

Declaration of Performance European Technical Approval

Documents for Self Drilling Fasteners



Self Drilling Fasteners

Use the contents listing below to select the document you require, then click through to the appropriate page.

Declaration of Performance Documents (DoPs)

Product	Page
JT2-3-4,8xLL	3
JT2-6-6,3xL	4
JT3-FR-2HPlus-5,5xL	5
JT3-3-5,5xL	6
JT3-6-5,5xL	7
JT3-12-5,5xL	8
JT3-FR-12-5,5xL	9
JT3-2-6,5xL	10
JZ1-6,3xL	11
JA3-6,5xL	12
JZ3-6,3xL	13
JT4-6-5,5xL	14
JT3-FR-2H-4,8xL	15
JT3-(FR)-2-4,9xL	16
JT4-(FR)-2-4,9xL	17
JT3-FR-3-5,5xL	18
JT3-FR-6-5,5xL	19
JT3-6-6,3xL	20
JA1-6,5xL	21
JF2-2H-4,8xL	22
JF3-2-5,5xL	23
JT3-LT-3-5,5xL	24
JT4-4-4,8xL	25
JT3-D-6H	26
JT3-D-12H	27

European Technical Approval Documents (ETAs)

ETA 100200	28
ETA 130177	145

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-002-100200 -2013**

1.) Unique identification code of the product-type:

JT2-3-4,8xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	6	ETA 100200
Characteristic shear resistance	annex	6	ETA 100200
Fastener type	annex	6	ETA 100200
Limits of the application	annex	6	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-011-100200 -2013**

1.) Unique identification code of the product-type:

JT2-6-6,3xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	19-20	ETA 100200
Characteristic shear resistance	annex	19-20	ETA 100200
Fastener type	annex	19-20	ETA 100200
Limits of the application	annex	19-20	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-030-100200 -2013**

1.) Unique identification code of the product-type:

JT3-FR-2HPlus-5,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	35-44	ETA 100200
Characteristic shear resistance	annex	35-44	ETA 100200
Fastener type	annex	35-44	ETA 100200
Limits of the application	annex	35-44	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-032-100200 -2013**

- 1.) Unique identification code of the product-type:
JT3-3-5,5xL
- 2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
Type and lot number are displayed on the packaging
- 3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
Fastening screw for metal members and sheeting
- 4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe
- 5.) Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12(2) :
Not relevant
- 6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 3
- 7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not relevant
- 8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	45-48/51	ETA 100200
Characteristic shear resistance	annex	45-48/51	ETA 100200
Fastener type	annex	45-48/51	ETA 100200
Limits of the application	annex	45-48/51	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President
(Name and function)

Bad Laasphe 13.06.2013
(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-040-100200-130177-2013**

1.) Unique identification code of the product-type:

JT3-6-5,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 /System 2+

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	52-56	6-7	ETA 100200	ETA 130177
Characteristic shear resistance	annex	52-56	6-7	ETA 100200	ETA 130177
Fastener type	annex	52-56	6-7	ETA 100200	ETA 130177
Limits of the application	annex	52-56	6-7	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-044-100200-130177 -2013**

1.) Unique identification code of the product-type:

JT3-12-5,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 /System 2+

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	57-62	8-9	ETA 100200	ETA 130177
Characteristic shear resistance	annex	57-62	8-9	ETA 100200	ETA 130177
Fastener type	annex	57-62	8-9	ETA 100200	ETA 130177
Limits of the application	annex	57-62	8-9	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-046-100200-130177-2013**

1.) Unique identification code of the product-type:

JT3-FR-12-5,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 /System 2+

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	57-62	8-9	ETA 100200	ETA 130177
Characteristic shear resistance	annex	57-62	8-9	ETA 100200	ETA 130177
Fastener type	annex	57-62	8-9	ETA 100200	ETA 130177
Limits of the application	annex	57-62	8-9	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-050-100200-13177-2013**

1.) Unique identification code of the product-type:

JT3-2-6,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 /System 2+

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	64-69	14-15	ETA 100200	ETA 130177
Characteristic shear resistance	annex	64-69	14-15	ETA 100200	ETA 130177
Fastener type	annex	64-69	14-15	ETA 100200	ETA 130177
Limits of the application	annex	64-69	14-15	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-053-100200 -2013**

1.) Unique identification code of the product-type:

JZ1-6,3xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	72-73	ETA 100200
Characteristic shear resistance	annex	72-73	ETA 100200
Fastener type	annex	72-73	ETA 100200
Limits of the application	annex	72-73	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-055-100200-130177-2013**

1.) Unique identification code of the product-type:

JA3-6,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 /System 2+

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	74-79	18-19	ETA 100200	ETA 130177
Characteristic shear resistance	annex	74-79	18-19	ETA 100200	ETA 130177
Fastener type	annex	74-79	18-19	ETA 100200	ETA 130177
Limits of the application	annex	74-79	18-19	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-056-100200-130177-2013**

1.) Unique identification code of the product-type:

JZ3-6,3xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 / System 2+

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	80-85	10-11	ETA 100200	ETA 130177
Characteristic shear resistance	annex	80-85	10-11	ETA 100200	ETA 130177
Fastener type	annex	80-85	10-11	ETA 100200	ETA 130177
Limits of the application	annex	80-85	10-11	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-074-100200 -2013**

- 1.) Unique identification code of the product-type:
JT4-6-5,5xL
- 2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
Type and lot number are displayed on the packaging
- 3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
Fastening screw for metal members and sheeting
- 4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe
- 5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :
Not relevant
- 6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 3
- 7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not relevant
- 8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

- 9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	103-104	ETA 100200
Characteristic shear resistance	annex	103-104	ETA 100200
Fastener type	annex	103-104	ETA 100200
Limits of the application	annex	103-104	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

- 10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President
(Name and function)

Bad Laasphe 13.06.2013
(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-017-100200 -2013**

1.) Unique identification code of the product-type:

JT3-FR-2H-4,8xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	25	ETA 100200
Characteristic shear resistance	annex	25	ETA 100200
Fastener type	annex	25	ETA 100200
Limits of the application	annex	25	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-019-100200 -2013**

1.) Unique identification code of the product-type:

JT3-(FR)-2-4,9xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	26-27	ETA 100200
Characteristic shear resistance	annex	26-27	ETA 100200
Fastener type	annex	26-27	ETA 100200
Limits of the application	annex	26-27	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-020-100200 -2013**

1.) Unique identification code of the product-type:

JT4-(FR)-2-4,9xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	26-27	ETA 100200
Characteristic shear resistance	annex	26-27	ETA 100200
Fastener type	annex	26-27	ETA 100200
Limits of the application	annex	26-27	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-033-100200 -2013**

- 1.) Unique identification code of the product-type:
JT3-FR-3-5,5xL
- 2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
Type and lot number are displayed on the packaging
- 3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
Fastening screw for metal members and sheeting
- 4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe
- 5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :
Not relevant
- 6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 3
- 7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not relevant
- 8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.
- 9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	45-48/51	ETA 100200
Characteristic shear resistance	annex	45-48/51	ETA 100200
Fastener type	annex	45-48/51	ETA 100200
Limits of the application	annex	45-48/51	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

- 10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President
(Name and function)

Bad Laasphe 13.06.2013
(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-042-100200-130177 -2013**

1.) Unique identification code of the product-type:

JT3-FR-6-5,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 2+ / System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200 and 130177, the notified body 0769 has made the factory production control system according system 2 + (and system 3) and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance			Harmonized technical specification	
Characteristic tension resistance	annex	52-56	6-7	ETA 100200	ETA 130177
Characteristic shear resistance	annex	52-56	6-7	ETA 100200	ETA 130177
Fastener type	annex	52-56	6-7	ETA 100200	ETA 130177
Limits of the application	annex	52-56	6-7	ETA 100200	ETA 130177
Reaction to fire	A1 bis E			ETA 100200	ETA 130177

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-048-100200 -2013**

1.) Unique identification code of the product-type:

JT3-6-6,3xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	63	ETA 100200
Characteristic shear resistance	annex	63	ETA 100200
Fastener type	annex	63	ETA 100200
Limits of the application	annex	63	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-052-100200 -2013**

1.) Unique identification code of the product-type:

JA1-6,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	70-71	ETA 100200
Characteristic shear resistance	annex	70-71	ETA 100200
Fastener type	annex	70-71	ETA 100200
Limits of the application	annex	70-71	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-065-100200 -2013**

1.) Unique identification code of the product-type:

JF2-2H-4,8xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	94	ETA 100200
Characteristic shear resistance	annex	94	ETA 100200
Fastener type	annex	94	ETA 100200
Limits of the application	annex	94	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-066-100200 -2013**

1.) Unique identification code of the product-type:

JF3-2-5,5xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	95-98	ETA 100200
Characteristic shear resistance	annex	95-98	ETA 100200
Fastener type	annex	95-98	ETA 100200
Limits of the application	annex	95-98	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-070-100200 -2013**

- 1.) Unique identification code of the product-type:
JT3-LT-3-5,5xL
- 2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
Type and lot number are displayed on the packaging
- 3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
Fastening screw for metal members and sheeting
- 4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe
- 5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :
Not relevant
- 6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 3
- 7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not relevant
- 8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	99-100	ETA 100200
Characteristic shear resistance	annex	99-100	ETA 100200
Fastener type	annex	99-100	ETA 100200
Limits of the application	annex	99-100	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President
(Name and function)

Bad Laasphe 13.06.2013
(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-072-100200 -2013**

1.) Unique identification code of the product-type:

JT4-4-4,8xL

2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):

Type and lot number are displayed on the packaging

3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:

Fastening screw for metal members and sheeting

4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):

EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe

5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :

Not relevant

6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3

7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:

Not relevant

8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:

Based on the European Technical Assessment ETA 100200, the notified body 0769 has made the factory production control system according system 3 and issued a report on the initial testing of the product.

9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	101-102	ETA 100200
Characteristic shear resistance	annex	101-102	ETA 100200
Fastener type	annex	101-102	ETA 100200
Limits of the application	annex	101-102	ETA 100200
Reaction to fire	A1 bis E		ETA 100200

10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President

(Name and function)

Bad Laasphe 13.06.2013

(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-076-130177 -2013**

- 1.) Unique identification code of the product-type:
JT3-D-6H-6,3/5,5xL
- 2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
Type and lot number are displayed on the packaging
- 3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
Fastening screw for metal members and sheeting
- 4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe
- 5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :
Not relevant
- 6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 2+
- 7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not relevant
- 8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
Based on the European Technical Assessment ETA 130177, the notified body 0769 has made the factory production control system according system 2 + and issued a report on the initial testing of the product.

- 9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	2-3	ETA 130177
Characteristic shear resistance	annex	2-3	ETA 130177
Fastener type	annex	2-3	ETA 130177
Limits of the application	annex	2-3	ETA 130177
Reaction to fire	A1 bis E		ETA 130177

- 10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President
(Name and function)

Bad Laasphe 13.06.2013
(Place and date of issue)



(Signature)

DECLARATION of PERFORMANCE**according to Annex III of the regulation (EU) Nr. 305/2011 (construction product regulation)****Nr. EJOT 1-080-130177 -2013**

- 1.) Unique identification code of the product-type:
JT3-D-12H-6,3/5,5xL
- 2.) Type, batch or serial number or any other element allowing identification of the construction product as required pursuant to Article 11(4):
Type and lot number are displayed on the packaging
- 3.) Intended use or uses of the construction product, in accordance with the applicable harmonized technical specification, as foreseen by the manufacturer:
Fastening screw for metal members and sheeting
- 4.) Name, registered trade name or registered trade mark and contact address of the manufacturer as required pursuant to Article 11(5):
EJOT Baubefestigungen GmbH, In der Stockwiese 35, 57334 Bad Laasphe
- 5.) Where applicable, name and contact address of the authorized representative whose mandate covers the tasks specified in Article 12(2) :
Not relevant
- 6.) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:
System 2+
- 7.) In case of the declaration of performance concerning a construction product covered by a harmonized standard:
Not relevant
- 8.) In case of the declaration of performance concerning a construction product for which a European Technical Assessment has been issued:
Based on the European Technical Assessment ETA 130177, the notified body 0769 has made the factory production control system according system 2 + and issued a report on the initial testing of the product.

- 9.) Declared performance:

Essential characteristics	Performance		Harmonized technical specification
Characteristic tension resistance	annex	4-5	ETA 130177
Characteristic shear resistance	annex	4-5	ETA 130177
Fastener type	annex	4-5	ETA 130177
Limits of the application	annex	4-5	ETA 130177
Reaction to fire	A1 bis E		ETA 130177

- 10.) The performance of the product according to paragraph Nr 1 and 2 corresponds to the declared performance in Nr. 9. Responsible for creating this product performance is only the manufacturer according to Nr. 4.

Signed for and in the name of the manufacturer:

Dr. Frank Dratschmidt / Vice President
(Name and function)

Bad Laasphe 13.06.2013
(Place and date of issue)



(Signature)



European Technical Approval ETA-10/0200

English translation prepared by DIBt - Original version in German language

Handelsbezeichnung
Trade name

Befestigungsschrauben JA, JB, JT, JZ und JF
Fastening screws JA, JB, JT, JZ and JF

Zulassungsinhaber
Holder of approval

EJOT Baubefestigungen GmbH
In der Stockwiese 35
57334 Bad Laasphe
DEUTSCHLAND

Zulassungsgegenstand
und Verwendungszweck
*Generic type and use
of construction product*

Befestigungsschrauben für Bauteile und Bleche aus Metall
Fastening screws for metal members and sheeting

Geltungsdauer:
Validity: vom
from
bis
to

27 June 2013
27 June 2018

Herstellwerk
Manufacturing plant

EJOT Baubefestigungen GmbH
In der Stockwiese 35
57334 Bad Laasphe
DEUTSCHLAND

Diese Zulassung umfasst
This Approval contains

117 Seiten einschließlich 104 Anhänge
117 pages including 104 annexes

Diese Zulassung ersetzt
This Approval replaces

ETA-10/0200 mit Geltungsdauer vom 03.04.2012 bis 17.08.2015
ETA-10/0200 with validity from 03.04.2012 to 17.08.2015

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
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¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12

² Official Journal of the European Communities L 220, 30 August 1993, p. 1

³ Official Journal of the European Union L 284, 31 October 2003, p. 25

⁴ *Bundesgesetzblatt Teil I 1998*, p. 812

⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178

⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product/ products and intended use

1.1 Definition of the construction product

The EJOT fastening screws are self drilling and self tapping screws listed in Table 1. The fastening screws are made of case hardened carbon steel or stainless steel. They are partly completed with metallic washers and EPDM sealing rings. For details see the appropriate Annexes.

Screws or washers for which the stainless steel grade A2 according to EN ISO 3506-1 is given in the respective Annexes (e. g. 1.4301 or 1.4567) may be made of stainless steel grade A4 (e. g. 1.4401 or 1.4578) as well.

Examples of fastening screws and the corresponding connections are shown in Annex 1.

The fastening screws and the corresponding connections are subject to tension and shear forces.

Table 1 Different types of fastening screws

Annex	Fastening screw	Comp. I	Comp. II	Description
Annex 6	JT2-2-4,2 x L JT2-3-4,8 x L	steel	steel	with hexagon head or round head with Phillips®, Pozidriv® or Torx® drive system
Annex 7	JT2-2H/3-4,8 x L	steel	steel	with undercut, hexagon head and sealing washer $\geq \varnothing 14$ mm
Annex 8	JT2-2H-4,8 x L	steel	steel	with undercut and hexagon head
Annex 9	JT2-T-2H-4,8 x L	steel	steel	with undercut and round head with Torx® drive system
Annex 10	JT2-2H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 11	JT2-3H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 12	JT2-3H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 13	JT2-3-5,5 x L	steel	steel	with hexagon head
Annex 14	JT2-3-5,5 x L	steel	steel	with hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 15	JT2-6-5,5 x L	steel	steel	with hexagon head
Annex 16	JT2-6-5,5 x L	steel	steel	with hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 17	JT2-8-5,5 x L	steel	steel	with hexagon head
Annex 18	JT2-8-5,5 x L	steel	steel	with hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 19	JT2-6-6,3 x L	steel	steel	with hexagon head
Annex 20	JT2-6-6,3 x L	steel	steel	with hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 21	JT2-12-5,5 x L	steel	steel	with hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 22	JT2-12-5,5 x L	steel	steel	with hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 23	JT3-2H-4,8 x L JT6-2H-4,8 x L	steel	steel	with undercut and hexagon head and sealing washer $\geq \varnothing 14$ mm

Annex	Fastening screw	Comp. I	Comp. II	Description
Annex 24	JT3-3H-4,8 x L JT6-3H-4,8 x L	steel	steel	with undercut, hexagon head and sealing washer $\geq \varnothing 14$ mm
Annex 25	JT3-FR-2H-4,8 x L JT6-FR-2H-4,8 x L	steel	steel	with undercut, round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 26 ^{*)}	JT3- (FR-)2-4,9xL JT4- (FR-)2-4,9xL JT9- (FR-)2-4,9xL	alu 165 1)	timber	hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 27 ^{*)}	JT3- (FR-)2-4,9xL JT4- (FR-)2-4,9xL JT9- (FR-)2-4,9xL	Alu 215 2)	timber	hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 28	JT3-2H-5,5 x L JT6-2H-5,5 x L	steel	steel	with undercut, hexagon head and sealing washer $\geq \varnothing 16$ mm
Annex 29	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 165	alu 165	with hexagon or round head and sealing washer $\geq \varnothing 14$ mm
Annex 30	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 215	alu 215	with hexagon or round head and sealing washer $\geq \varnothing 14$ mm
Annex 31	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 165	steel	with hexagon or round head and sealing washer $\geq \varnothing 14$ mm
Annex 32	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 215	steel	with hexagon or round head and sealing washer $\geq \varnothing 14$ mm
Annex 33 ^{*)}	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 165	timber	with hexagon or round head and sealing washer $\geq \varnothing 14$ mm
Annex 34 ^{*)}	JT3-2-6,0 x L JT3-FR-2-6,0 x L JT6-2-6,0 x L JT6-FR-2-6,0 x L	alu 215	timber	with hexagon or round head and sealing washer $\geq \varnothing 14$ mm
Annex 35	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 36	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 37	JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L	steel	steel	with undercut, round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 38	JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L	steel	steel	with undercut, round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 39	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 165	alu 165	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm

Annex	Fastening screw	Comp. I	Comp. II	Description
Annex 40	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 215	alu 215	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 41	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 165	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 42	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 165	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 43	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 215	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 44	JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L	alu 215	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 11$ mm
Annex 45	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 46	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 47	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 48	JT3-3-5,5xL JT3-FR-3-5,5xL JT6-3-5,5xL JT6-FR-3-5,5 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 49	JT3-3H-5,5 x L JT6-3H-5,5 x L JT3-FR-3H-5,5 x L JT6-FR-3H-5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 50	JT3-3H-5,5 x L JT6-3H-5,5 x L JT3-FR-3H-5,5 x L JT6-FR-3H-5,5 x L	steel	steel	with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 51	JT3-3-5,5 x L JT6-3-5,5 x L JT3-FR-3-5,5 x L JT6-FR-3-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm
Annex 52	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 16$ mm

Annex	Fastening screw	Comp. I	Comp. II	Description
Annex 53	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 54	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 55	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 56	JT3-6-5,5 x L JT6-6-5,5 x L JT3-FR-6-5,5 x L JT6-FR-6-5,5 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 57	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 58	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 59	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 60	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 61	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 62	JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$
Annex 63	JT3-6-6,3 x L JT6-6-6,3 x L	steel	steel	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 64	JT3-2-6,5 x L JT6-2-6,5 x L	steel	steel	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 65 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 66 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	alu 165	timber	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 67 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	alu 215	timber	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$
Annex 68 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$

Annex	Fastening screw	Comp. I	Comp. II	Description
Annex 69 ^{*)}	JT3-2-6,5 x L JT6-2-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 70	JA1-6,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 71 ^{*)}	JA1-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 72	JZ1-6,3 x L JB1-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 73	JZ1-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 74	JA3-6,5 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 75 ^{*)}	JA3-6,5 x L	steel	timber	with hexagon head and sealing washer ≥ Ø16 mm
Annex 76	JA3-6,5 x L	alu 165	alu 165	with hexagon head and sealing washer ≥ Ø16 mm
Annex 77	JA3-6,5 x L	alu 215	alu 215	with hexagon head and sealing washer ≥ Ø16 mm
Annex 78	JA3-6,5 x L	alu 165	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 79	JA3-6,5 x L	alu 215	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 80	JZ3-6,3 x L JB3-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 81	JZ3-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 82	JZ3-6,3 x L JB3-6,3 x L	alu 165	alu 165	with hexagon head and sealing washer ≥ Ø16 mm
Annex 83	JZ3-6,3 x L JB3-6,3 x L	alu 215	alu 215	with hexagon head and sealing washer ≥ Ø16 mm
Annex 84	JZ3-6,3 x L JB3-6,3 x L	alu 165	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 85	JZ3-6,3 x L JB3-6,3 x L	alu 215	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 86	JZ3-8,0 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 87	JZ7-6,3 x L JB7-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø16 mm
Annex 88	JZ7-6,3 x L JB7-6,3 x L	steel	steel	with hexagon head and sealing washer ≥ Ø22 mm
Annex 89	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
Annex 90	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm
Annex 91	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer ≥ Ø14 mm

Annex	Fastening screw	Comp. I	Comp. II	Description
Annex 92	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 165	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}14$ mm
Annex 93	JF3-2H-4,8 x L JF6-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-FR-2H-4,8 x L	alu 215	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}14$ mm
Annex 94	JF2-2H-4,8 x L	steel	steel	with hexagon head
Annex 95	JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}11$ mm
Annex 96	JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	steel	steel	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}14$ mm
Annex 97	JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	alu 165	alu 165	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}14$ mm
Annex 98	JF3-2-5,5xL JF6-2-5,5xL JF3-FR-2-5,5xL JF6-FR-2-5,5xL	alu 215	alu 215	with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}14$ mm
Annex 99	JT3-LT-3-5,5xL JT6-LT-3-5,5xL	steel	steel	round head with Torx® drive system
Annex 100	JT3-LT-3-5,5xL JT6-LT-3-5,5xL	steel	steel	round head with Torx® drive system and sealing washer $\geq \text{Ø}11$ mm
Annex 101	JT4-4-4,8xL JT9-4-4,8xL	alu 165	alu 165	with hexagon head
Annex 102	JT4-4-4,8xL JT9-4-4,8xL	alu 215	alu 215	with hexagon head
Annex 103	JT4-6-5,5xL JT9-6-5,5xL	alu 165	alu 165	with hexagon head
Annex 104	JT4-6-5,5xL JT9-6-5,5xL	alu 215	alu 215	with hexagon head

*) These fastening screws are applicable for fastening to timber substructures

1) Aluminum alloy with $R_{m,min}$ of 165 N/mm²

2) Aluminum alloy with $R_{m,min}$ of 215 N/mm²

1.2 Intended use

The fastening screws are intended to be used for fastening steel sheeting to steel substructures and as far as stated in Table 1 to timber substructures. The sheeting can either be used as wall or roof cladding or as load bearing wall and roof element.

The fastening screws can also be used for the fastening of other thin gauge steel members.

The component to be fastened is component I and the substructure is component II.

The intended use comprises fastening screws and connections for indoor and outdoor applications. Fastening screws which are made of stainless steel are intended to be used in external environments with a high or very high corrosion category.

The intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads).

The provisions made in this European technical approval are based on an assumed working life of the fastening screws of 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

2 Characteristics of product and methods of verification

2.1 Characteristics of product

The fastening screws shall correspond to the drawings given in the appropriate Annexes (see Table 1).

The characteristic material values, dimensions and tolerances of the fastening screws neither indicated in this section nor in the Annexes shall correspond to the respective values laid down in the technical documentation⁷ to this European technical approval.

The characteristic values of the shear and tension resistance of the connections made with the fastening screws are given in the appropriate Annexes or in section 4.2.

The fastening screws are considered to satisfy the requirements of performance class A1 of the characteristic reaction to fire.

2.2 Methods of verification

The assessment of the fitness of the fastening screws for the intended use in relation to the Essential Requirements ER 1 (Mechanical resistance and stability), ER 2 (Safety in case of fire), ER 4 (Safety in use) and additional aspects of durability has been made in accordance with section 3.2 of the Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.

The assessment of the resistance to fire performance is only relevant to the assembled system (fastening screws, sheeting, substructure) which is not part of the ETA.

The fastening screws are considered to satisfy the requirements of performance class A 1 of the characteristic reaction to fire, in accordance with the provisions of the EC Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

Concerning Essential Requirements No. 1 (Mechanical resistance and stability) and No. 4 (Safety in use) the following applies:

The characteristic values of resistance given in the Annexes were determined by shear and tension tests.

The formulas to calculate the design resistance are given in clause 4.2.1.

⁷ The technical documentation to this European technical approval is deposited at Deutsches Institut für Bautechnik and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure is handed over to the approved bodies.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 99/92 of the European Commission⁸ system 3 of the attestation of conformity applies.

This system of attestation of conformity is defined as follows:

System 3: Declaration of conformity of the product by the manufacturer on the basis of:

- (a) Tasks for the manufacturer:
 - (1) factory production control;
- (b) Tasks for the approved body:
 - (2) initial type-testing of the product.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The manufacturer may only use initial materials stated in the technical documentation of this European technical approval.

The factory production control shall be in accordance with the "control plan relating to this European technical approval" which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.⁹

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of fastening screws in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

- initial type-testing of the product,

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in written reports.

⁸ Official Journal of the European Communities L 80 of 18.03.1998.

⁹ The "control plan" is a confidential part of the European technical approval and only handed over to the approved body involved in the procedure of attestation of conformity. See section 3.2.2.

3.3 CE marking

The CE marking shall be affixed on each packaging of fastening screws. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the European technical approval,
- the name of the product.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The fastening screws are manufactured in accordance with the provisions of the European technical approval using the manufacturing process as laid down in the technical documentation.

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Design

4.2.1 General

Fastening screws completely or partly exposed to external weather or similar conditions are made of stainless steel or are protected against corrosion. For the corrosion protection the rules given in EN 1090-2:2008 + A1:2011, EN 1993-1-3:2006 + AC:2009 and EN 1993-1-4:2006 are taken into account.

For the types of connection (a, b, c, d) listed in the Annexes it is not necessary to take into account the effect of constraints due to temperature. For other types of connection it shall be considered for design as long as constraining forces due to temperature do not occur or are not significant (e. g. sufficient flexibility of the structure).

The loading is predominantly static. (Remark: Wind loads are regarded as predominantly static.)

Dimensions, material properties, torque moments $M_{t,norm}$, minimum effective screw-in length l_{ef} and nominal material thicknesses t_N as stated in the ETA or in the Annexes are observed.

The verification concept stated in EN 1990:2002 + A1:2005 + A1:2005/AC:2010 is used for the design of the connections made with the fastening screws. The characteristic values (shear and tension resistance) stated in the Annexes are used for the design of the entire connections.

The following formulas are used to calculate the values of design resistance:

$$N_{Rd} = \frac{N_{Rk}}{\gamma_M}$$

$$V_{Rd} = \frac{V_{Rk}}{\gamma_M}$$

The recommended partial safety factor $\gamma_M = 1.33$ is used in order to determine the corresponding design resistances, provided no values are given in national regulations of the member state in which the fastening screws are used or in the respective National Annex to Eurocode 3.

In case of combined tension and shear forces the linear interaction formula according to EN 1993-1-3:2006 + AC:2009, section 8.3 (8) is taken into account.

$$\frac{N_{Sd}}{N_{Rd}} + \frac{V_{Sd}}{V_{Rd}} \leq 1.0$$

The possibly required reduction of the tension resistance (pull-through resistance) due to the position of the fastener is taken into account:

- in accordance with EN 1993 1 3:2006+ AC:2009, section 8.3 (7) and Fig. 8.2 (component I is made of steel) or EN 1999-1-4:2007 + A1:2011, section 8.1 (6) and Table 8.3 (component I is made of aluminium),
- of 0.7 if the supporting structure is an asymmetric profile (e.g. Z-profile) with $t_{II} < 5$ mm

4.2.2 Additional rules for connections with timber substructures

As far as no other provisions are made in the following EN 1995-1-1:2004 + A1:2008 applies.

Drill points of self drilling screws are not taken into account for the effective screw-in length.

The following terms are used:

l_g - Screw-in length - part of thread screwed into component II including drill point.

l_b - Length of unthreaded part of the drill-point.

l_{ef} - effective screw-in length $l_{ef} = l_g - l_b$

$$N_{R,k} = F_{ax,Rk} \cdot k_{mod}$$

$$V_{R,k} = F_{v,Rk} \cdot k_{mod}$$

$F_{ax,Rk}$ according to EN 1995-1-1:2004 + A1:2008, equation (8.40a)

Remark: $F_{ax,Rk} = F_{ax,\alpha,Rk}$ with $\alpha = 90^\circ$

$F_{v,Rk}$ according to EN 1995-1-1:2004 + A1:2008, clause 8.2.3

k_{mod} according to EN 1995-1-1:2004 + A1:2008, Table 3.1

$M_{y,Rk}$ in equation (8.9) of EN 1995-1-1:2004 + A1:2008 and $f_{ax,k}$ in equation (8.40a) of EN 1995-1-1:2004 + A1:2008 are given in the Annexes of this ETA.

The characteristic values for pullout and bearing resistance (timber substructure) calculated according to EN 1995-1-1:2004 + A1:2008 are compared with the characteristic values for component I (pull over and bearing resistance) stated in the right column of the table in the appropriate Annexes. The lower value is used for further calculations.

4.2.3 Additional rules for fastening of perforated sheets

For the fastening of perforated sheets (structural part I) only fastening screws with diameters given in Annexes 2, 3, 4 or 5 are used for which characteristic values are given in the following Annexes for unperforated sheets of same thickness and strength class as for the perforated sheets.

For the calculation of the connection the characteristic values for the connection of unperforated sheets according to the relevant Annex and the characteristic values for the connection of perforated sheets according to Annex 2, 3, 4 or 5 are determined. The lower values are used for further calculations.

The fastening to perforated sheets (structural part II) is not ruled in this ETA.

4.3 Installation

The installation is only carried out according to the manufacturer's instructions. The manufacturer hands over the assembly instructions to the assembler.

It is guaranteed by the execution that no bimetallic corrosion will occur.

For regular shear forces the components I and II are directly connected to each other so that the fastening screws do not get additional bending. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

The fastening screws are fixed rectangular to the surface of the components to guarantee a correct load bearing and if necessary rain-proof connection.

Fastening screws for steel substructures are screwed in with the cylindrical part of the thread at least 6 mm if the substructure has a thickness over 6 mm unless otherwise declared in the manufacturer's instruction. Welded drill points are not taken into account for the screw-in length.

The conformity of the installed fasteners with the provisions of the ETA is attested by the executing company.

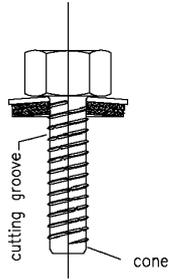
5 Indications to the manufacturer

It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2, 4.2 and 4.3 (including Annexes referred to) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European technical approval.

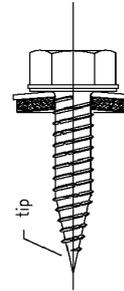
In addition all installation data (predrill diameter, torque moment, application limits) shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustration(s).

Andreas Kummerow
p. p. Head of Department

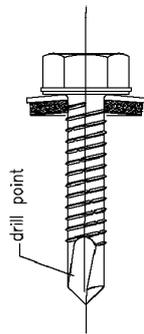
beglaubigt:
Ulbrich



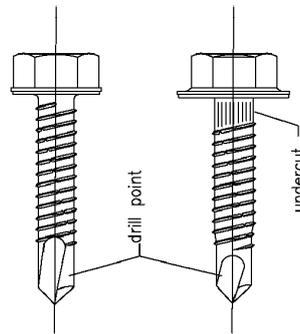
self tapping screw
with sealing washer



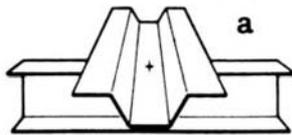
self tapping screw
with sealing washer



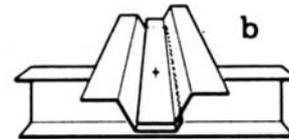
self-drilling screw
with sealing washer



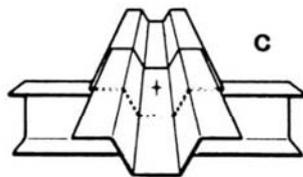
self-drilling screw
with integrated washer



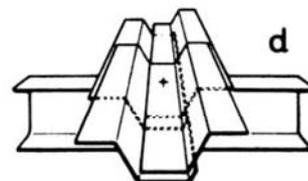
Single connection



Side lap connection



End overlap connection



Side lap + end overlap connection

Screws

Examples for screws
Types of connection

Annex 1

<p>Hole pattern I</p>	<p>Type of Fastener self tapping screw $\varnothing 6,3$ mm and $\varnothing 6,5$ mm and self drilling screw from $\varnothing 5,5$ mm to $\varnothing 6,3$ mm</p> <p>Materials Fastener: stainless steel - EN 10088 or similar Washer: stainless steel - EN 10088 EPDM sealing washer</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346 Component II: at least S235 - EN 10025-1 or at least S280GD - EN 10346 or structural timber at least strength grade C24</p>
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sheet / \varnothing washer	perforated sheets made of S280GD with $R_{m,min} = 360$ N/mm ²				perforated sheets made of S320GD with $R_{m,min} = 390$ N/mm ²				perforated sheets made of S350GD with $R_{m,min} = 420$ N/mm ²				
	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm	
$M_{t,nom}$	5 Nm												
$V_{R,k}$ [kN] for $t_{N,d}$ [mm]	0,50	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—
	0,63	—	—	—	—	—	—	—	—	—	—	—	—
	0,75	2,16	2,22	2,24	2,38	2,34	2,40	2,44	2,58	2,54	2,60	2,62	2,78
	0,88	2,56	2,64	2,64	2,78	2,78	2,86	2,86	3,02	3,00	3,10	3,10	3,26
	1,00	2,92	3,04	3,02	3,16	3,16	3,30	3,26	3,42	3,42	3,56	3,52	3,68
	1,13	3,32	3,48	3,42	3,56	3,60	3,76	3,70	3,86	3,88	4,10	4,00	4,16
	1,25	3,70	3,88	3,80	3,94	4,00	4,20	4,10	4,26	4,32	4,54	4,42	4,60
	1,50	4,46	4,74	4,56	4,72	4,84	5,12	4,96	5,10	5,22	5,54	5,34	5,50
$N_{R,k}$ [kN] for $t_{N,d}$ [mm]	0,50	—	—	—	—	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—	—	—	—	—
	0,63	—	—	—	—	—	—	—	—	—	—	—	—
	0,75	1,40	1,94	2,14	2,22	1,52	2,08	3,32	2,42	1,64	2,26	2,50	2,60
	0,88	1,82	2,34	2,62	2,70	1,96	2,54	2,82	2,92	2,12	2,74	3,04	3,14
	1,00	2,24	2,74	3,06	3,14	2,44	2,96	3,32	3,42	2,62	3,20	3,58	3,68
	1,13	2,74	3,18	3,58	3,64	2,98	3,44	3,88	3,96	3,20	3,70	4,18	4,26
	1,25	3,24	3,58	4,08	4,12	3,52	3,88	4,40	4,46	3,78	4,18	4,76	4,80
	1,50	4,36	4,46	5,12	5,12	4,74	4,84	5,56	5,56	5,10	5,22	5,98	5,98

The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening of perforated sheets	Annex 2
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<p>Hole pattern II</p>	<p>Type of Fastener self tapping screw $\varnothing 6,3$ mm and $\varnothing 6,5$ mm and self drilling screw from $\varnothing 5,5$ mm to $\varnothing 6,3$ mm</p> <p>Materials Fastener: stainless steel - EN 10088 or similar Washer: stainless steel - EN 10088 EPDM sealing washer</p> <p>Component I: S280GD - EN 10346 Component II: at least S235 - EN 10025-1 or at least S280GD - EN 10346 or structural timber at least strength grade C24</p>
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screw / \varnothing washer	self drilling screws $\varnothing 5,5$ mm and $\varnothing 6,0$ mm				self tapping screws and self drilling screws $\varnothing 6,3$ mm and $\varnothing 6,5$ mm				
	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm	
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	2,48	2,52	2,84	2,76	2,38	2,64	3,16	3,24
	0,88	3,04	3,12	3,42	3,32	3,02	3,28	3,78	3,88
	1,00	3,56	3,70	3,84	3,84	3,64	3,96	4,36	4,50
	1,13	4,14	4,26	4,40	4,40	4,36	4,70	5,00	5,18
	1,25	4,68	4,84	4,92	4,94	5,06	5,40	5,60	5,84
	1,50	5,76	6,04	5,90	6,10	6,62	6,94	6,88	7,16
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—
	0,63	—	—	—	—	—	—	—	—
	0,75	2,88	3,16	3,24	3,14	2,86	3,46	3,72	3,92
	0,88	3,42	3,72	3,76	3,70	3,40	4,02	4,30	4,46
	1,00	3,92	4,28	4,28	4,20	3,90	4,56	4,82	4,96
	1,13	4,46	4,86	4,88	4,72	4,44	5,12	5,38	5,48
	1,25	4,96	5,42	5,42	5,26	4,94	5,66	5,88	5,94
	1,50	6,04	6,60	6,60	6,38	6,00	6,74	6,92	6,90

The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening of perforated sheets	Annex 3
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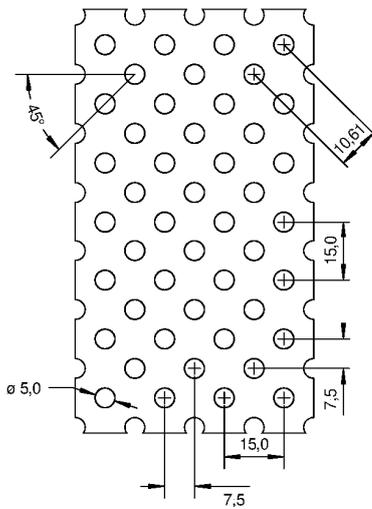
<p>Hole pattern II</p>	<p>Type of Fastener self tapping screw $\varnothing 6,3$ mm and $\varnothing 6,5$ mm and self drilling screw from $\varnothing 5,5$ mm to $\varnothing 6,3$ mm</p> <p>Materials Fastener: stainless steel - EN 10088 or similar Washer: stainless steel - EN 10088 EPDM sealing washer</p> <p>Component I: S320GD - EN 10346 Component II: at least S235 - EN 10025-1 or at least S280GD - EN 10346 or structural timber at least strength grade C24</p>
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screw / \varnothing washer	self drilling screws $\varnothing 5,5$ mm and $\varnothing 6,0$ mm				self tapping screws and self drilling screws $\varnothing 6,3$ mm and $\varnothing 6,5$ mm				
	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm	
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	2,68	2,74	3,08	3,00	2,68	2,88	3,42	3,50
	0,88	3,30	3,38	3,70	3,60	3,36	3,60	4,10	4,22
	1,00	3,86	4,00	4,16	4,16	4,02	4,30	4,72	4,88
	1,13	4,48	4,62	4,76	4,76	4,76	5,08	5,42	5,60
	1,25	5,06	5,24	5,32	5,36	5,50	5,84	6,08	6,30
	1,50	6,24	6,54	6,40	6,60	7,10	7,52	7,46	7,76
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—	—
	0,63	—	—	—	—	—	—	—	—
	0,75	3,12	3,42	3,50	3,40	3,12	3,68	4,06	4,26
	0,88	3,70	4,04	4,08	4,00	3,70	4,32	4,68	4,86
	1,00	4,24	4,64	4,64	4,54	4,24	4,92	5,24	5,40
	1,13	4,84	5,26	5,28	5,12	4,84	5,54	5,86	5,96
	1,25	5,38	5,88	5,88	5,70	5,38	6,14	6,40	6,48
	1,50	6,54	7,16	7,16	6,92	6,54	7,38	7,54	7,52

The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening of perforated sheets	Annex 4
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Hole pattern II

Type of Fastener

self tapping screw $\varnothing 6,3$ mm and $\varnothing 6,5$ mm and
self drilling screw from $\varnothing 5,5$ mm to $\varnothing 6,3$ mm

Materials

Fastener: stainless steel - EN 10088 or similar
Washer: stainless steel - EN 10088
EPDM sealing washer

Component I: S350GD - EN 10346

Component II: at least S235 - EN 10025-1 or
at least S280GD - EN 10346 or
structural timber at least strength grade C24

screw / \varnothing washer	self drilling screws $\varnothing 5,5$ mm and $\varnothing 6,0$ mm				self tapping screws and self drilling screws $\varnothing 6,3$ mm and $\varnothing 6,5$ mm				
	16 mm	19 mm	22 mm	25 mm	16 mm	19 mm	22 mm	25 mm	
$M_{t,nom}$	5 Nm								
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	2,88	2,92	3,30	3,20	2,98	3,20	3,72	3,92
	0,88	3,54	3,62	3,96	3,86	3,62	3,88	4,42	4,54
	1,00	4,14	4,28	4,46	4,46	4,24	4,52	5,08	5,12
	1,13	4,80	4,94	5,10	5,10	4,92	5,24	5,78	5,74
	1,25	5,44	5,62	5,70	5,72	5,56	5,92	6,46	6,32
	1,50	6,24	6,54	6,40	7,02	6,94	7,36	7,86	7,48
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	
	0,63	—	—	—	—	—	—	—	
	0,75	3,34	3,66	3,76	3,64	3,52	4,16	4,52	4,64
	0,88	3,96	4,36	4,38	4,28	3,98	4,74	5,04	5,24
	1,00	4,54	4,98	4,96	4,86	4,40	5,24	5,50	5,76
	1,13	5,16	5,64	5,64	5,48	4,86	5,76	5,96	6,32
	1,25	5,80	6,28	6,28	6,14	5,38	6,24	6,40	6,80
	1,50	6,54	7,16	7,16	7,46	6,54	7,38	7,54	7,80

The thickness of the perforated sheets which are exposed to wind loads shall be at least 1,00 mm.

For intermediate values of the washer diameter the characteristic values for the washer with the smaller diameter shall be used.

Fastening of perforated sheets

Annex 5

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2,20$ mm</p>
<p>Timber substructures</p> <p>no performance determined</p>	

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
$M_{t,nom}$	—										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71	0,71
	0,50	0,71	1,18	1,18	1,18	1,18	1,18	1,18	1,18	1,18	—
	0,55	0,71	1,18	1,42	1,42	1,42	1,42	1,42	1,42	1,42	—
	0,63	0,71	1,18	1,42	1,71	1,71	1,71	1,71	1,71	1,71	—
	0,75	0,71	1,18	1,42	1,71	2,14	2,14	2,14	2,14	—	—
	0,88	0,71	1,18	1,42	1,71	2,14	2,52	2,52	2,52	—	—
	1,00	0,71	1,18	1,42	1,71	2,14	2,52	2,86	2,86	—	—
	1,13	0,71	1,18	1,42	1,71	2,14	2,52	2,86	—	—	—
	1,25	0,71	1,18	1,42	1,71	2,14	2,52	—	—	—	—
	1,50	0,71	1,18	1,42	1,71	—	—	—	—	—	—
	1,75	0,71	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,42	0,62	0,72	0,88	1,08	1,08	1,08	1,08	1,08	1,08
	0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,54	1,54	1,54	—
	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	—	—
	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	—	—
	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,62	—	—	—
	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,62	—	—	—
	1,25	0,42	0,62	0,72	0,88	1,12	1,38	—	—	—	—
	1,50	0,42	0,62	0,72	0,88	—	—	—	—	—	—
	1,75	0,42	—	—	—	—	—	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw

JT2-2H/3-4,8 x L

with undercut, hexagon head and sealing washer $\geq \varnothing 14$ mm

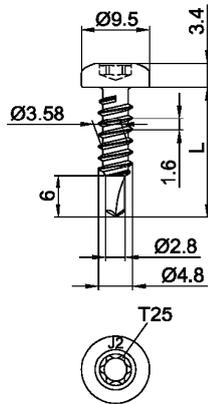
Annex 7

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2,20$ mm</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
$M_{t,nom}$	—										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92	0,92
	0,50	0,92	1,42	1,42	1,42	1,42	1,42	1,42	1,42	1,42	—
	0,55	0,92	1,42	1,67	1,67	1,67	1,67	1,67	1,67	1,67	—
	0,63	0,92	1,42	1,67	1,87	1,87	1,87	1,87	1,87	1,87	—
	0,75	0,92	1,42	1,67	1,87	2,16	2,16	2,16	2,16	—	—
	0,88	0,92	1,42	1,67	1,87	2,16	2,75	2,75	2,75	—	—
	1,00	0,92	1,42	1,67	1,87	2,16	2,75	3,30	3,30	—	—
	1,13	0,92	1,42	1,67	1,87	2,16	2,75	3,30	—	—	—
	1,25	0,92	1,42	1,67	1,87	2,16	2,75	—	—	—	—
	1,50	0,92	1,42	1,67	1,87	—	—	—	—	—	—
	1,75	0,92	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,42	0,62	0,72	0,81	0,81	0,81	0,81	0,81	0,81	0,81
	0,50	0,42	0,62	0,72	0,88	1,12	1,27	1,27	1,27	1,27	—
	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	—
	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	1,50	—
	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	—	—
	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,50	1,50	—	—
	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,50	—	—	—
	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,50	—	—	—
	1,25	0,42	0,62	0,72	0,88	1,12	1,38	—	—	—	—
	1,50	0,42	0,62	0,72	0,88	—	—	—	—	—	—
	1,75	0,42	—	—	—	—	—	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 8
<p>JT2-2H-4,8 x L with undercut and hexagon head</p>	



Materials

Fastener: carbon steel
case hardened and galvanized
Washer: none
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Drilling capacity $\Sigma t_i \leq 2,20$ mm

Timber substructures

no performance determined

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
$M_{t,nom}$	—										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69	0,69
	0,50	0,69	1,37	1,37	1,37	1,37	1,37	1,37	1,37	1,37	—
	0,55	0,69	1,37	1,70	1,70	1,70	1,70	1,70	1,70	1,70	—
	0,63	0,69	1,37	1,70	1,96	1,96	1,96	1,96	1,96	1,96	—
	0,75	0,69	1,37	1,70	1,96	2,35	2,35	2,35	2,35	—	—
	0,88	0,69	1,37	1,70	1,96	2,35	2,70	2,70	2,70	—	—
	1,00	0,69	1,37	1,70	1,96	2,35	2,70	3,02	3,02	—	—
	1,13	0,69	1,37	1,70	1,96	2,35	2,70	3,02	—	—	—
	1,25	0,69	1,37	1,70	1,96	2,35	2,70	—	—	—	—
	1,50	0,69	1,37	1,70	1,96	—	—	—	—	—	—
	1,75	0,69	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,42	0,62	0,72	0,85	0,85	0,85	0,85	0,85	0,85	0,85
	0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,38	1,38	1,38	—
	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	—	—
	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	—	—
	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,62	—	—	—
	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,62	—	—	—
	1,25	0,42	0,62	0,72	0,88	1,12	1,38	—	—	—	—
	1,50	0,42	0,62	0,72	0,88	—	—	—	—	—	—
	1,75	0,42	—	—	—	—	—	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw

JT2-T-2H-4,8 x L

with undercut and round head with Torx® drive system

Annex 9

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,50$ mm</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	1,00	1,13	1,25	1,50	2,00	2,50	3,00	4,00
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	1,40	—	1,60	ac	1,90	ac	2,30
	0,75	1,80	—	1,90	—	2,00	ac	2,20
	0,88	2,20	—	2,30	—	2,50	—	2,80
	1,00	2,60	—	2,80	—	3,00	—	3,40
	1,13	3,00	—	3,10	—	3,20	—	4,00
	1,25	3,50	—	3,70	—	3,90	—	4,40
	1,50	4,30	—	4,60	—	4,90	—	5,50
	1,75	4,30	—	4,60	—	4,90	—	5,50
	2,00	4,30	—	4,60	—	4,90	—	5,50
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,70	—	0,81	—	0,97	ac	1,24
	0,55	0,89	—	1,02	—	1,23	ac	1,57
	0,63	1,30	—	1,50	—	1,80	ac	2,30
	0,75	1,30	—	1,50	—	1,80	ac	2,30
	0,88	1,30	—	1,50	—	1,80	—	2,30
	1,00	1,30	—	1,50	—	1,80	—	2,30
	1,13	1,30	—	1,50	—	1,80	—	2,30
	1,25	1,30	—	1,50	—	1,80	—	2,30
	1,50	1,30	—	1,50	—	1,80	—	2,30
	1,75	1,30	—	1,50	—	1,80	—	2,30
	2,00	1,30	—	1,50	—	1,80	—	2,30

Self drilling screw	Annex 11
<p>JT2-3H-5,5 x L with undercut, hexagon head and sealing washer $\geq \varnothing 16$ mm</p>	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,50$ mm</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	2 x 0,63	2 x 0,75	2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25	2 x 1,50	2 x 1,75
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	—	—	—	—	—	—	—	—
0,50	—	—	—	—	—	—	—	—
0,55	—	—	—	—	—	—	—	—
0,63	—	1,60	1,60	1,60	1,60	1,60	—	—
0,75	—	1,90	1,90	1,90	1,90	1,90	—	—
0,88	—	2,20	2,20	2,20	2,20	2,20	—	—
1,00	—	2,60	2,60	2,60	2,60	2,60	—	—
1,13	—	2,60	2,60	2,60	2,60	—	—	—
1,25	—	2,60	2,60	2,60	2,60	—	—	—
1,50	—	2,60	—	—	—	—	—	—
1,75	—	2,60	—	—	—	—	—	—
2,00	—	2,60	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	—	—	—	—	—	—	—	—
0,50	—	0,97	1,24	1,51	1,62	1,62	1,62	—
0,55	—	1,23	1,57	1,91	2,05	2,05	—	—
0,63	—	1,80	2,30	2,80	3,00	3,00	—	—
0,75	—	1,80	2,30	2,80	3,30	3,80	—	—
0,88	—	1,80	2,30	2,80	3,30	3,80	—	—
1,00	—	1,80	2,30	2,80	3,30	3,80	—	—
1,13	—	1,80	2,30	2,80	3,30	—	—	—
1,25	—	1,80	2,30	2,80	3,30	—	—	—
1,50	—	1,80	2,30	2,80	—	—	—	—
1,75	—	1,80	—	—	—	—	—	—
2,00	—	1,80	—	—	—	—	—	—

Self drilling screw	Annex 12
JT2-3H-5,5 x L with undercut, hexagon head and sealing washer $\geq \text{Ø}16$ mm	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,00$ mm</p>
	<p>Timber substructures</p> <p>no performance determined</p>

$t_{N,II}$ [mm]	—	—	1,50	2,00	2,50	3,00	4,00	5,00
$M_{t,nom}$	7 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	2,60	2,80	2,80	2,80	3,80	3,80
	0,75	—	3,00	3,50	3,50	3,50	4,60	4,60
	0,88	—	3,40	4,20	4,20	4,20	5,30	5,30
	1,00	—	3,80	4,50	4,50	4,50	6,00	6,00
	1,13	—	4,20	4,90	4,90	4,90	6,70	—
	1,25	—	4,60	5,30	5,30	5,30	7,30	—
	1,50	—	5,30	6,00	6,00	6,00	8,10	—
	1,75	—	5,30	6,00	6,00	6,00	8,10	—
	2,00	—	5,30	6,00	6,00	6,00	8,10	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	1,60	2,20	2,20	2,20	2,20	2,20
	0,75	—	1,60	2,50	2,90	2,90	2,90	2,90
	0,88	—	1,60	2,50	3,60	3,60	3,80	3,80
	1,00	—	1,60	2,50	3,60	4,70	4,70	4,70
	1,13	—	1,60	2,50	3,60	4,80	5,70	—
	1,25	—	1,60	2,50	3,60	4,80	6,80	—
	1,50	—	1,60	2,50	3,60	4,80	6,80	—
	1,75	—	1,60	2,50	3,60	4,80	6,80	—
	2,00	—	1,60	2,50	3,60	4,80	6,80	—

Self drilling screw	Annex 15
JT2-6-5,5 x L with hexagon head	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,00$ mm</p>
<p>Timber substructures</p> <p>no performance determined</p>	

$t_{N,II}$ [mm]	—	—	1,50	2,00	2,50	3,00	4,00	5,00
$M_{t,nom}$	7 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	2,40	ac	2,50	ac	2,50	abcd
	0,75	—	2,70	—	3,10	ac	3,10	ac
	0,88	—	3,10	—	3,80	—	3,80	ac
	1,00	—	3,40	—	4,00	—	4,00	ac
	1,13	—	3,80	—	4,40	—	4,40	—
	1,25	—	4,10	—	4,80	—	4,80	—
	1,50	—	5,00	—	5,40	—	5,40	—
	1,75	—	5,00	—	5,40	—	5,40	—
	2,00	—	5,00	—	5,40	—	5,40	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	0,86	ac	1,35	ac	1,62	abcd
	0,55	—	1,09	ac	1,71	ac	2,05	abcd
	0,63	—	1,60	ac	2,50	ac	3,00	abcd
	0,75	—	1,60	—	2,50	ac	3,60	ac
	0,88	—	1,60	—	2,50	—	3,60	ac
	1,00	—	1,60	—	2,50	—	3,60	ac
	1,13	—	1,60	—	2,50	—	3,60	—
	1,25	—	1,60	—	2,50	—	3,60	—
	1,50	—	1,60	—	2,50	—	3,60	—
	1,75	—	1,60	—	2,50	—	3,60	—
	2,00	—	1,60	—	2,50	—	3,60	—

Self drilling screw	Annex 16
JT2-6-5,5 x L with hexagon head and sealing washer $\geq \text{Ø}16$ mm	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1</p>
	<p>Drilling capacity $\Sigma t_i \leq 9,50$ mm</p>
<p>Timber substructures</p> <p>no performance determined</p>	

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0
$M_{t,nom}$	7 Nm				—			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	3,80 abcd	3,80 ac	3,80 ac	3,80 ac	—	—	—
	0,75	4,60 ac	4,60 ac	4,60 ac	4,60 ac	—	—	—
	0,88	5,30 ac	5,30 ac	5,30 ac	5,30 a	—	—	—
	1,00	6,00 ac	6,00 ac	6,00 ac	6,00 a	—	—	—
	1,13	6,70 ac	6,70 ac	6,70 ac	6,70 a	—	—	—
	1,25	7,30 ac	7,30 ac	7,30 ac	7,30 —	—	—	—
	1,50	8,10 —	8,10 —	8,10 —	8,10 —	—	—	—
	1,75	8,10 —	8,10 —	8,10 —	—	—	—	—
	2,00	8,10 —	8,10 —	8,10 —	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,20 abcd	2,20 ac	2,20 ac	2,20 ac	—	—	—
	0,75	2,90 ac	2,90 ac	2,90 ac	2,90 ac	—	—	—
	0,88	3,80 ac	3,80 ac	3,80 ac	3,80 a	—	—	—
	1,00	4,70 ac	4,70 ac	4,70 ac	4,70 a	—	—	—
	1,13	5,70 ac	5,70 ac	5,70 ac	5,70 a	—	—	—
	1,25	5,80 ac	6,30 ac	6,80 ac	6,80 —	—	—	—
	1,50	5,80 —	6,30 —	6,80 —	6,80 —	—	—	—
	1,75	5,80 —	6,30 —	6,80 —	—	—	—	—
	2,00	5,80 —	6,30 —	6,80 —	—	—	—	—

Self drilling screw	Annex 17
JT2-8-5,5 x L with hexagon head	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1</p>
	<p>Drilling capacity $\Sigma t_i \leq 9,50 \text{ mm}$</p>
	<p>Timber substructures</p> <p>no performance determined</p>

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0
$M_{t,nom}$	7 Nm				—			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	3,00 abcd	3,00 abcd	3,00 abcd	3,00 abcd	—	—	—
	0,75	3,70 ac	3,70 ac	3,70 ac	3,70 ac	—	—	—
	0,88	4,20 ac	4,20 ac	4,20 ac	4,20 a	—	—	—
	1,00	4,80 ac	4,80 ac	4,80 ac	4,80 a	—	—	—
	1,13	5,40 ac	5,40 ac	5,40 ac	5,40 a	—	—	—
	1,25	5,80 ac	5,80 ac	5,80 ac	5,80 a	—	—	—
	1,50	6,70 —	6,70 —	6,70 —	6,70 —	—	—	—
	1,75	6,70 —	6,70 —	6,70 —	—	—	—	—
	2,00	6,70 —	6,70 —	6,70 —	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,73 abcd	1,73 abcd	1,73 abcd	1,73 abcd	—	—	—
	0,55	2,18 abcd	2,18 abcd	2,18 abcd	2,18 abcd	—	—	—
	0,63	3,20 abcd	3,20 abcd	3,20 abcd	3,20 abcd	—	—	—
	0,75	4,10 ac	4,10 ac	4,10 ac	4,10 ac	—	—	—
	0,88	5,00 ac	5,00 ac	5,00 ac	5,00 a	—	—	—
	1,00	5,80 ac	5,80 ac	5,80 ac	5,80 a	—	—	—
	1,13	5,80 ac	6,80 ac	6,80 ac	6,80 a	—	—	—
	1,25	5,80 ac	6,80 ac	7,60 ac	7,60 a	—	—	—
	1,50	5,80 —	6,80 —	9,30 —	9,30 —	—	—	—
	1,75	5,80 —	6,80 —	9,30 —	—	—	—	—
	2,00	5,80 —	6,80 —	9,30 —	—	—	—	—

Self drilling screw	Annex 18
JT2-8-5,5 x L with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,50$ mm</p>
	<p>Timber substructures</p> <p>no performance determined</p>

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00
$M_{t,nom}$	—	7 Nm						—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	2,40 abcd	2,40 abcd	2,40 abcd	2,40 abcd	2,40 ac	—
	0,75	—	2,90 ac	3,10 ac	3,10 ac	3,10 ac	3,10 ac	—
	0,88	—	3,50 ac	3,80 ac	3,80 ac	3,80 ac	3,80 a	—
	1,00	—	4,00 ac	4,60 ac	4,60 ac	4,60 ac	4,60 a	—
	1,13	—	4,60 ac	5,20 ac	5,20 ac	5,20 ac	5,20 a	—
	1,25	—	5,20 —	5,80 ac	5,80 ac	5,80 ac	5,80 a	—
	1,50	—	6,40 —	7,20 —	7,20 —	7,20 —	7,20 —	—
	1,75	—	6,40 —	7,20 —	7,20 —	7,20 —	—	—
	2,00	—	6,40 —	7,20 —	7,20 —	7,20 —	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	2,10 abcd	2,10 abcd	2,10 abcd	2,10 abcd	2,10 ac	—
	0,75	—	2,80 ac	2,80 ac	2,80 ac	2,80 ac	2,80 ac	—
	0,88	—	3,40 ac	3,60 ac	3,60 ac	3,60 ac	3,60 a	—
	1,00	—	3,40 ac	4,30 ac	4,30 ac	4,30 ac	4,30 a	—
	1,13	—	3,40 ac	4,70 ac	5,50 ac	5,50 ac	5,50 a	—
	1,25	—	3,40 —	4,70 ac	6,20 ac	6,60 ac	6,60 a	—
	1,50	—	3,40 —	4,70 —	6,20 —	8,70 —	8,70 —	—
	1,75	—	3,40 —	4,70 —	6,20 —	8,70 —	—	—
	2,00	—	3,40 —	4,70 —	6,20 —	8,70 —	—	—

Self drilling screw	Annex 19
JT2-6-6,3 x L with hexagon head	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,50$ mm</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00
$M_{t,nom}$	7 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	—	—	—	—	—	—	—	—
0,50	—	—	—	—	—	—	—	—
0,55	—	—	—	—	—	—	—	—
0,63	—	2,40 abcd	2,40 abcd	2,40 abcd	2,40 abcd	2,40 ac	—	—
0,75	—	2,90 ac	3,10 ac	3,10 ac	3,10 ac	3,10 ac	—	—
0,88	—	3,50 ac	3,80 ac	3,80 ac	3,80 ac	3,80 a	—	—
1,00	—	4,00 ac	4,60 ac	4,60 ac	4,60 ac	4,60 a	—	—
1,13	—	4,60 ac	5,20 ac	5,20 ac	5,20 ac	5,20 a	—	—
1,25	—	5,20 —	5,80 ac	5,80 ac	5,80 ac	5,80 a	—	—
1,50	—	6,40 —	7,20 —	7,20 —	7,20 —	7,20 a	—	—
1,75	—	6,40 —	7,20 —	7,20 —	7,20 —	—	—	—
2,00	—	6,40 —	7,20 —	7,20 —	7,20 —	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	—	—	—	—	—	—	—	—
0,50	—	1,13 abcd	1,13 abcd	1,13 abcd	1,13 abcd	1,13 ac	1,13 ac	—
0,55	—	1,43 abcd	1,43 abcd	1,43 abcd	1,43 abcd	1,43 ac	—	—
0,63	—	2,10 abcd	2,10 abcd	2,10 abcd	2,10 abcd	2,10 ac	—	—
0,75	—	2,80 ac	2,80 ac	2,80 ac	2,80 ac	2,80 ac	—	—
0,88	—	3,40 ac	3,60 ac	3,60 ac	3,60 ac	3,60 a	—	—
1,00	—	3,40 ac	4,30 ac	4,30 ac	4,30 ac	4,30 a	—	—
1,13	—	3,40 ac	4,70 ac	5,50 ac	5,50 ac	5,50 a	—	—
1,25	—	3,40 —	4,70 ac	6,20 ac	6,60 ac	6,60 a	—	—
1,50	—	3,40 —	4,70 —	6,20 —	8,70 —	8,70 a	—	—
1,75	—	3,40 —	4,70 —	6,20 —	8,70 —	—	—	—
2,00	—	3,40 —	4,70 —	6,20 —	8,70 —	—	—	—

Self drilling screw	Annex 20
JT2-6-6,3 x L with hexagon head and sealing washer $\geq \varnothing 16$ mm	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S280GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1</p>
	<p>Drilling capacity $\Sigma t_i \leq 13,00$ mm</p>
	<p>Timber substructures no performance determined</p>

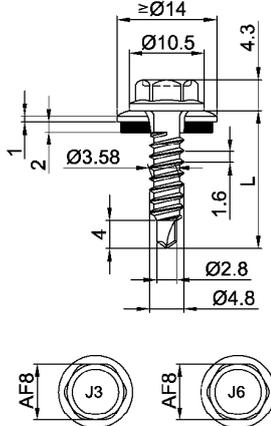
$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0			
$M_{t,nom}$	7 Nm										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75	2,00
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75	2,00
	—	—	—	—	—	—	—	—	—	—	—
	—	—	—	—	—	—	—	—	—	—	—
	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	—	—	—
	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
	3,50	3,50	3,50	3,50	3,50	3,50	3,50	3,50	—	—	—
	4,20	4,20	4,20	4,20	4,20	4,20	4,20	4,20	—	—	—
	4,20	4,90	4,90	4,90	4,90	4,90	—	—	—	—	—
	4,20	5,60	5,60	5,60	5,60	5,60	—	—	—	—	—
	4,20	6,40	7,20	7,20	7,20	7,20	—	—	—	—	—
	4,20	6,40	7,20	7,20	7,20	7,20	—	—	—	—	—
	4,20	6,40	7,20	7,20	7,20	7,20	—	—	—	—	—
	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	—	—	—
	1,64	1,64	1,64	1,64	1,64	1,64	1,64	1,64	—	—	—
	2,40	2,40	2,40	2,40	2,40	2,40	2,40	2,40	—	—	—
	3,10	3,10	3,10	3,10	3,10	3,10	3,10	3,10	—	—	—
	3,90	3,90	3,90	3,90	3,90	3,90	3,90	3,90	—	—	—
	4,70	4,70	4,70	4,70	4,70	4,70	4,70	4,70	—	—	—
	4,70	5,60	5,60	5,60	5,60	5,60	—	—	—	—	—
	4,70	6,40	6,40	6,40	6,40	6,40	—	—	—	—	—
	4,70	6,40	6,40	6,40	6,40	6,40	—	—	—	—	—
	4,70	6,40	6,40	6,40	6,40	6,40	—	—	—	—	—
	4,70	6,40	6,40	6,40	6,40	6,40	—	—	—	—	—

Self drilling screw	Annex 21
JT2-12-5,5 x L with hexagon head and sealing washer $\geq \text{Ø}16$ mm	

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: carbon steel, galvanized stainless Steel (1.4301) - EN 10088</p> <p>Component I: S320GD or S350GD - EN 10346</p> <p>Component II: S235, S275 or S355 - EN 10025-1</p>
	<p>Drilling capacity $\Sigma t_i \leq 13,00$ mm</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0
$M_{t,nom}$	7 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,50 ac	—					
	0,75	3,20 ac	—					
	0,88	3,90 ac	3,90 a	—				
	1,00	4,20 —	4,60 ac	4,60 ac	4,60 ac	4,60 ac	4,60 a	—
	1,13	4,20 —	5,30 —	5,30 —	5,30 —	5,30 —	—	—
	1,25	4,20 —	6,00 —	6,00 —	6,00 —	6,00 —	—	—
	1,50	4,20 —	6,40 —	7,20 —	7,60 —	7,60 —	—	—
	1,75	4,20 —	6,40 —	7,20 —	7,60 —	7,60 —	—	—
	2,00	4,20 —	6,40 —	7,20 —	7,60 —	7,60 —	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,40 ac	—					
	0,55	1,77 ac	—					
	0,63	2,60 ac	—					
	0,75	3,30 ac	—					
	0,88	4,20 ac	4,20 a	—				
	1,00	4,70 —	5,00 ac	5,00 ac	5,00 ac	5,00 ac	5,00 a	—
	1,13	4,70 —	6,00 —	6,00 —	6,00 —	6,00 —	—	—
	1,25	4,70 —	6,90 —	6,90 —	6,90 —	6,90 —	—	—
	1,50	4,70 —	6,90 —	6,90 —	6,90 —	6,90 —	—	—
	1,75	4,70 —	6,90 —	6,90 —	6,90 —	6,90 —	—	—
	2,00	4,70 —	6,90 —	6,90 —	6,90 —	6,90 —	—	—

Self drilling screw	Annex 22
JT2-12-5,5 x L with hexagon head and sealing washer $\geq \text{Ø}16$ mm	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088</p> <p>Washer: stainless steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2,20$ mm</p>
	<p>Timber substructures no performance determined</p>

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
$M_{t,nom}$	—										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55	0,55
	0,50	0,55	0,89	0,89	0,89	0,89	0,89	0,89	0,89	0,89	—
	0,55	0,55	0,89	1,06	1,06	1,06	1,06	1,06	1,06	1,06	—
	0,63	0,55	0,89	1,06	1,28	1,28	1,28	1,28	1,28	1,28	—
	0,75	0,55	0,89	1,06	1,28	1,61	1,61	1,61	1,61	—	—
	0,88	0,55	0,89	1,06	1,28	1,61	1,86	1,86	1,86	—	—
	1,00	0,55	0,89	1,06	1,28	1,61	1,86	2,09	2,09	—	—
	1,13	0,55	0,89	1,06	1,28	1,61	1,86	2,09	—	—	—
	1,25	0,55	0,89	1,06	1,28	1,61	1,86	—	—	—	—
	1,50	0,55	0,89	1,06	1,28	—	—	—	—	—	—
	1,75	0,55	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,42	0,62	0,72	0,88	0,97	0,97	0,97	0,97	0,97	0,97
	0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,39	1,39	1,39	—
	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	1,60	—
	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	1,60	—
	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	—	—
	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,60	1,60	—	—
	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,60	—	—	—
	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,60	—	—	—
	1,25	0,42	0,62	0,72	0,88	1,12	1,38	—	—	—	—
	1,50	0,42	0,62	0,72	0,88	—	—	—	—	—	—
	1,75	0,42	—	—	—	—	—	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 23
JT3-2H-4,8 x L JT6-2H-4,8 x L with undercut and hexagon head and sealing washer $\geq \varnothing 14$ mm	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088</p> <p>Washer: stainless steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,25 \text{ mm}$</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00
$M_{t,nom}$	3 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,00 ac	1,10 ac	1,20 ac	1,20 ac	1,20 abcd	1,20 abc	1,20 abc
	0,55	1,15 —	1,25 —	1,40 ac	1,40 ac	1,45 ac	1,45 ac	1,45 ac
	0,63	1,30 —	1,40 —	1,60 ac	1,60 ac	1,70 ac	1,70 ac	1,70 ac
	0,75	1,60 —	1,80 —	1,90 ac	2,00 ac	2,10 ac	2,10 ac	2,10 a
	0,88	1,60 —	1,90 —	2,30 —	2,50 —	2,70 —	2,70 —	2,70 a
	1,00	1,60 —	2,10 —	2,60 —	2,90 —	3,10 —	3,10 —	3,10 a
	1,13	1,60 —	2,10 —	2,60 —	2,90 —	3,40 —	3,40 —	3,50 —
	1,25	1,60 —	2,10 —	2,60 —	2,90 —	3,70 —	3,70 —	3,80 —
	1,50	1,60 —	2,10 —	2,60 —	2,90 —	3,70 —	3,70 —	—
	1,75	1,60 —	2,10 —	2,60 —	2,90 —	3,70 —	3,70 —	—
	2,00	1,60 —	2,10 —	2,60 —	2,90 —	3,70 —	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,80 ac	1,10 ac	1,20 ac	1,50 ac	1,60 abcd	1,60 abc	1,60 abc
	0,55	0,80 —	1,10 —	1,20 ac	1,50 ac	1,65 ac	2,00 ac	2,05 ac
	0,63	0,80 —	1,10 —	1,20 ac	1,50 ac	1,70 ac	2,40 ac	2,50 ac
	0,75	0,80 —	1,10 —	1,20 ac	1,50 ac	1,70 ac	2,40 ac	3,40 a
	0,88	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	2,40 —	3,40 a
	1,00	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	2,40 —	3,40 a
	1,13	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	2,40 —	3,40 —
	1,25	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	2,40 —	3,40 —
	1,50	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	2,40 —	—
	1,75	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	2,40 —	—
	2,00	0,80 —	1,10 —	1,20 —	1,50 —	1,70 —	—	—

Self drilling screw	Annex 24
JT3-3H-4,8 x L JT6-3H-4,8 x L with undercut, hexagon head and sealing washer $\geq \text{Ø}14 \text{ mm}$	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088</p> <p>Washer: stainless steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2,20$ mm</p>
<p>Timber substructures no performance determined</p>	

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	1,75
$M_{t,nom}$	—										
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49	0,49
	0,50	0,49	0,80	0,80	0,80	0,80	0,80	0,80	0,80	0,80	—
	0,55	0,49	0,80	0,95	0,95	0,95	0,95	0,95	0,95	0,95	—
	0,63	0,49	0,80	0,95	1,15	1,15	1,15	1,15	1,15	1,15	—
	0,75	0,49	0,80	0,95	1,15	1,45	1,45	1,45	1,45	1,45	—
	0,88	0,49	0,80	0,95	1,15	1,45	1,68	1,68	1,68	1,68	—
	1,00	0,49	0,80	0,95	1,15	1,45	1,68	1,88	1,88	—	—
	1,13	0,49	0,80	0,95	1,15	1,45	1,68	1,88	—	—	—
	1,25	0,49	0,80	0,95	1,15	1,45	1,68	—	—	—	—
	1,50	0,49	0,80	0,95	1,15	—	—	—	—	—	—
	1,75	0,49	—	—	—	—	—	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,40	0,42	0,62	0,72	0,85	0,85	0,85	0,85	0,85	0,85	0,85
	0,50	0,42	0,62	0,72	0,88	1,12	1,38	1,38	1,38	1,38	—
	0,55	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,63	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,75	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	0,88	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	1,62	—
	1,00	0,42	0,62	0,72	0,88	1,12	1,38	1,62	1,62	—	—
	1,13	0,42	0,62	0,72	0,88	1,12	1,38	1,62	—	—	—
	1,25	0,42	0,62	0,72	0,88	1,12	1,38	—	—	—	—
	1,50	0,42	0,62	0,72	0,88	—	—	—	—	—	—
	1,75	0,42	—	—	—	—	—	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 25
JT3-FR-2H-4,8 x L JT6-FR-2H-4,8 x L with undercut, round head with Torx® drive system and sealing washer $\geq \text{Ø}11$ mm	

	<p>Materials</p> <p>Fastener: JT3-(FR-)2-4,9xL and JT4-(FR-)2-4,9xL stainless steel (1.4301 / 1.4567) – EN 10088 JT9-(FR-)2-4,9xL stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: timber – EN 14081</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures following performance were determined</p> <p>$M_{y,k} = 4,672 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 24,5 \text{ mm}$</p>														
$l_g =$ $M_{t,nom} =$ $V_{R,k}$ for $t_{N,I} =$ $N_{R,I,II,k} =$	25,00	27,00	29,00	31,00	33,00	35,00	37,00	39,00	41,00	<div style="writing-mode: vertical-rl; transform: rotate(180deg);"> failure of component I failure of component II see chapter 4.2.2 </div>					
	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50	0,50						
	0,60	0,66	0,66	0,66	0,66	0,66	0,66	0,66	0,66						
	0,70	0,73	0,81	0,82	0,82	0,82	0,82	0,82	0,82						
	0,80	0,73	0,81	0,88	0,95	0,98	0,98	0,98	0,98						
	0,90	0,73	0,81	0,88	0,95	0,99	0,99	0,99	0,99						
	1,00	0,73	0,81	0,88	0,95	1,00	1,00	1,00	1,00						
	1,20	0,73	0,81	0,88	0,95	1,00	1,00	1,00	1,00						
	1,50	0,73	0,81	0,88	0,95	1,00	1,00	1,00	1,00						
	2,00	0,73	0,81	0,88	0,95	1,00	1,00	1,00	1,00						
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p> <p>The values indicated above, depending on the screw depth l_g, shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2</p> <p>For $k_{mod} < 0,90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m^3, max. 500 kg/m^3) and yield moment $M_{y,k} = 5990 \text{ Nmm}$.</p>															
Self-drilling screw						Annex 26									
JT3-(FR-)2-4,9xL JT4-(FR-)2-4,9xL JT9-(FR-)2-4,9xL With hexagon head or FR-head and seal washer $\geq \text{Ø } 11,0 \text{ mm}$															

	<p>Materials</p> <p>Fastener: JT3-(FR-)2-4,9xL and JT4-(FR-)2-4,9xL stainless steel (1.4301 / 1.4567) – EN 10088 JT9-(FR-)2-4,9xL stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: timber – EN 14081</p>																																																																																																																																						
	<p>Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$</p> <p>Timber substructures for timber substructures following performance were determined</p> <p>$M_{y,k} = 4,672 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 24,5 \text{ mm}$</p>																																																																																																																																						
<table border="1"> <thead> <tr> <th>$l_g =$</th> <th>25,00</th> <th>27,00</th> <th>29,00</th> <th>31,00</th> <th>33,00</th> <th>35,00</th> <th>37,00</th> <th>39,00</th> <th>41,00</th> <th></th> </tr> </thead> <tbody> <tr> <td>$M_{t,nom} =$</td> <td colspan="10">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{d,i} =$</td> <td>0,50</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td>0,66</td> <td rowspan="8">failure of component I (bearing)</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,73</td> <td>0,81</td> <td>0,87</td> <td>0,87</td> <td>0,87</td> <td>0,87</td> <td>0,87</td> <td>0,87</td> <td>0,87</td> </tr> <tr> <td></td> <td>0,70</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,07</td> <td>1,07</td> <td>1,07</td> <td>1,07</td> </tr> <tr> <td></td> <td>0,80</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,10</td> <td>1,17</td> <td>1,25</td> <td>1,28</td> </tr> <tr> <td></td> <td>0,90</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,10</td> <td>1,17</td> <td>1,25</td> <td>1,29</td> </tr> <tr> <td></td> <td>1,00</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,10</td> <td>1,17</td> <td>1,25</td> <td>1,30</td> </tr> <tr> <td></td> <td>1,20</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,10</td> <td>1,17</td> <td>1,25</td> <td>1,30</td> </tr> <tr> <td></td> <td>1,50</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,10</td> <td>1,17</td> <td>1,25</td> <td>1,30</td> </tr> <tr> <td></td> <td>2,00</td> <td>0,73</td> <td>0,81</td> <td>0,88</td> <td>0,95</td> <td>1,03</td> <td>1,10</td> <td>1,17</td> <td>1,25</td> <td>1,30</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,86</td> <td>0,95</td> <td>1,04</td> <td>1,12</td> <td>1,21</td> <td>1,30</td> <td>1,38</td> <td>1,47</td> <td>1,56</td> <td>failure of component II see chapter 4.2.2</td> </tr> </tbody> </table>	$l_g =$	25,00	27,00	29,00	31,00	33,00	35,00	37,00	39,00	41,00		$M_{t,nom} =$	—										$V_{R,k}$ for $t_{d,i} =$	0,50	0,66	0,66	0,66	0,66	0,66	0,66	0,66	0,66	0,66	failure of component I (bearing)		0,60	0,73	0,81	0,87	0,87	0,87	0,87	0,87	0,87	0,87		0,70	0,73	0,81	0,88	0,95	1,03	1,07	1,07	1,07	1,07		0,80	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,28		0,90	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,29		1,00	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30		1,20	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30		1,50	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30		2,00	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30	$N_{R,II,k} =$	0,86	0,95	1,04	1,12	1,21	1,30	1,38	1,47	1,56	failure of component II see chapter 4.2.2		
$l_g =$	25,00	27,00	29,00	31,00	33,00	35,00	37,00	39,00	41,00																																																																																																																														
$M_{t,nom} =$	—																																																																																																																																						
$V_{R,k}$ for $t_{d,i} =$	0,50	0,66	0,66	0,66	0,66	0,66	0,66	0,66	0,66	0,66	failure of component I (bearing)																																																																																																																												
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	0,70	0,73	0,81	0,88	0,95	1,03	1,07	1,07	1,07	1,07																																																																																																																													
	0,80	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,28																																																																																																																													
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	1,00	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30																																																																																																																													
	1,20	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30																																																																																																																													
	1,50	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30																																																																																																																													
	2,00	0,73	0,81	0,88	0,95	1,03	1,10	1,17	1,25	1,30																																																																																																																													
$N_{R,II,k} =$	0,86	0,95	1,04	1,12	1,21	1,30	1,38	1,47	1,56	failure of component II see chapter 4.2.2																																																																																																																													
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p> <p>The values indicated above, depending on the screw depth l_g, shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2</p> <p>For $k_{mod} < 0,90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m^3, max. 500 kg/m^3) and yield moment $M_{y,k} = 5990 \text{ Nmm}$.</p>																																																																																																																																							
Self-drilling screw																																																																																																																																							
JT3-(FR-)2-4,9xL JT4-(FR-)2-4,9xL JT9-(FR-)2-4,9xL With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$						Annex 27																																																																																																																																	

	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573 Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573 Timber – EN 14081
	Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$ Timber substructures for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 26,0 \text{ mm}$

$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50		
$M_{t,nom} =$	—										
$V_{R,k}$ for $t_{N,I} =$	0,40	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29
	0,50	0,29 -	0,42 -	0,51 -	0,60 -	0,69 -	0,75 -	0,81 -	0,81 -	0,81 -	0,81
	0,60	0,29 -	0,42 -	0,53 -	0,63 -	0,71 -	0,78 -	0,85 -	0,85 -	-	0,85
	0,70	0,29 -	0,42 -	0,53 -	0,65 -	0,74 -	0,82 -	0,89 -	0,89 -	-	0,89
	0,80	0,29 -	0,42 -	0,53 -	0,65 -	0,76 -	0,85 -	0,92 -	0,92 -	-	0,92
	0,90	0,29 -	0,42 -	0,55 -	0,68 -	0,81 -	0,88 -	0,97 -	0,97 -	-	0,97
	1,00	0,29 -	0,42 -	0,56 -	0,71 -	0,85 -	0,93 -	1,00 -	-	-	1,00
	1,20	0,29 -	0,42 -	0,59 -	0,77 -	0,94 -	-	-	-	-	1,24
	1,50	0,29 -	0,42 -	-	-	-	-	-	-	-	1,59
$N_{R,II,k} =$	0,22	0,28	0,35	0,43	0,50	0,58	0,68	0,86	1,18	failure of component II see chapter 4.2.2	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.
 For other areas of application see allgemeine bauaufsichtliche Zulassung Z-14.4-426.
 The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

Self-drilling screw

JT3-2-6,0xL JT6-2-6,0xL
 JT3-FR-2-6,0xL JT6-FR-2-6,0xL
 With hexagon head and seal washer $\geq \varnothing 14,0 \text{ mm}$

Annex 29

	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573 Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573 Timber – EN 14081																																																																																																																																						
	Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$																																																																																																																																						
Timber substructures for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 26,0 \text{ mm}$																																																																																																																																							
<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>0,40</td> <td>0,50</td> <td>0,60</td> <td>0,70</td> <td>0,80</td> <td>0,90</td> <td>1,00</td> <td>1,20</td> <td>1,50</td> <td></td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="10">—</td> </tr> <tr> <td rowspan="8">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,40</td> <td>0,38 -</td> <td>0,38</td> </tr> <tr> <td>0,50</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,67 -</td> <td>0,78 -</td> <td>0,90 -</td> <td>0,98 -</td> <td>1,05 -</td> <td>1,05 -</td> <td>1,05 -</td> <td>1,05</td> </tr> <tr> <td>0,60</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,70 -</td> <td>0,81 -</td> <td>0,93 -</td> <td>1,02 -</td> <td>1,10 -</td> <td>1,10 -</td> <td>-</td> <td>1,10</td> </tr> <tr> <td>0,70</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,70 -</td> <td>0,84 -</td> <td>0,96 -</td> <td>1,07 -</td> <td>1,15 -</td> <td>1,15 -</td> <td>-</td> <td>1,15</td> </tr> <tr> <td>0,80</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,70 -</td> <td>0,84 -</td> <td>0,99 -</td> <td>1,11 -</td> <td>1,20 -</td> <td>1,20 -</td> <td>-</td> <td>1,20</td> </tr> <tr> <td>0,90</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,72 -</td> <td>0,88 -</td> <td>1,05 -</td> <td>1,15 -</td> <td>1,25 -</td> <td>1,25 -</td> <td>-</td> <td>1,25</td> </tr> <tr> <td>1,00</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,74 -</td> <td>0,92 -</td> <td>1,11 -</td> <td>1,21 -</td> <td>1,30 -</td> <td>-</td> <td>-</td> <td>1,30</td> </tr> <tr> <td>1,20</td> <td>0,38 -</td> <td>0,55 -</td> <td>0,78 -</td> <td>1,00 -</td> <td>1,23 -</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1,61</td> </tr> <tr> <td>1,50</td> <td>0,38 -</td> <td>0,55 -</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>2,08</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,29</td> <td>0,37</td> <td>0,46</td> <td>0,55</td> <td>0,64</td> <td>0,75</td> <td>0,87</td> <td>1,12</td> <td>1,53</td> <td>failure of component II see chapter 4.2.2</td> </tr> </table>	$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50		$M_{t,nom} =$	—										$V_{R,k}$ for $t_{N,I} =$	0,40	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38	0,50	0,38 -	0,55 -	0,67 -	0,78 -	0,90 -	0,98 -	1,05 -	1,05 -	1,05 -	1,05	0,60	0,38 -	0,55 -	0,70 -	0,81 -	0,93 -	1,02 -	1,10 -	1,10 -	-	1,10	0,70	0,38 -	0,55 -	0,70 -	0,84 -	0,96 -	1,07 -	1,15 -	1,15 -	-	1,15	0,80	0,38 -	0,55 -	0,70 -	0,84 -	0,99 -	1,11 -	1,20 -	1,20 -	-	1,20	0,90	0,38 -	0,55 -	0,72 -	0,88 -	1,05 -	1,15 -	1,25 -	1,25 -	-	1,25	1,00	0,38 -	0,55 -	0,74 -	0,92 -	1,11 -	1,21 -	1,30 -	-	-	1,30	1,20	0,38 -	0,55 -	0,78 -	1,00 -	1,23 -	-	-	-	-	1,61	1,50	0,38 -	0,55 -	-	-	-	-	-	-	-	2,08	$N_{R,II,k} =$	0,29	0,37	0,46	0,55	0,64	0,75	0,87	1,12	1,53	failure of component II see chapter 4.2.2		
$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50																																																																																																																														
$M_{t,nom} =$	—																																																																																																																																						
$V_{R,k}$ for $t_{N,I} =$	0,40	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38 -	0,38																																																																																																																												
	0,50	0,38 -	0,55 -	0,67 -	0,78 -	0,90 -	0,98 -	1,05 -	1,05 -	1,05 -	1,05																																																																																																																												
	0,60	0,38 -	0,55 -	0,70 -	0,81 -	0,93 -	1,02 -	1,10 -	1,10 -	-	1,10																																																																																																																												
	0,70	0,38 -	0,55 -	0,70 -	0,84 -	0,96 -	1,07 -	1,15 -	1,15 -	-	1,15																																																																																																																												
	0,80	0,38 -	0,55 -	0,70 -	0,84 -	0,99 -	1,11 -	1,20 -	1,20 -	-	1,20																																																																																																																												
	0,90	0,38 -	0,55 -	0,72 -	0,88 -	1,05 -	1,15 -	1,25 -	1,25 -	-	1,25																																																																																																																												
	1,00	0,38 -	0,55 -	0,74 -	0,92 -	1,11 -	1,21 -	1,30 -	-	-	1,30																																																																																																																												
	1,20	0,38 -	0,55 -	0,78 -	1,00 -	1,23 -	-	-	-	-	1,61																																																																																																																												
1,50	0,38 -	0,55 -	-	-	-	-	-	-	-	2,08																																																																																																																													
$N_{R,II,k} =$	0,29	0,37	0,46	0,55	0,64	0,75	0,87	1,12	1,53	failure of component II see chapter 4.2.2																																																																																																																													
Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting. For other areas of application see allgemeine bauaufsichtliche Zulassung Z-14.4-426. The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2																																																																																																																																							
Self-drilling screw										Annex 30																																																																																																																													
JT3-2-6,0xL		JT6-2-6,0xL																																																																																																																																					
JT3-FR-2-6,0xL		JT6-FR-2-6,0xL																																																																																																																																					
With hexagon head and seal washer $\geq \varnothing 14,0 \text{ mm}$																																																																																																																																							

		Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573 Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346 timber – EN14081																																																																																																																																													
		Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$																																																																																																																																													
		Timber substructures for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 26,0 \text{ mm}$																																																																																																																																													
<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>0,40</td> <td>0,50</td> <td>0,63</td> <td>0,75</td> <td>0,88</td> <td>1,00</td> <td>1,25</td> <td>1,50</td> <td colspan="2"></td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="10">—</td> </tr> <tr> <td rowspan="8">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,40</td> <td>0,29 -</td> <td>0,29</td> </tr> <tr> <td>0,50</td> <td>0,40 -</td> <td>0,40 -</td> <td>0,40 -</td> <td>0,65 -</td> <td>0,73 -</td> <td>0,81 -</td> <td>0,81 -</td> <td>0,81 -</td> <td>0,81 -</td> <td>0,81</td> </tr> <tr> <td>0,60</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,50 -</td> <td>0,67 -</td> <td>0,76 -</td> <td>0,85 -</td> <td>0,85 -</td> <td>-</td> <td>-</td> <td>0,85</td> </tr> <tr> <td>0,70</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,61 -</td> <td>0,70 -</td> <td>0,80 -</td> <td>0,89 -</td> <td>0,89 -</td> <td>-</td> <td>-</td> <td>0,89</td> </tr> <tr> <td>0,80</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,61 -</td> <td>0,71 -</td> <td>0,82 -</td> <td>0,92 -</td> <td>0,92 -</td> <td>-</td> <td>-</td> <td>0,92</td> </tr> <tr> <td>0,90</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,61 -</td> <td>0,75 -</td> <td>0,86 -</td> <td>0,97 -</td> <td>-</td> <td>-</td> <td>-</td> <td>0,97</td> </tr> <tr> <td>1,00</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,61 -</td> <td>0,78 -</td> <td>0,89 -</td> <td>1,00 -</td> <td>-</td> <td>-</td> <td>-</td> <td>1,00</td> </tr> <tr> <td>1,20</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,61 -</td> <td>0,86 -</td> <td>0,93 -</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1,24</td> </tr> <tr> <td>1,50</td> <td>0,40 -</td> <td>0,50 -</td> <td>0,61 -</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>-</td> <td>1,59</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,53</td> <td>0,75</td> <td>0,80</td> <td>1,05</td> <td>1,35</td> <td>1,63</td> <td>2,26</td> <td>3,02</td> <td colspan="2">failure of component II see chapter 4.2.2</td> </tr> </table>											$t_{N,II} =$	0,40	0,50	0,63	0,75	0,88	1,00	1,25	1,50			$M_{t,nom} =$	—										$V_{R,k}$ for $t_{N,I} =$	0,40	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29	0,50	0,40 -	0,40 -	0,40 -	0,65 -	0,73 -	0,81 -	0,81 -	0,81 -	0,81 -	0,81	0,60	0,40 -	0,50 -	0,50 -	0,67 -	0,76 -	0,85 -	0,85 -	-	-	0,85	0,70	0,40 -	0,50 -	0,61 -	0,70 -	0,80 -	0,89 -	0,89 -	-	-	0,89	0,80	0,40 -	0,50 -	0,61 -	0,71 -	0,82 -	0,92 -	0,92 -	-	-	0,92	0,90	0,40 -	0,50 -	0,61 -	0,75 -	0,86 -	0,97 -	-	-	-	0,97	1,00	0,40 -	0,50 -	0,61 -	0,78 -	0,89 -	1,00 -	-	-	-	1,00	1,20	0,40 -	0,50 -	0,61 -	0,86 -	0,93 -	-	-	-	-	1,24	1,50	0,40 -	0,50 -	0,61 -	-	-	-	-	-	-	1,59	$N_{R,II,k} =$	0,53	0,75	0,80	1,05	1,35	1,63	2,26	3,02	failure of component II see chapter 4.2.2	
$t_{N,II} =$	0,40	0,50	0,63	0,75	0,88	1,00	1,25	1,50																																																																																																																																							
$M_{t,nom} =$	—																																																																																																																																														
$V_{R,k}$ for $t_{N,I} =$	0,40	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29 -	0,29																																																																																																																																				
	0,50	0,40 -	0,40 -	0,40 -	0,65 -	0,73 -	0,81 -	0,81 -	0,81 -	0,81 -	0,81																																																																																																																																				
	0,60	0,40 -	0,50 -	0,50 -	0,67 -	0,76 -	0,85 -	0,85 -	-	-	0,85																																																																																																																																				
	0,70	0,40 -	0,50 -	0,61 -	0,70 -	0,80 -	0,89 -	0,89 -	-	-	0,89																																																																																																																																				
	0,80	0,40 -	0,50 -	0,61 -	0,71 -	0,82 -	0,92 -	0,92 -	-	-	0,92																																																																																																																																				
	0,90	0,40 -	0,50 -	0,61 -	0,75 -	0,86 -	0,97 -	-	-	-	0,97																																																																																																																																				
	1,00	0,40 -	0,50 -	0,61 -	0,78 -	0,89 -	1,00 -	-	-	-	1,00																																																																																																																																				
	1,20	0,40 -	0,50 -	0,61 -	0,86 -	0,93 -	-	-	-	-	1,24																																																																																																																																				
1,50	0,40 -	0,50 -	0,61 -	-	-	-	-	-	-	1,59																																																																																																																																					
$N_{R,II,k} =$	0,53	0,75	0,80	1,05	1,35	1,63	2,26	3,02	failure of component II see chapter 4.2.2																																																																																																																																						
Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting. Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 8,0%. For other areas of application see allgemeine bauaufsichtliche Zulassung Z-14.4-426. The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2																																																																																																																																															
Self-drilling screw																																																																																																																																															
JT3-2-6,0xL JT6-2-6,0xL JT3-FR-2-6,0xL JT6-FR-2-6,0xL With hexagon head or FR-head and seal washer $\geq \text{Ø } 14,0 \text{ mm}$							Annex 31																																																																																																																																								

	Materials Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573 Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346 timber – EN14081
	Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$ Timber substructures for timber substructures following performance were determined $M_{y,k} = 7,911 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 26,0 \text{ mm}$

$t_{N,II} =$	0,40	0,50	0,63	0,75	0,88	1,00	1,25	1,50		
$M_{t,nom} =$	—									
$V_{R,k}$ for $t_{N,I} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	failure of component I (bearing)
	0,38	0,38	0,38	0,38	0,38	0,38	0,38	0,38	0,38	
	0,52	0,52	0,52	0,84	0,95	1,05	1,05	1,05	1,05	
	0,52	0,65	0,65	0,87	0,99	1,10	1,10	-	-	
	0,52	0,65	0,79	0,90	1,03	1,15	1,15	-	-	
	0,52	0,65	0,79	0,92	1,06	1,20	1,20	-	-	
	0,52	0,65	0,79	0,97	1,11	1,25	-	-	-	
$N_{R,II,k} =$	0,53	0,75	0,80	1,05	1,35	1,63	2,26	3,02	failure of component II see chapter 4.2.2	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.
 Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 8,0%.
 For other areas of application see allgemeine bauaufsichtliche Zulassung Z-14.4-426.
 The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2

Self-drilling screw	Annex 32
JT3-2-6,0xL JT6-2-6,0xL JT3-FR-2-6,0xL JT6-FR-2-6,0xL With hexagon head or FR-head and seal washer $\geq \varnothing 14,0 \text{ mm}$	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: timber – EN14081</p>
	<p>Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$</p>
	<p>Timber substructures</p> <p>for timber substructures following performance were determined</p> <p>$M_{y,k} = 7,911 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 26,0 \text{ mm}$</p>

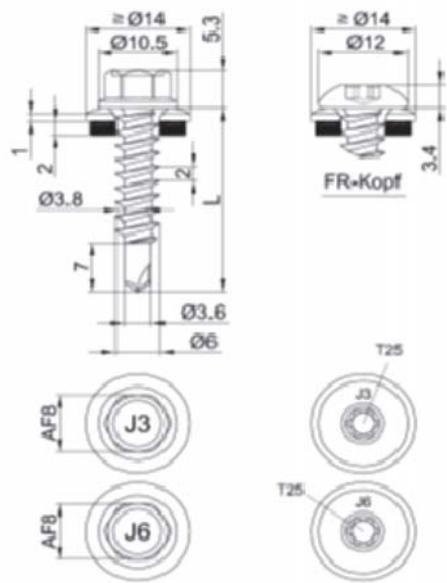
$l_g =$	31,00	32,00	33,00	34,00	35,00	36,00	$\geq 37,00$		
$M_{t,nom} =$	—								
$V_{R,k}$ for $t_{N,I} =$	0,50	0,81 -	0,81 -	0,81 -	0,81 -	0,81 -	0,81 -	0,81 -	0,81
	0,60	0,85 -	0,85 -	0,85 -	0,85 -	0,85 -	0,85 -	0,85 -	0,85
	0,70	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -	0,89 -	0,89
	0,80	0,92 -	0,92 -	0,92 -	0,92 -	0,92 -	0,92 -	0,92 -	0,92
	0,90	0,96 -	0,97 -	0,97 -	0,97 -	0,97 -	0,97 -	0,97 -	0,97
	1,00	0,96 -	1,00 -	1,00 -	1,00 -	1,00 -	1,00 -	1,00 -	1,00
	1,20	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,24
	1,50	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,59
	2,00	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,59
$N_{R,III,k} =$	1,27	1,32	1,38	1,43	1,48	1,53	1,59		failure of component II see chapter 4.2.2

For timber substructures the indicated values of the shear force resistance $V_{R,k}$ shall apply with and without washer. For other areas of application see allgemeine bauaufsichtliche Zulassung Z-14.4-426. The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 For $k_{mod} < 0,90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m^3 , max. 500 kg/m^3) and yield moment $M_{y,k} = 7.911 \text{ Nmm}$.

Self-drilling screw

JT3-2-6,0xL JT6-2-6,0xL
JT3-FR-2-6,0xL JT6-FR-2-6,0xL
With hexagon head or FR-head and seal washer $\geq \text{Ø } 14,0 \text{ mm}$

Annex 33



Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal

Component I: aluminium alloy
with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573

Component II: timber – EN 14081

Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$

Timber substructures
for timber substructures following performance were determined

$M_{y,k} = 7,911 \text{ Nm}$
 $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 26,0 \text{ mm}$

$l_g =$	31,00	32,00	33,00	34,00	35,00	36,00	$\geq 37,00$		
$M_{t,nom} =$	—								
$V_{R,k}$ for $t_{N,I} =$	0,50	0,96 -	1,00 -	1,04 -	1,05 -	1,05 -	1,05 -	1,05 -	1,05
	0,60	0,96 -	1,00 -	1,04 -	1,08 -	1,10 -	1,10 -	1,10 -	1,10
	0,70	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,15 -	1,15 -	1,15
	0,80	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,20
	0,90	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,25
	1,00	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,30
	1,20	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	1,61
	1,50	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	2,08
	2,00	0,96 -	1,00 -	1,04 -	1,08 -	1,12 -	1,16 -	1,20 -	2,08
$N_{R,II,k} =$	1,27	1,32	1,38	1,43	1,48	1,53	1,59		failure of component II see chapter 4.2.2

For timber substructures the indicated values of the shear force resistance $V_{R,k}$ shall apply with and without washer. For other areas of application see allgemeine bauaufsichtliche Zulassung Z-14.4-426. The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 For $k_{mod} < 0,90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m^3 , max. 500 kg/m^3) and yield moment $M_{y,k} = 7.911 \text{ Nmm}$.

Self-drilling screw

JT3-2-6,0xL JT6-2-6,0xL
JT3-FR-2-6,0xL JT6-FR-2-6,0xL
With hexagon head or FR-head and seal washer $\geq \varnothing 14,0 \text{ mm}$

Annex 34

Materials

Fastener: stainless steel (1.4301) - EN 10088,
stainless steel (1.4404) - EN 10088

Washer: stainless steel (1.4301) - EN 10088

Component I: S280GD, S320GD or S350GD - EN 10346

Component II: S235 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Drilling capacity $\Sigma t_i \leq 3,50$ mm

Timber substructures
no performance determined

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00
$M_{t,nom}$	1 Nm			2 Nm			2,5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,56	0,60	0,64	0,68	0,83	0,98	1,13	1,13	1,13	1,13
	0,55	0,58	0,67	0,73	0,78	0,94	1,09	1,25	1,25	1,25	1,25
	0,63	0,60	0,71	0,82	0,87	1,04	1,21	1,38	1,38	1,38	1,38
	0,75	0,62	0,74	0,86	0,97	1,15	1,33	1,51	1,51	1,51	1,51
	0,88	0,62	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67
	1,00	0,62	0,74	0,86	1,06	1,56	2,15	2,77	2,77	2,77	2,77
	1,13	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92
	1,25	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92
	1,50	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92
	1,75	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	—
	2,00	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,48	1,48	1,48
	0,55	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,65	1,65	1,65
	0,63	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,83	1,83
	0,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,23
	0,88	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59
	1,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59
	1,13	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59
	1,25	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59
	1,50	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,59
	1,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	—
	2,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 35
JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16$ mm	

Materials
Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235 - EN 10025-1, S280GD, S320GD or S350GD - EN 10346

Drilling capacity $\Sigma t_i \leq 3,50$ mm

Timber substructures
no performance determined

$t_{N,II}$ [mm]	2 x 0,63	2 x 0,75	2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25
$M_{t,nom}$	2 Nm	3 Nm		4 Nm		
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]						
0,40	—	—	—	—	—	—
0,50	—	—	—	—	—	—
0,55	—	—	—	—	—	—
0,63	1,65	1,78	1,91	2,04	2,04	2,04
0,75	1,65	2,60	2,76	2,92	2,92	2,92
0,88	1,65	2,60	3,39	3,55	3,55	3,55
1,00	1,65	2,60	3,39	4,17	4,17	4,17
1,13	1,65	2,60	3,39	4,17	4,17	—
1,25	1,65	2,60	3,39	4,17	—	—
1,50	1,65	2,60	3,39	4,17	—	—
1,75	1,65	2,60	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]						
0,40	1,01	1,48	1,48	1,48	1,48	1,48
0,50	1,01	1,65	1,65	1,65	1,65	1,65
0,55	1,01	1,78	1,83	1,83	1,83	1,83
0,63	1,01	1,78	2,23	2,23	2,23	2,23
0,75	1,01	1,78	2,31	2,84	2,84	2,84
0,88	1,01	1,78	2,31	2,84	2,84	2,84
1,00	1,01	1,78	2,31	2,84	2,84	2,84
1,13	1,01	1,78	2,31	2,84	2,84	—
1,25	1,01	1,78	2,31	2,84	—	—
1,50	1,01	1,78	2,31	2,84	—	—
1,75	1,01	1,78	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 36
JT3-2H Plus - 5,5 x L JT6-2H Plus - 5,5 x L JT3-FR-2H Plus - 5,5 x L JT6-FR-2H Plus - 5,5 x L with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16$ mm	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088</p> <p>Washer: stainless steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p>
	<p>Timber substructures</p> <p>no performance determined</p>

$t_{N,II}$ [mm]	0,40	0,50	0,55	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00
$M_{t,nom}$	1 Nm			2 Nm			2,5 Nm				
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,56	0,60	0,64	0,68	0,83	0,98	1,13	1,13	1,13	1,13
	0,55	0,58	0,67	0,73	0,78	0,94	1,09	1,25	1,25	1,25	1,25
	0,63	0,60	0,71	0,82	0,87	1,04	1,21	1,38	1,38	1,38	1,38
	0,75	0,62	0,74	0,86	0,97	1,15	1,33	1,51	1,51	1,51	1,51
	0,88	0,62	0,74	0,86	1,02	1,42	2,04	2,67	2,67	2,67	2,67
	1,00	0,62	0,74	0,86	1,06	1,56	2,15	2,77	2,77	2,77	2,77
	1,13	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92
	1,25	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92
	1,50	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	3,92
	1,75	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	—
	2,00	0,62	0,74	0,86	1,11	1,70	2,28	2,87	3,22	3,57	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,30	0,41	0,47	0,56	0,73	0,86	0,86	0,86	0,86	0,86
	0,55	0,30	0,41	0,47	0,56	0,73	1,04	1,04	1,04	1,04	1,04
	0,63	0,30	0,41	0,47	0,56	0,73	1,06	1,20	1,20	1,20	1,20
	0,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,56	1,56	1,56
	0,88	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32
	1,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32
	1,13	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32
	1,25	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32
	1,50	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	2,32
	1,75	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	—
	2,00	0,30	0,41	0,47	0,56	0,73	1,06	1,40	1,71	1,99	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 37
JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L with undercut, round head with Torx® drive system and sealing washer $\geq \text{Ø}11 \text{ mm}$	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088</p> <p>Washer: stainless steel (1.4301) - EN 10088</p> <p>Component I: S280GD, S320GD or S350GD - EN 10346</p> <p>Component II: S235 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,50$ mm</p>
	<p>Timber substructures</p> <p>no performance determined</p>

$t_{N,II}$ [mm]	2 x 0,63	2 x 0,75	2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25
$M_{t,nom}$	2 Nm	3 Nm		4 Nm		
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]						
0,40	—	—	—	—	—	—
0,50	—	—	—	—	—	—
0,55	—	—	—	—	—	—
0,63	1,65	1,78	1,91	2,04	2,04	2,04
0,75	1,65	2,60	2,76	2,92	2,92	2,92
0,88	1,65	2,60	3,39	3,55	3,55	3,55
1,00	1,65	2,60	3,39	4,17	4,17	4,17
1,13	1,65	2,60	3,39	4,17	4,17	—
1,25	1,65	2,60	3,39	4,17	—	—
1,50	1,65	2,60	3,39	4,17	—	—
1,75	1,65	2,60	—	—	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]						
0,40	0,86	0,86	0,86	0,86	0,86	0,86
0,50	1,01	1,04	1,04	1,04	1,04	1,04
0,55	1,01	1,20	1,20	1,20	1,20	1,20
0,63	1,01	1,56	1,56	1,56	1,56	1,56
0,75	1,01	1,78	2,31	2,32	2,32	2,32
0,88	1,01	1,78	2,31	2,32	2,32	2,32
1,00	1,01	1,78	2,31	2,32	2,32	2,32
1,13	1,01	1,78	2,31	2,32	2,32	—
1,25	1,01	1,78	2,31	2,32	—	—
1,50	1,01	1,78	2,31	2,32	—	—
1,75	1,01	1,78	—	—	—	—

If both components I and II are made of S320GD or S350GD the values may be increased by 8,3%.

Self drilling screw	Annex 38
JT3-FR-2H Plus-5,5 x L JT6-FR-2H Plus-5,5 x L with undercut, round head with Torx® drive system and sealing washer $\geq \text{Ø}11$ mm	

Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal

Component I: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573

Component II: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573

Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$

Timber substructures
for timber substructures no performance determined

$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	
$M_{t,nom} =$	—									
$V_{R,k}$ for $t_{N,I} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	
	0,19 -	0,19 -	0,19 -	0,19 -	0,19 -	0,19 -	0,19 ac	0,19 ac	0,19 ac	
	0,50	0,27 -	0,32 -	0,37 -	0,43 -	0,48 -	0,53 ac	0,53 ac	0,53 ac	
	0,60	0,27 -	0,38 -	0,44 -	0,49 -	0,55 -	0,61 -	0,63 -	0,76 ac	
	0,70	0,27 -	0,38 -	0,50 -	0,55 -	0,62 -	0,68 -	0,74 -	0,99 ac	
	0,80	0,27 -	0,38 -	0,50 -	0,61 -	0,69 -	0,76 -	0,84 -	1,22 ac	
	0,90	0,27 -	0,38 -	0,50 -	0,61 -	0,76 -	0,83 -	0,95 -	1,34 -	
	1,00	0,27 -	0,38 -	0,50 -	0,61 -	0,76 -	0,91 -	1,05 -	1,47 -	
	1,20	0,27 -	0,38 -	0,50 -	0,61 -	0,76 -	0,91 -	1,26 -	1,71 -	
	1,50	0,27 -	0,38 -	0,50 -	0,61 -	0,76 -	0,91 -	1,26 -	2,08 -	
$N_{R,II,k} =$	0,14	0,21	0,28	0,36	0,43	0,50	0,56	0,73	0,91	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-2H Plus 5,5xL JT6-2H Plus 5,5xL
 JT3-FR-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL
 With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 39

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
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$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	
$M_{t,nom} =$	—									
$V_{R,k}$ for $t_{N,I} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	
	0,24 -	0,24 -	0,24 -	0,24 -	0,24 -	0,24 -	0,24 ac	0,24 ac	0,24 ac	
	0,50	0,35 -	0,42 -	0,49 -	0,55 -	0,62 -	0,69 ac	0,69 ac	0,69 ac	
	0,60	0,35 -	0,50 -	0,57 -	0,63 -	0,71 -	0,79 -	0,83 -	0,99 ac	
	0,70	0,35 -	0,50 -	0,65 -	0,72 -	0,81 -	0,86 -	0,96 -	1,29 ac	
	0,80	0,38 -	0,50 -	0,65 -	0,80 -	0,90 -	0,93 -	1,08 -	1,59 ac	
	0,90	0,38 -	0,50 -	0,65 -	0,80 -	0,99 -	1,00 -	1,23 -	1,75 -	
	1,00	0,38 -	0,50 -	0,65 -	0,80 -	0,99 -	1,18 -	1,37 -	1,91 -	
	1,20	0,38 -	0,50 -	0,65 -	0,80 -	0,99 -	1,18 -	1,64 -	2,23 -	
	1,50	0,38 -	0,50 -	0,65 -	0,80 -	0,99 -	1,18 -	1,64 -	2,71 -	
$N_{R,II,k} =$	0,19	0,28	0,37	0,47	0,56	0,65	0,73	0,95	1,19	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-2H Plus 5,5xL JT6-2H Plus 5,5xL
 JT3-FR-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL
 With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 40

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
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$t_{N,II} =$	0,40	0,50	0,63	0,75	0,88	1,00	1,25	1,50	2,00	
$M_{t,nom} =$	—									
$V_{R,k}$ for $t_{N,I} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	
	0,19 -	0,19 -	0,19 -	0,19 -	0,19 -	0,19 ac	0,19 ac	0,19 ac	0,19 ac	
	0,35 -	0,35 -	0,35 -	0,40 -	0,47 -	0,53 ac	0,53 ac	0,53 ac	0,53 ac	
	0,35 -	0,42 -	0,42 -	0,47 -	0,54 -	0,61 -	0,69 -	0,76 ac	0,76 ac	
	0,35 -	0,42 -	0,49 -	0,53 -	0,61 -	0,68 -	0,84 -	0,99 ac	0,99 ac	
	0,35 -	0,42 -	0,49 -	0,56 -	0,66 -	0,76 -	0,99 -	1,22 ac	1,22 a	
	0,35 -	0,42 -	0,49 -	0,56 -	0,70 -	0,83 -	1,03 -	1,34 -	1,34 -	
	0,35 -	0,42 -	0,49 -	0,56 -	0,74 -	0,91 -	1,19 -	1,47 -	1,47 -	
	0,35 -	0,42 -	0,49 -	0,56 -	0,74 -	0,91 -	1,31 -	1,71 -	1,71 -	
	0,35 -	0,42 -	0,49 -	0,56 -	0,74 -	0,91 -	1,50 -	2,08 -	2,08 -	
$N_{R,II,k} =$	0,30	0,41	0,56	0,73	1,06	1,40	1,99	2,59	2,59	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 8,0%.

Self-drilling screw

JT3-2H Plus 5,5xL JT6-2H Plus 5,5xL
 JT3-FR-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL
 With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 41

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
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$t_{N,II} =$	2x0,63	2x0,75	2x0,88	2x1,00	2x1,13	2x1,25
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,40	0,58 -	0,58 ac	0,58 ac	0,58 ac	0,58 ac
	0,50	0,73 -	0,73 ac	0,74 ac	0,77 ac	0,77 ac
	0,60	0,80 -	0,80 ac	0,87 ac	0,94 ac	0,94 ac
	0,70	0,87 -	0,87 ac	0,99 ac	1,12 ac	1,12 ac
	0,80	0,94 -	0,94 ac	1,12 ac	1,29 a	1,29 a
	0,90	1,12 -	1,19 -	1,36 -	1,51 a	1,51 a
	1,00	1,29 -	1,44 -	1,60 -	1,75 a	1,75 a
	1,20	1,29 -	1,51 -	1,74 -	1,96 a	1,96 a
1,50	1,29 -	1,62 -	1,94 -	2,27 a	-	-
$N_{R,II,k} =$	1,01	1,78	2,31	2,84	2,84	2,84

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 8,0%.

Self-drilling screw	Annex 42
JT3-2H Plus 5,5xL JT6-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
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$t_{N,II} =$	2x0,63	2x0,75	2x0,88	2x1,00	2x1,13	2x1,25
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,40 0,50 0,60 0,70 0,80 0,90 1,00 1,20 1,50	- - - - - - - - -	0,77 ac 0,97 ac 1,06 ac 1,14 ac 1,23 ac 1,56 - 1,88 - 1,97 - 2,11 -	0,77 ac 0,99 ac 1,15 ac 1,30 ac 1,46 ac 1,77 - 2,08 - 2,26 - 2,53 -	0,77 ac 1,00 ac 1,23 ac 1,46 ac 1,68 a 1,98 a 2,28 a 2,55 a 2,96 a	0,77 ac 1,00 ac 1,23 ac 1,46 a 1,68 a 1,98 a 2,28 a 2,55 a -
$N_{R,II,k} =$	1,01	1,78	2,31	2,84	2,84	2,84

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Component II of steel S320GD or S350GD: the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 8,0%.

Self-drilling screw	Annex 44
JT3-2H Plus 5,5xL JT6-2H Plus 5,5xL JT3-FR-2H Plus 5,5xL JT6-FR-2H Plus 5,5xL With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 4,20 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
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$t_{N,II} =$	1,50	2,00	2,50	3,00	
$M_{t,nom} =$	—				
$V_{R,k}$ for $t_{N,I} =$	0,50	0,77 ac	0,77 ac	0,77 abcd	0,77 abcd
	0,60	0,84 -	0,96 ac	0,96 ac	0,96 ac
	0,70	0,92 -	1,15 -	1,15 ac	1,15 a
	0,80	1,07 -	1,23 -	1,30 -	1,30 a
	0,90	1,19 -	1,34 -	1,46 -	1,50 -
	1,00	1,30 -	1,46 -	1,61 -	1,69 -
	1,20	1,53 -	1,69 -	1,84 -	2,00 -
	1,50	2,15 -	2,23 -	2,30 -	- -
2,00	2,15 -	2,23 -	- -	- -	
$N_{R,II,k} =$	0,69	1,07	1,61	2,15	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-3-5,5xL JT6-3-5,5xL
JT3-FR-3-5,5xL JT6-FR-3-5,5xL
With hexagon head or FR-head and seal washer $\geq \varnothing 16 \text{ mm}$

Annex 45

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 4,20 \text{ mm}$</p> <hr/> <p>Timber substrates for timber substrates no performance determined</p>
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$t_{N,II} =$	1,50	2,00	2,50	3,00			
$M_{t,nom} =$	—						
$V_{R,k}$ for $t_{N,I} =$	0,50 1,00 0,60 1,10 0,70 1,20 0,80 1,40 0,90 1,55 1,00 1,70 1,20 2,00 1,50 2,80 2,00 2,80	ac - - - - - - - - - - - - - - - -	1,00 1,25 1,50 1,60 1,75 1,90 2,20 2,90 2,90	ac ac - - - - - - - - - - - - - -	1,00 1,25 1,50 1,70 1,90 2,10 2,40 3,00 -	abcd ac ac a a - - - - - - - - -	1,00 1,25 1,50 1,70 1,95 2,20 2,60 - - - -
$N_{R,II,k} =$	0,90	1,40	2,10	2,80			

Self-drilling screw	
JT3-3-5,5xL JT6-3-5,5xL JT3-FR-3-5,5xL JT6-FR-3-5,5xL With hexagon head or FR-head and seal washer $\geq \varnothing 16 \text{ mm}$	Annex 46

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>																																																	
<table border="1" data-bbox="582 1052 1077 1512"> <thead> <tr> <th>$t_{N,II} =$</th> <th>1,50</th> <th>2,00</th> <th>2,50</th> </tr> </thead> <tbody> <tr> <td>$M_{t,nom} =$</td> <td colspan="3">—</td> </tr> <tr> <td rowspan="9">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>0,77 ac</td> <td>0,77 ac</td> <td>0,77 abcd</td> </tr> <tr> <td>0,60</td> <td>0,84 -</td> <td>0,96 ac</td> <td>0,96 a</td> </tr> <tr> <td>0,70</td> <td>0,92 -</td> <td>1,15 -</td> <td>1,15 a</td> </tr> <tr> <td>0,80</td> <td>1,07 -</td> <td>1,23 -</td> <td>1,30 -</td> </tr> <tr> <td>0,90</td> <td>1,19 -</td> <td>1,34 -</td> <td>1,46 -</td> </tr> <tr> <td>1,00</td> <td>1,30 -</td> <td>1,46 -</td> <td>1,61 -</td> </tr> <tr> <td>1,20</td> <td>1,53 -</td> <td>1,69 -</td> <td>1,84 -</td> </tr> <tr> <td>1,50</td> <td>2,15 -</td> <td>2,23 -</td> <td>2,30 -</td> </tr> <tr> <td>2,00</td> <td>2,15 -</td> <td>2,23 -</td> <td>- -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>2,00</td> <td>2,90</td> <td>3,90</td> </tr> </tbody> </table>		$t_{N,II} =$	1,50	2,00	2,50	$M_{t,nom} =$	—			$V_{R,k}$ for $t_{N,I} =$	0,50	0,77 ac	0,77 ac	0,77 abcd	0,60	0,84 -	0,96 ac	0,96 a	0,70	0,92 -	1,15 -	1,15 a	0,80	1,07 -	1,23 -	1,30 -	0,90	1,19 -	1,34 -	1,46 -	1,00	1,30 -	1,46 -	1,61 -	1,20	1,53 -	1,69 -	1,84 -	1,50	2,15 -	2,23 -	2,30 -	2,00	2,15 -	2,23 -	- -	$N_{R,II,k} =$	2,00	2,90	3,90
$t_{N,II} =$	1,50	2,00	2,50																																															
$M_{t,nom} =$	—																																																	
$V_{R,k}$ for $t_{N,I} =$	0,50	0,77 ac	0,77 ac	0,77 abcd																																														
	0,60	0,84 -	0,96 ac	0,96 a																																														
	0,70	0,92 -	1,15 -	1,15 a																																														
	0,80	1,07 -	1,23 -	1,30 -																																														
	0,90	1,19 -	1,34 -	1,46 -																																														
	1,00	1,30 -	1,46 -	1,61 -																																														
	1,20	1,53 -	1,69 -	1,84 -																																														
	1,50	2,15 -	2,23 -	2,30 -																																														
	2,00	2,15 -	2,23 -	- -																																														
$N_{R,II,k} =$	2,00	2,90	3,90																																															
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																		
<table border="1" data-bbox="199 1904 1460 2105"> <tr> <td colspan="2" style="text-align: center;">Self-drilling screw</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">Annex 47</td> </tr> <tr> <td style="text-align: center;">JT3-3-5,5xL</td> <td style="text-align: center;">JT6-3-5,5xL</td> </tr> <tr> <td style="text-align: center;">JT3-FR-3-5,5xL</td> <td style="text-align: center;">JT6-FR-3-5,5xL</td> </tr> <tr> <td colspan="2" style="text-align: center;">With hexagon head or FR-head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$</td> <td></td> </tr> </table>		Self-drilling screw		Annex 47	JT3-3-5,5xL	JT6-3-5,5xL	JT3-FR-3-5,5xL	JT6-FR-3-5,5xL	With hexagon head or FR-head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$																																									
Self-drilling screw		Annex 47																																																
JT3-3-5,5xL	JT6-3-5,5xL																																																	
JT3-FR-3-5,5xL	JT6-FR-3-5,5xL																																																	
With hexagon head or FR-head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$																																																		

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 3,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>																																																	
<table border="1"> <thead> <tr> <th>$t_{N,II} =$</th> <th>1,50</th> <th>2,00</th> <th>2,50</th> </tr> </thead> <tbody> <tr> <td>$M_{t,nom} =$</td> <td colspan="3">—</td> </tr> <tr> <td rowspan="9">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>1,00 ac</td> <td>1,00 ac</td> <td>1,00 abcd</td> </tr> <tr> <td>0,60</td> <td>1,10 -</td> <td>1,25 ac</td> <td>1,25 a</td> </tr> <tr> <td>0,70</td> <td>1,20 -</td> <td>1,50 -</td> <td>1,50 a</td> </tr> <tr> <td>0,80</td> <td>1,40 -</td> <td>1,60 -</td> <td>1,70 -</td> </tr> <tr> <td>0,90</td> <td>1,55 -</td> <td>1,75 -</td> <td>1,90 -</td> </tr> <tr> <td>1,00</td> <td>1,70 -</td> <td>1,90 -</td> <td>2,10 -</td> </tr> <tr> <td>1,20</td> <td>2,00 -</td> <td>2,20 -</td> <td>2,40 -</td> </tr> <tr> <td>1,50</td> <td>2,80 -</td> <td>2,90 -</td> <td>3,00 -</td> </tr> <tr> <td>2,00</td> <td>2,80 -</td> <td>2,90 -</td> <td>- -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>2,00</td> <td>2,90</td> <td>3,90</td> </tr> </tbody> </table>		$t_{N,II} =$	1,50	2,00	2,50	$M_{t,nom} =$	—			$V_{R,k}$ for $t_{N,I} =$	0,50	1,00 ac	1,00 ac	1,00 abcd	0,60	1,10 -	1,25 ac	1,25 a	0,70	1,20 -	1,50 -	1,50 a	0,80	1,40 -	1,60 -	1,70 -	0,90	1,55 -	1,75 -	1,90 -	1,00	1,70 -	1,90 -	2,10 -	1,20	2,00 -	2,20 -	2,40 -	1,50	2,80 -	2,90 -	3,00 -	2,00	2,80 -	2,90 -	- -	$N_{R,II,k} =$	2,00	2,90	3,90
$t_{N,II} =$	1,50	2,00	2,50																																															
$M_{t,nom} =$	—																																																	
$V_{R,k}$ for $t_{N,I} =$	0,50	1,00 ac	1,00 ac	1,00 abcd																																														
	0,60	1,10 -	1,25 ac	1,25 a																																														
	0,70	1,20 -	1,50 -	1,50 a																																														
	0,80	1,40 -	1,60 -	1,70 -																																														
	0,90	1,55 -	1,75 -	1,90 -																																														
	1,00	1,70 -	1,90 -	2,10 -																																														
	1,20	2,00 -	2,20 -	2,40 -																																														
	1,50	2,80 -	2,90 -	3,00 -																																														
	2,00	2,80 -	2,90 -	- -																																														
$N_{R,II,k} =$	2,00	2,90	3,90																																															
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																		
<table border="1"> <tr> <td colspan="2">Self-drilling screw</td> <td rowspan="3">Annex 48</td> </tr> <tr> <td>JT3-3-5,5xL</td> <td>JT6-3-5,5xL</td> </tr> <tr> <td>JT3-FR-3-5,5xL</td> <td>JT6-FR-3-5,5xL</td> </tr> <tr> <td colspan="2">With hexagon head or FR-head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$</td> <td></td> </tr> </table>		Self-drilling screw		Annex 48	JT3-3-5,5xL	JT6-3-5,5xL	JT3-FR-3-5,5xL	JT6-FR-3-5,5xL	With hexagon head or FR-head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$																																									
Self-drilling screw		Annex 48																																																
JT3-3-5,5xL	JT6-3-5,5xL																																																	
JT3-FR-3-5,5xL	JT6-FR-3-5,5xL																																																	
With hexagon head or FR-head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$																																																		

Materials

Fastener: stainless steel (1.4301) - EN 10088,
stainless steel (1.4404) - EN 10088

Washer: stainless steel (1.4301) - EN 10088

Component I: S280GD, S320GD or S350GD - EN 10346

Component II: S280GD, S320GD or S350GD - EN 10346

Drilling capacity $\Sigma t_i \leq 3,50$ mm

Timber substructures
no performance determined

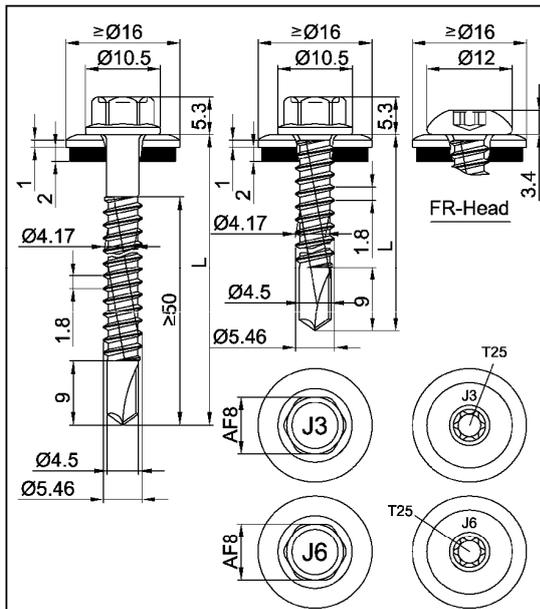
$t_{N,II}$ [mm]	2 x 0,63	2 x 0,75	2 x 0,88	2 x 1,00	2 x 1,13	2 x 1,25	2 x 1,50	2 x 1,75	
$M_{t,nom}$	—	5 Nm						—	
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50 — — — — — — — —	— — — — — — — —	1,60 — 1,60 — 1,60 — 1,60 — 1,60 —	1,90 — 1,90 — 1,90 — 1,90 — 1,90 — 1,90 —	2,20 — 2,20 — 2,20 — 2,20 — 2,20 — 2,20 —	2,50 — 2,50 — 2,50 — 2,50 — 2,50 — 2,50 —	— — — — — — — —	— — — — — — — —	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50 — — 0,81 — 0,97 — 1,19 — 1,51 — 1,62 — 1,62 — — —	— — — 1,02 — 1,23 — 1,50 — 1,91 — 2,05 — — — —	— — — 1,50 — 1,80 — 2,20 — 2,80 — 3,00 — — — —	— — — 1,50 — 1,80 — 2,20 — 2,80 — 3,20 — — — —	— — — 1,50 — 1,80 — 2,20 — 2,80 — 3,20 — — — —	— — — 1,50 — 1,80 — 2,20 — 2,80 — — — — — —	— — — 1,50 — 1,80 — 2,20 — 2,80 — — — — — —	— — — 1,50 — — — — — — — — — — — —	— — — 1,50 — — — — — — — — — — — —

Self drilling screw

JT3-3H-5,5 x L
JT6-3H-5,5 x L
JT3-FR-3H-5,5 x L
JT6-FR-3H-5,5 x L

with undercut, hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16$ mm

Annex 49



Materials

Fastener: stainless steel (1.4301) - EN 10088,
stainless steel (1.4404) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235, S275 or S355 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Drilling capacity

$\Sigma t_i \leq 6,00$ mm

Timber substructures

no performance determined

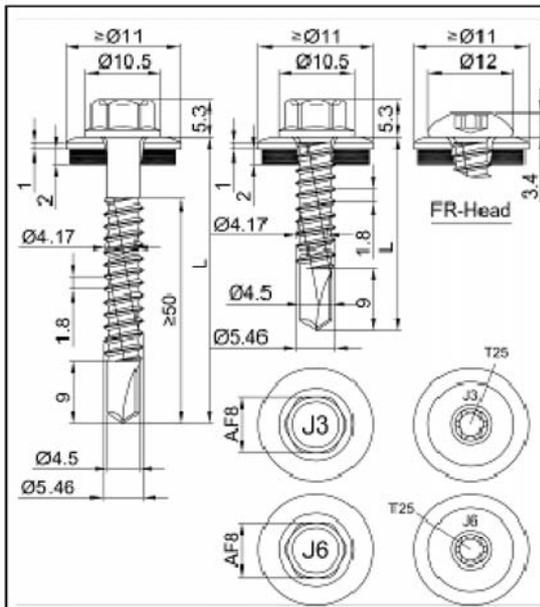
$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	—	2 x 1,50	—
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,10 ac	2,40 ac	2,60 ac	2,90 ac	2,90 ac	2,40 ac	—
	0,75	2,50 —	2,80 ac	3,10 ac	3,30 ac	3,30 ac	3,10 ac	—
	0,88	2,90 —	3,20 —	3,40 ac	3,70 ac	3,70 ac	3,70 ac	—
	1,00	3,10 —	3,40 —	4,00 —	4,20 ac	4,20 ac	3,70 —	—
	1,13	3,30 —	3,80 —	4,50 —	4,60 —	4,60 —	3,70 —	—
	1,25	3,40 —	3,90 —	4,70 —	4,90 —	4,90 —	3,70 —	—
	1,50	3,80 —	4,40 —	5,00 —	5,50 —	5,50 —	3,70 —	—
	1,75	3,80 —	4,40 —	5,00 —	5,50 —	5,50 —	3,70 —	—
	2,00	3,80 —	4,40 —	5,00 —	5,50 —	5,50 —	3,70 —	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,92 ac	1,30 ac	—				
	0,55	1,16 ac	1,64 ac	—				
	0,63	1,70 ac	2,40 ac	—				
	0,75	1,70 —	2,60 ac	2,90 ac	2,90 ac	2,90 ac	2,70 ac	—
	0,88	1,70 —	2,60 —	3,50 ac	3,50 ac	3,50 ac	2,70 ac	—
	1,00	1,70 —	2,60 —	3,50 —	4,10 ac	4,10 ac	2,70 —	—
	1,13	1,70 —	2,60 —	3,50 —	4,10 —	4,10 —	2,70 —	—
	1,25	1,70 —	2,60 —	3,50 —	4,10 —	4,10 —	2,70 —	—
	1,50	1,70 —	2,60 —	3,50 —	4,50 —	4,50 —	2,70 —	—
	1,75	1,70 —	2,60 —	3,50 —	4,50 —	4,50 —	2,70 —	—
	2,00	1,70 —	2,60 —	3,50 —	4,50 —	4,50 —	2,70 —	—

Self drilling screw

JT3-6-5,5 x L
JT6-6-5,5 x L
JT3-FR-6-5,5 x L
JT6-FR-6-5,5 x L

with hexagon head or round head with Torx® drive system and sealing washer \geq
 $\varnothing 16$ mm

Annex 52



Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal
Component I: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573
Component II: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573

Drilling capacity $\Sigma t_i \leq 6,50 \text{ mm}$

Timber substructures

for timber substructures no performance determined

$t_{N,II} =$	2,00	2,50	3,00	4,00	
$M_{t,nom} =$	—				
$V_{R,k}$ for $t_{N,I} =$	0,50	0,71 ac	0,71 ac	0,71 ac	0,71 ac
	0,60	0,89 ac	0,91 ac	0,93 ac	0,93 ac
	0,70	1,07 ac	1,11 ac	1,15 ac	1,15 ac
	0,80	1,25 ac	1,31 ac	1,36 ac	1,36 ac
	0,90	1,43 ac	1,51 ac	1,58 ac	1,58 ac
	1,00	1,61 ac	1,71 ac	1,80 ac	1,80 ac
	1,20	1,80 -	1,93 -	2,06 -	2,17 ac
	1,50	2,09 -	2,27 -	2,45 -	2,72 a
2,00	2,56 -	2,83 -	3,10 -	3,63 a	
$N_{R,II,k} =$	1,03	1,68	2,33	3,63	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-6-5,5xL JT6-6-5,5xL
JT3-FR-6-5,5xL JT6-FR-6-5,5xL
With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 53

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,50 \text{ mm}$</p>
<p>Timber substructures for timber substructures no performance determined</p>	

$t_{N,II} =$	2,00	2,50	3,00	4,00	
$M_{t,nom} =$	—				
$V_{R,k}$ for $t_{N,I} =$	0,50	0,93 ac	0,93 ac	0,93 ac	0,93 ac
	0,60	1,16 ac	1,19 ac	1,21 ac	1,21 ac
	0,70	1,39 ac	1,45 ac	1,50 ac	1,50 ac
	0,80	1,63 ac	1,70 ac	1,78 ac	1,78 ac
	0,90	1,86 ac	1,96 ac	2,07 ac	2,07 ac
	1,00	2,09 ac	2,22 ac	2,35 ac	2,35 ac
	1,20	2,34 -	2,51 -	2,69 -	2,72 ac
	1,50	2,71 -	2,95 -	3,19 -	3,48 a
2,00	3,33 -	3,68 -	4,03 -	4,73 a	
$N_{R,II,k} =$	1,35	2,20	3,04	4,73	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-6-5,5xL JT6-6-5,5xL
 JT3-FR-6-5,5xL JT6-FR-6-5,5xL
 With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 54

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,50 \text{ mm}$</p>
	<p>Timber substructures for timber substructures no performance determined</p>

$t_{N,II} =$	1,50	1,75	2,00	2,50	3,00	4,00	-	2x1,50	
$M_{t,nom} =$	—								
$V_{R,k}$ for $t_{N,I} =$	0,50	0,71 ac	- -	0,71 ac					
	0,60	0,91 ac	0,91 ac	0,91 ac	0,92 ac	0,93 ac	0,93 ac	- -	0,91 ac
	0,70	1,10 ac	1,11 ac	1,12 ac	1,13 ac	1,15 ac	1,15 ac	- -	1,10 ac
	0,80	1,30 ac	1,31 ac	1,32 ac	1,34 ac	1,36 ac	1,36 ac	- -	1,30 ac
	0,90	1,49 ac	1,51 ac	1,53 ac	1,55 ac	1,58 ac	1,58 ac	- -	1,49 ac
	1,00	1,69 ac	1,71 ac	1,73 ac	1,76 ac	1,80 ac	1,80 ac	- -	1,69 ac
	1,20	1,69 -	1,79 -	1,90 -	1,97 -	2,06 -	2,17 ac	- -	1,69 -
	1,50	1,69 -	1,92 -	2,15 -	2,30 -	2,45 -	2,72 a	- -	1,69 -
	2,00	1,69 -	2,13 -	2,56 -	2,83 -	3,10 -	3,63 a	- -	1,69 -
$N_{R,II,k} =$	1,70	2,15	2,60	3,50	4,50	4,50	-	2,70	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw	Annex 55
JT3-6-5,5xL JT6-6-5,5xL JT3-FR-6-5,5xL JT6-FR-6-5,5xL	
With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 6,50 \text{ mm}$</p>
	<p>Timber substructures for timber substructures no performance determined</p>

$t_{N,II} =$	1,50	1,75	2,00	2,50	3,00	4,00	-	2x1,50	
$M_{t,nom} =$	—								
$V_{R,k}$ for $t_{N,I} =$	0,50	0,93 ac	- -	0,93 ac					
	0,60	1,18 ac	1,19 ac	1,19 ac	1,20 ac	1,21 ac	1,21 ac	- -	1,18 ac
	0,70	1,44 ac	1,45 ac	1,46 ac	1,48 ac	1,50 ac	1,50 ac	- -	1,44 ac
	0,80	1,69 ac	1,71 ac	1,72 ac	1,75 ac	1,78 ac	1,78 ac	- -	1,69 ac
	0,90	1,95 ac	1,97 ac	1,99 ac	2,03 ac	2,07 ac	2,07 ac	- -	1,95 ac
	1,00	2,20 ac	2,23 ac	2,25 ac	2,30 ac	2,35 ac	2,35 ac	- -	2,20 ac
	1,20	2,20 -	2,32 -	2,45 -	2,58 -	2,69 -	2,72 ac	- -	2,20 -
	1,50	2,20 -	2,45 -	2,79 -	2,99 -	3,19 -	3,48 a	- -	2,20 -
2,00	2,20 -	2,67 -	3,33 -	3,68 -	4,03 -	4,73 a	- -	2,20 -	
$N_{R,II,k} =$	1,70	2,15	2,60	3,50	4,50	4,50	-	2,70	

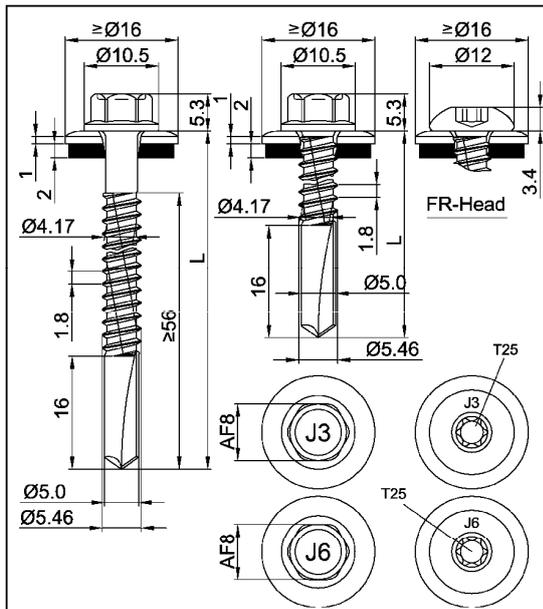
Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-6-5,5xL JT6-6-5,5xL
JT3-FR-6-5,5xL JT6-FR-6-5,5xL

With hexagon head or FR-head and seal washer $\geq \text{Ø } 11,0 \text{ mm}$

Annex 56



Materials

Fastener: stainless steel (1.4301) - EN 10088,
stainless steel (1.4404) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD - EN 10346
Component II: S235, S275 or S355 - EN 10025-1

Drilling capacity $\Sigma t_i \leq 13,00$ mm

Timber substructures

no performance determined

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0
$M_{t,nom}$	7 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,20 ac	—					
	0,75	2,80 ac	—					
	0,88	3,50 ac	3,50 a	—				
	1,00	4,20 —	4,20 ac	4,20 ac	4,20 ac	4,20 ac	4,20 a	—
	1,13	4,20 —	4,90 —	4,90 —	4,90 —	4,90 —	—	—
	1,25	4,20 —	5,60 —	5,60 —	5,60 —	5,60 —	—	—
	1,50	4,20 —	6,40 —	7,20 —	7,20 —	7,20 —	—	—
	1,75	4,20 —	6,40 —	7,20 —	7,20 —	7,20 —	—	—
	2,00	4,20 —	6,40 —	7,20 —	7,20 —	7,20 —	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,30 ac	—					
	0,55	1,64 ac	—					
	0,63	2,40 ac	—					
	0,75	3,10 ac	—					
	0,88	3,90 ac	3,90 a	—				
	1,00	4,70 —	4,70 ac	4,70 ac	4,70 ac	4,70 ac	4,70 a	—
	1,13	4,70 —	5,60 —	5,60 —	5,60 —	5,60 —	—	—
	1,25	4,70 —	6,40 —	6,40 —	6,40 —	6,40 —	—	—
	1,50	4,70 —	6,40 —	6,40 —	6,40 —	6,40 —	—	—
	1,75	4,70 —	6,40 —	6,40 —	6,40 —	6,40 —	—	—
	2,00	4,70 —	6,40 —	6,40 —	6,40 —	6,40 —	—	—

Self drilling screw

JT3-12-5,5 x L
JT6-12-5,5 x L
JT3-FR-12-5,5 x L
JT6-FR-12-5,5 x L

with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16$ mm

Annex 57

Materials
Fastener: stainless steel (1.4301) - EN 10088, stainless steel (1.4404) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S320GD or S350GD - EN 10346
Component II: S235, S275 or S355 - EN 10025-1

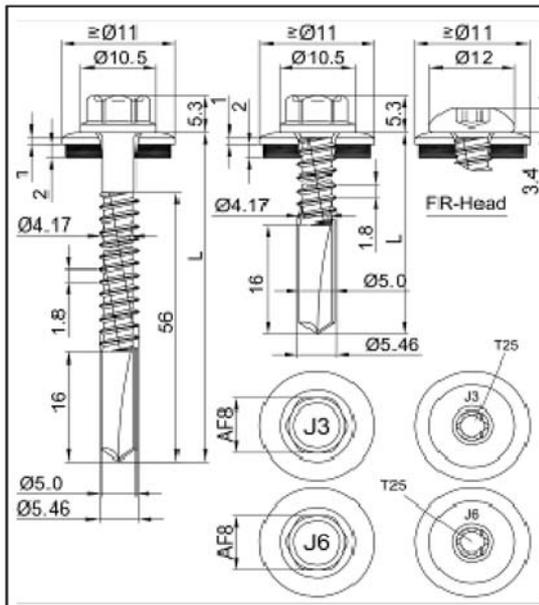
Drilling capacity $\Sigma t_i \leq 13,00$ mm

Timber substructures
no performance determined

$t_{N,II}$ [mm]	4,00	5,00	6,00	8,00	10,0	12,0	13,0	14,0
$M_{t,nom}$	7 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,50 ac	2,50	—				
	0,75	3,20 ac	3,20	—				
	0,88	3,90 ac	3,90	—				
	1,00	4,20	4,60 ac	4,60 ac	4,60 ac	4,60 ac	4,60	—
	1,13	4,20	5,30	5,30	5,30	5,30	—	—
	1,25	4,20	6,00	6,00	6,00	6,00	—	—
	1,50	4,20	6,40	7,20	7,60	7,60	—	—
	1,75	4,20	6,40	7,20	7,60	7,60	—	—
	2,00	4,20	6,40	7,20	7,60	7,60	—	—
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,40 ac	1,40	—				
	0,55	1,77 ac	1,77	—				
	0,63	2,60 ac	2,60	—				
	0,75	3,30 ac	3,30	—				
	0,88	4,20 ac	4,20	—				
	1,00	4,70	5,00 ac	5,00 ac	5,00 ac	5,00 ac	5,00	—
	1,13	4,70	6,00	6,00	6,00	6,00	—	—
	1,25	4,70	6,90	6,90	6,90	6,90	—	—
	1,50	4,70	6,90	6,90	6,90	6,90	—	—
	1,75	4,70	6,90	6,90	6,90	6,90	—	—
	2,00	4,70	6,90	6,90	6,90	6,90	—	—

Self drilling screw

<p>JT3-12-5,5 x L JT6-12-5,5 x L JT3-FR-12-5,5 x L JT6-FR-12-5,5 x L</p> <p>with hexagon head or round head with Torx® drive system and sealing washer $\geq \text{Ø}16$ mm</p>	Annex 58
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Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal

Component I: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573

Component II: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573

Drilling capacity $\Sigma t_i \leq 13,00 \text{ mm}$

Timber substructures

for timber substructures no performance determined

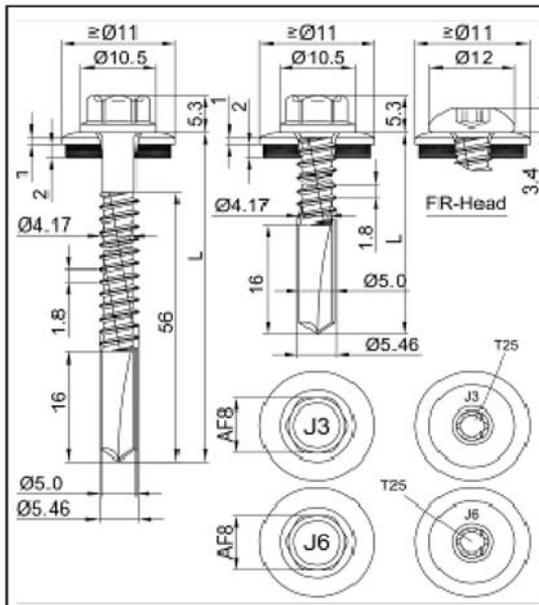
$t_{N,II} =$	4,00	5,00	6,00	8,00	10,00	12,00
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,50	0,77 ac				
	0,60	0,94 ac	0,94 ac	0,94 ac	0,94 ac	0,94 a
	0,70	1,10 ac	1,10 ac	1,10 ac	1,10 ac	1,10 a
	0,80	1,27 ac	1,27 ac	1,27 ac	1,27 ac	1,27 a
	0,90	1,48 ac	1,48 ac	1,48 ac	1,48 ac	1,48 a
	1,00	1,69 ac	1,69 ac	1,69 ac	1,69 ac	1,69 a
	1,20	1,94 -	1,94 -	1,94 -	1,94 ac	-
	1,50	2,32 -	2,32 -	2,32 -	2,32 ac	-
	2,00	2,91 -	3,00 -	3,09 -	3,26 ac	-
$N_{R,II,k} =$	1,11	1,58	2,21	3,48	3,48	3,48

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-12-5,5xL JT6-12-5,5xL
JT3-FR-12-5,5xL JT6-FR-12-5,5xL
With hexagon head or FR-head and seal washer $\geq \text{Ø } 11,0 \text{ mm}$

Annex 59



Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal

Component I: aluminium alloy
with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573

Component II: aluminium alloy
with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573

Drilling capacity $\Sigma t_i \leq 13,00 \text{ mm}$

Timber substructures

for timber substructures no performance determined

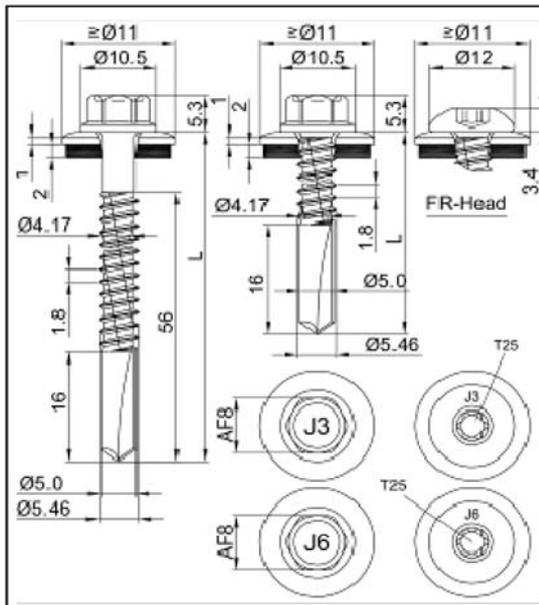
$t_{N,II} =$	4,00	5,00	6,00	8,00	10,00	12,00
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,50	1,00 ac				
	0,60	1,22 ac	1,22 ac	1,22 ac	1,22 ac	1,22 a
	0,70	1,44 ac	1,44 ac	1,44 ac	1,44 ac	1,44 a
	0,80	1,66 ac	1,66 ac	1,66 ac	1,66 ac	1,66 a
	0,90	1,93 ac	1,93 ac	1,93 ac	1,93 ac	1,93 a
	1,00	2,20 ac	2,20 ac	2,20 ac	2,20 ac	2,20 a
	1,20	2,52 -	2,52 -	2,52 -	2,52 ac	2,52 ac -
	1,50	3,02 -	3,02 -	3,02 -	3,02 ac	3,02 ac -
	2,00	3,79 -	3,91 -	4,02 -	4,25 ac	4,25 a -
$N_{R,II,k} =$	1,45	2,06	2,89	4,54	4,54	4,54

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-12-5,5xL JT6-12-5,5xL
JT3-FR-12-5,5xL JT6-FR-12-5,5xL
With hexagon head or FR-head and seal washer $\geq \text{Ø } 11,0 \text{ mm}$

Annex 60



Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal
Component I: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573
Component II: S235 – EN 10025-1
S280GD, S320GD – EN 10346

Drilling capacity $\Sigma t_i \leq 13,00 \text{ mm}$

Timber substructures

for timber substructures no performance determined

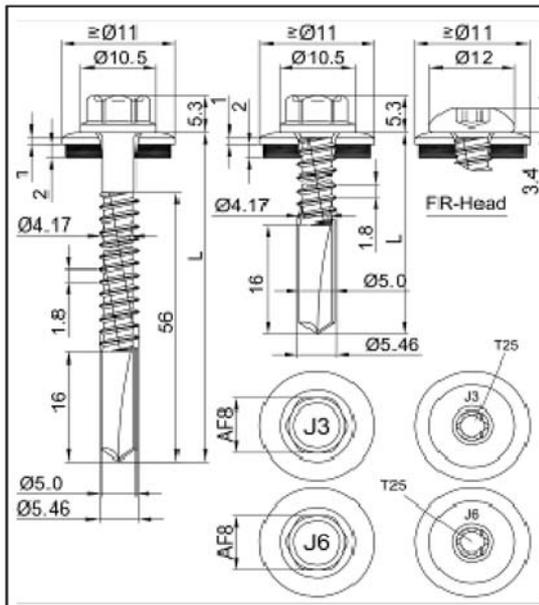
$t_{N,II} =$	4,00	5,00	6,00	8,00	10,00	12,00
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,50	0,77 ac				
	0,60	0,94 ac	0,94 ac	0,94 ac	0,94 ac	0,94 a
	0,70	1,10 ac	1,10 ac	1,10 ac	1,10 ac	1,10 a
	0,80	1,27 ac	1,27 ac	1,27 ac	1,27 ac	1,27 a
	0,90	1,48 ac	1,48 ac	1,48 ac	1,48 ac	1,48 a
	1,00	1,69 ac	1,69 ac	1,69 ac	1,69 ac	1,69 a
	1,20	1,94 -	1,94 -	1,94 -	1,94 ac	- -
	1,50	2,32 -	2,32 -	2,32 -	2,32 ac	- -
	2,00	2,91 -	3,00 -	3,09 -	3,26 ac	- -
$N_{R,II,k} =$	4,70	6,40	6,40	6,40	6,40	6,40

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-12-5,5xL JT6-12-5,5xL
JT3-FR-12-5,5xL JT6-FR-12-5,5xL
With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 61



Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal
Component I: aluminium alloy
with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573
Component II: S235 – EN 10025-1
S280GD, S320GD – EN 10346

Drilling capacity $\Sigma t_i \leq 13,00 \text{ mm}$

Timber substructures

for timber substructures no performance determined

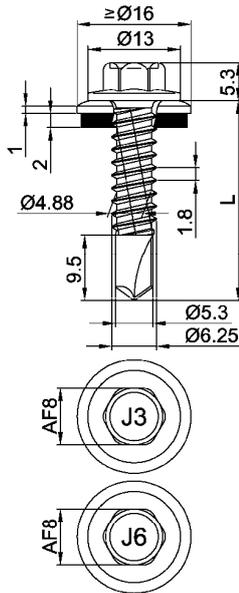
$t_{N,II} =$	4,00	5,00	6,00	8,00	10,00	12,00
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,50	1,00 ac				
	0,60	1,22 ac	1,22 ac	1,22 ac	1,22 ac	1,22 a
	0,70	1,44 ac	1,44 ac	1,44 ac	1,44 ac	1,44 a
	0,80	1,66 ac	1,66 ac	1,66 ac	1,66 ac	1,66 a
	0,90	1,93 ac	1,93 ac	1,93 ac	1,93 ac	1,93 a
	1,00	2,20 ac	2,20 ac	2,20 ac	2,20 ac	2,20 a
	1,20	2,52 -	2,52 -	2,52 -	2,52 ac	2,52 ac -
	1,50	3,02 -	3,02 -	3,02 -	3,02 ac	3,02 ac -
	2,00	3,79 -	3,91 -	4,02 -	4,25 ac	4,25 a -
$N_{R,II,k} =$	4,70	6,40	6,40	6,40	6,40	6,40

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw

JT3-12-5,5xL JT6-12-5,5xL
JT3-FR-12-5,5xL JT6-FR-12-5,5xL
With hexagon head or FR-head and seal washer $\geq \varnothing 11,0 \text{ mm}$

Annex 62



Materials

Fastener: stainless steel (1.4301) - EN 10088,
stainless steel (1.4404) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235, S275 or S355 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Drilling capacity $\Sigma t_i \leq 6,50$ mm

Timber substructures

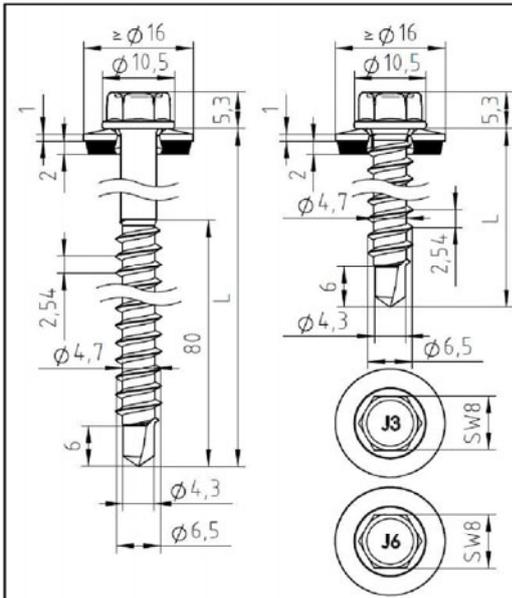
no performance determined

$t_{N,II}$ [mm]	1,50	2,00	2,50	3,00	4,00	5,00	6,00	7,00	
$M_{t,nom}$	—	7 Nm							—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,80 abcd	1,80 abcd	1,80 abcd	1,80 abcd	1,80 abc	1,80 a	—	
	0,55	2,20 abcd	2,20 abcd	2,20 abcd	2,20 abcd	2,20 abc	—	—	
	0,63	2,60 abcd	2,60 abcd	2,60 abcd	2,60 abcd	2,60 abc	—	—	
	0,75	3,40 ac	3,40 ac	3,40 ac	3,40 ac	3,40 ac	—	—	
	0,88	3,80 ac	3,90 ac	4,10 ac	4,10 ac	4,10 a	—	—	
	1,00	4,20 ac	4,40 ac	4,70 ac	4,70 ac	4,70 a	—	—	
	1,13	4,70 ac	5,00 ac	5,40 ac	5,70 ac	5,70 a	—	—	
	1,25	5,10 ac	5,50 ac	6,00 ac	6,60 ac	6,60 a	—	—	
	1,50	5,70 ac	6,40 ac	7,00 ac	7,50 a	7,90 a	—	—	
	1,75	5,70 ac	6,40 ac	7,00 ac	7,50 —	—	—	—	
	2,00	5,70 ac	6,40 ac	7,00 ac	7,50 —	—	—	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	1,50 abcd	1,50 abcd	1,50 abcd	1,50 abcd	1,50 abc	1,50 a	—	
	0,55	2,10 abcd	2,10 abcd	2,10 abcd	2,10 abcd	2,10 abc	—	—	
	0,63	2,70 abcd	2,70 abcd	2,70 abcd	2,70 abcd	2,70 abc	—	—	
	0,75	3,00 ac	3,70 ac	3,70 ac	3,70 ac	3,70 ac	—	—	
	0,88	3,00 ac	4,20 ac	4,20 ac	4,20 ac	4,20 a	—	—	
	1,00	3,00 ac	4,20 ac	4,70 ac	4,70 ac	4,70 a	—	—	
	1,13	3,00 ac	4,20 ac	4,80 ac	5,60 ac	5,60 a	—	—	
	1,25	3,00 ac	4,20 ac	4,80 ac	6,40 ac	6,40 a	—	—	
	1,50	3,00 ac	4,20 ac	4,80 ac	8,30 a	8,30 a	—	—	
	1,75	3,00 ac	4,20 ac	4,80 ac	8,30 —	—	—	—	
	2,00	3,00 ac	4,20 ac	4,80 ac	8,30 —	—	—	—	

Self drilling screw

JT3-6-6,3 x L
JT6-6-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 63



Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) - EN 10088

Component I: S280GD – EN 10346

Component II: structural timber – EN 14081

Drilling capacity $\Sigma t_i \leq 2,00$ mm

Timber substructures

performance determined with

$M_{y,Rk} = 9,742$ Nm

$f_{ax,k} = 8,575$ N/mm² for $l_{ef} \geq 26$ mm

$l_g =$	32	38	42	48	52	58	62	68	72	78	82			
$M_{t,nom} =$	—													
$V_{R,k}$ for $t_{N,I} =$	0,50	—	—	—	—	—	—	—	—	—	—	—	bearing resistance of component I	
	0,55	—	—	—	—	—	—	—	—	—	—	—		
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
	0,75	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80		
	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,60		2,60
	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,30
	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,30
	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,30
	1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,30
	1,75	—	—	—	—	—	—	—	—	—	—	—		—
	2,00	—	—	—	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ for $t_{N,I} =$	0,50	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	pull-tough resistance of component I	
	0,55	1,30	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50		
	0,63	1,30	1,56	1,81	2,06	2,20	2,20	2,20	2,20	2,20	2,20	2,20		
	0,75	1,30	1,56	1,81	2,06	2,31	2,56	2,80	2,80	2,80	2,80	2,80		
	0,88	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,50	3,50		3,50
	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		4,20
	1,13	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		5,00
	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		5,90
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		5,90
	1,75	—	—	—	—	—	—	—	—	—	—	—		—
	2,00	—	—	—	—	—	—	—	—	—	—	—	—	

The values listed above in dependence on the screw-in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350$ kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw

JT3-2-6,5 x L

JT6-2-6,5 x L

with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 65

Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) – EN 10088
with vulcanised EPDM seal

Component I: aluminium alloy
with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573

Component II: timber – EN 14081

Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$

Timber substructures
for timber substructures following performance were determined

$M_{y,k} = 9,742 \text{ Nm}$
 $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 32,5 \text{ mm}$

$l_g =$	33,00	36,00	39,00	42,00	45,00	48,00	51,00	54,00	60,00		
$M_{t,nom} =$	—										
$V_{R,k}$ for $t_{N,i} =$	0,50	0,54	0,54	0,54	0,54	0,54	0,54	0,54	0,54	0,54	failure of component I (bearing)
	0,60	0,74	0,74	0,74	0,74	0,74	0,74	0,74	0,74	0,74	
	0,70	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	0,93	
	0,80	1,13	1,13	1,13	1,13	1,13	1,13	1,13	1,13	1,13	
	0,90	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25	
	1,00	1,30	1,37	1,37	1,37	1,37	1,37	1,37	1,37	1,37	
	1,20	1,30	1,45	1,60	1,70	1,70	1,70	1,70	1,70	1,70	
	1,50	1,30	1,45	1,60	1,70	1,70	1,70	1,70	1,70	1,70	
	2,00	1,30	1,45	1,60	1,70	1,70	1,70	1,70	1,70	1,70	
$N_{R,II,k} =$	1,12	1,25	1,38	1,51	1,64	1,77	1,90	2,03	2,16	2,16	failure of component II see chapter 4.2.2

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.
The values indicated above, depending on the screw depth l_g , shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2
For $k_{mod} < 0,90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{t,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m^3 , max. 500 kg/m^3) and yield moment $M_{y,k} = 13830 \text{ Nmm}$.

Self-drilling screw	Annex 66
JT3-2-6,5xL JT6-2-6,5xL With hexagon head and seal washer $\geq \varnothing 16,0 \text{ mm}$	

		<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: timber – EN 14081</p>																																																																																																																																													
		<p>Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$</p> <p>Timber substructures for timber substructures following performance were determined</p> <p>$M_{y,k} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 32,5 \text{ mm}$</p>																																																																																																																																													
<table border="1"> <thead> <tr> <th>$l_g =$</th> <th>33,00</th> <th>36,00</th> <th>39,00</th> <th>42,00</th> <th>45,00</th> <th>48,00</th> <th>51,00</th> <th>54,00</th> <th>60,00</th> <th></th> </tr> </thead> <tbody> <tr> <td>$M_{t,nom} =$</td> <td colspan="10">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{h,i} =$</td> <td>0,50</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td>0,70</td> <td rowspan="8">failure of component I (bearing)</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> <td>0,96</td> </tr> <tr> <td></td> <td>0,70</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> <td>1,21</td> </tr> <tr> <td></td> <td>0,80</td> <td>1,30</td> <td>1,45</td> <td>1,47</td> <td>1,47</td> <td>1,47</td> <td>1,47</td> <td>1,47</td> <td>1,47</td> <td>1,47</td> </tr> <tr> <td></td> <td>0,90</td> <td>1,30</td> <td>1,45</td> <td>1,60</td> <td>1,63</td> <td>1,63</td> <td>1,63</td> <td>1,63</td> <td>1,63</td> <td>1,63</td> </tr> <tr> <td></td> <td>1,00</td> <td>1,30</td> <td>1,45</td> <td>1,60</td> <td>1,75</td> <td>1,78</td> <td>1,78</td> <td>1,78</td> <td>1,78</td> <td>1,78</td> </tr> <tr> <td></td> <td>1,20</td> <td>1,30</td> <td>1,45</td> <td>1,60</td> <td>1,75</td> <td>1,90</td> <td>2,05</td> <td>2,20</td> <td>2,22</td> <td>2,22</td> </tr> <tr> <td></td> <td>1,50</td> <td>1,30</td> <td>1,45</td> <td>1,60</td> <td>1,75</td> <td>1,90</td> <td>2,05</td> <td>2,20</td> <td>2,22</td> <td>2,22</td> </tr> <tr> <td></td> <td>2,00</td> <td>1,30</td> <td>1,45</td> <td>1,60</td> <td>1,75</td> <td>1,90</td> <td>2,05</td> <td>2,20</td> <td>2,22</td> <td>2,22</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>1,12</td> <td>1,25</td> <td>1,38</td> <td>1,51</td> <td>1,64</td> <td>1,77</td> <td>1,90</td> <td>2,03</td> <td>2,16</td> <td>failure of component II see chapter 4.2.2</td> </tr> </tbody> </table>											$l_g =$	33,00	36,00	39,00	42,00	45,00	48,00	51,00	54,00	60,00		$M_{t,nom} =$	—										$V_{R,k}$ for $t_{h,i} =$	0,50	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	failure of component I (bearing)		0,60	0,96	0,96	0,96	0,96	0,96	0,96	0,96	0,96	0,96		0,70	1,21	1,21	1,21	1,21	1,21	1,21	1,21	1,21	1,21		0,80	1,30	1,45	1,47	1,47	1,47	1,47	1,47	1,47	1,47		0,90	1,30	1,45	1,60	1,63	1,63	1,63	1,63	1,63	1,63		1,00	1,30	1,45	1,60	1,75	1,78	1,78	1,78	1,78	1,78		1,20	1,30	1,45	1,60	1,75	1,90	2,05	2,20	2,22	2,22		1,50	1,30	1,45	1,60	1,75	1,90	2,05	2,20	2,22	2,22		2,00	1,30	1,45	1,60	1,75	1,90	2,05	2,20	2,22	2,22	$N_{R,II,k} =$	1,12	1,25	1,38	1,51	1,64	1,77	1,90	2,03	2,16	failure of component II see chapter 4.2.2
$l_g =$	33,00	36,00	39,00	42,00	45,00	48,00	51,00	54,00	60,00																																																																																																																																						
$M_{t,nom} =$	—																																																																																																																																														
$V_{R,k}$ for $t_{h,i} =$	0,50	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	0,70	failure of component I (bearing)																																																																																																																																				
	0,60	0,96	0,96	0,96	0,96	0,96	0,96	0,96	0,96	0,96																																																																																																																																					
	0,70	1,21	1,21	1,21	1,21	1,21	1,21	1,21	1,21	1,21																																																																																																																																					
	0,80	1,30	1,45	1,47	1,47	1,47	1,47	1,47	1,47	1,47																																																																																																																																					
	0,90	1,30	1,45	1,60	1,63	1,63	1,63	1,63	1,63	1,63																																																																																																																																					
	1,00	1,30	1,45	1,60	1,75	1,78	1,78	1,78	1,78	1,78																																																																																																																																					
	1,20	1,30	1,45	1,60	1,75	1,90	2,05	2,20	2,22	2,22																																																																																																																																					
	1,50	1,30	1,45	1,60	1,75	1,90	2,05	2,20	2,22	2,22																																																																																																																																					
	2,00	1,30	1,45	1,60	1,75	1,90	2,05	2,20	2,22	2,22																																																																																																																																					
$N_{R,II,k} =$	1,12	1,25	1,38	1,51	1,64	1,77	1,90	2,03	2,16	failure of component II see chapter 4.2.2																																																																																																																																					
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p> <p>The values indicated above, depending on the screw depth l_g, shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2</p> <p>For $k_{mod} < 0,90$: failure of component I see right column and failure of component II see chapter 4.2.2 with $f_{1,k} = 80 \cdot 10^{-6} \cdot \rho_k^2$ (load carrying class 3, ρ_k in kg/m^3, max. 500 kg/m^3) and yield moment $M_{y,k} = 13830 \text{ Nmm}$.</p>																																																																																																																																															
Self-drilling screw																																																																																																																																															
JT3-2-6,5xL JT6-2-6,5xL With hexagon head and seal washer $\geq \varnothing 16,0 \text{ mm}$						Annex 67																																																																																																																																									

Materials

Fastener: stainless steel (1.4301 / 1.4567) – EN 10088
stainless steel (1.4401 / 1.4578) – EN 10088

Washer: stainless steel (1.4301) - EN 10088

Component I: S320GD or S350GD – EN 10346

Component II: structural timber – EN 14081

Drilling capacity $\Sigma t_i \leq 2,00$ mm

Timber substructures
performance determined with

$M_{y,Rk} = 9,742$ Nm
 $f_{ax,k} = 8,575$ N/mm² for $l_{ef} \geq 26$ mm

$l_g =$	32	38	42	48	52	58	62	68	72	78	82		
$M_{t,nom} =$	—												
$V_{R,k}$ for $t_{N,I} =$	0,50	—	—	—	—	—	—	—	—	—	—	—	bearing resistance of component I
	0,55	—	—	—	—	—	—	—	—	—	—	—	
	0,63	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	
	0,75	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	
	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	
	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	
	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	
	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	
	1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	
	1,75	—	—	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	—	—	
$N_{R,k}$ for $t_{N,I} =$	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	pull-tough resistance of component I
	0,55	1,30	1,56	1,64	1,64	1,64	1,64	1,64	1,64	1,64	1,64	1,64	
	0,63	1,30	1,56	1,81	2,06	2,31	2,40	2,40	2,40	2,40	2,40	2,40	
	0,75	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,10	3,10	3,10	
	0,88	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,80	
	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	
	1,13	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	
	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81	
	1,75	—	—	—	—	—	—	—	—	—	—	—	
	2,00	—	—	—	—	—	—	—	—	—	—	—	

The values listed above in dependence on the screw-in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350$ kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw

JT3-2-6,5 x L

JT6-2-6,5 x L

with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 69

Materials

Fastener: stainless steel (1.4529) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

Timber substructures
performance determined with

$M_{y,Rk} = 9,742 \text{ Nm}$
 $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{ef} \geq 26,0 \text{ mm}$

$t_{N,II}$ [mm]	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00												
d_{pd} [mm]	Ø 3,5	Ø 4,0	Ø 4,5				Ø 5,0	Ø 5,3												
$M_{t,nom}$	3 Nm						5 Nm													
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—	—	—	—								
	0,55	—	—	—	—	—	—	—	—	—	—	—								
	0,63	1,30	—	1,50	—	1,80	—	2,00	ac	2,30	ac	2,50	ac	2,90	ac	2,90	ac	2,90	ac	2,90
	0,75	1,40	—	1,60	—	1,90	—	2,20	ac	2,50	ac	2,70	ac	3,10	ac	3,10	ac	3,10	ac	3,10
	0,88	1,50	—	1,70	—	2,00	—	2,30	—	2,60	—	2,80	ac	3,20	ac	3,20	ac	3,20	ac	3,20
	1,00	1,50	—	1,80	—	2,10	—	2,50	—	2,80	—	3,10	—	3,60	—	3,60	—	3,60	—	3,60
	1,13	1,60	—	1,80	—	2,20	—	2,60	—	2,90	—	3,20	—	3,80	—	3,80	—	3,80	—	3,80
	1,25	1,60	—	1,90	—	2,30	—	2,70	—	3,00	—	3,30	—	4,00	—	4,00	—	4,00	—	4,00
	1,50	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	—	4,00	—	4,00	—	4,00
	1,75	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	—	4,00	—	4,00	—	4,00
	2,00	1,60	—	1,90	—	2,40	—	2,80	—	3,20	—	3,50	—	4,00	—	4,00	—	4,00	—	4,00
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,49	—	0,59	—	0,70	—	0,76	ac	0,86	ac	0,97	ac	1,13	ac	1,13	ac	1,13	ac	1,19
	0,55	0,61	—	0,75	—	0,89	—	0,95	ac	1,09	ac	1,23	ac	1,43	ac	1,43	ac	1,43	ac	1,50
	0,63	0,90	—	1,10	—	1,30	—	1,40	ac	1,60	ac	1,80	ac	2,10	ac	2,10	ac	2,10	ac	2,20
	0,75	0,90	—	1,10	—	1,30	—	1,40	ac	1,60	ac	1,80	ac	2,10	ac	2,10	ac	2,10	ac	2,80
	0,88	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	ac	2,10	ac	2,10	ac	2,10	ac	3,50
	1,00	0,90	—	1,10	—	1,30	—	1,40	—	1,60	—	1,80	—	2,20	—	2,20	—	2,20	—	4,20
	1,13	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	2,30	—	5,00
	1,25	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	2,30	—	5,90
	1,50	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	2,30	—	5,90
	1,75	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	2,30	—	5,90
	2,00	1,00	—	1,20	—	1,40	—	1,50	—	1,70	—	1,90	—	2,30	—	2,30	—	2,30	—	5,90

The values listed above in dependence on the screw-in length l_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

JA1-6,5 x L

with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$

Annex 70

Materials

Fastener: stainless steel (1.4529) - EN 10088
 Washer: stainless steel (1.4304) - EN 10088
 Component I: S280GD, S320GD or S350GD – EN 10346
 Component II: structural timber – EN 14081

Predrill diameter see table below

Timber substructures
 performance determined with

$M_{y,Rk} = 9,742 \text{ Nm}$
 $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{ef} \geq 26 \text{ mm}$

$l_g =$	26	31	36	41	46	51	56	61	66	71	76			
$d_{pd} [\text{mm}]$	Ø 4,5 mm													
$M_{t,nom} =$	—													
$V_{R,k}$ for $t_{N,I} =$	0,50	—	—	—	—	—	—	—	—	—	—	—	bearing resistance of component I	
	0,55	—	—	—	—	—	—	—	—	—	—	—		
	0,63	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		2,90
	0,75	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,10
	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,20
	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,60
	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,80
	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		4,00
	1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		4,00
	1,75	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		4,00
	2,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	
$N_{R,k}$ for $t_{N,I} =$	0,50	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	pull-through resistance of component I	
	0,55	1,30	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50		
	0,63	1,30	1,56	1,81	2,06	2,20	2,20	2,20	2,20	2,20	2,20	2,20		
	0,75	1,30	1,56	1,81	2,06	2,31	2,56	2,80	2,80	2,80	2,80	2,80		
	0,88	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,50	3,50		
	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,13	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,75	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	2,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		

The values listed above in dependence on the screw-in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw	Annex 71
JA1-6,5 x L with hexagon head and sealing washer $\geq \text{Ø } 16 \text{ mm}$	

Materials
Fastener: stainless steel (1.4529) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

Timber substructures
no performance determined

$t_{N,II}$ [mm]	1,25	1,50	2,00	3,00	4,00	6,00	$\geq 7,00$	—
d_{pd} [mm]	$\varnothing 5,0$		$\varnothing 5,3$			$\varnothing 5,5$	$\varnothing 5,7$	—
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,50 ac	2,70 ac	2,90 abcd	3,00 abcd	3,10 abcd	3,10 abcd	3,10 abcd
	0,75	2,60 ac	3,10 ac	3,30 abcd	3,60 abcd	3,70 abcd	3,70 abcd	3,70 abcd
	0,88	2,80 ac	3,20 ac	3,80 ac	4,10 abcd	4,30 abcd	4,40 abcd	4,40 abcd
	1,00	3,20 ac	3,60 ac	4,10 ac	4,80 ac	4,90 ac	5,10 ac	5,10 ac
	1,13	3,40 ac	4,00 ac	4,60 ac	5,40 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	3,60 ac	4,20 ac	5,00 ac	6,10 ac	6,30 ac	6,50 ac	6,50 ac
	1,50	3,70 ac	4,40 ac	5,70 ac	6,80 ac	7,10 ac	7,30 ac	7,30 ac
	1,75	3,70 ac	4,70 ac	6,20 ac	7,60 ac	7,70 ac	8,10 ac	8,10 ac
	2,00	5,00 —	6,50 —	8,80 —	10,3 —	10,6 —	11,3 —	11,3 —
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97 ac	1,35 ac	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd
	0,55	1,23 ac	1,71 ac	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd
	0,63	1,80 ac	2,50 ac	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd
	0,75	2,00 ac	2,60 ac	3,10 abcd	3,60 abcd	3,60 abcd	3,60 abcd	3,60 abcd
	0,88	2,00 ac	2,70 ac	3,30 ac	3,80 abcd	3,80 abcd	3,80 abcd	3,80 abcd
	1,00	2,00 ac	2,70 ac	3,40 ac	4,00 ac	4,00 ac	4,00 ac	4,00 ac
	1,13	2,00 ac	2,70 ac	3,60 ac	4,40 ac	4,40 ac	4,40 ac	4,40 ac
	1,25	2,00 ac	2,70 ac	3,60 ac	4,80 ac	4,90 ac	4,90 ac	4,90 ac
	1,50	2,00 ac	2,70 ac	3,60 ac	5,60 ac	5,90 ac	5,90 ac	5,90 ac
	1,75	2,00 ac	2,70 ac	3,60 ac	5,80 ac	6,90 ac	7,10 ac	7,10 ac
	2,00	2,00 —	2,70 —	3,60 —	6,00 —	7,30 —	7,60 —	7,60 —

JZ1 - 6,3 x L for components II with $t_{II} \geq 1,25$ mm
JB1 - 6,3 x L for components II with $t_{II} \leq 2,00$ mm

Self tapping screw

JZ1-6,3 x L
JB1-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 72

Materials
Fastener: stainless steel (1.4529) - EN 10088
Washer: stainless steel (1.4301) - EN 10088
Component I: S280GD, S320GD or S350GD - EN 10346
Component II: S235 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

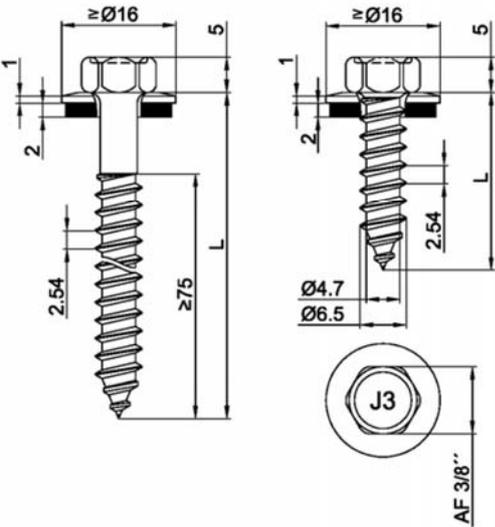
Timber substructures
no performance determined

$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	$\geq 7,00$	—
d_{pd} [mm]	—			$\varnothing 5,3$		$\varnothing 5,5$	$\varnothing 5,7$	—
$M_{t,nom}$	—			5 Nm				—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	—	—	3,40 abcd	3,40 abcd	3,40 abcd	3,40 abcd
	0,75	—	—	—	4,20 ac	4,20 ac	4,20 ac	4,20 ac
	0,88	—	—	—	4,70 ac	4,70 ac	4,70 ac	4,70 ac
	1,00	—	—	—	5,00 ac	5,00 ac	5,10 ac	5,10 ac
	1,13	—	—	—	5,60 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	—	—	—	6,30 —	6,40 —	6,50 ac	6,50 ac
	1,50	—	—	—	7,10 —	7,20 —	7,30 —	7,30 —
	1,75	—	—	—	7,70 —	7,90 —	8,10 —	8,10 —
2,00	—	—	—	7,70 —	7,90 —	8,10 —	8,10 —	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	1,67 abcd	1,67 abcd	1,67 abcd	1,67 abcd	—
	0,55	—	—	2,11 abcd	2,11 abcd	2,11 abcd	2,11 abcd	—
	0,63	—	—	3,10 abcd	3,10 abcd	3,10 abcd	3,10 abcd	—
	0,75	—	—	4,00 ac	4,00 ac	4,00 ac	4,00 ac	—
	0,88	—	—	4,40 ac	4,40 ac	4,40 ac	4,40 ac	—
	1,00	—	—	4,60 ac	4,60 ac	4,60 ac	4,60 ac	—
	1,13	—	—	5,10 ac	5,10 ac	5,10 ac	5,10 ac	—
	1,25	—	—	5,10 —	5,10 —	5,10 ac	5,10 ac	—
	1,50	—	—	5,90 —	5,90 —	5,90 —	5,90 —	—
	1,75	—	—	6,90 —	6,90 —	7,10 —	7,10 —	—
2,00	—	—	8,80 —	11,6 —	13,4 —	13,4 —	—	

Self tapping screw

JZ1-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 22$ mm

Annex 73



Materials

Fastener: stainless steel (1.4301) - EN 10088
 Washer: stainless steel (1.4301) - EN 10088
 Component I: S280GD, S320GD or S350GD - EN 10346
 Component II: S235 - EN 10025-1
 S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

Timber substructures
 performance determined with

$M_{y,Rk} = 9,742 \text{ Nm}$
 $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{ef} \geq 26,0 \text{ mm}$

$t_{N,II}$ [mm]	0,63	0,75	0,88	1,00	1,13	1,25	1,50	2,00		
d_{pd} [mm]	Ø 3,5	Ø 4,0	Ø 4,5				Ø 5,0	Ø 5,3		
$M_{t,nom}$	3 Nm						5 Nm			
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—	—	
	0,55	—	—	—	—	—	—	—	—	
	0,63	1,30	—	1,50	—	1,80	—	2,00	ac	
	0,75	1,40	—	1,60	—	1,90	—	2,20	ac	
	0,88	1,50	—	1,70	—	2,00	—	2,30	—	
	1,00	1,50	—	1,80	—	2,10	—	2,50	—	
	1,13	1,60	—	1,80	—	2,20	—	2,60	—	
	1,25	1,60	—	1,90	—	2,30	—	2,70	—	
	1,50	1,60	—	1,90	—	2,40	—	2,80	—	
	1,75	1,60	—	1,90	—	2,40	—	2,80	—	
	2,00	1,60	—	1,90	—	2,40	—	2,80	—	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,49	—	0,59	—	0,70	—	0,76	ac	
	0,55	0,61	—	0,75	—	0,89	—	0,95	ac	
	0,63	0,90	—	1,10	—	1,30	—	1,40	ac	
	0,75	0,90	—	1,10	—	1,30	—	1,40	ac	
	0,88	0,90	—	1,10	—	1,30	—	1,40	—	
	1,00	0,90	—	1,10	—	1,30	—	1,40	—	
	1,13	1,00	—	1,20	—	1,40	—	1,50	—	
	1,25	1,00	—	1,20	—	1,40	—	1,50	—	
	1,50	1,00	—	1,20	—	1,40	—	1,50	—	
	1,75	1,00	—	1,20	—	1,40	—	1,50	—	
	2,00	1,00	—	1,20	—	1,40	—	1,50	—	

The values listed above in dependence on the screw-in length l_{ef} are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_a = 350 \text{ kg/m}^3$). For other combinations of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

JA3-6,5 x L

with hexagon head and sealing washer $\geq \text{Ø}16 \text{ mm}$

Annex 74

Materials
 Fastener: stainless steel (1.4301 / 1.4567) - EN 10088
 Washer: stainless steel (1.4301) - EN 10088
 Component I: S280GD, S320GD or S350GD – EN 10346
 Component II: structural timber – EN 14081

Predrill diameter see table below

Timber substructures
 performance determined with

$M_{y,Rk} = 9,742 \text{ Nm}$
 $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{ef} \geq 26 \text{ mm}$

$l_g =$	26	31	36	41	46	51	56	61	66	71	76			
$d_{pd} [\text{mm}]$	Ø 4,5 mm													
$M_{t,nom} =$	—													
$V_{R,k}$ for $t_{N,I} =$	0,50	—	—	—	—	—	—	—	—	—	—	—	bearing resistance of component I	
	0,55	—	—	—	—	—	—	—	—	—	—	—		
	0,63	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		2,90
	0,75	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,10
	0,88	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,20
	1,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,60
	1,13	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		3,80
	1,25	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		4,00
	1,50	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		4,00
	1,75	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67		4,00
	2,00	2,04	2,10	2,17	2,23	2,29	2,35	2,42	2,48	2,54	2,60	2,67	4,00	
$N_{R,k}$ for $t_{N,I} =$	0,50	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	1,19	pull-through resistance of component I	
	0,55	1,30	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50		
	0,63	1,30	1,56	1,81	2,06	2,20	2,20	2,20	2,20	2,20	2,20	2,20		
	0,75	1,30	1,56	1,81	2,06	2,31	2,56	2,80	2,80	2,80	2,80	2,80		
	0,88	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,50	3,50		
	1,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,13	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,25	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,50	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	1,75	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		
	2,00	1,30	1,56	1,81	2,06	2,31	2,56	2,81	3,06	3,31	3,56	3,81		

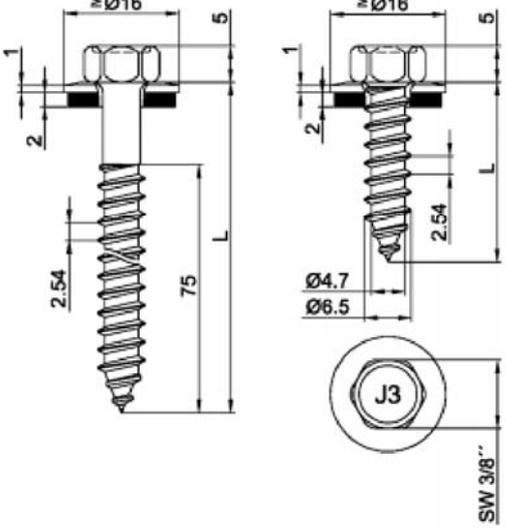
The values listed above in dependence on the screw-in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw	Annex 75
JA3-6,5 x L with hexagon head and sealing washer $\geq \text{Ø } 16 \text{ mm}$	

		<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573 timber – EN 14081</p>																																																																																																																																																																							
		<p>Pre-drill diameter see table</p> <p>Timber substructures for timber substructures following performance were determined</p> <p>$M_{y,k} = 9,742 \text{ Nm}$ $f_{ax,k} = 8,575 \text{ N/mm}^2$ for $l_{eff} \geq 32,5 \text{ mm}$</p>																																																																																																																																																																							
<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>0,50</td> <td>0,70</td> <td>0,90</td> <td>1,00</td> <td>1,20</td> <td>1,50</td> <td>2,00</td> <td>2,50</td> <td>3,00</td> <td colspan="2"></td> </tr> <tr> <td>$d_{pd} =$</td> <td colspan="3">Ø 4,0</td> <td colspan="6">Ø 4,5</td> <td colspan="2">Ø 5,0</td> <td></td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="11">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,65 -</td> <td>0,82 -</td> <td>0,92 ac</td> <td>0,92 ac</td> <td>0,92 abcd</td> <td>0,92 abcd</td> <td>0,92</td> <td rowspan="8">failure of component I (bearing)</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,65 -</td> <td>0,82 -</td> <td>1,00 -</td> <td>1,15 ac</td> <td>1,15 ac</td> <td>1,15 ac</td> <td>1,15</td> </tr> <tr> <td></td> <td>0,70</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,65 -</td> <td>0,82 -</td> <td>1,07 -</td> <td>1,38 -</td> <td>1,38 ac</td> <td>1,38 ac</td> <td>1,38</td> </tr> <tr> <td></td> <td>0,80</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,65 -</td> <td>0,82 -</td> <td>1,15 -</td> <td>1,46 -</td> <td>1,61 -</td> <td>1,61 ac</td> <td>1,61</td> </tr> <tr> <td></td> <td>0,90</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,65 -</td> <td>0,82 -</td> <td>1,27 -</td> <td>1,61 -</td> <td>1,77 -</td> <td>1,84 -</td> <td>1,84</td> </tr> <tr> <td></td> <td>1,00</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,67 -</td> <td>0,82 -</td> <td>1,38 -</td> <td>1,77 -</td> <td>1,92 -</td> <td>2,07 -</td> <td>2,07</td> </tr> <tr> <td></td> <td>1,20</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,67 -</td> <td>0,88 -</td> <td>1,61 -</td> <td>1,84 -</td> <td>2,15 -</td> <td>2,38 -</td> <td>2,38</td> </tr> <tr> <td></td> <td>1,50</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,67 -</td> <td>0,88 -</td> <td>2,15 -</td> <td>2,30 -</td> <td>2,53 -</td> <td>2,76 -</td> <td>2,76</td> </tr> <tr> <td></td> <td>2,00</td> <td>0,24 -</td> <td>0,40 -</td> <td>0,57 -</td> <td>0,67 -</td> <td>0,88 -</td> <td>2,15 -</td> <td>2,30 -</td> <td>2,53 -</td> <td>2,76 -</td> <td>2,76</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>-</td> <td>-</td> <td>0,36</td> <td>0,42</td> <td>0,55</td> <td>0,77</td> <td>1,23</td> <td>1,77</td> <td>2,38</td> <td colspan="2">failure of component II see chapter 4.2.2</td> </tr> </table>												$t_{N,II} =$	0,50	0,70	0,90	1,00	1,20	1,50	2,00	2,50	3,00			$d_{pd} =$	Ø 4,0			Ø 4,5						Ø 5,0			$M_{t,nom} =$	—											$V_{R,k}$ for $t_{N,I} =$	0,50	0,24 -	0,40 -	0,57 -	0,65 -	0,82 -	0,92 ac	0,92 ac	0,92 abcd	0,92 abcd	0,92	failure of component I (bearing)		0,60	0,24 -	0,40 -	0,57 -	0,65 -	0,82 -	1,00 -	1,15 ac	1,15 ac	1,15 ac	1,15		0,70	0,24 -	0,40 -	0,57 -	0,65 -	0,82 -	1,07 -	1,38 -	1,38 ac	1,38 ac	1,38		0,80	0,24 -	0,40 -	0,57 -	0,65 -	0,82 -	1,15 -	1,46 -	1,61 -	1,61 ac	1,61		0,90	0,24 -	0,40 -	0,57 -	0,65 -	0,82 -	1,27 -	1,61 -	1,77 -	1,84 -	1,84		1,00	0,24 -	0,40 -	0,57 -	0,67 -	0,82 -	1,38 -	1,77 -	1,92 -	2,07 -	2,07		1,20	0,24 -	0,40 -	0,57 -	0,67 -	0,88 -	1,61 -	1,84 -	2,15 -	2,38 -	2,38		1,50	0,24 -	0,40 -	0,57 -	0,67 -	0,88 -	2,15 -	2,30 -	2,53 -	2,76 -	2,76		2,00	0,24 -	0,40 -	0,57 -	0,67 -	0,88 -	2,15 -	2,30 -	2,53 -	2,76 -	2,76	$N_{R,II,k} =$	-	-	0,36	0,42	0,55	0,77	1,23	1,77	2,38	failure of component II see chapter 4.2.2	
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JA3-6,5xL-E16 With hexagon head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$							Annex 76																																																																																																																																																																		

		<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573 timber – EN 14081</p>																																																																																																																																																																																																																																																																																
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<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting. The values indicated above, depending on the screw depth l_g, shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg / m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2 Timber substructures (component II): predrilling the holes with $\text{Ø } 4,80 \text{ mm}$ is necessary.</p>																																																																																																																																																																																																																																																																																		
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	0,90	0,45 -	0,58 -	0,72 -	0,85 -	1,12 -	1,65 -	2,10 -	2,30 -	2,40 -	2,40																																																																																																																																																												
	1,00	0,45 -	0,58 -	0,72 -	0,88 -	1,12 -	1,80 -	2,30 -	2,50 -	2,70 -	2,70																																																																																																																																																												
	1,20	0,45 -	0,58 -	0,72 -	0,88 -	1,20 -	2,10 -	2,40 -	2,80 -	3,10 -	3,10																																																																																																																																																												
	1,50	0,45 -	0,58 -	0,72 -	0,88 -	1,23 -	2,80 -	3,00 -	3,30 -	3,60 -	3,60																																																																																																																																																												
	2,00	0,45 -	0,58 -	0,72 -	0,88 -	1,23 -	2,80 -	3,00 -	3,30 -	3,60 -	3,60																																																																																																																																																												
$N_{F,II,k} =$	1,00	1,20	1,40	1,50	1,90	2,30	2,30	2,30	2,30	2,30	failure of component II see chapter 4.2.2																																																																																																																																																												
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p> <p>The values indicated above, depending on the screw depth l_g, shall apply to $k_{mod} = 0,90$ and the timber strength class C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and strength classes see chapter 4.2.2</p> <p>Timber substructures (component II): predrilling the holes with $\text{Ø } 4,80 \text{ mm}$ is necessary.</p>																																																																																																																																																																							
Self-tapping screw																																																																																																																																																																							
JA3-6,5xL-E16						Annex 79																																																																																																																																																																	
With hexagon head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$																																																																																																																																																																							

<p>Typ JB</p>	<p>Materials</p> <p>Fastener: stainless steel (1.4301) - EN 10088 Washer: stainless steel (1.4301) - EN 10088 Component I: S280GD, S320GD or S350GD - EN 10346 Component II: S235, S275, S355 - EN 10025-1 S280GD, S320GD or S350GD - EN 10346</p>
	<p>Predrill diameter see table below</p>
	<p>Timber substructures no performance determined</p>

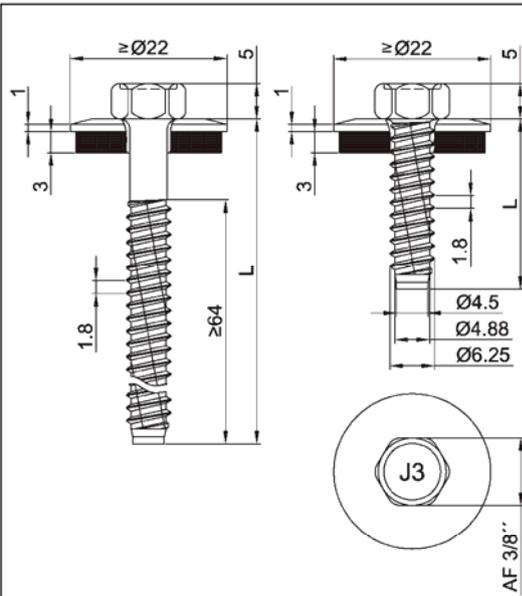
$t_{N,II}$ [mm]	1,25	1,50	2,00	3,00	4,00	6,00	$\geq 7,00$	—
d_{pd} [mm]	$\varnothing 5,0$		$\varnothing 5,3$			$\varnothing 5,5$	$\varnothing 5,7$	—
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,50 ac	2,70 ac	2,90 abcd	3,00 abcd	3,10 abcd	3,10 abcd	3,10 abcd
	0,75	2,60 ac	3,10 ac	3,30 abcd	3,60 abcd	3,70 abcd	3,70 abcd	3,70 abcd
	0,88	2,80 ac	3,20 ac	3,80 ac	4,10 abcd	4,30 abcd	4,40 abcd	4,40 abcd
	1,00	3,20 ac	3,60 ac	4,10 ac	4,80 ac	4,90 ac	5,10 ac	5,10 ac
	1,13	3,40 ac	4,00 ac	4,60 ac	5,40 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	3,60 ac	4,20 ac	5,00 ac	6,10 ac	6,30 ac	6,50 ac	6,50 ac
	1,50	3,70 ac	4,40 ac	5,70 ac	6,80 ac	7,10 ac	7,30 ac	7,30 ac
	1,75	3,70 ac	4,70 ac	6,20 ac	7,60 ac	7,70 ac	8,10 ac	8,10 ac
	2,00	5,00 —	6,50 —	8,80 —	10,3 —	10,6 —	11,3 —	11,3 —
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97 ac	1,35 ac	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd
	0,55	1,23 ac	1,71 ac	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd
	0,63	1,80 ac	2,50 ac	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd
	0,75	2,00 ac	2,60 ac	3,10 abcd	3,60 abcd	3,60 abcd	3,60 abcd	3,60 abcd
	0,88	2,00 ac	2,70 ac	3,30 ac	3,80 abcd	3,80 abcd	3,80 abcd	3,80 abcd
	1,00	2,00 ac	2,70 ac	3,40 ac	4,00 ac	4,00 ac	4,00 ac	4,00 ac
	1,13	2,00 ac	2,70 ac	3,60 ac	4,40 ac	4,40 ac	4,40 ac	4,40 ac
	1,25	2,00 ac	2,70 ac	3,60 ac	4,80 ac	4,90 ac	4,90 ac	4,90 ac
	1,50	2,00 ac	2,70 ac	3,60 ac	5,60 ac	5,90 ac	5,90 ac	5,90 ac
	1,75	2,00 ac	2,70 ac	3,60 ac	5,80 ac	6,90 ac	7,10 ac	7,10 ac
	2,00	2,00 —	2,70 —	3,60 —	6,00 —	7,30 —	7,60 —	7,60 —

JZ3 - 6,3 x L for components II with $t_{II} \geq 1,25$ mm
JB3 - 6,3 x L for components II with $t_{II} \leq 2,00$ mm

Self tapping screw

JZ3-6,3 x L
JB3-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 80



Materials

Fastener: stainless steel (1.4301) - EN 10088
 Washer: stainless steel (1.4301) - EN 10088
 Component I: S280GD, S320GD or S350GD - EN 10346
 Component II: S235, S275, S355 - EN 10025-1
 S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

Timber substructures

no performance determined

$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	$\geq 7,00$	—
d_{pd} [mm]	—			$\varnothing 5,3$		$\varnothing 5,5$	$\varnothing 5,7$	—
$M_{t,nom}$	—			5 Nm				—
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	—	—	3,40 abcd	3,40 abcd	3,40 abcd	3,40 abcd
	0,75	—	—	—	4,20 ac	4,20 ac	4,20 ac	4,20 ac
	0,88	—	—	—	4,70 ac	4,70 ac	4,70 ac	4,70 ac
	1,00	—	—	—	5,00 ac	5,00 ac	5,10 ac	5,10 ac
	1,13	—	—	—	5,60 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	—	—	—	6,30 —	6,40 —	6,50 ac	6,50 ac
	1,50	—	—	—	7,10 —	7,20 —	7,30 —	7,30 —
	1,75	—	—	—	7,70 —	7,90 —	8,10 —	8,10 —
2,00	—	—	—	7,70 —	7,90 —	8,10 —	8,10 —	
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	1,67 abcd	1,67 abcd	1,67 abcd	1,67 abcd	—
	0,55	—	—	2,11 abcd	2,11 abcd	2,11 abcd	2,11 abcd	—
	0,63	—	—	3,10 abcd	3,10 abcd	3,10 abcd	3,10 abcd	—
	0,75	—	—	4,00 ac	4,00 ac	4,00 ac	4,00 ac	—
	0,88	—	—	4,40 ac	4,40 ac	4,40 ac	4,40 ac	—
	1,00	—	—	4,60 ac	4,60 ac	4,60 ac	4,60 ac	—
	1,13	—	—	5,10 ac	5,10 ac	5,10 ac	5,10 ac	—
	1,25	—	—	5,10 —	5,10 —	5,10 ac	5,10 ac	—
	1,50	—	—	5,90 —	5,90 —	5,90 —	5,90 —	—
	1,75	—	—	6,90 —	6,90 —	7,10 —	7,10 —	—
2,00	—	—	8,80 —	11,6 —	13,4 —	13,4 —	—	

Self tapping screw

JZ3-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 22$ mm

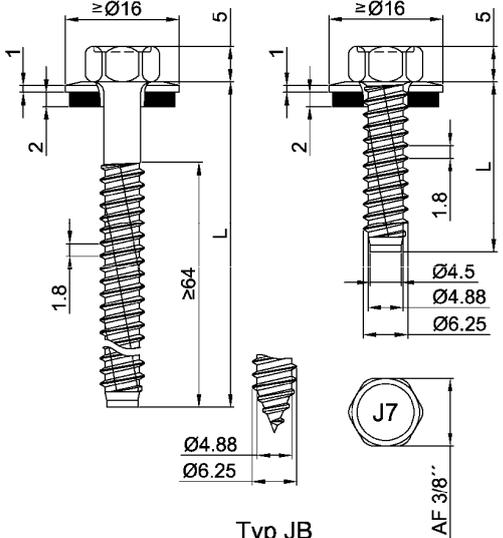
Annex 81

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p>																																																																																																																																																																																					
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<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>1,20</td> <td>1,50</td> <td>2,00</td> <td>2,50</td> <td>3,00</td> <td>4,00</td> <td>5,00</td> <td>6,00</td> <td>$\geq 7,00$</td> <td colspan="3"></td> </tr> <tr> <td>$d_{pd} =$</td> <td colspan="4">$\text{Ø } 4,5$</td> <td>$\text{Ø } 5,0$</td> <td colspan="3">$\text{Ø } 5,3$</td> <td>$\text{Ø } 5,5$</td> <td colspan="3"></td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="12">—</td> </tr> <tr> <td rowspan="8">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>0,79</td> <td>-</td> <td>0,84</td> <td>ac</td> <td>0,84</td> <td>ac</td> <td>0,84</td> <td>abcd</td> <td>0,84</td> <td>abcd</td> <td>0,84</td> <td>abcd</td> </tr> <tr> <td>0,60</td> <td>0,79</td> <td>-</td> <td>0,96</td> <td>-</td> <td>1,07</td> <td>ac</td> <td>1,07</td> <td>ac</td> <td>1,07</td> <td>abcd</td> <td>1,07</td> <td>abcd</td> </tr> <tr> <td>0,70</td> <td>0,79</td> <td>-</td> <td>1,07</td> <td>-</td> <td>1,30</td> <td>-</td> <td>1,30</td> <td>ac</td> <td>1,30</td> <td>abcd</td> <td>1,30</td> <td>abcd</td> </tr> <tr> <td>0,80</td> <td>0,79</td> <td>-</td> <td>1,15</td> <td>-</td> <td>1,46</td> <td>-</td> <td>1,53</td> <td>-</td> <td>1,53</td> <td>ac</td> <td>1,53</td> <td>abcd</td> </tr> <tr> <td>0,90</td> <td>0,79</td> <td>-</td> <td>1,27</td> <td>-</td> <td>1,53</td> <td>-</td> <td>1,73</td> <td>-</td> <td>1,77</td> <td>ac</td> <td>1,77</td> <td>abcd</td> </tr> <tr> <td>1,00</td> <td>0,80</td> <td>-</td> <td>1,38</td> <td>-</td> <td>1,61</td> <td>-</td> <td>1,92</td> <td>-</td> <td>2,00</td> <td>ac</td> <td>2,00</td> <td>abcd</td> </tr> <tr> <td>1,20</td> <td>0,87</td> <td>-</td> <td>1,61</td> <td>-</td> <td>1,84</td> <td>-</td> <td>2,07</td> <td>-</td> <td>2,30</td> <td>ac</td> <td>2,38</td> <td>abcd</td> </tr> <tr> <td>1,50</td> <td>0,87</td> <td>-</td> <td>2,15</td> <td>-</td> <td>2,30</td> <td>-</td> <td>2,53</td> <td>-</td> <td>2,69</td> <td>ac</td> <td>3,07</td> <td>ac</td> </tr> <tr> <td>2,00</td> <td>0,87</td> <td>-</td> <td>2,15</td> <td>-</td> <td>2,30</td> <td>-</td> <td>2,53</td> <td>-</td> <td>2,69</td> <td>-</td> <td>3,07</td> <td>-</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,54</td> <td>0,77</td> <td>1,23</td> <td>1,77</td> <td>2,38</td> <td>3,68</td> <td>5,30</td> <td>7,06</td> <td>7,06</td> <td colspan="3"></td> </tr> </table>													$t_{N,II} =$	1,20	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$				$d_{pd} =$	$\text{Ø } 4,5$				$\text{Ø } 5,0$	$\text{Ø } 5,3$			$\text{Ø } 5,5$				$M_{t,nom} =$	—												$V_{R,k}$ for $t_{N,I} =$	0,50	0,79	-	0,84	ac	0,84	ac	0,84	abcd	0,84	abcd	0,84	abcd	0,60	0,79	-	0,96	-	1,07	ac	1,07	ac	1,07	abcd	1,07	abcd	0,70	0,79	-	1,07	-	1,30	-	1,30	ac	1,30	abcd	1,30	abcd	0,80	0,79	-	1,15	-	1,46	-	1,53	-	1,53	ac	1,53	abcd	0,90	0,79	-	1,27	-	1,53	-	1,73	-	1,77	ac	1,77	abcd	1,00	0,80	-	1,38	-	1,61	-	1,92	-	2,00	ac	2,00	abcd	1,20	0,87	-	1,61	-	1,84	-	2,07	-	2,30	ac	2,38	abcd	1,50	0,87	-	2,15	-	2,30	-	2,53	-	2,69	ac	3,07	ac	2,00	0,87	-	2,15	-	2,30	-	2,53	-	2,69	-	3,07	-	$N_{R,II,k} =$	0,54	0,77	1,23	1,77	2,38	3,68	5,30	7,06	7,06			
$t_{N,II} =$	1,20	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$																																																																																																																																																																													
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<p>Self-tapping screw</p>										<p>Annex 82</p>																																																																																																																																																																												
<p>JZ3-6,3xL-E16 JB3-6,3xL-E16 With hexagon head and seal washer $\geq \text{Ø } 16,0 \text{ mm}$</p>																																																																																																																																																																																						

<p>Typ JB</p>	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p>																																																																																																																																																																											
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<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>1,20</td> <td>1,50</td> <td>2,00</td> <td>2,50</td> <td>3,00</td> <td>4,00</td> <td>5,00</td> <td>6,00</td> <td>$\geq 7,00$</td> <td colspan="3"></td> </tr> <tr> <td>$d_{pd} =$</td> <td colspan="4">$\varnothing 4,5$</td> <td>$\varnothing 5,0$</td> <td colspan="3">$\varnothing 5,3$</td> <td>$\varnothing 5,5$</td> <td colspan="3"></td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="12">—</td> </tr> <tr> <td rowspan="8">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>1,03 -</td> <td>1,10 ac</td> <td>1,10 ac</td> <td>1,10 abcd</td> </tr> <tr> <td>0,60</td> <td>1,03 -</td> <td>1,25 ac</td> <td>1,40 ac</td> <td>1,40 ac</td> <td>1,40 ac</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 abcd</td> </tr> <tr> <td>0,70</td> <td>1,03 -</td> <td>1,40 -</td> <td>1,70 -</td> <td>1,70 ac</td> <td>1,70 ac</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 abcd</td> </tr> <tr> <td>0,80</td> <td>1,03 -</td> <td>1,50 -</td> <td>1,90 -</td> <td>2,00 -</td> <td>2,00 -</td> <td>2,00 ac</td> <td>2,00 abcd</td> <td>2,00 abcd</td> <td>2,00 abcd</td> <td>2,00 abcd</td> <td>2,00 abcd</td> </tr> <tr> <td>0,90</td> <td>1,03 -</td> <td>1,65 -</td> <td>2,00 -</td> <td>2,25 -</td> <td>2,30 -</td> <td>2,30 ac</td> <td>2,30 ac</td> <td>2,30 abcd</td> <td>2,30 abcd</td> <td>2,30 abcd</td> <td>2,30 abcd</td> </tr> <tr> <td>1,00</td> <td>1,04 -</td> <td>1,80 -</td> <td>2,10 -</td> <td>2,50 -</td> <td>2,60 -</td> <td>2,60 ac</td> <td>2,60 ac</td> <td>2,60 abcd</td> <td>2,60 abcd</td> <td>2,60 abcd</td> <td>2,60 abcd</td> </tr> <tr> <td>1,20</td> <td>1,14 -</td> <td>2,10 -</td> <td>2,40 -</td> <td>2,70 -</td> <td>3,00 -</td> <td>3,10 ac</td> <td>3,10 ac</td> <td>3,10 abcd</td> <td>3,10 abcd</td> <td>3,10 abcd</td> <td>3,10 abcd</td> </tr> <tr> <td>1,50</td> <td>1,14 -</td> <td>2,80 -</td> <td>3,00 -</td> <td>3,30 -</td> <td>3,50 -</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 ac</td> </tr> <tr> <td>2,00</td> <td>1,14 -</td> <td>2,80 -</td> <td>3,00 -</td> <td>3,30 -</td> <td>3,50 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,33 -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,71</td> <td>1,00</td> <td>1,60</td> <td>2,30</td> <td>3,10</td> <td>4,80</td> <td>6,90</td> <td>9,20</td> <td>9,20</td> <td colspan="2"></td> </tr> </table>													$t_{N,II} =$	1,20	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$				$d_{pd} =$	$\varnothing 4,5$				$\varnothing 5,0$	$\varnothing 5,3$			$\varnothing 5,5$				$M_{t,nom} =$	—												$V_{R,k}$ for $t_{N,I} =$	0,50	1,03 -	1,10 ac	1,10 ac	1,10 abcd	0,60	1,03 -	1,25 ac	1,40 ac	1,40 ac	1,40 ac	1,40 abcd	0,70	1,03 -	1,40 -	1,70 -	1,70 ac	1,70 ac	1,70 abcd	0,80	1,03 -	1,50 -	1,90 -	2,00 -	2,00 -	2,00 ac	2,00 abcd	0,90	1,03 -	1,65 -	2,00 -	2,25 -	2,30 -	2,30 ac	2,30 ac	2,30 abcd	2,30 abcd	2,30 abcd	2,30 abcd	1,00	1,04 -	1,80 -	2,10 -	2,50 -	2,60 -	2,60 ac	2,60 ac	2,60 abcd	2,60 abcd	2,60 abcd	2,60 abcd	1,20	1,14 -	2,10 -	2,40 -	2,70 -	3,00 -	3,10 ac	3,10 ac	3,10 abcd	3,10 abcd	3,10 abcd	3,10 abcd	1,50	1,14 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 ac	2,00	1,14 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 -	4,00 -	4,00 -	4,00 -	4,00 -	4,33 -	$N_{R,II,k} =$	0,71	1,00	1,60	2,30	3,10	4,80	6,90	9,20	9,20																												
$t_{N,II} =$	1,20	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$																																																																																																																																																																			
$d_{pd} =$	$\varnothing 4,5$				$\varnothing 5,0$	$\varnothing 5,3$			$\varnothing 5,5$																																																																																																																																																																			
$M_{t,nom} =$	—																																																																																																																																																																											
$V_{R,k}$ for $t_{N,I} =$	0,50	1,03 -	1,10 ac	1,10 ac	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd																																																																																																																																																																
	0,60	1,03 -	1,25 ac	1,40 ac	1,40 ac	1,40 ac	1,40 abcd	1,40 abcd	1,40 abcd	1,40 abcd	1,40 abcd	1,40 abcd																																																																																																																																																																
	0,70	1,03 -	1,40 -	1,70 -	1,70 ac	1,70 ac	1,70 abcd	1,70 abcd	1,70 abcd	1,70 abcd	1,70 abcd	1,70 abcd																																																																																																																																																																
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	0,90	1,03 -	1,65 -	2,00 -	2,25 -	2,30 -	2,30 ac	2,30 ac	2,30 abcd	2,30 abcd	2,30 abcd	2,30 abcd																																																																																																																																																																
	1,00	1,04 -	1,80 -	2,10 -	2,50 -	2,60 -	2,60 ac	2,60 ac	2,60 abcd	2,60 abcd	2,60 abcd	2,60 abcd																																																																																																																																																																
	1,20	1,14 -	2,10 -	2,40 -	2,70 -	3,00 -	3,10 ac	3,10 ac	3,10 abcd	3,10 abcd	3,10 abcd	3,10 abcd																																																																																																																																																																
	1,50	1,14 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 ac	4,00 ac	4,00 ac	4,00 ac	4,00 ac	4,00 ac																																																																																																																																																																
2,00	1,14 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 -	4,00 -	4,00 -	4,00 -	4,00 -	4,33 -																																																																																																																																																																	
$N_{R,II,k} =$	0,71	1,00	1,60	2,30	3,10	4,80	6,90	9,20	9,20																																																																																																																																																																			
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																																																																																																																																												
<p>Self-tapping screw</p>																																																																																																																																																																												
<p>JZ3-6,3xL-E16 JB3-6,3xL-E16 With hexagon head and seal washer $\geq \varnothing 16,0 \text{ mm}$</p>																																																																																																																																																																												
<p>Annex 83</p>																																																																																																																																																																												

<p>Typ JB</p>	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573 Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p> <p>Pre-drill diameter see table</p> <p>Timber substructures for timber substructures no performance determined</p>												
$t_{N,II} =$	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$				
$d_{pd} =$	$\varnothing 5,0$		$\varnothing 5,3$					$\varnothing 5,5$	$\varnothing 5,7$				
$M_{t,nom} =$	—												
$V_{R,k}$ for $t_{N,I} =$	0,50	0,83	-	0,84	ac	0,84	ac	0,84	abcd	0,84	-		
	0,60	0,83	-	0,96	-	1,07	ac	1,07	ac	1,07	abcd	1,07	-
	0,70	0,83	-	1,07	-	1,30	-	1,30	ac	1,30	abcd	1,30	abcd
	0,80	0,83	-	1,15	-	1,46	-	1,53	-	1,53	ac	1,53	abcd
	0,90	0,83	-	1,27	-	1,53	-	1,73	-	1,77	ac	1,77	abcd
	1,00	0,83	-	1,38	-	1,61	-	1,92	-	2,00	ac	2,00	abcd
	1,20	0,90	-	1,61	-	1,84	-	2,07	-	2,30	ac	2,38	abcd
	1,50	0,93	-	2,15	-	2,30	-	2,53	-	2,69	ac	3,07	ac
	2,00	0,93	-	2,15	-	2,30	-	2,53	-	2,69	-	3,07	-
$N_{R,II,k} =$	2,00	2,70	3,60	3,60	6,00	7,30	7,45	7,60	7,60				
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>													
Self-tapping screw													
<p style="text-align: center;">JZ3-6,3xL-E16 JB3-6,3xL-E16 With hexagon head and seal washer $\geq \varnothing 16,0 \text{ mm}$</p> <p style="text-align: right; font-weight: bold; font-size: 1.2em;">Annex 84</p>													

<p>Typ JB</p>	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088 Washer: stainless steel (1.4301) – EN 10088 with vulcanised EPDM seal</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573 Component II: S235 – EN 10025-1 S280GD, S320GD – EN 10346</p>																																																																																																																																																													
	<p>Pre-drill diameter see table</p>																																																																																																																																																													
<p>Timber substructures</p> <p>for timber substructures no performance determined</p>																																																																																																																																																														
<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>1,25</td> <td>1,50</td> <td>2,00</td> <td>2,50</td> <td>3,00</td> <td>4,00</td> <td>5,00</td> <td>6,00</td> <td>$\geq 7,00$</td> <td></td> <td></td> </tr> <tr> <td>$d_{pd} =$</td> <td colspan="2">$\varnothing 5,0$</td> <td colspan="5">$\varnothing 5,3$</td> <td>$\varnothing 5,5$</td> <td>$\varnothing 5,7$</td> <td></td> <td></td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="11">—</td> </tr> <tr> <td rowspan="8">$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>1,08 -</td> <td>1,10 ac</td> <td>1,10 ac</td> <td>1,10 abcd</td> <td>1,10 abcd</td> <td>1,10 abcd</td> <td>1,10 abcd</td> <td>1,10 abcd</td> <td>1,10 abcd</td> <td>1,10 -</td> </tr> <tr> <td>0,60</td> <td>1,08 -</td> <td>1,25 -</td> <td>1,40 ac</td> <td>1,40 ac</td> <td>1,40 ac</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 abcd</td> <td>1,40 -</td> </tr> <tr> <td>0,70</td> <td>1,08 -</td> <td>1,40 -</td> <td>1,70 -</td> <td>1,70 ac</td> <td>1,70 ac</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 abcd</td> <td>1,70 -</td> </tr> <tr> <td>0,80</td> <td>1,08 -</td> <td>1,50 -</td> <td>1,90 -</td> <td>2,00 -</td> <td>2,00 -</td> <td>2,00 ac</td> <td>2,00 abcd</td> <td>2,00 abcd</td> <td>2,00 abcd</td> <td>2,00 -</td> </tr> <tr> <td>0,90</td> <td>1,08 -</td> <td>1,65 -</td> <td>2,00 -</td> <td>2,25 -</td> <td>2,30 -</td> <td>2,30 ac</td> <td>2,30 ac</td> <td>2,30 abcd</td> <td>2,30 abcd</td> <td>2,30 -</td> </tr> <tr> <td>1,00</td> <td>1,08 -</td> <td>1,80 -</td> <td>2,10 -</td> <td>2,50 -</td> <td>2,60 -</td> <td>2,60 ac</td> <td>2,60 ac</td> <td>2,60 abcd</td> <td>2,60 abcd</td> <td>2,60 -</td> </tr> <tr> <td>1,20</td> <td>1,18 -</td> <td>2,10 -</td> <td>2,40 -</td> <td>2,70 -</td> <td>3,00 -</td> <td>3,10 ac</td> <td>3,10 ac</td> <td>3,10 abcd</td> <td>3,10 abcd</td> <td>3,10 -</td> </tr> <tr> <td>1,50</td> <td>1,21 -</td> <td>2,80 -</td> <td>3,00 -</td> <td>3,30 -</td> <td>3,50 -</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 ac</td> <td>4,00 -</td> </tr> <tr> <td>2,00</td> <td>1,21 -</td> <td>2,80 -</td> <td>3,00 -</td> <td>3,30 -</td> <td>3,50 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,00 -</td> <td>4,33 -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>2,00</td> <td>2,70</td> <td>3,60</td> <td>3,60</td> <td>6,00</td> <td>7,30</td> <td>7,45</td> <td>7,60</td> <td>7,60</td> <td></td> </tr> </table>												$t_{N,II} =$	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$			$d_{pd} =$	$\varnothing 5,0$		$\varnothing 5,3$					$\varnothing 5,5$	$\varnothing 5,7$			$M_{t,nom} =$	—											$V_{R,k}$ for $t_{N,I} =$	0,50	1,08 -	1,10 ac	1,10 ac	1,10 abcd	1,10 -	0,60	1,08 -	1,25 -	1,40 ac	1,40 ac	1,40 ac	1,40 abcd	1,40 abcd	1,40 abcd	1,40 abcd	1,40 -	0,70	1,08 -	1,40 -	1,70 -	1,70 ac	1,70 ac	1,70 abcd	1,70 abcd	1,70 abcd	1,70 abcd	1,70 -	0,80	1,08 -	1,50 -	1,90 -	2,00 -	2,00 -	2,00 ac	2,00 abcd	2,00 abcd	2,00 abcd	2,00 -	0,90	1,08 -	1,65 -	2,00 -	2,25 -	2,30 -	2,30 ac	2,30 ac	2,30 abcd	2,30 abcd	2,30 -	1,00	1,08 -	1,80 -	2,10 -	2,50 -	2,60 -	2,60 ac	2,60 ac	2,60 abcd	2,60 abcd	2,60 -	1,20	1,18 -	2,10 -	2,40 -	2,70 -	3,00 -	3,10 ac	3,10 ac	3,10 abcd	3,10 abcd	3,10 -	1,50	1,21 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 ac	4,00 ac	4,00 ac	4,00 ac	4,00 -	2,00	1,21 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 -	4,00 -	4,00 -	4,00 -	4,33 -	$N_{R,II,k} =$	2,00	2,70	3,60	3,60	6,00	7,30	7,45	7,60	7,60						
$t_{N,II} =$	1,25	1,50	2,00	2,50	3,00	4,00	5,00	6,00	$\geq 7,00$																																																																																																																																																					
$d_{pd} =$	$\varnothing 5,0$		$\varnothing 5,3$					$\varnothing 5,5$	$\varnothing 5,7$																																																																																																																																																					
$M_{t,nom} =$	—																																																																																																																																																													
$V_{R,k}$ for $t_{N,I} =$	0,50	1,08 -	1,10 ac	1,10 ac	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 abcd	1,10 -																																																																																																																																																			
	0,60	1,08 -	1,25 -	1,40 ac	1,40 ac	1,40 ac	1,40 abcd	1,40 abcd	1,40 abcd	1,40 abcd	1,40 -																																																																																																																																																			
	0,70	1,08 -	1,40 -	1,70 -	1,70 ac	1,70 ac	1,70 abcd	1,70 abcd	1,70 abcd	1,70 abcd	1,70 -																																																																																																																																																			
	0,80	1,08 -	1,50 -	1,90 -	2,00 -	2,00 -	2,00 ac	2,00 abcd	2,00 abcd	2,00 abcd	2,00 -																																																																																																																																																			
	0,90	1,08 -	1,65 -	2,00 -	2,25 -	2,30 -	2,30 ac	2,30 ac	2,30 abcd	2,30 abcd	2,30 -																																																																																																																																																			
	1,00	1,08 -	1,80 -	2,10 -	2,50 -	2,60 -	2,60 ac	2,60 ac	2,60 abcd	2,60 abcd	2,60 -																																																																																																																																																			
	1,20	1,18 -	2,10 -	2,40 -	2,70 -	3,00 -	3,10 ac	3,10 ac	3,10 abcd	3,10 abcd	3,10 -																																																																																																																																																			
	1,50	1,21 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 ac	4,00 ac	4,00 ac	4,00 ac	4,00 -																																																																																																																																																			
2,00	1,21 -	2,80 -	3,00 -	3,30 -	3,50 -	4,00 -	4,00 -	4,00 -	4,00 -	4,33 -																																																																																																																																																				
$N_{R,II,k} =$	2,00	2,70	3,60	3,60	6,00	7,30	7,45	7,60	7,60																																																																																																																																																					
<p>Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																																																																																																																														
Self-tapping screw						Annex 85																																																																																																																																																								
JZ3-6,3xL-E16 JB3-6,3xL-E16																																																																																																																																																														
With hexagon head and seal washer $\geq \varnothing 16,0 \text{ mm}$																																																																																																																																																														



Materials

Fastener: stainless steel CRONIMAKS®
similar to stainless steel (1.4301) - EN 10088

Washer: stainless steel (1.4301) - EN 10088

Component I: S280GD, S320GD or S350GD - EN 10346

Component II: S235, S275 or S355 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

Timber substructures
no performance determined

Typ JB

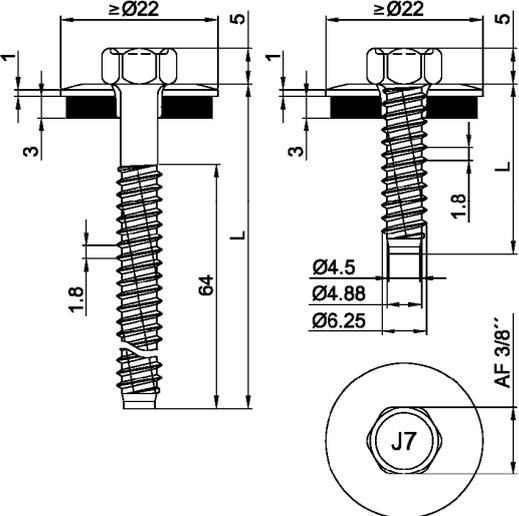
$t_{N,II}$ [mm]	1,25	1,50	2,00	3,00	4,00	6,00	$\geq 7,00$	—
d_{pd} [mm]	$\varnothing 5,0$		$\varnothing 5,3$			$\varnothing 5,5$	$\varnothing 5,7$	—
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	2,50 ac	2,70 ac	2,80 abcd	3,00 abcd	3,10 abcd	3,10 abcd	3,10 abcd
	0,75	2,60 ac	3,10 ac	3,30 abcd	3,60 abcd	3,70 abcd	3,70 abcd	3,70 abcd
	0,88	2,80 ac	3,20 ac	3,80 ac	4,10 abcd	4,30 abcd	4,40 abcd	4,40 abcd
	1,00	3,20 ac	3,60 ac	4,10 ac	4,80 ac	4,90 ac	5,10 ac	5,10 ac
	1,13	3,40 ac	4,00 ac	4,60 ac	5,40 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	3,60 ac	4,20 ac	5,00 ac	6,10 ac	6,30 ac	6,50 ac	6,50 ac
	1,50	3,70 ac	4,40 ac	5,70 ac	6,80 ac	7,10 ac	7,30 ac	7,30 ac
	1,75	3,70 ac	4,70 ac	6,20 ac	7,60 ac	7,70 ac	8,10 ac	8,10 ac
	2,00	5,00 —	6,50 —	8,80 —	10,3 —	10,6 —	11,3 —	11,3 —
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	0,97 ac	1,35 ac	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd	1,51 abcd
	0,55	1,23 ac	1,71 ac	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd	1,91 abcd
	0,63	1,80 ac	2,50 ac	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd	2,80 abcd
	0,75	2,00 ac	2,70 ac	3,10 abcd	3,60 abcd	3,60 abcd	3,60 abcd	3,60 abcd
	0,88	2,00 ac	2,70 ac	3,30 ac	3,80 abcd	3,80 abcd	3,80 abcd	3,80 abcd
	1,00	2,00 ac	2,70 ac	3,40 ac	4,00 ac	4,00 ac	4,00 ac	4,00 ac
	1,13	2,00 ac	2,70 ac	3,60 ac	4,40 ac	4,40 ac	4,40 ac	4,40 ac
	1,25	2,00 ac	2,70 ac	3,60 ac	4,80 ac	4,90 ac	4,90 ac	4,90 ac
	1,50	2,00 ac	2,70 ac	3,60 ac	5,60 ac	5,90 ac	5,90 ac	5,90 ac
	1,75	2,00 ac	2,70 ac	3,60 ac	5,80 ac	6,90 ac	7,10 ac	7,10 ac
	2,00	2,00 —	2,70 —	3,60 —	6,00 —	7,30 —	7,60 —	7,60 —

JZ7 - 6,3 x L for components II with $t_{II} \geq 1,25$ mm
JB7 - 6,3 x L for components II with $t_{II} \leq 2,00$ mm

Self tapping screw

JZ7-6,3 x L
JB7-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 16$ mm

Annex 87



Materials

Fastener: stainless steel CRONIMAKS®
similar to stainless steel (1.4301) - EN 10088

Washer: stainless steel (1.4301) - EN 10088

Component I: S280GD, S320GD or S350GD - EN 10346

Component II: S235, S275 or S355 - EN 10025-1
S280GD, S320GD or S350GD - EN 10346

Predrill diameter see table below

Timber substructures
no performance determined

$t_{N,II}$ [mm]	1,50	2,00	3,00	4,00	5,00	6,00	$\geq 7,00$	—
d_{pd} [mm]	—			$\varnothing 5,3$		$\varnothing 5,5$	$\varnothing 5,7$	—
$M_{t,nom}$	5 Nm							
$V_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	—	—	—	—	—
	0,55	—	—	—	—	—	—	—
	0,63	—	—	—	3,40 abcd	3,40 abcd	3,40 abcd	3,40 abcd
	0,75	—	—	—	4,20 ac	4,20 ac	4,20 ac	4,20 ac
	0,88	—	—	—	4,70 ac	4,70 ac	4,70 ac	4,70 ac
	1,00	—	—	—	5,00 ac	5,00 ac	5,10 ac	5,10 ac
	1,13	—	—	—	5,60 ac	5,60 ac	5,80 ac	5,80 ac
	1,25	—	—	—	6,30 —	6,40 —	6,50 ac	6,50 ac
	1,50	—	—	—	7,10 —	7,20 —	7,30 —	7,30 —
	1,75	—	—	—	7,70 —	7,90 —	8,10 —	8,10 —
	2,00	—	—	—	7,70 —	7,90 —	8,10 —	8,10 —
$N_{R,k}$ [kN] for $t_{N,I}$ [mm]	0,50	—	—	1,67 abcd	1,67 abcd	1,67 abcd	1,67 abcd	—
	0,55	—	—	2,11 abcd	2,11 abcd	2,11 abcd	2,11 abcd	—
	0,63	—	—	3,10 abcd	3,10 abcd	3,10 abcd	3,10 abcd	—
	0,75	—	—	4,00 ac	4,00 ac	4,00 ac	4,00 ac	—
	0,88	—	—	4,40 ac	4,40 ac	4,40 ac	4,40 ac	—
	1,00	—	—	4,60 ac	4,60 ac	4,60 ac	4,60 ac	—
	1,13	—	—	5,10 ac	5,10 ac	5,10 ac	5,10 ac	—
	1,25	—	—	5,10 —	5,10 —	5,10 ac	5,10 ac	—
	1,50	—	—	5,90 —	5,90 —	5,90 —	5,90 —	—
	1,75	—	—	6,90 —	6,90 —	7,10 —	7,10 —	—
	2,00	—	—	8,80 —	11,6 —	13,4 —	13,4 —	—

JZ7 - 6,3 x L for components II with $t_{II} \geq 1,25$ mm
JB7 - 6,3 x L for components II with $t_{II} \leq 2,00$ mm

Self tapping screw

JZ7-6,3 x L
JB7-6,3 x L
with hexagon head and sealing washer $\geq \varnothing 22$ mm

Annex 88

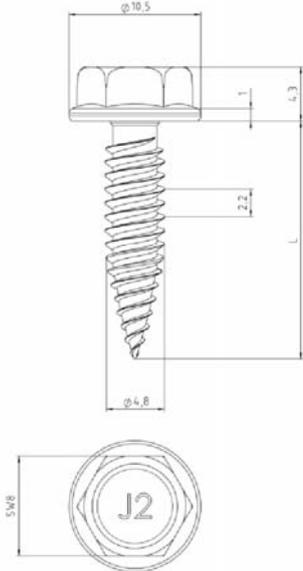
	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4404) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p>																																																																																																																																																					
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<p>If both components I and II are made of S320GD or S350GD all values may be increased by 8,3%.</p>																																																																																																																																																						
<p>Self tapping screw</p>		<p>Annex 89</p>																																																																																																																																																				
<p>JF3-2H-4,8 x L JF3-FR-2H-4,8 x L JF6-2H-4,8 x L JF6-FR-2H-4,8 x L</p> <p>with hexagon head or round head with Torx® drive system and sealing washer $\geq \varnothing 14$ mm</p>																																																																																																																																																						

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: aluminium-Alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium-Alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p>																																																															
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$t_{N,II} =$	0,50	0,60	0,70	0,80	0,90	1,00																																																										
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<p>Pull-through resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p> <table border="1"> <tr> <td colspan="2" style="text-align: center;">self-tapping screw</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">Annex 90</td> </tr> <tr> <td style="text-align: center;">JF3-2H-4,8xL</td> <td style="text-align: center;">JF6-2H-4,8xL</td> </tr> <tr> <td style="text-align: center;">JF3-FR-2H-4,8xL</td> <td style="text-align: center;">JF6-FR-2H-4,8xL</td> </tr> <tr> <td colspan="2" style="text-align: center;">with hexagon head or FR head and seal washer $\geq \varnothing 14 \text{ mm}$</td> <td></td> </tr> </table>		self-tapping screw		Annex 90	JF3-2H-4,8xL	JF6-2H-4,8xL	JF3-FR-2H-4,8xL	JF6-FR-2H-4,8xL	with hexagon head or FR head and seal washer $\geq \varnothing 14 \text{ mm}$																																																							
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<table border="1" data-bbox="391 1097 1268 1467"> <tr> <td>$t_{N,II} =$</td> <td>0,50</td> <td>0,60</td> <td>0,70</td> <td>0,80</td> <td>0,90</td> <td>1,00</td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="6">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,58 -</td> </tr> <tr> <td>0,60</td> <td>0,58 -</td> <td>0,86 -</td> <td>0,86 -</td> <td>0,86 -</td> <td>0,86 -</td> <td>0,86 -</td> </tr> <tr> <td>0,70</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,14 -</td> <td>1,14 -</td> <td>1,14 -</td> </tr> <tr> <td>0,80</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,42 -</td> <td>1,42 -</td> <td>1,42 -</td> </tr> <tr> <td>0,90</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,42 -</td> <td>1,90 -</td> <td>1,90 -</td> </tr> <tr> <td>1,00</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,42 -</td> <td>1,90 -</td> <td>2,38 -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,42</td> <td>0,54</td> <td>0,67</td> <td>0,79</td> <td>0,92</td> <td>1,04</td> </tr> </table>		$t_{N,II} =$	0,50	0,60	0,70	0,80	0,90	1,00	$M_{t,nom} =$	—						$V_{R,k}$ for $t_{N,I} =$	0,50	0,58 -	0,58 -	0,58 -	0,58 -	0,58 -	0,60	0,58 -	0,86 -	0,86 -	0,86 -	0,86 -	0,86 -	0,70	0,58 -	0,86 -	1,14 -	1,14 -	1,14 -	1,14 -	0,80	0,58 -	0,86 -	1,14 -	1,42 -	1,42 -	1,42 -	0,90	0,58 -	0,86 -	1,14 -	1,42 -	1,90 -	1,90 -	1,00	0,58 -	0,86 -	1,14 -	1,42 -	1,90 -	2,38 -	$N_{R,II,k} =$	0,42	0,54	0,67	0,79	0,92	1,04
$t_{N,II} =$	0,50	0,60	0,70	0,80	0,90	1,00																																																										
$M_{t,nom} =$	—																																																															
$V_{R,k}$ for $t_{N,I} =$	0,50	0,58 -	0,58 -	0,58 -	0,58 -	0,58 -																																																										
0,60	0,58 -	0,86 -	0,86 -	0,86 -	0,86 -	0,86 -																																																										
0,70	0,58 -	0,86 -	1,14 -	1,14 -	1,14 -	1,14 -																																																										
0,80	0,58 -	0,86 -	1,14 -	1,42 -	1,42 -	1,42 -																																																										
0,90	0,58 -	0,86 -	1,14 -	1,42 -	1,90 -	1,90 -																																																										
1,00	0,58 -	0,86 -	1,14 -	1,42 -	1,90 -	2,38 -																																																										
$N_{R,II,k} =$	0,42	0,54	0,67	0,79	0,92	1,04																																																										
<p>Pull-through resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																																
<table border="1" data-bbox="193 1915 1463 2116"> <tr> <td style="text-align: center;">self-tapping screw</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">Annex 91</td> </tr> <tr> <td style="text-align: center;">JF3-2H-4,8xL JF6-2H-4,8xL JF3-FR-2H-4,8xL JF6-FR-2H-4,8xL</td> </tr> <tr> <td style="text-align: center;">with hexagon head or FR head and seal washer $\geq \text{Ø } 14 \text{ mm}$</td> </tr> </table>		self-tapping screw	Annex 91	JF3-2H-4,8xL JF6-2H-4,8xL JF3-FR-2H-4,8xL JF6-FR-2H-4,8xL	with hexagon head or FR head and seal washer $\geq \text{Ø } 14 \text{ mm}$																																																											
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	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: aluminium-Alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p>																																																															
	<p>Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$</p>																																																															
	<p>Timber substructures for timber substructures no performance determined</p>																																																															
<table border="1" data-bbox="391 1097 1268 1467"> <tr> <td>$t_{N,II} =$</td> <td>0,50</td> <td>0,55</td> <td>0,63</td> <td>0,75</td> <td>0,88</td> <td>1,00</td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="6">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,45 -</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,66 -</td> <td>0,66 -</td> <td>0,66 -</td> </tr> <tr> <td></td> <td>0,70</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,66 -</td> <td>0,88 -</td> <td>0,88 -</td> </tr> <tr> <td></td> <td>0,80</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,66 -</td> <td>0,88 -</td> <td>1,09 -</td> </tr> <tr> <td></td> <td>0,90</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,66 -</td> <td>0,88 -</td> <td>1,09 -</td> </tr> <tr> <td></td> <td>1,00</td> <td>0,45 -</td> <td>0,45 -</td> <td>0,66 -</td> <td>0,88 -</td> <td>1,09 -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,67</td> <td>0,78</td> <td>0,94</td> <td>1,21</td> <td>1,50</td> <td>1,78</td> </tr> </table>		$t_{N,II} =$	0,50	0,55	0,63	0,75	0,88	1,00	$M_{t,nom} =$	—						$V_{R,k}$ for $t_{N,I} =$	0,50	0,45 -	0,45 -	0,45 -	0,45 -	0,45 -		0,60	0,45 -	0,45 -	0,66 -	0,66 -	0,66 -		0,70	0,45 -	0,45 -	0,66 -	0,88 -	0,88 -		0,80	0,45 -	0,45 -	0,66 -	0,88 -	1,09 -		0,90	0,45 -	0,45 -	0,66 -	0,88 -	1,09 -		1,00	0,45 -	0,45 -	0,66 -	0,88 -	1,09 -	$N_{R,II,k} =$	0,67	0,78	0,94	1,21	1,50	1,78
$t_{N,II} =$	0,50	0,55	0,63	0,75	0,88	1,00																																																										
$M_{t,nom} =$	—																																																															
$V_{R,k}$ for $t_{N,I} =$	0,50	0,45 -	0,45 -	0,45 -	0,45 -	0,45 -																																																										
	0,60	0,45 -	0,45 -	0,66 -	0,66 -	0,66 -																																																										
	0,70	0,45 -	0,45 -	0,66 -	0,88 -	0,88 -																																																										
	0,80	0,45 -	0,45 -	0,66 -	0,88 -	1,09 -																																																										
	0,90	0,45 -	0,45 -	0,66 -	0,88 -	1,09 -																																																										
	1,00	0,45 -	0,45 -	0,66 -	0,88 -	1,09 -																																																										
$N_{R,II,k} =$	0,67	0,78	0,94	1,21	1,50	1,78																																																										
<p>Pull-through resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																																
<table border="1" data-bbox="199 1915 1460 2116"> <tr> <td style="text-align: center;">self-tapping screw</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">Annex 92</td> </tr> <tr> <td style="text-align: center;"> JF3-2H-4,8xL JF6-2H-4,8xL JF3-FR-2H-4,8xL JF6-FR-2H-4,8xL with hexagon head or FR head and seal washer $\geq \text{Ø } 14 \text{ mm}$ </td> </tr> </table>		self-tapping screw	Annex 92	JF3-2H-4,8xL JF6-2H-4,8xL JF3-FR-2H-4,8xL JF6-FR-2H-4,8xL with hexagon head or FR head and seal washer $\geq \text{Ø } 14 \text{ mm}$																																																												
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	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4404) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: aluminium-Alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p>																																																															
	<p>Drilling capacity $\Sigma t_i \leq 2,00 \text{ mm}$</p>																																																															
	<p>Timber substructures for timber substructures no performance determined</p>																																																															
<table border="1" data-bbox="391 1097 1268 1467"> <tr> <td>$t_{N,II} =$</td> <td>0,50</td> <td>0,60</td> <td>0,70</td> <td>0,80</td> <td>0,90</td> <td>1,00</td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="6">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{N,I} =$</td> <td>0,50</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,58 -</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,86 -</td> <td>0,86 -</td> <td>0,86 -</td> </tr> <tr> <td></td> <td>0,70</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,14 -</td> </tr> <tr> <td></td> <td>0,80</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,42 -</td> </tr> <tr> <td></td> <td>0,90</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,42 -</td> </tr> <tr> <td></td> <td>1,00</td> <td>0,58 -</td> <td>0,58 -</td> <td>0,86 -</td> <td>1,14 -</td> <td>1,42 -</td> </tr> <tr> <td>$N_{R,II,k} =$</td> <td>0,67</td> <td>0,78</td> <td>0,94</td> <td>1,21</td> <td>1,50</td> <td>1,78</td> </tr> </table>		$t_{N,II} =$	0,50	0,60	0,70	0,80	0,90	1,00	$M_{t,nom} =$	—						$V_{R,k}$ for $t_{N,I} =$	0,50	0,58 -	0,58 -	0,58 -	0,58 -	0,58 -		0,60	0,58 -	0,58 -	0,86 -	0,86 -	0,86 -		0,70	0,58 -	0,58 -	0,86 -	1,14 -	1,14 -		0,80	0,58 -	0,58 -	0,86 -	1,14 -	1,42 -		0,90	0,58 -	0,58 -	0,86 -	1,14 -	1,42 -		1,00	0,58 -	0,58 -	0,86 -	1,14 -	1,42 -	$N_{R,II,k} =$	0,67	0,78	0,94	1,21	1,50	1,78
$t_{N,II} =$	0,50	0,60	0,70	0,80	0,90	1,00																																																										
$M_{t,nom} =$	—																																																															
$V_{R,k}$ for $t_{N,I} =$	0,50	0,58 -	0,58 -	0,58 -	0,58 -	0,58 -																																																										
	0,60	0,58 -	0,58 -	0,86 -	0,86 -	0,86 -																																																										
	0,70	0,58 -	0,58 -	0,86 -	1,14 -	1,14 -																																																										
	0,80	0,58 -	0,58 -	0,86 -	1,14 -	1,42 -																																																										
	0,90	0,58 -	0,58 -	0,86 -	1,14 -	1,42 -																																																										
	1,00	0,58 -	0,58 -	0,86 -	1,14 -	1,42 -																																																										
$N_{R,II,k} =$	0,67	0,78	0,94	1,21	1,50	1,78																																																										
<p>Pull-through resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																																
<table border="1" data-bbox="199 1915 1455 2116"> <tr> <td colspan="2" data-bbox="199 1915 1029 1960">self-tapping screw</td> <td data-bbox="1029 1915 1455 2116" rowspan="3" style="text-align: center; vertical-align: middle;">Annex 93</td> </tr> <tr> <td data-bbox="199 1960 630 2027" style="text-align: center;">JF3-2H-4,8xL</td> <td data-bbox="630 1960 1029 2027" style="text-align: center;">JF6-2H-4,8xL</td> </tr> <tr> <td data-bbox="199 2027 630 2116" style="text-align: center;">JF3-FR-2H-4,8xL</td> <td data-bbox="630 2027 1029 2116" style="text-align: center;">JF6-FR-2H-4,8xL</td> </tr> </table> <p data-bbox="343 2072 885 2105" style="text-align: center;">with hexagon head or FR head and seal washer $\geq \varnothing 14 \text{ mm}$</p>		self-tapping screw		Annex 93	JF3-2H-4,8xL	JF6-2H-4,8xL	JF3-FR-2H-4,8xL	JF6-FR-2H-4,8xL																																																								
self-tapping screw		Annex 93																																																														
JF3-2H-4,8xL	JF6-2H-4,8xL																																																															
JF3-FR-2H-4,8xL	JF6-FR-2H-4,8xL																																																															

	<p>Materials</p> <p>Fastener: carbon steel case hardened and galvanized</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350 GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350 GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2 \times 0,88 \text{ mm}$</p>
<p>Timber substructures for timber substructures no performance determined</p>	

$t_{N,II} =$	0,40	0,50	0,55	0,63	0,75	0,88
$M_{t, \text{nom}} =$	—					
$V_{R,k} \text{ for } t_{N,I} =$	0,40	0,79	0,79	0,79	0,79	0,79
	0,50	0,79	1,18	1,27	1,42	1,65
	0,55	0,79	1,18	1,41	1,56	1,79
	0,63	0,79	1,18	1,41	1,77	2,00
	0,75	0,79	1,18	1,41	1,77	2,35
	0,88	0,79	1,18	1,41	1,77	2,35
	1,00	—	—	—	—	—
	1,13	—	—	—	—	—
	1,25	—	—	—	—	—
	1,50	—	—	—	—	—
	1,75	—	—	—	—	—
2,00	—	—	—	—	—	
$N_{R,k} \text{ for } t_{N,I} =$	0,40	0,52	0,71	0,82	0,92	0,92
	0,50	0,52	0,71	0,82	1,01	1,30
	0,55	0,52	0,71	0,82	1,01	1,30
	0,63	0,52	0,71	0,82	1,01	1,30
	0,75	0,52	0,71	0,82	1,01	1,30
	0,88	0,52	0,71	0,82	1,01	1,30
	1,00	—	—	—	—	—
	1,13	—	—	—	—	—
	1,25	—	—	—	—	—
	1,50	—	—	—	—	—
	1,75	—	—	—	—	—
2,00	—	—	—	—	—	

If component I and component II are made of S320GD or S350GD, the values may be increased by 8,3%.

self drilling screw	Annex 94
JF2-2H-4,8 x L with hexagon head	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p>
	<p>Timber substructures for timber substructures no performance determined</p>

$t_{N,II} =$	0,40	0,50	0,55	0,63	0,75	0,88	1,00
$M_{t,nom} =$	—						
$V_{R,k}$ for $t_{N,I} =$	0,40	0,88 —	0,88 —	0,88 —	0,88 —	0,88 —	0,88 —
	0,50	0,88 —	1,56 —	1,56 —	1,56 —	1,56 —	1,56 —
	0,55	0,88 —	1,56 —	1,76 —	1,76 —	1,76 —	1,76 —
	0,63	0,88 —	1,56 —	1,76 —	2,09 —	2,09 —	2,09 —
	0,75	0,88 —	1,56 —	1,76 —	2,09 —	2,57 —	2,57 —
	0,88	0,88 —	1,56 —	1,76 —	2,09 —	2,57 —	3,11 —
	1,00	0,88 —	1,56 —	1,76 —	2,09 —	2,57 —	3,11 —
	1,13	—	—	—	—	—	—
1,25	—	—	—	—	—	—	
$N_{R,k}$ for $t_{N,I} =$	0,40	0,60 —	0,82 —	0,94 —	1,00 —	1,00 —	1,00 —
	0,50	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,67 —
	0,55	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	0,63	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	0,75	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	0,88	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	1,00	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	1,13	—	—	—	—	—	—
1,25	—	—	—	—	—	—	

If both components I and II are made of S320GD or S350GD all values may be increased by 8,3%.

Self drilling screw	
<p style="text-align: center;">JF3-2-5,5 x L JF6-2-5,5 x L JF3-FR-2-5,5 x L JF6-FR-2-5,5 x L</p> <p style="text-align: center;">with hexagon head or round head with Torx®-drive and sealing washer $\geq \varnothing 11 \text{ mm}$</p>	Annex 95

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346 Component II: S280GD, S320GD or S350GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 2 \times 1,00 \text{ mm}$</p>
	<p>Timber substructures for timber substructures no performance determined</p>

$t_{N,II} =$	0,40	0,50	0,55	0,63	0,75	0,88	1,00
$M_{t,nom} =$	—						
$V_{R,k}$ for $t_{N,I} =$	0,40	0,96 —	0,96 —	0,96 —	0,96 —	0,96 —	0,96 —
	0,50	0,96 —	1,56 —	1,56 —	1,56 —	1,56 —	1,56 —
	0,55	0,96 —	1,56 —	1,76 —	1,76 —	1,76 —	1,76 —
	0,63	0,96 —	1,56 —	1,76 —	2,09 —	2,09 —	2,09 —
	0,75	0,96 —	1,56 —	1,76 —	2,09 —	2,57 —	2,57 —
	0,88	0,96 —	1,56 —	1,76 —	2,09 —	2,57 —	3,11 —
	1,00	0,96 —	1,56 —	1,76 —	2,09 —	2,57 —	3,11 —
	1,13	—	—	—	—	—	—
1,25	—	—	—	—	—	—	
$N_{R,k}$ for $t_{N,I} =$	0,40	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,46 —
	0,50	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,76 —
	0,55	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	0,63	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	0,75	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	0,88	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	1,00	0,60 —	0,82 —	0,94 —	1,14 —	1,44 —	1,80 —
	1,13	—	—	—	—	—	—
1,25	—	—	—	—	—	—	

If both components I and II are made of S320GD or S350GD all values may be increased by 8,3%.

Self drilling screw	Annex 96
<p style="text-align: center;">JF3-2-5,5 x L JF6-2-5,5 x L JF3-FR-2-5,5 x L JF6-FR-2-5,5 x L</p> <p style="text-align: center;">with hexagon head or round head with Torx®-drive and sealing washer $\geq \varnothing 14 \text{ mm}$</p>	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: aluminium-Alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium-Alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p>																																																																																																																																											
	<p>Drilling capacity $\Sigma t_i \leq 2 \times 1,50 \text{ mm}$</p>																																																																																																																																											
<p>Timber substructures for timber substructures no performance determined</p>																																																																																																																																												
<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>0,40</td> <td>0,50</td> <td>0,60</td> <td>0,70</td> <td>0,80</td> <td>0,90</td> <td>1,00</td> <td>1,20</td> <td>1,50</td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="10">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{N,I} =$</td> <td>0,40</td> <td>0,43 —</td> </tr> <tr> <td></td> <td>0,50</td> <td>0,43 —</td> <td>0,62 —</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> </tr> <tr> <td></td> <td>0,70</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> <td>0,79 —</td> <td>0,79 —</td> <td>0,79 —</td> <td>0,79 —</td> <td>0,79 —</td> <td>0,79 —</td> </tr> <tr> <td></td> <td>0,80</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> <td>0,79 —</td> <td>0,88 —</td> <td>0,88 —</td> <td>0,88 —</td> <td>0,88 —</td> <td>0,88 —</td> </tr> <tr> <td></td> <td>0,90</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> <td>0,79 —</td> <td>0,88 —</td> <td>1,04 —</td> <td>1,04 —</td> <td>1,04 —</td> <td>1,04 —</td> </tr> <tr> <td></td> <td>1,00</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> <td>0,79 —</td> <td>0,88 —</td> <td>1,04 —</td> <td>1,19 —</td> <td>1,19 —</td> <td>1,19 —</td> </tr> <tr> <td></td> <td>1,20</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> <td>0,79 —</td> <td>0,88 —</td> <td>1,04 —</td> <td>1,19 —</td> <td>1,24 —</td> <td>1,24 —</td> </tr> <tr> <td></td> <td>1,50</td> <td>0,43 —</td> <td>0,62 —</td> <td>0,71 —</td> <td>0,79 —</td> <td>0,88 —</td> <td>1,04 —</td> <td>1,19 —</td> <td>1,24 —</td> <td>1,87 —</td> </tr> <tr> <td>$N_{R,III} =$</td> <td>0,24</td> <td>0,35</td> <td>0,45</td> <td>0,58</td> <td>0,69</td> <td>0,80</td> <td>0,91</td> <td>1,13</td> <td>1,63</td> </tr> </table>											$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	$M_{t,nom} =$	—										$V_{R,k}$ for $t_{N,I} =$	0,40	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —		0,50	0,43 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —		0,60	0,43 —	0,62 —	0,71 —	0,71 —	0,71 —	0,71 —	0,71 —	0,71 —	0,71 —		0,70	0,43 —	0,62 —	0,71 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —		0,80	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	0,88 —	0,88 —	0,88 —	0,88 —		0,90	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,04 —	1,04 —	1,04 —		1,00	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,19 —	1,19 —	1,19 —		1,20	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,19 —	1,24 —	1,24 —		1,50	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,19 —	1,24 —	1,87 —	$N_{R,III} =$	0,24	0,35	0,45	0,58	0,69	0,80	0,91	1,13	1,63
$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50																																																																																																																																			
$M_{t,nom} =$	—																																																																																																																																											
$V_{R,k}$ for $t_{N,I} =$	0,40	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —	0,43 —																																																																																																																																		
	0,50	0,43 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —	0,62 —																																																																																																																																		
	0,60	0,43 —	0,62 —	0,71 —	0,71 —	0,71 —	0,71 —	0,71 —	0,71 —	0,71 —																																																																																																																																		
	0,70	0,43 —	0,62 —	0,71 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —																																																																																																																																		
	0,80	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	0,88 —	0,88 —	0,88 —	0,88 —																																																																																																																																		
	0,90	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,04 —	1,04 —	1,04 —																																																																																																																																		
	1,00	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,19 —	1,19 —	1,19 —																																																																																																																																		
	1,20	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,19 —	1,24 —	1,24 —																																																																																																																																		
	1,50	0,43 —	0,62 —	0,71 —	0,79 —	0,88 —	1,04 —	1,19 —	1,24 —	1,87 —																																																																																																																																		
$N_{R,III} =$	0,24	0,35	0,45	0,58	0,69	0,80	0,91	1,13	1,63																																																																																																																																			
<p>Pull-through resistance of component I according to EN 1999-1-4, section 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.</p>																																																																																																																																												
self drilling screw							<p>Annex 97</p>																																																																																																																																					
JF3-2-5,5 x L		JF6-2-5,5 x L																																																																																																																																										
JF3-FR-2-5,5 x L		JF6-FR-2-5,5 x L																																																																																																																																										
with hexagon head or round head with Torx®-drive and sealing washer $\geq \varnothing 11 \text{ mm}$																																																																																																																																												

	<p>Materials</p> <p>Fastener: stainless steel (1.4301) – EN 10088 stainless steel (1.4404) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: aluminium-Alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium-Alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p>																																																																																																																																											
	<p>Drilling capacity $\Sigma t_i \leq 2 \times 1,50 \text{ mm}$</p>																																																																																																																																											
<p>Timber substructures for timber substructures no performance determined</p>																																																																																																																																												
<table border="1"> <tr> <td>$t_{N,II} =$</td> <td>0,40</td> <td>0,50</td> <td>0,60</td> <td>0,70</td> <td>0,80</td> <td>0,90</td> <td>1,00</td> <td>1,20</td> <td>1,50</td> </tr> <tr> <td>$M_{t,nom} =$</td> <td colspan="10">—</td> </tr> <tr> <td>$V_{R,k}$ for $t_{N,I} =$</td> <td>0,40</td> <td>0,55 —</td> </tr> <tr> <td></td> <td>0,50</td> <td>0,55 —</td> <td>0,79 —</td> </tr> <tr> <td></td> <td>0,60</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> </tr> <tr> <td></td> <td>0,70</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> <td>1,03 —</td> <td>1,03 —</td> <td>1,03 —</td> <td>1,03 —</td> <td>1,03 —</td> <td>1,03 —</td> </tr> <tr> <td></td> <td>0,80</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> <td>1,03 —</td> <td>1,15 —</td> <td>1,15 —</td> <td>1,15 —</td> <td>1,15 —</td> <td>1,15 —</td> </tr> <tr> <td></td> <td>0,90</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> <td>1,03 —</td> <td>1,15 —</td> <td>1,35 —</td> <td>1,35 —</td> <td>1,35 —</td> <td>1,35 —</td> </tr> <tr> <td></td> <td>1,00</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> <td>1,03 —</td> <td>1,15 —</td> <td>1,35 —</td> <td>1,54 —</td> <td>1,54 —</td> <td>1,54 —</td> </tr> <tr> <td></td> <td>1,20</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> <td>1,03 —</td> <td>1,15 —</td> <td>1,35 —</td> <td>1,54 —</td> <td>1,62 —</td> <td>1,62 —</td> </tr> <tr> <td></td> <td>1,50</td> <td>0,55 —</td> <td>0,79 —</td> <td>0,91 —</td> <td>1,03 —</td> <td>1,15 —</td> <td>1,35 —</td> <td>1,54 —</td> <td>1,62 —</td> <td>2,44 —</td> </tr> <tr> <td>$N_{R,III,k} =$</td> <td>0,31</td> <td>0,46</td> <td>0,60</td> <td>0,75</td> <td>0,89</td> <td>1,04</td> <td>1,18</td> <td>1,47</td> <td>2,12</td> </tr> </table>											$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50	$M_{t,nom} =$	—										$V_{R,k}$ for $t_{N,I} =$	0,40	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —		0,50	0,55 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —		0,60	0,55 —	0,79 —	0,91 —	0,91 —	0,91 —	0,91 —	0,91 —	0,91 —	0,91 —		0,70	0,55 —	0,79 —	0,91 —	1,03 —	1,03 —	1,03 —	1,03 —	1,03 —	1,03 —		0,80	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,15 —	1,15 —	1,15 —	1,15 —		0,90	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,35 —	1,35 —	1,35 —		1,00	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,54 —	1,54 —	1,54 —		1,20	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,54 —	1,62 —	1,62 —		1,50	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,54 —	1,62 —	2,44 —	$N_{R,III,k} =$	0,31	0,46	0,60	0,75	0,89	1,04	1,18	1,47	2,12
$t_{N,II} =$	0,40	0,50	0,60	0,70	0,80	0,90	1,00	1,20	1,50																																																																																																																																			
$M_{t,nom} =$	—																																																																																																																																											
$V_{R,k}$ for $t_{N,I} =$	0,40	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —	0,55 —																																																																																																																																		
	0,50	0,55 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —	0,79 —																																																																																																																																		
	0,60	0,55 —	0,79 —	0,91 —	0,91 —	0,91 —	0,91 —	0,91 —	0,91 —	0,91 —																																																																																																																																		
	0,70	0,55 —	0,79 —	0,91 —	1,03 —	1,03 —	1,03 —	1,03 —	1,03 —	1,03 —																																																																																																																																		
	0,80	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,15 —	1,15 —	1,15 —	1,15 —																																																																																																																																		
	0,90	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,35 —	1,35 —	1,35 —																																																																																																																																		
	1,00	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,54 —	1,54 —	1,54 —																																																																																																																																		
	1,20	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,54 —	1,62 —	1,62 —																																																																																																																																		
	1,50	0,55 —	0,79 —	0,91 —	1,03 —	1,15 —	1,35 —	1,54 —	1,62 —	2,44 —																																																																																																																																		
$N_{R,III,k} =$	0,31	0,46	0,60	0,75	0,89	1,04	1,18	1,47	2,12																																																																																																																																			
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<p>self drilling screw</p>								<p>Annex 98</p>																																																																																																																																				
<p>JF3-2-5,5 x L JF6-2-5,5 x L</p> <p>JF3-FR-2-5,5 x L JF6-FR-2-5,5 x L</p> <p>with hexagon head or round head with Torx®-drive and sealing washer $\geq \varnothing 11 \text{ mm}$</p>																																																																																																																																												

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: none</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,50$ mm</p>
	<p>Timber substructures</p> <p>for timber substructures no performance determined</p>

$t_{N,II} =$	1,00	1,13	1,25	1,50	1,75	2,00	2,50	3,00	
$M_{t,nom} =$	—								
$V_{R,k}$ for $t_{N,I} =$	0,50	1,21 —	1,30 —	1,39 —	1,57 —	1,57 —	1,57 —	1,57 —	1,57 —
	0,55	1,32 —	1,42 —	1,52 —	1,71 —	1,74 —	1,78 —	1,84 —	— —
	0,63	1,51 —	1,62 —	1,72 —	1,94 —	2,02 —	2,11 —	2,28 —	— —
	0,75	1,78 —	1,91 —	2,03 —	2,28 —	2,44 —	2,61 —	2,93 —	— —
	0,88	2,08 —	2,23 —	2,36 —	2,65 —	2,90 —	3,14 —	3,63 —	— —
	1,00	2,35 —	2,52 —	2,67 —	3,00 —	3,32 —	3,64 —	4,29 —	— —
	1,13	2,71 —	2,90 —	3,07 —	3,43 —	3,79 —	4,16 —	— —	— —
	1,25	3,07 —	3,28 —	3,47 —	3,87 —	4,27 —	4,68 —	— —	— —
	1,50	3,78 —	4,03 —	4,26 —	4,74 —	5,22 —	5,70 —	— —	— —
	1,75	3,78 —	4,03 —	4,26 —	4,74 —	5,22 —	— —	— —	— —
2,00	2,00 —	4,03 —	4,26 —	4,74 —	— —	— —	— —	— —	
$N_{R,k}$ for $t_{N,I} =$	0,50	1,10 —	1,10 —	1,50 —	1,59 ^{a)} —				
	0,55	1,10 —	1,10 —	1,50 —	1,82 ^{a)} —	1,82 ^{a)} —	1,82 ^{a)} —	1,82 ^{a)} —	— —
	0,63	1,10 —	1,10 —	1,50 —	2,00 —	2,16 ^{a)} —	2,16 ^{a)} —	2,16 ^{a)} —	— —
	0,75	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	2,72 ^{a)} —	2,72 ^{a)} —	— —
	0,88	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	2,90 —	3,35 —	— —
	1,00	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	2,90 —	3,40 —	— —
	1,13	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	2,90 —	— —	— —
	1,25	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	2,90 —	— —	— —
	1,50	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	2,90 —	— —	— —
	1,75	1,10 —	1,10 —	1,50 —	2,00 —	2,45 —	— —	— —	— —
2,00	1,10 —	1,10 —	1,50 —	2,00 —	— —	— —	— —	— —	

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

Self drilling screw	Annex 99
JT3-LT-3-5,5 x L JT6-LT-3-5,5 x L with pan head with Torx®-drive	

	<p>Materials</p> <p>Fastener: stainless steel (1.4301 / 1.4567) – EN 10088 stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Washer: stainless steel (1.4301) – EN 10088</p> <p>Component I: S280GD, S320GD or S350GD – EN 10346</p> <p>Component II: S280GD, S320GD or S350GD – EN 10346</p>
	<p>Drilling capacity $\Sigma t_i \leq 3,50$ mm</p>
	<p>Timber substructures</p> <p>for timber substructures no performance determined</p>

$t_{N,II} =$	1,00	1,13	1,25	1,50	1,75	2,00	2,50	3,00			
$M_{t,nom} =$	—										
$V_{R,k}$ for $t_{N,I} =$	0,50	1,60	—	1,60	—	1,60	—	1,60	—	1,60	—
	0,55	1,68	—	1,69	—	1,71	—	1,82	—	1,84	—
	0,63	1,80	—	1,84	—	1,88	—	2,16	—	2,21	—
	0,75	1,98	—	2,06	—	2,14	—	2,68	—	2,78	—
	0,88	2,17	—	2,30	—	2,42	—	3,24	—	3,39	—
	1,00	2,35	—	2,52	—	2,67	—	3,76	—	3,96	—
	1,13	2,71	—	2,90	—	3,07	—	4,01	—	4,28	—
	1,25	3,07	—	3,28	—	3,47	—	4,25	—	4,59	—
	1,50	3,78	—	4,03	—	4,26	—	4,74	—	5,22	—
	1,75	3,78	—	4,03	—	4,26	—	4,74	—	5,22	—
	2,00	3,78	—	4,03	—	4,26	—	4,74	—	—	—
$N_{R,k}$ for $t_{N,I} =$	0,50	0,86 ^{a)}	—	0,86 ^{a)}	—	0,86 ^{a)}	—	0,86 ^{a)}	—	0,86 ^{a)}	—
	0,55	1,04	—	1,04	—	1,04 ^{a)}	—	1,04 ^{a)}	—	1,04 ^{a)}	—
	0,63	1,10	—	1,10	—	1,20 ^{a)}	—	1,20 ^{a)}	—	1,20 ^{a)}	—
	0,75	1,10	—	1,10	—	1,50	—	1,56 ^{a)}	—	1,56 ^{a)}	—
	0,88	1,10	—	1,10	—	1,50	—	2,00	—	2,32 ^{a)}	—
	1,00	1,10	—	1,10	—	1,50	—	2,00	—	2,32 ^{a)}	—
	1,13	1,10	—	1,10	—	1,50	—	2,00	—	2,32 ^{a)}	—
	1,25	1,10	—	1,10	—	1,50	—	2,00	—	2,32 ^{a)}	—
	1,50	1,10	—	1,10	—	1,50	—	2,00	—	2,32 ^{a)}	—
	1,75	1,10	—	1,10	—	1,50	—	2,00	—	2,32 ^{a)}	—
	2,00	1,10	—	1,10	—	1,50	—	2,00	—	—	—

If component I is made of S320GD or S350GD, the values marked with ^{a)} may be increased by 8,3%.

Self drilling screw		Annex 100
JT3-LT-3-5,5 x L JT6-LT-3-5,5 x L with pan head with Torx®-drive and sealing washer $\geq \varnothing 11$ mm		

	<p>Materials</p> <p>Fastener: JT4-4-4,8xL: stainless steel (1.4301 / 14567) – EN 10088 JT9-4-4,8xL: stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 4,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
--	---

$t_{N,II} =$	2,00	2,50	3,00
$M_{t,nom} =$	—		
$V_{R,k}$ for $t_{N,I} =$	0,50 0,60 0,70 0,80 0,90 1,00 1,20 1,50 2,00	0,67 ac 0,87 ac 1,06 ac 1,37 - 1,67 - 1,98 - 2,21 - 2,56 - -	0,67 ac 0,87 ac 1,06 ac 1,37 - 1,67 - 1,98 - 2,41 - 3,04 - -
$N_{R,II,k} =$	1,40	1,90	2,39

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw	Annex 101
JT4-(FR-)4-4,8xL JT9-(FR-)4-4,8xL With hexagon head or FR-head	

	<p>Materials</p> <p>Fastener: JT4-4-4,8xL: stainless steel (1.4301 / 1.4567) – EN 10088 JT9-4-4,8xL: stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 4,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
--	--

$t_{N,II} =$	2,00	2,50	3,00
$M_{t,nom} =$	—		
$V_{R,k}$ for $t_{N,I} =$	0,50	0,60	0,70
	0,87 ac	1,13 ac	1,38 ac
	0,80	0,90	1,00
	1,78 -	2,18 -	2,58 -
	1,20	1,50	2,00
	2,88 -	3,33 -	- -
$N_{R,II,k} =$	1,83	2,48	3,12

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Further particulars:

- Component I and II of aluminium with a tensile strength of $R_m \geq 245 \text{ N/mm}^2$: For $R_m \geq 215 \text{ N/mm}^2$ the indicated values of the shear force resistance $V_{R,k}$ can be increased by 14%.
- Component II of aluminium with a tensile strength of $R_m \geq 245 \text{ N/mm}^2$: For $R_m \geq 215 \text{ N/mm}^2$ the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 14%.

Self-drilling screw	Annex 102
JT4-(FR-)4-4,8xL JT9-(FR-)4-4,8xL With hexagon head or FR-head	

	<p>Materials</p> <p>Fastener: JT4-6-5,5xL stainless steel (1.4301 / 1.4567) – EN 10088 JT9-6-5,5xL stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Component I: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 165 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 6,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
--	--

$t_{N,II} =$	2,00	2,50	3,00	4,00	5,00	
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,50	0,71 ac				
	0,60	0,94 ac				
	0,70	1,17 ac				
	0,80	1,40 -	1,40 -	1,40 ac	1,40 ac	1,40 a
	0,90	1,62 -	1,62 -	1,62 ac	1,62 ac	1,62 a
	1,00	1,84 -	1,84 -	1,84 ac	1,84 ac	1,84 a
	1,20	2,16 -	2,21 -	2,26 -	2,35 -	2,44 a
	1,50	2,65 -	2,76 -	2,88 -	3,11 -	3,34 a
	2,00	2,65 -	2,76 -	2,88 -	3,11 -	- -
$N_{R,II,k} =$	1,36	1,77	2,16	3,43	4,70	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Self-drilling screw	Annex 103
JT4-6-5,5xL JT9-6-5,5xL With hexagon head	

	<p>Materials</p> <p>Fastener: JT4-6-5,5xL stainless steel (1.4301 / 1.4567) – EN 10088 JT9-6-5,5xL stainless steel (1.4401 / 1.4578) – EN 10088</p> <p>Component I: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <p>Component II: aluminium alloy with $R_{m,min} = 215 \text{ N/mm}^2$ – EN 573</p> <hr/> <p>Drilling capacity $\Sigma t_i \leq 6,50 \text{ mm}$</p> <hr/> <p>Timber substructures for timber substructures no performance determined</p>
--	--

$t_{N,II} =$	2,00	2,50	3,00	4,00	5,00	
$M_{t,nom} =$	—					
$V_{R,k}$ for $t_{N,I} =$	0,50	0,93 ac				
	0,60	1,23 ac				
	0,70	1,53 ac				
	0,80	1,82 -	1,82 -	1,82 ac	1,82 ac	1,82 a
	0,90	2,11 -	2,11 -	2,11 ac	2,11 ac	2,11 a
	1,00	2,40 -	2,40 -	2,40 ac	2,40 ac	2,40 a
	1,20	2,82 -	2,88 -	2,94 -	3,06 -	3,18 a
	1,50	3,45 -	3,60 -	3,75 -	4,05 -	4,35 a
2,00	3,45 -	3,60 -	3,75 -	4,05 -	- -	
$N_{R,II,k} =$	1,77	2,30	2,82	4,47	6,12	

Pull-through resistance of component I according to EN 1999-1-4, chapter 8.3.3.1 or specifications of the manufacturer of the aluminium structural sheeting.

Further particulars:

- Component I and II of aluminium with a tensile strength of $R_m \geq 245 \text{ N/mm}^2$: For $R_m \geq 215 \text{ N/mm}^2$ the indicated values of the shear force resistance $V_{R,k}$ can be increased by 14%.
- Component II of aluminium with a tensile strength of $R_m \geq 245 \text{ N/mm}^2$: For $R_m \geq 215 \text{ N/mm}^2$ the indicated values of the pull-out resistance $N_{R,II,k}$ can be increased by 14%.

Self-drilling screw

JT4-6-5,5xL
JT9-6-5,5xL
With hexagon head

Annex 104

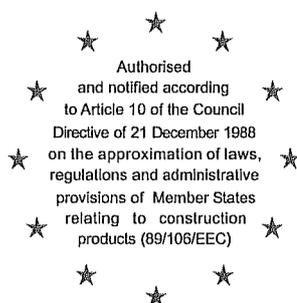
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Member of EOTA

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Handelsbezeichnung
Trade name

Schrauben zur Befestigung von Sandwichpaneelen
Fastening screws for sandwich panels

Zulassungsinhaber
Holder of approval

EJOT Baubefestigungen GmbH
In der Stockwiese 35
57334 Bad Laasphe
DEUTSCHLAND

**Zulassungsgegenstand
und Verwendungszweck**
*Generic type and use
of construction product*

Befestigungsschrauben für Sandwichelemente
Fastening screws for sandwich panels

Geltungsdauer: vom
Validity: from
bis
to

26 April 2013
26 April 2018

Herstellwerke
Manufacturing plants

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Diese Zulassung umfasst
This Approval contains

29 Seiten einschließlich 19 Anhänge
29 pages including 19 annexes



Europäische Organisation für Technische Zulassungen
European Organisation for Technical Approvals

I LEGAL BASES AND GENERAL CONDITIONS

- 1 This European technical approval is issued by Deutsches Institut für Bautechnik in accordance with:
 - Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of Member States relating to construction products¹, modified by Council Directive 93/68/EEC² and Regulation (EC) N° 1882/2003 of the European Parliament and of the Council³;
 - *Gesetz über das In-Verkehr-Bringen von und den freien Warenverkehr mit Bauprodukten zur Umsetzung der Richtlinie 89/106/EWG des Rates vom 21. Dezember 1988 zur Angleichung der Rechts- und Verwaltungsvorschriften der Mitgliedstaaten über Bauprodukte und anderer Rechtsakte der Europäischen Gemeinschaften (Bauproduktengesetz - BauPG) vom 28. April 1998⁴, as amended by Article 2 of the law of 8 November 2011⁵;*
 - Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.
- 2 Deutsches Institut für Bautechnik is authorized to check whether the provisions of this European technical approval are met. Checking may take place in the manufacturing plant. Nevertheless, the responsibility for the conformity of the products to the European technical approval and for their fitness for the intended use remains with the holder of the European technical approval.
- 3 This European technical approval is not to be transferred to manufacturers or agents of manufacturers other than those indicated on page 1, or manufacturing plants other than those indicated on page 1 of this European technical approval.
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- 6 The European technical approval is issued by the approval body in its official language. This version corresponds fully to the version circulated within EOTA. Translations into other languages have to be designated as such.

¹ Official Journal of the European Communities L 40, 11 February 1989, p. 12
² Official Journal of the European Communities L 220, 30 August 1993, p. 1
³ Official Journal of the European Union L 284, 31 October 2003, p. 25
⁴ *Bundesgesetzblatt Teil I 1998*, p. 812
⁵ *Bundesgesetzblatt Teil I 2011*, p. 2178
⁶ Official Journal of the European Communities L 17, 20 January 1994, p. 34

II SPECIFIC CONDITIONS OF THE EUROPEAN TECHNICAL APPROVAL

1 Definition of product/ products and intended use

1.1 Definition of the construction product

The fastening screws for sandwich panels are self drilling and self tapping screws listed in Table 1. The fastening screws for sandwich panels are made of stainless steel. They are partly completed with metallic washers and EPDM sealing rings. For details see the appropriate Annexes.

Screws or washers for which the stainless steel grade A2 according to EN ISO 3506-1 is given in the respective Annexes (e. g. 1.4301 or 1.4567) may be made of stainless steel grade A4 (e. g. 1.4401 or 1.4578) as well.

Examples of fastening screws for sandwich panels and a corresponding connection are shown in Annex 1.

The fastening screws for sandwich panels and the corresponding connections are subject to tension and shear forces.

Table 1 Different types of the fastening screws for sandwich panels

Annex	Fastening screw	Description
Annex 2	EJOT® JT3-D-6H-5,5/6,3 x L EJOT® JT3-D-6H-5,5/6,3 x L EJOT® JT3-D-FR-6H-5,5/6,3 x L EJOT® JT6-D-FR-6H-5,5/6,3 x L	Self drilling screw with sealing washer $\geq \varnothing$ 16 mm
Annex 3	EJOT® JT3-D-6H-5,5/6,3 x L EJOT® JT3-D-6H-5,5/6,3 x L EJOT® JT3-D-FR-6H-5,5/6,3 x L EJOT® JT6-D-FR-6H-5,5/6,3 x L	Self drilling screw with sealing washer $\geq \varnothing$ 16 mm
Annex 4	EJOT® JT3-D-12H-5,5/6,3 x L EJOT® JT6-D-12H-5,5/6,3 x L EJOT® JT3-D-FR-12H-5,5/6,3 x L EJOT® JT6-D-FR-12H-5,5/6,3 x L	Self drilling screw with sealing washer $\geq \varnothing$ 16 mm
Annex 5	EJOT® JT3-6-5,5 x L EJOT® JT6-6-5,5 x L EJOT® JT3-FR-6-5,5 x L EJOT® JT6-FR-6-5,5 x L	Self drilling screw with sealing washer $\geq \varnothing$ 16 mm
Annex 6	EJOT® JT3-6-5,5 x L EJOT® JT6-6-5,5 x L EJOT® JT3-FR-6-5,5 x L EJOT® JT6-FR-6-5,5 x L	Self drilling screw with sealing washer $\geq \varnothing$ 16 mm
Annex 7	EJOT® JT3-6-5,5 x L EJOT® JT6-6-5,5 x L EJOT® JT3-FR-6-5,5 x L EJOT® JT6-FR-6-5,5 x L	Self drilling screw with sealing washer $\geq \varnothing$ 16 mm

Annex	Fastening screw	Description
Annex 8	EJOT® JT3-12-5,5 x L EJOT® JT6-12-5,5 x L EJOT® JT3-FR-12-5,5 x L EJOT® JT6-FR-12-5,5 x L	Self drilling screw with sealing washer $\geq \varnothing 16$ mm
Annex 9	EJOT® JT3-12-5,5 x L EJOT® JT6-12-5,5 x L EJOT® JT3-FR-12-5,5 x L EJOT® JT6-FR-12-5,5 x L	Self drilling screw with sealing washer $\geq \varnothing 16$ mm
Annex 10	EJOT® JZ3-6,3 x L	Self tapping screw with sealing washer $\geq \varnothing 16$ mm
Annex 11	EJOT® JZ3-6,3 x L	Self tapping screw with sealing washer $\geq \varnothing 16$ mm
Annex 12	EJOT® JZ7-6,3 x L	Self tapping screw with sealing washer $\geq \varnothing 16$ mm
Annex 13	EJOT® JZ7-6,3 x L	Self tapping screw with sealing washer $\geq \varnothing 16$ mm
Annex 14*	EJOT® JT3-2-6,5 x L EJOT® JT6-2-6,5 x L	Self drilling screw with sealing washer $\geq \varnothing 16$ mm
Annex 15*	EJOT® JT3-2-6,5 x L EJOT® JT6-2-6,5 x L	Self drilling screw with sealing washer $\geq \varnothing 16$ mm
Annex 16*	EJOT® JT3-D-2H-6,5/7,0 x L EJOT® JT6-D-2H-6,5/7,0 x L EJOT® JT3-D-FR-2H-6,5/7,0 x L EJOT® JT6-D-FR-2H-6,5/7,0 x L	Self drilling screw with sealing washer $\geq \varnothing 16$ mm
Annex 17*	EJOT® JT3-D-2H-6,5/7,0 x L EJOT® JT6-D-2H-6,5/7,0 x L EJOT® JT3-D-FR-2H-6,5/7,0 x L EJOT® JT6-D-FR-2H-6,5/7,0 x L	Self drilling screw with sealing washer $\geq \varnothing 16$ mm
Annex 18*	EJOT® JA3-6,5 x L	Self tapping screw with sealing washer $\geq \varnothing 16$ mm
Annex 19*	EJOT® JA3-6,5 x L	Self tapping screw with sealing washer $\geq \varnothing 16$ mm

*) This fastening screws for sandwich panels are applicable for fastening to timber substructure

1.2 Intended use

The fastening screws for sandwich panels are intended to be used for fastening of flat, lightly profiled or profiled sandwich panels to metal supporting structures and as far as stated in Table 1 to timber supporting structures. The core material of the sandwich panel shall be made of polystyrene (PS) - or polyurethane (PUR) – ridged foam or mineral wool with a minimum compression resistance of the core material of 0.04 N/mm² (according to the specifications to the sandwich elements for instance in the CE-marking). The sandwich panels can either be used as wall or as roof cladding.

The component to be fastened is component I and the supporting structure is component II.

The intended use comprises fastening screws for sandwich panels and connections for indoor and outdoor applications. Fastening screws for sandwich panels which are made of stainless steel are intended to be used in external environments with a high or very high corrosion category.

The intended use comprises connections with predominantly static loads (e.g. wind loads, dead loads).

The provisions made in this European technical approval are based on an assumed working life of the fastening screws for sandwich panels of 25 years when installed in the works or 50 years if the screws are not accessible after installation and they are sufficient protected against corrosion (e. g. made of stainless steel). The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

2 Characteristics of product and methods of verification

2.1 Characteristics of product

The fastening screws for sandwich panels shall correspond to the drawings given in the appropriate Annexes (see Table 1).

The characteristic material values, dimensions and tolerances of the fastening screws for sandwich panels neither indicated in this section nor in the Annexes shall correspond to the respective values laid down in the technical documentation⁷ to this European technical approval.

The characteristic values of the shear and tension resistance of the connections made with the fastening screws for sandwich panels as well as the maximum head displacement are given in the appropriate Annexes or in section 4.2.

The fastening screws for sandwich panels are considered to satisfy the requirements of performance class A1 of the characteristic reaction to fire.

2.2 Methods of verification

The assessment of the fitness of the fastening screws for sandwich panels for the intended use in relation to the Essential Requirements ER 1 (Mechanical resistance and stability), ER 2 (Safety in case of fire), ER 4 (Safety in use) and additional aspects of durability has been made in accordance with section 3.2 of the Common Procedural Rules for Requesting, Preparing and the Granting of European technical approvals set out in the Annex to Commission Decision 94/23/EC⁶.

The assessment of the resistance to fire performance is only relevant to the assembled system (fastening screws for sandwich panels, sandwich panels, supporting structure) which is not part of the ETA.

⁷ The technical documentation to this European technical approval is deposited at Deutsches Institut für Bautechnik and, as far as relevant for the tasks of the approved bodies involved in the attestation of conformity procedure is handed over to the approved bodies.

The fastening screws for sandwich panels are considered to satisfy the requirements of performance class A 1 of the characteristic reaction to fire, in accordance with the provisions of the EC Decision 96/603/EC (as amended) without the need for testing on the basis of its listing in that decision.

Concerning Essential Requirements No. 1 (Mechanical resistance and stability) and No. 4 (Safety in use) the following applies:

The characteristic values of resistance given in the Annexes were determined by shear and tension tests and the values for the maximum head displacement were determined by bending tests.

The formulas to calculate the design resistance are given in clause 4.2.1.

3 Evaluation and attestation of conformity and CE marking

3.1 System of attestation of conformity

According to the Decision 99/92/EC of the European Commission⁸ system 2+ of the attestation of conformity applies.

System 2+: Declaration of conformity of the product by the manufacturer on the basis of:

- (a) Tasks for the manufacturer:
 - (1) initial type-testing of the product;
 - (2) factory production control;
 - (3) testing of samples taken at the factory in accordance with a prescribed test plan.
- (b) Tasks for the approved body:
 - (4) certification of factory production control on the basis of:
 - initial inspection of factory and of factory production control;
 - continuous surveillance, assessment and approval of factory production control.

Note: Approved bodies are also referred to as "notified bodies".

3.2 Responsibilities

3.2.1 Tasks for the manufacturer

3.2.1.1 Factory production control

The manufacturer shall exercise permanent internal control of production. All the elements, requirements and provisions adopted by the manufacturer shall be documented in a systematic manner in the form of written policies and procedures, including records of results performed. This production control system shall insure that the product is in conformity with this European technical approval.

The factory production control shall be in accordance with the control plan which is part of the technical documentation of this European technical approval. The control plan is laid down in the context of the factory production control system operated by the manufacturer and deposited with Deutsches Institut für Bautechnik.⁹

The results of factory production control shall be recorded and evaluated in accordance with the provisions of the control plan.

⁸ Official Journal of the European Communities L 80 of 18.03.1998

⁹ The control plan is a confidential part of the European technical approval and only handed over to the approved bodies involved in the procedure of attestation of conformity. See section 3.2.2.

3.2.1.2 Other tasks for the manufacturer

The manufacturer shall, on the basis of a contract, involve a body which is approved for the tasks referred to in section 3.1 in the field of prefabricated structural components made of hot-rolled steel products in order to undertake the actions laid down in section 3.2.2. For this purpose, the control plan referred to in sections 3.2.1.1 and 3.2.2 shall be handed over by the manufacturer to the approved body involved.

The manufacturer shall make a declaration of conformity, stating that the construction product is in conformity with the provisions of this European technical approval.

3.2.2 Tasks for the approved bodies

The approved body shall perform the

- initial inspection of factory and of factory production control,
- continuous surveillance, assessment and approval of factory production control

in accordance with the provisions laid down in the control plan.

The approved body shall retain the essential points of its actions referred to above and state the results obtained and conclusions drawn in written reports.

The approved certification body involved by the manufacturer shall issue an EC certificate of conformity of the factory production control stating the conformity with the provisions of this European technical approval.

In cases where the provisions of the European technical approval and its control plan are no longer fulfilled the certification body shall withdraw the certificate of conformity and inform Deutsches Institut für Bautechnik without delay.

3.3 CE marking

The CE marking shall be affixed on the accompanying commercial documents. The letters "CE" shall be followed by the identification number of the approved certification body, where relevant, and be accompanied by the following additional information:

- the name and address of the producer (legal entity responsible for the manufacture),
- the last two digits of the year in which the CE marking was affixed,
- the number of the EC certificate for the factory production control,
- the number of the European technical approval,
- the name of the product.

4 Assumptions under which the fitness of the product for the intended use was favourably assessed

4.1 Manufacturing

The fastening screws for sandwich panels are manufactured in accordance with the provisions of the European technical approval using the manufacturing process as laid down in the technical documentation.

The European technical approval is issued for the product on the basis of agreed data/information, deposited with Deutsches Institut für Bautechnik, which identifies the product that has been assessed and judged. Changes to the product or production process, which could result in this deposited data/information being incorrect, should be notified to Deutsches Institut für Bautechnik before the changes are introduced. Deutsches Institut für Bautechnik will decide whether or not such changes affect the approval and consequently the validity of the CE marking on the basis of the approval and if so whether further assessment or alterations to the approval shall be necessary.

4.2 Design

4.2.1 General

Fastening screws for sandwich panels completely or partly exposed to external weather or similar conditions are made of stainless steel or are protected against corrosion. For the corrosion protection the rules given in EN 1090-2:2008 + A1:2011, EN 1993-1-3:2006 + AC:2009 and EN 1993-1-4:2006 are taken into account.

In the following and in the Annexes the structural components to be fastened are called component I and the supporting structure or base material are called component II. Furthermore the following symbols are used, see also Annex 1:

d or D	Thickness of the sandwich panel
t_{N1}	Thickness of the outer face / top plate (on the side of the screw head)
t_{N2}	Thickness of the inner face / bottom plate (on the side of the supporting structure)
t_{II}	Thickness of the supporting structure
u	from screw axes measured screw head displacement, resulting from the displacement of the outer face of the sandwich panels by thermal expansion e. g. caused by solar radiation
max u	maximum allowed screw head displacement, $u \leq \max u$

For calculation of shear resistance of the connection the value for the plate thickness t_{N2} (plate in contact with the supporting structure) is used as relevant. For calculation of tension resistance of the connection and pull-over the relevant thickness is plate thickness t_{N1} (plate in contact with screw head).

The loading is predominantly static. (Remark: Wind loads are regarded as predominantly static.)

Dimensions, material properties, torque moments $M_{t,nom}$, minimum effective screw-in length l_{ef} , nominal material thicknesses t_{N1} and t_{N2} and maximum head displacement as stated in the ETA or in the Annexes are observed.

The verification concept stated in EN 1990:2002 + A1:2005 + A1:2005/AC:2010 is used for the design of the connections made with the fastening screws for sandwich panels. The characteristic values (shear and tension resistance) stated in the Annexes are used for the design of the entire connections.

For intermediate thicknesses of component I or component II the characteristic value for the thinner component is taken.

The following formulas are used to calculate the values of design resistance:

$$N_{R,d} = \frac{N_{R,k}}{\gamma_M}$$

$$V_{R,d} = \frac{V_{R,k}}{\gamma_M}$$

The recommended partial safety factor $\gamma_M = 1.33$ is used in order to determine the corresponding design resistances, provided no values are given in national regulations of the member state in which the fastening screws for sandwich panels are used or in the respective National Annex to Eurocode 3.

In case of combined tension and shear forces the linear interaction formula according to EN 1993-1-3:2006 + AC:2009, section 8.3 (8) is taken into account.

$$\frac{N_{S,d}}{N_{R,d}} + \frac{V_{S,d}}{V_{R,d}} \leq 1,0$$

The possibly required reduction of the tension resistance to 70% of the characteristic values of tension resistance given in the Annexes is taken into account for connections of sandwich panels to thin-walled (plate thickness $t < 5\text{mm}$) asymmetric profiles like Z- or C-shaped profiles.

4.2.2 Additional rules for connections with timber substructures

As far as no other provisions are made in the following EN 1995-1-1:2004 + A1:2008 applies.

Drill points of self drilling screws are not taken into account for the effective screw-in length.

The following terms are used:

l_g - Screw-in length – part of thread screwed into component II including drill point.

l_b - Length of unthreaded part of the drill-point.

l_{ef} - effective screw-in length $l_{ef} = l_g - l_b$

$N_{R,k} = F_{ax,Rk} \cdot k_{mod}$

$V_{R,k} = F_{v,Rk} \cdot k_{mod}$

$F_{ax,Rk}$ according to EN 1995-1-1:2004 + A1:2008, equation (8.40a)

Remark: $F_{ax,Rk} = F_{ax,\alpha,Rk}$ with $\alpha = 90^\circ$

$F_{v,Rk}$ according to EN 1995-1-1:2004 + A1:2008, clause 8.2.3

k_{mod} according to EN 1995-1-1:2004 + A1:2008, Table 3.1

$M_{y,Rk}$ in equation (8.9) of EN 1995-1-1:2004 + A1:2008 and $f_{ax,k}$ in equation (8.40a) of EN 1995-1-1:2004 + A1:2008 are given in the Annexes of this ETA.

The characteristic values for pullout and bearing resistance (timber substructure) calculated according to EN 1995-1-1:2004 + A1:2008 are compared with the characteristic values for component I (pull over and bearing resistance) stated in the therefore foreseen column or line of the table in the appropriate Annexes. The lower value is used for further calculations.

4.3 Installation

The installation is only carried out according to the manufacturer's instructions. The manufacturer hands over the assembly instructions to the assembler.

It is guaranteed by the execution that no bimetallic corrosion will occur.

Screws with washers and EPDM sealing rings exposed to external weather are screwed-in with electric screw driver with appropriate set depth stop.

The use of impact wrenches is not allowed.

The fastening elements are fixed rectangular to the surface of the components to guarantee a correct load bearing and if necessary rain-proof connection.

Component I and component II are in contact to each other in the connection area. The use of compression resistant thermal insulation strips up to a thickness of 3 mm is allowed.

During installation of fastening screws admissible for timber substructures, except self-drilling screws, the components I and II which shall be connected are predrilled with $d_{pd} = 0.7 d$ (d nominal screw diameter) as long as no other instructions are given in the Annexes.

Fastening screws for steel substructures are screwed-in with the cylindrical part of the thread

- through the material if component II has a thickness up to 6 mm and
- at least 6 mm if component II has a thickness over 6 mm.

Welded drill bits or hardened tips are therefore not be taken into account.

The manufacturer's information about the maximum clamp length is considered.

Already loaded screws in regular load bearing connections are if required only replaced by thread forming screws with a larger diameter. Therefore the hole has to be predrilled for the thicker fastening screw.

The conformity of the installed fasteners with the provisions of the ETA is attested by the executing company.

5 Indications to the manufacturer

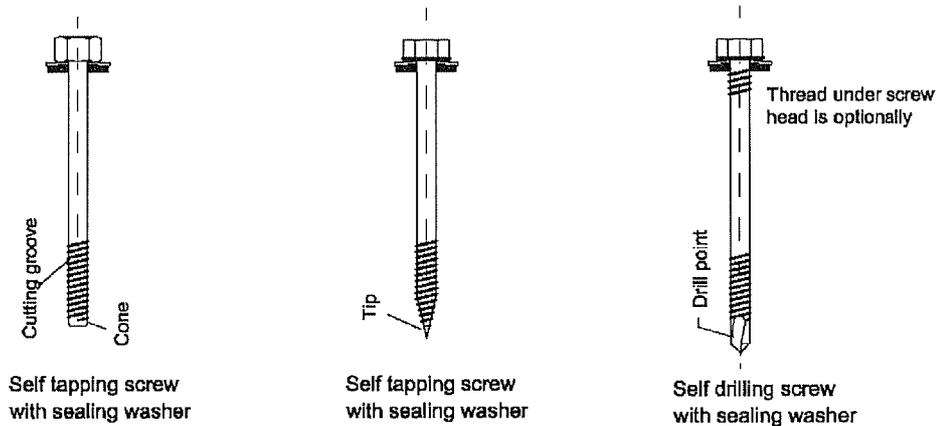
It is in the responsibility of the manufacturer to ensure that the information on the specific conditions according to 1, 2, 4.2 and 4.3 (including Annexes referred to) is given to those who are concerned. This information may be given by reproduction of the respective parts of the European technical approval.

In addition all installation data (e. g. application limits) shall be shown clearly on the package and/or on an enclosed instruction sheet, preferably using illustration(s).

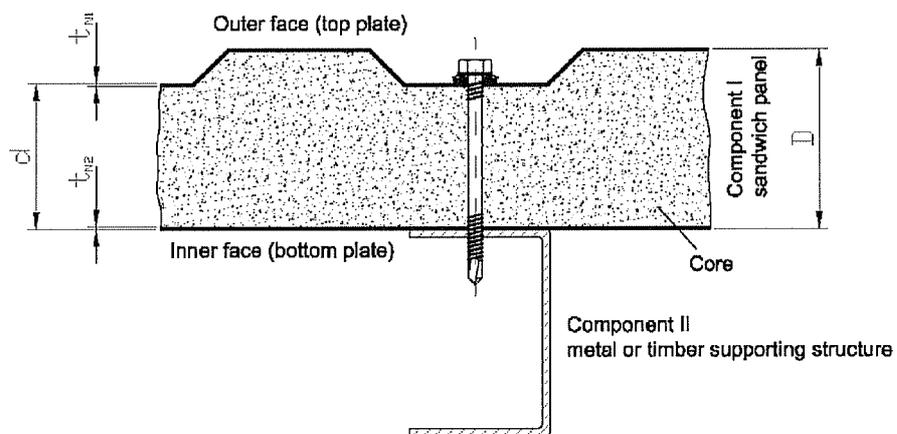
Georg Feistel
Head of Department

beglaubigt:
Ulbrich

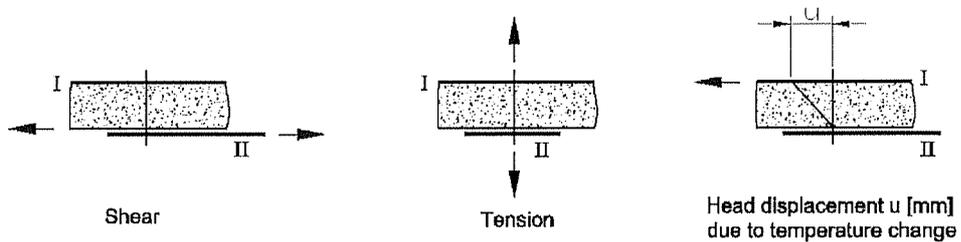
Examples of screws



Example of execution of a connection



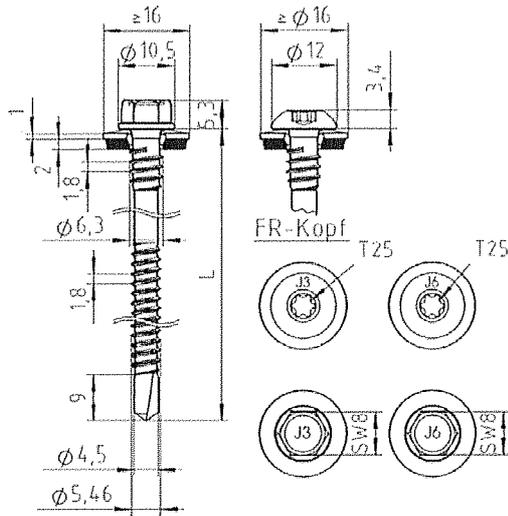
Loading conditions



Fastening screws for sandwich panels

Examples of screws
Example of execution of a connection
Loading conditions

Annex 1



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S280GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 6,50$ mm

Timber supporting structures:

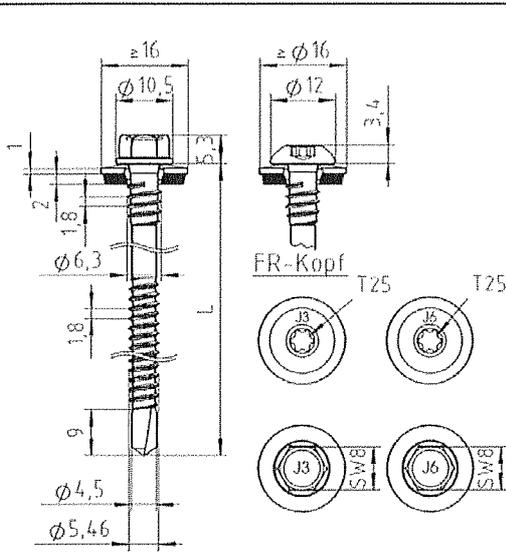
No performance determined

	t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								
		1,50	2,00	2,50	3,00	4,00	5,00	—	—	—
$V_{R,k}$ [kN]	0,40	0,60	0,60	0,60	0,60	0,60	0,60	—	—	—
	0,50	1,50	1,50	1,50	1,50	1,50	1,50	—	—	—
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	—	—	—
	0,63	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,75	2,70	2,70	2,70	2,70	2,70	2,70	—	—	—
	0,88	2,70	2,70	2,70	2,70	2,70	2,70	—	—	—
	1,00	2,70	2,70	2,70	2,70	2,70	2,70	—	—	—
$N_{R,k}$ [kN]	0,40	1,57	1,57	1,57	1,57	1,57	1,57	—	—	—
	0,50	1,70	1,70	1,70	1,70	1,70	1,70	—	—	—
	0,55	2,00	2,00	2,00	2,00	2,00	2,00	—	—	—
	0,63	1,90	2,20	2,20	2,20	2,20	2,20	—	—	—
	0,75	1,90	2,60	3,40	3,40	3,40	3,40	—	—	—
	0,88	1,90	2,60	4,10	4,10	4,10	4,10	—	—	—
	1,00	1,90	2,60	4,20	4,90	4,90	4,90	—	—	—
max u [mm]	40	20,0	15,5	7,0	7,0	7,0	6,0	—	—	—
	50	23,0	18,5	9,0	9,0	8,5	7,0	—	—	—
	60	26,0	21,5	11,0	11,0	10,0	8,0	—	—	—
	70	28,5	24,0	13,5	13,5	13,0	11,0	—	—	—
	80	31,5	27,0	16,0	16,0	15,0	13,0	—	—	—
	100	37,5	33,0	21,5	21,5	19,0	16,0	—	—	—
	120	40,0	38,5	27,0	27,0	23,0	20,0	—	—	—
	140	40,0	40,0	32,5	32,5	26,0	23,0	—	—	—
≥ 160	40,0	40,0	32,5	32,5	26,0	23,0	—	—	—	
$M_{t,nom}$ [Nm]										

Self drilling screw

EJOT® JT3-D-6H-5,5/6,3 x L EJOT® JT3-D-6H-5,5/6,3 x L
EJOT® JT3-D-FR-6H-5,5/6,3 x L EJOT® JT6-D-FR-6H-5,5/6,3 x L
with sealing washer $\geq \phi 16$ mm

Annex 2



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S320GD or S350GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 6,50 \text{ mm}$

Timber supporting structures:

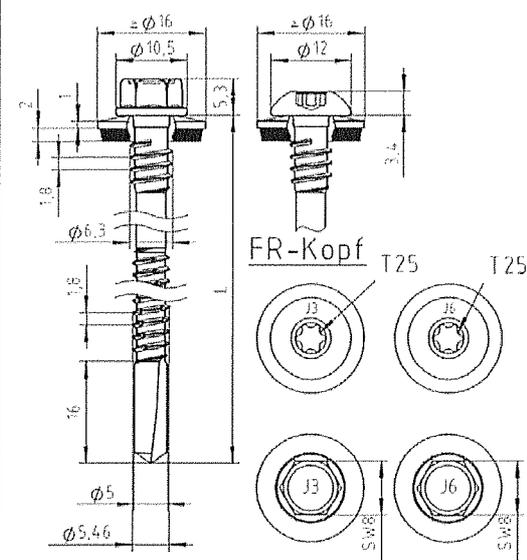
No performance determined

	t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								
		1,50	2,00	2,50	3,00	4,00	5,00	—	—	—
$V_{R,k}$ [kN]	0,40	0,65	0,65	0,65	0,65	0,65	0,65	—	—	—
	0,50	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,55	1,70	1,70	1,70	1,70	1,70	1,70	—	—	—
	0,63	1,80	1,80	1,80	1,80	1,80	1,80	—	—	—
	0,75	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
	0,88	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
	1,00	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
$N_{R,k}$ [kN]	0,40	1,70	1,70	1,70	1,70	1,70	1,70	—	—	—
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	—	—	—
	0,55	1,90	2,10	2,10	2,10	2,10	2,10	—	—	—
	0,63	1,90	2,40	2,40	2,40	2,40	2,40	—	—	—
	0,75	1,90	2,60	3,60	3,60	3,60	3,60	—	—	—
	0,88	1,90	2,60	4,20	4,50	4,50	4,50	—	—	—
	1,00	1,90	2,60	4,20	5,00	5,00	5,00	—	—	—
max u [mm]	40	20,0	15,5	7,0	7,0	7,0	6,0	—	—	—
	50	23,0	18,5	9,0	9,0	8,5	7,0	—	—	—
	60	26,0	21,5	11,0	11,0	10,0	8,0	—	—	—
	70	28,5	24,0	13,5	13,5	13,0	11,0	—	—	—
	80	31,5	27,0	16,0	16,0	15,0	13,0	—	—	—
	100	37,5	33,0	21,5	21,5	19,0	16,0	—	—	—
	120	40,0	38,5	27,0	27,0	23,0	20,0	—	—	—
	140	40,0	40,0	32,5	32,5	26,0	23,0	—	—	—
≥ 160	40,0	40,0	32,5	32,5	26,0	23,0	—	—	—	
$M_{t, \text{nom}}$ [Nm]										

Self drilling screw

EJOT® JT3-D-6H-5,5/6,3 x L EJOT® JT3-D-6H-5,5/6,3 x L
EJOT® JT3-D-FR-6H-5,5/6,3 x L EJOT® JT6-D-FR-6H-5,5/6,3 x L
with sealing washer $\geq \text{Ø } 16 \text{ mm}$

Annex 3



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S320GD or S350GD – EN 10346

Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 13,0 \text{ mm}$

Timber supporting structures:
No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								—	—
	3,00	4,00	5,00	6,00	8,00	10,0	12,0	—		
$V_{R,k}$ [kN]	0,40	0,98	0,98	0,98	0,98	0,98	0,98	0,98	—	—
	0,50	0,98	0,98	0,98	0,98	0,98	0,98	0,98	—	—
	0,55	0,98	0,98	0,98	0,98	0,98	0,98	0,98	—	—
	0,63	1,20	1,20	1,20	1,20	1,20	1,20	1,20	—	—
	0,75	1,70	1,70	1,70	1,70	1,70	1,70	1,70	—	—
	0,88	2,40	2,40	2,40	2,40	2,40	2,40	2,40	—	—
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	—	—
$N_{R,k}$ [kN]	0,40	1,66	1,66	1,66	1,66	1,66	1,66	1,66	—	—
	0,50	1,70	1,70	1,70	1,70	1,70	1,70	1,70	—	—
	0,55	2,00	2,00	2,00	2,00	2,00	2,00	2,00	—	—
	0,63	2,40	2,40	2,40	2,40	2,40	2,40	2,40	—	—
	0,75	3,00	3,10	3,10	3,10	3,10	3,10	3,10	—	—
	0,88	3,00	3,80	3,80	3,80	3,80	3,80	3,80	—	—
	1,00	3,00	4,60	4,60	4,60	4,60	4,60	4,60	—	—
max u [mm]	40	14,0	7,0	6,0	5,0	5,0	5,0	5,0	—	—
	50	16,0	8,5	7,5	6,5	6,5	6,5	6,5	—	—
	60	18,5	10,0	9,0	8,0	8,0	8,0	8,0	—	—
	70	20,0	12,5	11,0	10,0	10,0	10,0	10,0	—	—
	80	22,0	15,0	13,5	12,0	12,0	12,0	12,0	—	—
	100	26,0	19,0	18,0	15,0	15,0	15,0	15,0	—	—
	120	29,0	22,5	20,0	18,0	18,0	18,0	18,0	—	—
	140	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—
	≥ 160	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—
$M_{t,nom}$ [Nm]										

Self drilling screw

EJOT® JT3-D-12H-5,5/6,3 x L EJOT® JT6-D-12H-5,5/6,3 x L
EJOT® JT3-D-FR-12H-5,5/6,3 x L EJOT® JT6-D-FR-12H-5,5/6,3 x L
with sealing washer $\geq \varnothing 16 \text{ mm}$

Annex 5

Materials:
Fastener: stainless steel (1.4301) – EN 10088
 stainless steel (1.4401) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S280GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
 S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 6,5 \text{ mm}$

Timber supporting structures:
 No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								
	1,50	2,0	2,50	3,00	4,00	5,00	—	—	—
$V_{R,k}$ [kN]	0,40	0,60	0,60	0,60	0,60	0,60	—	—	—
	0,50	1,50	1,50	1,50	1,50	1,50	—	—	—
	0,55	1,50	1,50	1,50	1,50	1,50	—	—	—
	0,63	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,75	2,70	2,70	2,70	2,70	2,70	—	—	—
	0,88	2,70	2,70	2,70	2,70	2,70	—	—	—
	1,00	2,70	2,70	2,70	2,70	2,70	—	—	—
$N_{R,k}$ [kN]	0,40	1,57	1,57	1,57	1,57	1,57	—	—	—
	0,50	1,70	1,70	1,70	1,70	1,70	—	—	—
	0,55	2,00	2,00	2,00	2,00	2,00	—	—	—
	0,63	1,90	2,20	2,20	2,20	2,20	—	—	—
	0,75	1,90	2,60	3,40	3,40	3,40	—	—	—
	0,88	1,90	2,60	4,10	4,10	4,10	—	—	—
	1,00	1,90	2,60	4,20	4,90	4,90	—	—	—
max u [mm]	40	20,0	15,5	7,0	7,0	7,0	6,0	—	—
	50	23,0	18,5	9,0	9,0	8,5	7,0	—	—
	60	26,0	21,5	11,0	11,0	10,0	8,0	—	—
	70	28,5	24,0	13,5	13,5	13,0	11,0	—	—
	80	31,5	27,0	16,0	16,0	15,0	13,0	—	—
	100	37,5	33,0	21,5	21,5	19,0	16,0	—	—
	120	40,0	38,5	27,0	27,0	23,0	20,0	—	—
	140	40,0	40,0	32,5	32,5	26,0	23,0	—	—
≥ 160	40,0	40,0	32,5	32,5	26,0	23,0	—	—	
$M_{t,nom}$ [Nm]									

Self drilling screw		Annex 6
EJOT® JT3-6-5,5 x L	EJOT® JT6-6-5,5 x L	
EJOT® JT3-FR-6-5,5 x L	EJOT® JT6-FR-6-5,5 x L	
with sealing washer $\geq \varnothing 16 \text{ mm}$		

Materials:
Fastener: stainless steel (1.4301) – EN 10088
 stainless steel (1.4401) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S320GD or S350GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
 S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 6,50 \text{ mm}$

Timber supporting structures:
 No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]							—	—	—
	1,50	2,00	2,50	3,00	4,00	5,00				
$V_{R,k}$ [kN]	0,40	0,65	0,65	0,65	0,65	0,65	0,65	—	—	—
	0,50	1,60	1,60	1,60	1,60	1,60	1,60	—	—	—
	0,55	1,70	1,70	1,70	1,70	1,70	1,70	—	—	—
	0,63	1,80	1,80	1,80	1,80	1,80	1,80	—	—	—
	0,75	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
	0,88	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
	1,00	2,80	2,80	2,80	2,80	2,80	2,80	—	—	—
$N_{R,k}$ [kN]	0,40	1,70	1,70	1,70	1,70	1,70	1,70	—	—	—
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	—	—	—
	0,55	1,90	2,10	2,10	2,10	2,10	2,10	—	—	—
	0,63	1,90	2,40	2,40	2,40	2,40	2,40	—	—	—
	0,75	1,90	2,60	3,60	3,60	3,60	3,60	—	—	—
	0,88	1,90	2,60	4,20	4,50	4,50	4,50	—	—	—
	1,00	1,90	2,60	4,20	5,00	5,00	5,00	—	—	—
max u [mm]	40	20,0	15,5	7,0	7,0	7,0	6,0	—	—	—
	50	23,0	18,5	9,0	9,0	8,5	7,0	—	—	—
	60	26,0	21,5	11,0	11,0	10,0	8,0	—	—	—
	70	28,5	24,0	13,5	13,5	13,0	11,0	—	—	—
	80	31,5	27,0	16,0	16,0	15,0	13,0	—	—	—
	100	37,5	33,0	21,5	21,5	19,0	16,0	—	—	—
	120	40,0	38,5	27,0	27,0	23,0	20,0	—	—	—
	140	40,0	40,0	32,5	32,5	26,0	23,0	—	—	—
	≥ 160	40,0	40,0	32,5	32,5	26,0	23,0	—	—	—
$M_{t,nom}$ [Nm]										

Self drilling screw

EJOT® JT3-6-5,5 x L EJOT® JT6-6-5,5 x L
 EJOT® JT3-FR-6-5,5 x L EJOT® JT6-FR-6-5,5 x L
 with sealing washer $\geq \phi 16 \text{ mm}$

Annex 7

Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD – EN 10346

Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 13,0 \text{ mm}$

Timber supporting structures:

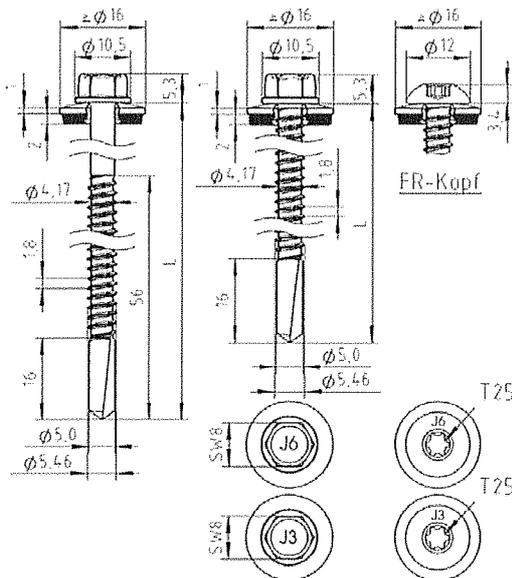
No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								—	—
	3,00	4,00	5,00	6,00	8,00	10,0	12,0	—		
$V_{R,k}$ [kN]	0,40	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—
	0,50	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—
	0,55	0,90	0,90	0,90	0,90	0,90	0,90	0,90	—	—
	0,63	1,10	1,10	1,10	1,10	1,10	1,10	1,10	—	—
	0,75	1,60	1,60	1,60	1,60	1,60	1,60	1,60	—	—
	0,88	2,20	2,20	2,20	2,20	2,20	2,20	2,20	—	—
	1,00	2,90	2,90	2,90	2,90	2,90	2,90	2,90	—	—
$N_{R,k}$ [kN]	0,40	1,54	1,54	1,54	1,54	1,54	1,54	1,54	—	—
	0,50	1,70	1,70	1,70	1,70	1,70	1,70	1,70	—	—
	0,55	2,00	2,00	2,00	2,00	2,00	2,00	2,00	—	—
	0,63	2,40	2,40	2,40	2,40	2,40	2,40	2,40	—	—
	0,75	3,00	3,10	3,10	3,10	3,10	3,10	3,10	—	—
	0,88	3,00	3,90	3,90	3,90	3,90	3,90	3,90	—	—
	1,00	3,00	4,70	4,70	4,70	4,70	4,70	4,70	—	—
max u [mm]	40	14,0	7,0	6,0	5,0	5,0	5,0	5,0	—	—
	50	16,0	8,5	7,5	6,5	6,5	6,5	6,5	—	—
	60	18,5	10,0	9,0	8,0	8,0	8,0	8,0	—	—
	70	20,0	12,5	11,0	10,0	10,0	10,0	10,0	—	—
	80	22,0	15,0	13,5	12,0	12,0	12,0	12,0	—	—
	100	26,0	19,0	18,0	15,0	15,0	15,0	15,0	—	—
	120	29,0	22,5	20,0	18,0	18,0	18,0	18,0	—	—
	140	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—
≥ 160	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—	
$M_{t,nom}$ [Nm]										

Self drilling screw

EJOT® JT3-12-5,5 x L EJOT® JT6-12-5,5 x L
EJOT® JT3-FR-12-5,5 x L EJOT® JT6-FR-12-5,5 x L
with sealing washer $\geq \varnothing 16 \text{ mm}$

Annex 8



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S320GD or S350GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Drilling capacity: $\Sigma(t_{N2} + t_{II}) \leq 13,0 \text{ mm}$

Timber supporting structures:

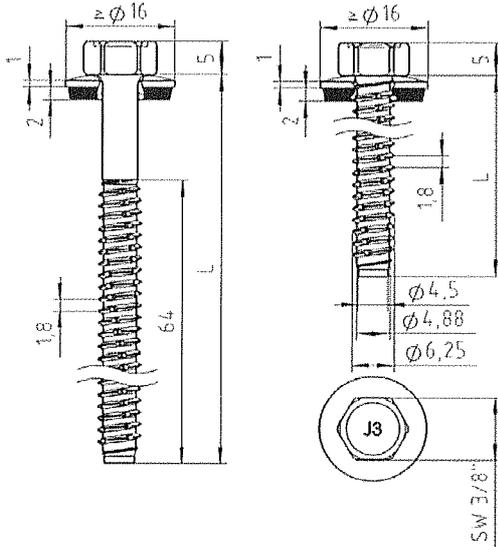
No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								—	—
	3,00	4,00	5,00	6,00	8,00	10,0	12,0	—		
$V_{R,k}$ [kN]	0,40	0,98	0,98	0,98	0,98	0,98	0,98	0,98	—	—
	0,50	0,98	0,98	0,98	0,98	0,98	0,98	0,98	—	—
	0,55	0,98	0,98	0,98	0,98	0,98	0,98	0,98	—	—
	0,63	1,20	1,20	1,20	1,20	1,20	1,20	1,20	—	—
	0,75	1,70	1,70	1,70	1,70	1,70	1,70	1,70	—	—
	0,88	2,40	2,40	2,40	2,40	2,40	2,40	2,40	—	—
	1,00	3,10	3,10	3,10	3,10	3,10	3,10	3,10	—	—
$N_{R,k}$ [kN]	0,40	1,66	1,66	1,66	1,66	1,66	1,66	1,66	—	—
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	1,90	—	—
	0,55	2,20	2,20	2,20	2,20	2,20	2,20	2,20	—	—
	0,63	2,60	2,60	2,60	2,60	2,60	2,60	2,60	—	—
	0,75	3,00	3,30	3,30	3,30	3,30	3,30	3,30	—	—
	0,88	3,00	4,20	4,20	4,20	4,20	4,20	4,20	—	—
1,00	3,00	4,70	5,00	5,00	5,00	5,00	5,00	—	—	
max u [mm]	40	14,0	7,0	6,0	5,0	5,0	5,0	5,0	—	—
	50	16,0	8,5	7,5	6,5	6,5	6,5	6,5	—	—
	60	18,5	10,0	9,0	8,0	8,0	8,0	8,0	—	—
	70	20,0	12,5	11,0	10,0	10,0	10,0	10,0	—	—
	80	22,0	15,0	13,5	12,0	12,0	12,0	12,0	—	—
	100	26,0	19,0	18,0	15,0	15,0	15,0	15,0	—	—
	120	29,0	22,5	20,0	18,0	18,0	18,0	18,0	—	—
	140	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—
≥ 160	33,0	26,0	23,5	21,0	21,0	21,0	21,0	—	—	
$M_{t,nom}$ [Nm]										

Self drilling screw

EJOT® JT3-12-5,5 x L EJOT® JT6-12-5,5 x L
EJOT® JT3-FR-12-5,5 x L EJOT® JT6-FR-12-5,5 x L
with sealing washer $\geq \varnothing 16 \text{ mm}$

Annex 9



Materials:

Fastener: stainless steel (1.4301) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD – EN 10346

Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Predrill diameter see table below

Timber supporting structures:

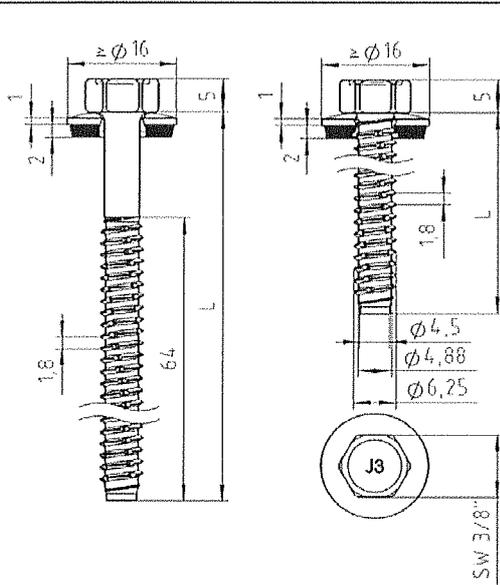
No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_l [mm]									
	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	≥ 10,0	
d_{pd} [mm]	5,0		5,3			5,5		5,7		
$V_{R,k}$ [kN]	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
$N_{R,k}$ [kN]	0,40	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,55	2,00	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
	0,63	2,00	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80
	0,75	2,00	2,90	3,60	3,60	3,60	3,60	3,60	3,60	3,60
	0,88	2,00	2,90	3,80	3,80	3,80	3,80	3,80	3,80	3,80
	1,00	2,00	2,90	3,90	4,00	4,00	4,00	4,00	4,00	4,00
max u [mm]	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	3,0
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	4,5
	50	33,5	12,5	12,5	12,5	5,5	5,5	5,5	5,5	5,5
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	7,0
	70	40,0	18,5	18,5	18,5	9,5	9,5	9,5	9,5	9,5
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	12,5
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	18,0
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	23,5
	≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	29,0
$M_{t, nom}$ [Nm]										

Self tapping screw

EJOT® JZ3-6,3 x L
with sealing washer ≥ Ø 16 mm

Annex 10



Materials:

Fastener: stainless steel (1.4301) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S320GD or S350GD – EN 10346

Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Predrill diameter see table below

Timber supporting structures:

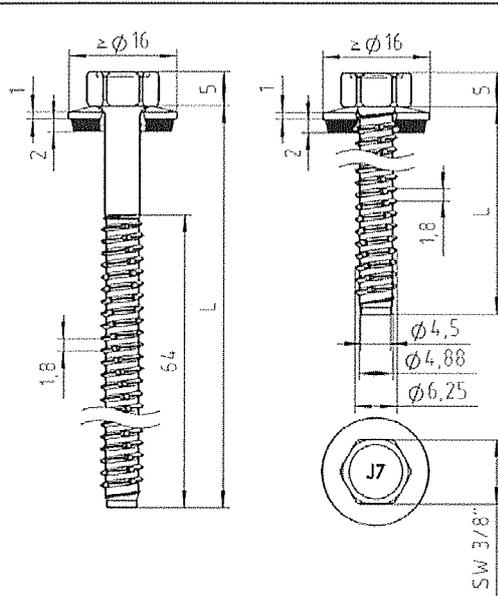
No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{fl} [mm]									
	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	$\geq 10,0$	
d_{pd} [mm]	5,0	5,3					5,5	5,7		
$V_{R,k}$ [kN]	0,40	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,50	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
	0,55	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70
	0,63	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10
	0,75	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10
	0,88	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10
	1,00	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10
$N_{R,k}$ [kN]	0,40	1,36	1,36	1,36	1,36	1,36	1,36	1,36	1,36	1,36
	0,50	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00
	0,55	2,00	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50
	0,63	2,00	2,90	3,00	3,00	3,00	3,00	3,00	3,00	3,00
	0,75	2,00	2,90	3,90	3,90	3,90	3,90	3,90	3,90	3,90
	0,88	2,00	2,90	3,90	4,10	4,10	4,10	4,10	4,10	4,10
	1,00	2,00	2,90	3,90	4,30	4,30	4,30	4,30	4,30	4,30
max u [mm]	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	3,0
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	4,5
	50	33,5	12,5	12,5	12,5	5,5	5,5	5,5	5,5	5,5
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	7,0
	70	40,0	18,5	18,5	18,5	9,5	9,5	9,5	9,5	9,5
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	12,5
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	18,0
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	23,5
	≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	29,0
$M_{l,nom}$ [Nm]										

Self tapping screw

EJOT® JZ3-6,3 x L
with sealing washer $\geq \phi 16$ mm

Annex 11



Materials:

Fastener: stainless steel CRONIMAKS®
similar to stainless steel (1.4301) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S280GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Predrill diameter see table below

Timber supporting structures:

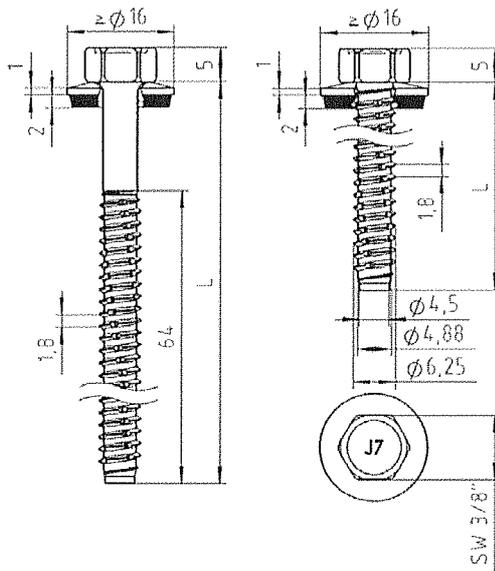
No performance determined

t _{N1} , t _{N2} , d, D [mm]	t _{fl} [mm]									
	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	≥ 10,0	
d _{pd} [mm]	5,0	5,3					5,5	5,7		
V _{R,k} [kN]	0,40	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86	0,86
	0,50	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,55	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50	1,50
	0,63	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,75	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,88	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	1,00	1,80	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
N _{R,k} [kN]	0,40	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25	1,25
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,55	2,00	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30
	0,63	2,00	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80
	0,75	2,00	2,90	3,60	3,60	3,60	3,60	3,60	3,60	3,60
	0,88	2,00	2,90	3,80	3,80	3,80	3,80	3,80	3,80	3,80
	1,00	2,00	2,90	3,90	4,00	4,00	4,00	4,00	4,00	4,00
max u [mm]	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0	3,0
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5	4,5
	50	33,5	12,5	12,5	12,5	5,5	5,5	5,5	5,5	5,5
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0	7,0
	70	40,0	18,5	18,5	18,5	9,5	9,5	9,5	9,5	9,5
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5	12,5
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0	18,0
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5	23,5
	≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	29,0
M _{t, nom} [Nm]										

Self tapping screw

EJOT® JZ7-6,3 x L
with sealing washer ≥ Ø 16 mm

Annex 12



Materials:

Fastener: stainless steel CRONIMAKS®
similar to stainless steel (1.4301) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S320GD or S350GD – EN 10346
Component II: S235, S275 or S355 – EN 10025-1
S280GD, S320GD or S350GD – EN 10346

Predrill diameter see table below

Timber supporting structures:

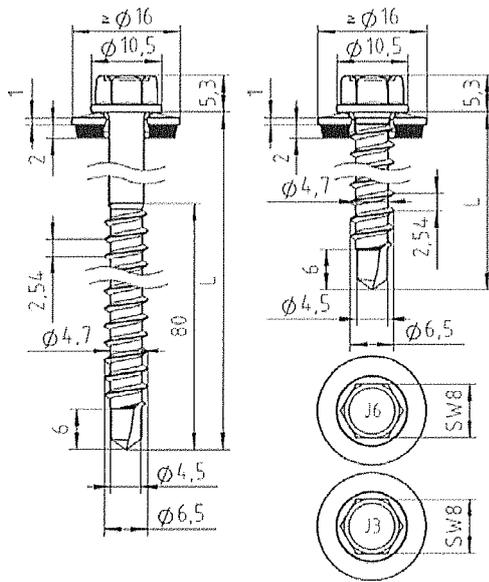
No performance determined

t_{N1}, t_{N2}, d, D [mm]	t_{II} [mm]								
	1,50	2,00	2,50	3,00	4,00	5,00	6,00	8,00	$\geq 10,0$
d_{pd} [mm]	5,0	5,3					5,5	5,7	
$V_{R,k}$ [kN]	0,40	0,94	0,94	0,94	0,94	0,94	0,94	0,94	0,94
	0,50	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
	0,55	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70
	0,63	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10
	0,75	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10
	0,88	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10
	1,00	2,00	2,10	2,10	2,10	2,10	2,10	2,10	2,10
$N_{R,k}$ [kN]	0,40	1,36	1,36	1,36	1,36	1,36	1,36	1,36	1,36
	0,50	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00
	0,55	2,00	2,50	2,50	2,50	2,50	2,50	2,50	2,50
	0,63	2,00	2,90	3,00	3,00	3,00	3,00	3,00	3,00
	0,75	2,00	2,90	3,90	3,90	3,90	3,90	3,90	3,90
	0,88	2,00	2,90	3,90	4,10	4,10	4,10	4,10	4,10
	1,00	2,00	2,90	3,90	4,30	4,30	4,30	4,30	4,30
max u [mm]	30	20,0	7,0	7,0	7,0	3,0	3,0	3,0	3,0
	40	26,5	10,0	10,0	10,0	4,5	4,5	4,5	4,5
	50	33,5	12,5	12,5	12,5	5,5	5,5	5,5	5,5
	60	40,0	15,5	15,5	15,5	7,0	7,0	7,0	7,0
	70	40,0	18,5	18,5	18,5	9,5	9,5	9,5	9,5
	80	40,0	21,5	21,5	21,5	12,5	12,5	12,5	12,5
	100	40,0	27,0	27,0	27,0	18,0	18,0	18,0	18,0
	120	40,0	32,5	32,5	32,5	23,5	23,5	23,5	23,5
≥ 140	40,0	38,5	38,5	38,5	29,0	29,0	29,0	29,0	
$M_{t,nom}$ [Nm]									

Self tapping screw

EJOT® JZ7-6,3 x L
with sealing washer $\geq \phi 16$ mm

Annex 13



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD – EN 10346

Component II: structural timber – EN 14081

Drilling capacity: $t_{N2} \leq 2,00$ mm

Timber supporting structures:

performance determined with

$M_{y,Rk} = 9,742$ Nm

$f_{ax,k} = 11,810$ N/mm² für $l_{ef} \geq 44$ mm

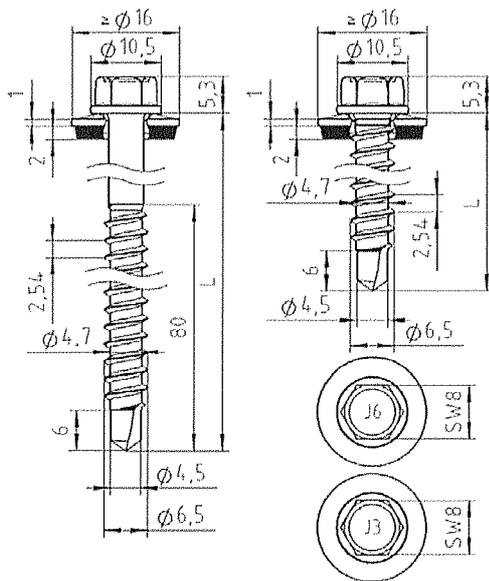
t_{N1}, t_{N2}, d, D [mm]	l_g [mm]												
	50	53	56	59	62	65	68	71	74	77	80		
$V_{R,k}$ [kN]	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
$N_{R,k}$ [kN]	0,40	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24
	0,50	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80	1,80
	0,55	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,63	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50
	0,75	3,04	3,25	3,30	3,30	3,30	3,30	3,30	3,30	3,30	3,30	3,30	3,30
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10	4,10	4,10	4,10	4,10
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90	4,90
max u [mm]	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	50	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	70	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
≥ 140	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	
$M_{t,nom}$ [Nm]													

The values listed above in dependence on the screw-in length in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350$ kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw

EJOT® JT3-2-6,5 x L EJOT® JT6-2-6,5 x L
with sealing washer $\geq \phi 16$ mm

Annex 14



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S320GD or S350GD – EN 10346

Component II: structural timber – EN 14081

Drilling capacity: $t_{N2} \leq 2,00$ mm

Timber supporting structures:

performance determined with

$M_{y,Rk} = 9,742$ Nm

$f_{ax,k} = 11,810$ N/mm² für $l_{ef} \geq 44$ mm

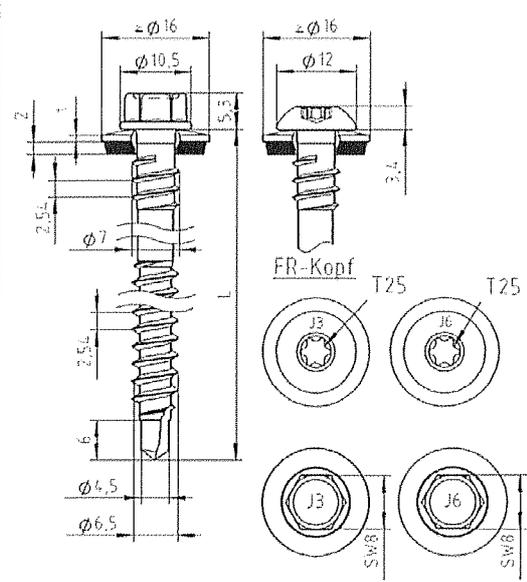
t_{N1}, t_{N2}, d, D [mm]	l_g [mm]												
	50	53	56	59	62	65	68	71	74	77	80		
$V_{R,k}$ [kN]	0,40	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11
	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	0,55	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	0,63	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
	0,75	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
	0,88	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
	1,00	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40
$N_{R,k}$ [kN]	0,40	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90
	0,55	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00
	0,63	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70	2,70
	0,75	3,04	3,25	3,45	3,60	3,60	3,60	3,60	3,60	3,60	3,60	3,60	3,60
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,40	4,40	4,40	4,40	4,40
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,91	5,11	5,30
max u [mm]	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	50	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	70	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	120	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
≥ 140	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	
$M_{t,nom}$ [Nm]													

The values listed above in dependence on the screw-in length in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350$ kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw

EJOT® JT3-2-6,5 x L EJOT® JT6-2-6,5 x L
with sealing washer $\geq \varnothing 16$ mm

Annex 15



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD – EN 10346

Component II: structural timber – EN 14081

Drilling capacity: $t_{N2} \leq 2,00$ mm

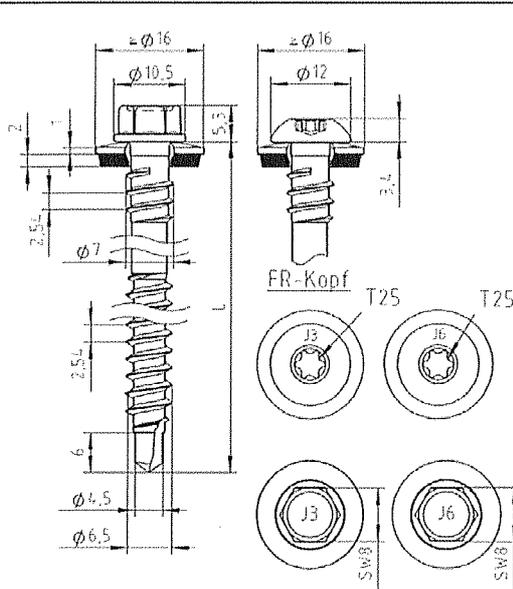
Timber supporting structures:
performance determined with

$M_{y,Rk} = 9,742$ Nm
 $f_{ax,k} = 11,810$ N/mm² für $l_{ef} \geq 44$ mm

t_{N1}, t_{N2}, d, D [mm]	50	53	56	59	62	65	68	71	74	77	80	
	l_g [mm]											
$V_{R,k}$ [kN]	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,l}$ [kN]
	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10
	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20
	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30
$N_{R,k}$ [kN]	1,57	1,57	1,57	1,57	1,57	1,57	1,57	1,57	1,57	1,57	1,57	$N_{R,k,l}$ [kN]
	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70
	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00
	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20	2,20
	3,04	3,25	3,40	3,40	3,40	3,40	3,40	3,40	3,40	3,40	3,40	3,40
	3,04	3,25	3,45	3,66	3,87	4,08	4,10	4,10	4,10	4,10	4,10	4,10
	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,90	4,90	4,90
$\max u$ [mm]	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	$\max u$ [mm]
	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5
	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5
	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0
	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5
	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5
	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0
$M_{t,nom}$ [Nm]												

The values listed above in dependence on the screw-in length in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350$ kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw	Annex 16
EJOT® JT3-D-2H-6,5/7,0 x L EJOT® JT6-D-2H-6,5/7,0 x L EJOT® JT3-D-FR-2H-6,5/7,0 x L EJOT® JT6-D-FR-2H-6,5/7,0 x L with sealing washer $\geq \varnothing 16$ mm	



Materials:

Fastener: stainless steel (1.4301) – EN 10088
stainless steel (1.4401) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S320GD or S350GD – EN 10346

Component II: structural timber – EN 14081

Drilling capacity: $t_{N2} \leq 2,00$ mm

Timber supporting structures:

performance determined with

$M_{y,Rk} = 9,742$ Nm

$f_{ax,k} = 11,810$ N/mm² für $l_{ef} \geq 44$ mm

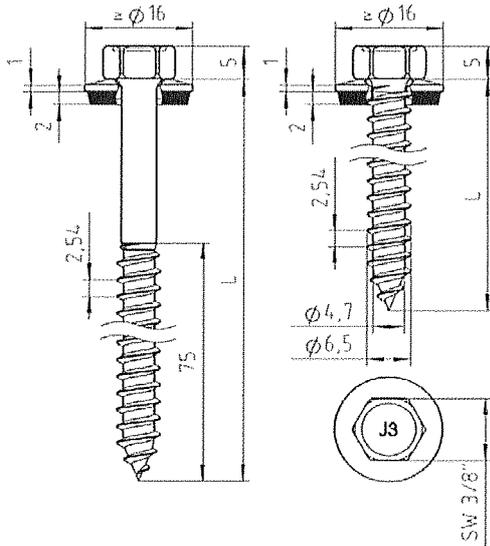
t_{N1}, t_{N2}, d, D [mm]	l_g [mm]													
	50	53	56	59	62	65	68	71	74	77	80			
$V_{R,k}$ [kN]	0,40	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	$V_{R,k,I}$ [kN]	
	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20		
	0,55	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30		
	0,63	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40		
	0,75	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40		
	0,88	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40		
	1,00	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40		
$N_{R,k}$ [kN]	0,40	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	1,70	$N_{R,k,I}$ [kN]	
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90		
	0,55	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10	2,10		
	0,63	2,40	2,40	2,40	2,40	2,40	2,40	2,40	2,40	2,40	2,40	2,40		
	0,75	3,04	3,25	3,45	3,60	3,60	3,60	3,60	3,60	3,60	3,60	3,60		
	0,88	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,50	4,50	4,50		4,50
	1,00	3,04	3,25	3,45	3,66	3,87	4,08	4,28	4,49	4,70	4,91	5,11		5,30
max u [mm]	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	max u [mm]	
	40	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5		
	50	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5	7,5		
	60	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0	9,0		
	70	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5	11,5		
	80	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5	13,5		
	100	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		
	≥ 140	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0	18,0		18,0
$M_{t,nom}$ [Nm]														

The values listed above in dependence on the screw-in length in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350$ kg/m³). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self drilling screw

EJOT® JT3-D-2H-6,5/7,0 x L EJOT® JT6-D-2H-6,5/7,0 x L
EJOT® JT3-D-FR-2H-6,5/7,0 x L EJOT® JT6-D-FR-2H-6,5/7,0 x L
with sealing washer $\geq \phi 16$ mm

Annex 17



Materials:

Fastener: stainless steel (1.4301) – EN 10088

Washer: stainless steel (1.4301) – EN 10088

Component I: S280GD – EN 10346

Component II: structural timber – EN 14081

Predrill diameter 4,5 mm

Timber supporting structures:

performance determined with

$M_{y,Rk} = 9,742 \text{ Nm}$

$f_{ax,k} = 11,080 \text{ N/mm}^2$ für $l_{ef} \geq 50 \text{ mm}$

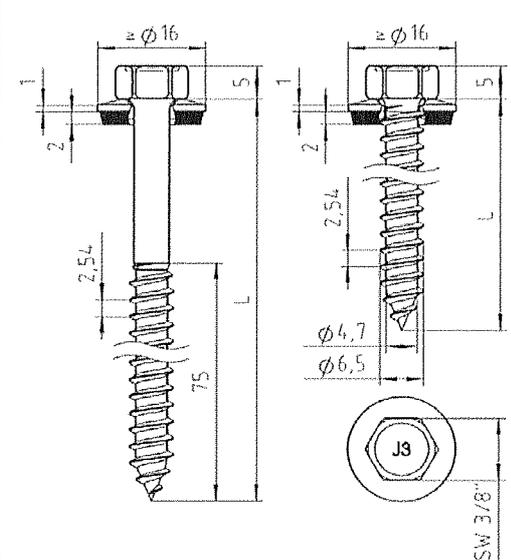
t_{N1}, t_{N2}, d, D [mm]	l_g [mm]													
	50	53	55	58	60	63	65	68	70	73	75			
$V_{R,k}$ [kN]	0,40	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	1,03	$V_{R,k,l}$ [kN]
	0,50	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	1,10	
	0,55	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,63	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,75	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,88	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	1,00	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
$N_{R,k}$ [kN]	0,40	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	1,24	$N_{R,k,l}$ [kN]
	0,50	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	1,90	
	0,55	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	2,30	
	0,63	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	2,80	
	0,75	3,24	3,40	3,56	3,60	3,60	3,60	3,60	3,60	3,60	3,60	3,60	3,60	
	0,88	3,24	3,40	3,56	3,73	3,80	3,80	3,80	3,80	3,80	3,80	3,80	3,80	
	1,00	3,24	3,40	3,56	3,73	3,89	4,00	4,00	4,00	4,00	4,00	4,00	4,00	
max u [mm]	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	max u [mm]
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
	50	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	
	70	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0		
≥ 120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
$M_{t,nom}$ [Nm]														

The values listed above in dependence on the screw-in length in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw

EJOT® JA3-6,5 x L
with sealing washer $\geq \varnothing 16 \text{ mm}$

Annex 18



Materials:
Fastener: stainless steel (1.4301) – EN 10088
Washer: stainless steel (1.4301) – EN 10088
Component I: S320GD or S350GD – EN 10346
Component II: structural timber – EN 14081

Predrill diameter 4,5 mm

Timber supporting structures:
performance determined with

$M_{y,Rk} = 9,742 \text{ Nm}$
 $f_{ax,k} = 11,080 \text{ N/mm}^2$ für $l_{ef} \geq 50 \text{ mm}$

t_{N1}, t_{N2}, d, D [mm]	l_g [mm]													
	50	53	56	59	62	65	68	71	74	77	80			
$V_{R,k}$ [kN]	0,40	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	1,11	$V_{R,k,I}$ [kN]
	0,50	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	1,20	
	0,55	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	1,30	
	0,63	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	
	0,75	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	
	0,88	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	
	1,00	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	1,40	
$N_{R,k}$ [kN]	0,40	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	1,35	$N_{R,k,I}$ [kN]
	0,50	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	2,00	
	0,55	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	2,50	
	0,63	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	3,00	
	0,75	3,24	3,40	3,56	3,73	3,89	3,90	3,90	3,90	3,90	3,90	3,90	3,90	
	0,88	3,24	3,40	3,56	3,73	3,89	4,05	4,10	4,10	4,10	4,10	4,10	4,10	
	1,00	3,24	3,40	3,56	3,73	3,89	4,05	4,21	4,30	4,30	4,30	4,30	4,30	
max u [mm]	30	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	4,0	max u [mm]
	40	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	6,0	
	50	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	8,0	
	60	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	10,0	
	70	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	12,5	
	80	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	15,0	
	100	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
120	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0		
≥ 140	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	20,0	
$M_{t,nom}$ [Nm]														

The values listed above in dependence on the screw-in length in length l_g are valid for $k_{mod} = 0,90$ and timber strength grade C24 ($\rho_k = 350 \text{ kg/m}^3$). For other values of k_{mod} and timber strength grades see section 4.2.2.

Self tapping screw	Annex 19
EJOT® JA3-6,5 x L with sealing washer $\geq \varnothing 16 \text{ mm}$	

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