

English translation of National technical test certificate

No.: P-BWU02-1980001

Subject:	Self-drilling screws JT4-3H/5-5,5x19 JT9-3H/5-5,5x19 JT4-3H/7-5,5x21 JT9-3H/7-5,5x21
Intended use:	Connections of wall holders made of aluminum or stainless steel on substructures made of aluminum support profiles for external wall cladding, ventilated at rear according to DIN 18516-1
Applicant:	Ejot Baubefestigungen GmbH In der Stockwiese 35 57334 Bad Laasphe
Date of issue:	March 11, 2019
Period of validity until:	March 11, 2024

Based on this national technical test certificate, the above mentioned subject is applicable according to the state building regulations. This national technical test certificate substitutes the national technical test certificate No.: P-BWU02-148004 dated August 18, 2014.

This national technical test certificate includes 8 pages and 17 attachments.

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I. General provisions

1. The national technical test certificate does not substitute the approvals, agreements and certificates prescribed by law for performing building projects.
2. The national technical test certificate is granted without prejudice to the rights of a third party, especially private property rights.
3. Manufacturers and distributors of the building product / construction type must provide copies of the national technical test certificate for the user of the building product / construction type without prejudice to further regulations in the „special provisions“ and must point out to the fact that the national technical test certificate has to be available at the point of use. The authorities involved must be provided with copies of the national technical test certificate upon request.
4. The national technical test certificate may only be reproduced completely. A publication in extracts needs the written approval of the Versuchsanstalt für Stahl, Holz und Steine. Texts and drawings of advertising leaflets may not contradict the national technical test certificate. Translations of the national technical test certificate must include the note “translation of the German original version not examined by the Versuchsanstalt für Stahl, Holz und Steine”.
5. The national technical test certificate is irrevocably granted. The provisions of the national technical test certificate may be subsequently amended or modified, especially if technical knowledge necessitates this.
6. Contraction against this notification is admissible. An appeal must be made within a month after receipt of this notification in writing or for record at the Versuchsanstalt für Stahl, Holz und Steine, Kaiserstraße 12, 76128 Karlsruhe. The date of receipt of the notice of opposition at the Versuchsanstalt für Stahl, Holz und Steine is relevant for the timeliness of the opposition.

II. Special provisions

1 Subject and field of application

1.1 Subject

Subject of the national technical test certificate are the self-drilling screws JT4-3H/5-5,5x19, JT9-3H/5-5,5x19, JT4-3H/7-5,5x21, JT9-3H/7-5,5x21 for the connection of wall holders made of aluminum or stainless steels with aluminum support profiles manufactured and distributed by the company EJOT Baubefestigungen GmbH.

1.2 Field of application

The above item is intended for use in accordance with DIN 18516-1:2010-06.

2 Requirements of the building product

2.1 Properties and composition

The specifications in the attachments apply with regard to the dimensions, materials and corrosion protection.

2.2 Provisions for design and dimensioning

2.2.1 Preface

In the following and in the attachments, the component on which the screw head abuts (wall holder) is designated as component I and the components on the side averted to the screw head (support profile) component II.

2.2.2 Load-bearing capacity

The verification concept given in DIN 18516-1:2010-06 applies. According to DIN 18516:2010-06, the design values of the load-bearing capacity result from the characteristic values of the load-bearing capacity with a partial safety factor of $\gamma_M = 2,0$. The characteristic values of the load-bearing capacity for connections are given in the attachments. The following applies.

$F_{Q,RK}$ Characteristic value of the transverse load-bearing capacity (load direction rectangular to the axis of the screws)

$F_{Z,A,RK}$ Characteristic value of the pull-out capacity (load direction parallel to the axis of the screws)

For considering a possible failure of component I for a tensile load of the connection (load direction parallel to the axis of the screws), the characteristic pull-through bearing capacity of the screw through component I can be calculated by means of DIN EN 1999-1-4:2010-05, equation

(8.13). In this equation for the parameter d_w , the collar diameter of the bolt head (cf. dimensions in Appendices 1 to 15) may be used.

In the case of combined loading from tensile forces F_Z and transverse forces F_Q from wind suction (WS) and dead weight (EG), the following proof of interaction shall be provided.

$$\frac{F_{Z,Ed}}{\min(F_{Z,A,Rd}; F_{Z,D,Rd})} + \frac{F_{Q,WS,Ed}}{F_{Q,Rd}} + \frac{F_{Q,EG,Ed}}{F_{Q,Rd}} \leq 1,0$$

with	$F_{Z,Ed}$	Design values of the interacting tensile forces
	$F_{Q,WS,Ed}$	Design value of the interacting transverse forces based on wind suction load
	$F_{Q,EG,Ed}$	Design value of the interacting transverse forces based on load from dead weight
	$F_{Z,A,Rd}$	Design values form the pull-out bearing capacity
	$F_{Z,D,Rd}$	Design value of the pull-through bearing capacity
	$F_{Q,Rd}$	Design value of the transverse force bearing capacity

The characteristic values apply for components I made of aluminum alloys with a minimum tensile strength $R_m = 190 \text{ N/mm}^2$ to $R_m = 245 \text{ N/mm}^2$ or made of stainless steel 1.4301 with a minimum tensile strength of $R_m = 550 \text{ N/mm}^2$ and for components II made of aluminum alloys with a tensile strength of $R_m = 190 \text{ N/mm}^2$ to $R_m = 245 \text{ N/mm}^2$. Linear interpolation may be performed for intermediate values of the tensile strength.

For intermediate values of the component thickness, the characteristic value for the lower component thickness must be used.

2.2.3 Edge distance and hole diameters

The minimum value of the distance to the longitudinal edge of the bearing profile is $e_1 = 10 \text{ mm}$. The minimum value of the distance to the transverse edge of the support profile is $e_2 = 10 \text{ mm}$ at the fixed point and $e_2 = 50 \text{ mm}$ at the sliding point.

The mean values of the distances of the fasteners to the edge of the wall holder can be seen in attachment 16 and 17. The hole diameters are displayed in attachment 16 and 17.

2.2.4 Temperature-related restraint load

The application of fasteners for non-restraint-free connections is only allowable with a proof of constraint stress due to temperature (transverse load), cf. DIN 18516-1:2010-06, section 5.2.2. Without this proof, the fasteners may only be applied for restraint-free connections. This restriction, however, do not apply for connections with long holes, where no or only negligibly small

temperature-related restraint loads may develop because of the displacement of the screws in the long hole.

2.3 Provisions for the design

Connections corresponding to section 1 may only be produced by firms having the necessary experience, unless a training of the assembling staff through skilled persons is ensured being experienced in this field.

Upon scheduled lateral force load the components to be connected must directly lie on one another, and the shear joint must be located on the contact point of component I with component II so that the connecting element does not undergo any additional bending.

The fasteners are to be attached rectangular to the component surface in order to secure a faultless connection.

Screws for aluminum substructures must be over-tightened as planned. Both components are in the undercut. The connection is set up together for all screws using a drill screw driver. The use of impact wrenches is not permitted.

3 Verification of conformity

3.1 General

The confirmation of the conformity of the fasteners with the provisions of this national technical test certificate must be made for each manufacturing plant through a declaration of conformity of the producers on the basis of a factory production control and a first inspection of the fasteners performed through an approved inspection body.

3.2 Factory production control

In each manufacturing plant, a factory production control according to the principles of the Deutsches Institut für Bautechnik (German Institute for Building Technology) for the “proof of conformity for fasteners in lightweight metal construction” (see number 6/1999 of the “DIBt Mitteilungen”) is to be established and performed. Factory production control is understood as the continuous monitoring of the production performed by the manufacturer with which he secures that his building products correspond to the provisions of this national technical test certificate.

Within the scope of the factory production control the following is to be checked:

- Form and dimensions of the fasteners
- Mechanical properties and
- The base material applied

The results of the factory production control are to be recorded and evaluated. The records must include the following information at least:

- Designation of the building product, the base material and the components

- Type of control or test
- Date of production and control / test of the building product or base material or components
- Results of tests / controls and comparison with the requirements
- Signature of the person responsible for the factory production control

The records have to be kept five years at least. Upon request, they have to be submitted to the German Institute for Building Technology (DIBt), to the appropriate highest building authority and to the issuing inspection body.

In case of test results that do not meet the requirements of the standard technical specifications, the manufacturer must immediately take the necessary measures in order to remedy shortcomings. Within the scope of factory production control it must be secured that those building products that do not meet the requirements are not provided with the conformity mark (Ü mark) and confusions with conforming ones are excluded. For proving the remedy of defects, the relevant test must be repeated immediately after removal of the defects.

3.3 First inspection of the fasteners

Within the scope of the first inspection, the requirements imposed in section 2.1 of this national technical test certificate are to be checked. Sampling and tests are incumbent on the respective approved body.

4 Conformity mark

The building product is to be provided with the conformity mark (Ü mark) by the manufacturer according to the Regulations for conformity marks (ÜZVO) of the countries.

According to the regional building regulation of the countries, the Ü mark must be attached to the building product, the dispatch note or to its packaging or, in case of difficulties, to the delivery note or to an attachment to the delivery note together with the compulsory information.

Labeling with the Ü mark in consideration of the number of this national technical test certificate may only be done if the prerequisites according to section 3 are fulfilled.

5 Legal basis

This national technical test certificate is granted on the basis of §19 and §22 of the regional building codes for Baden-Württemberg (LBO) in the version of November 21, 2017 last amended by Article 3 of the Act of November 21, 2017 (GBI. p. 612, 613), in conjunction with the Administrative Regulation Technical Building Regulations Part C, serial no. C.3.9 of December 20, 2017.

A granted national technical test certificate applies in all countries of the Federal Republic of Germany according to §19, section 2 in connection with §18 section 2 of the Model Building Regulation (MBO) and the corresponding provisions of the respective regional building codes.

The determination of the characteristic forces indicated in the appendices is based on test results documented in the reports No. 013611, 128008 and 148003 of the Research Center for Steel, Timber and Masonry.

Karlsruhe, March 11, 2019

cf

Official in charge

Head of the Inspection Body

Dipl.-Ing. C. Fauth

Dr.-Ing. D. Ruff

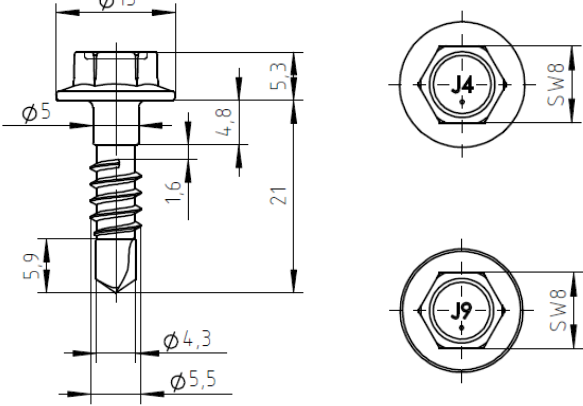
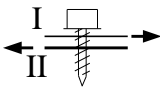
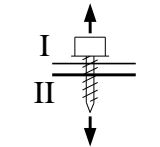
Screw	Component I	Component II		
JT4-3H/5-5,5x19, JT9-3H/5-5,5x19	Wall holder according to attachment 16, $t = 3 \text{ mm}$, $R_m \geq 190 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 190 \text{ N/mm}^2$		
Materials: JT4-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
	1,6 mm	2,0 mm	—	
Sliding point wind suction	2,69	3,02	—	
Fixed point wind suction	2,36	3,59	—	
Fixed point dead weight	2,28	3,33	—	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
	1,6 mm	2,0 mm	—	
Fixed point	1,06	1,57	—	
Transverse edge distance support section:	Sliding point: 50 mm			
	Fixed point: 10 mm			
Longitudinal edge distance support section:	10 mm			

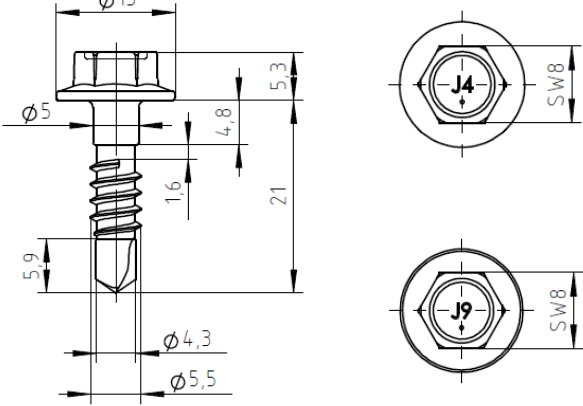
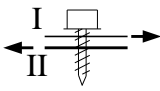
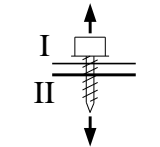
Screw	Component I	Component II		
JT4-3H/5-5,5x19, JT9-3H/5-5,5x19	Wall holder according to attachment 16, $t = 3 \text{ mm}$, $R_m \geq 215 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 215 \text{ N/mm}^2$		
Materials: JT4-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
	1,6 mm	2,0 mm	—	
Sliding point wind suction	2,90	3,42	—	
Fixed point wind suction	2,67	4,06	—	
Fixed point dead weight	2,58	3,77	—	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
	1,6 mm	2,0 mm	—	
Fixed point	1,20	1,77	—	
Transverse edge distance support section:	Sliding point: 50 mm			
	Fixed point: 10 mm			
Longitudinal edge distance support section:	10 mm			

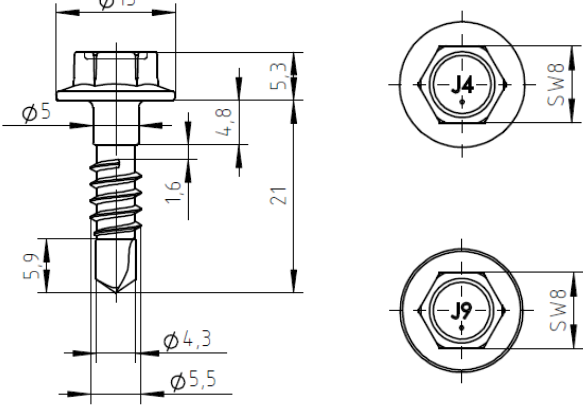
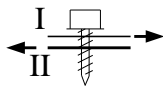
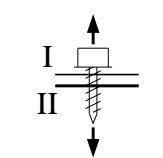
Screw	Component I	Component II		
JT4-3H/5-5,5x19, JT9-3H/5-5,5x19	Wall holder according to attachment 16, $t = 3 \text{ mm}$, $R_m \geq 245 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 245 \text{ N/mm}^2$		
Materials: JT4-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Sliding point wind suction	1,6 mm	2,0 mm	—	
Fixed point wind suction	2,90	3,78	—	
Fixed point dead weight	2,73	4,49	—	
Fixed point dead weight	2,63	4,17	—	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Fixed point	1,6 mm	2,0 mm	—	
Fixed point	1,30	1,96	—	
Transverse edge distance support section:	Sliding point: 50 mm			
	Fixed point: 10 mm			
Longitudinal edge distance support section:	10 mm			

Screw	Component I	Component II		
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 3 \text{ mm}$, $R_m \geq 190 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 190 \text{ N/mm}^2$		
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Sliding point wind suction	—	—		3,0 mm
Fixed point wind suction	—	—		3,02
Fixed point dead weight	—	—		3,59
Fixed point dead weight	—	—		3,33
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Fixed point	—	—		3,0 mm
Fixed point	—	—	2,82	
Transverse edge distance support section:			Sliding point: 50 mm Fixed point: 10 mm	
Longitudinal edge distance support section:			10 mm	

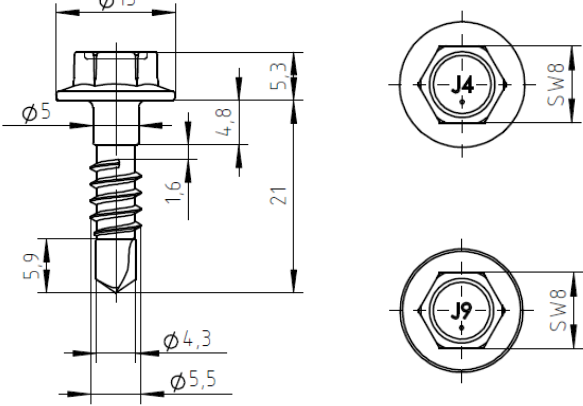
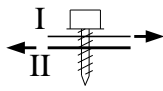
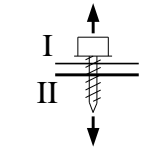
Screw	Component I	Component II		
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 3 \text{ mm}$, $R_m \geq 215 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 215 \text{ N/mm}^2$		
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,Rk}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Sliding point wind suction	—	—	3,0 mm	
Fixed point wind suction	—	—	3,42	
Fixed point dead weight	—	—	4,06	
Fixed point dead weight	—	—	3,77	
Characteristic value of the pull-out bearing capacity $F_{Z,A,Rk}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Fixed point	—	—	3,0 mm	
Fixed point	—	—	3,20	
Transverse edge distance support section:		Sliding point: 50 mm		
		Fixed point: 10 mm		
Longitudinal edge distance support section:		10 mm		

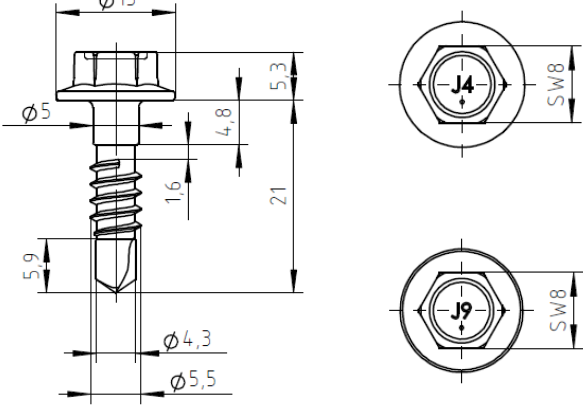
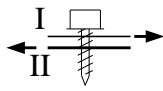
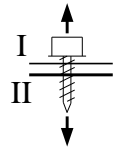
Screw	Component I	Component II		
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 3 \text{ mm}$, $R_m \geq 245 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 245 \text{ N/mm}^2$		
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Sliding point wind suction	—	—		3,0 mm
Fixed point wind suction	—	—		3,78
Fixed point dead weight	—	—		4,49
Fixed point dead weight	—	—		4,17
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 16)	Component II			
Fixed point	—	—		3,0 mm
Fixed point	—	—	3,27	
Transverse edge distance support section:			Sliding point: 50 mm Fixed point: 10 mm	
Longitudinal edge distance support section:			10 mm	

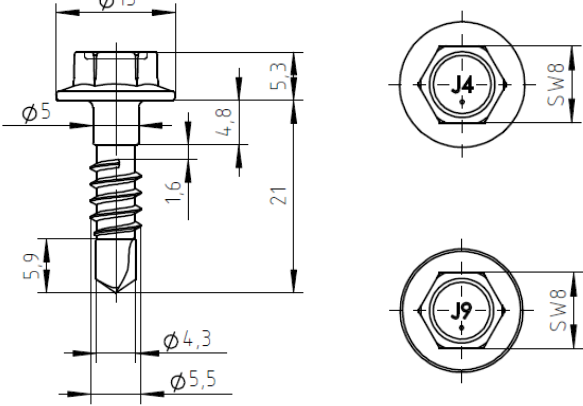
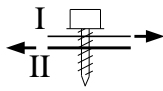
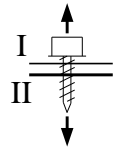
Screw	Component I	Component II	
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 4 \text{ mm}$, $R_m \geq 190 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 190 \text{ N/mm}^2$	
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587			
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Sliding point wind suction	—	2,0 mm 3,0 mm	
Fixed point wind suction	—	3,02 3,02	
Fixed point dead weight	—	3,59 3,59	
Fixed point dead weight	—	3,33 3,33	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Fixed point	—	2,0 mm 3,0 mm	
Fixed point	—	1,57 2,82	
Transverse edge distance support section: Sliding point: 50 mm Fixed point: 10 mm			
Longitudinal edge distance support section: 10 mm			

Screw	Component I	Component II	
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 4 \text{ mm}$, $R_m \geq 215 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 215 \text{ N/mm}^2$	
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587			
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Sliding point wind suction	—	2,0 mm 3,0 mm	
Fixed point wind suction	—	3,42 3,42	
Fixed point dead weight	—	4,06 4,06	
Fixed point dead weight	—	3,77 3,77	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Fixed point	—	2,0 mm 3,0 mm	
Fixed point	—	1,77 3,20	
Transverse edge distance support section: Sliding point: 50 mm Fixed point: 10 mm			
Longitudinal edge distance support section: 10 mm			

Screw	Component I	Component II	
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 4 \text{ mm}$, $R_m \geq 245 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 245 \text{ N/mm}^2$	
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587			
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Sliding point wind suction	—	2,0 mm 3,0 mm	
Fixed point wind suction	—	3,78 4,49	
Fixed point dead weight	—	4,17 4,17	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Fixed point	—	2,0 mm 3,27	
Transverse edge distance support section:			
		Sliding point: 50 mm Fixed point: 10 mm	
Longitudinal edge distance support section:			
		10 mm	

Screw	Component I	Component II	
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 5 \text{ mm}$, $R_m \geq 190 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 190 \text{ N/mm}^2$	
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587			
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Sliding point wind suction	—	2,0 mm	
Fixed point wind suction	—	3,59	
Fixed point dead weight	—	3,33	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Fixed point	—	1,57	
Transverse edge distance support section:			
	Sliding point: 50 mm Fixed point: 10 mm		
Longitudinal edge distance support section:			
	10 mm		

Screw	Component I	Component II	
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, $t = 5 \text{ mm}$, $R_m \geq 215 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 215 \text{ N/mm}^2$	
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587			
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Sliding point wind suction	—	2,0 mm	
Fixed point wind suction	—	3,42	
Fixed point dead weight	—	4,06	
	—	3,77	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Fixed point	—	2,0 mm	
	—	1,77	
Transverse edge distance support section:	Sliding point: 50 mm		
	Fixed point: 10 mm		
Longitudinal edge distance support section:	10 mm		

Screw	Component I	Component II	
JT4-3H/7-5,5x21, JT9-3H/7-5,5x21	Wall holder according to attachment 16, t = 5 mm, R_m ≥ 245 N/mm²	Support section for ex. L- or T-section, R_m ≥ 245 N/mm²	
Materials: JT4-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/7-5,5x21 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587			
Characteristic value of the transverse force bearing capacity F_{Q,RK} in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Sliding point wind suction	—	2,0 mm	
Fixed point wind suction	—	3,78	
Fixed point dead weight	—	4,49	
Fixed point dead weight	—	4,17	—
Characteristic value of the pull-out bearing capacity F_{Z,A,RK} in [kN]			
Component I (Wall holder according to attachment 16)	Component II		
Fixed point	—	2,0 mm	
Fixed point	—	1,96	—
Transverse edge distance support section:			Sliding point: 50 mm Fixed point: 10 mm
Longitudinal edge distance support section:			10 mm

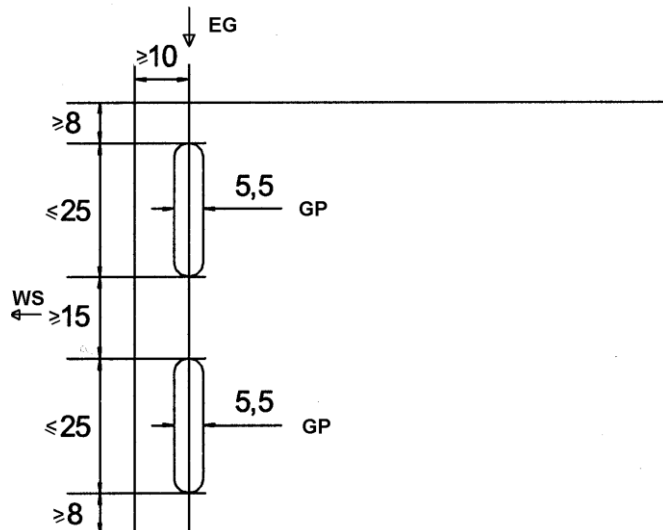
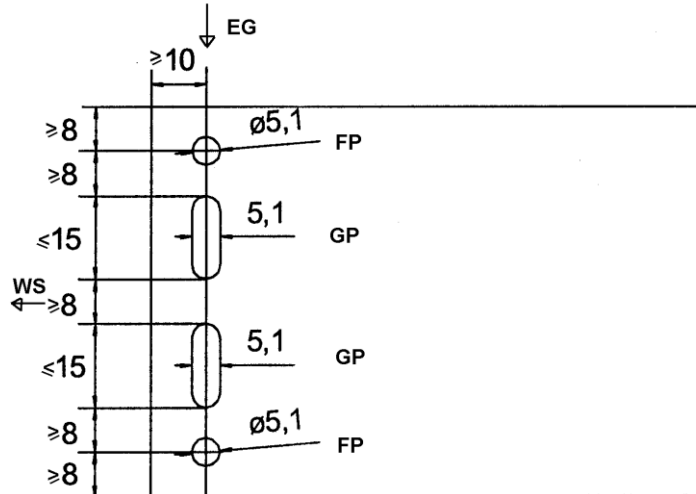
Screw	Component I	Component II		
JT4-3H/5-5,5x19, JT9-3H/5-5,5x19	Wall holder according to attachment 17, $t = 1,5 \text{ mm}$, $R_m \geq 550 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 190 \text{ N/mm}^2$		
Materials: JT4-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 17)	Component II			
	1,6 mm	2,0 mm	2,4 mm	
Sliding point wind suction	1,57	1,59	1,59	
Fixed point wind suction	2,41	2,45	2,45	
Fixed point dead weight	2,41	2,45	2,45	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 17)	Component II			
	1,6 mm	2,0 mm	2,4 mm	
Fixed point	1,06	1,57	1,57	
Transverse edge distance support section:	Sliding point: 50 mm			
	Fixed point: 10 mm			
Longitudinal edge distance support section:	10 mm			

Screw	Component I	Component II		
JT4-3H/5-5,5x19, JT9-3H/5-5,5x19	Wall holder according to attachment 17, $t = 1,5 \text{ mm}$, $R_m \geq 550 \text{ N/mm}^2$	Support section for ex. L- or T- section, $R_m \geq 215 \text{ N/mm}^2$		
Materials: JT4-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 17)	Component II			
	1,6 mm	2,0 mm	2,4 mm	
Sliding point wind suction	1,77	1,79	1,79	
Fixed point wind suction	2,73	2,77	2,77	
Fixed point dead weight	2,73	2,77	2,77	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 17)	Component II			
	1,6 mm	2,0 mm	2,4 mm	
Fixed point	1,20	1,77	1,77	
Transverse edge distance support section:	Sliding point: 50 mm			
	Fixed point: 10 mm			
Longitudinal edge distance support section:	10 mm			

Screw	Component I	Component II		
JT4-3H/5-5,5x19, JT9-3H/5-5,5x19	Wall holder according to attachment 17, $t = 1,5 \text{ mm}$, $R_m \geq 550 \text{ N/mm}^2$	Support section for ex. L- or T-section, $R_m \geq 245 \text{ N/mm}^2$		
Materials: JT4-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4301 or 1.4567 JT9-3H/5-5,5x19 stainless steel, DIN EN 10088, material no. 1.4401 or 1.4587				
Characteristic value of the transverse force bearing capacity $F_{Q,RK}$ in [kN]				
Component I (Wall holder according to attachment 17)	Component II			
	1,6 mm	2,0 mm	2,4 mm	
Sliding point wind suction	1,79	1,81	1,81	
Fixed point wind suction	2,75	2,80	2,80	
Fixed point dead weight	2,75	2,80	2,80	
Characteristic value of the pull-out bearing capacity $F_{Z,A,RK}$ in [kN]				
Component I (Wall holder according to attachment 17)	Component II			
	1,6 mm	2,0 mm	2,4 mm	
Fixed point	1,30	1,96	1,96	
Transverse edge distance support section:	Sliding point: 50 mm Fixed point: 10 mm			
Longitudinal edge distance support section:	10 mm			

Component I	Wall holder to attachment 1 to 12	Material: Aluminum, DIN EN 755-2
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Design examples



Thickness $t = 3,0$ mm (attachment 1 to 6)
 Thickness $t = 4,0$ mm (attachment 7 to 9)
 Thickness $t = 5,0$ mm (attachment 10 to 12)

Component I	Wall holder to attachment 13 to 15	Material: 1.4301 acc. to DIN EN 10088-2
<p style="text-align: center;">Design examples</p> <div style="text-align: center;"> </div> <p style="text-align: center;">Thickness $t = 1,5$ mm (attachment 13 to 15)</p>		