Deutsches Institut für Bautechnik

Public-law institution jointly founded by the federal states and the Federation

European Technical Assessment Body for construction products

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Designated according to Article 29 of Regulation (EU) No 305/2011 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-13/0293 of 18 February 2026

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the European Technical Assessment:	Deutsches Institut für Bautechnik
Trade name of the construction product	Air - Stair System Treppenmeister
Product family to which the construction product belongs	Prefabricated stair with strings made of steel and steps made of wood and steel for use as an indoor stair in buildings.
Manufacturer	Treppenmeister GmbH Emminger Straße 38 71131 Jettingen DEUTSCHLAND
Manufacturing plant	Treppenmeister, Werk 1 bis 85
This European Technical Assessment contains	12 pages including 3 annexes which form an integral part of this assessment
This European Technical Assessment is issued in accordance with Article 95(4) of Regulation (EU) No 2024/3110, on the basis of	EAD 340006-00-0506
This version replaces	ETA-13/0293 issued on 14 December 2015

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Specific Part

1 Technical description of the product

The Air - Stair System Treppenmeister is a prefabricated stair system, which consists of steps, strings, wall ties and system fasteners. On the wall-free side the steps are rest on the string. Additionally, they are connected with the strings by system fasteners. On the wall side each step is equipped with two wall ties which are anchored in the staircase wall.

The steps are made of a composite material made of wood and steel, the strings, the wall ties and the system fasteners are made of steel.

The product description is given in Annex A. The material values, dimensions and tolerances of the components of the stair not indicated in the annexes shall correspond to the values laid down in the technical documentation[1].

2 Specification of the intended use in accordance with the applicable European Assessment Document

The performances given in Section 3 are only valid if the stair is used in compliance with the specifications and conditions given in Annex B.

The verification and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the stair of at least 50 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.

[1] The technical documentation includes all information provided by the manufacturer that is necessary for the production, installation and maintenance of the stair. This primarily comprise the structural analysis, construction drawings, and the manufacturer's installation instructions. The confidential part of this documentation is stored at the Deutsches Institut für Bautechnik. If this confidential section is relevant to the tasks of the approved bodies within the framework of the AVCP system certification process, it will also be provided to those bodies.

3 Performance of the product and references to the methods used for its assessment

3.1 Mechanical resistance and stability (BWR 1)

Essential characteristic	Performance
Load-bearing capacity - Load-bearing capacity of the stair - Load-bearing capacity of components of the stair - Load-bearing capacity of fixings	 Q_{Rk}, q_{Rk} and h_{Rk}: See Annex C2 H_{Rk}: No performance assessed M_{Rk}, V_{Rk}, N_{Rk}, E, G, f_{mk} und f_{vk}: See technical documentation of this European Technical Assessment See technical documentation of this European Technical Assessment
Load-Displacement behaviour	w_q and w_Q: See Annex C2
Vibration behaviour	First natural frequency: $f_1 \geq 5$ Hz Deflection under a single load F = 1 kN: $w_{Q1} \leq 5$ mm
Prevention of progressive collapse	Failure of individual components of the stair does not lead to a progressive collapse of the complete stair
Residual load-bearing capacity	Local material failure does not lead to an abrupt total loss of load-bearing capacity of the stair
Long-term behaviour	Load-bearing capacity are ensured under an appropriate use and maintenance over the indicated working life
Resistance to earthquakes	No performance assessed
Durability against physical, chemical, biological agents	Adequate durability for the intended use under an appropriate use and maintenance

3.2 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	See Annex A4
Fire resistance	No performance assessed

3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Release of formaldehyde - Solid Wood	 Wood adhesive does not contain formaldehyde
Release of pentachlorophenol	No pentachlorophenol treated materials are used
Radioactive emission	No performance assessed

3.4 Safety in use (BWR 4)

Essential characteristic	Performance
Geometry	See Annex C1
Slipperiness	No performance assessed
Equipment of the stair for a safe use	No performance assessed
Safe breakage of components	No brittle failure of individual stair components
Impact resistance	No performance assessed

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with the European Assessment Document EAD No. 340006-00-0506 the applicable European legal act is: 1999/89/EC

The System to be applied is: 2+

In addition, with regard to reaction to fire for products covered by the European Assessment Document EAD No. 340006-00-0506 the applicable European legal act is: 2001/596/EC

The System to be applied is: 4

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable European Assessment Document

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 18 February 2026 by Deutsches Institut für Bautechnik

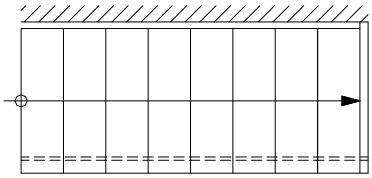
Dipl.-Ing. Beatrix Wittstock
Head of Section

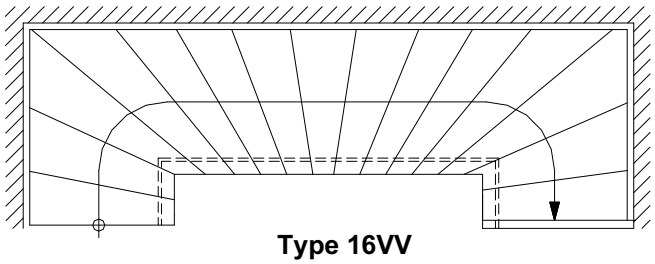
beglaubigt:
Stiller

Types of plans

Walking line is exemplified, position may be chosen freely within the walking zone, walking zone is 20 % of the clear width of the stair in the middle of the stair

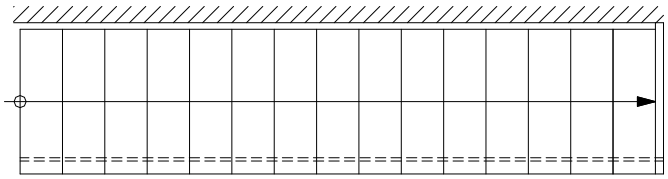
Type 9G



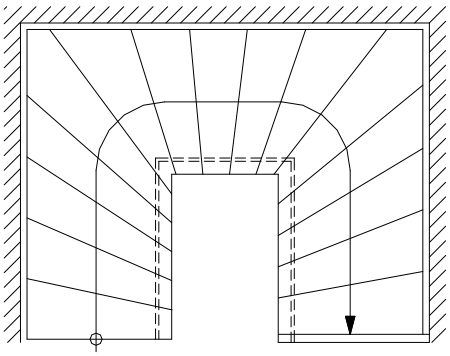


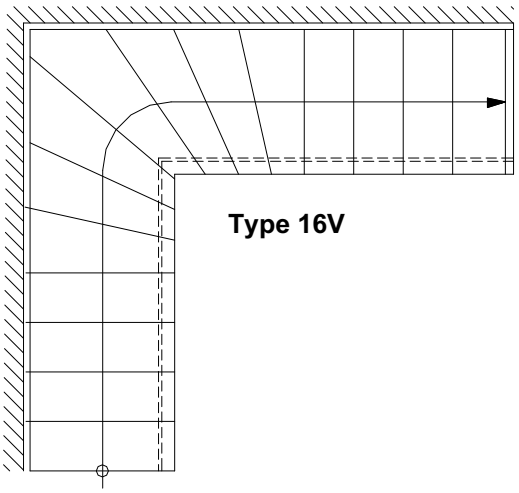
Type 16VV

Type 16G



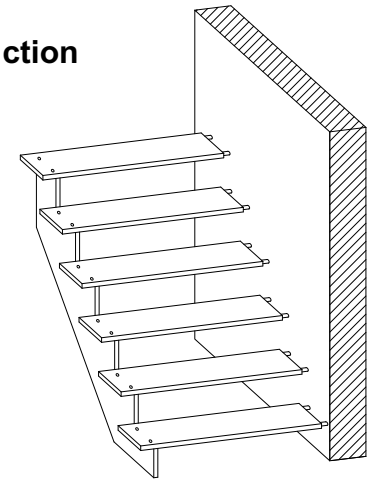
Type 16H





Type 16V

Construction



Air - Stair System Treppenmeister	Annex A1
Product (Types of plans and construction)	

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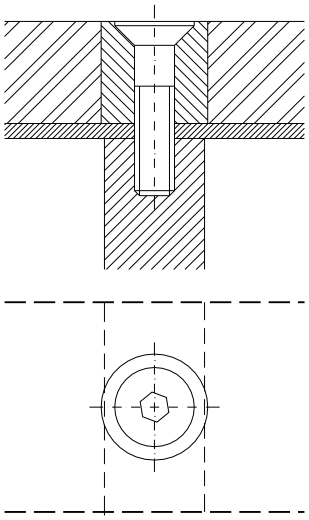
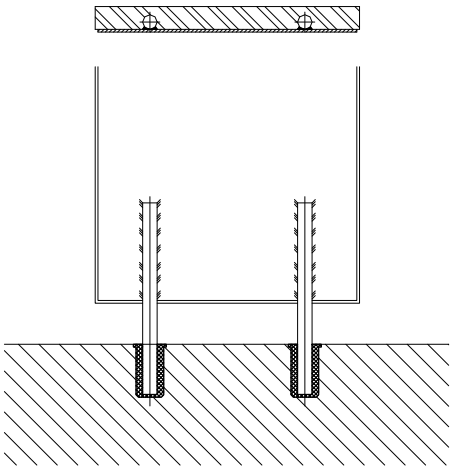
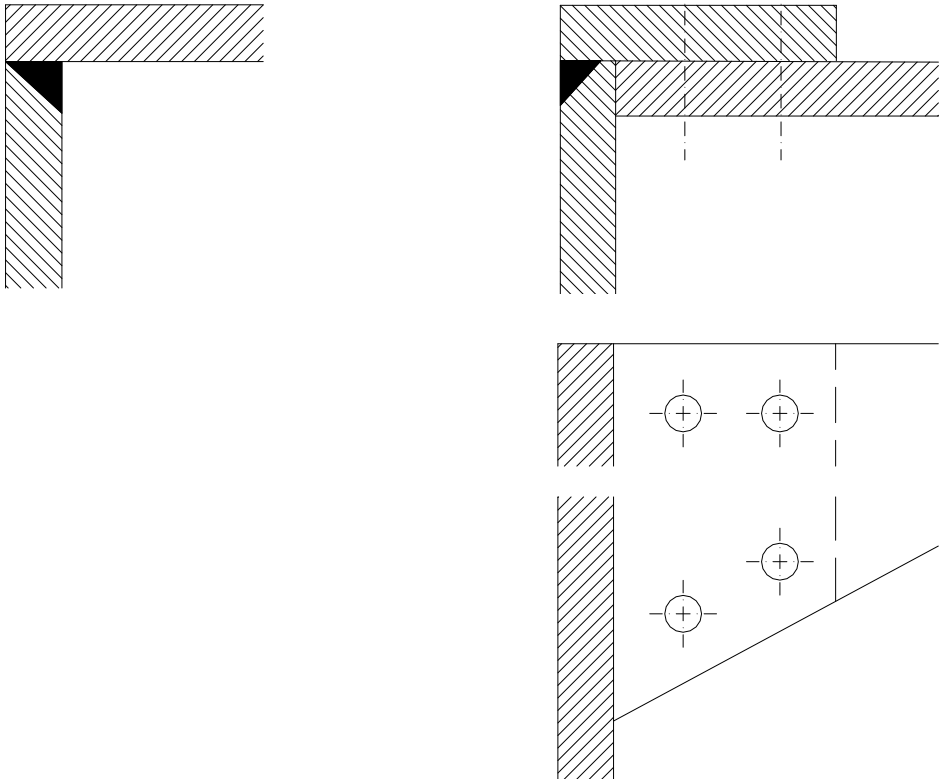
Step string joint



Wall tie



String corner joint



more details according to the technical documentation

Air - Stair System Treppenmeister	Annex A2
Step string joint, Wall tie, String corner joint	

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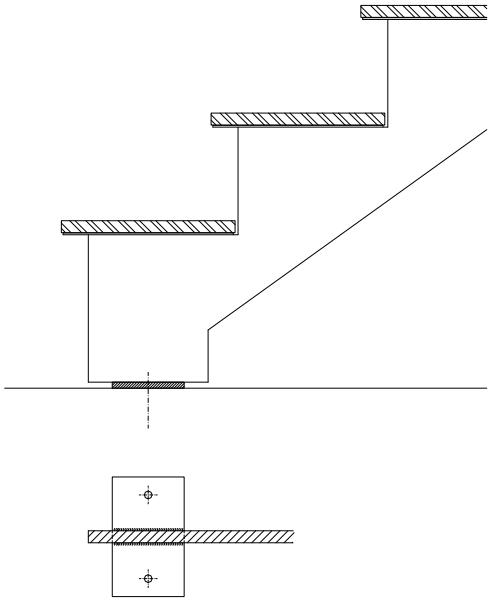
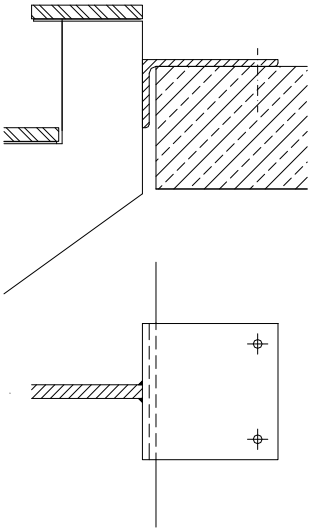
Joint at bottom



Joint at the top



more details according to technical documentation

Table 1: Minimum dimensions of components of stair and reaction to fire

Component of stair		Material [1]	Dimensions		Value	Reaction to fire
Step		Steel - wood composite plate [2]	Thickness	[mm]	23,5	No performance assessed
String	Type 9G, Type 16G, 16VV, 16H [4]	Steel	Width x height	[mm]	20 x 120	A1
	Type 16V-a [5]				20 x 120	
	Type 16V-b [4]				20 x 140	
Wall tie		Steel	Diameter	[mm]	16	A1
			Width x height	[mm]	16 x 16	
			Embedment depth step	[mm]	60	
Bearing sleeve		Rubber	Diameter	[mm]	25	Not relevant
			Embedment depth wall	[mm]	70	
Bearing sleeve		Rubber	Diameter	[mm]	30	
			Embedment depth wall	[mm]	55	
System fastener		Steel	- [3]	[mm]	- [3]	A1

[1] Characteristic values of material according to technical documentation
[2] Layer composition and wood species according to technical documentation
[3] According to technical documentation
[4] Possible dead load of baluster: g ≤ 0,40 kN/m (see also Use conditions Annex B1)
[5] Possible dead load of baluster: g ≤ 0,06 kN/m (see also Use conditions Annex B1)

Air - Stair System Treppenmeister	**Annex A3**
Joint at bottom, Joint at the top, Minimum dimension of components of stair and reaction to fire	

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Specification of intended use (Part 1)

Intended use:

- European Technical Assessment applies for a construction system.
- For the specific case of use the corresponding type of stair is manufactured within the context of the values defined in this European Technical Assessment.
- Values of this ETA apply to all types of stairs; the real dimensions follow in accordance with the relevant case of use.

Stair subject to:

- Static and quasi static loads

Use conditions:

- Indoor stair
- Air temperatures between +5 °C and +30 °C
- Relative air humidity between 30% and 70%
- To the individual requirements handrail and barrier can be attached to the stair optionally. Conditions for possible handrail/barrier:

  Dead load ≤ 0,40 kN/m, (exception: Type 16V-a: g ≤ 0,06 kN/m)

  Height ≤ 1,00 m

  Distance of baluster ≤ 0,81 m

Design:

- Design of the stair according to the annexes and the technical documentation of this European Technical Assessment.
- Fastening of the stair to the construction works according to the annexes and the technical documentation of this Technical European Assessment.
- Verification of the transmission of loads to the construction works by the civil engineer responsible for the construction works.
- Load bearing capacity at ultimate limit state:

$$q_k \cdot \gamma_Q \leq q_{Rk} / \gamma_M$$
$$Q_k \cdot \gamma_Q \leq Q_{Rk} / \gamma_M$$
$$h_k \cdot \gamma_Q \cdot \psi_0 \leq h_{Rk} / \gamma_M$$

with

q_{Rk}, Q_{Rk}, $h_{Rk:}$	characteristic values of resistance; see Table 3
γ_M:	recommended material partial safety factor; see Table 3
q_k, Q_k, h_k:	characteristic values of imposed loads according to EN 1991-1-1:2002 + AC:2009
$\gamma_Q = 1,5$:	recommended partial safety factor, in absence of other national regulations
$\psi_0 = 0,7$:	recommended combination factor, in absence of other national regulations

- Maximum characteristic values of imposed loads under consideration of the partial factors mentioned above; see Table 5

Air - Stair System Treppenmeister	**Annex B1**
Specification of intended use (Part 1)	

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Specification of intended use (Part 2)

Installation:

- Installation by personal appropriately trained and authorized by the holder of the assessment by means of the technical documentation of this European Technical Assessment
- Installation only in the way as specified in the technical documentation of this European Technical Assessment
- Installation of timber components when moisture content of timber components is 8 ± 2 %
- Sufficient support of the stair when assembling
- Installation of the stair components without additional stresses resulting from restraints not intended by the structural design
- Installation of stair components without significant defects and cracks
- Bolted connections are secured to prevent loosening by vibrations

Indication of the manufacturer:

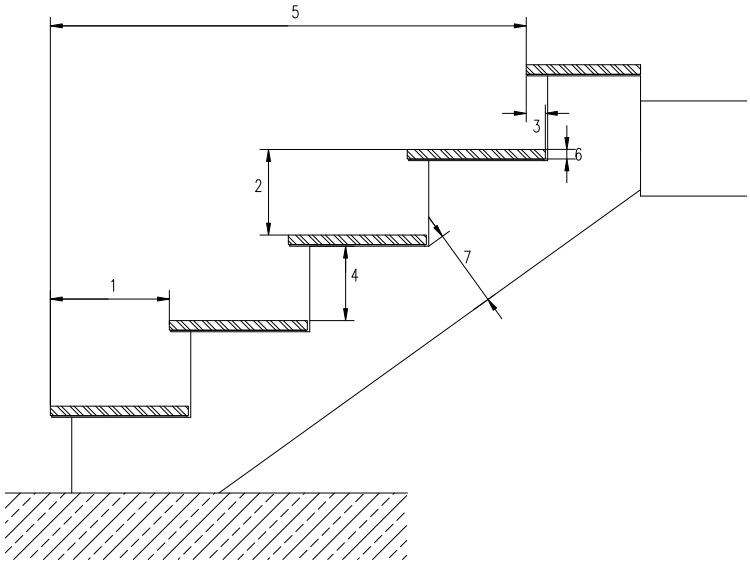
- Ensure that all persons involved will be appropriately informed about the specific conditions according to sections 1 and 2 (including the annexes to which reference is being made as well as the not confidential parts of the technical documentation deposited to this European Technical Assessment)
- Packaging of timber components such that the wood moisture is 8 ± 2 % during transport and storage
- Instructions for use should provide information as to use, maintenance and repair of the stair including the information of avoidance of moisture penetration of the timber components

Air - Stair System Treppenmeister	**Annex B2**
Specification of intended use (Part 2)	

Table 2: Geometry

Designation			Dimension	
			Minimum	**Maximum**
Going	step on walking line [1]	[mm]	210	370 [2]
	tapered step	[mm]	180 [2] [3]	550 [2] [4]
Rise of the stairs [1]			140 [2]	210
Pitch of the walking line [1]			21	45
Overlap of the steps		[mm]	40	- [5]
Number of rises		[-]	3	16
Openings	between stair and wall	[mm]	0	40
	between consecutive steps	[mm]	- [5]	186.5
Clear width of stairs		[mm]	500	1000
Minimum headroom		[mm]	- [5]	
Length of the flight		[mm]	- [5]	4050
Thickness of steps		[mm]	23.5	- [5]

[1] Values are constant within one flight
[2] Tolerance between nominal value and actual value = ± 5 mm
[3] Wall-free side of tapered step
[4] Wall side of tapered step
[5] Not relevant



1 Going
2 Rise
3 Overlap
4 Opening between consecutive steps
5 Length of flight
6 Thickness of step
7 Height of string

Air - Stair System Treppenmeister

Geometry

Annex C1

Table 3: Load-bearing capacity – Characteristic values of resistance

Component	Type of Loading	Characteristic values of resistance			γ_M
Steps	Vertical variable uniformly distributed load	q_{Rk}	[kN/m²]	6,8	1,5 [1)]
	Vertical variable single load	Q_{Rk}	[kN]	4,5	
	Horizontal variable uniformly distributed load on barrier	h_{Rk}	[kN/m]	0,8	
Strings	Vertical variable uniformly distributed load	q_{Rk}	[kN/m²]	4,5	1,0 [2)]
	Vertical variable single load	Q_{Rk}	[kN]	3,0	
	Horizontal variable uniformly distributed load on barrier	h_{Rk}	[kN/m]	0,5	

1) Recommended partial safety factor (wood-steel composite material decisive), in absence of other national regulations

2) Recommended partial safety factor (steel decisive), in absence of other national regulations

Table 4: Deflections under loading

Deflections of the flight under uniformly distributed load			
Uniformly distributed load	q_k	[kN/m²]	3,0
Length of the median line of the flight	L	[mm]	4050
Deflection related to the median line of flight	w_q	[-]	≤ L/200
Deflection of the step under single point load			
Single load	Q_k	[kN]	2,0
Clear width of the stair	L	[mm]	1000
Deflection related to the clear width of stair	w_Q	[-]	≤ L/200

Table 5: Imposed loads

Type of loading	Imposed loads		
Vertical variable uniformly distributed load	q_k	[kN/m²]	3,0
Vertical variable single load	Q_k	[kN]	2,0
Horizontal variable uniformly distributed load on barrier	h_k	[kN/m]	0,5

Air - Stair System Treppenmeister

Load-bearing-capacity – Characteristic values of resistance
Deflections under loading
Imposed loads

Annex C2