Deutsches Institut für Bautechnik

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

European Technical Assessment Body for construction products

Member of EOTA
www.eota.eu

Designated in accordance with Article 39 of Regulation (EU) No 2024/3110 and member of EOTA (European Organisation for Technical Assessment)

European Technical Assessment ETA-10/0215 of 1 September 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	String Stair System Treppenmeister
Product family to which the construction product belongs	Prefabricated Stair Kits
Manufacturer	Treppenmeister GmbH Emminger Straße 38 71131 Jettingen DEUTSCHLAND
Manufacturing plant	Treppenmeister, Plant 1 to 85
This European Technical Assessment contains	17 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) 2024/3110, on the basis of	EAD 340006-00-0506
This version replaces	ETA-10/0215 issued on 9 February 2023

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Specific Part

1 Technical description of the product

The String Stair System Treppenmeister is a prefabricated stair system consisting of steps, strings, and system fasteners. The steps are connected to the strings on both sides using system fasteners. Alternatively, on the wall side, the steps may also be anchored to the stairwell wall by means of two wall anchors.

A handrail and barrier can be included as part of the stair system, but they are not required for the load-bearing capacity of the stair.

The steps, landings, strings, handrail, and posts are made of solid wood. The railing-height strings are made of a wood-based product. The balusters are made of steel or solid wood, and the system fasteners are made of steel.

A detailed product description is provided in Annex A. Material properties, dimensions and tolerances of the stair components not specified in the annexes shall comply with the values set out 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 A7
Fire resistance	No performance assessed

3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Release of formaldehyde - Solid Wood - Wood-based product	 Wood adhesive does not contain formaldehyde Class E1
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	Handrail and barrier can be part of the stair system (see Annex A4 and A5). If vertical balusters, arranged between step and handrail, are used as fill-in elements, climb ability for infants will not be supported Tactility and visibility: No performance assessed
Safe breakage of components	No brittle failure of individual stair components made of wood or steel ESG-H: type C according to EN 12600:2002-11 VSG: type B according to EN 12600:2002-11
Impact resistance	Verified for filling elements made of glass up to a pendulum fall height of twin tyres (weight 50 kg, 4,0 bar tyre inflation pressure) of 450 mm (Type I and Type III) and 350 mm (Type II) Pendulum tests: test assembly according to EN 12600:2002-11, impact area according to DIN 18008-4:2013-07

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.

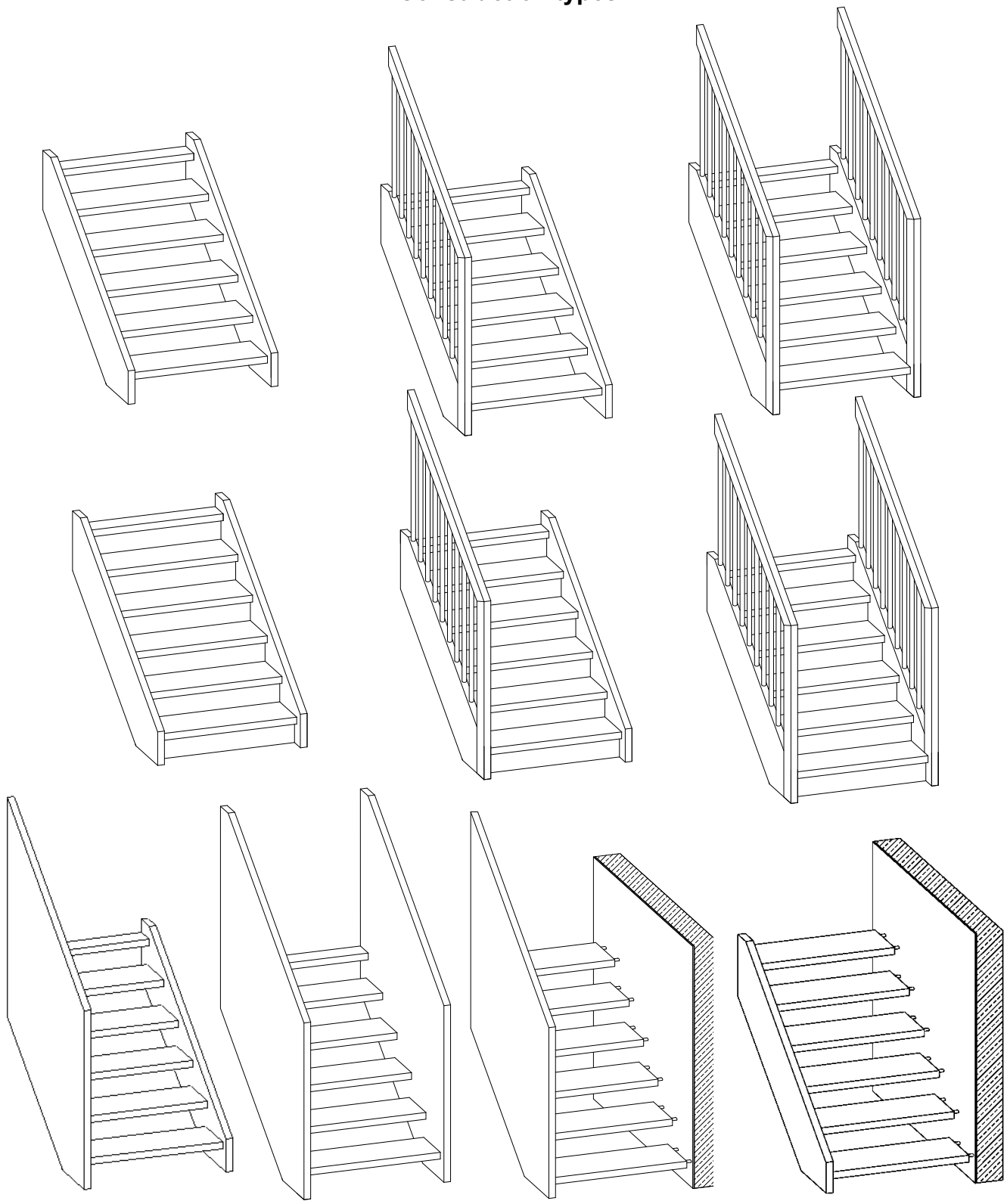
Issued in Berlin on 1 September 2026 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Stiller

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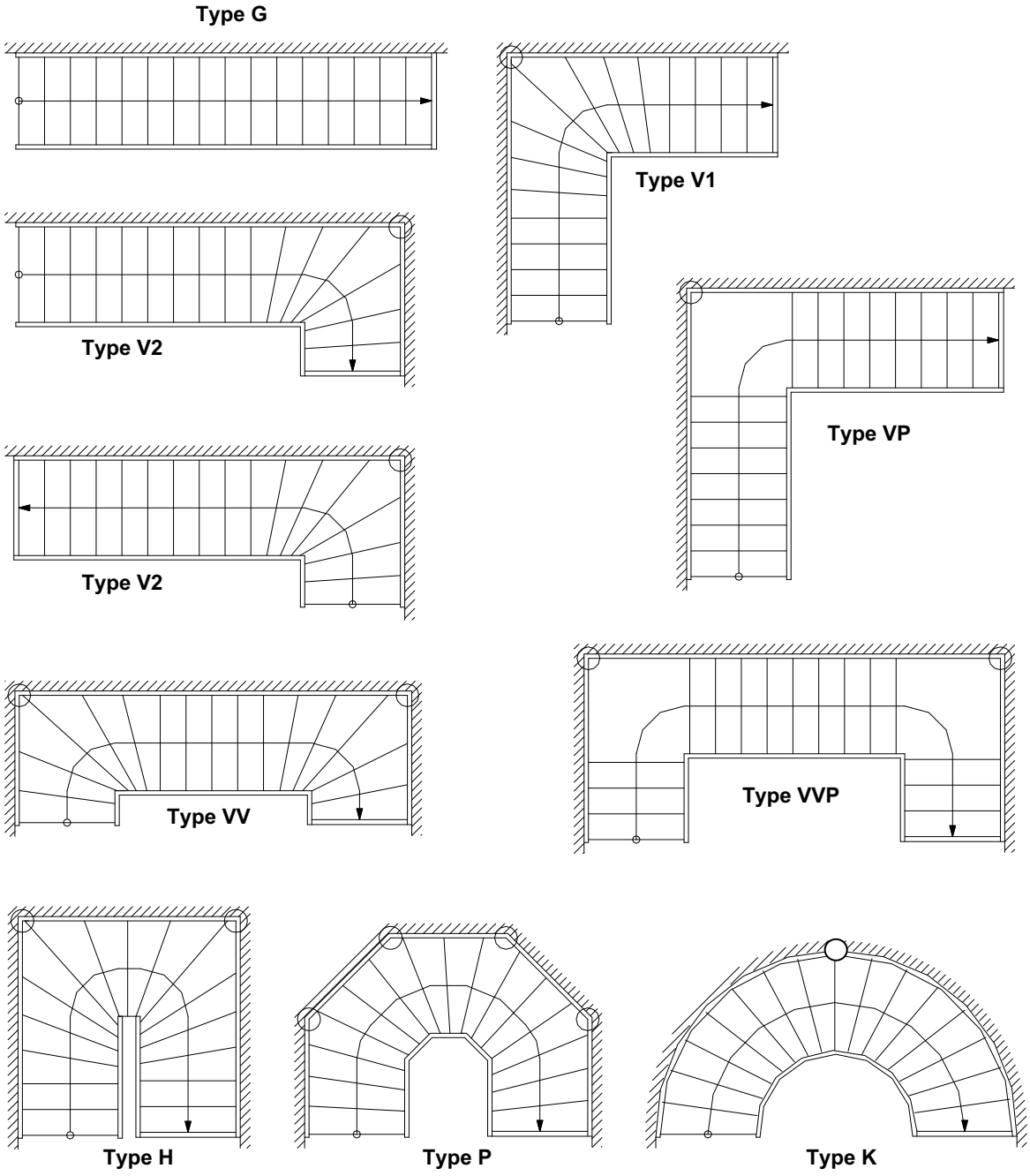
Construction types



String Stair System Treppenmeister	Annex A1
Product (Construction types)	

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Plan types



○ Support for vertical loads

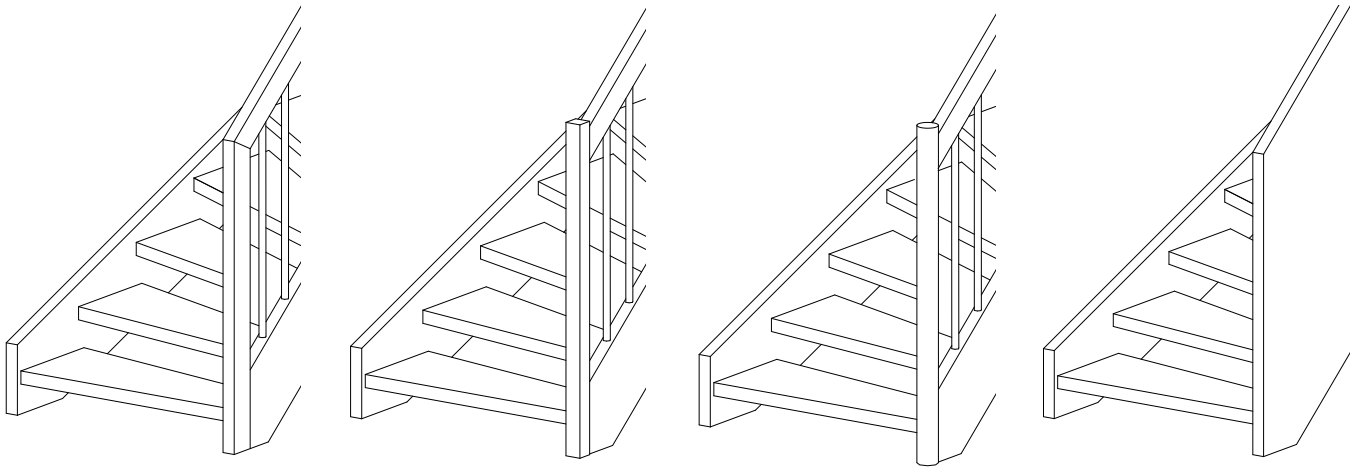
maximum number of rises, horizontal fixings to the wall and position of cross bracing according to the technical documentation

String Stair System Treppenmeister	Annex A2
Product (Plan types)	

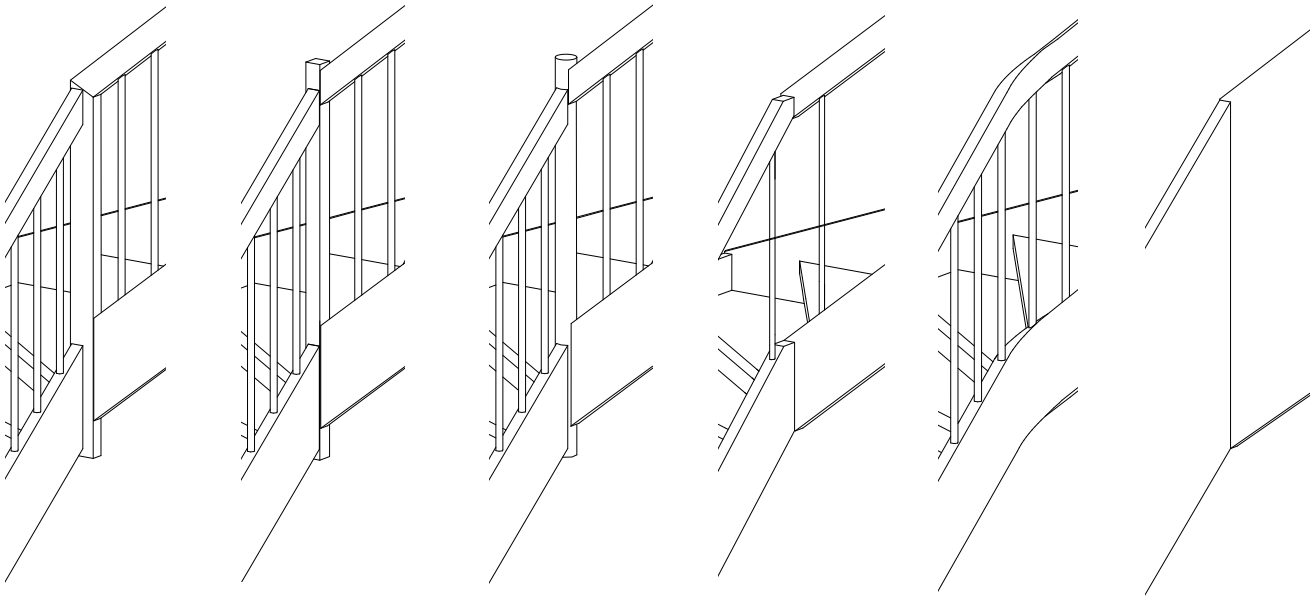
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Barrier constructions (posts)

Post at bottom and post at the top



Middle post



More details according to the technical documentation

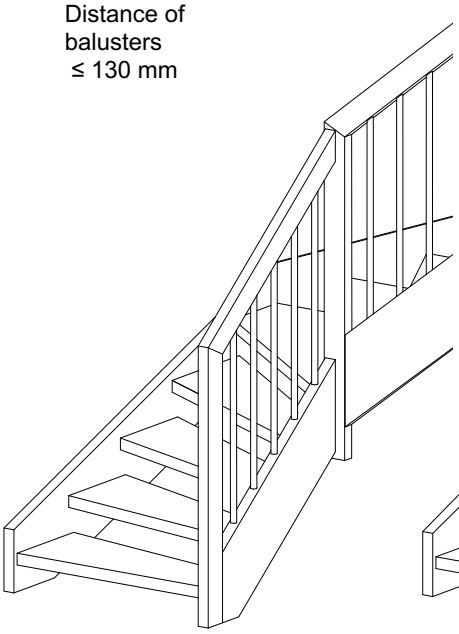
String Stair System Treppenmeister	Annex A3
Barrier constructions (posts)	

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Barrier constructions
(Filling elements with dead load maximum of 0,23 kN/m)

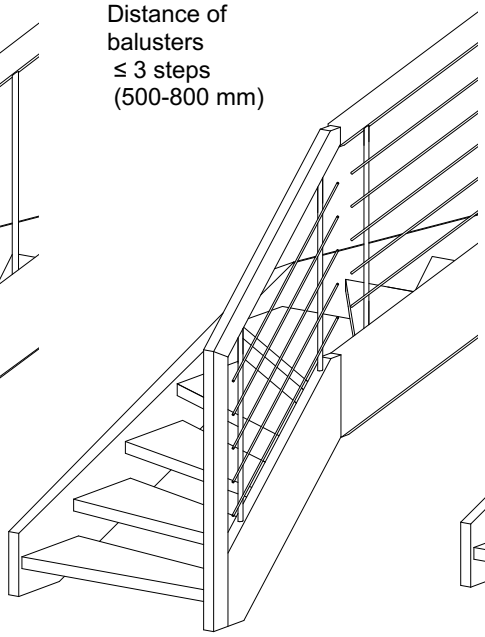
Standard barrier

Distance of balusters ≤ 130 mm



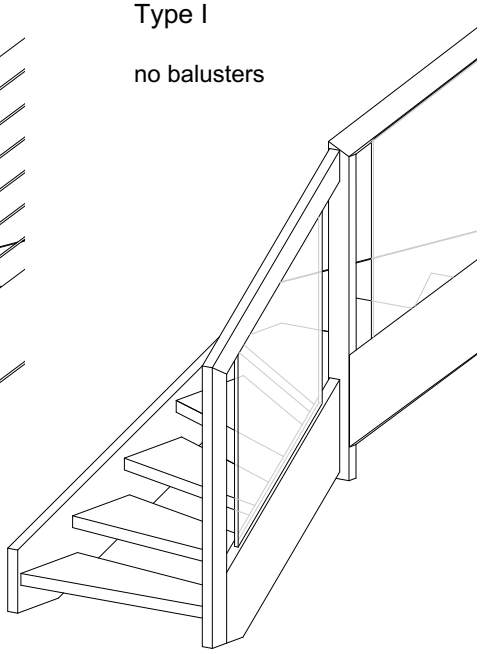
Railing barrier

Distance of balusters ≤ 3 steps (500-800 mm)



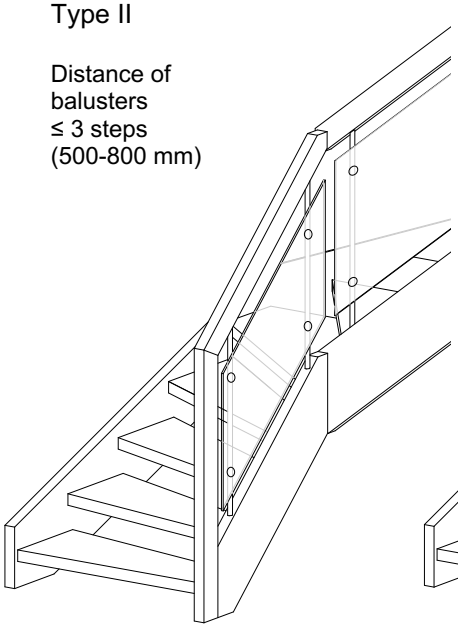
Glass barrier Type I

no balusters



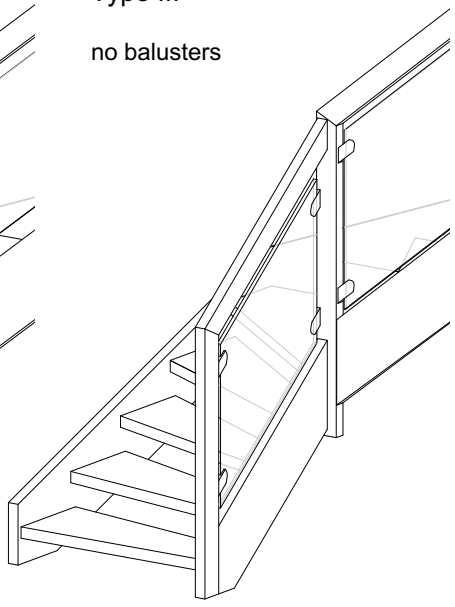
Glass barrier Type II

Distance of balusters ≤ 3 steps (500-800 mm)



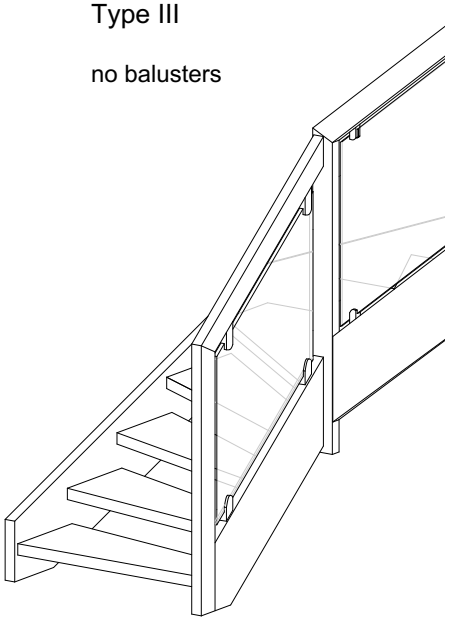
Glass barrier Type III

no balusters



Glass barrier Type III

no balusters

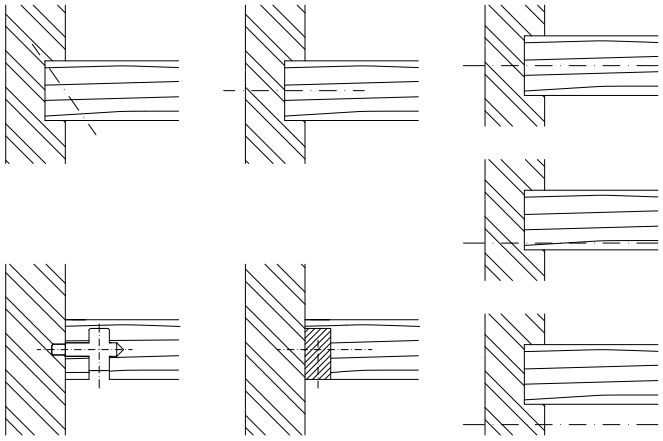


More details according to the technical documentation

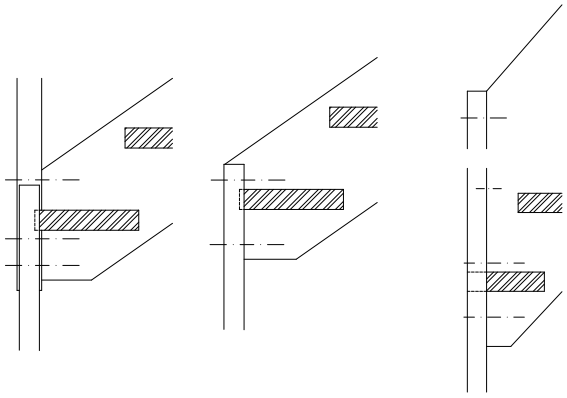
String Stair System Treppenmeister	Annex A4
Barrier constructions (fillings)	

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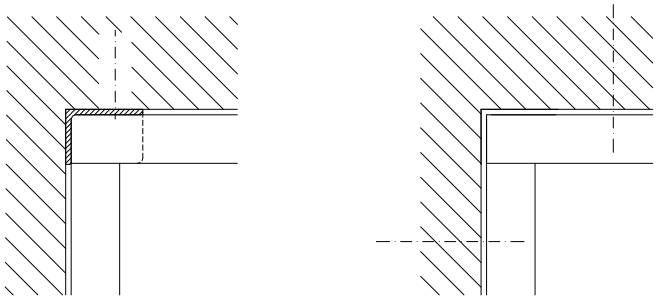
Step-string-joint



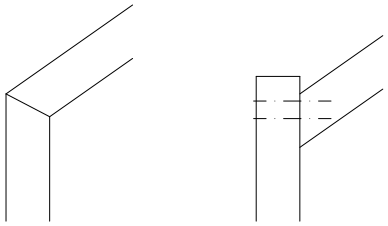
String-corner-joint



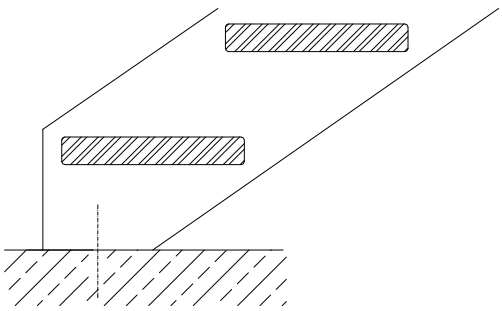
Corner-support of strings



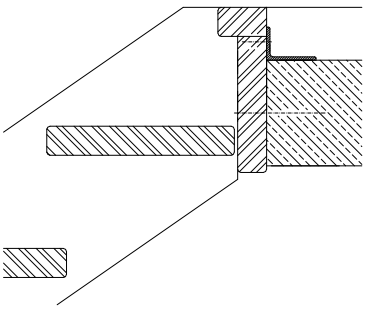
Post-handrail-joint



String joint at the top



String joint at bottom

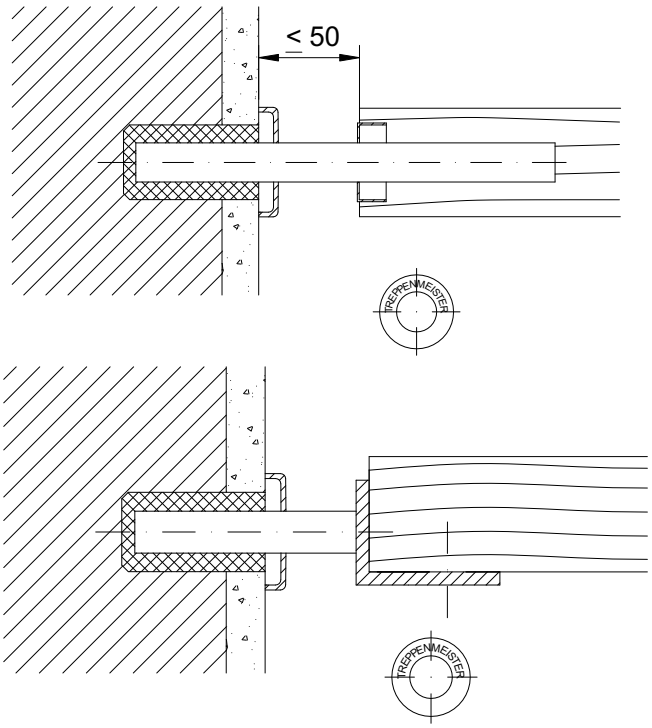


see technical documentation for relationship of joints to the wood species and plan types and more details

String Stair System Treppenmeister	**Annex A5**
Step-string-joint, String-corner-joint, Corner-support of strings, Post-handrail-joint String joint at the top, String joint at bottom	

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Wall ties



Wall tie:
- bearing sleeve (permanently elastic)
- round steel bar ∅ 16 mm
- ferrule
- plastic cover rosette
- type of stairs according to technical dokumentation

Dimensions in mm

String Stair System Treppenmeister	Annex A6
Wall ties	

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

Component of stair		Material [1]	Dimension		Value	Reaction to fire
Step		Solid wood [2] [3] [4]	Thickness	[mm]	44 (48) [10]	D-s2, d0
String		Solid wood [2] [3] [4]	Width x height	[mm]	44 x 240...340 [5]	D-s2, d0
		Wood-based product [11]	Width x height	[mm]	40 x 1000	
Post	At bottom, at the top	Solid wood [2]	Width x height	[mm]	44 x 70, 55 x 55 [5]	D-s2, d0
	Middle post (only glass barrier Type I)	Solid wood [2]	Width x height	[mm]	55 x 55	
Handrail		Solid wood [2]	Width x height	[mm]	44 x 70 [6]	D-s2, d0
Baluster		Solid wood [2]	Diameter	[mm]	29	D-s2, d0
		Steel	Diameter	[mm]	16 (21,3) [7]	A1
Barrier fillings Type I		Glass ESG-H	Thickness	[mm]	8	A1
Barrier fillings Type II and Type III		Glass ESG-H	Thickness	[mm]	8	A1
		Glass VSG [8]	Thickness	[mm]	2 x 4 mm [8]	no performance assessed
Angle joints, wall ties, system fastener		Steel	Diameter	[mm]	- [9]	A1
Wall ties		Round steel	Diameter	[mm]	16	A1
			Embedment depth wall	[mm]	55	
			Embedment depth step	[mm]	80	
Bearing sleeve (wall tie)		Plastic	Diameter	[mm]	30	Not relevant

[1] Characteristic values of material according to technical documentation
[2] Only wood of wood species 1:
Amazakoué, Bangkirai, Bongossi, Beech, Oak, Ash, Iroko/Kambala, Merbau, Wengé, Zebrano
[3] Only wood of wood species 2:
Maple, Afzelia/Doussié, Acacia/Robinia, Birch, Bubinga, Cherry tree, Nut tree, Elm, Sapelli, Teak, Dibetou, Hevea
[4] Only wood of wood species 3: Pine
[5] Depending on the width of the stair (800…1200 mm), the number of rises, wood species and type of plan according to technical documentation,
[6] Depending on type of plan and number of rises according to technical documentation, differing sections see Table 2
[7] Value in brackets for railing barrier
[8] VSG consisting of 2 x 4 mm ESG and 1.52 mm PVB-foil
[9] According to technical documentation
[10] Value in brackets for width of the stair > 1000 mm and ≤ 1200 mm
[11] Wood-based product: Layer structure according to technical documentation

String Stair System Treppenmeister	**Annex A7**
Minimum dimensions of components of the stair and reaction to fire	

Table 2: Differing minimum dimension of sections of posts and handrails

Type of plan	Component	Barrier type	Dimension width x height in mm [1)]
G	post bottom and top	Glass barrier Type I	100 x 44
G	handrail	Standard barrier	44 x 70 and 70 x 44
		Railing- and Glass barrier Type II and III	44 x 70 and 70…110 x 44
		Glass barrier Type I	65…170 x 44
VVP	handrail	Glass barrier Type I	44 x 70 and 60…80 x 44
VP	post bottom and top	Glass barrier Type I	55 x 55 and 90 x 55
VP	handrail	Glass barrier Type I	44 x 70 and 60…90 x 44
V2	post bottom and top	Glass barrier Type I	55 x 55 and 90 x 55
V2	handrail	Railing- and Glass barrier Type II and III	44 x 70 and 70 x 44
		Glass barrier Type I	65…110 x 44
V1	post bottom and top	Glass barrier type I	55 x 55 and 90 x 55
V1	handrail	Glass barrier Type I	44 x 70 and 60…100 x 44
VV	handrail	Glass barrier Type I	65…100 x 44
H	handrail	Glass barrier Type I	44 x 70 and 70 x 44
P	handrail	Glass barrier Type I	44 x 70 and 70 x44

[1)] from…to data and alternatives depend on number of rises and the horizontal support at the height of the ceiling edge, detailed values according to technical documentation

String Stair System Treppenmeister	**Annex A8**
Minimum dimension of sections of posts and handrails	

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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 according to Annex A1 and A2; 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%

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 4
γ_M:	recommended material partial safety factor; see Table 4
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 6

String 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 manufacturer 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 stair components without imposed deformations
- Installation of stair components without significant defects and cracks
- Replacing of stair components, which begin tearing when assembling
- Bolted connections are protected such that they will not be loosened by vibrations

Indication of the manufacturer:

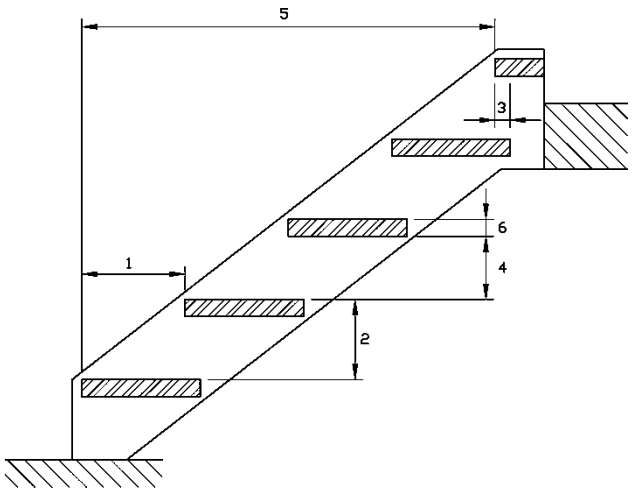
- Ensure that all persons involved will be appropriately informed about the specific conditions according to sections 1 and 2 (including the annexes to which reference is being made as well as the not confidential parts of the technical documentation deposited to this European Technical Assessment)
- 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

String Stair System Treppenmeister	Annex B2
Specification of intended use (Part 2)	

Table 3: Geometry

Designation			Dimension	
			Minimum	Maximum
Going	step on walking line [1]	[mm]	210	370 [2]
	tapered step	[mm]	60 [2], [3]	600 [2], [4]
Rise of the stairs [1]		[mm]	140 [2]	210
Pitch of the walking line [1]		[°]	21	45
Overlap of steps	wall side	[mm]	30	- [5]
	wall-free side	[mm]	30	- [5]
Number of rises			3	20
Openings	between barrier and other parts of the stair	[mm]	0	0
	between stairs and wall	[mm]	- [5]	50
	between consecutive steps	[mm]	- [5]	166
	between balusters	[mm]	40	130 (800) [6]
Clear width of stairs		[mm]	500	1200
Minimum headroom		[mm]	- [5]	
Length of the flight		[mm]	- [5]	4940 (5980) [7]
Thickness of steps		[mm]	44	- [5]
Height of the barrier / handrail		[mm]	900	1000
Handrail	width	[mm]	44	170
	height	[mm]	44	110
	clear distance to adjacent components	[mm]	50	- [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
[6] See also Annex A4
[7] Value in brackets for stairs with landing



1 Going
2 Rise
3 Overlap
4 Opening between consecutive steps
5 Length of the flight
6 Thickness of steps

String Stair System Treppenmeister	**Annex C1**
Geometry of the stair	

Table 4: Load-bearing capacity - Characteristic values of resistance

Type of loading	Characteristic values of resistance			γ_M [1]
vertical variable uniformly distributed load	q_{Rk}	[kN/m²]	5,0	1,1
vertical variable single load	Q_{Rk}	[kN]	3,3	
horizontal variable uniformly distributed load on barrier	h_{Rk}	[kN/m]	0,6	

[1] Recommended partial safety factor (steel decisive), in absence of other national regulations

Table 5: Deflections under loading

Deflection 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]	4940 (5980) [1]
deflection under load related to the median line of the flight	w_q	[mm]	≤ 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 - 1200 [2]
deflection under load related to the clear width of the stair	w_Q	[mm]	≤ L/200

[1] Value in brackets for stairs with landing
[2] Depends on stair configuration

Table 6: 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

String Stair System Treppenmeister

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

Annex C2