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**European Technical Assessment Body
for construction products**



European Technical Assessment

**ETA-24/0564
of 11 May 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

Fire-retardant stair type Schön

Product family
to which the construction product belongs

Prefabricated stair kits

Manufacturer

Joachim und Michael Schön GbR
Im Neudorf 10-12
56479 Seck
GERMANY

Manufacturing plant

Herstellwerk 1-50

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

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Specific Part

1 Technical description of the product

The "Fire-retardant stair type Schön" is a prefabricated stair system comprising cut stringers, steps, risers, landings and system fasteners. The steps and risers are interconnected by bolts and connected to the cut strings by means of dowels.

The steps and risers are covered.

The underside of the staircase is clad with gypsum fibreboard.

When installed in open interior spaces, the staircase is fitted with a handrail and railing. This is connected to the cut strings via an additional railing string.

Both the steps and the strings are made of wood-based product.

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 documentation¹.

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	See Annex C3

3.3 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Release of formaldehyde	Class E1
Release of pentachlorophenol	< 5 ppm
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. The vertical balusters, which extend from the railing string to the handrail, do not favour climbing by children. Tactility and visibility: No performance assessed
Safe breakage of components	No brittle failure of individual stair components made of wood or steel
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

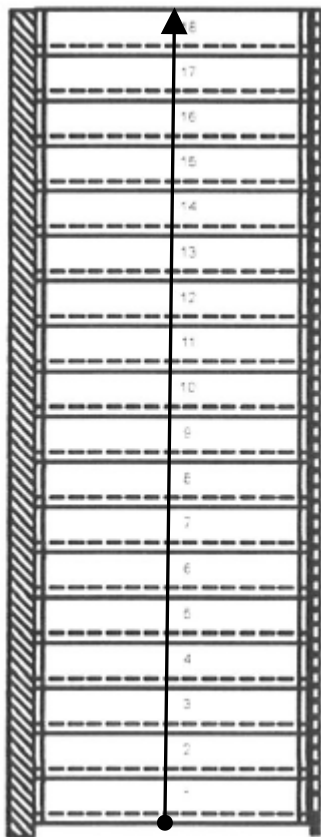
Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at Deutsches Institut für Bautechnik.

Issued in Berlin on 11 May 2026 by Deutsches Institut für Bautechnik

Dipl.-Ing. Beatrix Wittstock
Head of Section

beglaubigt:
Stiller

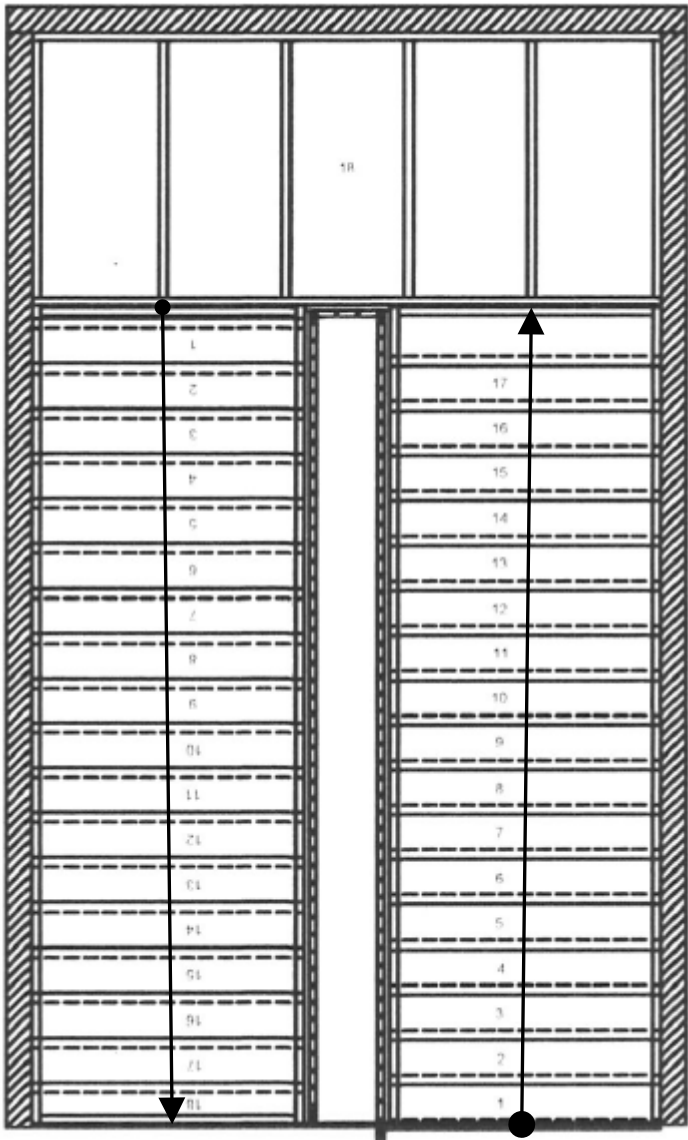
Types of plans 1 and 2



Type 1

Straight stair

Version: without railing + with railing
(Without support post on the wall-free side)



Type 2

Two-flight dog-leg stair with landing

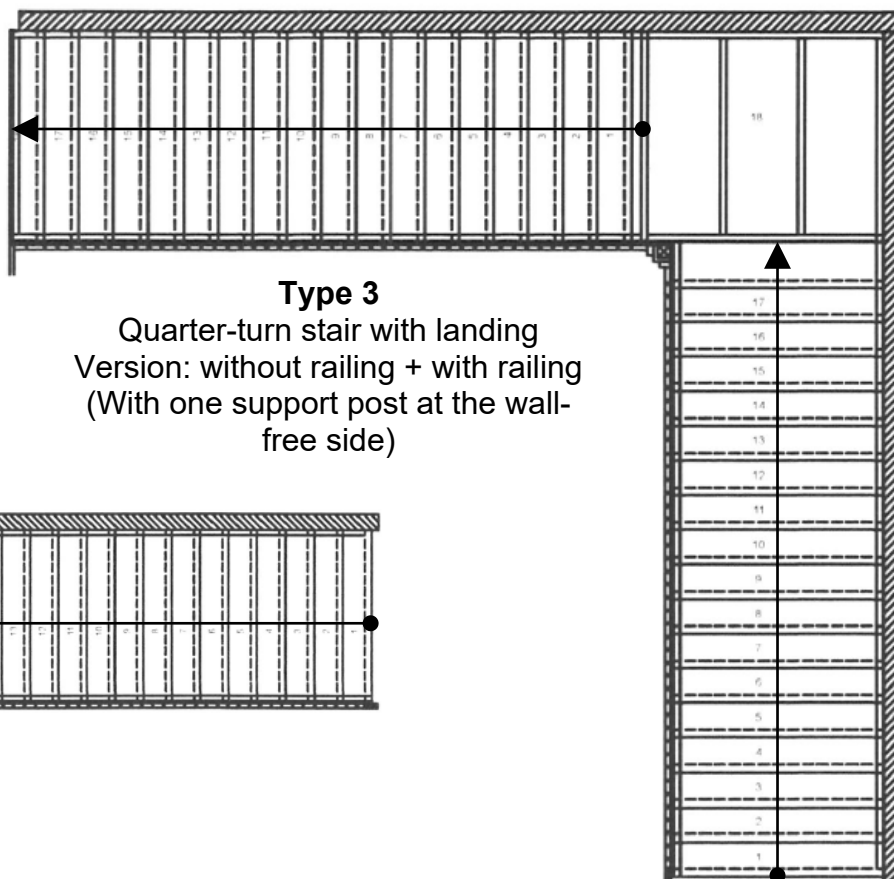
Version 1: without railing with central support post
Version 2: with railing without central support post

Fire-retardant stair type Schön

Product
(Types of plans 1 and 2)

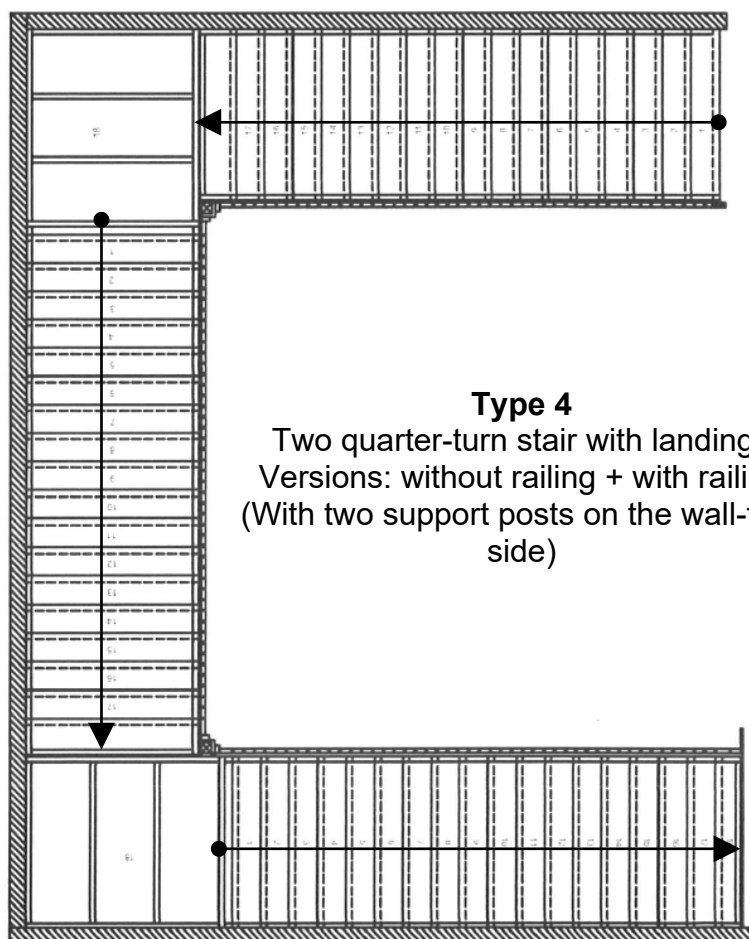
Annex A1

Types of plans 3 and 4



Type 3

Quarter-turn stair with landing
Version: without railing + with railing
(With one support post at the wall-free side)



Type 4

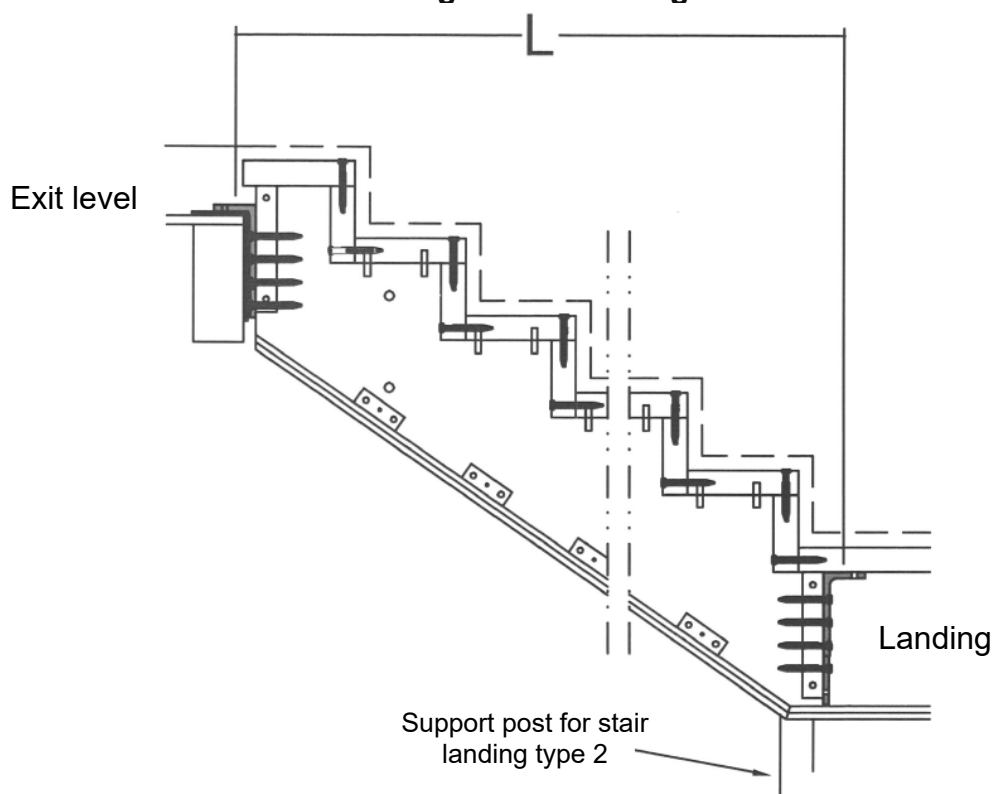
Two quarter-turn stair with landings
Versions: without railing + with railing
(With two support posts on the wall-free side)

Fire-retardant stair type Schön

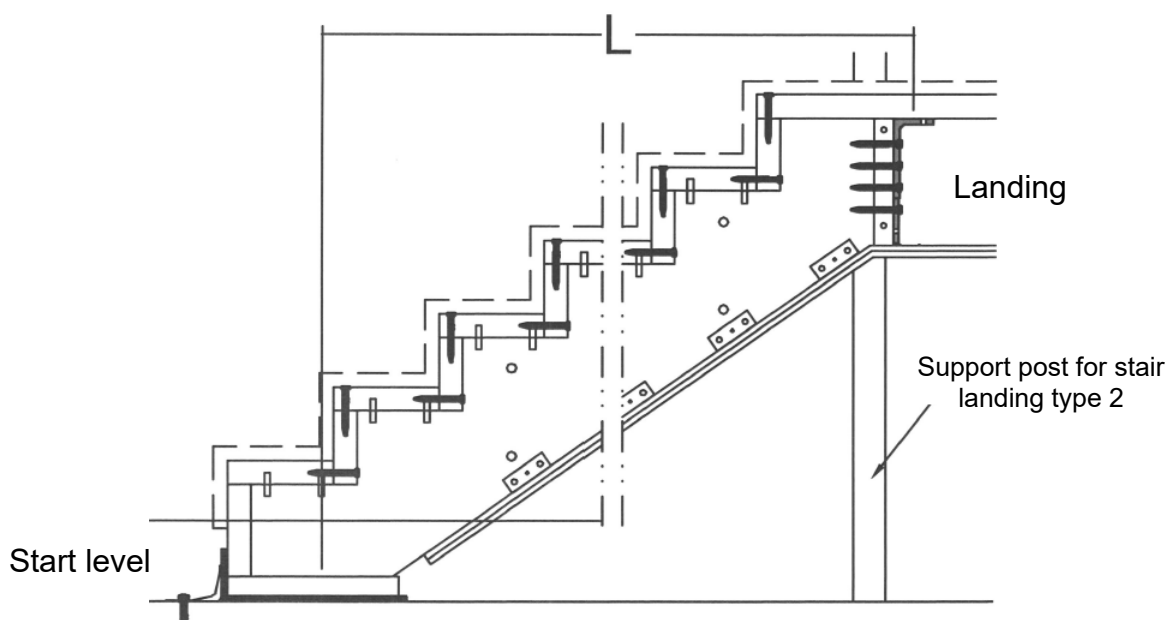
Product
(Types of plans 3 and 4)

Annex A2

Stair flight from landing to exit



Stair flight from the floor to the first landing



length L, angle dimensions, number of bolts, covering and underside cladding according to the technical documentation

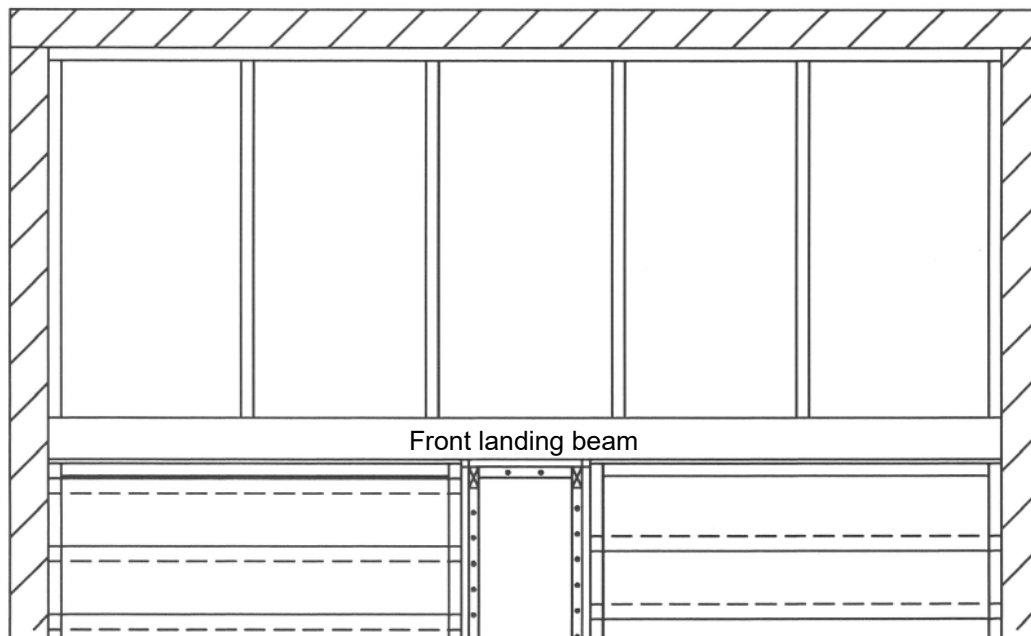
Fire-retardant stair type Schön

Stair flight

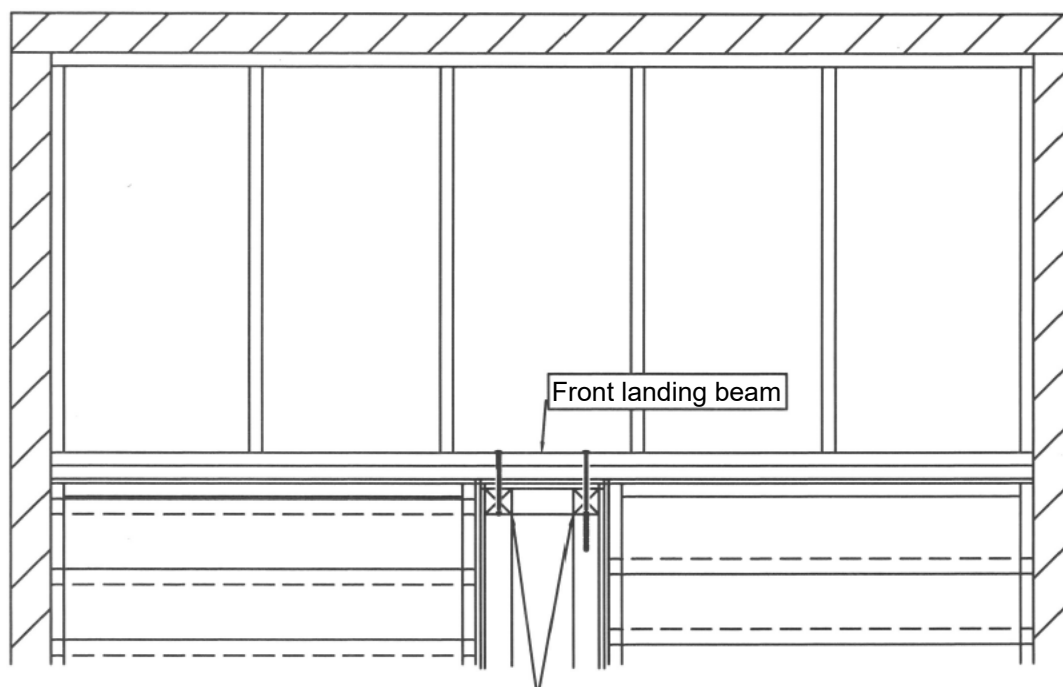
Annex A3

Stair landing type 1 (Half-turn landing without central support post)

Open interior, with additional side strings for railing load distribution, connected to the cut string



Stair landing type 2 (Half-turn landing with central support post)



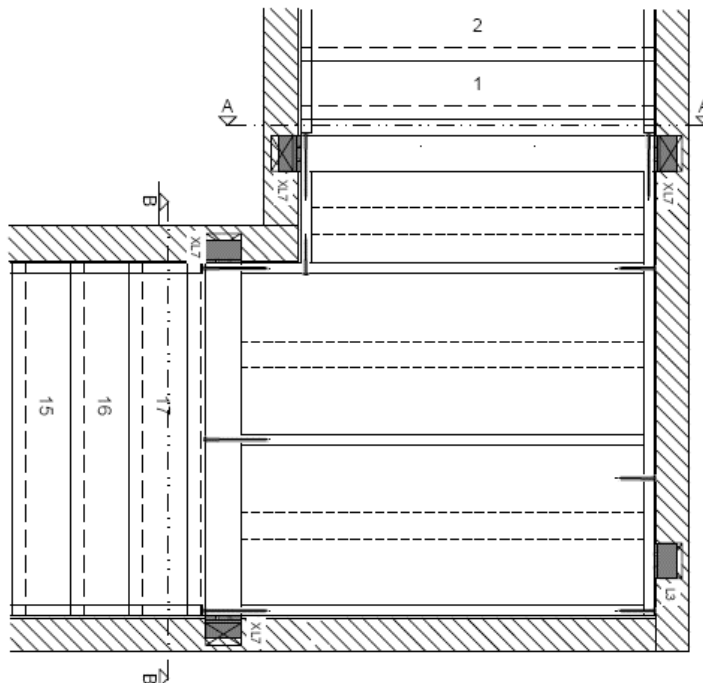
Number according to technical documentation

Fire-retardant stair type Schön

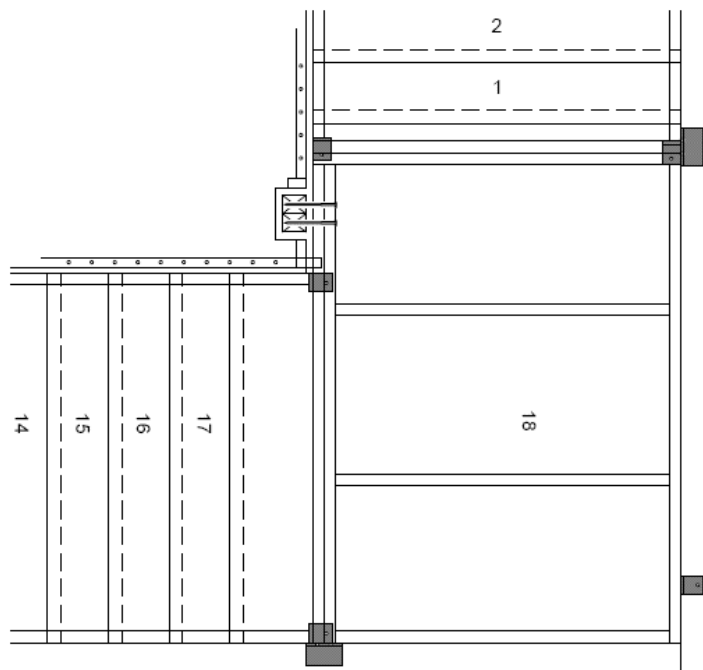
Stair landing types 1 and 2

Annex A4

Stair landing type 3 (quarter-turn landing between two walls)



Stair landing type 4 (quarter-turn landing with post)

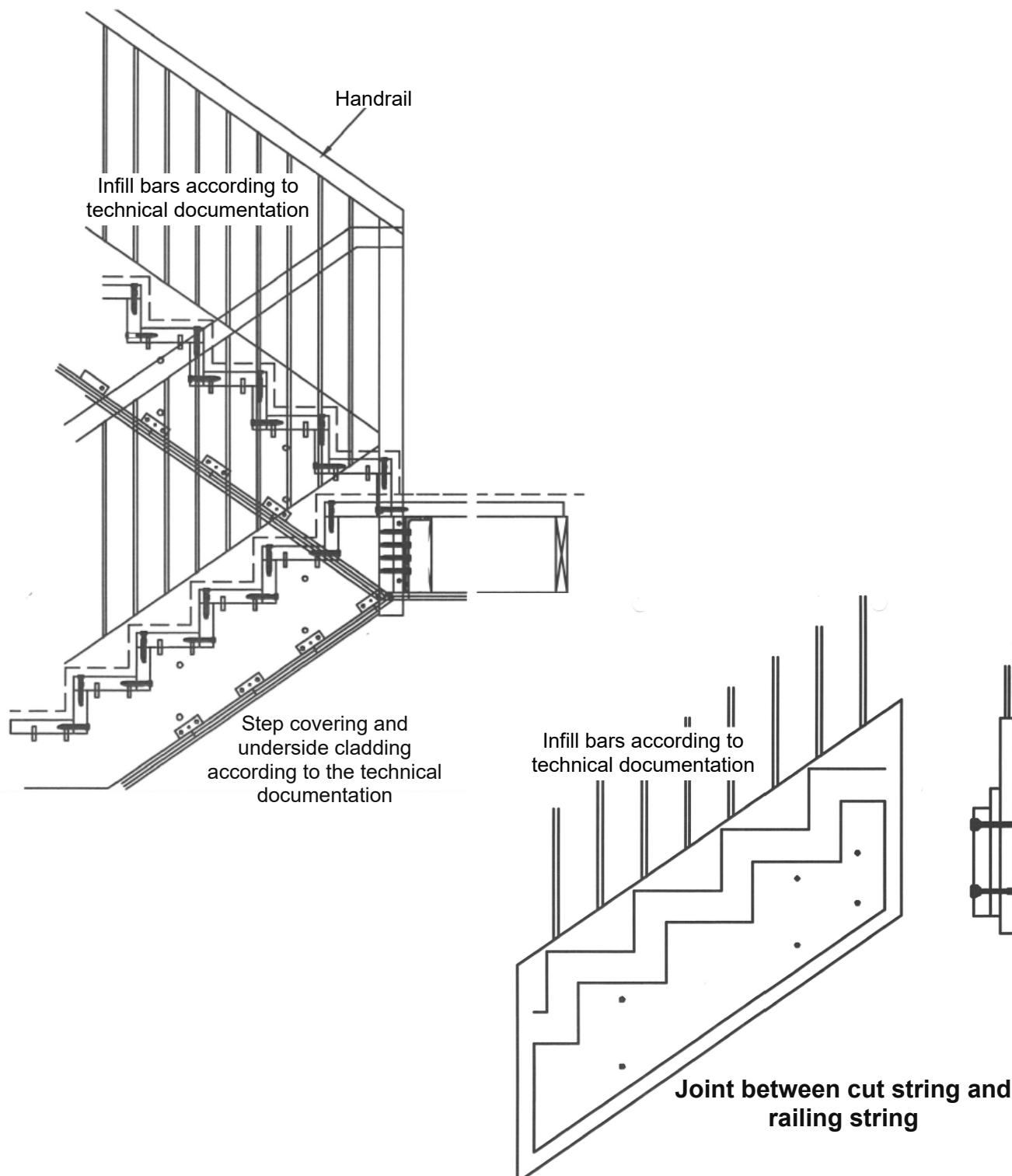


Fire-retardant stair type Schön

Stair landing type 3 and 4

Annex A5

Side view with open interior
stair landing type 1



Fire-retardant stair type Schön

Side view with open interior and Joint between cut string and railing string

Annex A6

Table 1: Minimum dimensions and materials of relevant stair components

Component of stair	Minimum dimensions [mm]		Material ¹⁾	Reaction to fire
Step	Thickness	59	Wood-based product	D-s2, d0
Cut string	Thickness x margin ⁴⁾	49 x 170...340 ²⁾	Wood-based product	D-s2, d0
Railing sting	Thickness	41	Solid wood	D-s2, d0
Support angle, system fastener	- ¹⁾		Steel	A1
Underside cladding	Thickness	2 x 15	Gypsum fibreboard	A2-s1, d0
Rungs (underside)	Width x height	119 x 41	Solid wood	D-s2, d0
Cavity insulation	- ¹⁾		Cellulose fibre	E
Landing beam ⁵⁾	Width x height	160 x 320	Glued laminated timber	D-s2, d0
	Width x height	49 x 320	Wood-based product	D-s2, d0
	Number x (Width x height)	2 x (49 x 320)	Wood-based product	D-s2, d0
Step and riser covering (1. or 2. or 3.) ³⁾	1. Thickness	9	Solid wood	D-s2, d0
	2. Thickness	9	Tiles	A1
	3. Thickness	9	Chipboard	D _{fl} -s1

¹⁾ Characteristic values of material according to technical documentation

²⁾ For stairs with fire resistance: according to Table 2, otherwise depending on the stair width, stair length, and the handrail/railing support

³⁾ Dead load $\leq 0,32 \text{ kN/m}^2$

⁴⁾ See also the schematic drawing in Annex C1

⁵⁾ Possible stair configurations according to technical documentation

Table 2: Minimum dimensions of cut strings for stairs with fire resistance

Length of flight [m]	Clear width of stairs [m]	Thickness x margin [mm]
$\leq 5,00$	$\leq 1,15$	49 x 340
$\leq 4,71$	$\leq 1,60$	49 x 340
$\leq 5,00$	$\leq 1,60$	49 x 360

Fire-retardant stair type Schön

Minimum dimensions of relevant stair components and reaction fire

Annex A7

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 the 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 or quasi-static loads
- Fire exposure

Use conditions:

- Indoor stair
- Air temperatures between +5 °C and +30 °C
- Relative air humidity between 30 % and 70 %

Use and construction conditions for stairs with fire resistance:

See Annex C3

Design:

- Design of the stair according to the annexes and the technical documentation to this European Technical Assessment
- Fastening of the stair to the construction works according to the annexes and the technical documentation to this European Technical Assessment
- Verification of load introduction and load transfer within the structure by the responsible structural engineer
- 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

Fire-retardant stair type Schön

Specification of intended use (Part 1)

Annex B1

Specification of intended use (Part 2)

Installation:

- Installation by personnel 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 $8 \pm 2 \%$
- 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

Indications to 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 $8 \pm 2 \%$ 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

Fire-retardant stair type Schön

Specification of intended use (Part 2)

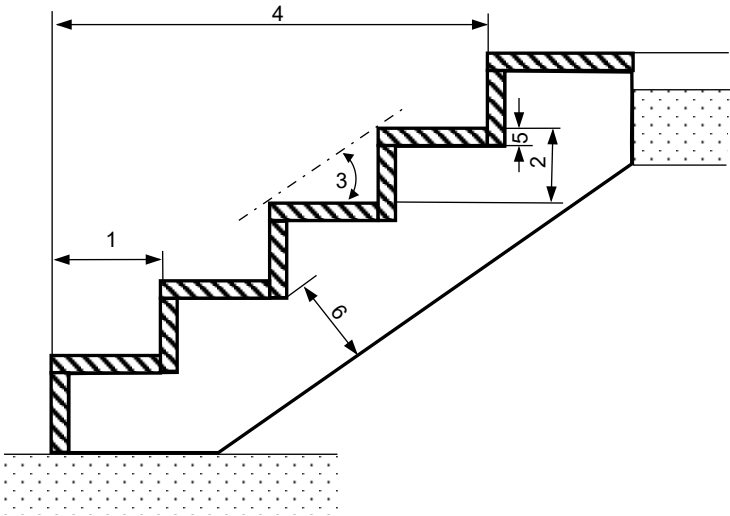
Annex B2

Table 3: Geometry

Designation			Dimension	
			minimum	maximum
Going on walking line ¹⁾	[mm]		210	370 ²⁾
Rise of the stairs ¹⁾	[mm]		140 ²⁾	210
Pitch ¹⁾	[°]		21	45
Number of rises	[-]		3	18
Openings	Between stairs and wall	[mm]	0	0
	Between consecutive steps	[mm]	- ³⁾	
Clear width of stairs	[mm]		500	1600
Minimum headroom	[mm]		- ³⁾	
Length of the flight	[mm]		- ³⁾	5000
Thickness of steps (without step covering)	[mm]		59	- ³⁾

- 1) Values are constant within one flight
2) Tolerance between nominal value and actual value = ± 5 mm
3) Not relevant

- 1 Going
2 Rise
3 Pitch
4 Length of the flight
5 Thickness of steps
6 Margin



Fire-retardant stair type Schön

Geometry of the stair

Annex C1

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/m ²]	6,75	1,5
Vertical variable single load	Q_{Rk}	[kN]	4,5	
Horizontal variable uniformly distributed load on barrier	h_{Rk}	[kN/m]	0,8	

¹⁾ Recommended partial safety factor, 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/m ²]	3,0
Maximum length of flight	L	[mm]	5000
Deflection related to the length of flight	w_q	[mm]	$\leq L/200$
Deflection of the step under single point load			
Single load	Q_k	[kN]	2,0
Maximum clear width of the stair	L	[mm]	1600
Deflection related to the clear width of the stair	w_Q	[mm]	$\leq L/200$

Table 6: Imposed loads

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

Fire-retardant stair type Schön

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

Annex C2

Resistance to fire

Fire Resistance class: R 30 according to EN 13501-2:2023, applicable under the following conditions:

- Stair width ≤ 1600 mm
- For plan type 2, only version 2 is permitted (see Annex A1)
- Only types of landing 1 and 3 according to Annex A4 and Annex A5
- On the underside of the stairs: Crossbars made of solid wood panel according to EN 13353:20202, dimensions length ≤ 1502 mm. Dimensions (b x h) ≥ 119 mm x 41 mm
- The underside of the stairs shall be clad with 2 x 15 mm gypsum fibreboards in accordance with EN 15283-2:2008+A1:2009 (density ≥ 1100 kg/m³), fixed to the timber structure. Fastener spacing: 500 mm for the first layer and 250 mm for the second layer. Joints shall be filled with non-combustible joint filler.
- The void under the stairs and above the cladding is to be filled with "Isocell Evolution," cellulose fiber according to ETA-19/0647 of 19.02.2020. Bulk density of 38-65 kg/m³
- Connection of the stairs and landing to solid constructions with bulk density ≥ 600 kg/m³ (nominal density).
- Alternatively: Connection of the landing to a timber stud wall with the following construction is permissible:
 - Timber studs, stud dimensions (b x h ≥ 100 mm x 100 mm), stud spacing (center-to-center ≤ 625 mm)
 - Sole plate / Frame timber: Dimensions (b x h ≥ 100 mm x 120 mm)
 - Additional supports for landing support: Dimensions (b x h ≥ 160 mm x 100 mm)
 - Insulation within the wall cavity: stone wool in accordance with EN 13162:2012+A1:2015, thickness ≥ 40 mm, density ≥ 40 kg/m³, non-combustible (reaction to fire class A1 in accordance with EN 13501-1:2018), melting point $\geq 1000^{\circ}\text{C}$
 - Cladding: 2 x $\geq 9,5$ mm panels, Type A according to EN 520: 2004+A1:2009
- Sound insulation pads d $\leq 12,5$ mm are allowed for bearing angles

The classification was achieved with the following test loads:

- Additional surface layers applied to the steps or landing (e.g., tiles, etc.) must be deducted from the specified loads.
- Per stair step: 1,47 kN (centered)
- On the landing:
 - Area load: 2,06 kN/m²
 - Point load from stair flights on the landing beam:
 - 9,72 kN (railing side)
 - 8,18 kN (wall side)
- The test loads used in the fire test include 0,6 times the imposed load (q_k) of the stairs:

$$0,6 \times q_k = 0,6 \times 3,0 \text{ kN/m}^2 = 1,8 \text{ kN/m}^2$$

Fire-retardant stair type Schön	Annex C3
Resistance to fire	