

Schöck Tronsole® type B with type D



Schöck Tronsole® type B with Tronsole® type D

The Schöck Tronsole® type B serves the sound insulation of stair flight and floor slab. Tronsole® type D can be employed for structural positional security. The stair flight can be manufactured for both in-situ concrete as well as in precast construction.

B, D

Product characteristics | Product design

i Product characteristics Tronsole® type B

- ▶ Impact sound pressure level difference $\Delta L_{n,w}^* \leq 30$ dB with type B-V2; $\Delta L_{n,w}^* \geq 32$ dB with type B-V1, tested according to DIN 7396; Test reports Nos. 91386-04 to 91386-06;
- ▶ High quality and efficient Elodur® elastomer support for linear connection
- ▶ Firm attachment to prefabricated stair flight using adhesive assembly tape
- ▶ High quality and easily cut PE foam panel

i Product characteristics Tronsole® type D

- ▶ Influence on the impact soundproofing is already contained in the acoustic characteristic value of type B
- ▶ Dowel for structural positional security between stair flight and floor slab
- ▶ Made of high-quality stainless steel with elastomer cap.
- ▶ Optional installation sleeve

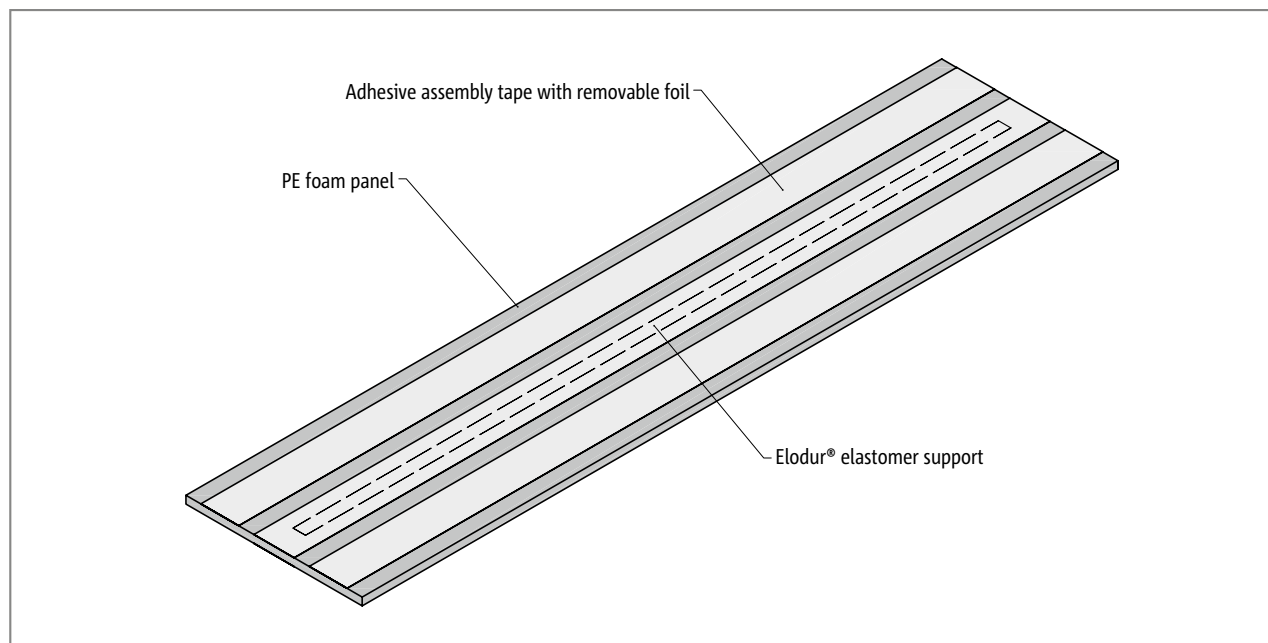


Fig. 131: Schöck Tronsole® type B

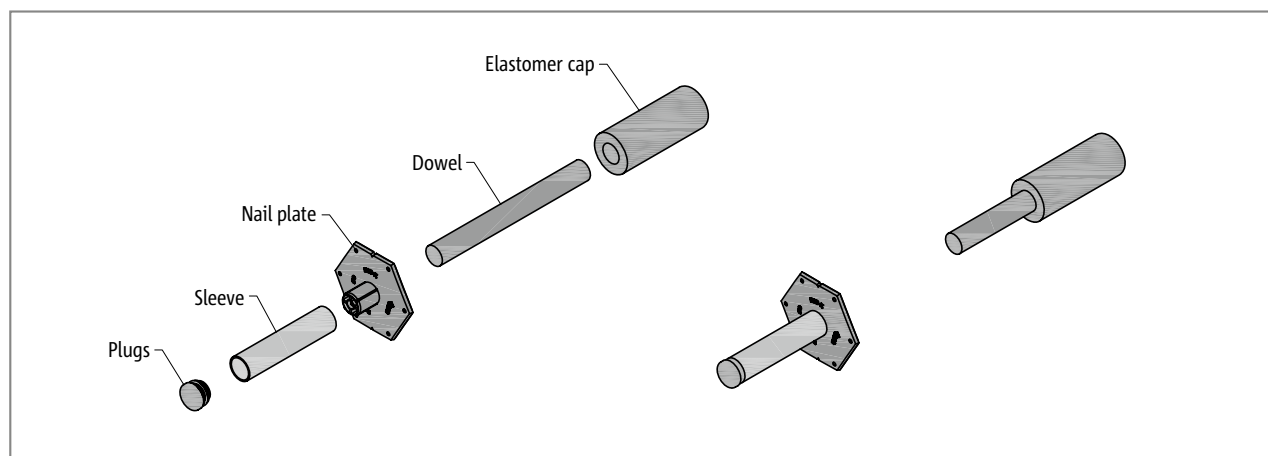


Fig. 132: Schöck Tronsole® type D-H:

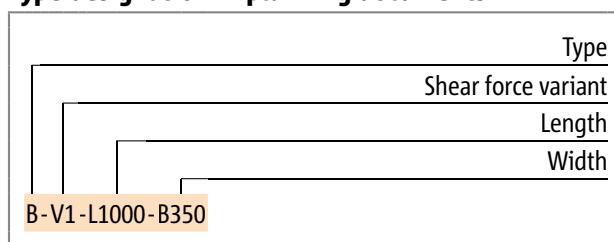
Product selection | Type designations | Special designs

Schöck Tronsole® type B Variants

The design of the Schöck Tronsole® type B can vary as follows:

- ▶ Shear force load-bearing level:
 - Type B-V1, shear force load-bearing level 1, elastomer support width $b = 25$ mm
 - Type B-V2, shear force load-bearing level 2, elastomer support width $b = 35$ mm
 - Type BS-V3, shear force load-bearing level 3, elastomer support width $b = 2 \times 25$ mm (special type on request)
- ▶ Length:
 - Type B-V1: $L = 1000$ mm, 1100 mm, 1200 mm, 1300 mm and 1500 mm
 - Type B-V2: $L = 1000$ mm, 1100 mm, 1200 mm and 1500 mm
- ▶ Width:
 - Type B Width: $B = 350$ mm and 600 mm

Type designation in planning documents

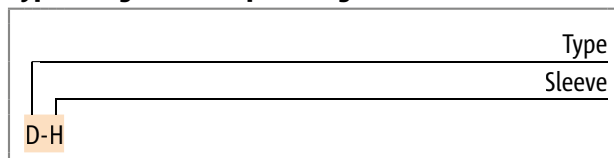


Schöck Tronsole® type D variants

The design of the Schöck Tronsole® type D can vary as follows:

- ▶ Sleeve:
 - Schöck Tronsole® type D is offered optionally with a sleeve.:

Type designation in planning documents



i Special designs

The Schöck Tronsole® type B can be cut to length on site. Furthermore, the special dimensions of the Tronsole®, which differ from the standard product variants presented in the information, can be requested from Schöck Application Technology.

Installation cross section

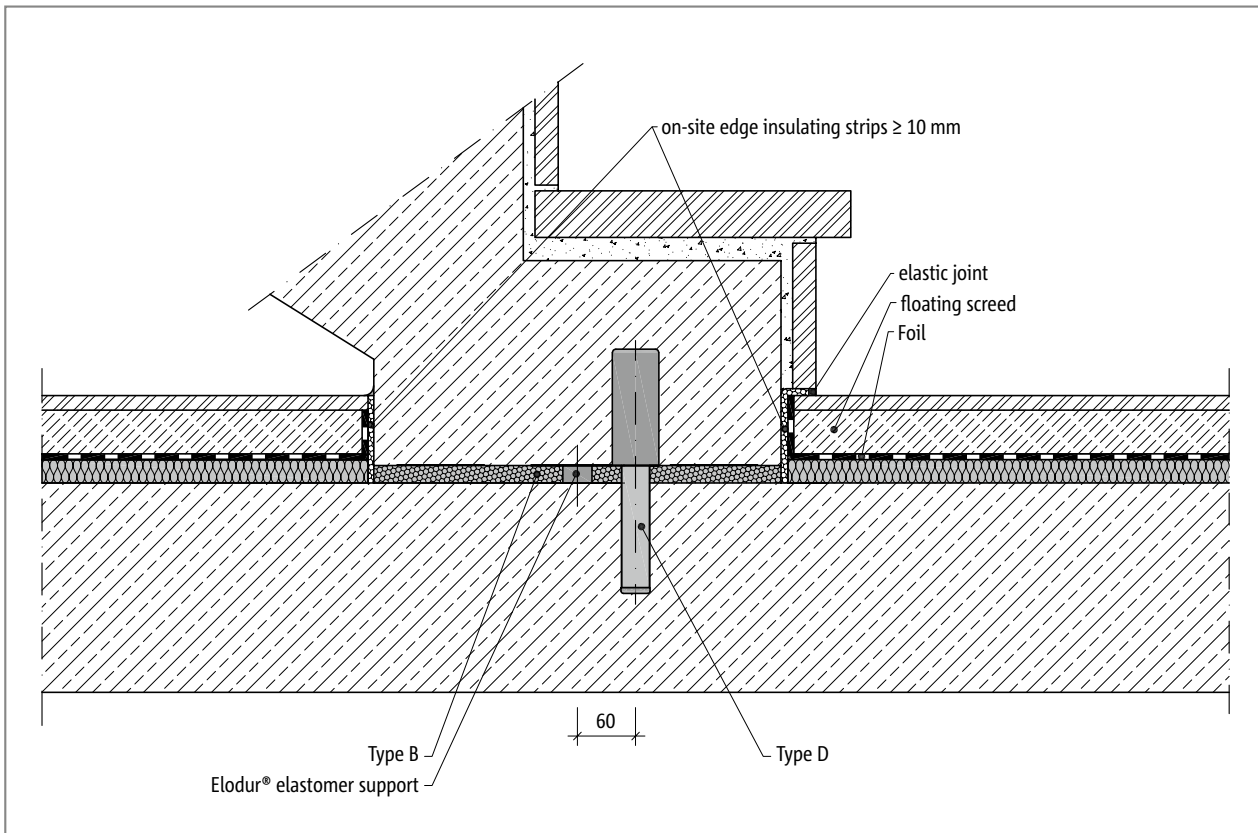


Fig. 133: Schöck Tronsole® Type B + type D: Installation cross-section

Element arrangement

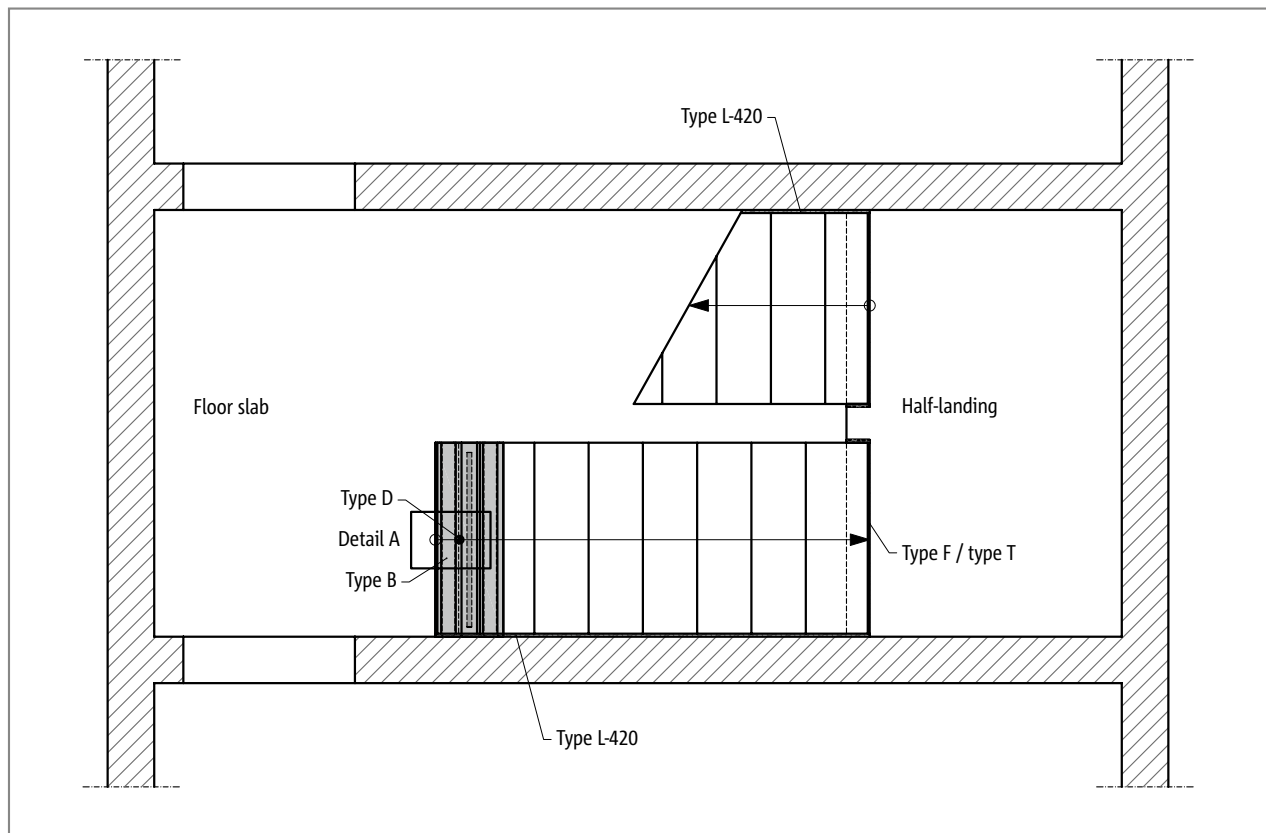


Fig. 134: Schöck Tronsole® Type B + type D: Element configuration in plan view

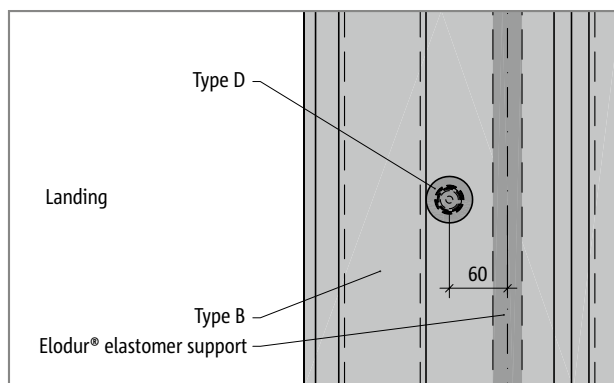


Fig. 135: Schöck Tronsole® Type B + type D: Detail A

i Element arrangement

- ▶ The given acoustic insulation values apply in combination with the Tronsole® type L-420 or with a sufficiently wide air joint (50 mm).
- ▶ The use of the Schöck Tronsole® type T or with corbel formation using Type F is suitable for the sound insulation of stair flight and landing/ floor slab. The Tronsole® type F, T and B can be combined on a stair flight.
- ▶ The Schöck Tronsole® type D offers structural positional security of the bottom of the stairs. It is combined with the Schöck Tronsole® type B.

B, D

Product description

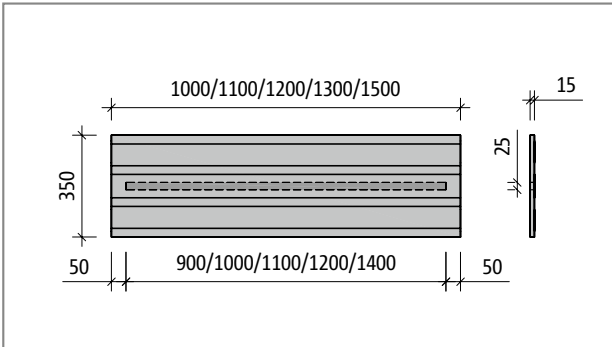


Fig. 136: Schöck Tronsole® type B-V1-L...-B350: Product layout

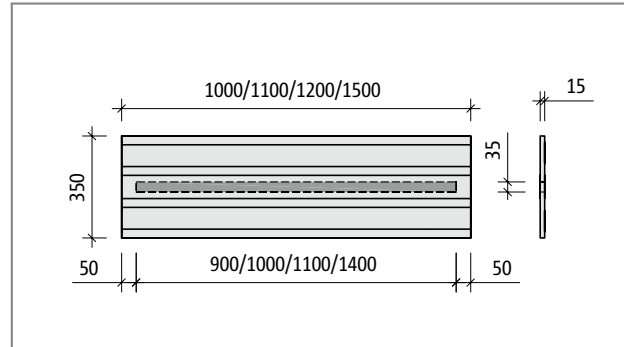


Fig. 137: Schöck Tronsole® type B-V2-L...-B350: Product layout

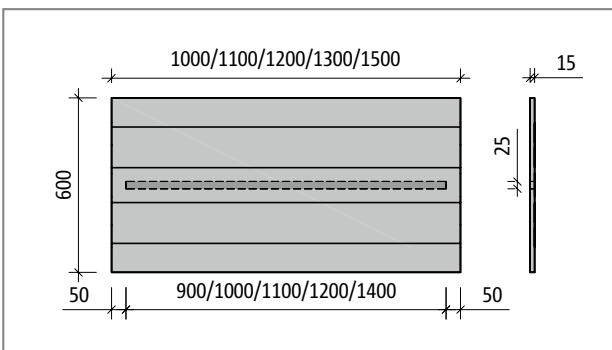


Fig. 138: Schöck Tronsole® type B-V1-L...-B600: Product layout

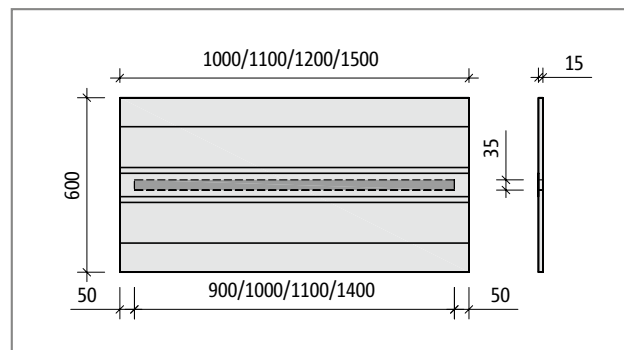


Fig. 139: Schöck Tronsole® type B-V2-L...-B600: Product layout

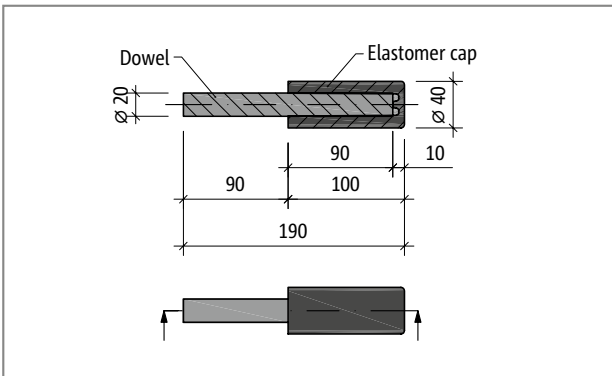


Fig. 140: Schöck Tronsole® type D: Product layout

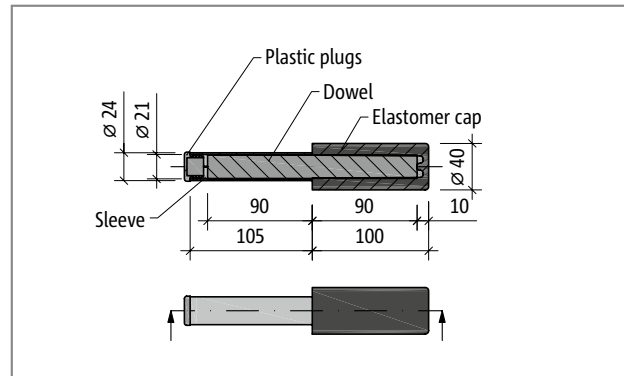


Fig. 141: Schöck Tronsole® type D-H: Product layout

B, D

Design

Design table

Schöck Tronsole® type	B-V1	B-V2
$v_{Rd,z}$ [kN/m]	42.4	59.3
$v_{Rd,x}$ [kN/m]	±3.8	±3.8
$v_{Rd,y}$ [kN/m]	±3.8	±3.8

Schöck Tronsole® type	B-V1	B-V2
Tronsole® length L [mm]	1000, 1100, 1200, 1300, 1500	1000, 1100, 1200, 1500
Tronsole® Thickness [mm]	15	
Elodur® elastomer support, length L_E [mm]	L - 100	
Elodur® elastomer support, thickness [mm]	15	
Elodur® elastomer support, width [mm]	25	35

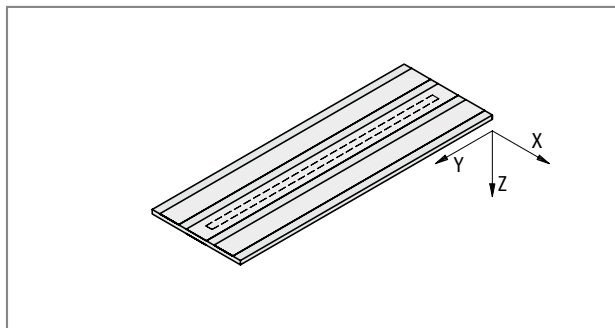


Fig. 142: Schöck Tronsole® type B: Sign rule for the design

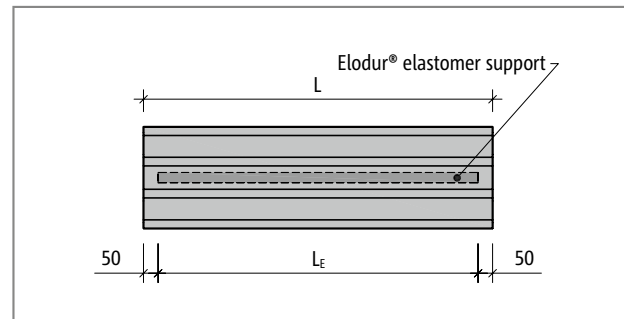


Fig. 143: Schöck Tronsole® type B Representation of lengths L and L_E ; the length of the Elodur® elastomer support is always 10 cm shorter than the length of the Tronsole®.

i Notes on design

- ▶ The Elodur® elastomer support serves exclusively for the transmission of vertical forces and small horizontal forces.
- ▶ The PE foam panel of the Tronsole® type B, with correct installation, specifies the central position of the Elodur® elastomer support. The adherence to this position prepares the basis for the design.

B, D

On-site reinforcement

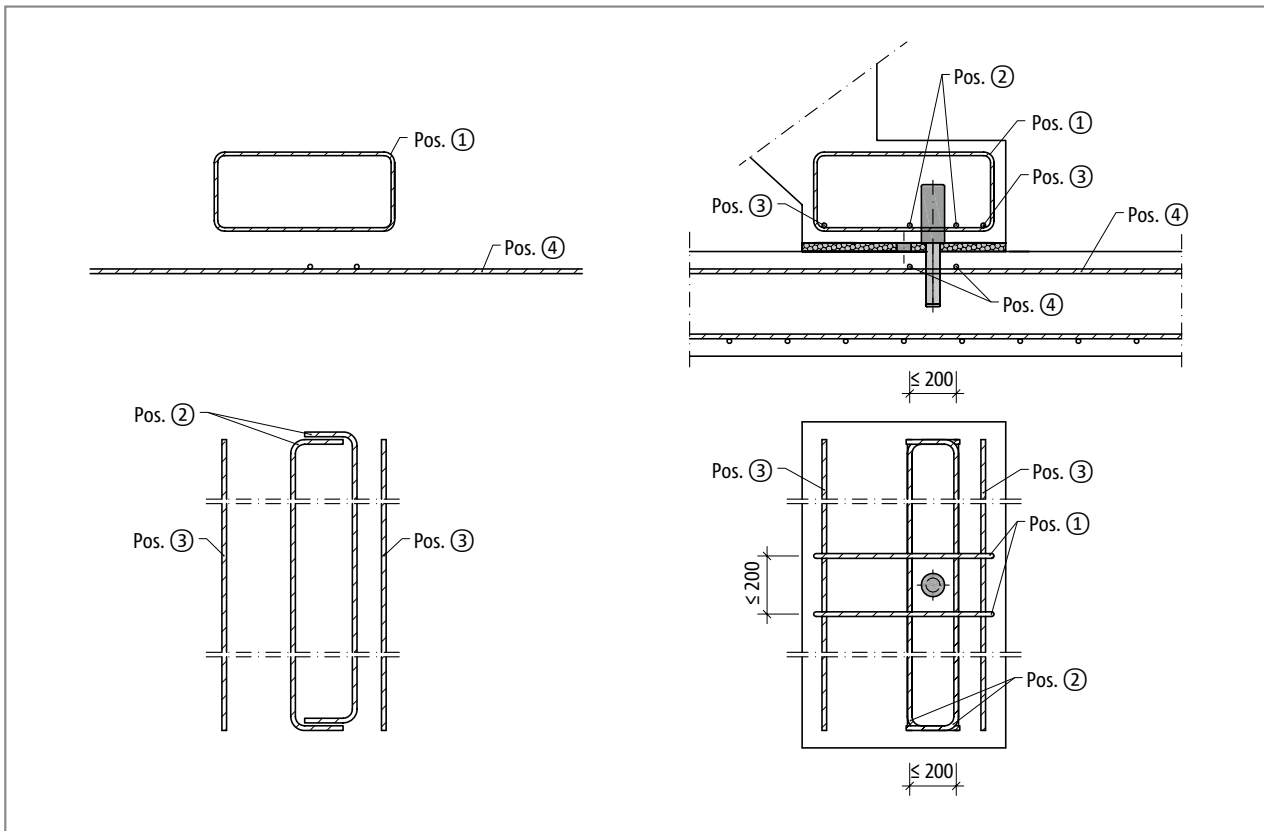


Fig. 144: Schöck Tronsole® type D: On-site reinforcement

Schöck Tronsole® type		D
On-site reinforcement	Location	Exposure class XC1, concrete strength \geq C25/30
Pos. 1 closed stirrup		
Pos. 1	on the stair side	2 · H8
Pos. 2 Transverse reinforcement with end hooks on both sides		
Pos. 2	on the stair side	2 · H8
Pos. 3 steel rods in transverse direction of the stairs		
Pos. 3	on the stair side	2 · H8
Pos. 4 Bar steel parallel and transverse to the stair flight		
Pos. 4	Floor slab, above	2 · 2 · H8

i On-site reinforcement

- ▶ The on-site reinforcement Pos. 1, Pos. 2, as well as Pos. 4 are to be arranged respectively in pairs around the Tronsole® type D. In the layout the separation of the stirrup resp. bar of an item should be maximum 200 mm.
- ▶ An existing upper slab reinforcement can be added to Pos. 4.

Deflection | Fire protection

Deformation of the Elodur® elastomer support of the Tronsole® type B-V1

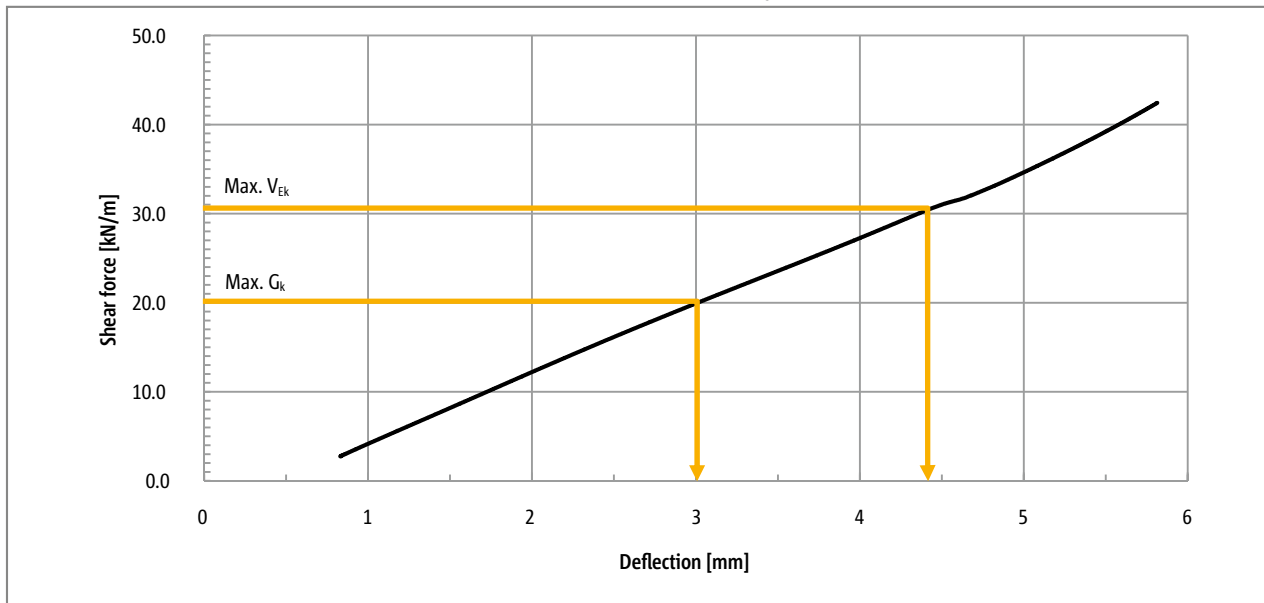


Fig. 145: Schöck Tronsole® type B-V1: Deformation of the Elodur® elastomer support

Deformation of the Elodur® elastomer support of the Tronsole® type B-V2

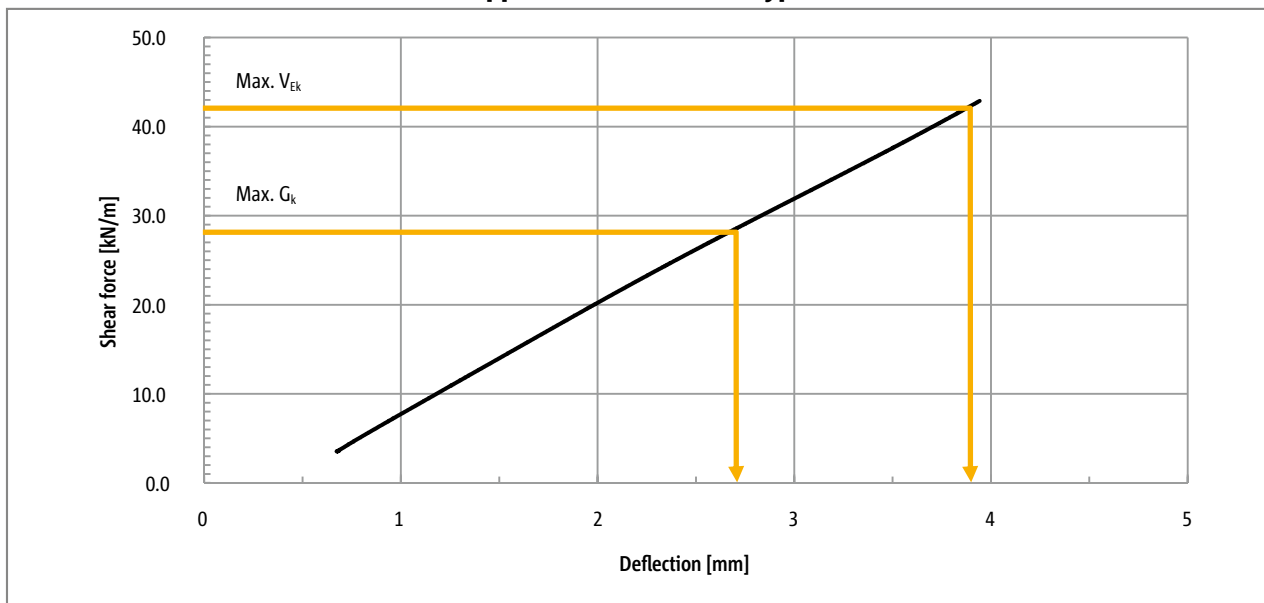


Fig. 146: Schöck Tronsole® type B-V2: Deformation of the Elodur® elastomer support

i Notes on deformation

- ▶ Deflection is the vertical deformation of the Elodur® elastomer support under vertical shear force load.
- ▶ Creep is additionally to be taken into account with 50 % of the deflection from the constant load G_k .
- ▶ $\text{Max. } V_{Ek} = \text{Max. } V_{Ed} / \gamma$, whereby $\gamma = 1.4$
- ▶ $\gamma = 1.4$ applies under the assumption that $\text{Max. } V_{Ed}$ is made up of two thirds from own weight and one third from live load.
- ▶ Thus $\text{Max. } V_{Ek}$ is the maximum service load and the maximum own weight is $\text{Max. } G_k = 2/3 \cdot \text{Max. } V_{Ek}$.

Fire protection

With the Tronsole® type D one is concerned with a static, non-relevant impact soundproofing element. Therefore the fire resistance class relates to the surrounding reinforced concrete components.

i Fire protection

- ▶ The Tronsole® type B conforms with building materials class B2 according to DIN 4102.

Materials | Installation

Materials and construction materials

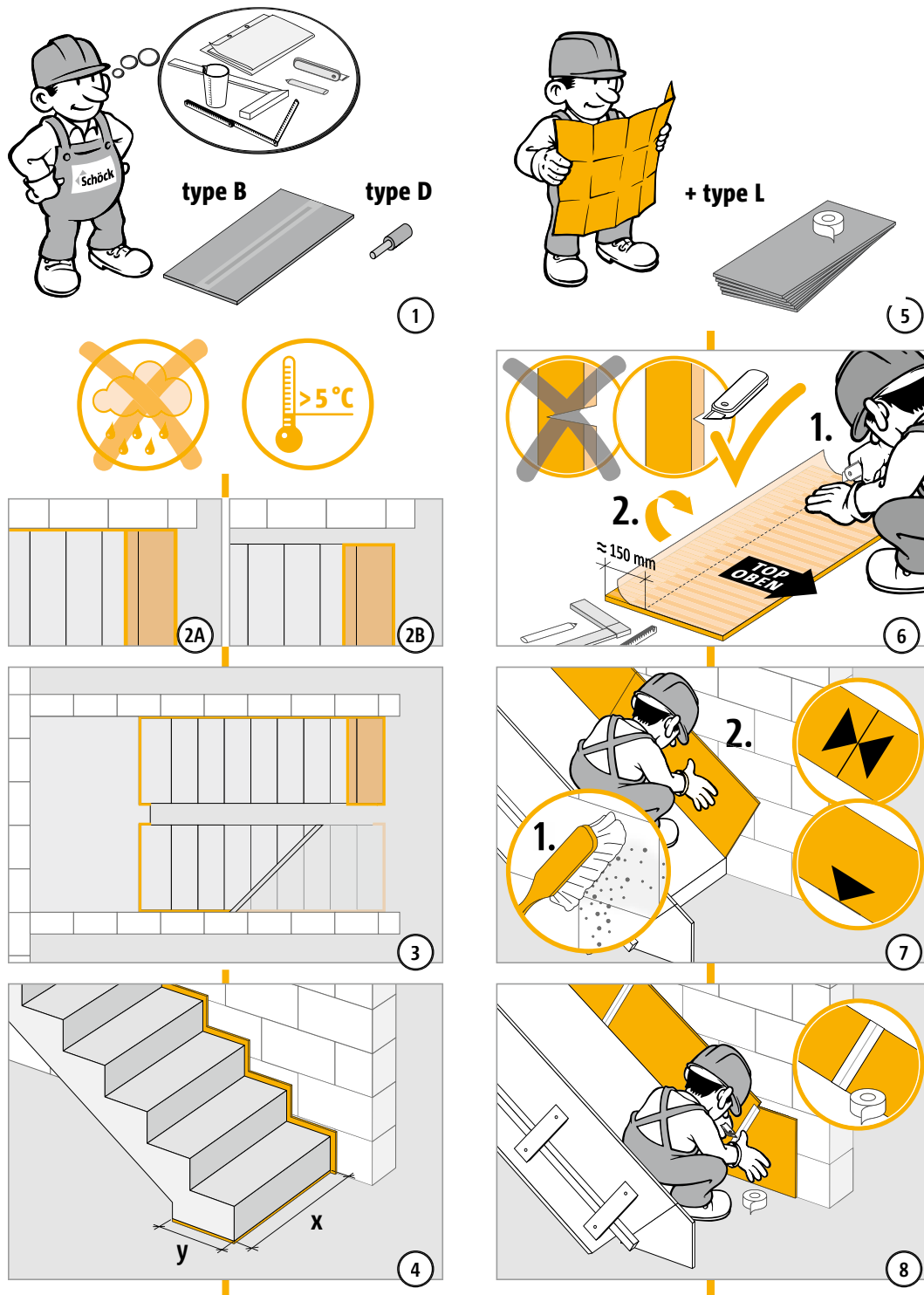
Schöck Tronsole® type B	Material
PE foam panel	PE foam according to DIN EN 14313
Elastomer support	Polyurethane according to DIN EN 13165

Schöck Tronsole® type D:	Material
Stainless steel dowel	S690, Material No. 1.4362
Elastomer cap	Polyurethane according to DIN EN 13165
Stainless steel sleeve	Material No 1.4404

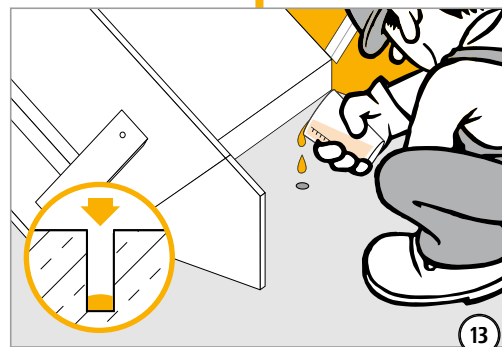
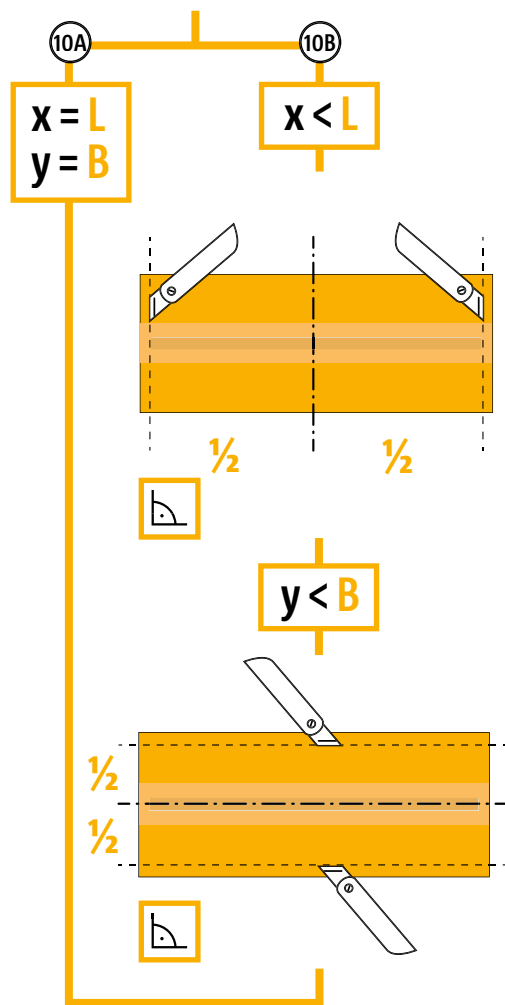
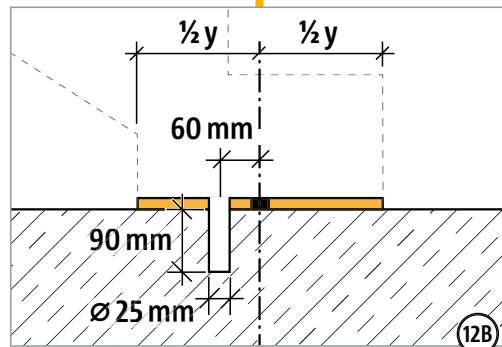
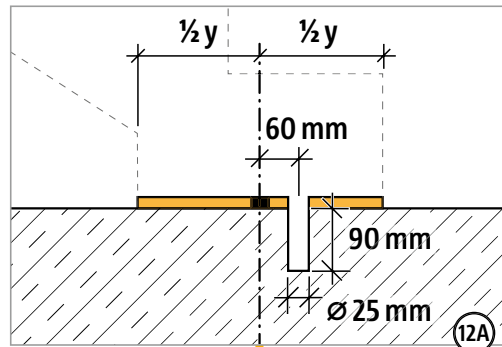
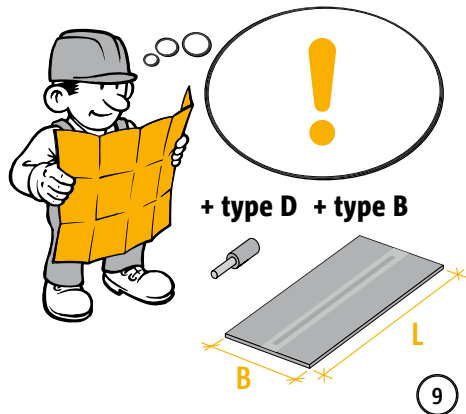
i Installation

- ▶ The Schöck Tronsole® type B has double-sided assembly adhesive tapes for securing to the bottom of the dry and dust-free precast stair flight.
- ▶ With the employment of in-situ stairs the Tronsole® type B lies on the floor slab between the edge formwork.
- ▶ The PE foam panels can be cut by hand using a simple cutting tool. As the PE foam panel at both ends of the linear elastomer support projects by 50 mm, the Tronsole® type B can be easily shortened without interfering with the elastomer support.
- ▶ With the cutting to length of the Tronsole® type B care is to be taken that the projection of the PE foam panels over the elastomer support is shortened to the same length on both sides, in order to retain the central position of the elastomer support.
- ▶ An acoustic bridge-free configuration limits the employment of on-site edge insulation strips on the sides of the foot of the stairs.
- ▶ The sleeve for the Tronsole® type D, which can be obtained optionally, can be used as stay-in-place formwork in the precast stair flight or in the floor.
- ▶ The Tronsole® type D (without sleeve) requires a block-out or the integration of the dowel in the hardened concrete of the floor slab.

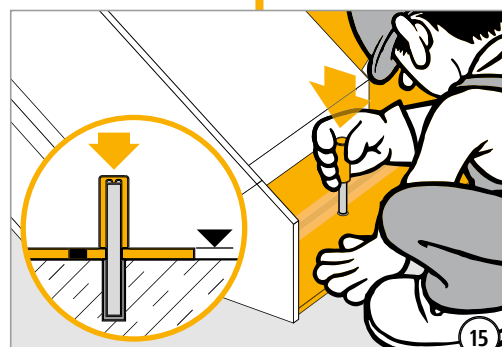
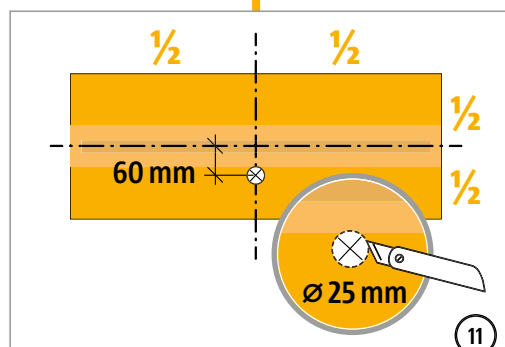
Installation instructions for building site in-situ concrete



Installation instructions for building site in-situ concrete

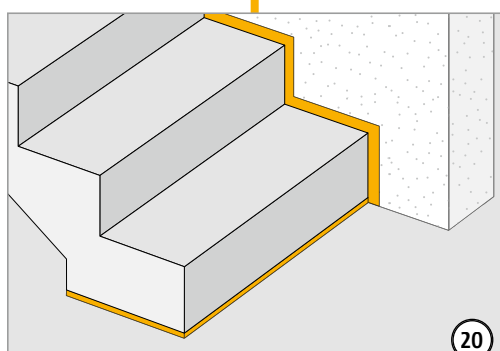
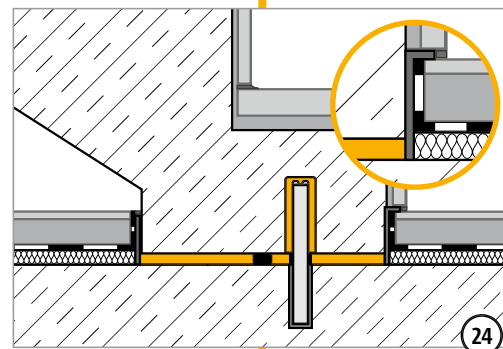
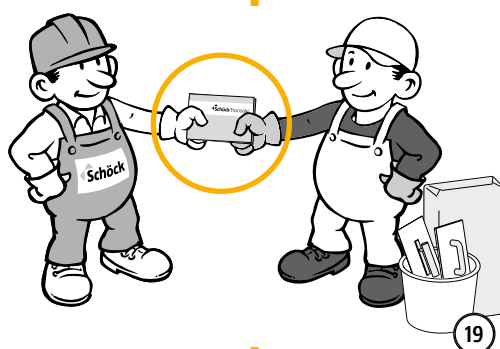
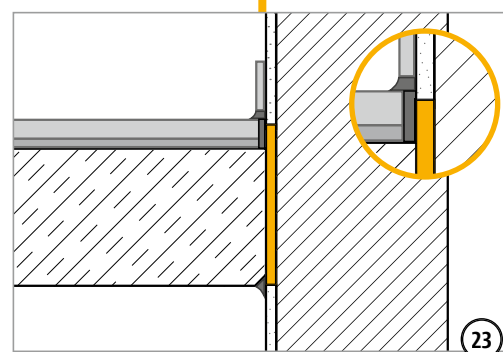
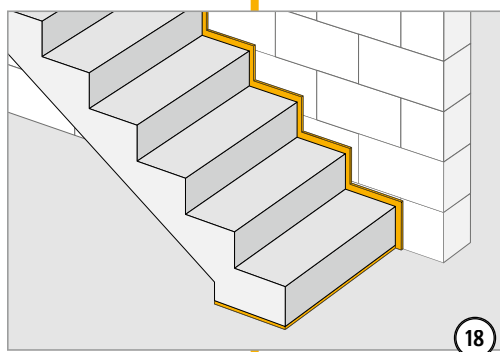
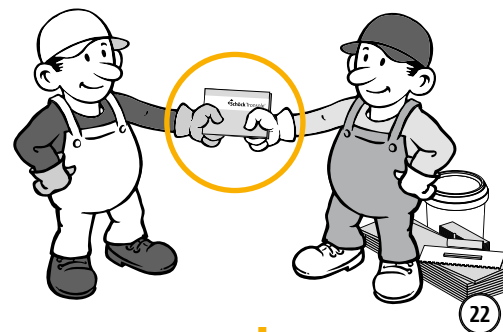
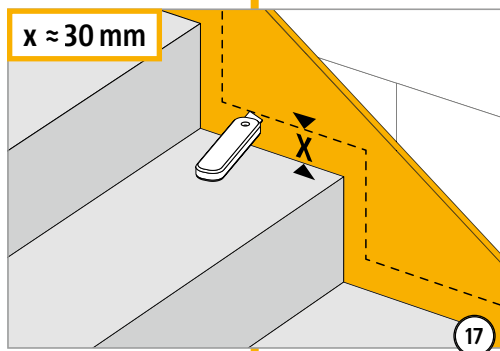
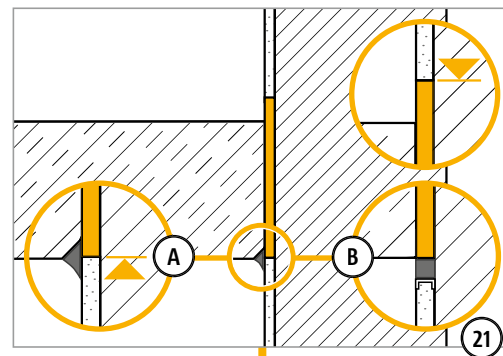
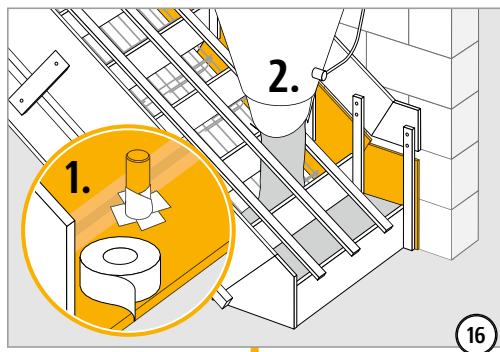


*Pay attention to sufficiently fluid consistency!



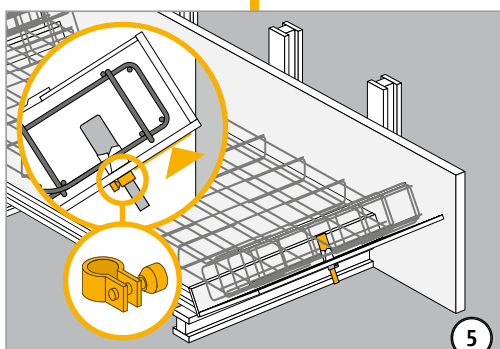
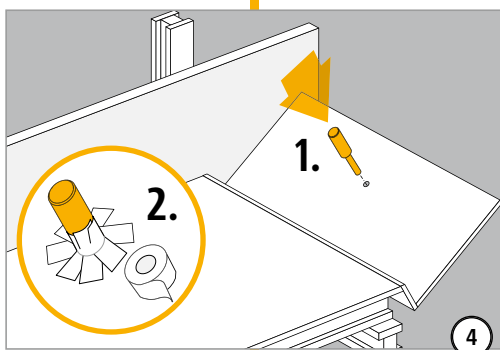
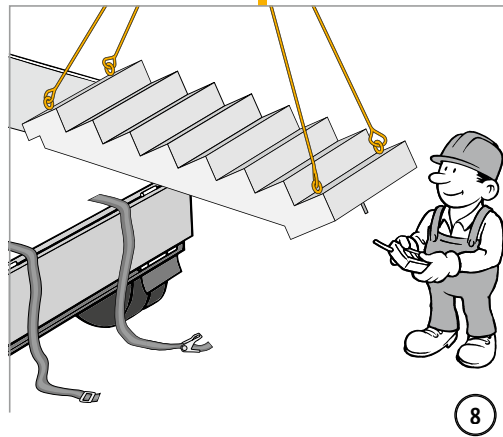
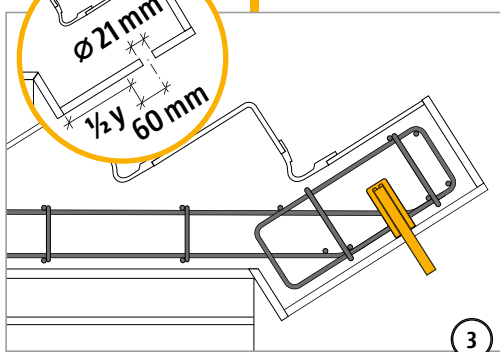
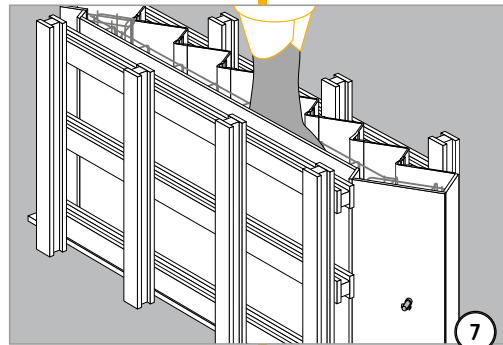
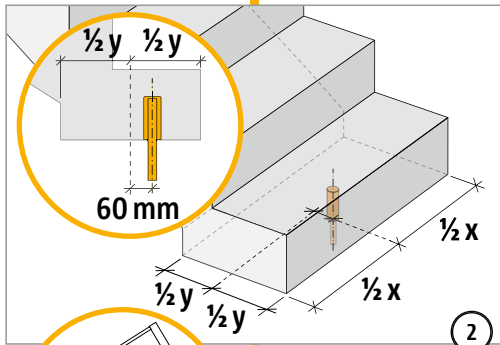
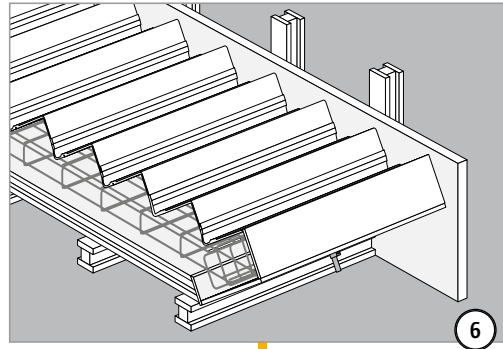
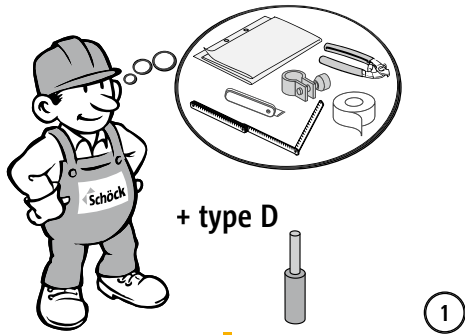
B, D

Installation instructions for building site in-situ concrete



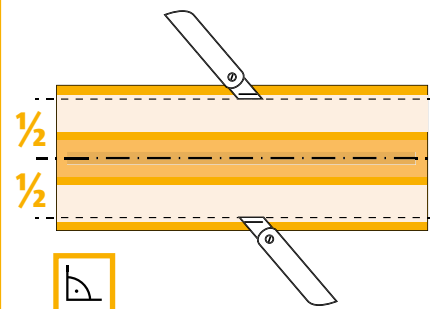
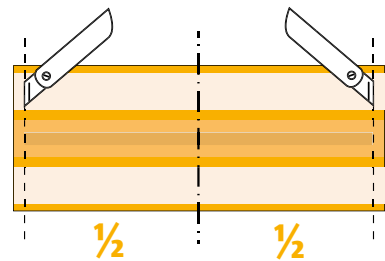
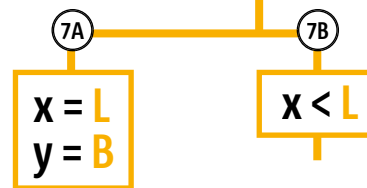
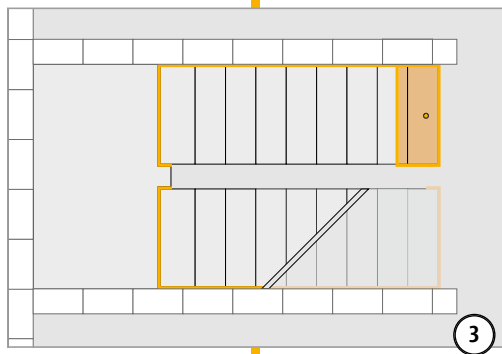
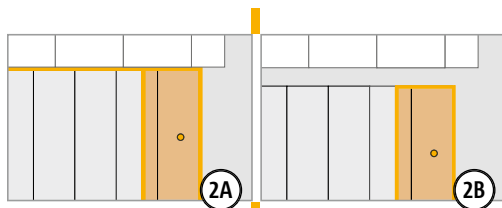
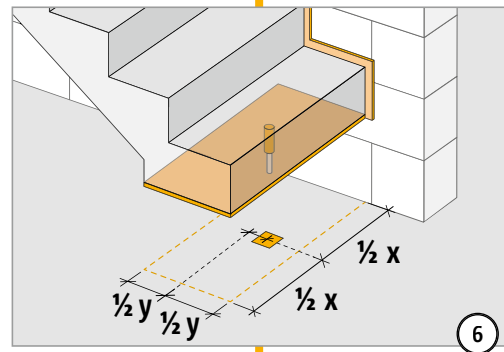
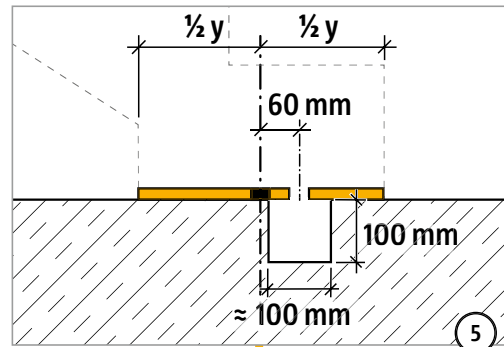
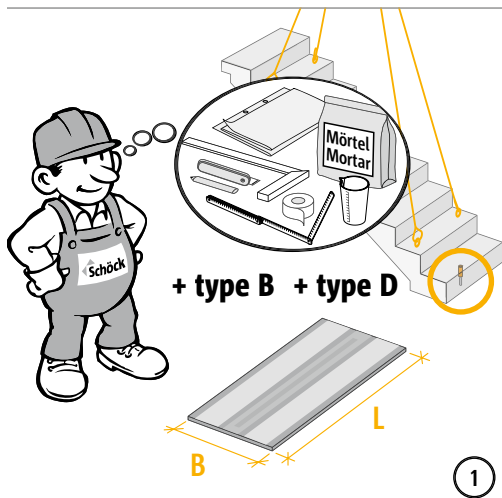
B, D

Installation instructions for prefabricating plant



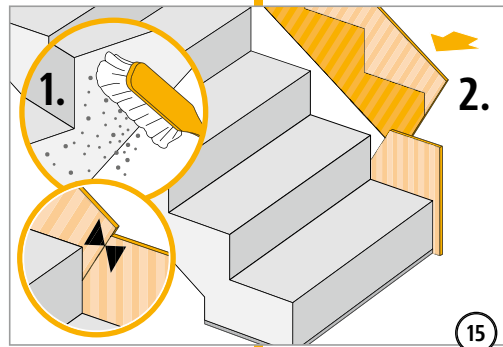
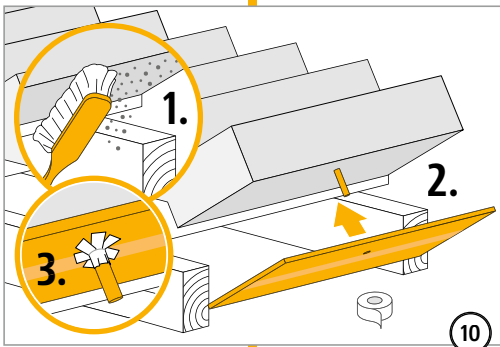
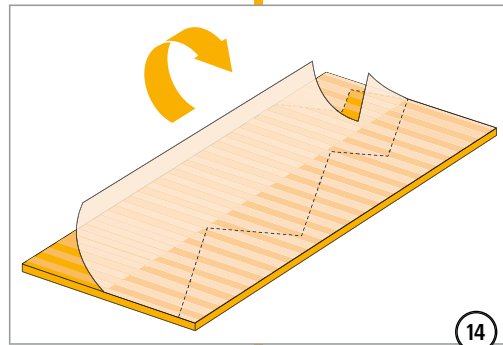
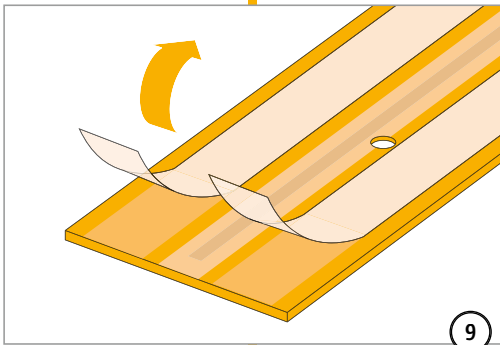
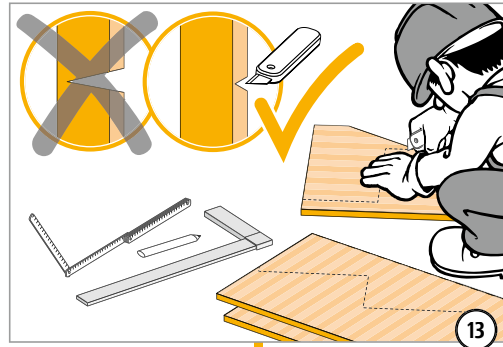
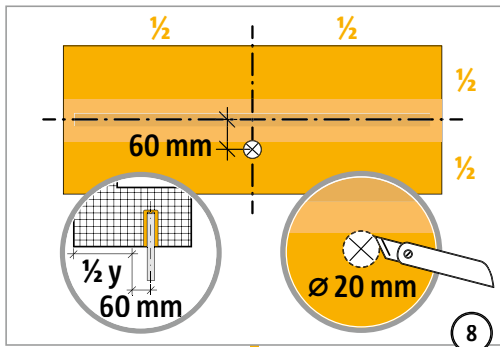
B, D

Installation instructions building site precast components

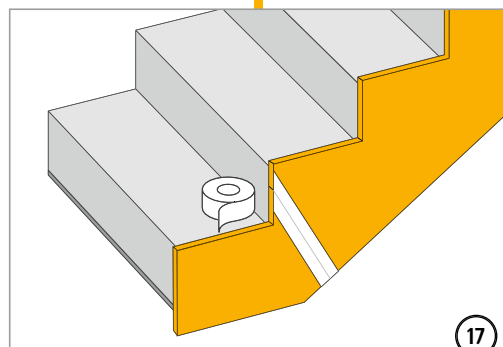
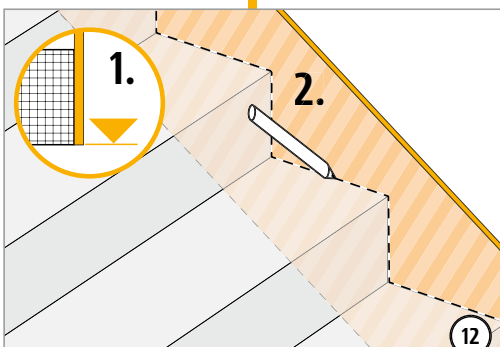
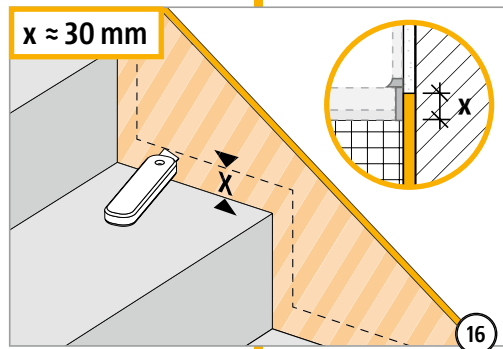
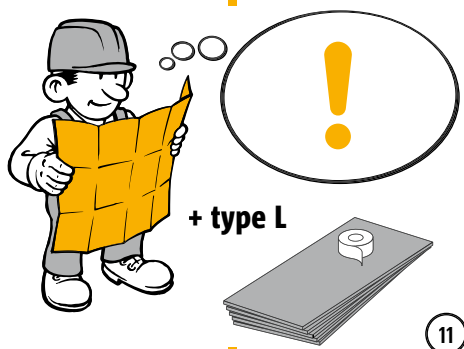


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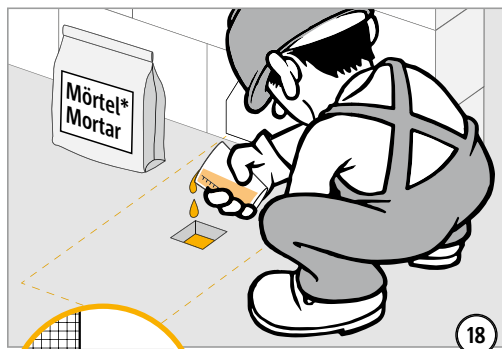
Installation instructions building site precast components



B, D

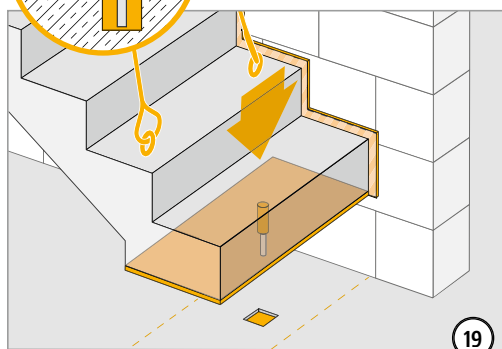


Installation instructions building site precast components

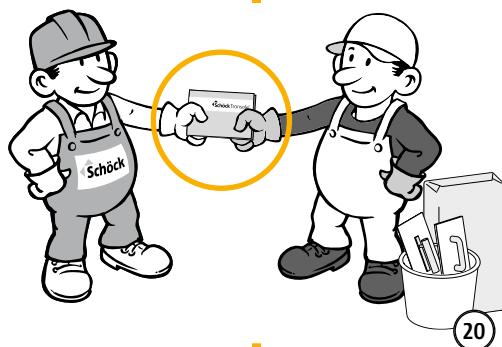


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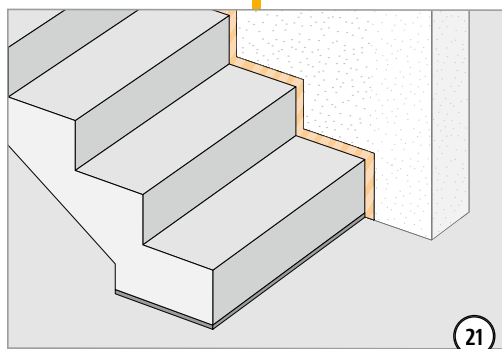
*Pay attention to sufficiently fluid consistency!



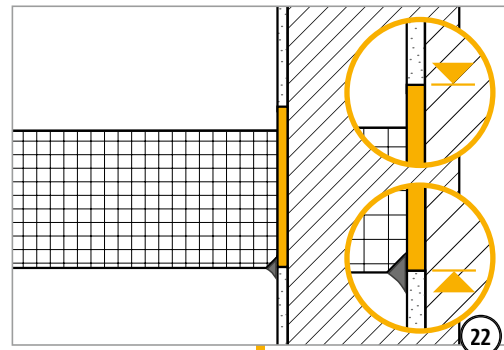
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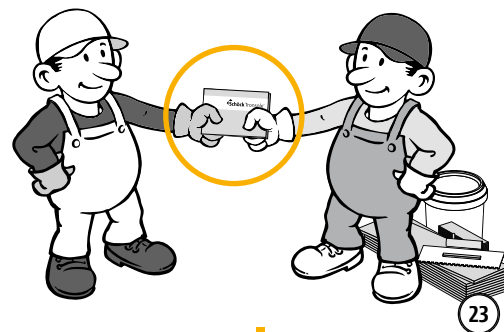
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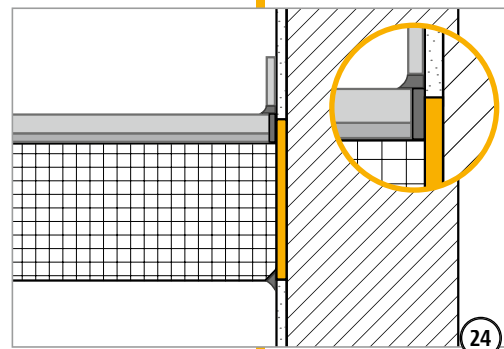
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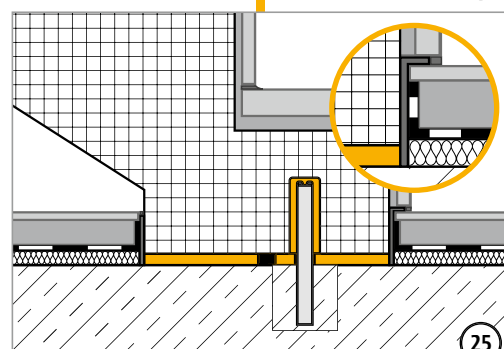
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23



24

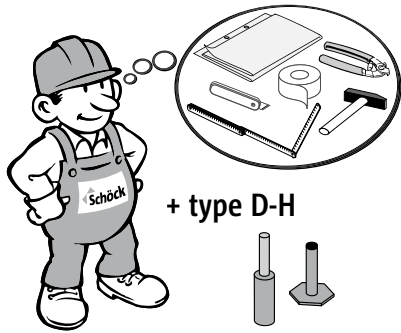


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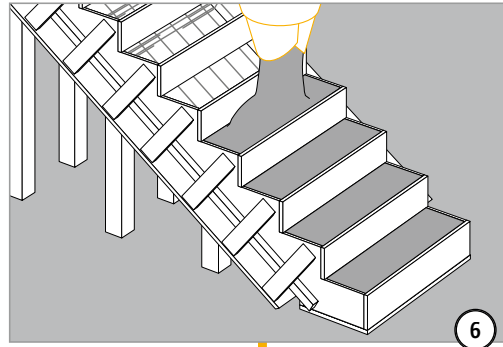


B, D

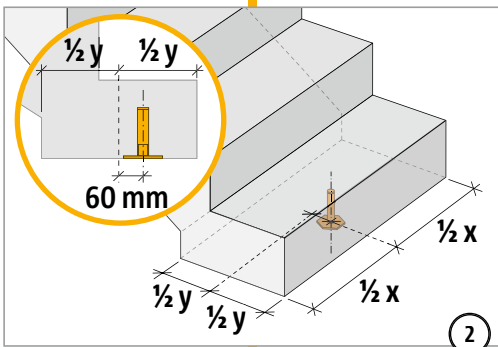
Installation instructions for prefabricating plant



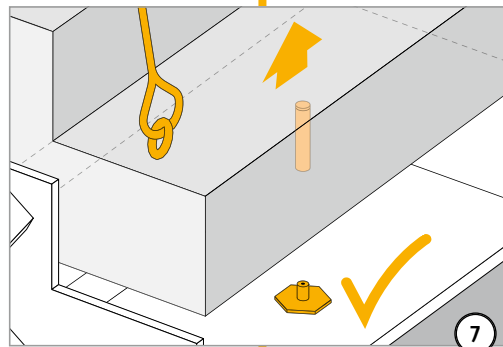
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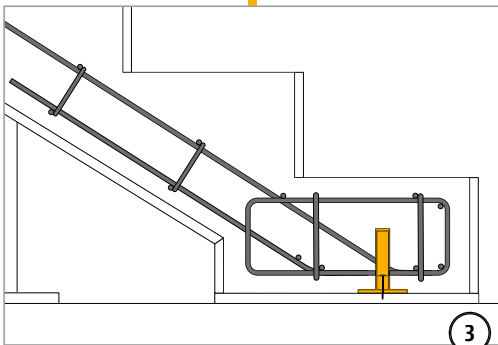
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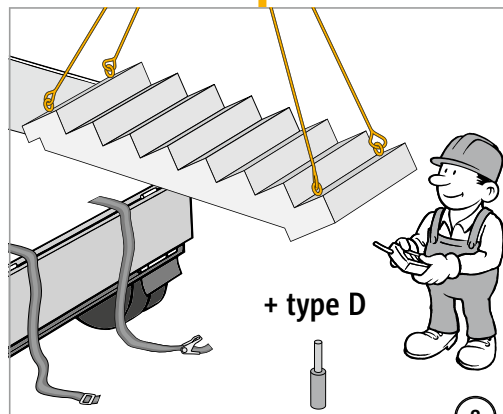
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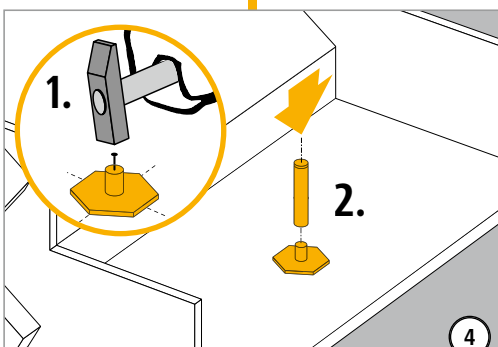
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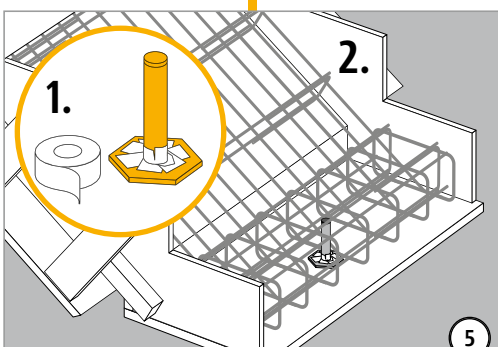
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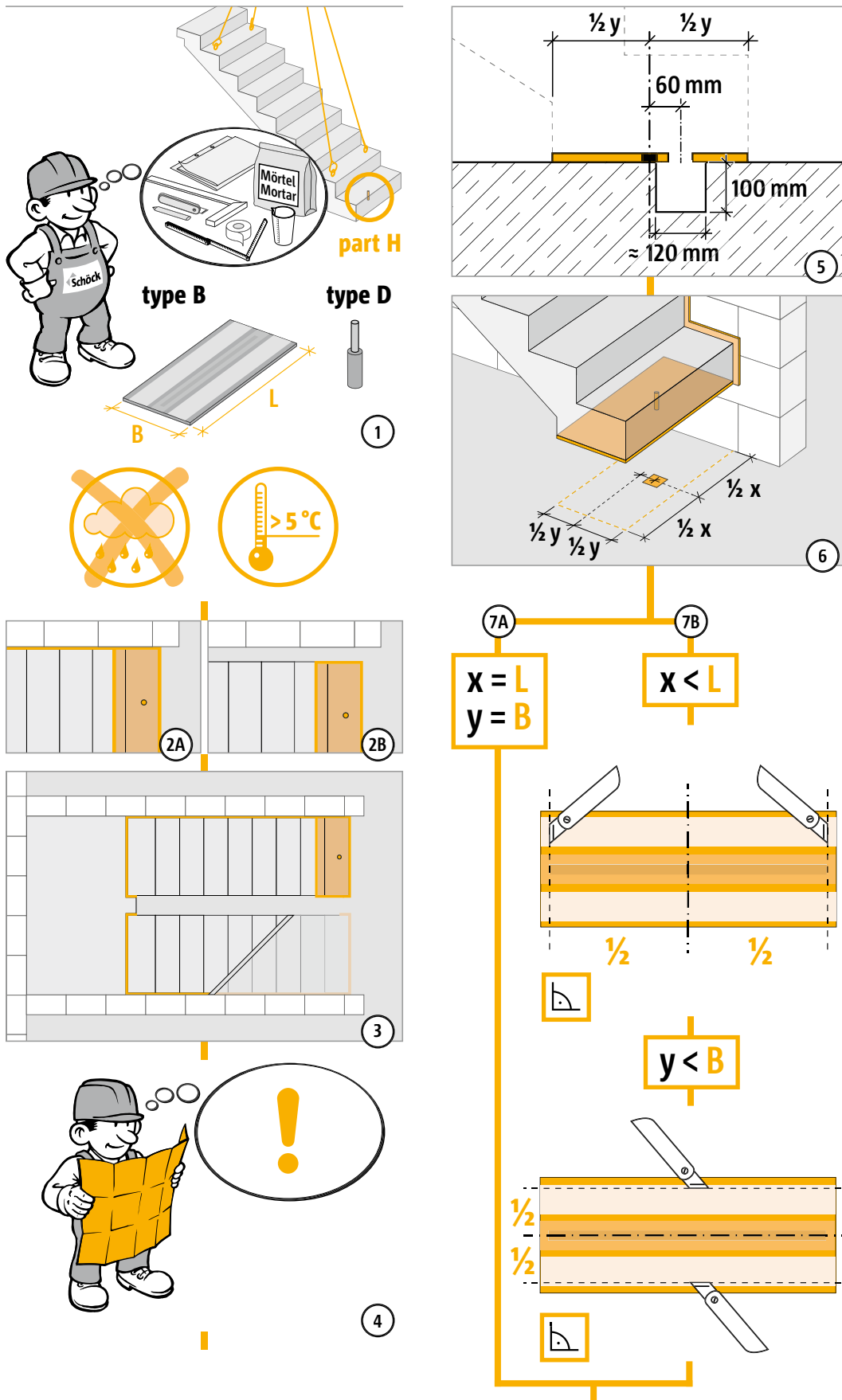
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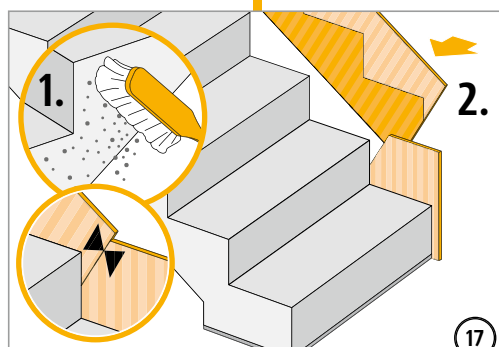
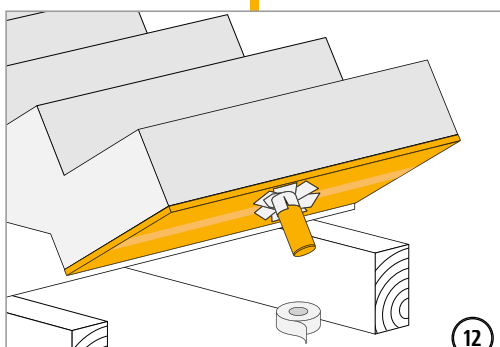
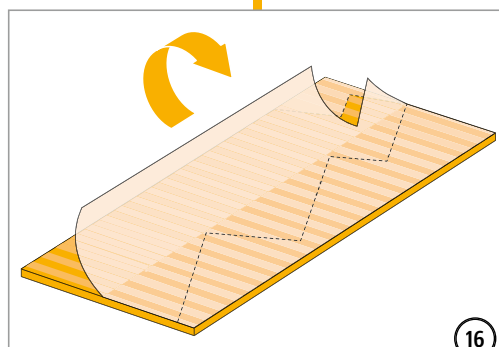
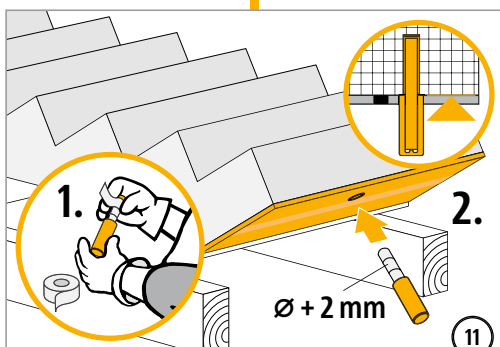
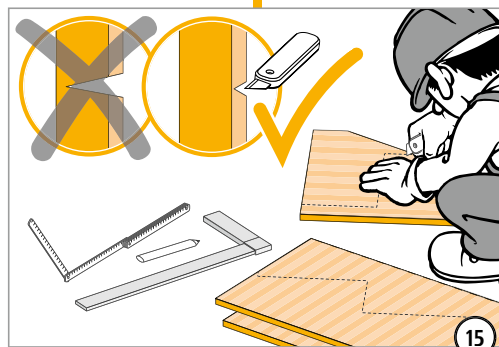
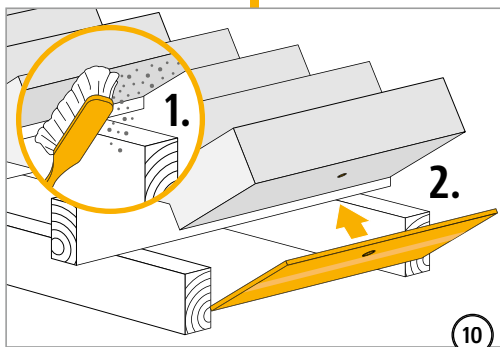
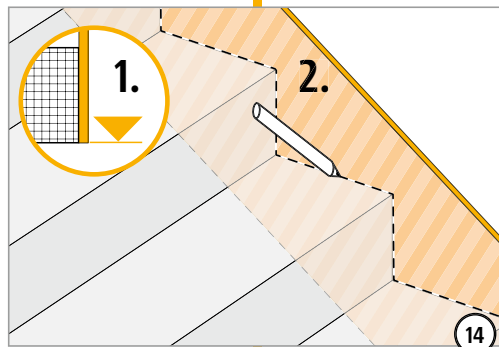
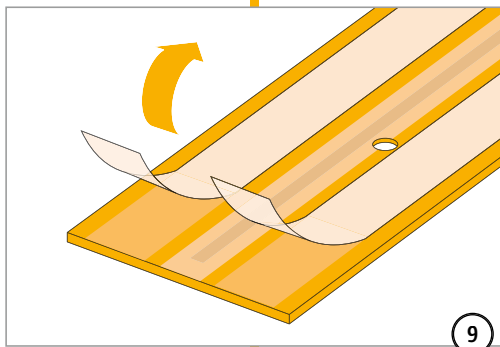
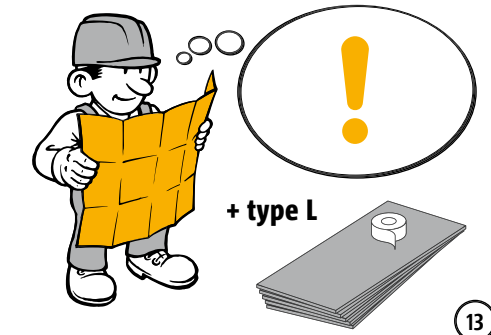
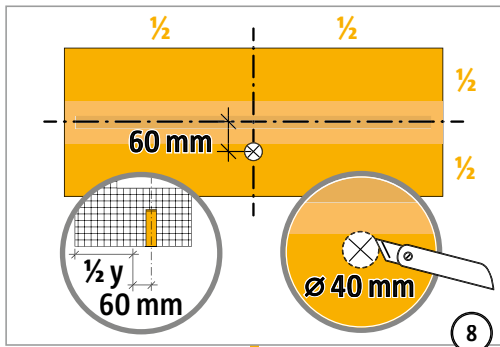
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B, D

Installation instructions building site precast components

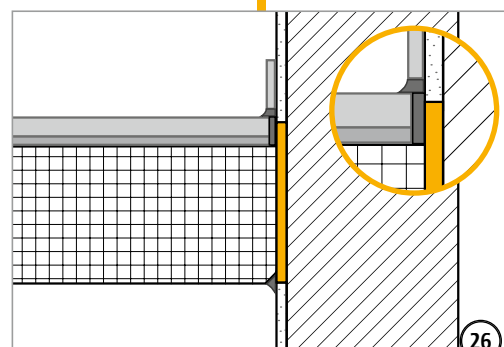
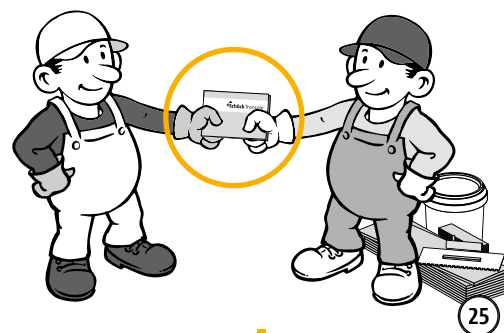
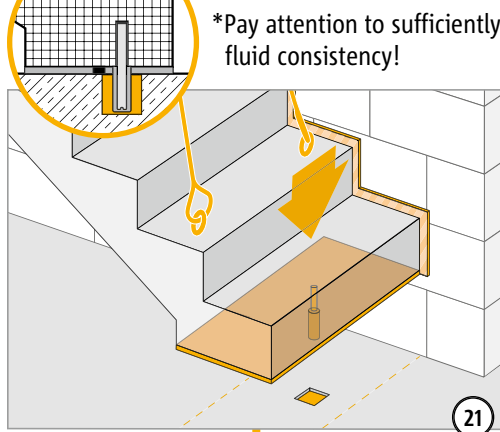
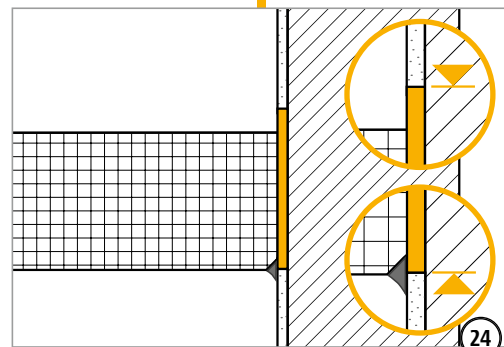
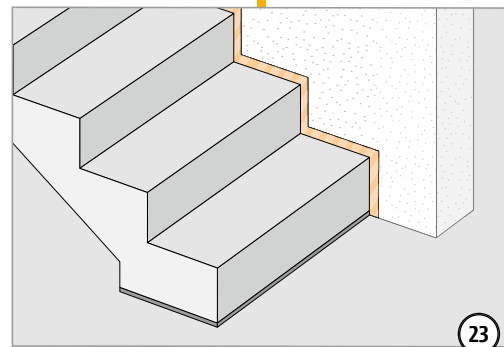
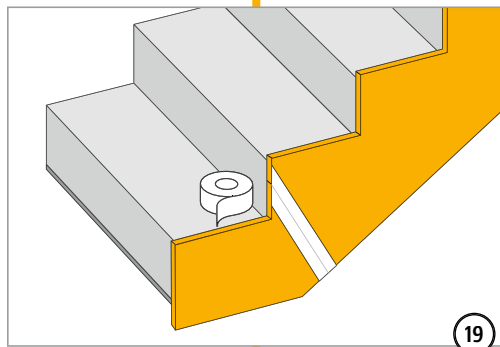
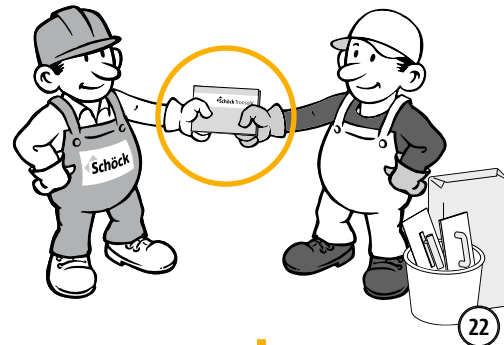
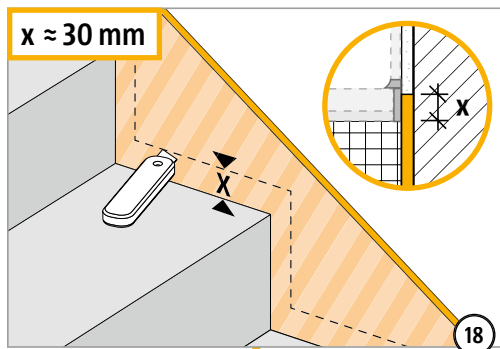


Installation instructions building site precast components



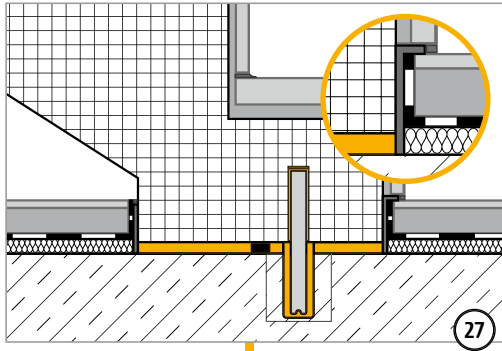
B, D

Installation instructions building site precast components



B, D

Installation instructions building site precast components



✓ Check list

- Are the dimensions of the Schöck Tronsole® matched to the geometry of the structural components which are to be insulated?
- Have the effects on the Schöck Isokorb® connection been specified at design level?
- Have the requirements with regard to fire protection been cleared and announced?
- Are planned existing horizontal loads, which can be conducted away via type B, taken into account?

