

A new take on elegant joints

Schlüter®-DILEX-F

Working aid





The virtually invisible movement joint

Schlüter®-DILEX-F

- ✓ Barely visible movement joint
- ✓ Insert available in 10 m lengths, reducing the need for unsightly joints
- ✓ Easily replaced in case of damage
- ✓ Dirt-repellent surface
- ✓ Large colour variety

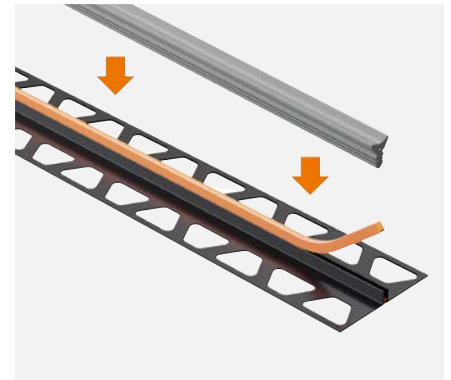
Schlüter®-DILEX-F

The new DILEX-F from Schlüter-Systems offers outstanding functional and visual performance. The slim joint design associated with large format tiles and pavers usually makes movement joints very obvious within a tiled field.

With Schlüter-DILEX-F, you can now install a new type of movement joint that will not usually interfere with the tile pattern. The system is able to absorb the usual movements of tile coverings despite its ultraslim design. This creates a movement joint that is hardly distinguishable from a grouted joint. Designers can now choose unobtrusive locations for technically necessary joints in projects with moderate traffic loads.

The DILEX-F system, which is comprised of the carrier profile Schlüter-DILEX-FCS and the insert Schlüter-DILEX-FIS, offers even more advantages. The removable protective covering of the carrier profile DILEX-FCS prevents dirt from entering the assembly during the installation. DILEX-FIS features a special surface treatment that repels dirt particles and allows for easy cleaning. The nylon thread integrated into the insert prevents inadvertent stretching during installation and once installed.

DILEX-FIS is available in 10 different colours. The material is separately ordered in rolls for easy insertion into the profile with the supplied mounting aid.



This results in movement joints without lots of visible joints. Slim, elegant and functional: Schlüter-DILEX-F is our interpretation of an intelligent joint.

Application areas

Whether in residential settings or in commercial buildings, ceramic coverings nowadays are made almost exclusively of large-format covering materials with very slim joints.

With Schlüter-DILEX-F, you can now create virtually invisible control joint profiles in such coverings. We recommend installing such assemblies over the uncoupling mats of the DITRA product range, especially in combination with the thin-layer screed system Schlüter-BEKOTEC.

This allows for planning the individual fields within the joint pattern, which avoids the need to install cut tiles in the surface.

The DILEX-F has a movement absorption capacity of +/- 1.3mm. Placement of the DILEX-F needs to take in account the size of the tiled area and the movement capacity of the movement joint.

The innovative joint design and large colour selection for inserts results in a more harmonious overall design than with conventional movement joints.

The DILEX-F is suitable for use in residential applications as well as in areas with moderate traffic loads, such as offices, salesrooms or car showrooms.

Application areas by local traffic volume



Persons



Trucks

Total weight max. 40 t



Shopping carts

Total weight max. 0.4 t



Forklifts

Pneumatic tyres

Total weight max. 5 t

Solid rubber tyres

Total weight max. 2.5 t



Cars

Total weight max. 3.5 t



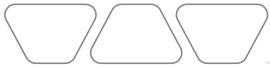
Pallet trucks

Hard rubber tyres

Total weight max. 2.5 t

(pallet trucks with tandem axles only)

● permissible ● not permissible



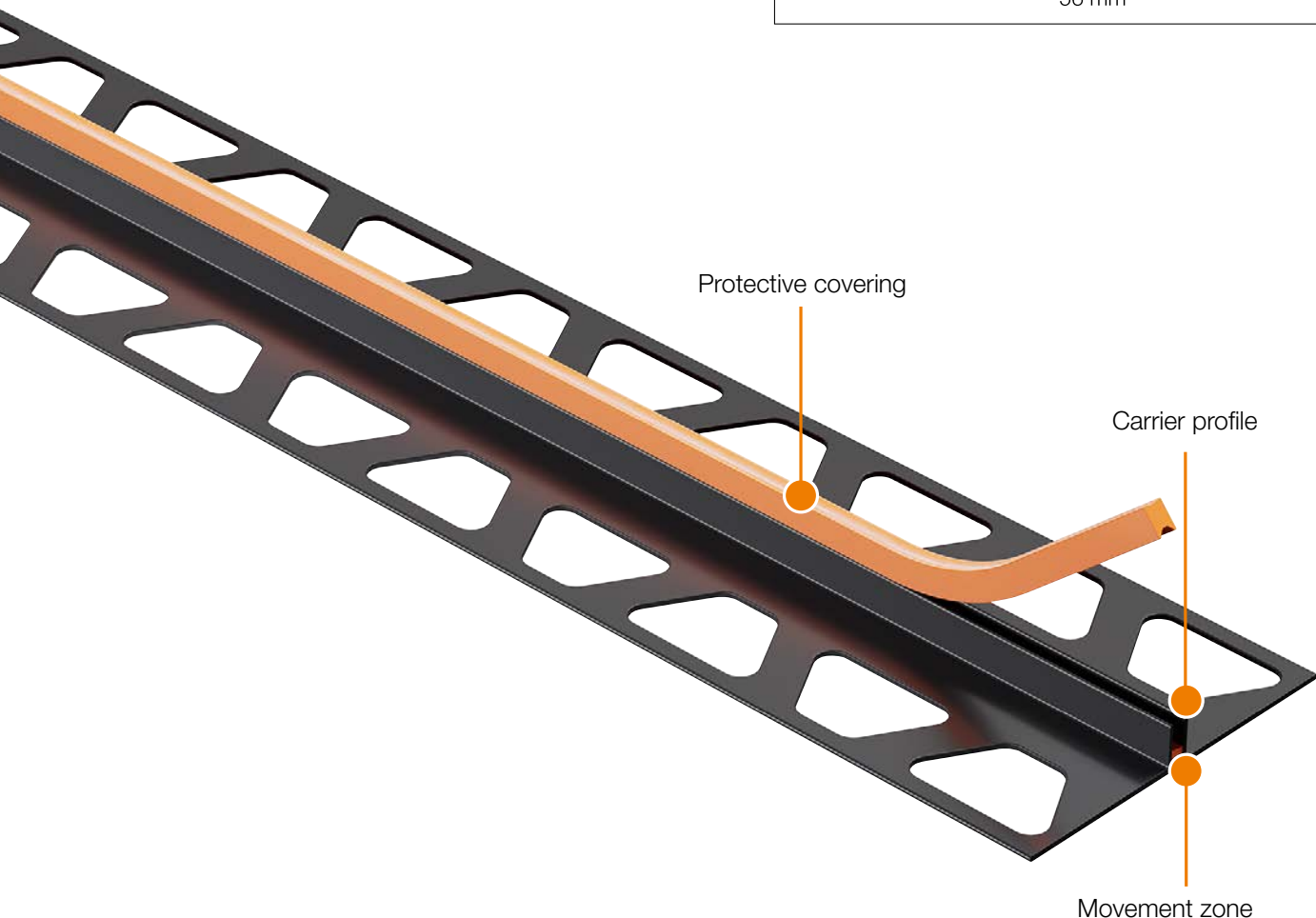
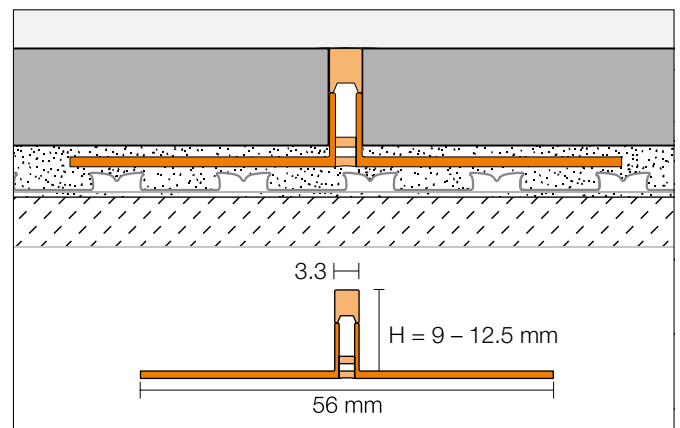
Schlüter®-DILEX-F: A two part system for demanding quality expectations

Schlüter®-DILEX-FCS – a completely new take on a proven profile

The appearance of the carrier profile DILEX-FCS resembles the proven DILEX systems BWB and BWS. The only noticeable difference is the protective covering in Schlüter orange. What appears unconventional at first glance turns out to be a completely redesigned movement joint.

In contrast to other movement joints the DILEX-FCS is installed so the tiles abut tightly against the profile, removing the need to grout between the tiles and the profile. The orange insert is removed after grouting the tiled floor and replaced with an insert in a colour that imitates the grout. In this way the installed DILEX-F resembles the grout joints.

- ✓ **Movement profile that resembles a grout joint**
- ✓ **Protective covering keeps dirt out of joint**
- ✓ **Protective covering serves as a height gauge during installation**



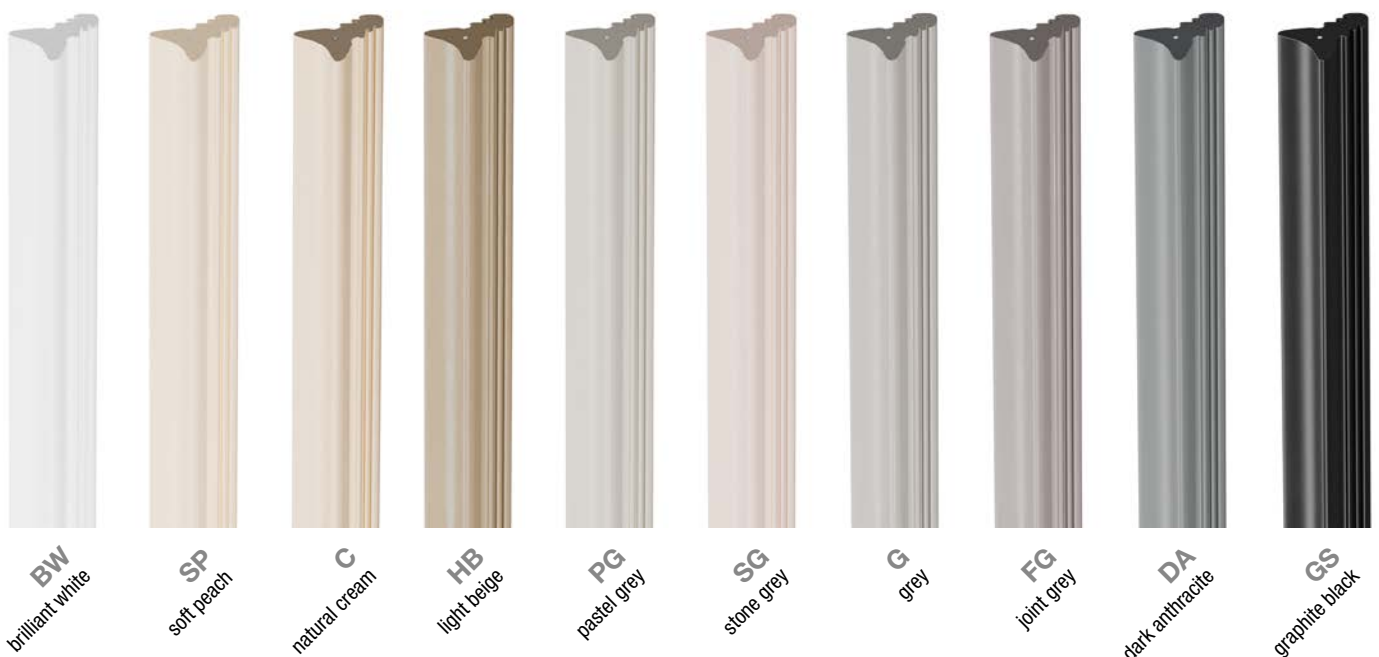
Schlüter®-DILEX-FIS – sealant movement joint 2.0

The DILEX-FIS insert seals the profile chamber and thus, the joint in such a way that it has the visual appearance of a sealant joint, yet it offers essential advantages: there is no need to cover the adjoining tiles to protect their surface and there is no risk of damaging the freshly installed joint with foot steps or debris (dust etc.). In addition, the dirt-repellent surface and the integrated anti-stretch thread of the silicone insert guarantee a consistent, clean appearance.

The specially formed push-in connectors of the supplied installation aid helps correct the inevitable minimal fluctuations in joint width caused by material tolerances to ensure the even installation of the insert.

The large colour selection of the insert matches the latest trends in floor coverings to offer a harmonious overall design in virtually all applications.

- ✓ **Joint with few visible breaks (from a roll)**
- ✓ **Dirt-repellent surface coating**
- ✓ **Anti-stretch thread keeps insert from losing shape**





Determining tiled segment sizes

New design options based on individual control joint profile placement

There are a myriad reasons for deformations of building components, including desiccation, changes in moisture level or temperature.

From a certain size, tiled segments require movement joints to reduce the stresses resulting from these deformations as a whole. The positioning and size of such movement joints must be carefully calculated and planned in advance, and the practical implementation of the joints must precisely follow these specifications.

The ZDB information sheet “Movement joints in panelling and coverings made of tiles and pavers” describes methods for determining the sizes of tiled segments and joint widths for tiled coverings.

In contrast to the old version of the ZDB information sheet, which clearly defines the arrangement, implementation and filling of movement joints in various application areas, the current version of the publication offers a formula to calculate control joint profiles in accordance with the anticipated movements.

Ideally each tiled segment should be square but if this is not achievable no side should be more than double the length of another.

According to the ZDB information sheet, the width of the movement joint for control joint profiles in the top covering depends on the individual tiled segment sizes, the anticipated temperature difference, the expansion coefficient of the substrate/top covering as well as the permissible overall deformation (ZGV) of the insulation material or the profiles.

Since the joint width and thus, the potential movement absorption is clearly defined for movement joint profiles, the below formula based on the ZDB information sheet “Movement joints in panelling and coverings made of tiles and pavers” can be rearranged to determine the maximum tiled segment length using the known factors. Such a calculation should always include a safety factor of 0.6 to cover unexpected situations (larger temperature differences etc.).

Minimum width calculation according to the ZDB information sheet:

Formula: $b = L \times \Delta T \times \alpha T \times 100 / ZGV$

- b:** minimum width of movement joint
- L:** length of screed area
- ΔT :** anticipated temperature difference between top covering installation and subsequent use
- αT :** expansion coefficient of building component with the largest expansion
- ZGV:** permissible total deformation of insulation material/joint profile

Calculating the size of tiled segments when using DILEX-F

Formula: $L_{Max} = B / (\Delta T \times \alpha T) \times 0.6$

- L_{Max} :** maximum length of area
- B:** profile's movement absorption
- ΔT :** anticipated temperature difference between top covering installation and subsequent use
- αT :** expansion coefficient of building component with the largest expansion
- 0.6:** safety factor

Substrate/top covering	αT in mm/(m x K)
Steel-reinforced concrete	0,012–0,015
Cement screed	0,010–0,012
Anhydrite screed	0,010–0,015
Ceramic tiles	0,006–0,008

Sample calculation

Profile's movement absorption, $B = +/- 1.3 \text{ mm}$
 Substrate: heated cement screed $\alpha T = 0.011 \text{ mm}/(\text{m} \times \text{K})$
 Anticipated temperature difference: $\Delta T = 20 \text{ Kelvin}$

$$L_{Max} = 1.3 / (20 \times 0.011) \times 0.6$$

$$L_{Max} = 3.5 \text{ m}$$

The use of Schlüter uncoupling systems makes it feasible to significantly increase the tiled segment size.

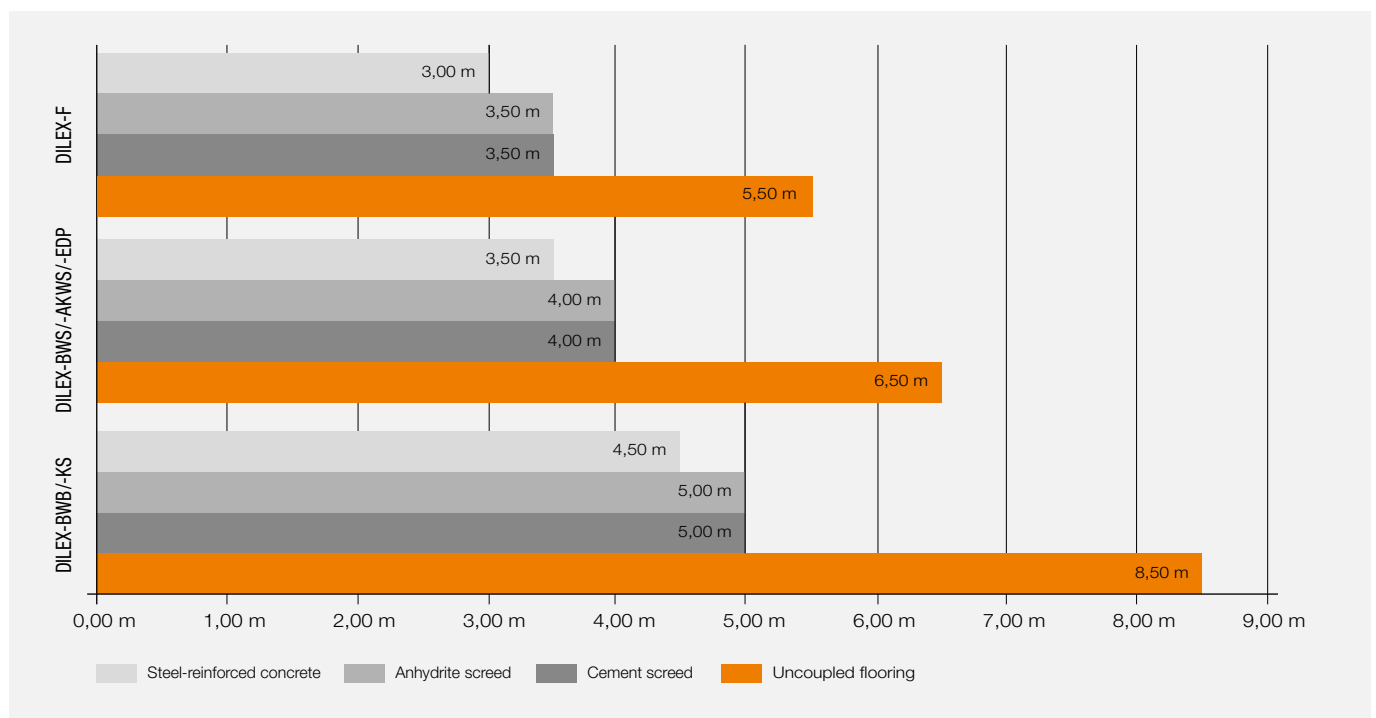
Due to the use of uncoupling systems, only the thermal expansion coefficient of the covering needs to be considered in the above calculation. For example, instead of 0.015 mm/(m x K) for anhydrite screed, we can use 0.008 mm/(m x K) for ceramic tiles in the equation. That increases the size of tiled segments by a factor of almost 2.

Consideration of this aspect greatly increases the appeal of the jointless, thin-layer screed system Schlüter-BEKOTEC as there is no need to continue joints from the substrate. That gives tile installers complete freedom for placing the joints of the top covering.

This aspect is also of great interest to designers, since the entire screed of a structure can be installed without a joint plan and every room can be designed individually with the desired covering formats without unsightly cut lines through tiles.

The below overview of the various Schlüter movement profiles in combination with the corresponding substrates is intended to simplify the joint design. It is based on a presumed temperature difference of 20 Kelvin and the average thermal expansion coefficient of the respective material.

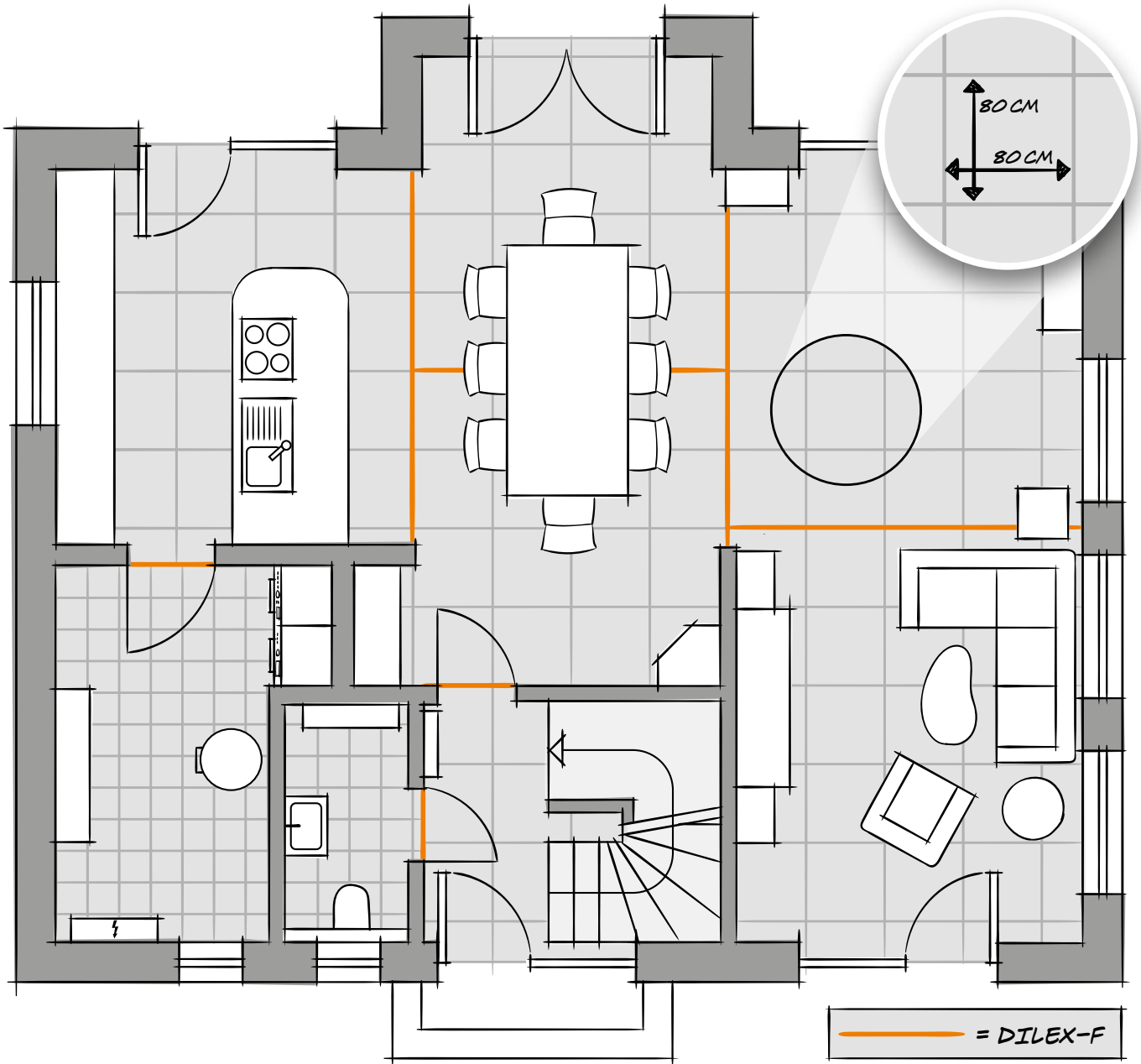
Feasible tiled segment size with an anticipated temperature difference of 20 K*



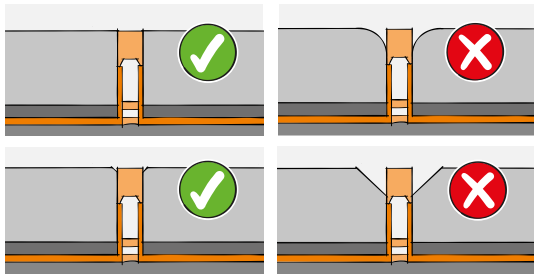
* tiled segment sizes were determined with the above formula, using a mean expansion coefficient for each structural component and a safety factor of 0.6. The result was then rounded to 0.5 m.



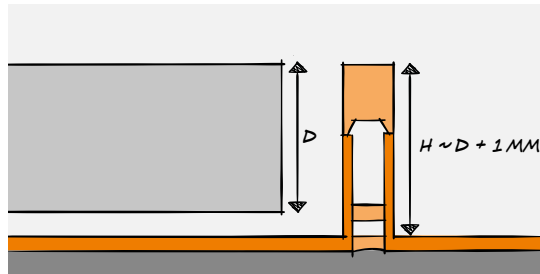
Planning example



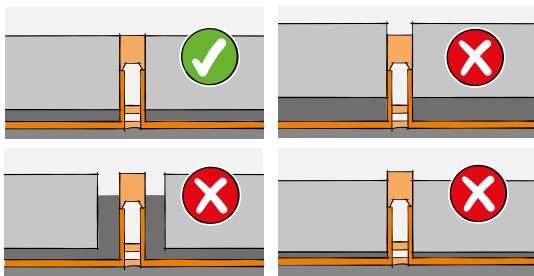
Installation notes



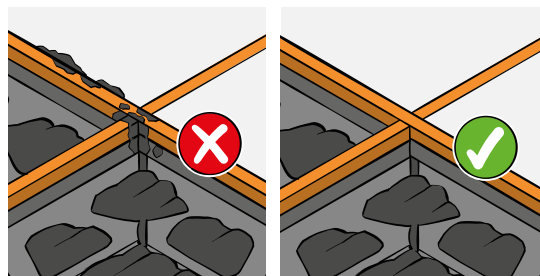
Installation must be flush with surface of tile covering



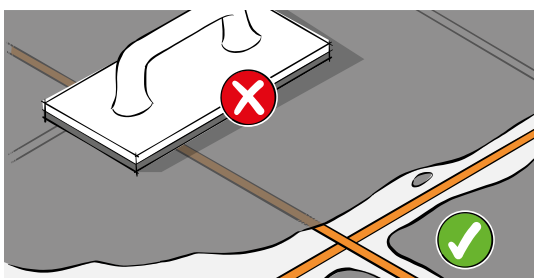
Selection of profile height as usual



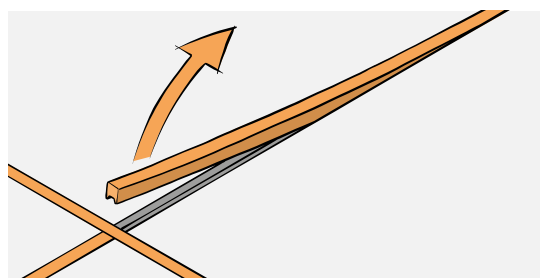
Installation must be flush with surface of tile covering and without any grout joint



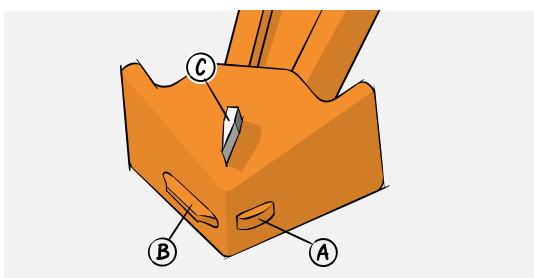
Any excess tile adhesive must be removed immediately.



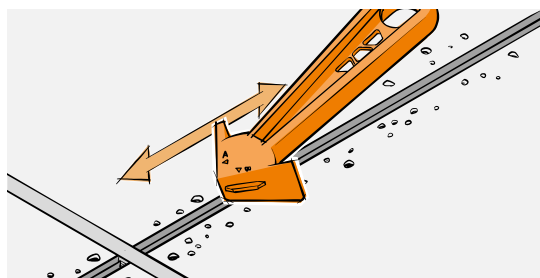
No grouting around profile and insert



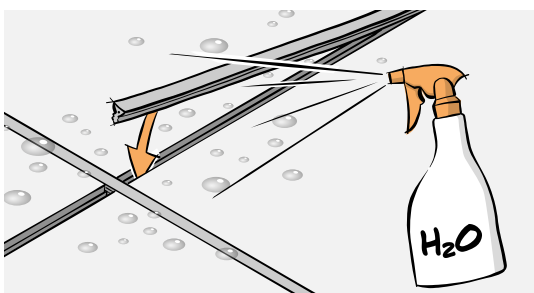
Insert is removed.



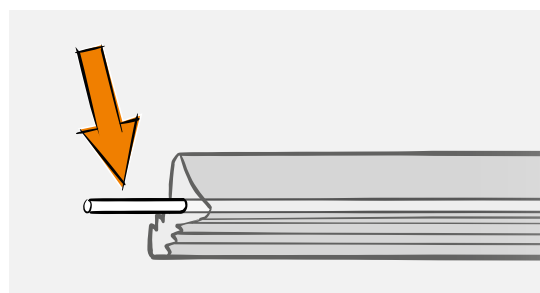
The installation aid is used to clean the joint (C) and to install the insert (A+B).



Joint is cleaned with the installation aid.



The insert is installed with the help of water and the mounting aid.



Insert cannot shrink due to anti-stretch thread – consistent visual appearance

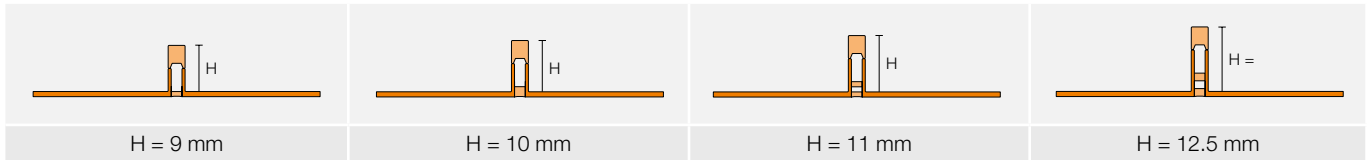


Product overview

Schlüter®-DILEX-FCS

Movement profile: Carrier profile with protective covering

Supplied length: 2.50 m



Schlüter®-DILEX-FIS*

Insert made of cross-linked silicone with integrated anti-stretch thread / installed width: 3.5 mm

Roll: 30 m long



* see colour code on page 5

Technical properties

	Maximum horizontal movement absorption	+ 1.3 mm		Maximum vertical movement absorption	0 mm
	Maximum horizontal movement absorption	- 1.3 mm		Maximum vertical movement absorption	0 mm



Learn more online

Would you like to know more about Schlüter-Systems?
The quickest way is to visit our website.

schluter.co.uk



You can also follow us on Instagram, Facebook and YouTube.



PROFILE OF INNOVATION

Schlüter-Systems KG · Schmölestraße 7 · D-58640 Iserlohn

Tel.: +49 2371 971-1261 · Fax: +49 2371 971-1112 · info@schluter.de · schluter-systems.com

Schlüter-Systems Ltd · Units 3-6 Bardon 22 Industrial Estate · Bardon Hill · Coalville · Leicestershire · LE67 1TE

Tel.: +44 1530 813396 · Fax: +44 1530 813376 · sales@schluter.co.uk · schluter.co.uk