

# Installation

A detailed insight into how to handle and mount plasterboard on a stud frame.



## DID YOU KNOW?

Our Click rail enables you to mount a steel stud frame on partitions without the use of tools.

### PROJECT PHOTO

Project: Nordea HQ, Ørestaden. Developer: MT Højgaard and Cowi. Photographer: Arkitektur Fotografierne.

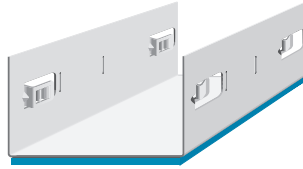
## PROFILES AND ACCESSORIES

Take a look at the product overview on the back of the manual for complete accessories and profiles for partitions.



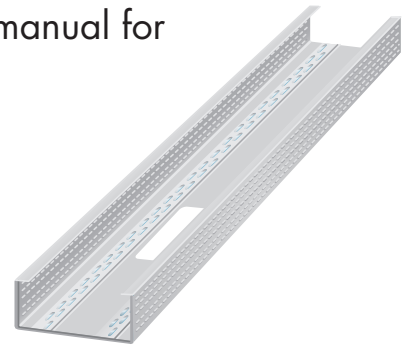
### MSKP/MSK Rails

MSKP and MSK rails are top and bottom rails with 30 mm high flanges. Type MSKP has a polythene coating on the back. Type SK and SKP come with 55 mm high flanges. Type SKP has polythene.



### MSKCP Click rail

Knauf Click rails make awkward working positions when measuring up and fixing posts a thing of the past. The Click system means posts can be fixed securely onto top and bottom rails without the use of tools. The MSKCP rail has polythene on the back.



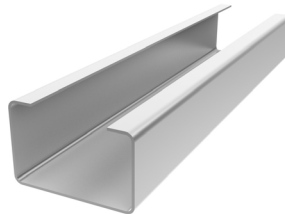
### MR post

With 38/40 mm asymmetric flanges that can be slotted into each other. Pre-cut holes for pipes and cables.



### MR+ sound post

With asymmetric flanges. Can be slotted in to each other. The MR+ sound post has highly enhanced acoustic properties for erecting partitions. See page 52.



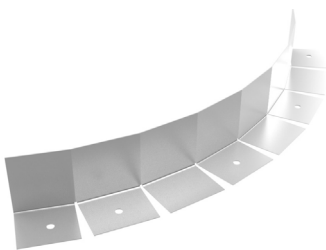
### FR and KR posts

FR Reinforcement posts 1.5 mm thick, and KR Casement posts, 1.0 mm thick. Used around doors and on high walls, plus on bearing walls. FR and KR posts should not be jointed, but run continuously from floor to ceiling.



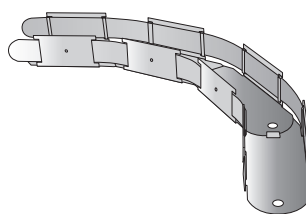
### KSK and FSK rails

1.0 mm thick KSK Casement Rails with 50 mm high flanges and FSK reinforcement rails 1.5 mm thick and 60 mm high flanges. Can be used for telescopic solutions and bearing walls.



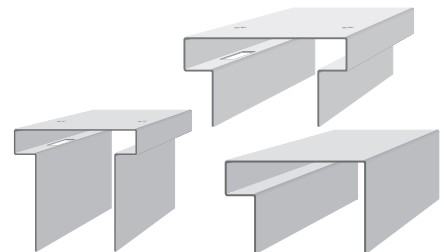
### SK profile

Bendable rail for curved solutions.



### SK Flex Rail

Bendable rail for curved walls. Three sizes.

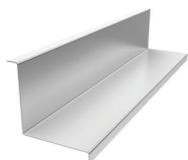


### Telescopic rails

For single walls with double gypsum layer or double walls with two layers of gypsum and for extra large areas. Available in various formats and can be ordered with angled top for mounting on pitched roofs.

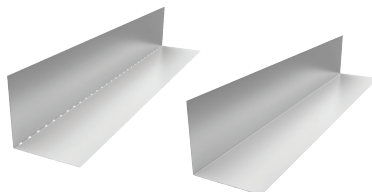
## PROFILES AND ACCESSORIES

Take a look at the product overview on the back of the manual for complete accessories and profiles for partitions. Description of end profiles - see page 60.



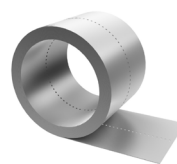
### HR corner posts

HR 60/60 corner posts are used for internal corners.



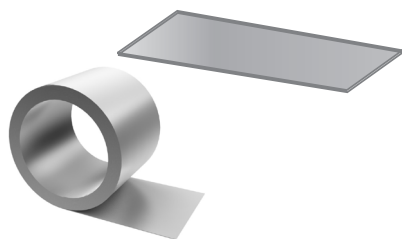
### H and HP profile

Corner profile H 50/50 is used for the joint between ceiling and wall. For joints other than 90°, variable corner profile HP 50/50 is used.



### VBA profile

Used for variable corners. Width is 98 mm.



### Rolled steel

Rolled steel is used for the backing behind short edge joints. Comes in 25 m rolls or 885 mm pieces. The width of both variants is 80 mm.



### T joint piece

Used for horizontal and vertical joints, e.g. on high walls with a single gypsum layer.



### KB 12 Load sheet fitting

With self-adhesive tape for fitting load spreader sheets, e.g. 12 mm plywood.



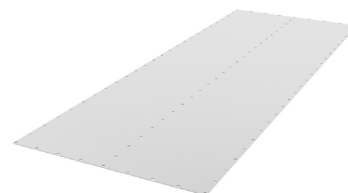
### FRK reinforcement post fitting

For fixing KR and FR posts around doors.



### Knauf Sealant Compound no. 1

For acoustic seals etc. Aluminium bag. White elastic single component water-based acrylic sealant. Sufficient for around 7 m of joints.



### Security sheet

Break-in resistant steel sheet with screw holes. Two variants - IBPH 1.0 and IBPH 2.0. More details under 'Break-in resistant walls', page 102.



#### KNAUF CLICK - ERGONOMICS ON RAILS:

- PRECISE INSTALLATION AND SIGNIFICANTLY LOWER RISK OF ERROR
- QUICK AND EASY (HELD BY FLANGES TOP AND BOTTOM)
- BETTER WORKING CONDITIONS

#### PROJECT PHOTO

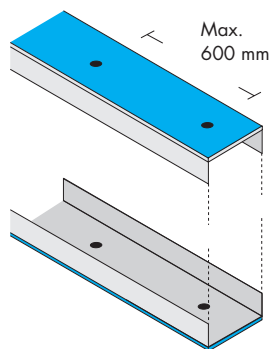
Project: Performers House, Silkeborg. Developer: BLP Fløndal og A/S and Hørring Mortensen A/S. Photographer: Arkitektur Fotograferne.

## INSTALLING STEEL STUD

### INSTALLING RAILS



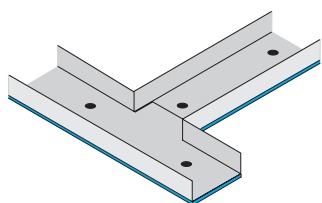
Rails are cut to length using metal shears. Cut the two side flanges first, bend the rail and cut the bed. We recommend cutting the polythene with a utility knife.



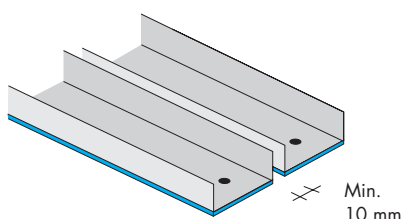
Fix top and bottom rails at both ends and approx. every 600 mm. Use nails, screws or dowels, depending on the surface you are fixing to.



Butt joints should be used for adjoining rails in corners. The easiest way to do so is to lay one rail across the other, cut the flange and bend it down into the bed of the first rail.

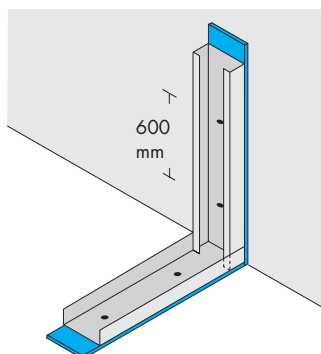


We recommend making T joints on top and bottom rails as shown on this illustration.



When using two sets of rails on walls, install with a gap of min. 10 mm. A larger gap can be required.

### INSTALLING POSTS



There must always be polythene behind the post when fixing it to walls, pillars etc.

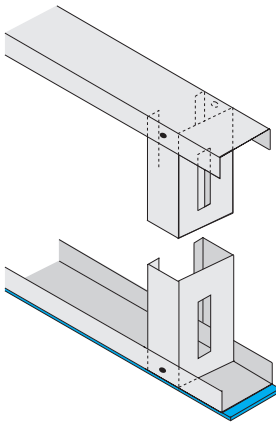
Cut posts to size - approx. 10 mm shorter than full height. Stand post parallel to the sides of the rail, align with flanges and turn to engage between flanges. Fix posts to the top and bottom rails with fixer grip or R/R 13 screws.



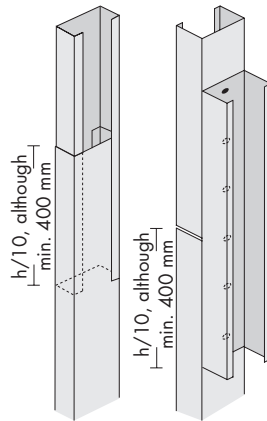
Reinforcement posts of shorter distance between posts can be needed depending on the load the wall will bear. Brackets should be used for mounting sanitary ware in wet rooms. (See section Wet Rooms).

## INSTALLING STEEL STUD

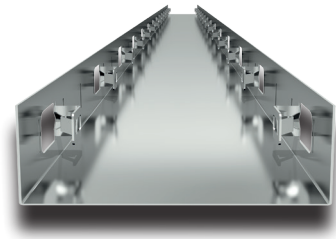
### JOINING STEEL PROFILES



Use a fixer grip or R/R 13 screws for top and bottom joints between ordinary rails and posts.



Posts can be slid into each other when using MR posts with asymmetric flanges. Minimum overlap is  $h/10$  ( $h$  = wall height), although minimum 400 mm. Joints should be offset from post to post. Alternatively, a shim joint can be used as shown.



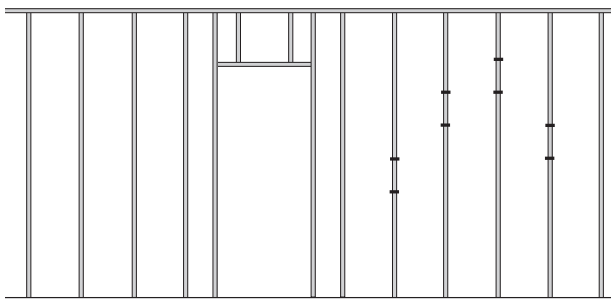
#### Knauf Click system

Simple, ergonomic rail system for joining profiles to partitions. See more on next page.

### PLACING POSTS

#### C/C 450

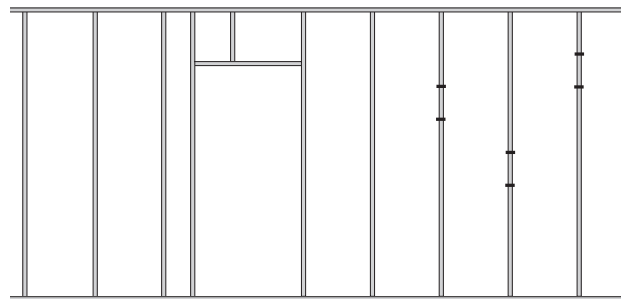
+ a + a + a + a + a + a + a + a + a + a + a + a +



a: Post spacing C/C 450 mm, including above doors.

#### C/C 600

+ a + a + a + a + a + a + a + a + a + a +



a: Post spacing C/C 600 mm, including above doors.

#### Post joints

Posts should usually be full length. Joints on posts (if necessary) should be offset from post to post.

#### Installation holes

Extra holes should be made in the profile bed when the hole does not exceed 40% of bed width and a height of max. 200 mm. Holes should be drilled min. 300 mm from profile ends.

## INSTALLING STEEL STUD

### KNAUF CLICK SYSTEM

Click rails make it possible to mount posts using the perfect working position without the use of tools. They make awkward positions for measuring up and fixing posts unnecessary, which reduces work on the floor and along the ceiling. The posts are also securely fixed, making it easier to mount boards and preventing the posts from falling during the process. The Click system can also be used for suspended ceilings.

#### Better quality

- Precision: Precise installation, fewer mistakes
- Strength: 10-35% better rigidity around door frames
- Screwing: Quick and easy (held by flanges top and bottom)

#### Working environment

- Ergonomics: Much more comfortable working positions
- Safety: Less reaching up, no loose posts that can fall and cause accidents
- Working comfort: Fewer adjustments of loose elements

#### Work flow

- Efficient: A smoother process
- Easy installation: Double walls can be installed quickly and simply
- Flexible: Easy to optimise and segregate the entire process (installations)



#### Other materials

Order brochures or see videos on the Click system at [knauf.dk](http://knauf.dk)



### MR+ SOUND POST

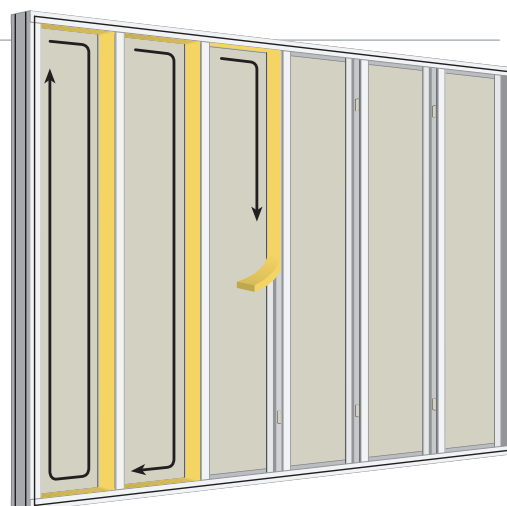
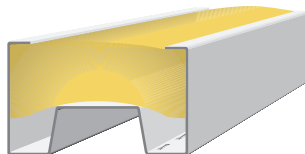
#### Improved acoustic properties

The MR+ has highly enhanced acoustic properties and is used for erecting partitions. With asymmetric flanges. Can be slotted in to each other. The MR+ sound post is used with border insulation (mineral wool strips). The strips are laid in all posts and the top and bottom rails. The strips used must be 10 mm wider than the profile width and be minimum 20 mm thick.



#### Installations

Wall fields should be fully insulated where there are penetrations through the installation, such as for electrical sockets to maintain acoustic class.



# SLIDING DOORS AND DOORS

## REINFORCEMENT AROUND DOORS

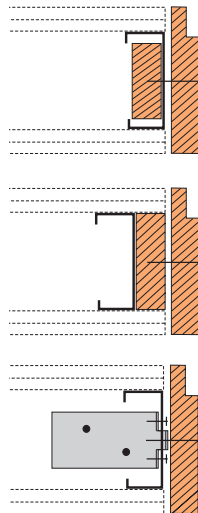
### Door openings

The door manufacturer's instructions must always be followed when integrating fire and acoustic classified doors.

### Side posts

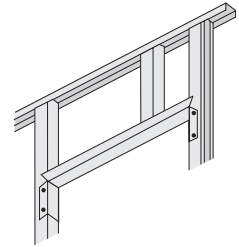
Side posts should be installed one-piece for the full wall height.

Ordinary posts can be used for lightweight doors, e.g. in dwellings, reinforced by wood for the full wall height (full profile width), alternatively, KR casement posts and FRK fittings can be used. FR reinforcement posts and FRK fittings are used for heavy doors.



### Door lintels

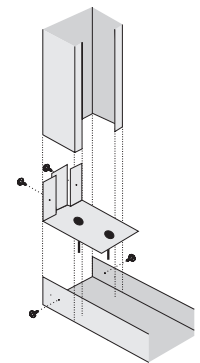
Cross bars over doors can be made using rails min. 100 mm wider than the door opening. The flange is cut through on both ends, the rail bent and fixed to the posts.



### Fixing

FR and KR posts are fixed to floor and ceiling using FRK fittings.

The fitting is fixed to the sub-surface and the posts screwed onto it.



## SLIDING DOORS

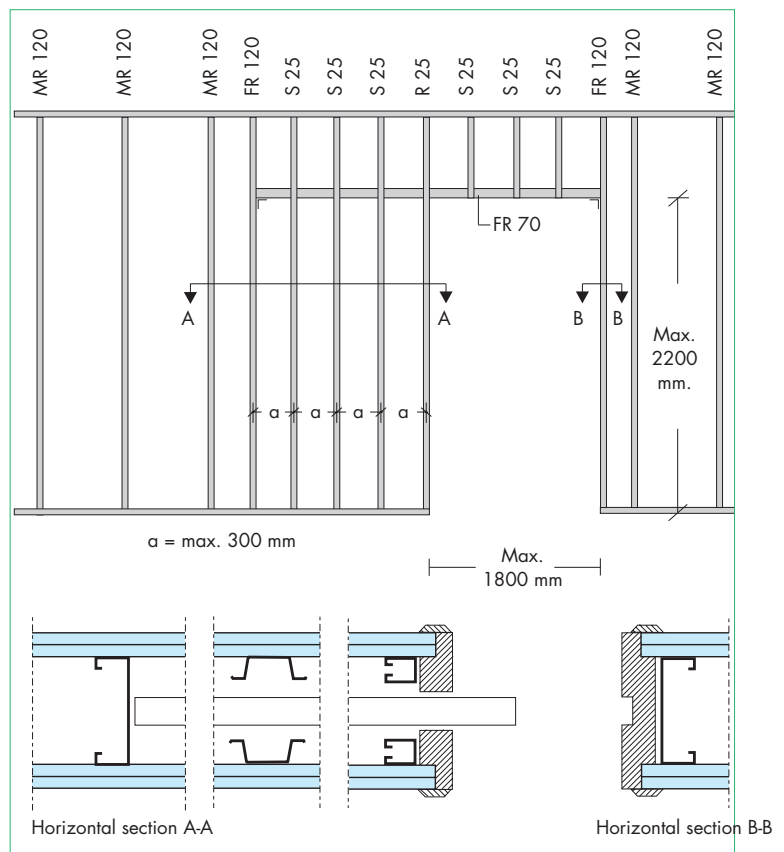
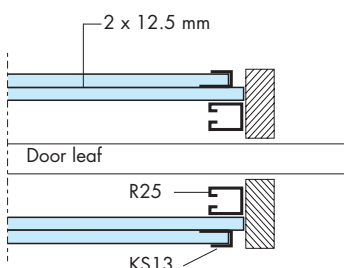
Sliding doors can be integrated into plasterboard walls, whether single, double or add-on walls. A wall cavity of at least 120 mm is required.

The stud skeleton on both sides of the door opening should be reinforced with full-length reinforcement posts, which should also be used on the top of the door opening.

Install S 25 profiles and R 25 posts in the sliding door cavity max. every 300 mm, as shown on the diagram.

### Example with liner groove

A liner groove can also be used around a door opening, as shown on the diagram and illustration.



## INSTALLING PLASTERBOARD

### BOARD JOINTS

#### Board joints

Boards are installed with the cardboard-clad edges abutting. The gap between the boards can be max. 4 mm. Cut edges should be placed at corners and ends.

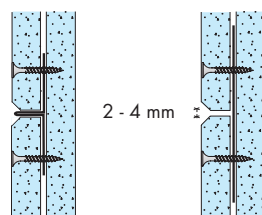
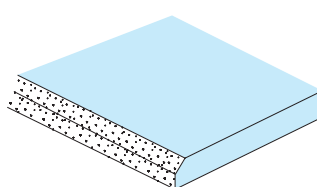
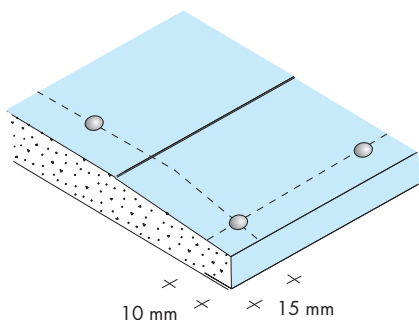
#### Short edge joints

When joints have to be filled, all short edge and cut joints should be bevelled 3 - 5 mm, before installation. The boards **must** be installed with a 2 - 4 mm gap to facilitate subsequent filling of the joint.

#### Installation direction

The first layer is best installed in the direction of the post profile openings to align with post positions. We recommend offsetting the boards on each side of the stud skeleton.

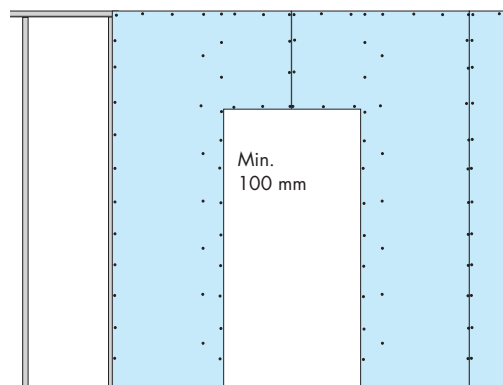
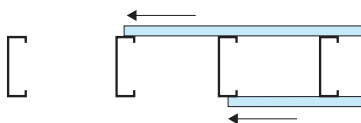
#### Screw positioning



T joint piece TSKA

Steel band

All short edge joints must be supported by posts, T joint piece or rolled steel.



#### Around doors

Always try to join the outer layer above the door opening and not flush with its edges.



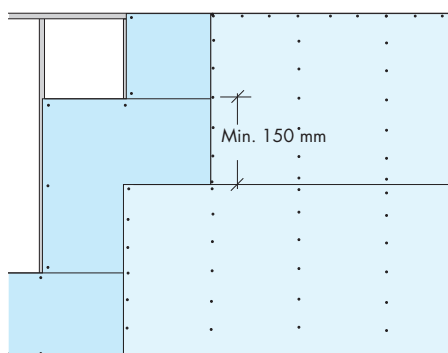
Always ensure screws are used correctly. I.e. they must be countersunk sufficiently that they can be filled. Avoid countersinking so much that the cardboard surface of the board is broken. Use an electric screwdriver that can be set to countersink screws by 0.5 - 1 mm.

### INSTALLING BOARDS

The boards can be installed along or across the posts. Adjust the board to measure 10 - 15 mm less than the final wall height.

#### Transverse installation

Install boards perpendicular to post length. All short edges should be joined on top of posts. When cladding with double layer boards, offset the joints in each layer as shown on the diagram.

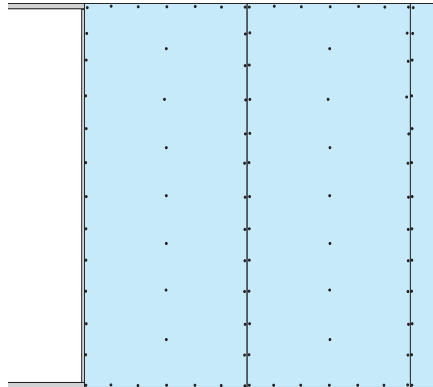


# INSTALLING PLASTERBOARD

## BOARD JOINTS

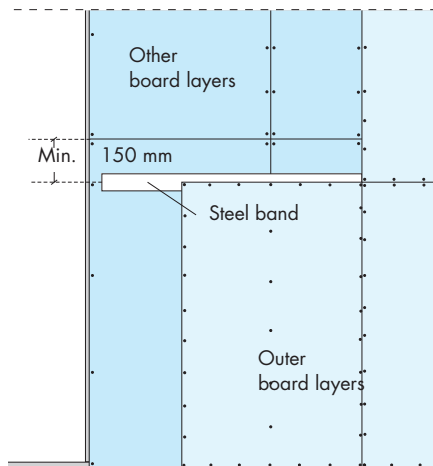
### Longitudinal installation (up to 2.5 m)

Install boards in the direction of the posts.  
The board should be installed without short edge joints when the wall is less than 2.5 metres high.



### Longitudinal installation (over 2.5 m)

Long edges should be jointed along posts. Short edges in the outer board layer must be supported by T joint pieces or rolled steel. Board joints on multi-layer walls should be offset by min. 150 mm.



## SCREWS

Screws that are specially intended for plasterboard and specified according to sub-surface type, wood or steel profiles. Screws for Ultra Board® - see page 76.

### SCREW TYPES

Board type	Steel stud type	Board layer	Screw type
A/B	MR profiles	1st layer	RAB 25
		2nd layer	RAB 35
		3rd layer	RA 51
		4th layer	RA 70
H/I/F	MR profiles	1st layer	RIB 32
		2nd layer	RIB 41
		3rd layer	RIB 57
A/B/H/I/F	KR and FR profiles	1st layer	FAB 25
		2nd layer	FAB 35
		3rd layer	FA 51
		4th layer	FA 70

### SCREWS

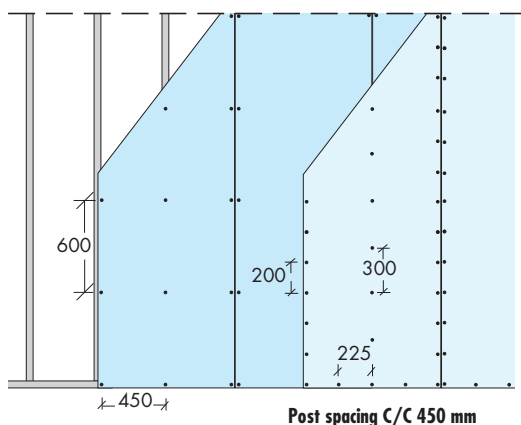
For skirting boards and surrounds on 2 x 12.5 mm plasterboard

Steel (max. thickness)	0.65	3.0
Screw	R/T 57	T/C 65

## SCREW SPACING

### Longitudinal installation

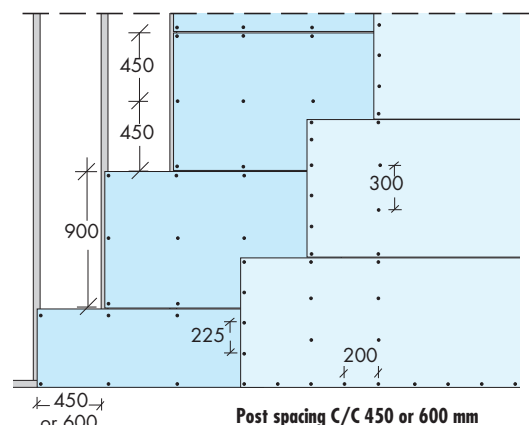
Screw the inner board layer onto posts every 600 mm. Screw along the edge of the outer board layer every 200 mm onto posts and 200 - 225 mm onto top and bottom rails. Space screws every 300 mm on all posts in the middle of the board.

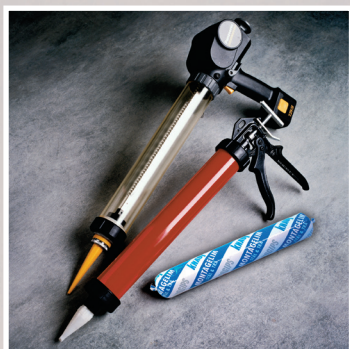
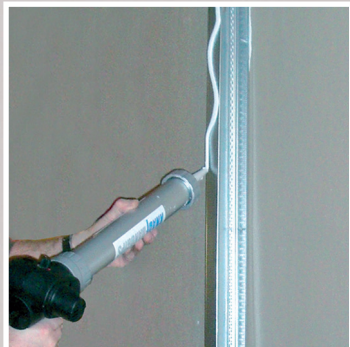


Stabilising walls can have a shorter screw spacing. Must be specified by project material.

### Transverse installation

Screw the inner layer to all posts with spacing equivalent to half the board width. Screw the outer board layer every 200 mm onto posts and 200 - 225 mm onto top and bottom rails. Space screws every 300 mm on all posts in the middle of the board.





#### DID YOU KNOW?

The ergonomic strain of using adhesive for installation is significantly reduced, as only three screws are normally needed above shoulder height.

Example of high wall construction with plasterboards glued onto steel studs.



# GLUED INSTALLATION

## GLUED INSTALLATION, INTRODUCTION

### Easy installation

The system works on all types of surface - steel and wood. All Knauf plasterboards can be used for glued installation. Use Knauf Montagelim. Apply using a grout gun on the profile and instead of fully screwing the board onto the profile - reduces number of screws. The adhesive remains pliable for a long period of time, making adjustment of boards and application on several boards in one pass possible. Full hardening is achieved in around 7 days at normal room temperature.

### A better working environment and ergonomics

The ergonomic strain for installation is significantly reduced, as only three screws are normally needed above shoulder height.

### Faster installation

Using adhesive and fewer screws means shorter installation time compared to using screws only. Significant savings in time can be achieved especially on larger projects. Our adhesive is also approved as a sealant for acoustic joints. This task can therefore be performed using the same grout gun.

### More stability and quality

Gluing means a significant improvement in the rigidity of the construction, of particular benefit for high walls.

### Combination of glue/screws

If both board layers cannot be adhered for practical reasons, a combination of screws in the first layer and adhesive for the second can be beneficial. The

hard types of board such as Solid Wet Board and Solid Board are easier to glue in particular. The use of special screws and filling screw holes is avoided. Installation time is also reduced. Fully-screwing the first layer is important for the sake of wall stability

### Eco-friendly

Our adhesive is odour- and emission free, and approved by BASTA and Sweden's Byggarbetsdömmingen.

### Fire

The use of Knauf SealX can achieve K<sub>1</sub>10 cladding class.

## INSTALLATION USING ADHESIVE

### Adhesive

Adhesive is applied using a grout gun. The steel studding is constructed of MR profiles as normal. The adhesive is applied to the profiles. The adhesive string should be 3 - 4 mm thick. Adhesive can be applied for 2 - 3 boards at a time (up to 30 minutes before mounting).

Press the glued side of the board onto the posts and slide upwards. Leave space for an acoustic grout of 5 - 10 mm at the top of walls with multiple board layers.

Simply press the boards one after the other firmly against the profiles. They adhere immediately - just as effectively as two flat glass sheets. What's more, they remain adjustable for up to 30 minutes.

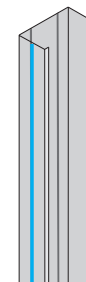
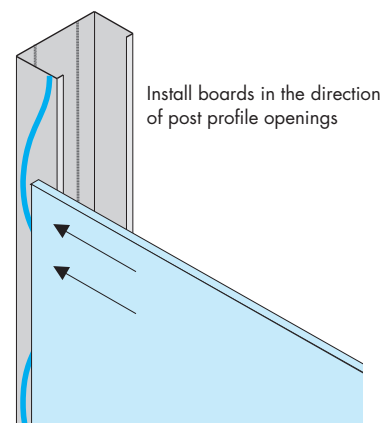
The adhesive is applied to the outside of the MR profiles. Once the adhesive has dried, the wall has excellent stability.

There are also far fewer screws to fill and sand.

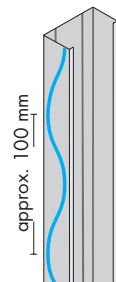
The adhesive string should be wavy on posts where boards will be joined. It can be straight on profiles with no joints. Use a string of adhesive 6 - 8 mm thick.

9 x Knauf screws are used to secure each board. 3 in the top and bottom rails and one in each post about halfway up.

Adhesive should be used for installing at temperatures of min. +10°C. Remove excess adhesive with soap and water. Clean grout gun and nozzle after use.



Apply a straight line of adhesive to stud rails and posts between board joints.



Apply a wavy line to posts where boards join.

## ADHERING PLASTERBOARD TO STEEL PROFILES

The diagram illustrates the internal structure of a window frame assembly. It shows a cross-section of the frame with various components labeled. On the left, a blue-shaded area represents the frame's internal structure, with a label 'Screw' pointing to a vertical dashed line. To the right, a white area represents the glazing unit, with a label 'Adhesive string' pointing to a vertical line. The diagram also shows the frame's outer profile and the glazing unit's outer profile.

Diagram illustrating the application of adhesive strings and filler rebates for wall repair. The diagram shows a cross-section of a wall with a diagonal crack. The repair process involves applying a wavy adhesive string along the crack, followed by an adhesive string placed alongside the filler rebate. Screws are used to secure the repair material.

Labels in the diagram:

- Wavy adhesive string
- Adhesive string placed alongside filler rebate
- Screw
- Adhesive string



## ADHERING PLASTERBOARD

### ADHERING PLASTERBOARD USING KNAUF ROTBAND FOR PARTITIONS

Plasterboard can be adhered as an alternative to plaster on concrete, brick, aerated concrete, etc.

When renovating old walls with damaged plaster, plasterboard is an excellent and simple alternative to plaster.

The method is also suitable when plasterboard walls abut concrete pillars, concrete or brick walls and when a continuous run of plasterboard is required. Plasterboards can be installed in such instances without any studding using Knauf Rotband. The method can also be used for installing plasterboard on fully clad surfaces.

#### 6.5 mm or 12.5 mm boards

6.5 mm Reno Board and 12.5 mm Classic 1 Board can both be used for

adhering. Using 6.5 mm plasterboard is particularly suitable for renovation projects. The low board thickness means that they can normally be installed without problems concerning surrounds, skirting boards and electrical installations.

Using Knauf Rotband, the boards can usually be installed at a distance from the sub-surface of just a few and up to 25 mm. Plasterboard strips can be adhered on a sub-surface which is very uneven or when greater distance is required to provide the surface for the boards.

#### Fire

Plasterboards skimmed with Knauf Rotband can be included in the fire resistance of a construction. Our 6.5 mm

and 12.5 mm plasterboards are class A2-s1,d0 material. 12.5 mm plasterboards fulfil the requirements for a class K<sub>1</sub> 10 B-s1,d0 cladding.

#### Sub-surface

The sub-surface must be firm, clean, free of dust and loose plaster, paint or oil/grease.

Always ensure that the inner side of an outer wall is not damp or can be expected to become damp, e.g. from rain or rising damp. Fresh or damp concrete or masonry is not suitable as a sub-surface. Even out significant unevenness. Porous sub-surfaces should be primed with Knauf Primer or suitable alternative.

All installation, sockets etc. must be fitted before the boards.

### MIXING AND APPLYING

#### Knauf Rotband

Plaster powder for mixing with clean water. 10 parts powder to 6 parts water. Coverage approx. 2 - 4 kg/m<sup>2</sup> depending on quality of sub-surface.

#### Mixing

Sprinkle the powder into clean water, mix with an electrical mixer to a smooth consistency. Hardens in around 2 hours, depending on temperature, ventilation and relative air humidity. Use the mixed mortar within 30 mins - 1 hour.

Remove any traces of earlier mixings from the bucket to avoid the hardening time being significantly reduced.

#### Applying the mortar

Place board with back upwards, cut to size (a little shorter than wall height). Apply mortar (e.g. using a trowel) to the back. Apply to one board at a time. Lay a string of the mortar around the long edges and with blobs about 300 mm apart on 12.5 mm boards and 200 mm for 6.5 mm boards. Lay a

string of mortar all the way around the edge of large cut-outs.

#### Installing boards

Stand boards at the site they are to be installed on laths or wedges until the mortar is hardened.

#### Uneven sub-surfaces

We recommend adhering strips of plasterboard on very uneven sub-surfaces before the actual board. Use a C-C distance of max. 450 mm for 12.5 mm boards and 225 mm for 6.5 mm boards. Install as instructed in the following section.

#### Adhering on a plaster surface

A thinner mortar is used to adhere to a plaster surface, applied with a toothed spatula. The board joints must be offset in relation to those of the underlying or existing construction.

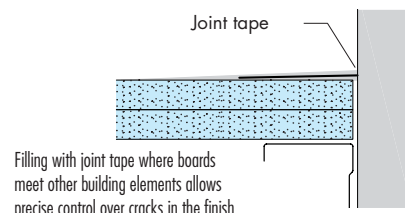


## CONNECTIONS AND EXPOSED ENDS

### CONNECTIONS

Connecting plasterboard constructions to other building elements can cause cracks in the finish applied. We recommend a compound sealant as described in the section on grouts for a

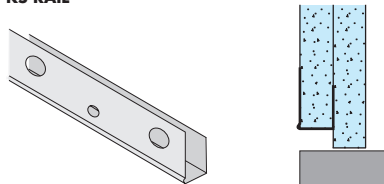
smooth joint. If small cracks can be accepted, they can be restricted to a very small area if using filler tape along the adjoining building element.



### EXPOSED ENDS

A range of standard profiles is available to strengthen and protect exposed plasterboard edges.

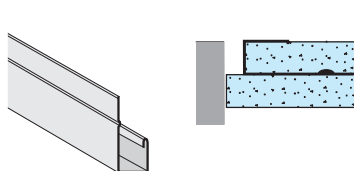
#### KS RAIL



#### KS edge protector

Galvanised steel edge protector KS 13 and KS 15 edge protectors are intended for single board layers and KS 26 for two layers. Edge protectors are used on plasterboard edges that have exposed joints or where the joint is filled with compound sealant. The profile is fitted over the board before installation. The profile is mitred at corners. Several sizes.

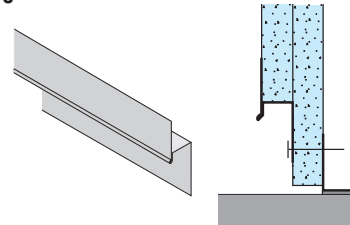
#### J13



#### End profile J13

White-painted steel profile. Used for board ends where filler is not required to cover the profile. The profile fitted onto the board and mitred in the corners.

#### AS 13



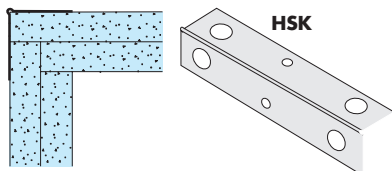
#### Sealing profile AS 13

Galvanised steel profile for sealing along floors. Used in situations where the floor covering extends up the wall, for instance. The profile is mitred at corners. Fixed using screws through the lower flange. The upper flange is filled and covered by the final finish applied to the board. AS 13 profiles are not suitable for use in wet rooms.

### CORNER JOINTS

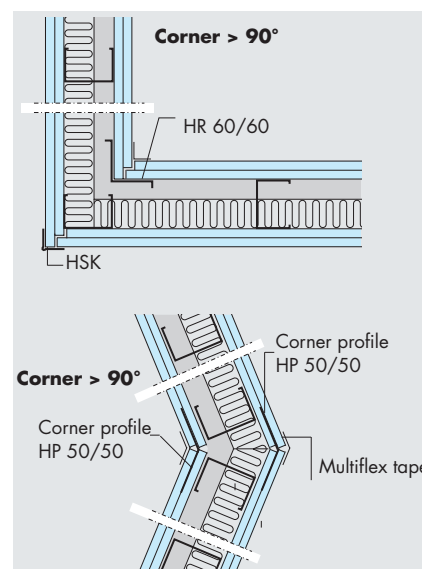
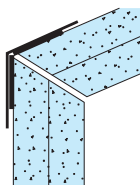
#### Corner protector HSK

Galvanised steel profile for fixing to right-angle, outgoing corners. The HSK profile is fixed on every 150 mm using a Clinch-On. The edges of the profile are pressed into the board to lock it into place using this tool. Corner protectors are covered with filler before the final finish is applied to the board.



#### Multiflex tape

Multiflex tape is a paper tape with steel lattice for outward corners in variable angles. The steel lattice side is applied to the board. The tape is secured when filler is applied in common with other types of joint tape. Multiflex tape is applied by the filler or painting contractor.



## CONNECTIONS AND EXPOSED ENDS

### WET-STICK - WATER-ACTIVATED CORNER PROFILE FOR GLUING ON PLASTERBOARD CARDBOARD BOARDS

Knauf Wet-Stick is used for external 90° plasterboard corners. Wet-Stick is impact-resistant and used for areas exposed to heavy use.

#### APPLYING WET-STICK:

1 Measure up and cut Wet-Stick into suitable lengths using shears or the like.

2 Place Wet-Stick profiles on saw horses and moisten using a spray along their full length with clean water. It is important that the entire surface is wet. The best result is achieved by placing the Wet-Stick profile on its spine. Ready for use after approx. 2 minutes.

**+** Use hot water in cold weather to activate the adhesive faster and ensure good adhesion.

3 Apply Wet-Stick to the corner when the glue feels sticky. Use Wet-Stick roller (or a similar soft roller) for faster and better application. Leave the adhesive to dry for 30 - 60 minutes (depending on room temperature and humidity) before covering with filler.

**!** Wet-Stick can only be used on cardboard-covered boards.

4 Wet-Stick must be fully adhered before applying filler. Apply filler using a 200 mm wide spatula. Leave to dry completely.

5 Use a 250 mm spatula for smooth application of the second layer. Leave to dry completely.

**+** Use a finish filler, such as Knauf Fill & Finish Light at this stage to make application and sanding of the finish easier.

6 Refer to the Knauf filler manual for more info on filling and sanding in general.

