Lindab Construline ™

Lindab System Solutions – Wall

Dimensioning with assembly instructions

Lindab®

Exterior Wall system solutions

Before you start
Lindab exterior wall profiles can be used at all different kind of buildings, the advantages are high thermal insulation, good sound reducing properties and use of total non-organic materials. The use of steel framed wall constructions is suitable for office buildings, apartments and family housing. All different kind of façade materials can be applied to the walls.

The conceptual wall build up is very easy, studs (RY, vertical) and runners (SKY, horizontal) together with board materials and insulation is the core of the wall. The boards are needed to increase the strength of the profiles and to protect from fire. On the inside a vapour barrier must be applied, the vapour barrier prevents moist air to leak from hot side to the cold side (and thereby condensate).
Variants on the wall build up are possible, ie with secondary insulation layers on the in- and outside, secondary systems on the outside to create ventilated facades…

Common wall boards are;
- Gypsum boards
- OSB or wooden boards
- Concrete based board materials

The profiles
Lindab exterior wall profiles are slotted to give good thermal and sound reducing properties. The wall will always be optimized with as thin steel as possible to allow for increased amount of insulation. Studs and runners can be supplied with a 10 mm polyethene sealing to give air tight connections to surrounding constructions, RYP and SKYP.
For door and window openings there are special products developed to reduce assembly time on the work site, there is a special opening stud named RYF and top-/bottom runner named SKYF.
In load carrying designs there is a need for lintels and stiffening/load distributing profiles. ÄA is used to distribute load over the full cross section for the studs and will also stiffen up the profile for end support reactions. YVX is a profile to create lintels over openings up to 2,1 meters span. For larger and more complex openings a box beam made of C-profiles can be done.

Lindab ADT tools
Lindab ADT Tools is a 3D design software that works on the Autodesk Architectural Desk Top platform (model year 2006 and forward). The software is based on Lindab know-how and consists of a number of macros to define elements for walls, floors and roof constructions. All elements are configured in a dialog box and then automatically generated in a 3D-view into the drawing. The building model contains all the information needed to be able to order, build and erect the building.

The advantages with using the Lindab ADT Tools design software are;
- Fast and accurate design process in 3D
- Exact specification and detailing
- 2D-workshop drawings created from the 3D model
- Possible to send electronic orders straight to Lindab

Lindab ADT Tools is available for construction engineers and customers of Lindab. Contact your local Lindab supplier to get more information.

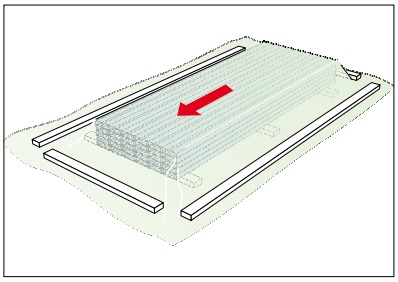
Exterior Wall system solutions

Fasteners
For all steel constructions you should use the right fasteners. By using fasteners from Lindab you will always be sure that they will work for the application and that they will be safe to use. For Lindab light gauge constructions, however, there is a universal screw developed to connect the profiles in most applications, BPSK. The screw is a standard screw, using a PH2-bit (same as for gypsum boards) but with a flat head to avoid cracks on board materials.

Cold bridges
The steel profiles are slotted and thereby cold bridging be avoided. However, there are some things that should be taken into consideration.

- Instead of having studs back to back box them. Boxed studs should be filled with insulation.
- Always optimize steel stud thickness
- Use an extra layer on the inside for installations – no risc for coldbridge and no problem with a perforated vapour barrier

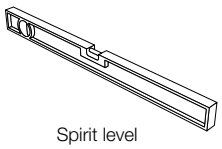
Storing steel profiles
The profiles are delivered in bundles. The bundles should be stored in a dry and clean place. If the bundles are stored outside they should be placed with a slope to let rainwater run off. The profiles should be protected from dirt and dust or brushed of before installation. Dirt and dust can effect the profiles with negative thermal conductivity performance and can also start to grow mould in the future.

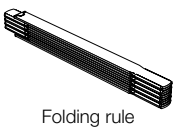


The bundles can be stored on top of each other

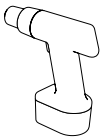
Cutting
The whole idea is to get a precut system and no cutting should be made on site. But, in case of on-site adustments and need for a cut, use a nibbling machine.

Tools


Spirit level


Folding rule


Pencil


Electric screw driver

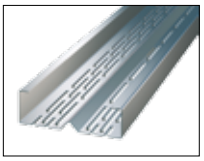

Steel scissors

Exterior Wall system solutions

Components for exterior wall constructions

RY
Slotted steel stud for exterior walls. The available dimensions are 100/120/145/150/170/195/200/220 in material thickness 0,7/1,0/1,2/1,5 mm. Static design for slotted profiles could be done in the software DIMstud, available from Lindab homepage.

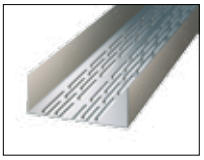
RYP
10 mm air tight polyethene applied to a RY, same dimensions and thicknessess as for RY.



RYF
Slotted steel stud for window and door openings in exterior walls. The profile is reinforced and asymmetric to make door and window assemblying easier. The available dimensions are 145/150/170/195/200/220 in thicknesses 1,2 and 1,5 mm. Static design for slotted profiles could be done in the software DIMstud, available from Lindab homepage.

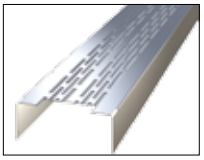
SKY
Slotted steel runner for exterior walls. The available dimensions are 100/120/145/150/170/195/200/220 in material thickness 0,7/1,0/1,2/1,5 mm. Static design for slotted profiles could be done in the software DIMstud, available from Lindab homepage.

SKYP
10 mm air tight polyethene applied to a SKY, same dimensions and thicknessess as for SKY.

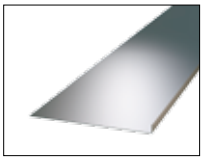


SKYF
Slotted steel runner for openings in exterior walls. The profile has a cutout in each end to speed up assembly to the RYF-stud. The available dimensions are 145/150/170195/200/220 in thicknessess 0,7/1,0/1,2 mm.

Static design for slotted profiles could be done in the software DIMstud, available from Lindab homepage.



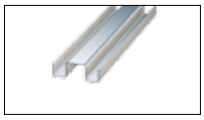
YVX
Lintel profile for openings. The profile is optimum as a lintel over door and window openings up to 2,1 meters in span. It is available in the following dimensions/thicknesses, 215/1,0-235/1,5-240/1,2-285/1,5-290/1,2



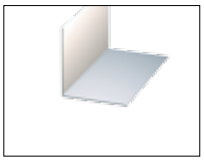
Exterior Wall system solutions

Components for exterior wall constructions

ÄA
End stiffener. The end stiffener increases the end support reactions and distributes the load over the full cross sections on RY and RYF studs in load carrying walls. Available in all dimensions corresponding to the RY-studs.

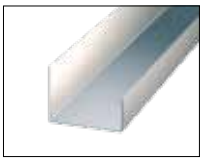


LPY
Corner connection. Use the corner connection, LPY, for larger openings when SKY is used (instead of SKYF). Available in all dimensions corresponding to the SKY runners.

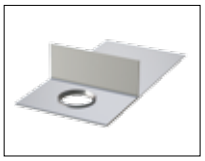


RCY
U-profile for extra layer of insulation on the inside of the exterior wall, available in 45/50/70/75 dimension.

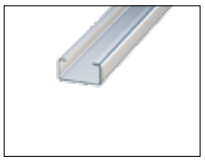
RZ
Z-profile for extra layer of insulation on the in- or outside of the exterior wall, available in 45/50/70/75 dimension.



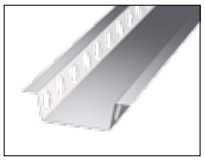
LOGL
LOGL is a bracket for lifting and handling elements.



MSK and **MK**
Rail and tie for brick facades. The bricklaying rail, MSK, should be attached to the RY-stud at 600 mm c/c. Each tie, MK, can take a load of 0,5 kN. The bricklaying rail is available in coated galvanized steel and stainless steel.



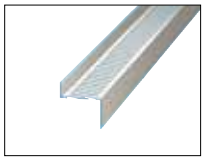
FLV
Ventilated batten for facade systems. Coated material. Profile height 25 mm.



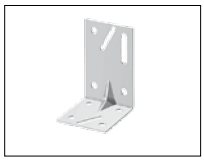
Exterior Wall system solutions

Components for facade renovation system

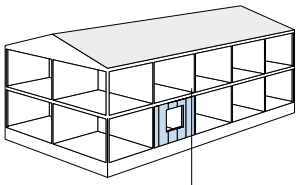
RFLEX
Spacer batten for facade renovations
L = 4 000 mm
Yield point ≥ 350 N/mm^2
Material thickness 1.2 mm



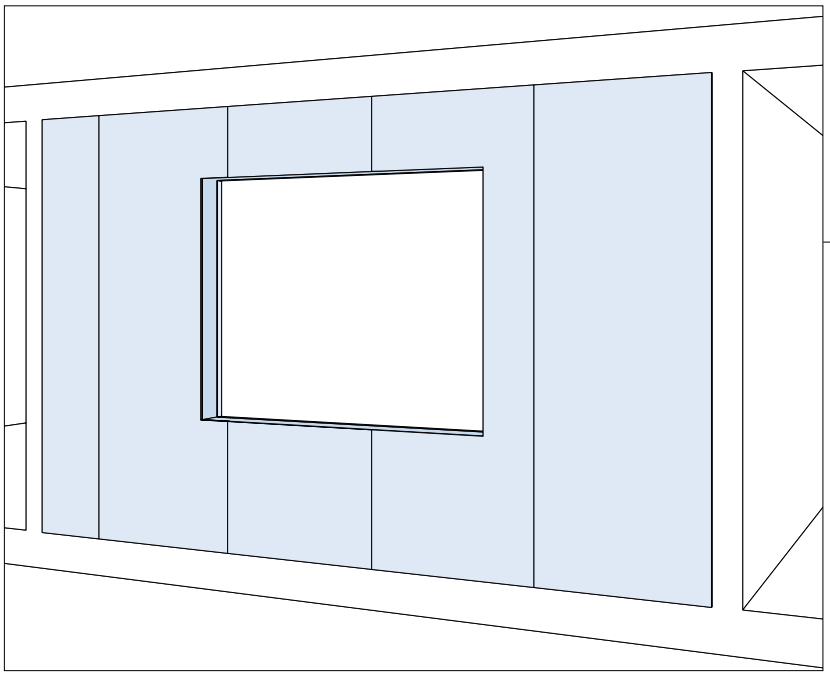
UK
Support bracket for spacer batten RFLEX
Yield point ≥ 350 N/mm^2
Material thickness 2.0 mm



Assembly – Exterior Wall system solutions

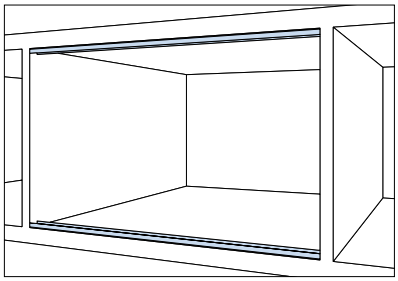


Infill wall / Site built walls

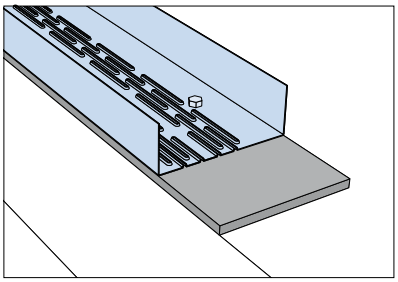


Infill walls built on site can be made as easy as partition walls, the runners are placed were the wall shall be and studs are placed into them at the right center distance. Center distance can vary between 200 and up to 625 mm depending on board materials. Studs should be made 15-20 mm shorter than the actual wall height to make them easier to install and speed up assembly. Studs and runners are designed in the DIMstud software.

Assembly the runner, SKYP



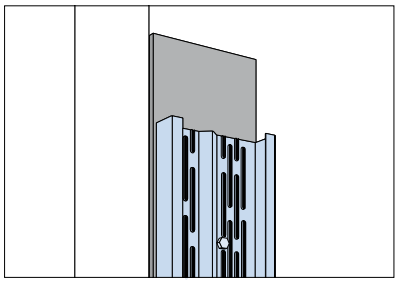
Check the underlay and make sure it is clean and smooth. Attach the top and bottom runner SKYP with suitable fasteners at a maximum centre distance of 600 mm.



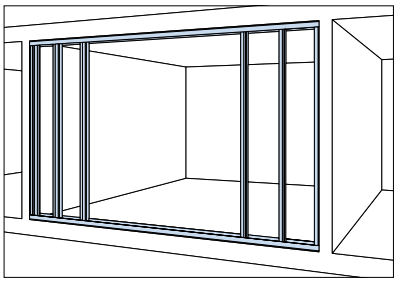
Apply the screws in the non-slotted part of the runner and alternate the sides of were to put the screws if possible.

Assembly – Exterior Wall system solutions

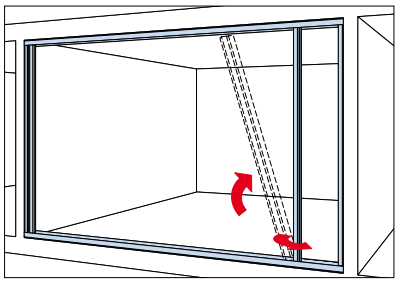
Stud RY



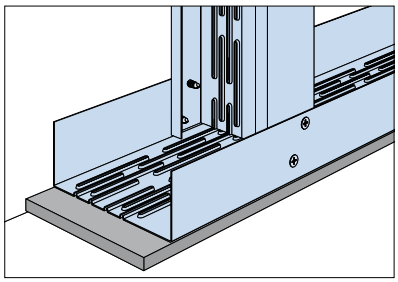
Assemble the studs with polyethene, RYP, to the connecting parts. Check the underlay and use the right fasteners.



Mark out were to place the opening studs RYF.

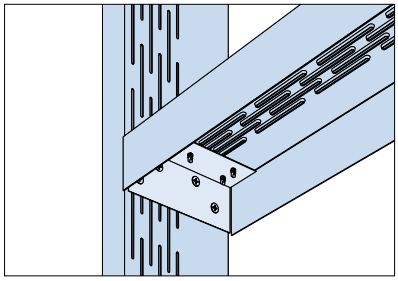


Assemble the studs at the right centre distance or according to the drawing.

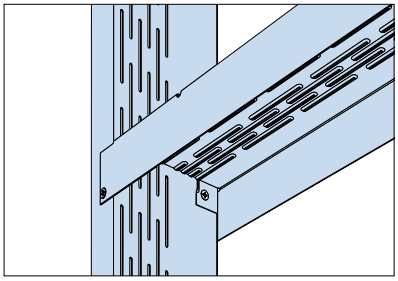


Fasten the studs with B 08 screws on each side.

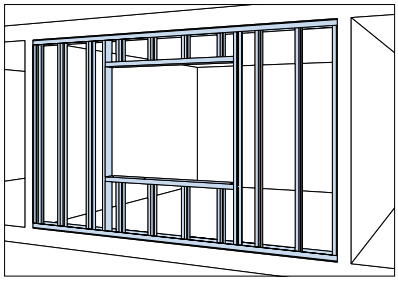
Wall openings



Fasten the runner SKY with fitting LPY to the stud RYF.



Alternatively fasten the runner SKYF directly to the stud RYF.

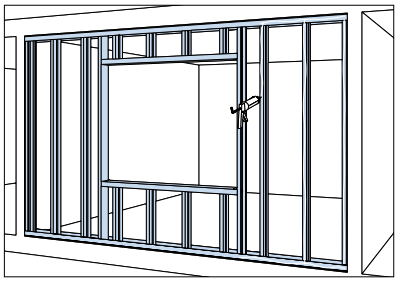


Fasten studs above and below the opening. Use the c/c measurement as prescribed.

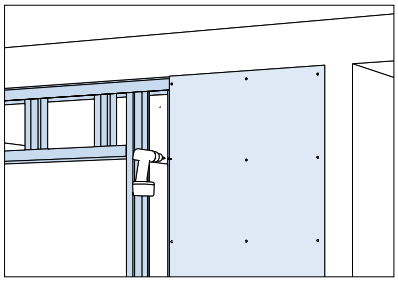
Assembly – Exterior Wall system solutions

Outdoor plaster board assembly

Board materials can be applied mechanically (screws) or chemically (glue) to the studs and runners. Use the recommended assembly instructions from the respective board/glue/screw material supplier.

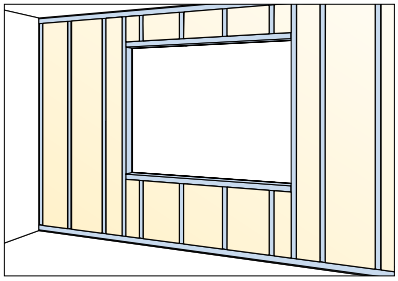


Apply plaster board glue to the studs and runners.

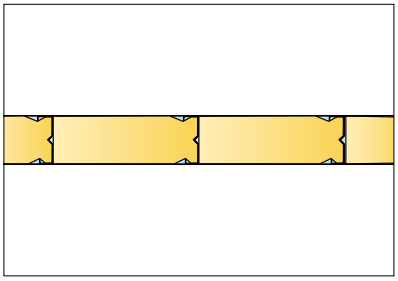


Fasten the plaster boards with plaster board screws at c/c 300 mm or according to drawing.

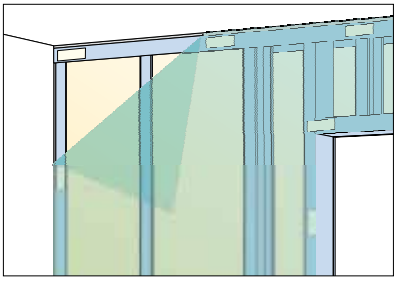
Insulation and plastic damp barrier



Insulate with mineral wool from the inside.

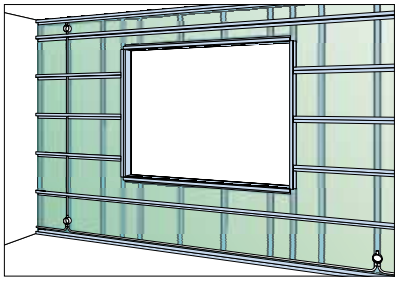


Make sure to fill out the cavity with insulation, smaller airgaps due to the slots or the flanges doesn't effect the insulating capacity.

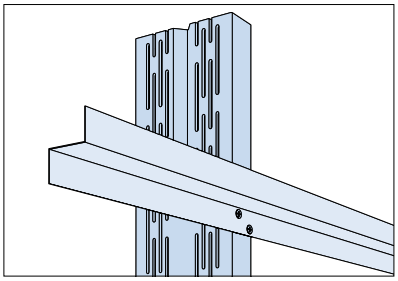


Attach the vapour barrier with glue or double sided adhesive tape. Make sure that the vapour barrier is intact from rips and big holes. Overlap the vapour barrier joints over a stud.

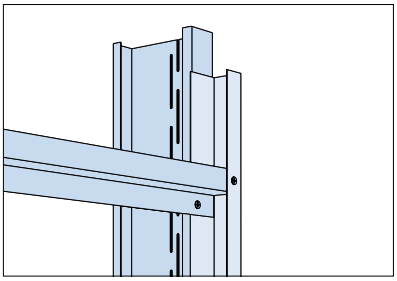
Secondary installation layer



Create a secondary layer for installations by using secondary profiles RZ and RCY. Place them horizontally at a centre distance to fit with the board material (400-625 mm). Installations can now be carried out without perforating the vapour barrier.



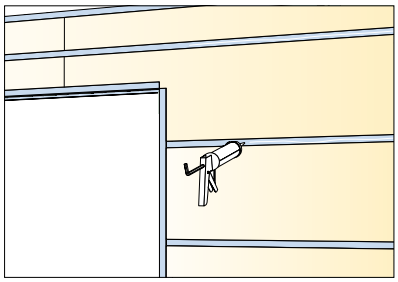
Use B 08 fasteners to fasten the secondaries



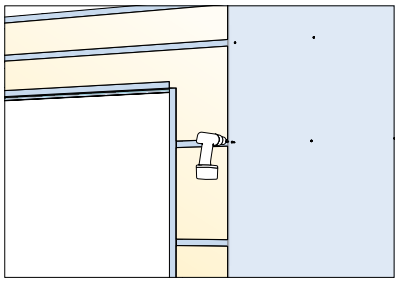
Use RCY around openings.

Assembly – Exterior Wall system solutions

Indoor plasterboard

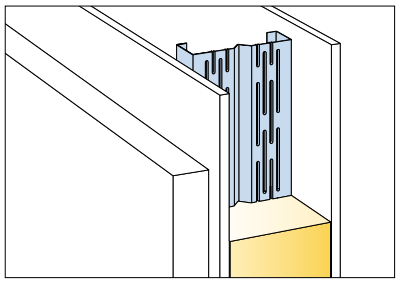


Fill the cavity with insulation and apply glue on the RZ-profiles.

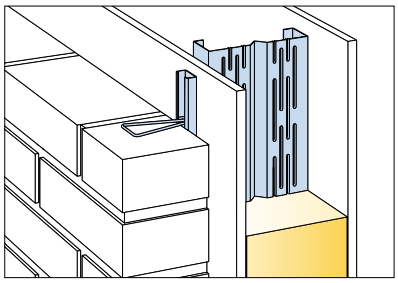


Apply the board material onto the RZ-profiles.

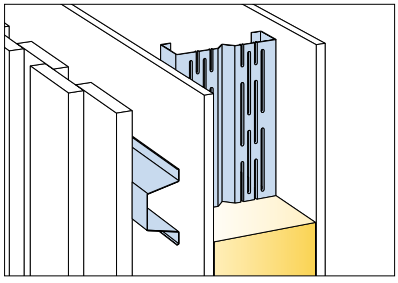
Facade material alternatives



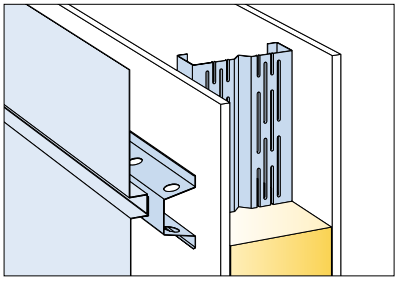
Rendered systems can be applied outside the outer board material. External layers of insulation can be the base for different render systems.



Brick walls are connected to the exterior wall by a secondary bricklaying rail and tie system.

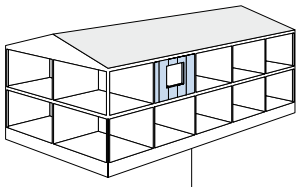


KLS Battens as a secondary outside system in combination with standing wood façade

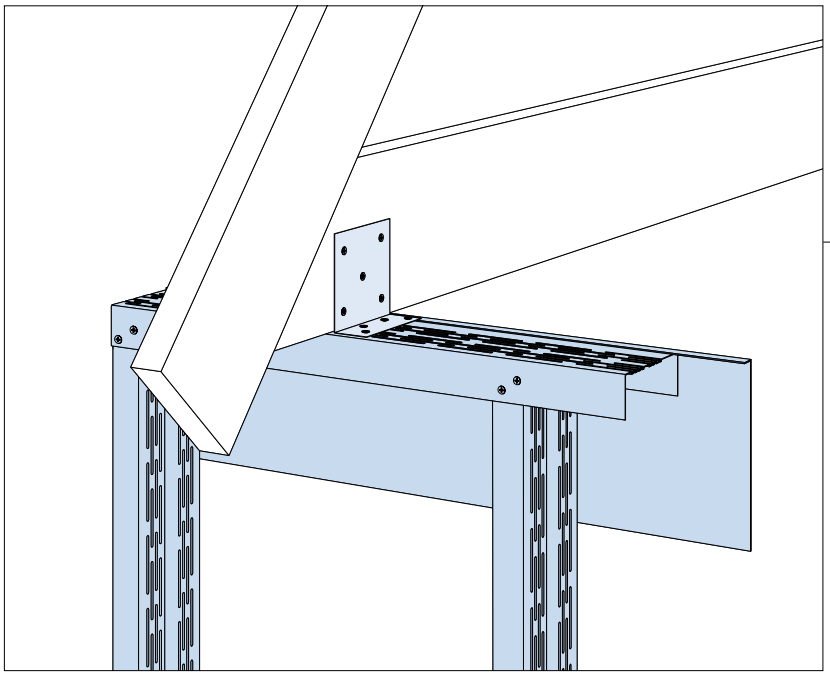


FLV can be used for ventilated facade materials

Assembly – Exterior Wall system solutions



Load carrying wall

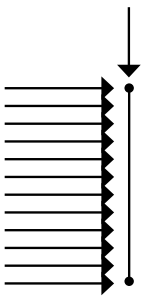


Components for load carrying wall

Load carrying walls are basically built up with the same profiles as for infill walls. The main difference are that all parts, studs and runners must have contact – no air gap allowed between the load carrying parts are allowed. It is also necessary to build in lintel beams to carry load over openings.

RY, RYF, SKY and C can be designed in DIMstud, minimum recommended thickness is 1,0 mm for use in structural design. For YVX there is a separate load table since the profile is calculated by practical experience, testing.

The following load table is an example of how much load a certain profile can take under certain circumstances. Use the software DIMstud to model more exact load cases.

	Dimension	Thickness	Q_d (kN/m)	N_d (kN)
RY the load table describes the capacity for different profiles for an axial load of 10 kN/stud for studs at 3,0 m heigt. 	100	0,7	*	
		1,0	0,60	10,0
		1,2	0,90	10,0
		1,5	1,10	10,0
	120	0,7	*	
		1,0	0,90	10,0
		1,2	1,10	10,0
		1,5	1,40	10,0
	145/150	0,7	*	
		1,0	1,10	10,0
		1,2	1,60	10,0
		1,5	2,00	10,0
	170	0,7	*	
		1,0	1,30	10,0
		1,2	1,90	10,0
		1,5	2,30	10,0
	195/200	0,7	*	
		1,0	1,70	10,0
		1,2	2,10	10,0
		1,5	2,70	10,0

* Not used for axial loads.

Assembly – Exterior Wall system solutions

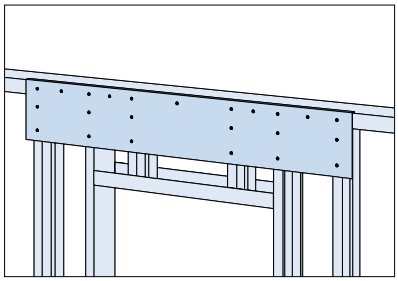
RYF

A special door and window stud designed to make door- and window installations easier. Reinforced to carry the extra load around openings.

The following load table is an example of how much load a certain profile can take under certain circumstances. Use the software DIMstud to model more exact load cases.

	Dimension	Thickness	Q_d (kN/m)	N_d (kN)
RYF the load table describes the capacity for different profiles for an axial load of 10 kN/stud for studs at 3,0 m heigt.	145	1,2	1,5	10,0
		1,5	1,9	10,0
	170	1,2	1,9	10,0
		1,5	2,4	10,0
	195	1,2	2,3	10,0
		1,5	2,9	10,0

YVX



Together with board materials it works like a lintel beam for structural walls for openings up to 2,1 m. The design table requires that the wall has at least one layer of plaster board on each side and that the studs and runners have minimum thickness of 1.0mm. The point load Fd is assumed to apply load on a width of at least 70mm.

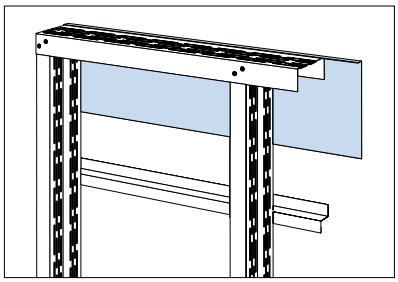
	Dimension	Thickness	M_d (kN/m)	F_d (kN)
YVX	215	1,0	3,1	5,9
	240	1,2	4,0	8,1
	235	1,5	5,2	11,8
	290	1,2	4,5	8,1
	285	1,5	6,0	11,8

Assembly – Exterior Wall system solutions

Lintels

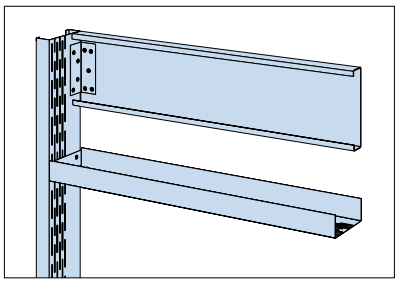
For load carrying walls it is necessary to have lintels above window- and door openings. Lintel beams can be made in alternative ways depending on complexity and loads.

YVX Lintel



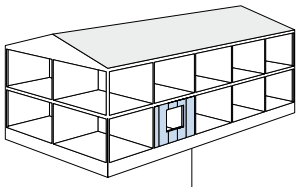
The Lindab YVX is an L-shaped profile which works for smaller openings from 600 to 2100 mm wide. It is the easiest and fastest way to create lintels. The profile shall be mounted directly to the steel behind the board materials. The YVX can be used as single member or doublesided to increase the load bearing capacity. Use B 08

Lintel from box beam with C-purlins

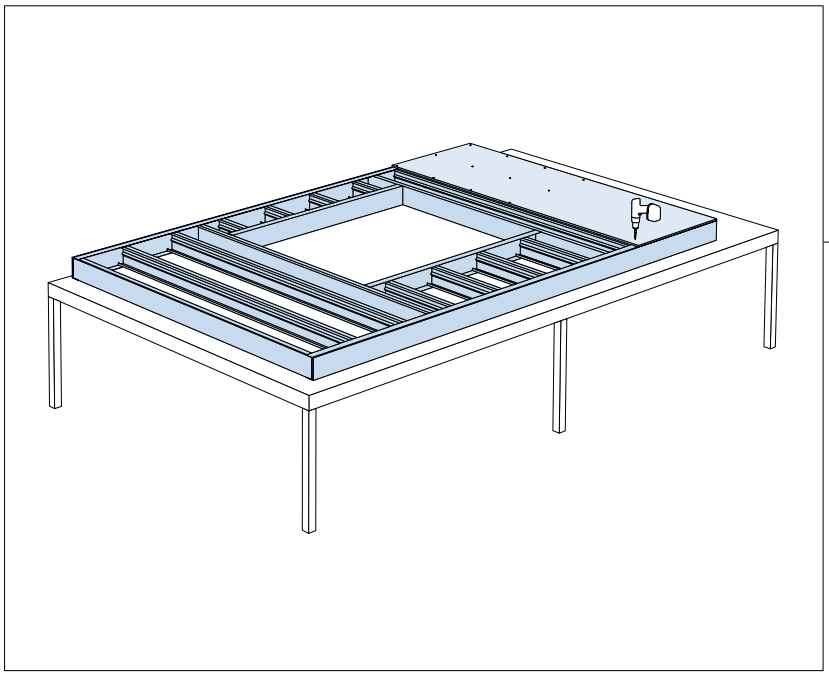


For large openings and high loads a box beam is recommended. The box beam is a traditional but more complex solution than the YVX. A C-profile is connected to the window studs with an L-profile or a console bracket. The C-profile must be connected to the top runner and have support for the lower flange. DIMstud can be used to design for static loads.

Assembly – Exterior Wall system solutions



Exterior wall for prefabrication



General

The use of prefabricated elements saves a lot of time in the building process. This is an example and work method that works well with the softwares supplied from Lindab. The idea is to create a workflow that makes it easier to work with our exterior wall systems.

Lindab ADT Tools is the base for creating work shop drawings, specifications and packing lists for entire projects. DIMstud and WallAnalyzer are the softwares used to design for static loads and thermal performance.

Step by step

1. Collect drawings and documentation.
2. General decissions for curtain walls;
   - What is the maximum element width?
   - Shall the windows be mounted in the prefabrication or on site?
   - What kind of fasteners will be used for the elements?
   - SKY or SKYP as tracks?
   - Schedule for delivery to site
   - What kind of window fasteners will be used?
3. Calculate wind loads.
4. Calculate maximum width for openings for different stud thicknesses on each floor.
5. Make specifications, drawings and order documentation for first delivery.
6. Calculate maximum element weight.
7. Design lifting tackles, LOGL.
8. Order, assemble and deliver.

Assembly – Exterior Wall system solutions

Drawings and documentation

Make sure you have the latest drawings for the facades and that all the required information is available.

General decisions

It is important to decide the level of prefabrication and chose the design of the elements. For example:

- *Maximum element width*. If the elements are too wide it can be difficult to install them properly. Sometimes it is better to divide one big element in two to avoid unnecessary inconvenience on site.
- *Window installation*. If the windows are small and it is possible to install them in the prefabrication phase, then this can save a lot of time on site.
- *Element fixing*. What kind of fixing will be used on site. Sometimes this affects the size of the element.
- *Track type.* In some cases it can be a good idea to use SKYP on all sides of the element to protect it from rain. For tracks with direct contact to for example concrete, SKYP should be used to give air tightness.
- *Delivery*. When and how the elements should be delivered. One house at a time, one floor at a time etc.
- *Window fixing.* What kind of window fixing will be used? RYF, BADY or plywood. Depending on this decision the tolerance on window openings in the elements is given.

Calculation of wind loads

The wind load for each level of the building should be calculated according to national standard.

Maximum element openings

With the wind load known we can calculate the maximum opening allowable for each thickness of stud.

Example	Wind load	qk = 0.97 kN/m2
	Stud center distance	CC = 600 mm
	Stud dimension	RY170
	Element height	H = 3100 mm

Assembly – Exterior Wall system solutions

The influence width for a window stud is given as:

$$B = 0.5\ CC + 0.5\ W_{Opening}$$

The load that will act uniformly distributed on the stud is given as:

$$q_{MAX} = qk \cdot W = qk \cdot \left(\frac{W_{Opening} + CC}{2} \right)$$

Solve for the width of the opening:

$$W_{Opening} = \frac{2q_{MAX} - qk \cdot CC}{qk}$$

where
- $W_{Opening}$ [m] - Opening width
- q_{MAX} [kN/m] - Uniformly distributed load
- q_k [kN/m^2] - Wind load
- CC [m] - Stud center distance

Use DIMstud to find the maximum allowable load for the studs with the relevant length (element height). With the load known we can now make a table of maximum opening for each stud thickness.

In this example the table looks like this:

Stud	qMAX	WOpening
RY170/0.7	0.992 kN/m	1440 mm
RY170/1.0	1.768 kN/m	3045 mm
RY170/1.2	2.149 kN/m	3830 mm
RY170/1.5	2.700 kN/m	4960 mm

Tables of this type are made for each floor and used later on when the drawings are made.

Assembly – Exterior Wall system solutions

Element drawings

Element drawings are created automatically from Lindab ADT Tools models, use length adjustment for studs according to the table below:

*) Make 8mm further reduction for each

Thickness	Adjustment*)
0.7 mm	7 mm
1.0 mm	7 mm
1.2 mm	8 mm
1.5 mm	8 mm

SKYP that is used instead of SKY.

Element weight

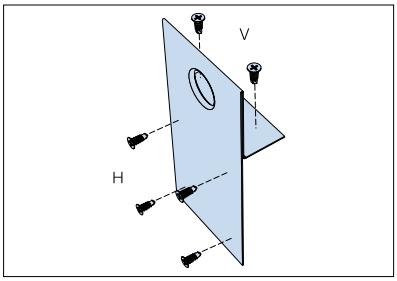
Calculate the maximum element weight including windows, plaster boards and everything that is included in the prefabrication. This weight called “M” is then used to design the lifting straps.

Example	Steel	51m * 1.43kg	73 kg
	Plaster board	7.2m^2 * 9kg	65 kg
	Windows	2 * 22kg	44 kg
	5% add-on for screws etc		9 kg
	TOTAL		191 kg

Assembly – Exterior Wall system solutions

Design lifting straps

The load table is done for two lifting eyes giving a triple safety for the loads applied. Vertical loads will be transferred into the screws assembled horizontally, vertical screws will handle the loads from the offset of the centre of mass and placing of the lifting bracket Lifting bracket must be assembled directly to the main steel frame (inside gypsum board)



Load table for LOGL, lifting eye

Number of B08 4.8MM for Vertical and Horizontal forces, SK3 according to StBK N-5								
Weight of element	Material thickness, element main frame							
	0.7		1.0		1.2		1.5	
	H	V	H	V	H	V	H	V
50	3	2	3	2	3	2	3	2
100	3	2	3	2	3	2	3	2
150	3	2	3	2	3	2	3	2
200	4	2	3	2	3	2	3	2
250	5	2	3	2	3	2	3	2
300	6	2	3	2	3	2	3	2
350	7	2	4	2	3	2	3	2
400	8	2	4	2	3	2	3	2
450	9	2	5	2	4	2	3	2
500	9	2	5	2	4	2	3	2
550	10	2	6	2	4	2	3	2
600	11	2	6	2	5	2	3	2
650	12	3	7	2	5	2	4	2
700	13	3	7	2	5	2	4	2
750	14	3	7	2	6	2	4	2
800	15	3	8	2	6	2	4	2

*)Table is valid for lifts with load bar (loads angular to the element only)
Lifting without lifting bar is not recommended but can be done if the number of screws are calculated for the loads accordingly

Shear capacity [kN] for B08, diam. 4.8mm			
Material thick-ness	Safetyclass		
	1	2	3
0.7	1.00	0.91	0.83
1.0	1.93	1.75	1.61
1.2	2.58	2.35	2.15
1.5	3.63	3.30	3.03

Number of LOGL	2	st
Safety factor	3	x

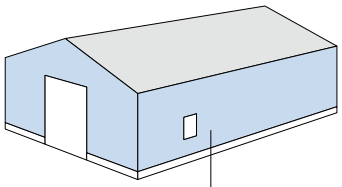
It is important to use a lifting yoke that applies vertical force to the straps since they are designed for this. If we apply force in an angle we obviously get higher load and also torsion in the connection.

Assembly – Exterior Wall system solutions

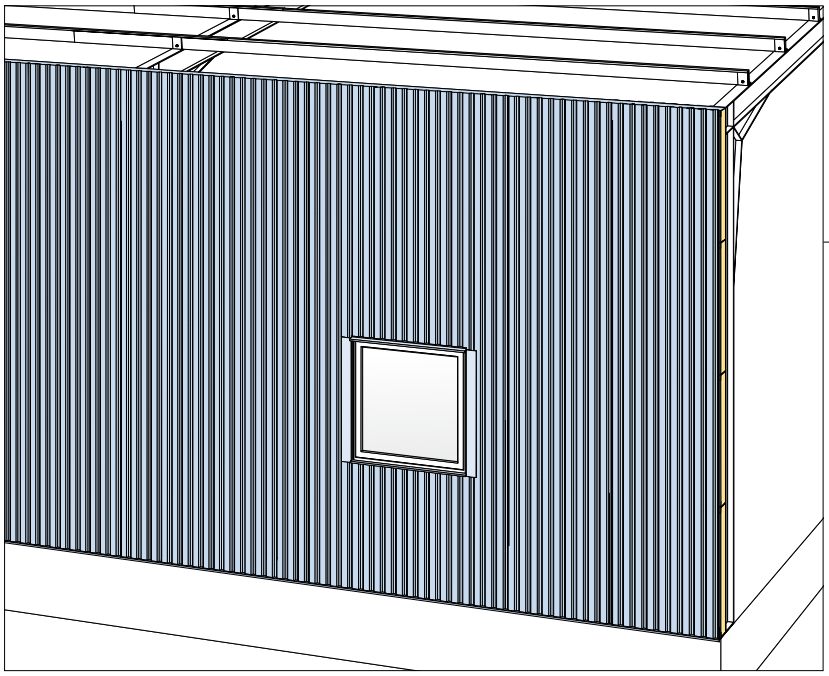
Separated windows
If we have big openings that will hold more than one window the window tracks must be designed to take the entire load from the windows. Use the same design method as for the window stud. As a general rule always use at least the same thickness for the window tracks as for the window studs.

Large openings
Openings that cover large parts of the element are better built on site. If only two studs are present next to the opening, design both of them for the window load. Do not use LPY as connection between stud and track. In this case it is better to use an extra piece of stud connected back to back with the window stud. Always use studs above and below big openings even if the distance is short.

Assembly – Exterior Wall system solutions



Thermowall



Slotted Z-profiles, ZS

Slotted Z-profiles can be used for walls or as a distance for double skin roofs. The use of slotted Z-profiles has the same advantages and basically the same properties as a slotted RY-stud.

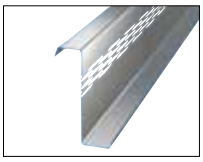
Slotted Z-profiles for walls

The use for Z-profiles in industrial and agricultural buildings is a well known technology. Slotted Z-profiles improves the energy loss for the wall, normally the Z-profiles are used to 50% but designed for deflection criteria, for the slotted Z-profiles the deflection properties are the same which means that you normally have the same thickness on the Z-profile as for a normal unslotted Z-profile.

Assembly – Exterior Wall system solutions

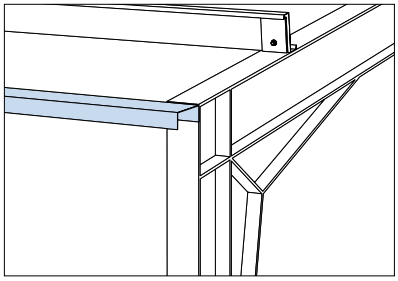
Slotted z-profile

Design values valid for spans up to 6,0 m. Over 6,0 meter will be included in the software DIMroof. Note that design values are half of the normal corresponding Z-profile but moment of inertia is almost the same!

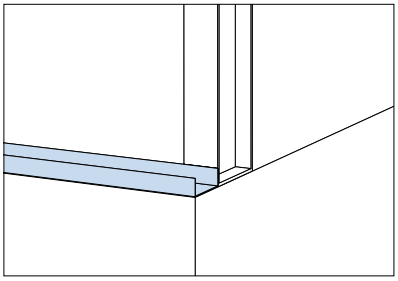


Design values for L < 6000mm						
Profile Type		Md	Nd	Vd	Wd	Ieff
		[kNm]	[kN]	[kN]	[mm3]	[mm4]
ZS 150	**1.0**	2,36	25,70	1,98	6828	562000
	1.2	3,27	33,00	2,40	9347	736000
	1.5	4,33	42,80	3,02	12369	957000
ZS 200	**1.0**	3,13	32,7	2,67	8949	944000
	1.2	4,28	44,2	3,25	12240	1285000
	1.5	5,67	59,2	4,08	16213	1673000

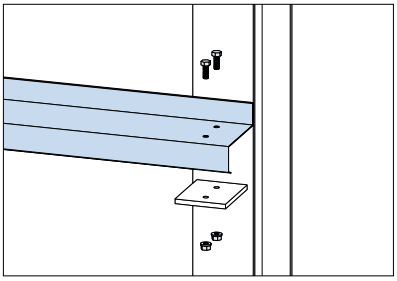
Upper and lower runner



Fasten a SKY runner at top and bottom of the wall construction.

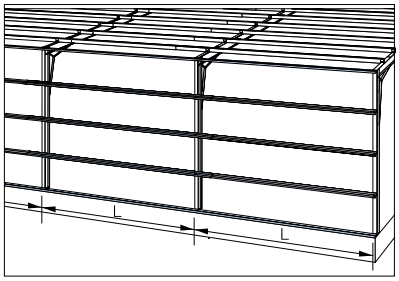


Use a SKY with polyethen sealing (SKYP) at the bottom.

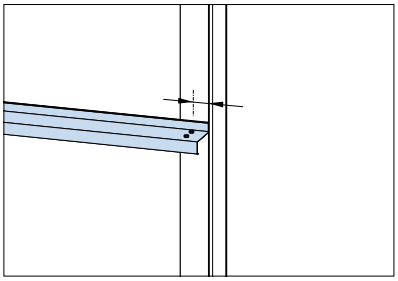


Fasten the Z-purlin with nut and bolt or selfdrilling screws in pillar.

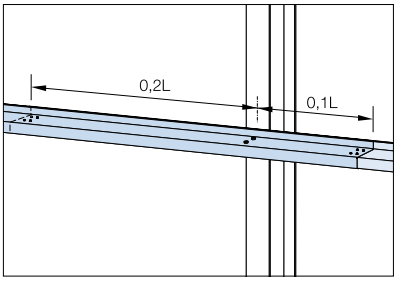
Slotted z-profile



Fasten the Z-purlins at the right centre distance.

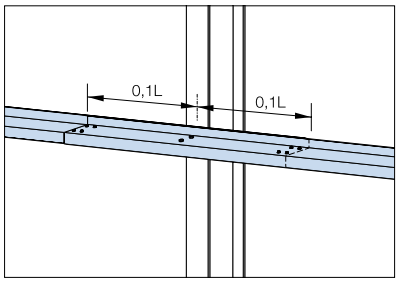


Make sure to have an overhang for the outer purlin.

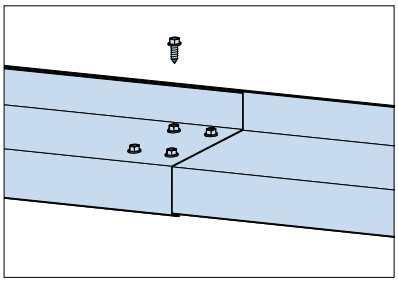


The outer purlin shall have an overlap with first inner bay of 0,2L.

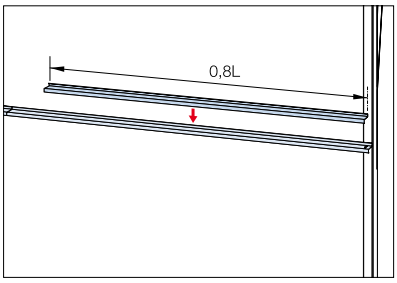
Assembly – Exterior Wall system solutions



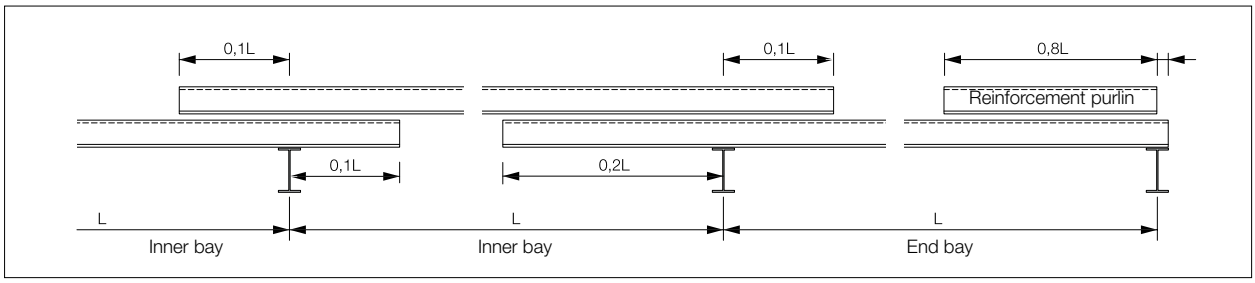
The overlap of the inner bays are 0,1L.



Fasten the overlap with self drilling screws according to drawing or instruction.

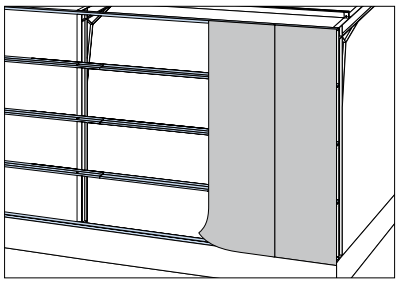


Sometimes an extra purlin is needed in the end bay. Overlap with 0,8L.

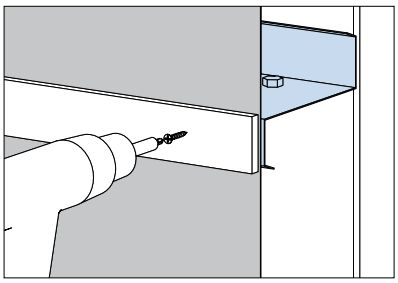


An overview of the overlap rules.

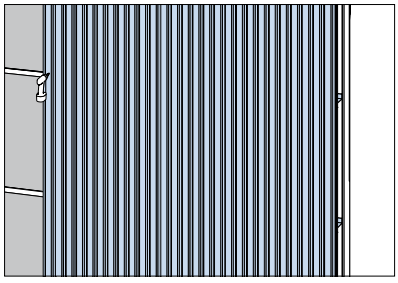
Outer wall cladding



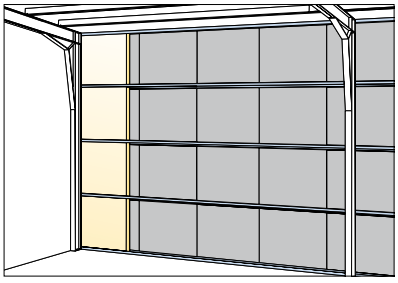
Fasten the wind breaker together with the coldbridge breaker along the purlins.



Coldbridge breaker fastened to the purlin with selfdrilling screw.

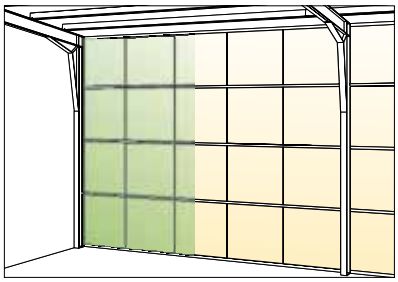


Apply exterior cladding.

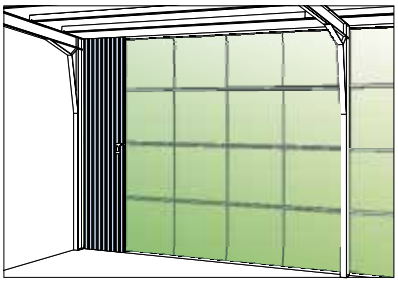


Go on with the insulation material on the inside of the wall.

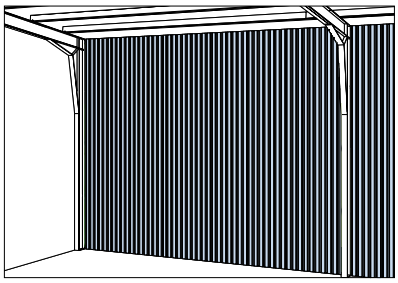
Assembly – Exterior Wall system solutions



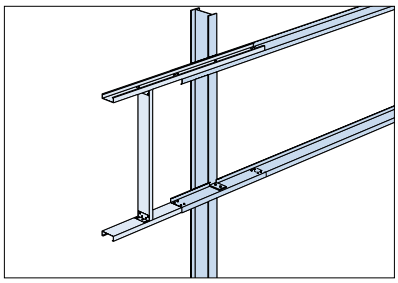
Fill out all bays with the insulation and apply vapour barrier.



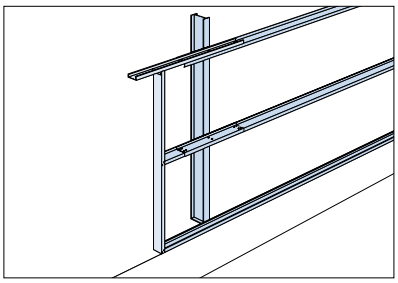
Fasten inside claddinng.



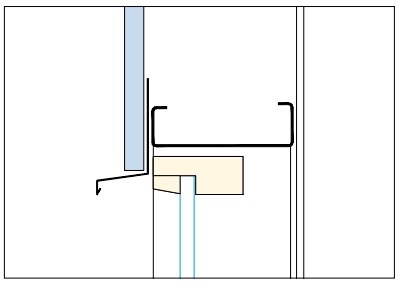
Door- and window openings



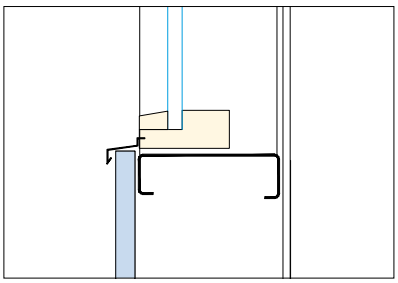
Assemble C-purlins around openings. Window opening in picture.



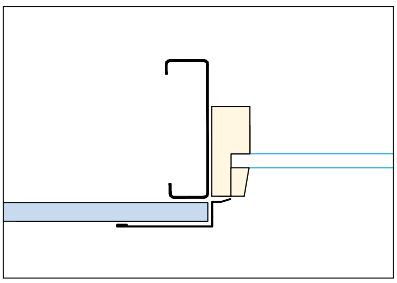
Do the same for door openings.



Plane drawing of the top part of openings.

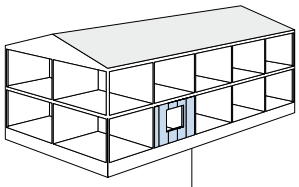


Plane drawing of the bottom part of window opening.

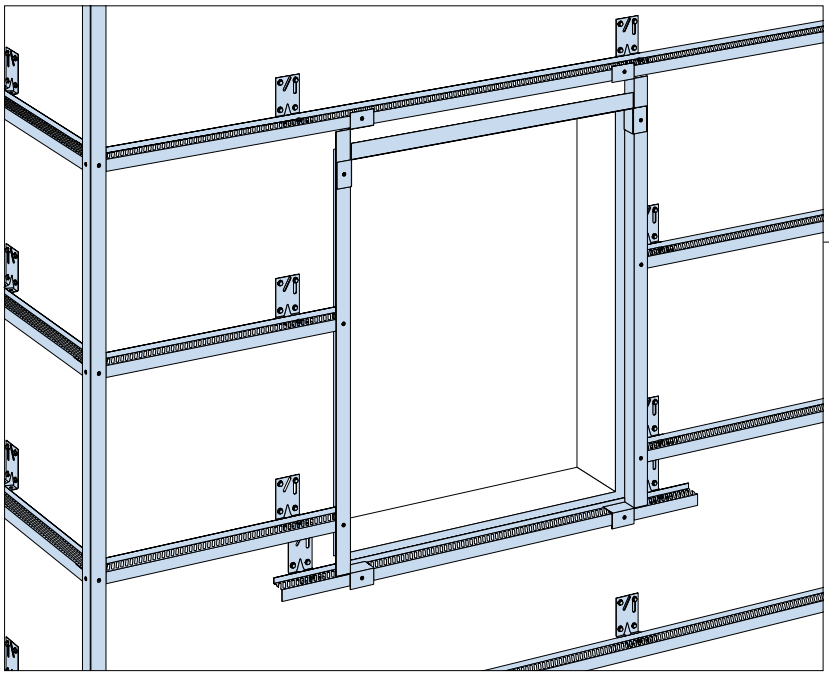


Side view of openings.

Assembly – Exterior Wall system solutions



Facade renovation



Many facades need to be renovated and need supplementary insulation at the same time. You get the best result if you put the insulation on the outside of the building. Renovation can then be done without disturbing the tenants.

Architectural harmonisation

It is very important that facade renovation harmonises aesthetically with the building and the surroundings of the building. The Lindab system allows the architect full freedom to choose material, colour, shape and detail solutions. Different facade materials can be used, such as exterior board materials, steel or aluminium cladding, cassette systems or wood panels. The application of battens, anchorages and the number of batten attachments must be suited to fit local conditions for each project.

Important details

Detail design and the quality of workmanship are of decisive importance in facade renovation. This must therefore be given great care. The corners, joints, skirting coverage, window and door openings are all important for the overall impression. Please contact Lindab for finished detail solutions for sheet metal facades.

System description

Horizontal spacer RFLEX battens fixed to the wall with support UK brackets. Diagonally located holes in both the battens and the brackets mean that the battens can be adjusted to compensate for irregularities in the wall. The range of adjustment is 30 mm but a further 25 mm can be obtained by turning the bracket upside down. Support UK bracket suits 100–150 mm supplementary insulation, depending on how it is aligned during assembly.

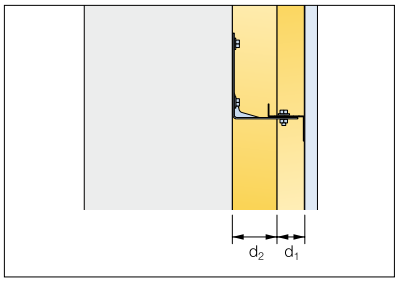
Assembly – Exterior Wall system solutions

Insulation value

The thermal resistance of supplementary insulation is calculated as follows:

$$m = \frac{1}{\lambda/d_1 + \Delta k_1/c} + \frac{1}{\lambda/d_2 + \Delta k_2/(ac)}$$

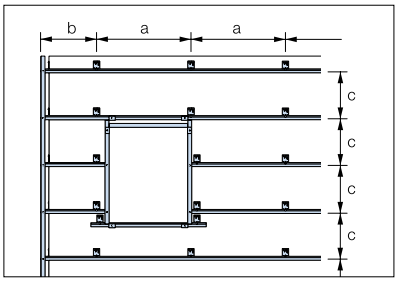
d_1, d_2 = insulation thickness (m)
Δk_1 = heat loss through spacer batten = 0.15 W/(m°C)
Δk_2 = heat loss through support brackets = 0.02 W/°C
a = distance between support brackets (m)
c = distance between spacer studs (m)
λ = thermal resistance of insulation W/(m°C)



Dimensioning

Maximum centre distance for RFLEX spacer battens and UK support brackets.

Facade cladding	a mm	b mm	c mm
9 mm external plasterboard, Steni board	1200	600	600
Cladding	1000	500	1200



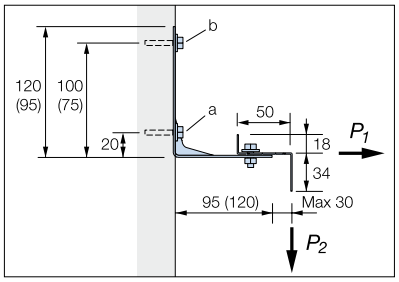
RFLEX spacer batten

Dimensioning values, safety class 2.

Load normal to wall	Load parallel to wall
M_{dx} = 456 Nm I = 41 000 mm^4	M_{dy} = 160 Nm I = 15 000 mm^4

Check that $M_x/M_{dx} + M_y/M_{dy} \leq 1$

UK support bracket



Dimensioning values, safety class 2.
P_1 = 2.9 kN/each
P_2 = 0.4 kN/each
Min. anchorage capacity

Fastener	Tension kN/pcs
a	1,5
b	1,5

Example

The wall is given 100 mm supplementary insulation and RFLEX spacer battens are placed at 1200 mm centres and UK support brackets at 1000 mm centres. Facade material Lindab LV 30/0.5 mm.

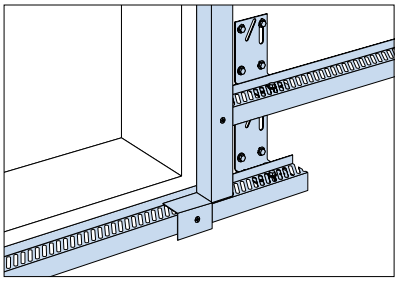
Heat transmission coefficient W/m2C°C)	
Before supplementary insulation	After supplementary insulation
0.60	0.25
0.70	0.27
0.80	0.28
0.90	0.29
1.00	0.30
1.20	0.32
Further information about estimating insulation thickness and energy savings costs can be found in the Stålbyggnadsinstitutet publ. nr 66.	

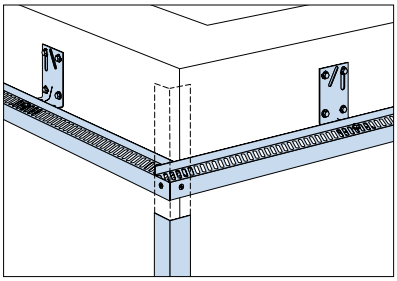
The choice of fastening method must be done individually, in consultation with the fastening supplier. Fastenings frequently need to be dimensioned after tensile testing.

RFLEX is fixed to the support brackets with one M6SF 6x16 8.8 fzb screw and M6MF LOC-KING 6BM10 fzb nut or equivalent.
The battens are joined by laying them with 100 mm overlap over a support bracket and screwing together with two screws.

Assembly – Exterior Wall system solutions

Corners, door and window openings
Angle profile KLP can be used around openings, inside
and outside corners.





The following types of SFS screws are recommended:

Facade batten to RFLEX	With outdoor plasterboard	B63, 4.8x25 mm
	Without plasterboard	D51, 4.8x19 mm
Facade batten to wood batten	With outdoor plasterboard	A31, 4.8x35 mm
	Without plasterboard	A61, 6.5x51 mm
Steni board to facade batten	Pre-drill	A30K, 4.2x25 mm

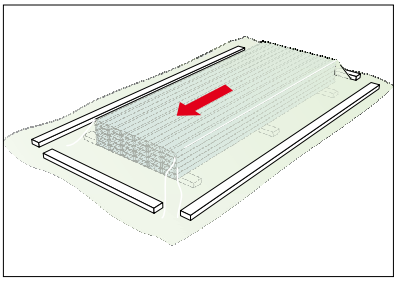
Partition Wall system solutions

Before you start
Lindab partition wall profiles can be used for all kinds of partition wall solutions. There are components for non-carrying walls, load carrying walls and other functional walls. The wall build up is always the same; a board material on each side of the studs (RdB) and runners (SK). There are special studs (KR) with higher load bearing capacity for wall openings and load bearing walls. The cavity can be filled with mineral wool to fulfil special acoustic and fire demands. Most common board material is gypsum boards in one or more layers.

The profiles
The Lindab partition wall profiles are excellent in acoustic performance. For special acoustic demands the stud RdBF can be used. The profiles can be delivered with polyethen sealing for tightness against roof, wall and floor. The profile are light and ergonomic to use.

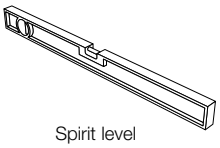
Fastening
A partition wall steel construction can be assembled with a fixing tool, self tapping screws or blind rivets. For profiles with thickness over 1 mm use self drilling screws.

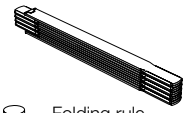
Storage
The pallet carrying the steel profiles should be stored slightly leaning for better water run off. Protect the profiles from dirt and dust.



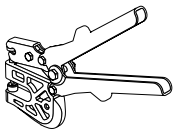
Cutting
The steel profiles can be cut with a profile shear or a pair of steel scissors. To simplify the assembly the studs should be ordered in pre- cut lengths.

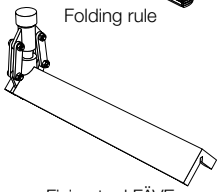
Tools


Spirit level

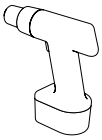

Folding rule

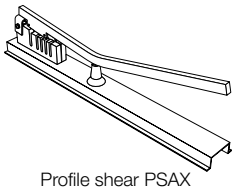

Pencil


Fixing tool FIXT


Fixing tool FÄVE


Steel scissors


Electric screw driver


Profile shear PSAX

Partition Wall system solutions

Components for partition wall structures

Studs

Lindab has a broad range of studs to fit for all demands, we have studs to fit on high walls, walls with high sound reduction and walls that are quick and easy to assemble.

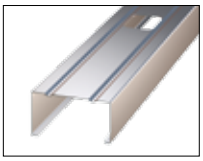
Our standard partition wall studs are designed to meet the demands for a 900 mm gypsum board system but will of course work as well for other board widths. The reason for a change from 1200 wide to 900 wide board materials was an ergonomic issue – it is much easier to reach over a 900 mm wide board and it is also less weight. The only problem was that sound performance was reduced. By introducing the RdB as a standard stud Lindab made it possible to put studs at centre 450 mm with equal or better sound performance than the previous standard studs. Lindab RdB is a protected trademark and RdB-slot-pattern and the method for producing it is protected by patents.

During 2008 the new RdBX will be introduced, the "X"-function simplifies the fastening method and reduces installation times by making the assembly faster, more ergonomic and more flexible.

Lindab can also offer steel studs for high performance walls, the RdBF, which is a RdB-stud with wider flanges.

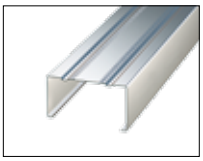
RE

RE is a basic stud for board materials.
The dimensions available are
45/50/67/70/75/95/100/120/145/160.



RdB

RdB is a sound reducing stud for partitions.
The stud is available in the following dimensions;
50/67/70/75/95/100/120/145/160.

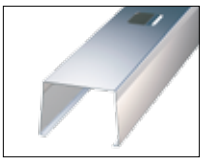


RdB7

Same as above but produced in 0,7 mm material.
Available in 70-145 mm dimensions.

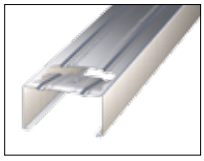
RdBF

This is the stud for high performance sound reduction walls, it is based on the RdB-patent but made with 48 mm wide flanges. The flanges are also spread to give the profile a spring-effect which increases the sound reduction.
Available in 70/95/120 mm dimension



RdBX

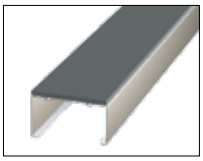
RdBX has the same performance as a RdB stud but with an improved fastening method that reduces installation times by making the assembly faster, more ergonomic and more flexible. The stud is available in the following dimensions: 70/75/95/100/120. See also campaign homepage www.lindab.com/rdbx



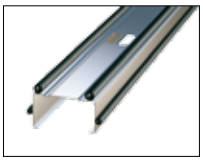
Partition Wall system solutions

Components for partition wall structures

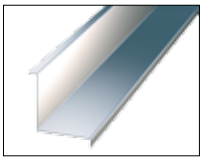
RP
RdB-stud with 4 mm polyethene for connections. Available in 70 and 95 mm dimensions



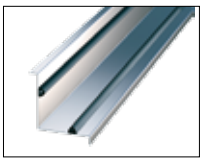
RT
RdB-stud with four rubber sealing strips for sound reducing connections, available in 70 and 95 mm dimensions.



HR
Corner stud and stud for joining at broken layers



HRT
Corner stud and stud for joining at broken layers with rubber sealing strips



Partition Wall system solutions

Components for partition wall structures

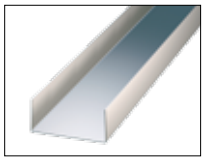
Runners

Lindab has a broad range of runners, various dimensions, heights and material thicknesses.

They can be supplied with polyethene or rubber sealing strips on demand.

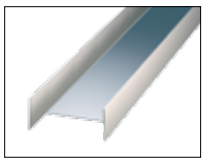
SK

Low flange runner for simpler constructions, available in 45/70/95 mm dimensions



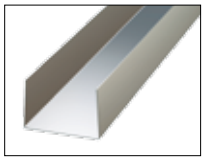
SKU

Top runner for door openings, made with a special cut out to ease up the assembly on studs. Order length equals to opening width.



SK43

Mid size flange runner for normal partition walls, available in 45/50/67/70/95/100 dimensions

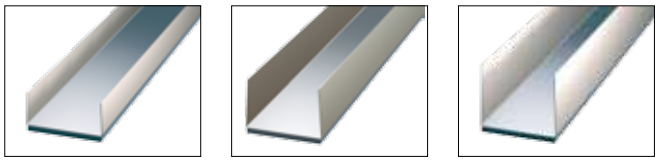


Partition Wall system solutions

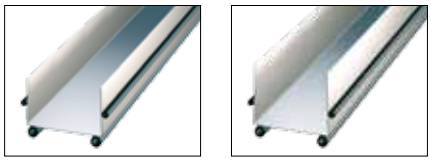
Components for partition wall structures

SK55
Universal runner with high flange, available in 45/70/95/120/145/160 mm dimensions

SKP, SKP43 and SKP55
Runners with different flange heights with 4 mm polyethene applied for low performance sound reducing walls with rating up to R'w 35 dB. Dimensions according to corresponding runner without polyethene SK, SK43 and SK55



SKT43 and SKT55
Runners with rubber sealing strips for sound reducing walls with rating over R'w 40 dB. Dimensions available according to corresponding runner without rubber sealings.

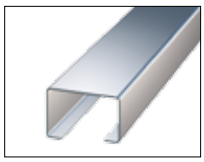


Partition Wall system solutions

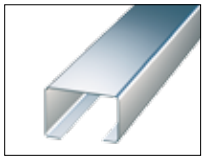
Components for partition wall structures

Reinforcement profiles
The reinforcement profiles are used for load carrying walls, high walls and as reinforcement for door and window openings.

FR
Reinforcement stud in 1,5 mm material. The stud is suited for high walls and load carrying partitions.
Available in 45/50/70/75/95/100/120/145/150/160/200 mm dimensions

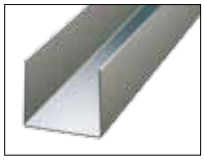


KR
Reinforcement stud in 1,0 mm material, ideal for door openings and load carrying walls.
Available in 45/70/75/95/100/120/150

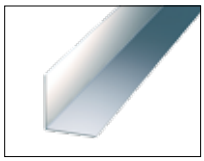


KSK
Reinforcement runner in 1,0 mm material for KR studs. Available in 45/70/75/95/100/120/150 mm dimensions

FSK60
Reinforcement runner in 1,5 mm material for FR studs. Available in 45/50/70/75/95/100/120/145/150/160/200 mm dimensions



KLP
L-profile for connecting partitions in 1,0 mm material

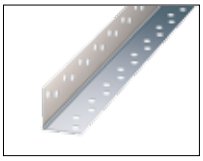


Partition Wall system solutions

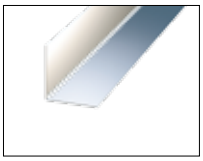
Components for partition wall structures

Plaster board profiles

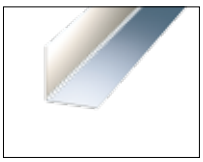
HS
Corner bead, profile for protecting outer corners on gypsum boards. Apply to the gypsum board with special tool FÄVE



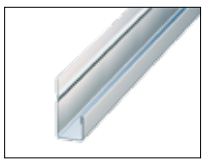
LP
L-profile for connecting partitions

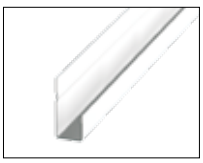


LPP
Perforated L-profile, various angles possible due to perforation. Supplied in 90 degree angle as standard

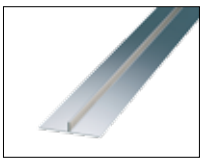


J, JL (coated)
Edge profile for gypsum boards, available in galvanized and coated material





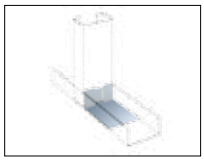
TSKA
Joining profile for gypsum boards



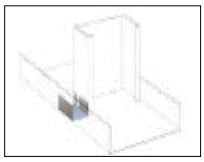
Partition Wall system solutions

Components for partition wall structures

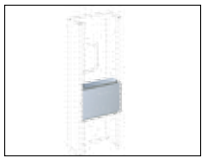
FRKL
Reinforced clip for reinforcement studs in normal runners.



VK
Clip for staggered frames



DK
Clip for electrical installations



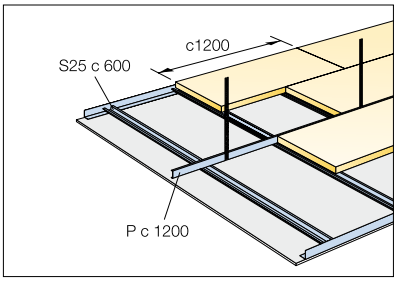
Partition Wall system solutions

Components for partition wall structures

Suspended ceilings

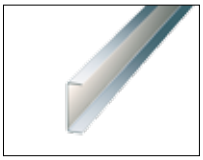
Suspended ceilings can be used to hide installations or just lower a ceiling to give the room better properties.

By supending the ceiling you will also improve the sound reduction from the floor above.



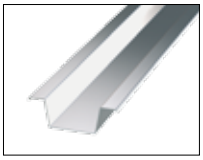
P

Suspended ceiling primary construction



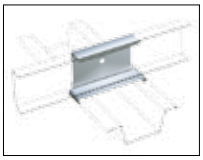
S 25

Hat profile for secondary constructions or as a roof batten. Available in 25/45 mm height and 0,5 / 0,7 thickness.



PSBE

Connection clip for P and S in suspended ceilings.



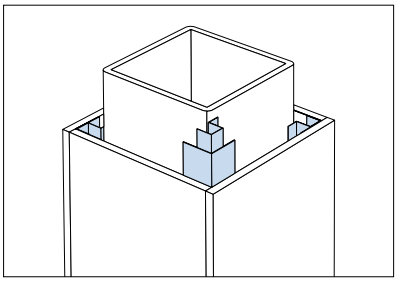
UBA

Suspension strap for suspended ceilings

Partition Wall system solutions

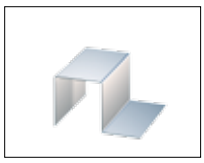
Components for partition wall structures

Fire protection for steel columns
These profiles gives support to fire board materials when you need to cover up beams and columns.



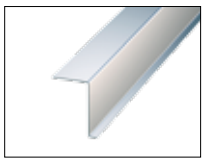
PDP
Spacer profile for fire insulation Replaces PD and PR

PD
Spacer clip for fire insulation



PR
Spacer stud for fire insulation

PA
Joining profile for fire insulation

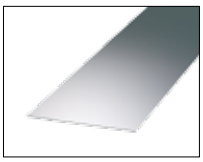


Partition Wall system solutions

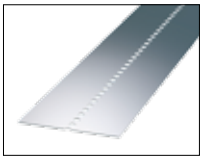
Components for partition wall structures

Flat sheet
Flat sheet can be used in many applications, like theft protection, reinforcement behind board materials or as universal solutions.

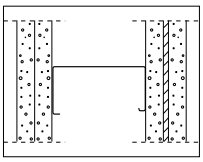
BA
Flat sheet on coil, available in 100/170 and 300 mm dimension



VBA
Flat sheet in coil, perforated, see also LPP. Available in 100 and 200 mm dimensions

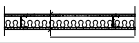
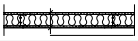
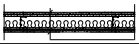
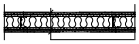
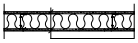
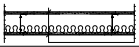
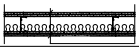
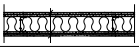
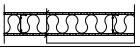
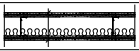
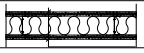
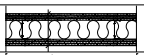
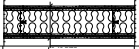
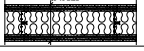


INPL
Flat sheet for theft protection, available in 1,0 and 2,0 mm material



Partition Wall system solutions

Overview, wall constructions
RdB Stud c/c 600

Wall performance, acoustic, fire height										
			35	40	44	48	52	55	56	60
1		RdB/RdBX E70/70 101 M45								
2		RdB/RdBX E70/70 101 M70								
3		RdB/RdBX E70/70 101 M0								
4		RdB/RdBX E70/70 202 M45								
5		RdB/RdBX E95/95 101 M0								
6		RdB/RdBX E70/70 202 M0								
7		RdB/RdBX E95/95 101 M45								
8		RdB/RdBX E70/70 202 M70								
9		RdB/RdBX E95/95 101 M95								
10		RdB/RdBX E95/95 202 M0								
11		RdB/RdBX E120/120 101 M45								
12		RdB/RdBX E95/95 202 M45								
13		RdB/RdBX E95/95 202 M95								
14		RdB/RdBX E120/120 101 M120								
15		RdB/RdBX ED100/50 202 M90								
16		RdB/RdBX E120/120 202 M45								
17		RdB/RdBX E120/120 202 M120								
18		RdB/RdBX ED140/70 202 M140								
19		RdB/RdBX E120/120 303 M120								
20		RdB/RdBX DD70/70 202 M140								
21		RdB/RdBX DD70/70 303 M140								

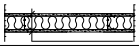
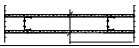
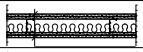
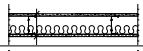
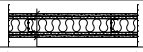
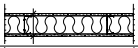
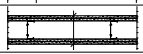
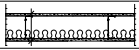
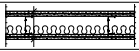
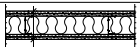
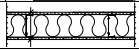
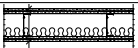
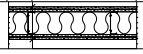
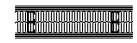
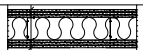
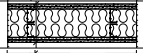
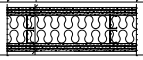
*	EI 60, Rockwool density >=30kg/m^3
**	EI 90, Rockwool density >=30kg/m^3
R´w	Expected sound reduction with normal made walls, connections according to Lindab, see connecting walls
R´w+$C_{50\text{-}3150}$	Same as above but also containing sound reduction in frequencies down to 50 Hz.
x0x	Gypsum boards on each side of the steel studs.
Mxxx	Mineral wool thickness

Partition Wall system solutions

Fire	**Max Wall height**	**Wall thickness**	**Runner**	**R´w dB**	**R´w+ C50-3150**
EI30	3600	95	SKT 70	40	36
EI30*	3600	95	SKT 70	40	36
EI30	3600	95	SKP 70	34	32
EI60	4000	120	SKT 70	48	44
EI30	5000	120	SKP 95	35	33
EI60	4000	120	SKT 70	43	40
EI30	5000	120	SKT 95	42	36
EI60**	4000	120	SKT 70	50	44
EI30*	5000	120	SKT 95	42	36
EI60	5500	145	SKT 95	44	41
EI30	5500	145	SKT 120	43	38
EI60	5500	145	SKT 95	48	44
EI60**	5500	145	SKT 95	50	45
EI30*	5500	145	SKT 120	43	38
EI60	2400	150	SKT 100	55	47
EI60	5700	170	SKT 120	51	46
EI60**	5700	170	SKT 120	53	44
EI60	3100	190	SKT 150	55	50
EI90	6000	195	SKT 120	56	48
EI60	3100	205	SKT 70	63	55
EI90	3200	230	SKT 70	65	60

Partition Wall system solutions

Overview, wall constructions
RdB Stud c/c 450

Wall performance, acoustic, fire height									
			35	40	44	48	52	55	56	60
1		RdB/RdBX E70/70 101 M45								
2		RdB/RdBX E70/70 101 M70								
3		RdB/RdBX E70/70 101 M0								
4		RdB/RdBX E70/70 202 M45								
5		RdB/RdBX E95/95 101 M0								
6		RdB/RdBX E70/70 202 M0								
7		RdB/RdBX E95/95 101 M45								
8		RdB/RdBX E70/70 202 M70								
9		RdB/RdBX E95/95 101 M95								
10		RdB/RdBX E95/95 202 M0								
11		RdB/RdBX E120/120 101 M45								
12		RdB/RdBX E95/95 202 M45								
13		RdB/RdBX E95/95 202 M95								
14		RdB/RdBX E120/120 101 M120								
15		RdB/RdBX ED100/50 202 M90								
16		RdB/RdBX E120/120 202 M45								
17		RdB/RdBX E120/120 202 M120								
18		RdB/RdBX ED140/70 202 M140								
19		RdB/RdBX E120/120 303 M120								
20		RdB/RdBX DD70/70 202 M140								
21		RdB/RdBX DD70/70 303 M140								

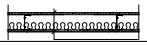
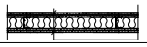
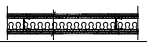
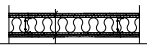
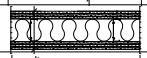
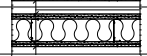
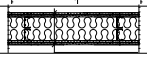
*	EI 60, Rockwool density >=30kg/m^3
**	EI 90, Rockwool density >=30kg/m^3
R´w	Expected sound reduction with normal made walls, connections according to Lindab, see connecting walls
R´w+$C_{50\text{-}3150}$	Same as above but also containing sound reduction in frequencies down to 50 Hz.
x0x	Gypsum boards on each side of the steel studs.
Mxxx	Mineral wool thickness

Partition Wall system solutions

Fire	**Max Wall height**	**Wall thickness**	**Runner**	**R´w dB**	**R´w+ C50-3150**
EI30	4400	95	SKP 70	37	32
EI30*	4400	95	SKP 70	37	32
EI30	4400	95	SKP 70	34	32
EI60	4600	120	SKT 70	45	41
EI30	5800	120	SKP 95	35	33
EI60	4600	120	SKT 70	42	39
EI30	5800	120	SKT 95	40	36
EI60**	4600	120	SKT 70	50	44
EI30*	5800	120	SKT 95	40	36
EI60	6300	145	SKT 95	44	41
EI30	6600	145	SKT 120	42	37
EI60	6300	145	SKT 95	48	44
EI60**	6300	145	SKT 95	50	44
EI30*	6600	145	SKT 120	42	37
EI60	2600	150	SKT 100	53	48
EI60	6500	170	SKT 120	49	44
EI60**	6500	170	SKT 120	52	44
EI60	3600	190	SKT 140	56	50
EI90	6800	195	SKT 120	55	48
EI60	3600	205	SKT 70	63	55
EI90	3700	230	SKT 70	65	58

Partition Wall system solutions

Overview, wall constructions
RdBF Stud c/c 600

Wall performance, acoustic, fire height									
			35	40	44	48	52	55	56	60
1		RdBF E95/95 101 M45								
2		RdBF E70/70 202 M70								
3		RdBF E70/70 202 M45								
4		RdBF E70/70 202 M0								
5		RdBF E95/95 202 M95								
6		RdBF E95/95 202 M0								
7		RdBF E95/95 303 M95								
8		RdBF E120/120 2L*02L M120								
9		RdBF E120/120 202 M70								
10		RdBF E120/120 202 M0								
11		RdBF DD70/70 202 M140								

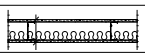
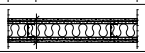
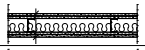
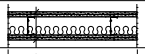
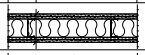
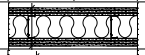
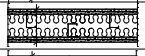
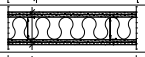
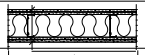
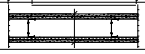
L*	Inner board is mounted horizontally
R´w	Expected sound reduction with normal made walls, connections according to Lindab, see connecting walls
R´w+$C_{50\text{-}3150}$	Same as above but also containing sound reduction in frequencies down to 50 Hz.
x0x	Gypsum boards on each side of the steel studs.
Mxxx	Mineral wool thickness

Partition Wall system solutions

Fire	**Max Wall height**	**Wall thickness mm**	**Runner**	**R´w dB**	**R´w+ C50-3150**
EI30	5800	120	SKT 55 95	40	35
EI60	4600	120	SKT 55 70	52	44
EI60	4600	120	SKT 55 70	48	44
EI60	4600	120	SKT 55 70	40	35
EI60	6300	145	SKT 55 95	52	44
EI60	6300	145	SKT 55 95	44	40
EI90	6300	170	SKT 55 95	52	48
EI60	6500	170	SKT 55 120	55	48
EI60	6500	170	SKT 55 120	48	44
EI60	6500	170	SKT 55 120	44	40
EI60	3600	205	SKT 55 70	60	56

Partition Wall system solutions

Overview, wall constructions
RdBF Stud c/c 450

Wall performance, acoustic, fire height									
			35	40	44	48	52	55	56	60
1		RdBF E95/95 101 M45								
2		RdBF E70/70 202 M70								
3		RdBF E70/70 202 M45								
4		RdBF E70/70 202 M0								
5		RdBF E95/95 202 M45								
6		RdBF E95/95 202 M95								
7		RdBF E95/95 202 M0								
8		RdBF E95/95 303 M95								
9		RdBF ED120/70 202 M90								
10		RdBF E120/120 202 M120								
11		RdBF E120/120 202 M70								
12		RdBF E120/120 202 M0								

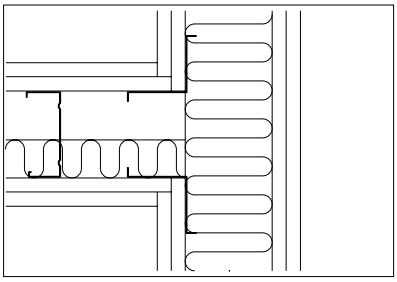
R´w	Expected sound reduction with normal made walls, connections according to Lindab, see connecting walls
R´w+$C_{50\text{-}3150}$	Same as above but also containing sound reduction in frequencies down to 50 Hz.
x0x	Gypsum boards on each side of the steel studs.
Mxxx	Mineral wool thickness

Partition Wall system solutions

Fire	**Max Wall height**	**Wall thickness**	**Runner**	**R´w dB**	**R´w+ C50-3150**
EI30	5800	120	SKT 95	40	35
EI60	4600	120	SKT 70	48	44
EI60	4600	120	SKT 70	48	44
EI60	4600	120	SKT 70	40	40
EI60	6300	145	SKT 95	48	44
EI60	6300	145	SKT 95	52	44
EI60	6300	145	SKT 95	44	40
EI90	6500	170	SKT 95	52	48
EI60	3600	170	SKT 120	55	48
EI60	6500	170	SKT 120	52	44
EI60	6500	170	SKT 120	48	44
EI60	6500	170	SKT 120	44	40

Partition Wall system solutions

Connecting walls



Requirements for connecting walls to achieve sound reduction on the wall types above:

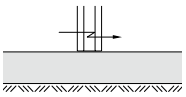
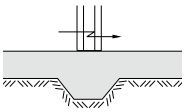
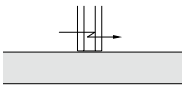
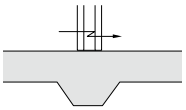
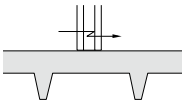
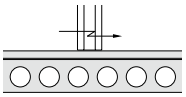
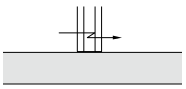
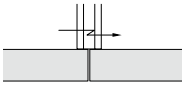
R´w	Gypsum boards connecting wall	Interrupted	Sealed	Mineral wool
40 dB	1x13 mm	No	No	No
44 dB	1x13 mm	Yes	No	No
44 dB	1x13 mm	No	No	Filled
44 dB	2x13 mm	No	No	No
48 dB	1x13 mm	Yes	Yes	No
48 dB	1x13 mm	Yes	No	30 mm
48 dB	2x13 mm	Yes	No	No
52 dB	2x13 mm	Yes	No	30 mm
55 dB	1x13 mm	Yes	Yes	Filled
55 dB	2x13 mm	Yes	Yes	No
55 dB	2x13 mm	Yes	No	Filled
60 dB	2x13 mm	Yes	Yes	Filled

To achieve the designated values on the wall it is very important to make an air tight construction and to use the correct gypsum boards as given above.

- Other board materials can affect the wall performance negative.
- Air leakage causes peaks in the sound transmission and affects the wall performance in a negative way.
- Light insulation or not filled cavities will only have marginal effect on the wall performance – for fire rating though, it is extremely important to use the right insulation and correct density (and in some cases rock wool instead of mineral wool).
- For high performance walls it is recommended to have interrupted layers in the connecting walls.
- Light walls in combination with heavier (ie concrete walls) can affect the sound transmission negative for the light walls, especially in small rooms with equal size like hotels.
- It is important that the walls connect to roofs that minimum can achieve the performance of the wall to prevent over hearing. Light secondary roof constructions are generally not good enough for higher ratings.

Partition Wall system solutions

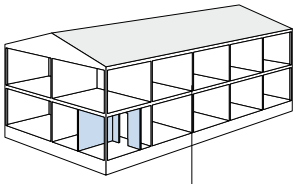
Connection to joists

Constructions	**Concrete thick-ness**	**R´w**	
Slab on gravel	90 mm 120 mm 150 mm	48 dB 52 dB 55 dB	
Tapered slab on gravel	90 mm	55 dB	
Freespan slab Slab on insulation Slab on piles	90 mm 120 mm 160 mm 200 mm	44 dB 48 dB 52 dB 55 dB	
Freespan tapered slab Slab on insulation Slab on piles	100 mm 130 mm 160 mm	48 dB 52 dB 55 dB	
Panel slab Prefab slabs	70 mm 70 mm	44 dB [1] 48 dB [2]	
	100 mm 100 mm 140 mm	48 dB [1] 52 dB [2] 55 dB	
Slabs with spare space	185+15 mm 185+15 mm	48 dB [1] 52 dB [2]	
	265+15 mm 265+70 mm	52 dB 55 dB	
Light concrete	200 mm 250 mm	44 dB 48 dB	
Slab with joint	-	>65 dB	

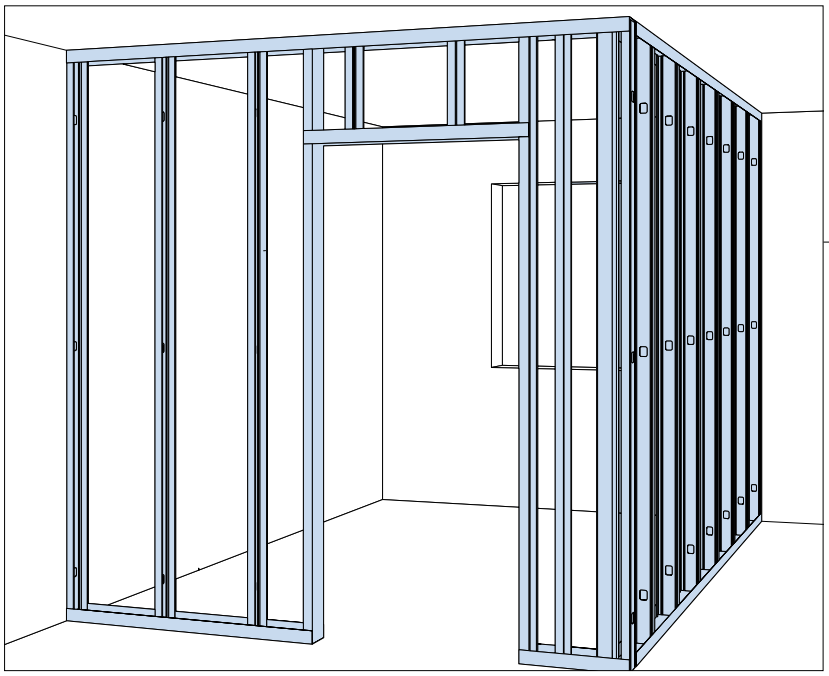
[1] With partition wall at normal angles to legs/holes

[2] With partition wall parallell to legs/holes

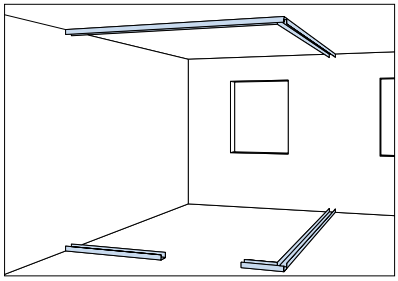
Assembly – Partition Wall system solutions



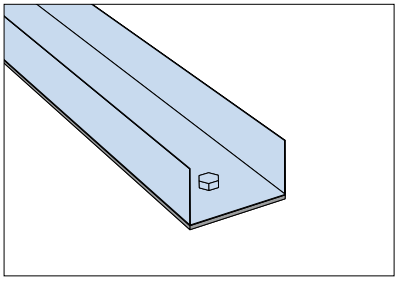
Partition wall



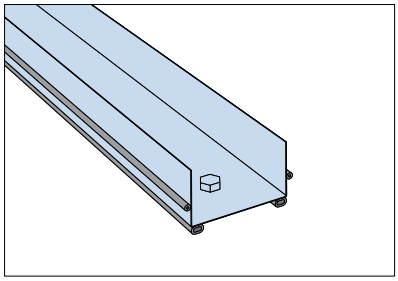
Runners



Mark out the walls and openings, assemble the bottom and top runners.



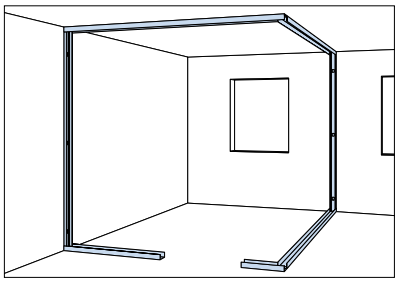
Select runners depending on sound reducing requirements, SKP for lower demands and SKT55 for demands above R'w 40 dB.



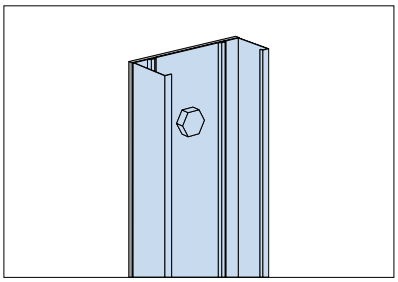
Use gun nails or expander bolts to secure the runner to the floor.

Assembly – Partition Wall system solutions

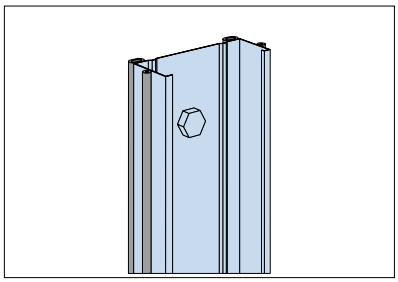
KR, FR, RE, RdB, RdBF Studs



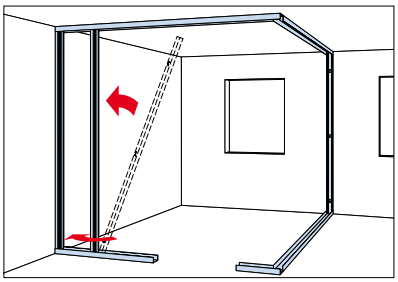
Assemble studs/runners to connecting walls.



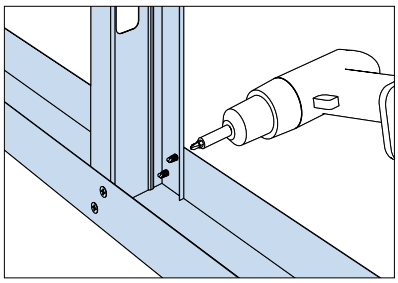
Depending on sound requirements, use a profile with polyethene (SKP or RP) or rubber sealings (SKT55 or RT).



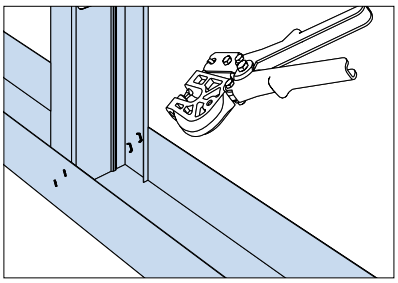
Use fasteners to fit the connecting walls, gun nails or expander bolts for heavy materials or gypsum expanders for light partitions.



Assemble the studs at the centre distance to fit with the board material – normally between 300-625 mm.

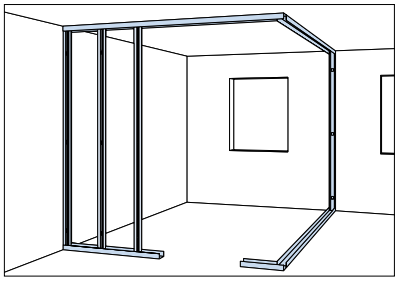


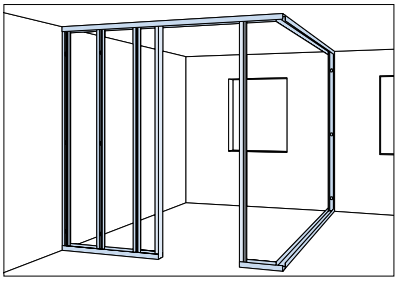
Fasten the studs with B 08 screws when KR, FR and RE studs are used.



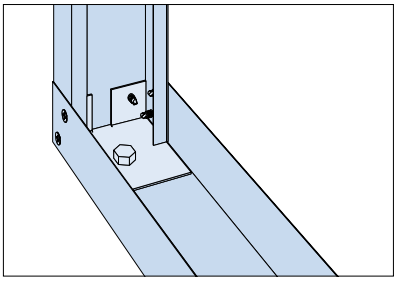
The hand fixing tool FIXT can be used for RdB and RdBF studs.

Openings



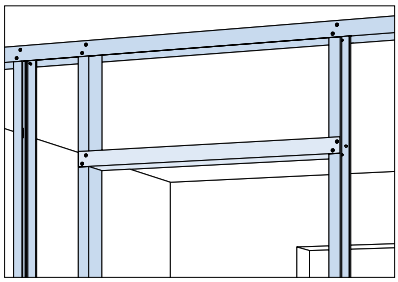


Use reinforced studs ,KR or FR, for openings.

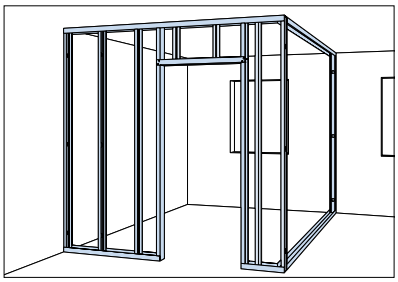


Use FRKL support reinforcement to attach the opening studs to the floor.

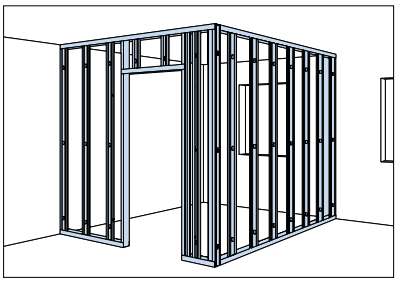
Assembly – Partition Wall system solutions



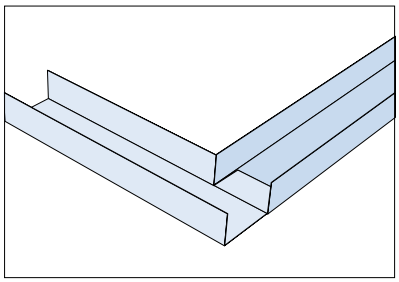
Assemble the top runner, SKU, over the opening.



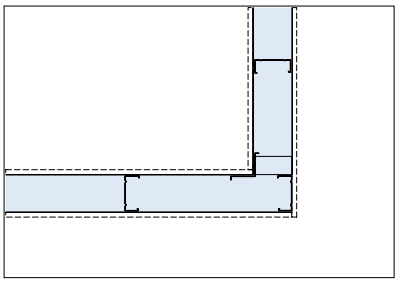
Continue the assembly and complete the wall.



L-connection



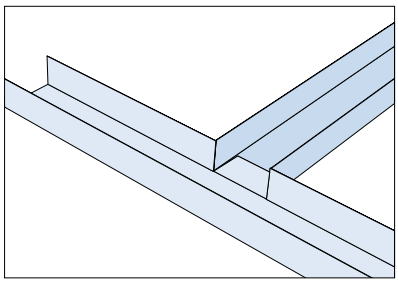
Place the runners next to each other



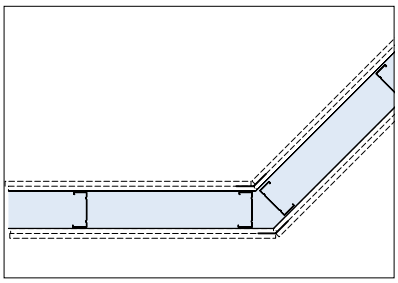
Make sure to assemble studs to support the gypsum board on both sides of the wall. Use HR/HRT to assure a support on the inner corner!

All connections shown on picture are valid for connections between light partitions and light exterior walls.

T-connection standard



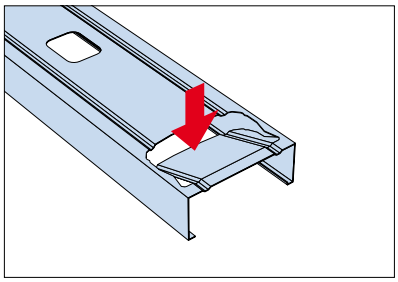
T-connection, broken board layer
For T-connections with broken layers HR/HRT should be used.



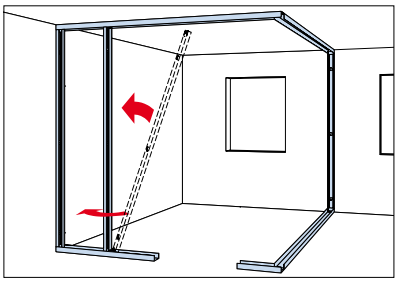
Non-angular connections
For non-angular corners use LPP and fit to the application.

Assembly – Partition Wall system solutions

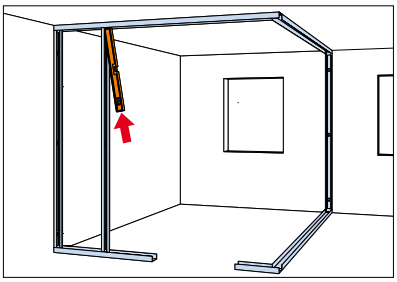
RdBX Studs



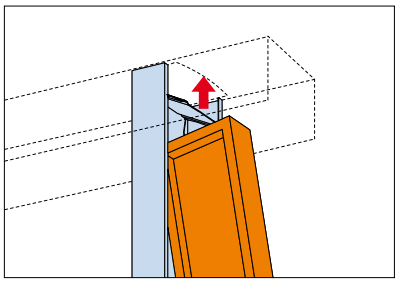
To fasten the stud into the runner the RdBX stud has a flap construction that locks into the runner.

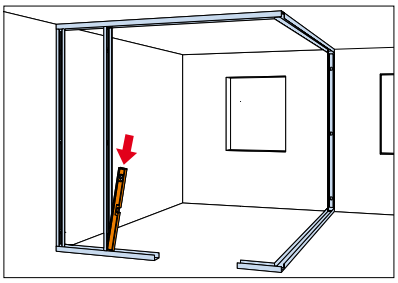


Place the stud in the runner.

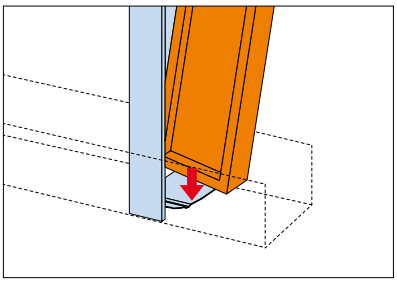


Press down the flap at the top with a spirit level for example.

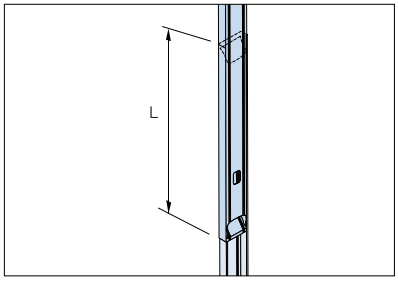




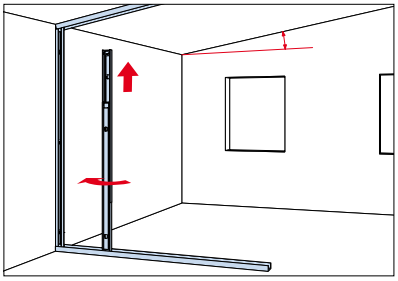
Make the same at the bottom of the stud.



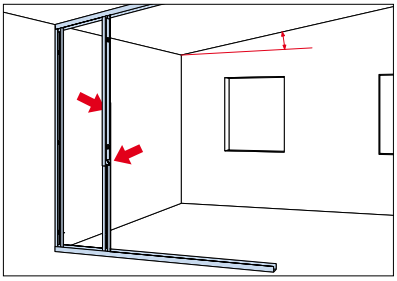
RdBX studs for sloping ceilings



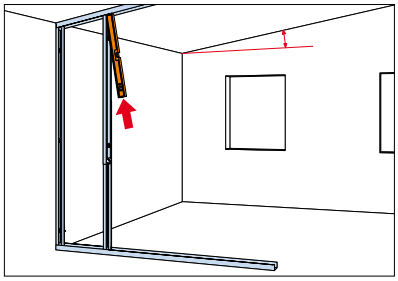
Slide two RdBX studs together and adjust to the length needed. L > 60 cm.
For heights <3m and with 70 mm stud L>30 cm



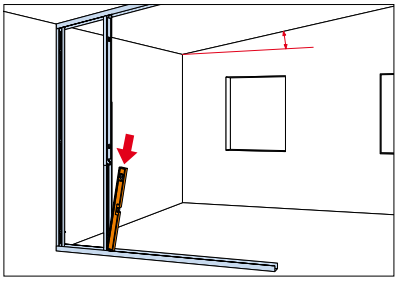
Place the adjustable stud into the runner and push to right length.



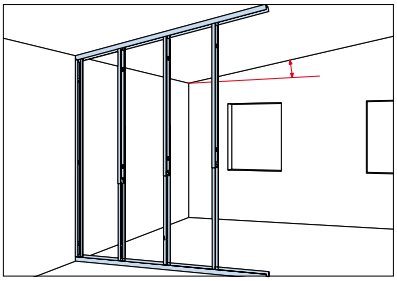
Lock the flaps at the stud connection.



Press down the flap at the top.



And at the bottom.



Continue the same way with the other studs and adjust to the right length.

Lindab Profile is a business area within the Lindab Group that develops, manufactures, and markets efficient, economical and aesthetic steel and sheet-metal solutions for the building industry.

We offer everything from complete building systems to individual building components for all types of housing, as well as commercial and industrial buildings.

Lindab Profile is represented in over 25 countries throughout Europe. Our head office is in Förslöv, in the south of Sweden.

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