

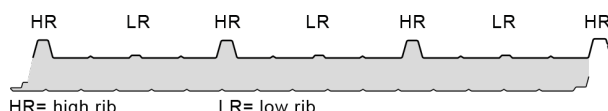
Roof sandwich panel

Type G4 – ST/ST

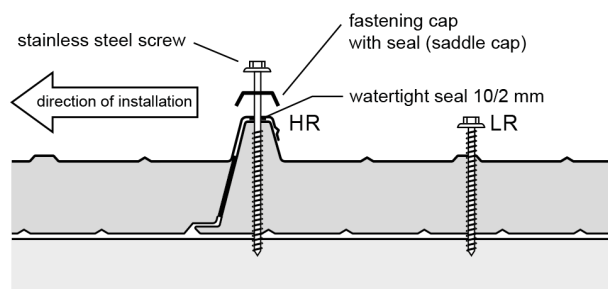
Fixing/Fasteners

Fixture

The number of fixing screws is determined by the statics, the approval Z-14.4-407 for fasteners of IFBS and the guidelines of DIN 1055 (wind suction load). According to approval Z-10.4-169 fixing may be applied through both high and low rib of the panel, though we recommend fixing through the high rib only using a saddle cap. Fixing should be performed as evenly as possible.



In rare cases, wind suction forces may be so strong in corner or edge areas that additional fixing in the low rib needs to be applied.



A static engineer must determine how many screws are needed for the surface, the corners and edge areas. Roof panels need to be fixed with at least 3 screws/rm onto end supports.

Fasteners

Only approved stainless steel screws (material 1.4301) with washer and EPDM seal are to be used for fastening. Here, you can choose between thread-forming and self-drilling screws.

The following table shows the measurements of thread-forming screws for different panel thicknesses.

Insulation thickness (mm)	Steel support Ø 6,3 mm		Wooden support* Ø 6,5 mm	
	HR (mm)	LR (mm)	HR (mm)	LR (mm)
30	≥ 90	≥ 55	≥ 130	≥ 95
40	≥ 100	≥ 65	≥ 140	≥ 105
50	≥ 110	≥ 75	≥ 150	≥ 115
60	≥ 120	≥ 85	≥ 160	≥ 125
70	≥ 130	≥ 95	≥ 170	≥ 135
80	≥ 140	≥ 105	≥ 180	≥ 145
100	≥ 160	≥ 125	≥ 200	≥ 165

The necessary lengths of screws differ between suppliers. When using thread-forming screws, please have a look at the prescribed drill diameter of the screw supplier which depends on the thickness of the steel subconstruction.

*) According to DIN 1052, when having a wooden subconstruction, pilot drilling is mandatory.

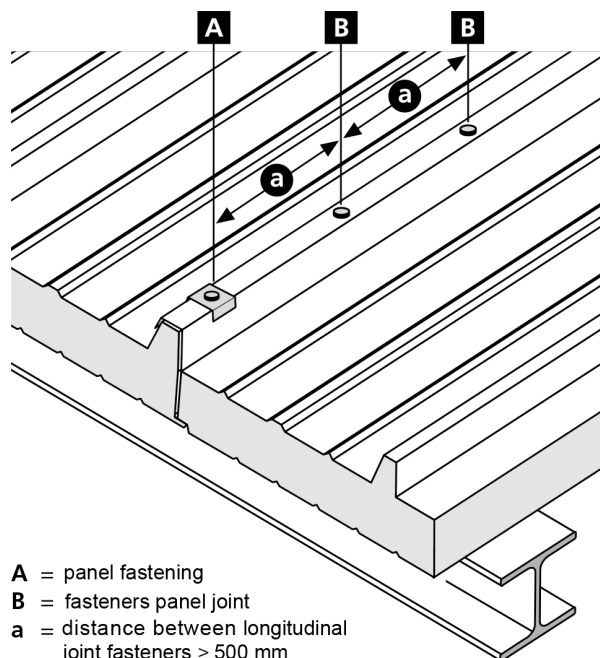
Drill diameter = 0,7 x screw diameter.

The thickness of the steel subconstruction must at least be $t \geq 1,5\text{mm}$ while the hole depth in coniferous wood must be at least 50 mm. For further information and minimal steel thicknesses for certain screw types, have a look at the approval for screws Z-14.4-407 of IFBS and at the details given by the screw supplier.

Fastening of the longitudinal joint

The overlapping longitudinal joint is to be fixed with stainless steel screws with EPDM-washers every $\geq 500\text{mm}$.

e.g.
EJOT Super-Saphire JT3 2H – 5,5 / 25 – E16
SFS Spedec SXL 2 – S14 – 5,5 / 22

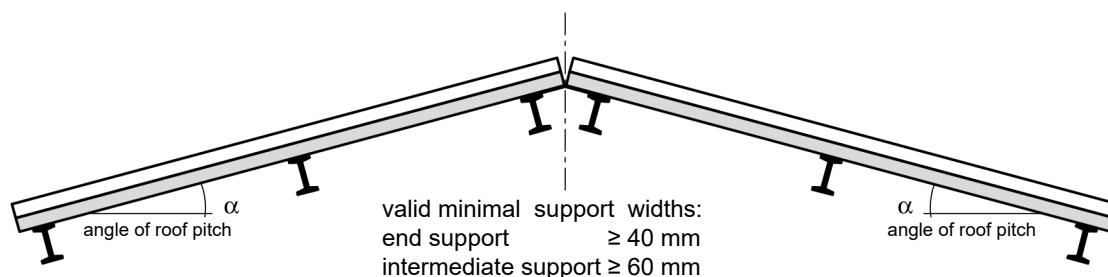


Roof sandwich panel

Type G4

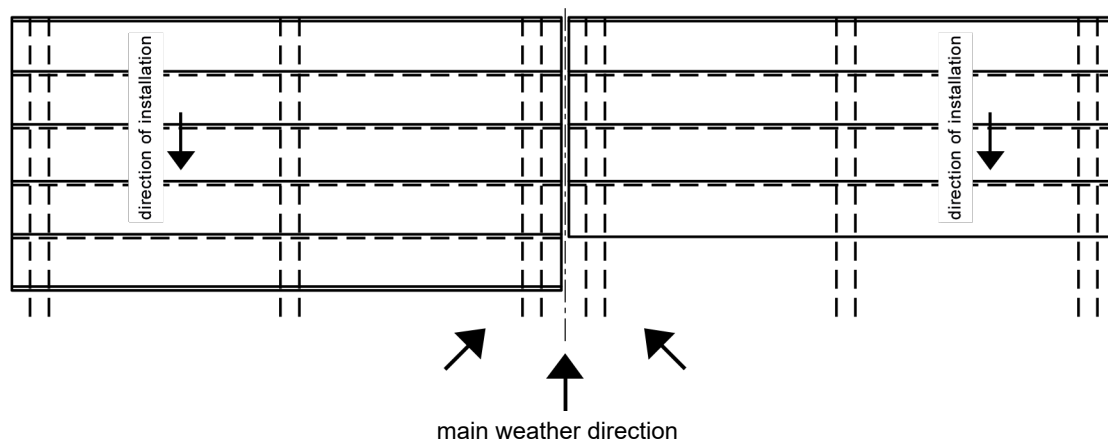
Overview/ start of installation

Cut

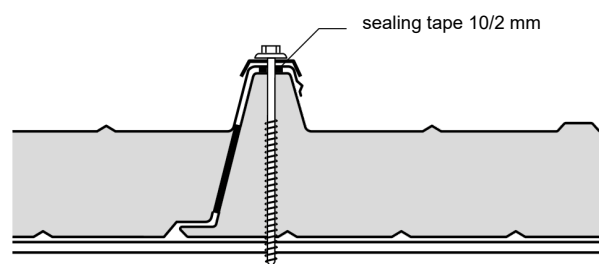
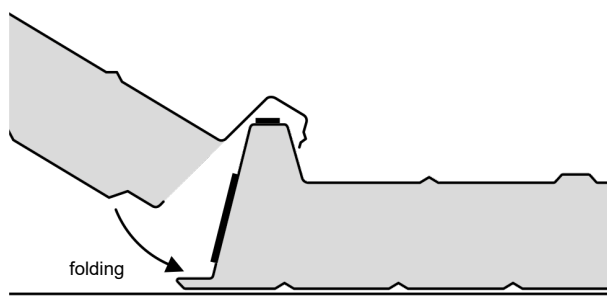


Top view

Start of installation: adjust first row of the panels and fix immediately!



Details longitudinal joint



The follow-up panel is to be positioned alongside at the high rib of the panel installed preliminarily and then let down onto the construction. This way, you make sure that the joint is sealed and no visible offset appears on the internal side.

Because of fluctuations in temperature while installation, the roof panels are to be fixed with screws immediately at the longitudinal joint of every support.

The roof panels are only to be accessed on foot while installation if they are adequately secured against shifting and slipping.

Longitudinal joint

Sealing strips/compression tapes (e.g. 10/2mm) are to be applied for sealing the longitudinal joint. If desired these may be inserted at the factory (incurred expenses shall be charged to the customer).

Roof pitch

Recommended roof pitch $\geq 5^\circ$, minimum 3°

For roofs with roof lights/ interior rainwater drain, we recommend a roof pitch of $\geq 7^\circ$

Cut on site, cuttings

Holes for roof lights, roof ducts etc. are made on site. Still, a subconstruction on all sides along the opening is mandatory. Panels and installation parts are fastened onto this supporting subconstruction.

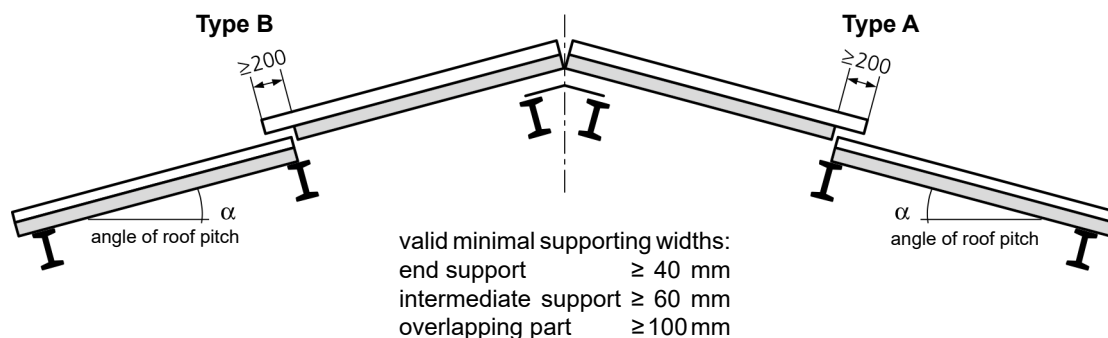
Cutting of Panels is only allowed with jigsaw and portable circular saw. Do NOT use a disc grinder (flex)!

Roof sandwich panel

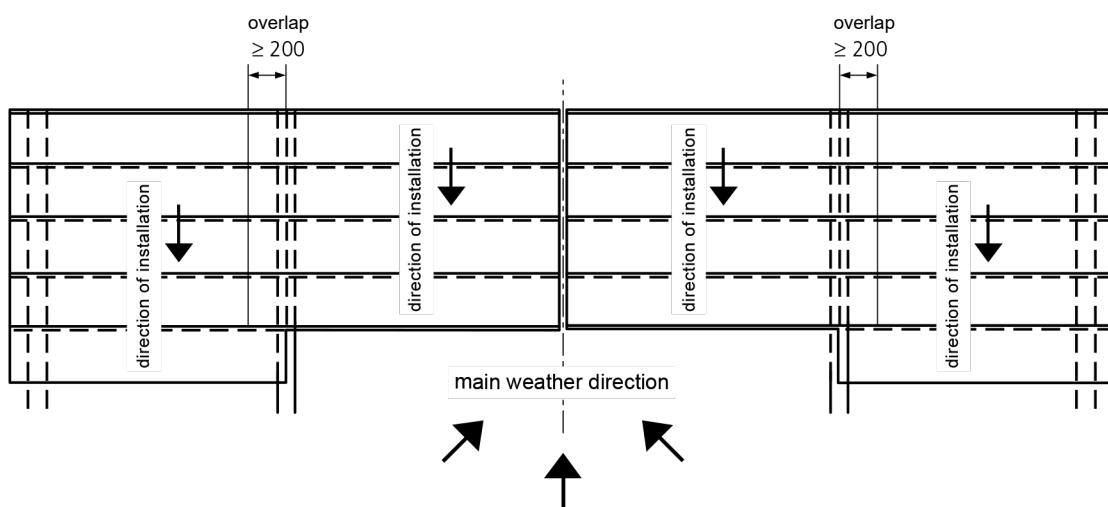
Type G4

Overlapping / endlapping

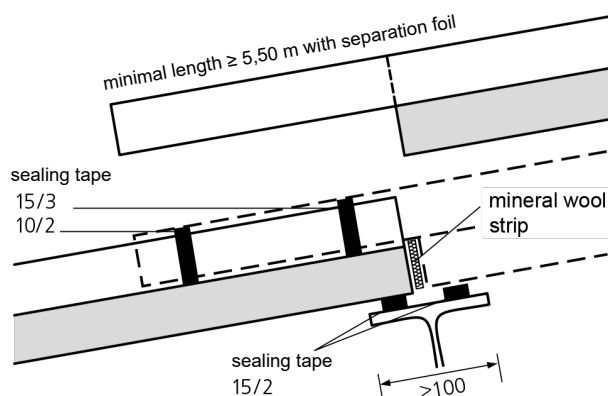
Cut



Plan



With roof lengths longer than the max. shipping lengths or heavier than the max installation weight, panels are to be adjusted successively. They are connected with an overlapping joint.

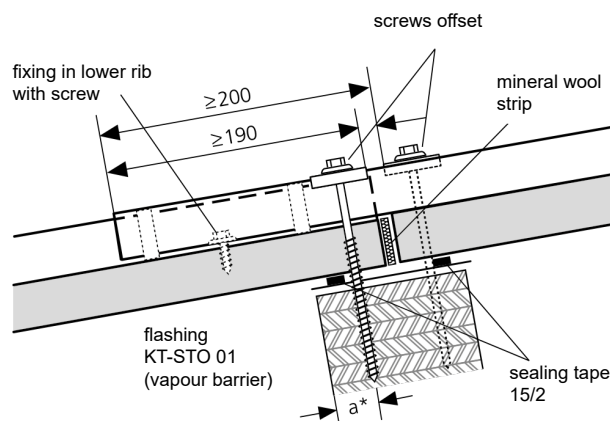


Overlapping with roof pitch $\geq 5^\circ$

Overlapping length ≥ 200 mm

Always use two watertight sealing tapes following the sketch above.

The panels may be equipped with separation foil and a cut at the underside ex-factory to facilitate the removal of the insulation at the construction site.



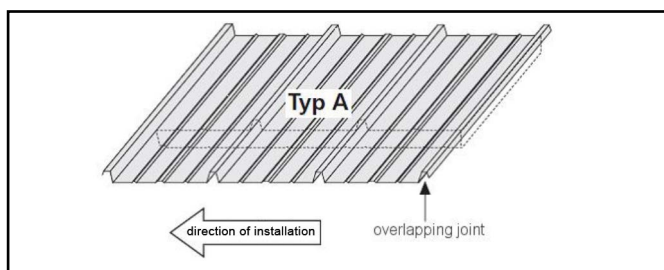
* distance to edge when using wooden purlins $a \geq 5 \times$ screw diameter (compare DIN 1052, part 1)

If roof panels are installed on wooden purlins or beams, we recommend checking the screws 2-3 months afterwards and adjust if necessary.

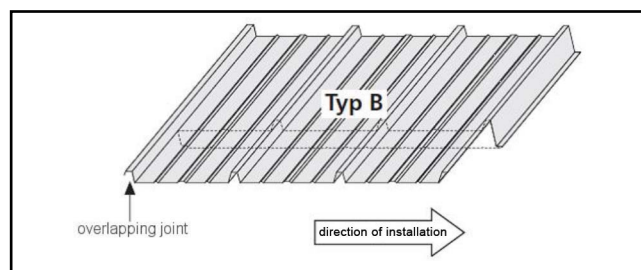
Use stainless steel screws with non-threaded areas under their screw head and EPDM-washer like

e.g. EJOT Super-Saphir JT3 2H – 5,5 / 25 – E16
SFS Spedec SXL 2 – S14 – 5,5 / 22

Please remember to inform us about direction of installation Type A or Type B before production:



Type A: from right to left (as seen from roof eaves)




Type B: from left to right (as seen from roof eaves)

Overlapping/endlapping can be prepared as follows:

Type S – separating cut without separation foil		x =
<p>Cut of the internal sheet up to the bottom edge of the external sheet.</p> <p>Possible for panels with length from 2.400 to 25.000 mm. Please note additional limitations on page 2.</p>		50 only PU 100 150 200 250 300
Type F – separating cut with separation foil		x =
<p>Cut of the internal sheet up to the bottom edge of the external sheet. Additionally a separation film is inserted between the external sheet and the core material.</p> <p>Possible for panels with length from 5.500 to 22.000 mm. Please note additional limitations on page 2.</p>		50 only PU 100 150 200 250 300
Type E – separating cut & removal of core material / Type FE – separating cut & removal of core material (separation foil)		x =
<p>Cut of the internal sheet up to the bottom edge of the external sheet. Additionally the core material will be removed.</p> <p>Possible for panels with length from 2.400 to 25.000 mm. Please note additional limitations on page 2.</p>		50 only PU 100 150 200 250 300
Type T – separating cut (thermal break)		x =
<p>Cut of the internal sheet only. Depth of the cut is ~ 20 mm.</p> <p>Possible for panels with length from 2.400 to 25.000 mm. Please note additional limitations on page 2.</p>		50 only PU 100 150 200 250 300

Necessary order information:

1. Panel thickness, panel length and width of the separating cut x
2. Mounting direction Type A or Type B
3. Factory-made cut Type S, Type F, Type E / FE or Type T

KGF	TGF	KFL	BL	SL	SE	VID	VAD	QM	AS	AWT	ASS	QS	EK	WE	PP	VS	IH	BUHA	EDV	MT
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		created by	Merz			changed by	Hoffmann			approved	Schulz			valid from	06.02.2017			Page 1 of 2		
		date	29.09.2011			date	03.02.2017			date	06.02.2017			valid until	disclaimer					

Please note the following additional limitations:

Element	Stacking	Length	Typ S separating cut without separation foil	Typ F separating cut with separation foil	Typ E / FE separating cut and removal of core material cleaned
G4 30 to 120	a-sided	> 2.400 mm	✓	✗	✓
		> 5.500 mm	✓	✓	✓
		> 10.000 mm	✓	✓	✓
		> 22.000 mm	✓	✗	✓
	alternating	> 2.400 mm	✓	✗	✓
		> 5.500 mm	✓	✓	✓
		> 10.000 mm	✓	✓	✓
		> 22.000 mm	✓	✗	✓
G4 150	a-sided	> 2.400 mm	✓	✗	✓
		> 5.500 mm	✓	✓	✓
		> 10.000 mm	✓	✓	✓
		> 22.000 mm	✓	✗	✓
HTD 50 to 120	a-sided	> 2.400 mm	✓	✗	✓
		> 5.500 mm	✓	✓	✓
		> 10.000 mm	✓	✓	✓
		> 22.000 mm	✓	✗	✓
	alternating	> 2.400 mm	✓	✗	✓
		> 5.500 mm	✓	✓	✓
		> 10.000 mm	✓	✓	✓
		> 22.000 mm	✓	✗	✓
HTD 150 to 200	a-sided	> 2.400 mm	✓	✗	✓
		> 5.500 mm	✓	✓	✓
		> 10.000 mm	✓	✓	✓
		> 22.000 mm	✓	✗	✓