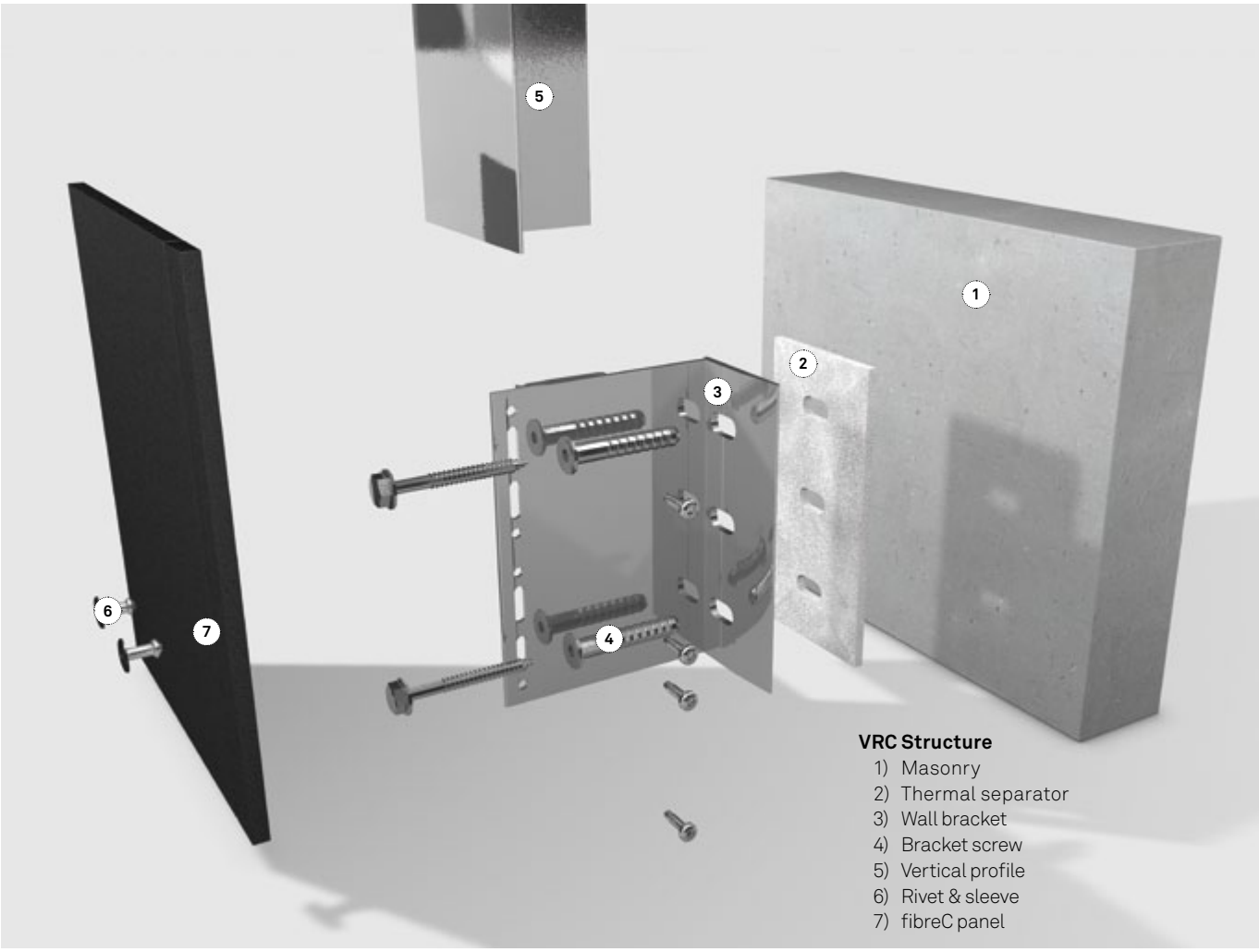
Visible Fastening with Rivets

The panels can be fastened with rivets on a metal substructure. The substructure will consist preferably of vertical profiles, fitted using wall bracket holders to the wall. The substructure must be adjustable to balance out any building tolerances and facilitate smooth fitting.

Details
Fastening with rivets

Download



VRC Structure

1) Masonry
2) Thermal separator
3) Wall bracket
4) Bracket screw
5) Vertical profile
6) Rivet & sleeve
7) fibreC panel

Planning Details

Substructure
Exclusively metal substructure.

Fastening
With rivets on vertical aluminium support profiles. Recommended rivets with special colours matching fibreC surfaces are available from different fastener manufacturers. Indicate the standard fibreC colour used and the manufacturer will give you a matching recommendation for the rivet colour.

Preparation
Holes in the substructure must be drilled using a centre sleeve to ensure the bore hole is centrically aligned. The bore diameter for the substructure is 5.1 mm. Two sleeves must be used per panel and they must usually be arranged in the centre point of the panel. There might be country-specific variations depending on the respective approval. The sleeves fix the panels; they are described as a fixed point. The rivets must be tightened using a rivet template matching the rivets. The rivet template has a load-distributing effect and creates a small clearance between rivet head and cladding board, with the result that movements in the cladding board can be absorbed.

Joint
Joint width at least 8 mm.

Cladding rivet aluminium/Niro with head varnish:
Panel thickness 13 mm
Dimension: 5 x 23 mm
Head diameter: 14 mm
Clamping range: 14.00 – 17.5 mm
Bore hole substructure: 5.1 mm
Bore hole fibreC panel: 8 mm

Appropriate sleeves for the rivet:
Panel thickness 13 mm
Article: distance sleeve aluminium
Dimension: 7.7 mm x 5.1 mm x 12 mm

Note
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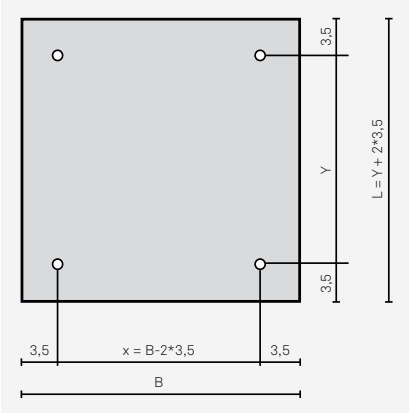
Absorbable loads of a panel fastened with four rivets

fibreC panel riveted		panel thickness 13 mm	
panel width B [cm]	span Y [cm]	pressure load [kN/m²]	suction load [kN/m²]
60	40	3.4	4.2
	60		3.0
	80		1.8
	100		1.2
	120		0.9
80	40	1.9	2.3
	60		2.1
	80		1.6
	100		1.1
	120		0.8
100	40	1.2	1.5
	60		1.4
	80		1.2
	100		1.0
	120		0.8
120	40	0.8	1.0
	60		1.0
	80		0.9
	100		0.8
	120		0.7

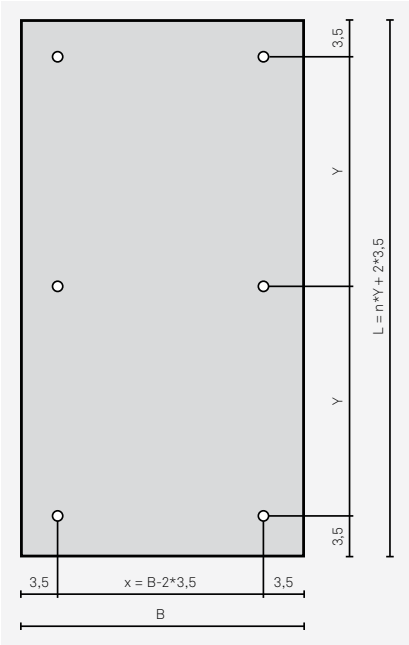
System sketch



Absorbable loads of a panel fastened with several rivets

fibreC panel riveted		panel thickness 13 mm	
panel width B [cm]	span Y [cm]	pressure load [kN/m²]	suction load [kN/m²]
60	40	3.4	2.9
	60		1.6
	80		1.0
	100		0.7
	120		0.5
80	40	1.9	2.4
	60		1.3
	80		0.8
	100		0.6
	120		< 0.5 out of range
100	40	1.2	2.1
	60		1.1
	80		0.7
	100		0.5
	120		< 0.5 out of range
120	40	0.8	1.9
	60		0.9
	80		0.6
	100		< 0.5 out of range
	120		< 0.5 out of range

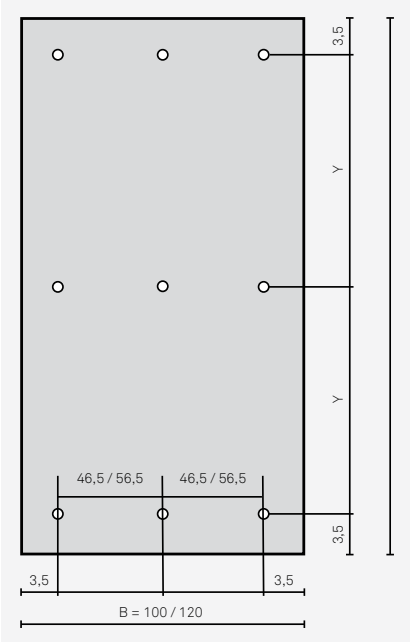
System sketch



Continuation: Absorbable loads of a panel fastened with several rivets

fibre C panel riveted		panel thickness 13 mm	
panel width B [cm]	span Y [cm]	pressure load [kN/m²]	suction load [kN/m²]
100	40	5.2	2.0
	60		1.2
	80		0.8
	100		0.6
	120		< 0.5 out of range
120	40	3.4	1.5
	60		1.0
	80		0.7
	100		< 0.5 out of range
	120		< 0.5 out of range

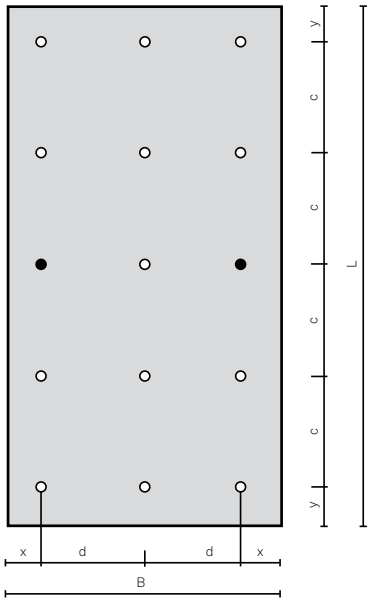
System sketch

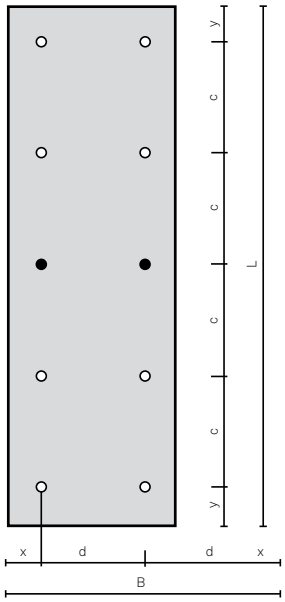


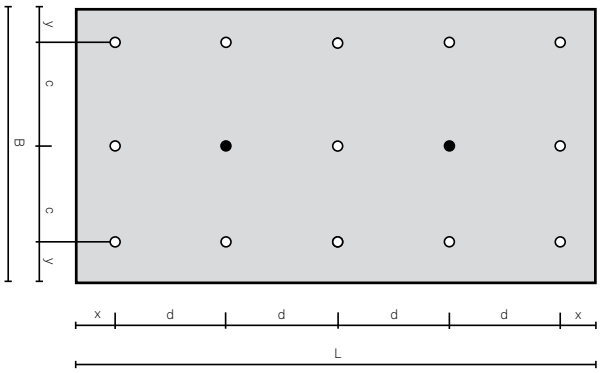
Fixed and floating points

All holes in the panels must be drilled with a diameter of 8 mm. The panels must be fixed with fixed and floating points. The fixed points must be designed on site during the assembly using an anchor point sleeve.

○ Floating point
● Fixed point







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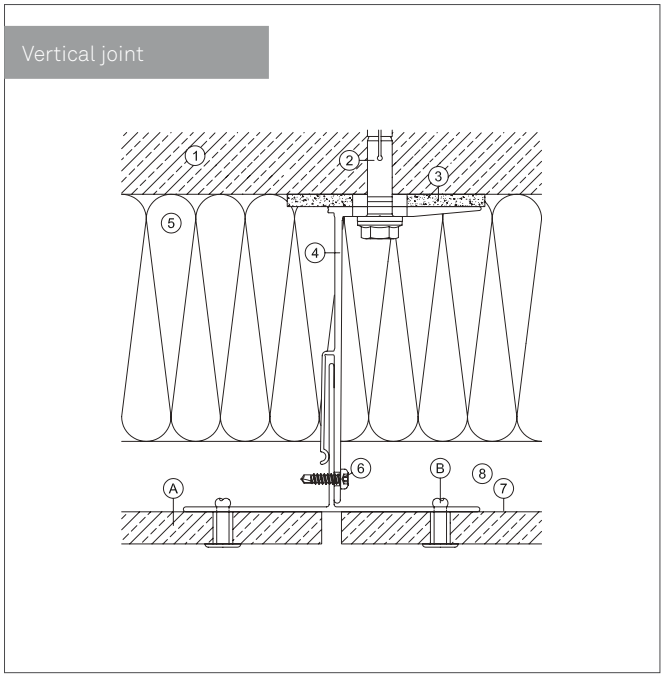

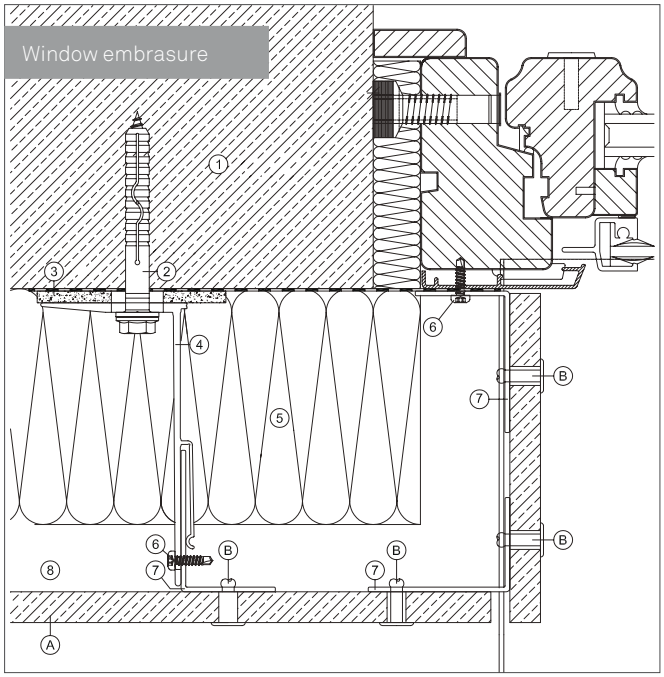

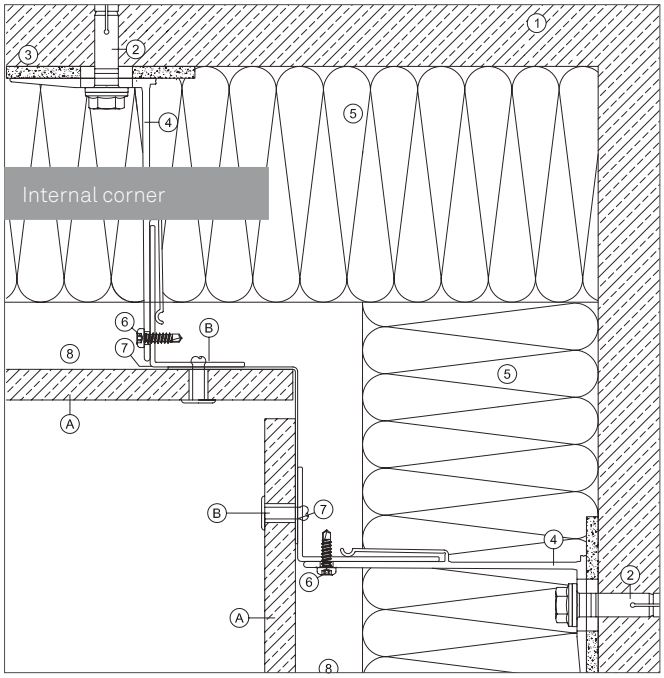

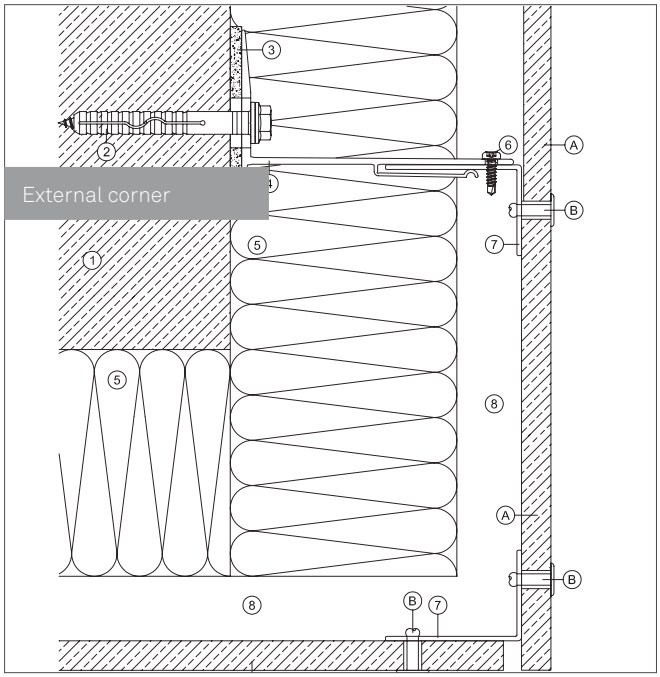

Legend

A) fibreC cladding panel
B) Rivet

1) Masonry
2) Fastening dowel
3) Thermal Separator
4) Wall bracket
5) Insulation
6) Bracket screw
7) Vertical profile
8) Ventilation space