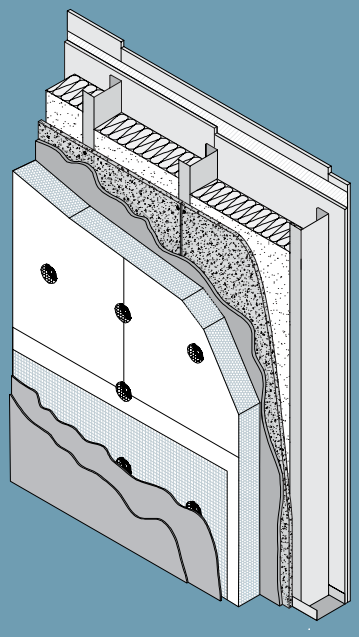


W333

Vidiwall HI | 11/2011

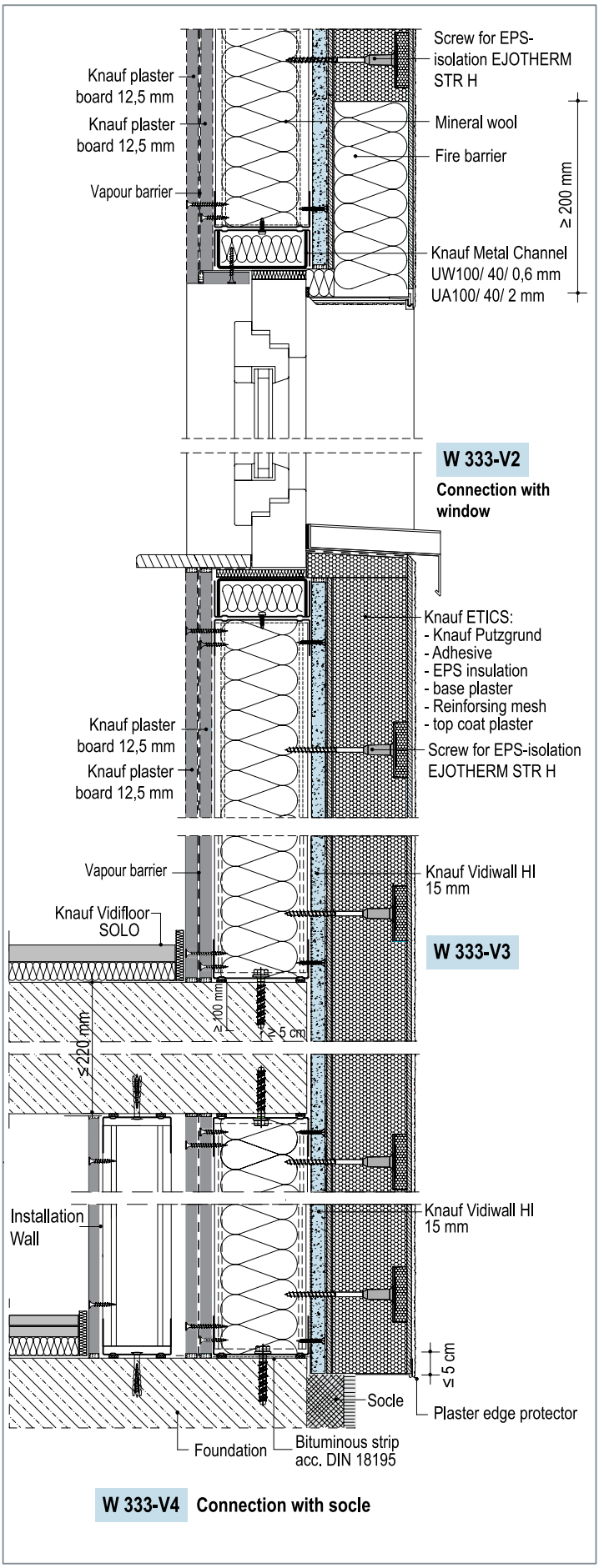
Vidiwall HI

Façade Wall
Single Metal Stud Frame with Vidiwall HI and ETICS

Knauf Vidiwall HI / External Wall System W333

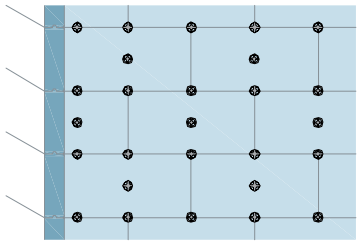
Properties of Material and Installation

Details M 1:5

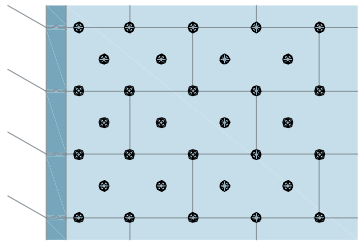


Wind load kN/m²	Building height		
	till 10 m	till 18 m	till 25 m
0,5	4	6	6
1,0	6	6	6
1,1	6	6	6
1,3	8	8	8
1,5	10	10	12

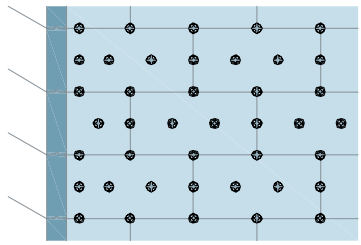
6 dowels / m²



8 dowels / m²



10 dowels / m²



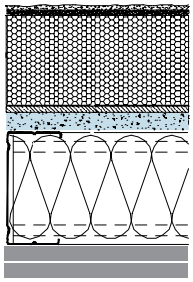
The required number of dowels should be individually calculated for each building. The main external factors are terrain form, building height and wind speed. Basically, the more exposed and higher the building, the greater the required number of dowels.

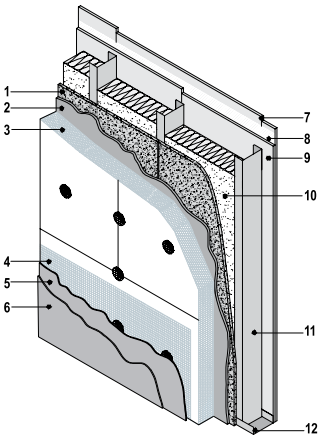
Table - Required number of dowels with working load of 0,20 kN according to DIN 1055-4.

Knauf Vidiwall HI / External Wall System W333

Properties of Material and Installation

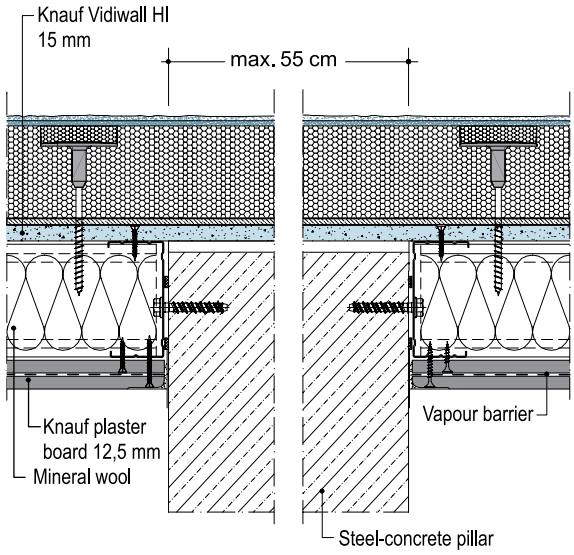
Technical data

System	Weight/Sound protection/Thermal protection		
 **Thickness** 140 mm + ETICS	Weight Kg/m² **49 *)**	Sound protection Rw **56 *)**	U-value **0,22 *)**
	*) The values are tested / evaluated with rock wool 30 kg/ m³, thickness of 100 mm and EPS 60 mm.		

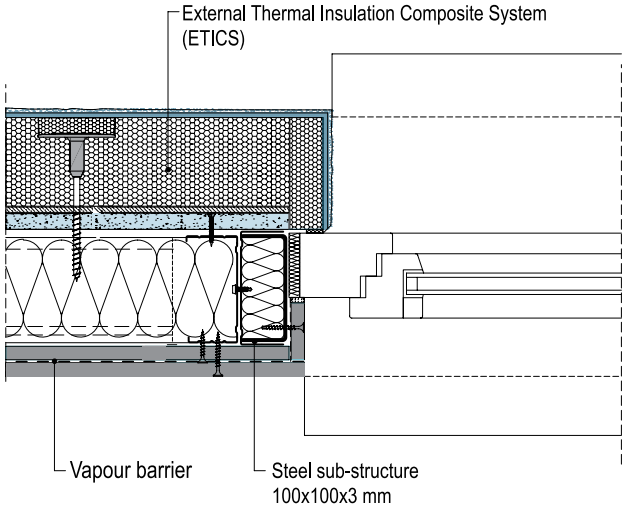


1 Knauf Vidiwall HI
2 Adhesive
3 EPS insulation
4 Reinforcing mesh
5 Base plaster
6 Top coat plaster
7 Knauf plaster board 12,5
8 Vapour barrier
9 Knauf plaster board 12.5
10 Mineral wool
11 Knauf profile CW 100
12 Knauf profile UW 100

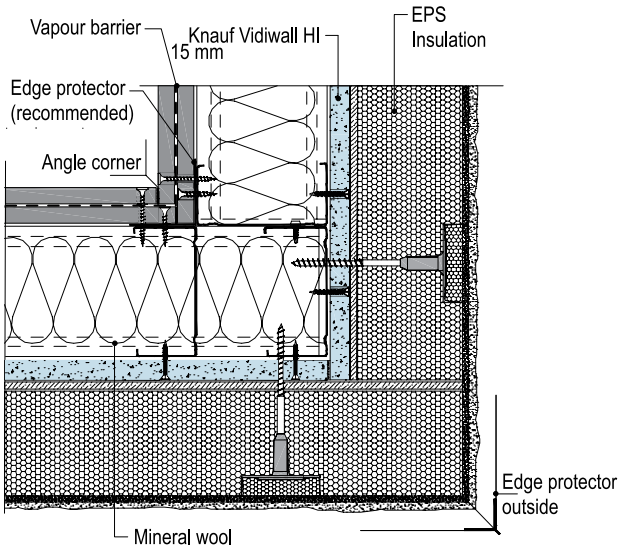
Details M 1:5



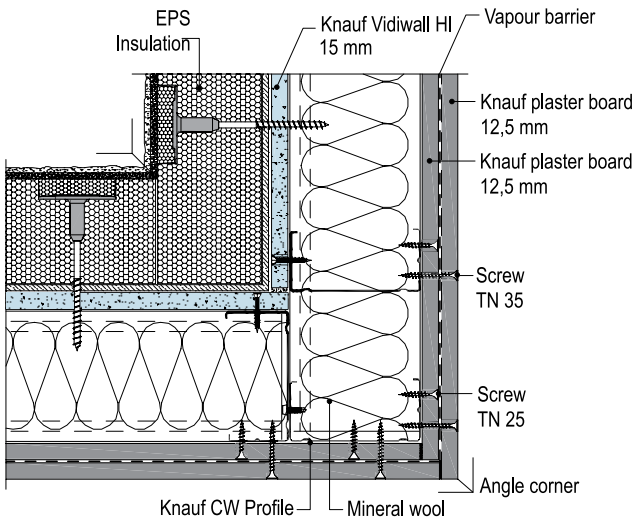
W 333-H1 **Connection with steel-concrete pillar**



W 333-H2 **Connection with window**



W 333-H3 **Outer corner**



W 333-H4 **Inner corner**

Knauf Vidiwall HI / External Wall System W333

Properties of Material and Installation

Material

Material Properties

Knauf Vidiwall HI is a homogeneous gypsum board reinforced with cellulose fibers produced according to EN 15283-2. The surface water absorption of Vidiwall HI complies to class W 1, the reaction to fire is class A2 s1d0 according to EN 13501-1.
The Vidiwall HI boards are produced with a SK-edge and thickness of 12.5 and 15 mm.
Distinguishing feature of Vidiwall HI is the blue colour of the surface.
Vidiwall HI is tested in systems for façade applications according to ETAG 004.
Vidiwall HI board can be installed and left unprotected to atmospheric influences for a month.

Technical Data	
Length	2395, 2495 mm
Width	1200, 1250 mm
Thickness	12.5, 15 mm
Density	ca. 1250 kg/m^3
Weight - 12.5 mm	15 kg/m^2
Weight - 15 mm	18 kg/m^2
Tensile bending strength	≥ 5,8 N/mm^2
Compressive strength	≥7.5 N/mm^2
Hardness of penetration	ca. 750 N
Water vapor diffusion resistance factor	μ ≈15
Termal conductivity	λ ≤0.30 W/m K
Class of reaction to fire under EN 13501-1	A2-s1,d0
Board type EN 15283-2	GF-W1
Moduls of elasticity	3900 N/mm^2

System Structure

The external wall system Vidiwall W 333 is a non load-bearing external wall system for buildings with concrete or steel construction. The system is mounted as a structure between concrete plates, it consists of metal stud structure, an internal lining of gypsum plaster boards, an external lining of Vidiwall HI and additional insulation and barrier layers.

Construction:
The wall structure is a single metal stud frame of Knauf CW studs with dimensions 100/50/0.6 mm. The distance between the axes of the metal profiles and their number depends on wind load, floor height and geometry of the building. A preliminary design can be found in the table below, but the stud structure should be calculated for each separate case. Openings for windows and doors are made with help-structure of enclosed square steel profiles.

An insulation of mineral wool -100 mm thick, is placed between the Knauf CW 100 metal studs.

External lining:
The Knauf Vidiwall HI boards are fastened to the metal studs with screws for gypsum fibre boards of 3.9 x 35 mm. Vidiwall HI boards should be primed using suitable primer for instance Knauf Putzgrund. After the complete drying of the surface, insulation plates of EPS or mineral wool are glued to the wall with suitable glue – Knauf Styrokleber. The insulation boards are fastened with the required number of suitable for the system dowels (for instance EJOTHERM STR H), calculated in compliance with the wind load and the height of the building. Afterwards their whole surface is troweled with gluing and reinforcing cement mixture Knauf Klebespachtel, into which the glassfibre band is embedded. The surface is prepared with suitable for the finishing coat primer and coated with a facade plaster of user's choice- for instance Knauf Conni, Knauf Kati, Knauf Addi.

Internal lining:
The internal lining consists of two layers of Knauf gypsum boards with min. 12.5 mm thickness (in case of fire protection requirements, respectively Knauf fire protection boards) and vapour barrier. The vapour barrier should be applied tightly around the window according to window manufacturer's instructions. In order to keep the vapour barrier intact installations must be placed in a separate dry lining sub-structure.

Table of Preliminary Dimensioning of Metal Profiles

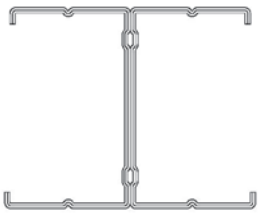
Wind Load	Floor Height in cm				
kN/m^2	270	290	310	330	350
0.3	1	2	2	2	3
0.5	2	3	3	4	4
0.7	3	4	4	5	5
0.9	4	4	5		
1.1	4	5			
1.3	5				
1.5	5				

The list in the table shows a set of applicable variants and does not claim completeness. For each type of the structure chosen from the table, a special calculation of stability depending on the specifics of the facility should be made.

Type 1 : Metal profiles Knauf 1 x CW 100/50/0.6, distance between axes of 62.5 mm
Type 2 : Metal profiles Knauf 1 x CW 100/50/0.6, distance between axes of 41.7 mm
Type 3 : Metal profiles Knauf 1 x CW 100/50/0.6, distance between axes of 31.3 mm
Type 4 : Metal profiles Knauf 2 x CW 100/50/0.6, distance between axes of 41.7 mm
Type 5 : Metal profiles Knauf 2 x CW 100/50/0.6, distance between axes of 31.3 mm

Metal Structure of Profile 1 x CW 100/ 0.6

Metal Structure of Profiles 2 x CW 100/ 0.6



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