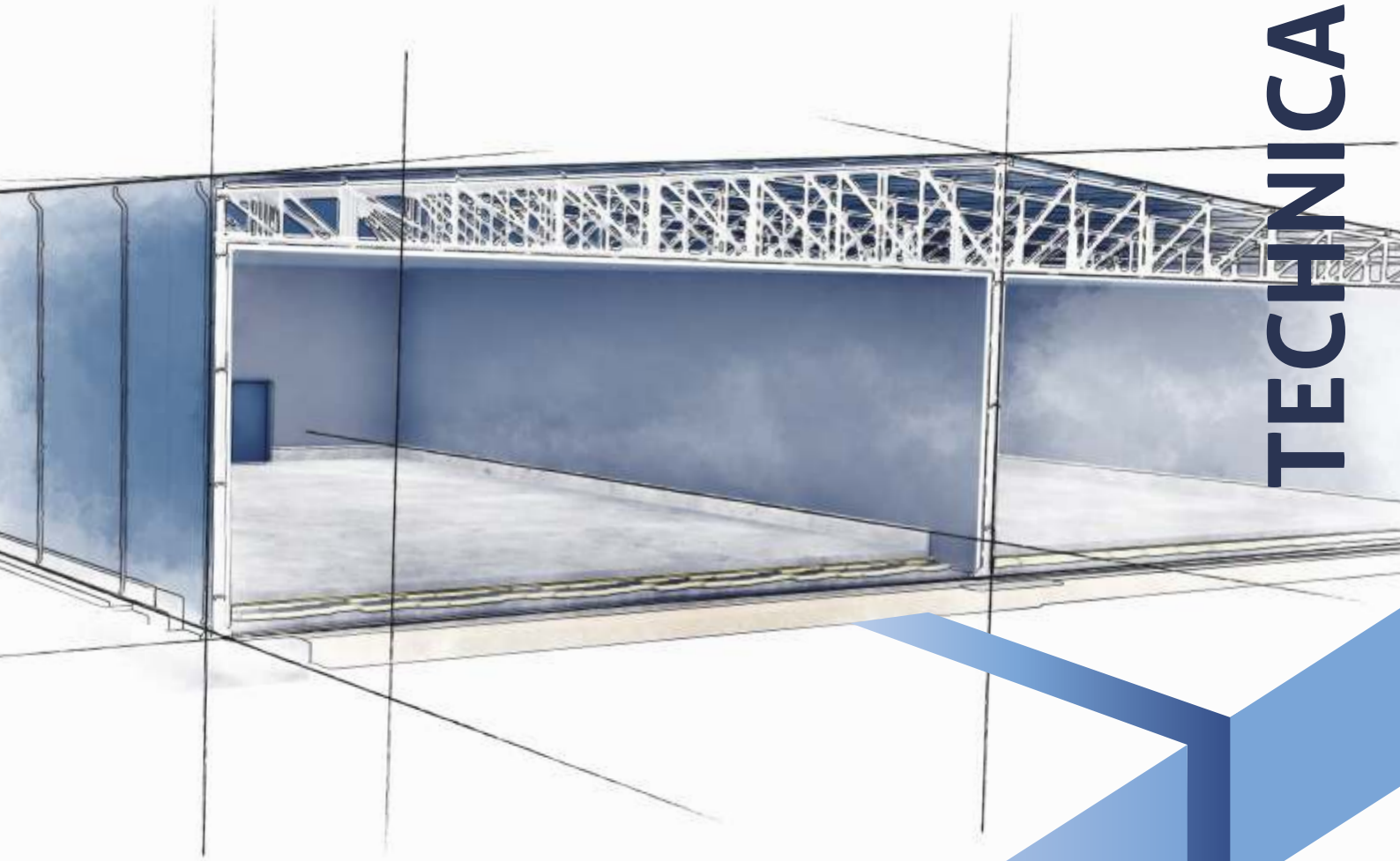
GÓR-STAL®
SANDWICH PANELS

TECHNICAL CATALOGUE

GS MW S,CH / GS MW U



CERTIFIED ISO 9001/14001 COMPANY

CONTENTS

I. TECHNICAL SOLUTIONS CATALOGUE – GENERAL INFORMATION

II. TECHNICAL SPECIFICATIONS OF PRODUCTS:

INTRODUCTION

This publication is intended to present an assortment and technical properties of sandwich panels to our customers. With over a decade of experience and extensive knowledge we perfectly know the needs of the market. As a result, we create products and solutions that give our customers real benefits.

ABOUT THE COMPANY

Gór-Stal® is a Polish company founded in 2003. It had originally produced and sold finished steel construction elements. The increase in demand for building materials for light industrial facilities forced co-owners to buy the line for the production of sandwich panels with a polyurethane core. It is one of the most modern and technologically advanced production lines in Europe. Gór-Stal® manufactures **sandwich panels** and **termPIR® insulating boards**. Sandwich panels are commonly used building materials for light cladding of industrial halls, warehouses, production halls and commercial buildings, offices, administrative buildings, freezers and cold storages. Since the beginning of the company's operation it has rapidly developed and extensively expanded its operations both geographically and in terms of product offerings. Gór-Stal® is recognized by customers in Poland, Czech Republic, Austria, Romania, Belgium, the Netherlands, Luxembourg, Great Britain, France, Germany, Estonia and the Nordic countries, Slovakia, Hungary, Ukraine, Lithuania and Latvia. We currently have two factories, one in Gorlice and the other in Bochnia, where we manufacture termPIR® insulation boards.

PRODUCTS

Gór-Stal offers a wide range of modern wall and roof sandwich panels made of stone mineral wool. Sandwich panels consist of two steel sheet claddings and a construction and insulation core made of rock mineral wool, which allows for high fire resistance parameters. Compatibility of the locks with those made of GS insPIRe panels allows the construction of buildings with excellent thermal insulation parameters and at the same time meeting the high requirements of fire resistance. Speed and ease of assembly, possibility of carrying out the work even in difficult weather conditions, low cost of implementation and ease of wall cleaning, modernity and versatility of the system make sandwich panels the best building material.A wide range of colors and varied shape of panels profiles allow for the implementation of ambitious architectural projects. Gór-Stal® owes its leader position in the production of sandwich panels to high technological advancement of production lines, well-qualified team of employees and special attention to the quality of the products.

STRUCTURE OF PANELS

In sandwich panels, **rock wool MiWo** with a density of **105 kg/m³ (+/-10%)** and a design thermal conductivity coefficient of **λ=0,044 W/m·K** is used as the core. The core of rock mineral wool (material with class A reaction to fire) allows to obtain high fire resistance classes of GS MW sandwich panels. Sheet metal grade **S220-S280GD DIN EN 10346** galvanized on both sides with the organic polyester lacquer with a film thickness of 2**5 microns** is used as cladding of sandwich panels. Due to the increased anticorrosion requirements, it is possible to make panels with metal plate dedicated for environments **C4** and **C5**, and the prevailing aggressive environments inside the buildings. It is possible to use stainless steel **1.4301** coating. Panels are protected against mechanical damage that may occur during transport or installation with a protective foil.

CERTIFICATES

Sandwich panel have the following certificates and technical approvals:

- Quality Management System certificate,
- Type III Environmental Certificate and Declaration (EPD)
- Classifications: fire resistance rating, reaction to fire, fire retardancy,
- **Hygienic Approval** - allows for use in, commercial, industrial, food processing, refrigeration facilities, residential and public buildings, including health services.

- Current versions of the documents are available at: **www.gor-stal.pl**

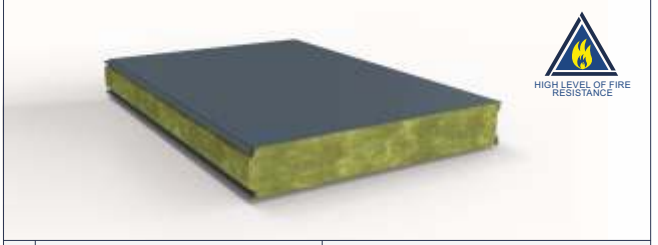
Wall panel GS MW S

01	Type of core	hard mineral wool	
02	Density [kg/m³]	105 (+/-10%)	
03	Thickness [mm]	80	
04	Mass [kg/mb] *	17,9 (module 1000 mm)	20,3 (module 1140mm)
05	Total width [mm]	1000 / 1140	
06	External lining profiling (module 1000 mm)	L - Linear, M -Mikro-profiling, F - Wavy, R - Grooving	
07	External lining profiling (module 1140 mm)	L - Linear, M -Mikro-profiling, F - Wavy	
08	Internal lining profiling	L - Linear	
09	Standard colours of external lining**	RAL 9002, RAL 9010, RAL 9006, RAL 9007, RAL7016	
10	Standard colours of internal lining**	RAL 9002, RAL 9010	
11	Cofficent $U_{d,5}$ [W/m²K]	0,54	
12	Reaction to fire (for all end uses)	A2-s1,d0	
13	Fire propagation	NRO	
14	Fire resistance	EI 60	
15	Water vapor permeability	„Complies" (impervious)	
16	Sound insulation	31(-1;-3)	
17	Certificates, approvals, seals of approval	Atest PZH, EN 14509:2013, EPD (type III)	

Wall panel GS MW U

01	Type of core	hard mineral wool		
02	Density [kg/m³]	105 (+/-10%)		
03	Thickness [mm]	80	100	120
04	Mass [kg/mb] * (module 1000 mm)	18,2	20,3	22,4
05	Total width [mm]	1000		
06	External lining profiling	L - Linear, M -Mikro-profiling, F - Wavy, R - Grooving		
07	Internal lining profiling	L - Linear		
08	Standard colours of external lining**	RAL 9002, RAL 9010, RAL 9006, RAL 9007, RAL 5010, RAL 7035, RAL 3000, RAL 6011, RAL7016, RAL 8017		
09	Standard colours of internal lining**	RAL 9002, RAL 9010		
10	Cofficent $U_{d,5}$ [W/m²K]	0,56	0,44	0,37
11	Reaction to fire (for all end uses)	A2-s1,d0		
12	Fire propagation	NRO		
13	Fire resistance	NPD		EI 120
14	Water vapor permeability	„Complies" (impervious)		
15	Sound insulation	NPD	32(-2;-3)	
16	Certificates, approvals, seals of approval	Atest PZH, EN 14509:2013, EPD (type III)		

Wall panel GS MW CH



01	Type of core	hard mineral wool				
02	Density [kg/m³]	105 (+/-10%)				
03	Thickness [mm]	100	120	160	200	250
	Mass [kg/mb] * (module 1000 mm)	20,0	22,1	26,3	30,5	35,8
04	Mass [kg/mb] * (moduł 1140 mm)	22,7	25,1	29,9	34,7	40,7
05	Total width [mm]	1000 / 1140				
06	External lining profiling (module 1000 mm)	L - Linear, M -Mikro-profiling, F - Wavy, R - Grooving				
	External lining profiling (module 1140 mm)	L - Linear, M -Mikro-profiling, F - Wavy, R - Grooving				
07	Internal lining profiling	L - Linear				
08	Standard colours of external lining**	RAL 9002, RAL 9010, RAL 9006, RAL 9007, RAL7016				
09	Standard colours of internal lining**	RAL 9002, RAL 9010				
10	Cofficent $U_{d,5}$ [W/m²K]	0,43	0,36	0,27	0,22	0,17
11	Reaction to fire (for all end uses)	A2-s1,d0				
12	Fire propagation	NRO				
13	Fire resistance	EI 120	EI 180		EI 240	
14	Water vapor permeability	„Complies" (impervious)				
15	Sound insulation	31(-2;-3)				
16	Certificates, approvals, seals of approval	Atest PZH, EN 14509:2013, EPD (type III)				

* panels with claddings 0,5/0,6 mm. A table with panel weights and the other corresponding facing thickness values are available in the Technical Department

** available colors depending on the thickness of the cladding, panels thicknesses and modular widths (details from the Sales Representative) RAL 9002, 9010 colours are defined by Gór-Stal as white

PROFILATIONS

M - Mikro-profiling

R - Grooving

L - Linear

F - Wavy

PRODUCTION PROGRAM

The production program for sandwich panel systems includes the following items:

Panels with visible fastening: GS MW S
GS MW S (standard connector) - thickness 80 mm
GS MW CH (standard connector) - thickness 100, 120, 160, 200 i 250 mm

Panels with hidden fastening:
GS MW U (hidden connector) - thickness 80, 100, 120 mm
Standard and custom-made flashings, according to the customer's design, with a maximum length of **6 m**. Detailed characteristics of the panels can be found further in this catalog.

GUIDELINES FOR TRANSPORTATION

Sandwich panels are packed in batches. Loading and unloading of the batches may be done by means of forklift trucks or a lift equipped with an appropriate bar lifting sling, however:

- a single forklift truck may be used to move a package of panels with maximum length of **8 metres**,
- panels with length exceeding **8 m** need to be unloaded using a lift with a hoisting beam,
- if unloading panels using a lift with rope slings, use spacers to prevent panels from being crushed.

The transportation of sandwich panels shall be carried out by vehicles adapted for that purpose, while maintaining the following conditions:

- ensure unobstructed access on both sides of the trailer along its entire length,
- never stack panels more than two packages high
- complete support for a panel package must be provided along the entire length of the open load-carrying body,
- ensure there is sufficient clear space between panel packages, the load-carrying body and the cargo straps,
- the truck must be equipped with cargo straps. Place flexible separators underneath the cargo straps.
- When tightened, the straps must not deform the panels.

TECHNICAL SUPPORT

We strive to deliver friendly and professional customer service. Our technical department and sales representatives assist designers, engineers and contractors in designing, ordering and selecting our products as well as installation thereof. Our customers are thus provided with active support from the design stage to the installation stage as well as prompt technical advisory service and cost calculation. The ordering and delivery process is coordinated by the **Customer Service Department (DOK).**

For more information visit our website **www.gor-stal.pl**

GUIDELINES FOR MOUNTING

The sandwich panel manufacturer recommends that you use flashings and cam-locks delivered with the panels as part of the light sandwich panel system. When mounting the panels, follow the guidelines provided below:

- only cut plates and flashings with a fine-toothed circular saw machine or metal cutting scissors. **Never use grinding wheels.**
- cut the panels and flashings at a properly prepared station in order not to damage the lacquer and thin coatings,
- remove the protection foil after the panels have been installed,
- after installation thoroughly clean the surface of the panels, particularly off steel filings,

Typical panel mounting solutions are presented farther in this publication.

"ATTENTION:
When installing sandwich panels with a mineral wool core, pay attention to the gaps between the panels (especially the gap on the façade side).
The wool in the lock between the plates should fit together. However, excessive pressure between adjacent boards should not be caused or allowed to occur.
This may result in excessive reduction of the gap between the claddings and, as a consequence (especially in the case of dark colors), may result in damage to the boards due to thermal expansion, e.g. under the influence of the sun."

APPLICATION

GS MW S / GS MW CH wall panels are intended for the construction of walls with the required fire resistance in frame structures. Compatibility of the locks with the GS insPIRe panels enables the production of e.g. inter-story belts in light casings.Panels can be mounted in both vertical and horizontal position, as single-span or multi-span wall elements.

PHYSICAL PROPERTIES

GS MW S / GS MW CH wall panels are produced in six core **thicknesses** (1 x S and 5 x CH): Panel facings are made of sheet metal galvanised on both sides according to **EN 10346** with organic polyester coating **25µm** thick. In sandwich panels, **rock wool** with a density ofi **105 kg/m3 (+/-10%)** and a design thermal conductivity coefficient of **λ=0,044 W/m·K** is used as the core. The core of rock **mineral wool** (material with reaction to fire class A) allows to obtain high fire resistance classes of GS sandwich panels with mineral wool. The modular widths of the panels are: **1000 mm and 1140 mm**, and their standard lengths range from **2.0 m to 16.0 m**

***. The tightness of the panel joints is ensured by properly designed panel locks.

Thickness [mm]	Weight [kg/m²]		Modular width [mm]	Length: typical/available [m]	Lining standard RAL colours	
	facings 0,6/0,6 mm**	facings 0,5/0,6 mm**			external linings*	internal linings*
S 80	18,8	17,9	1000/1140	2,0-16,0	9002, 9006, 9007, 9010 7016- for module 1140	9002, 9010
CH 100	20,9	20,0				
CH 120	23,0	22,1				
CH 160	27,2	26,3				
CH 200	31,4	30,5				
CH 250	36,6	35,8				

* availablepending on the thickness of the cladding, panels thicknesses and modular widths (details from the Sales Representative)
** typical lining thicknesses; also available 0.7 mm (details from our Sales Representative)
*** production of panels longer than 9.0 m, subject to prior agreement

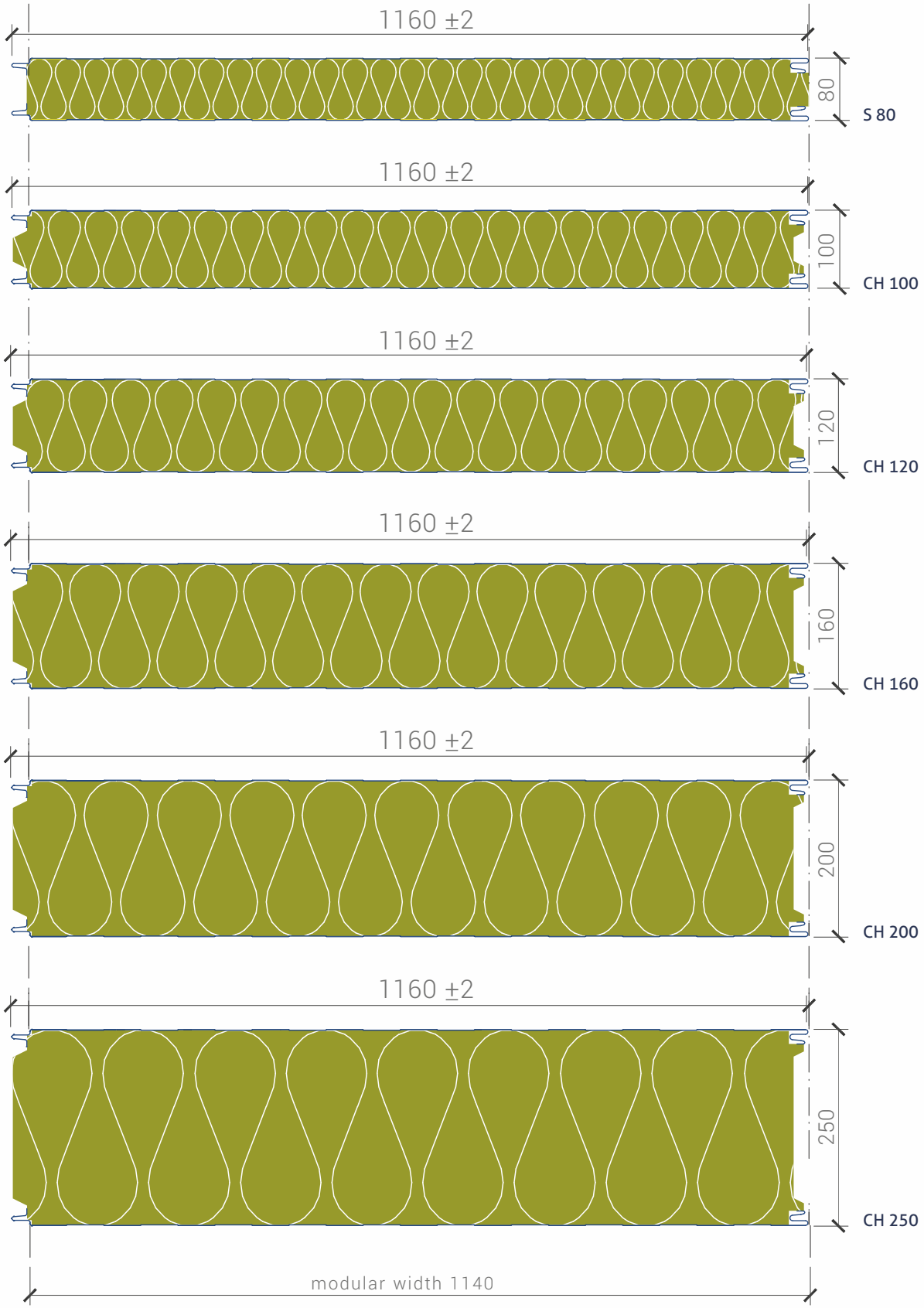
The fire resistance class depends on the core thickness and the lock type and is characterized by the fire resistance class (values given in the table below). Acoustic parameters were determined on the basis of **EN ISO 10140-3** and **EN-ISO 354**. Wall panels can be used for partitions with acoustic insulation requirements lower than those given below. Chemical corrosion resistance - sandwich panels can be used in environments with atmospheric corrosivity categories C1, C2, C3 according to **EN ISO 12944-2**.

TECHNICAL PARAMETERS OF Mi Wo CORE

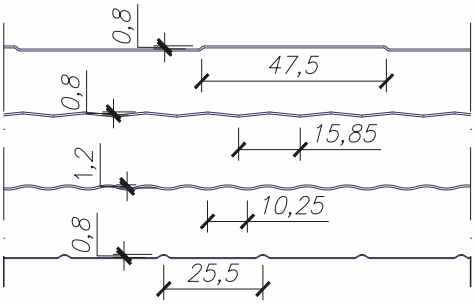
Thickness [mm]	Heat-transfer coefficient U [W/m²·K]	Acoustic insulation	Reaction to fire (for all end uses)	Fire resistance*	NRO
	EN 14509	EN ISO 717-1	EN 13501-1	EN 13501-2	PN-B-02867
S 80	0,54	31(-1;-3)	A2-s1,d0	EI 60	„NRO"
CH 100	0,43	31(-2;-3)		EI 120	
CH 120	0,36			EI 180	
CH 160	0,27				
CH 200	0,22			EI 240	
CH 250	0,17				

* conditions according to fire resistance classification

PANEL THICKNESS



External lining profiles



L - Linear

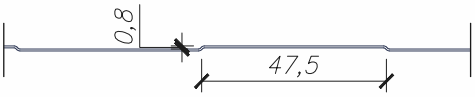
M - Mikro-profiling

F - Wavy

R - Grooving*

* - for module 1140 performed after prior arrangement (details from Sales Representative)

Internal lining profiles



L - Linear

TABLE OF ALLOWED LOADS FOR GS MW S / GS MW CH SANDWICH PANEL

Table of permissible loads of the **GS MW S / GS MW CH** wall sandwich panel with facings of thickness 0.5 / 0.6 mm in light colors, mounted as a single-span element, towards and from the support.

Panel thickness	The load due to:	The maximum load [kN/m^2] on the span length [m]:										
		1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
80	SGN (q_d)	3,91	2,94	2,35	1,96	1,68	1,47	0,93	0,75	0,62	0,53	0,45
	SGU (q_k)	10,85	6,74	4,38	2,94	2,02	1,42	1,02	0,74	0,54	0,40	0,30
100	SGN (q_d)	4,39	3,29	2,63	2,19	1,88	1,65	1,46	0,86	0,71	0,60	0,51
	SGU (q_k)	13,62	8,81	5,97	4,17	2,98	2,17	1,60	1,20	0,91	0,70	0,54
120	SGN (q_d)	5,66	4,25	3,40	2,83	2,43	2,12	1,05	0,85	0,70	0,59	0,50
	SGU (q_k)	10,08	7,14	5,01	3,73	2,84	2,19	1,71	1,35	1,07	0,86	0,69
160	SGN (q_d)	7,40	5,55	4,44	3,70	3,17	2,78	1,51	1,23	1,01	0,85	0,72
	SGU (q_k)	21,87	14,98	10,80	8,02	6,09	4,69	3,66	2,89	2,31	1,86	1,51
200	SGN (q_d)	10,06	7,54	6,04	5,03	4,31	3,77	2,09	1,70	1,40	1,18	1,00
	SGU (q_k)	25,92	18,14	13,39	10,20	7,94	6,27	5,01	4,05	3,30	2,71	2,24
250	SGN (q_d)	-	-	-	-	-	-	-	-	-	-	-
	SGU (q_k)	-	-	-	-	-	-	-	-	-	-	-

Table of permissible loads of the **GS MW S / GS MW CH** wall sandwich panel with facings of thickness 0.5 / 0.6 mm in light colors, mounted as a multi-span element, towards and from the support.

Panel thickness	The load due to:	The maximum load [kN/m^2] on the span length [m]:										
		1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
80	SGN (q_d)	2,48	1,88	1,30	0,76	0,48	0,33	0,23	0,17	0,13	0,11	-
	SGU (q_k)	11,98	8,16	5,88	4,33	3,25	2,49	1,93	1,52	1,20	0,96	0,78
100	SGN (q_d)	2,22	1,71	1,41	0,85	0,51	0,33	0,28	0,16	0,11	-	-
	SGU (q_k)	14,55	10,05	7,41	5,62	4,33	3,39	2,68	2,15	1,75	1,43	1,17
120	SGN (q_d)	2,29	1,71	1,21	0,67	0,38	0,22	0,13	-	-	-	-
	SGU (q_k)	10,35	7,33	5,54	4,35	3,53	2,91	2,41	2,01	1,69	1,44	1,22
160	SGN (q_d)	2,54	1,91	1,54	1,31	0,83	0,50	0,31	0,20	0,13	-	-
	SGU (q_k)	22,47	16,15	11,99	9,41	7,59	6,18	5,08	4,23	3,54	2,98	2,53
200	SGN (q_d)	2,89	2,16	1,73	1,46	1,26	1,10	0,75	0,53	0,38	0,28	0,22
	SGU (q_k)	26,35	18,85	14,35	11,37	9,26	7,70	6,45	5,45	4,75	4,06	3,51
250	SGN (q_d)	-	-	-	-	-	-	-	-	-	-	-
	SGU (q_k)	-	-	-	-	-	-	-	-	-	-	-

The load capacity tables have been prepared in accordance with **EN 14509** for panels with a rock mineral wool core with light-colored facings for an internal temperature of **20 ° C**. The deflection condition was assumed to be L / **100**. In the case of a different sheet thickness, limit deflections, temperatures, fastening or dark colors of the cladding, separate calculations must be made. The minimum width of the supports is **40 mm** and **60 mm** (intermediate).
The number of connectors required on the supports - 3. Detailed tables of permissible loads are available on the website.

PACKING

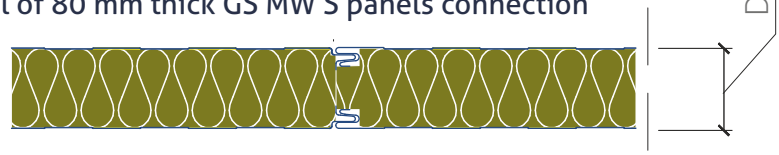
GS MW S / GS MW CH sandwich panels are packed in packages on pallets to allow their transport. The number of panels in each package depends on their thickness. Details in the table below.

Panel thickness [mm]	80	100	120	160	200	250
Maximum number of panels in one batch	14	11	9	7	5	4

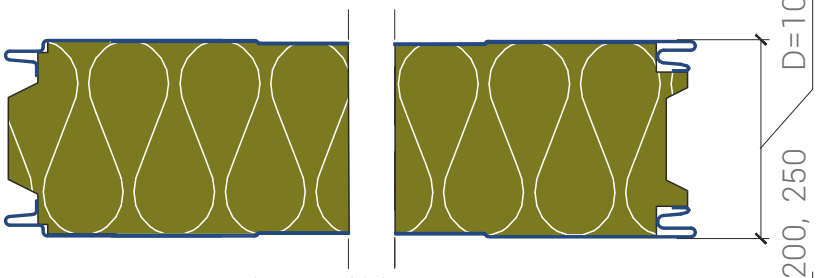
Selected details of cladding made of GS MW S sandwich panels

Shape of cam-lock for 80 mm thick panels GS MW S

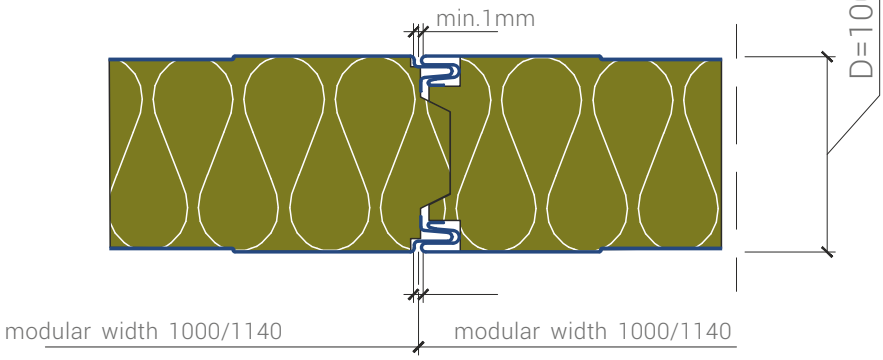
Detail of 80 mm thick GS MW S panels connection



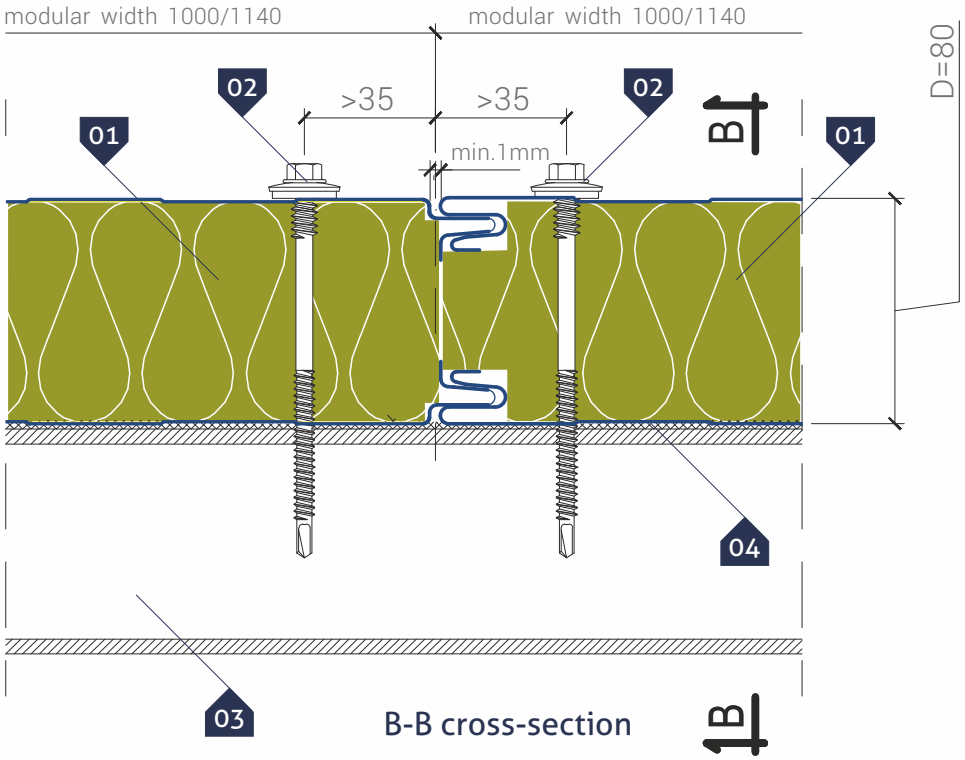
Shape of cam-lock for 100, 120, 160, 200, 250 mm thick panels GS MW CH



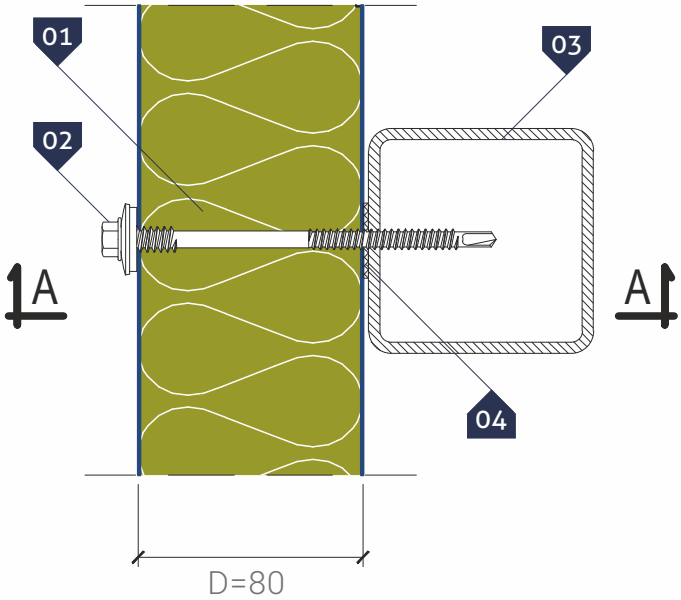
Detail of 100, 120, 160, 200, 250 mm thick panels' connection GS MW CH



A-A cross-section



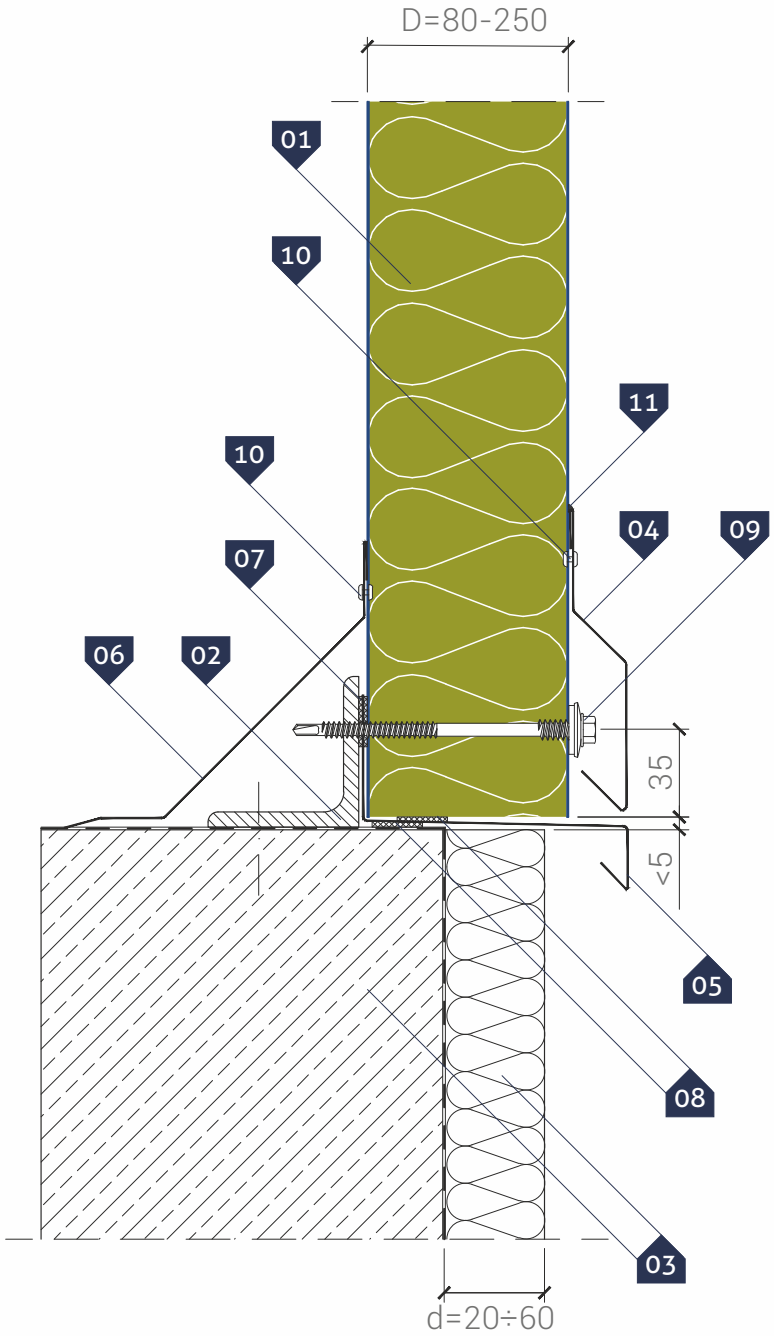
B-B cross-section



KEY:
01. **GS MW** wall panel
02. Self-drilling connector for sandwich panels
03. Transom acc. to structure design
04. Polyethylene, self-adhesive sealing tape **(PES)***

NOTE: fasten each panel along its width to a structure with a minimum of three connectors (this applies to full-width panels).

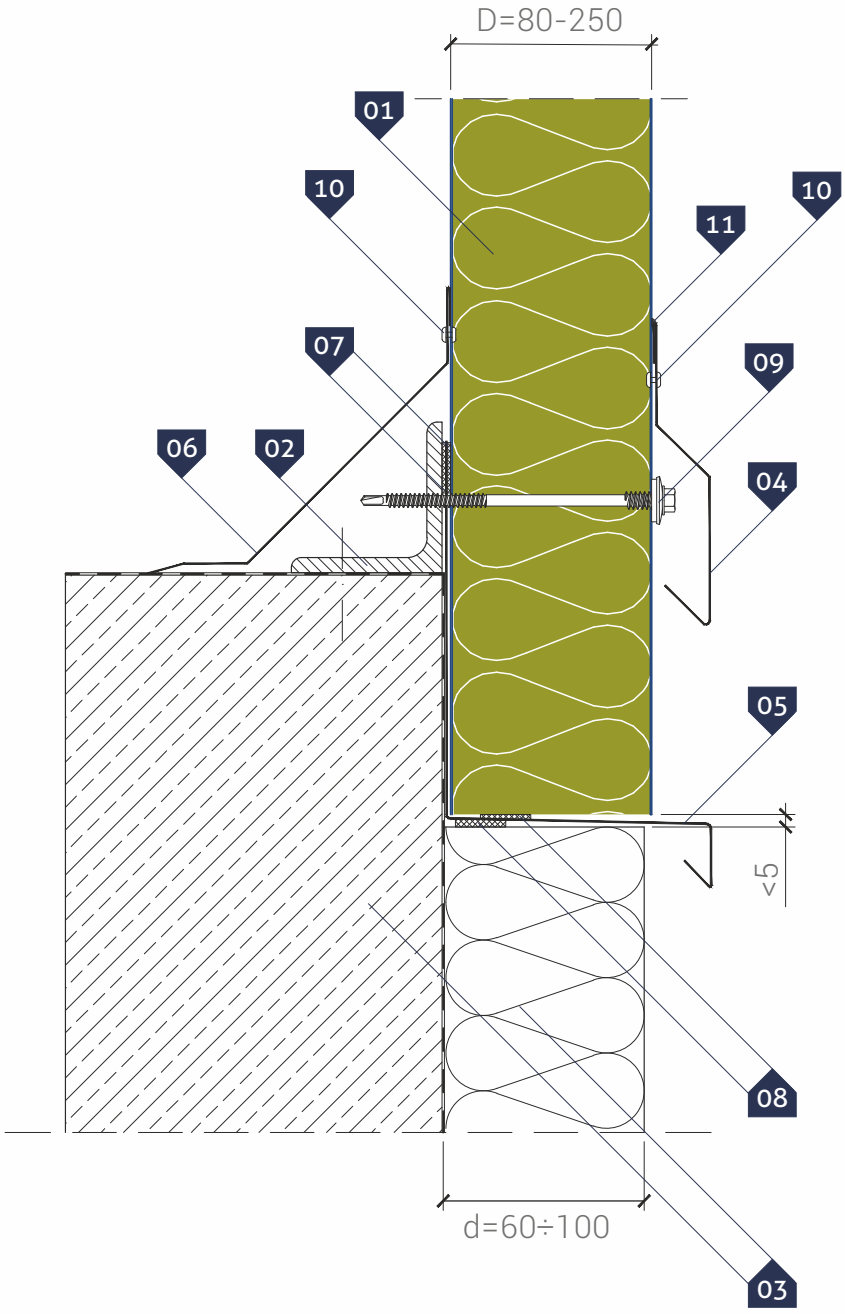
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Steel section acc. to structure design
03. Ground beam with insulation and thermal insulation acc. to detailed design
04. Drip edge **OB-10** (option)
05. Eaves **OB-13**
06. Covering flashing **OB-08**
07. Polyethylene, self-adhesive sealing tape **(PES)***
08. Impregnated polyurethane gasket **(PURS)** or polyurethane fitting mounting foam
09. Self-drilling connector for sandwich panels
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
11. Neutral silicone sealant

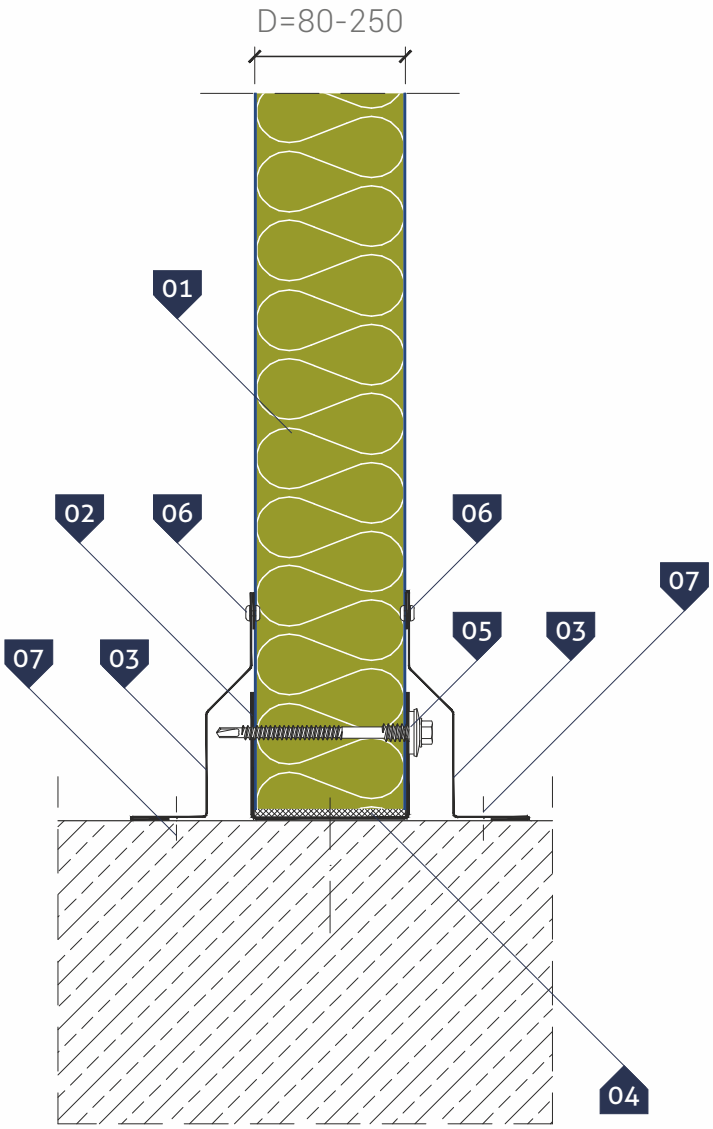
* - a recommended item



KEY:

01. **GS insPIRe® S** wall panel (visible mounting)
02. Steel section acc. to structure design
03. Ground beam with insulation and thermal insulation acc. to detailed design
04. Drip edge **OB-10** (option)
05. Eaves **OB-13** (extended)
06. Covering flashing **OB-08**
07. Polyethylene, self-adhesive sealing tape **(PES)***
08. Impregnated polyurethane gasket (PURS) or polyurethane fitting mounting foam
09. Self-drilling connector for sandwich panels
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
11. Neutral silicone sealant

* - a recommended item



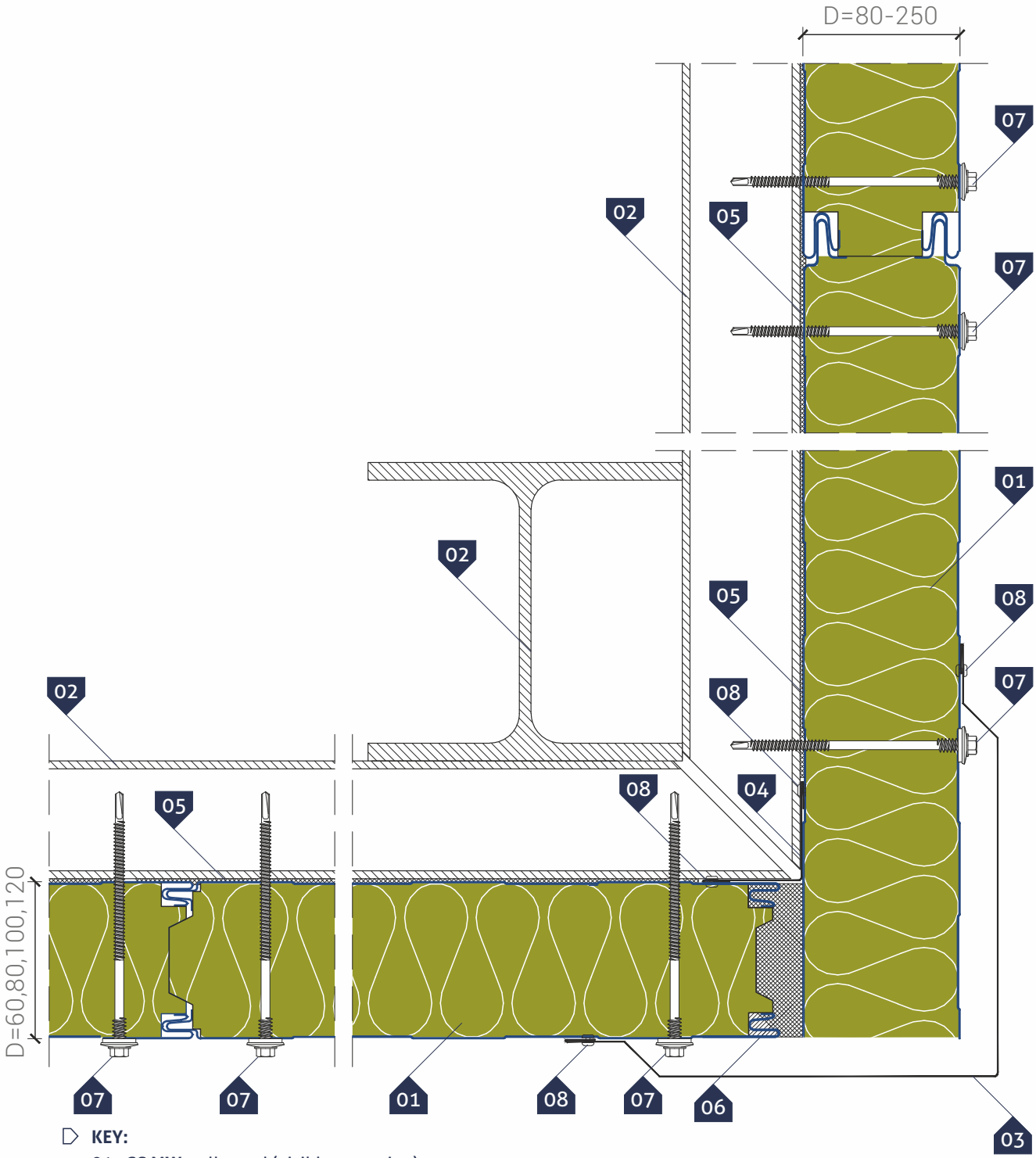
KEY:

01. **GS insPIRe® S** wall panel (visible mounting)
02. Edge channel section **OB-42**
03. Covering flashing **OB-05**
04. Filling with rock mineral wool
05. Self-drilling connector for sandwich panels
06. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
07. Steel expansion joint for fast assembly

Wall sandwich panel GS MW S / GS MW CH (visible connector)

VERTICAL ARRANGEMENT of panels
Detail of panel connection in a corner
Type I

GÓR-STAL® SANDWICH PANELS



KEY:

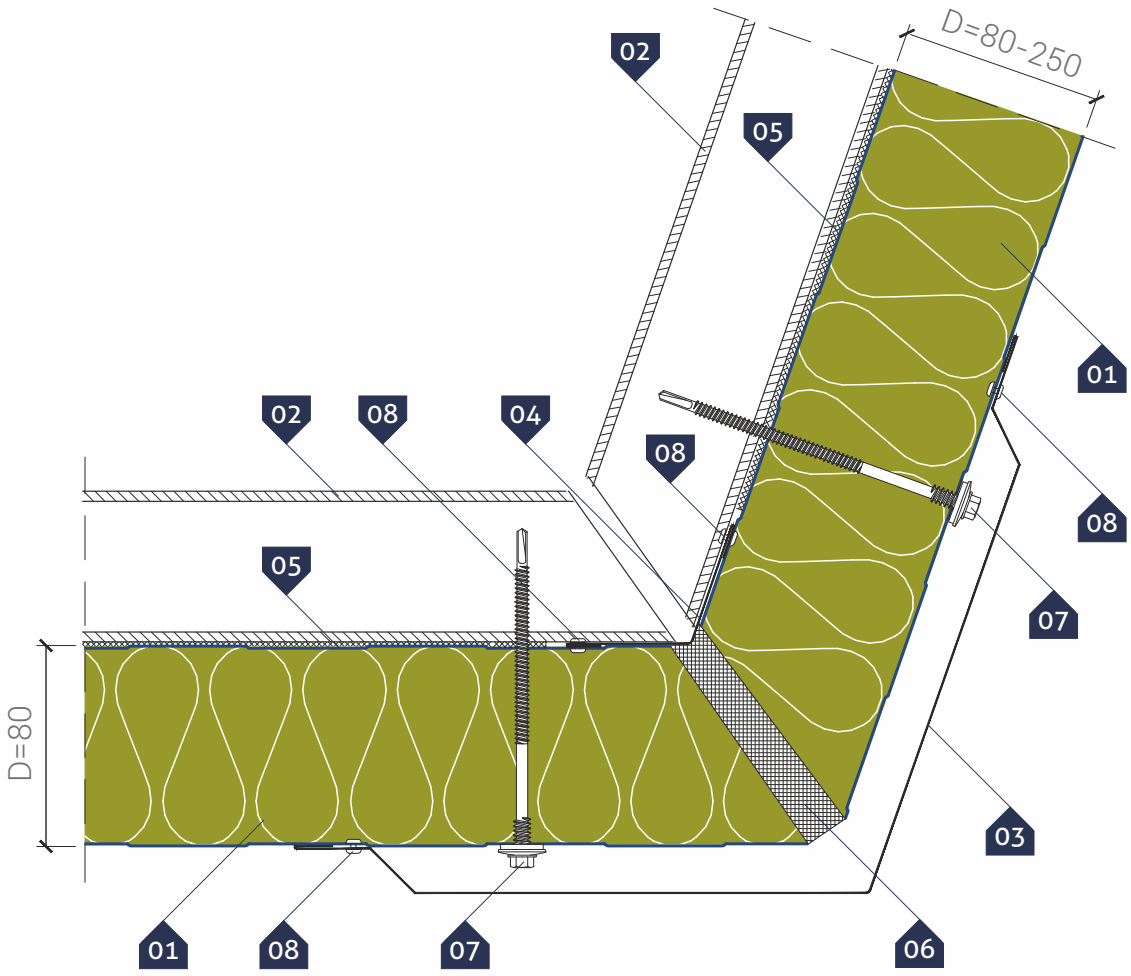
01. **GS MW** wall panel (visible mounting)
02. Steel post and transom acc. to structure design
03. Corner flashing **OB-03**
04. Corner flashing **OB-02**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

VERTICAL ARRANGEMENT of panels
Detail of panel connection in an optional angle corner

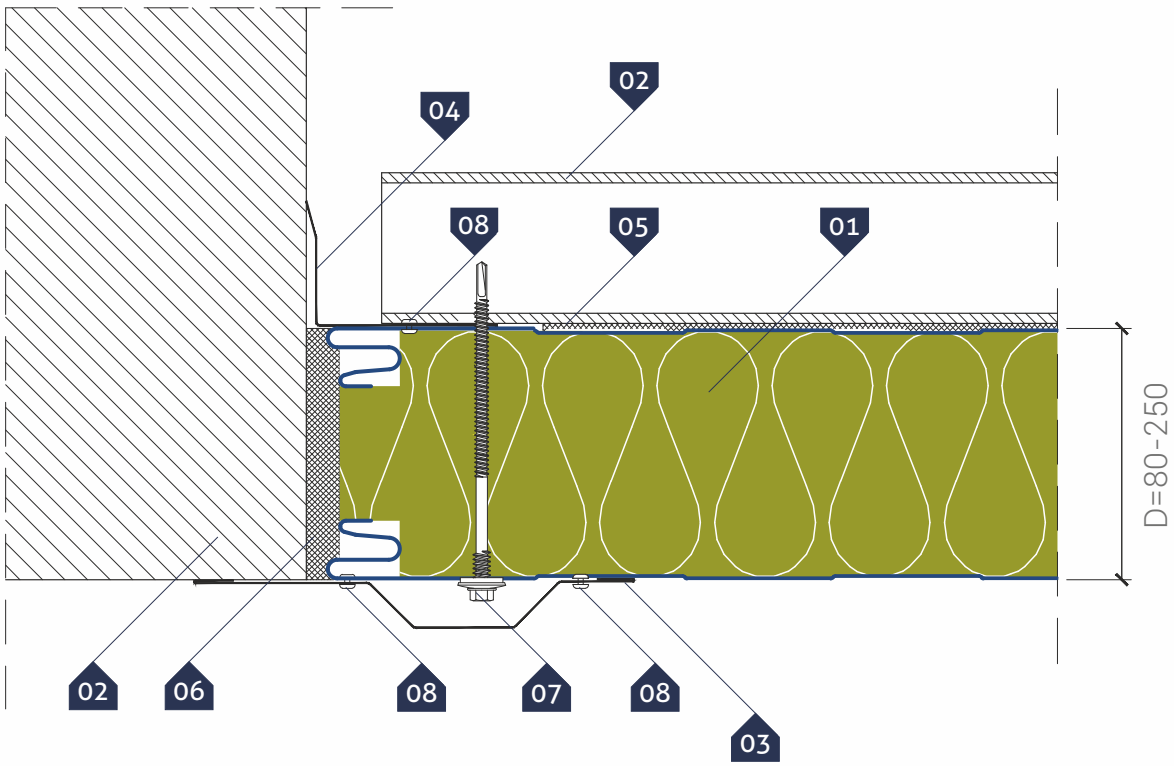
GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. Corner flashing **OB-03**
04. Corner flashing **OB-02**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

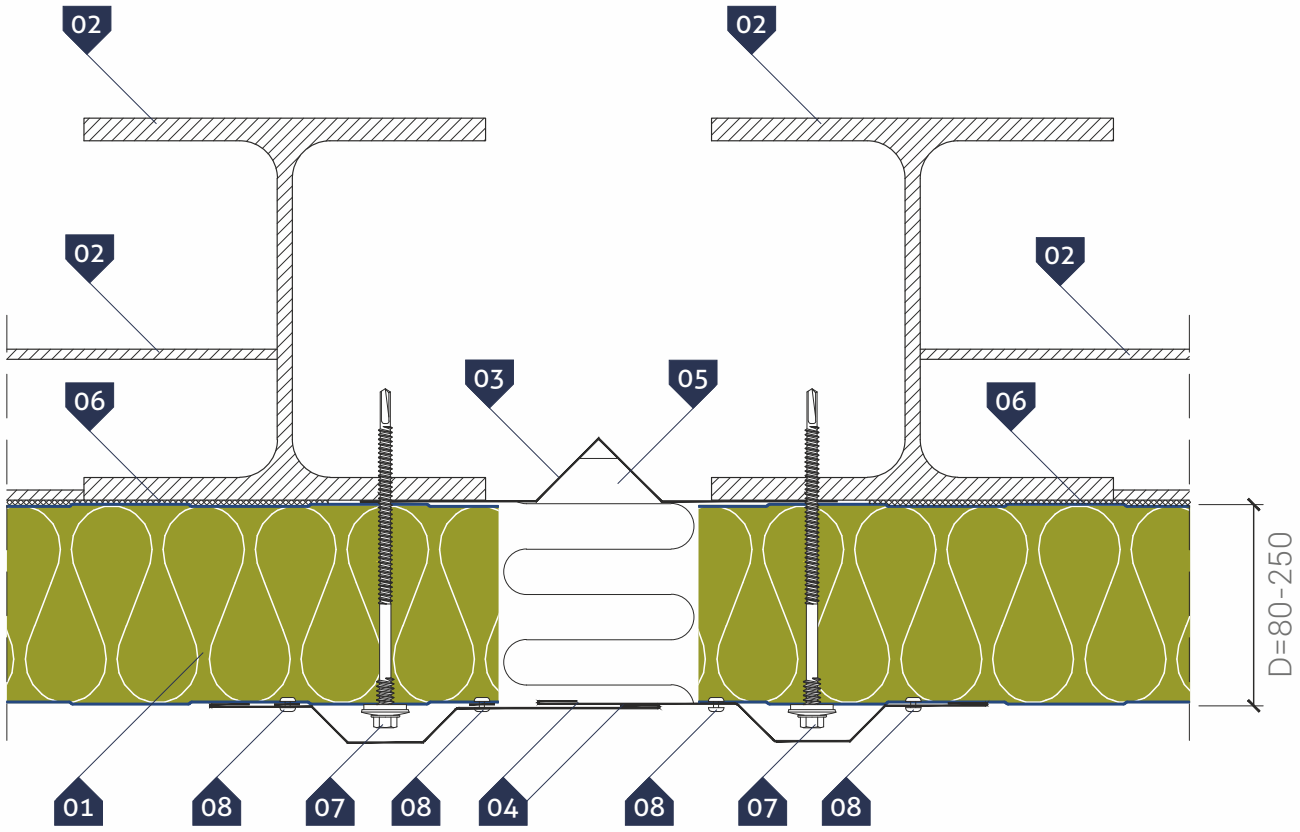
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Blockwall and transom acc. to structure design
03. Covering flashing **OB-19**
04. Inner corner flashing **OB-07**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

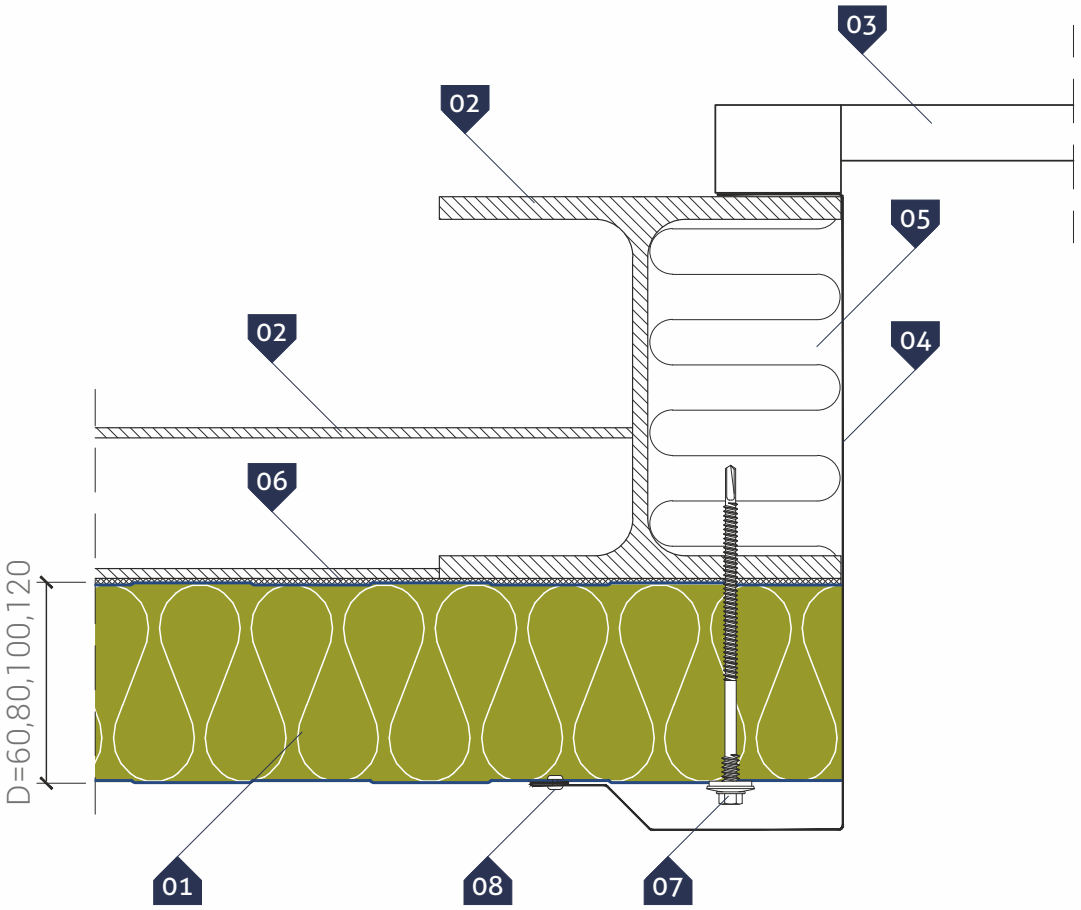
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Steel post and transom acc. to structure design
03. Individual expansion joint flashing
04. Covering flashing **OB-17**
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Polyethylene, self-adhesive sealing tape
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:

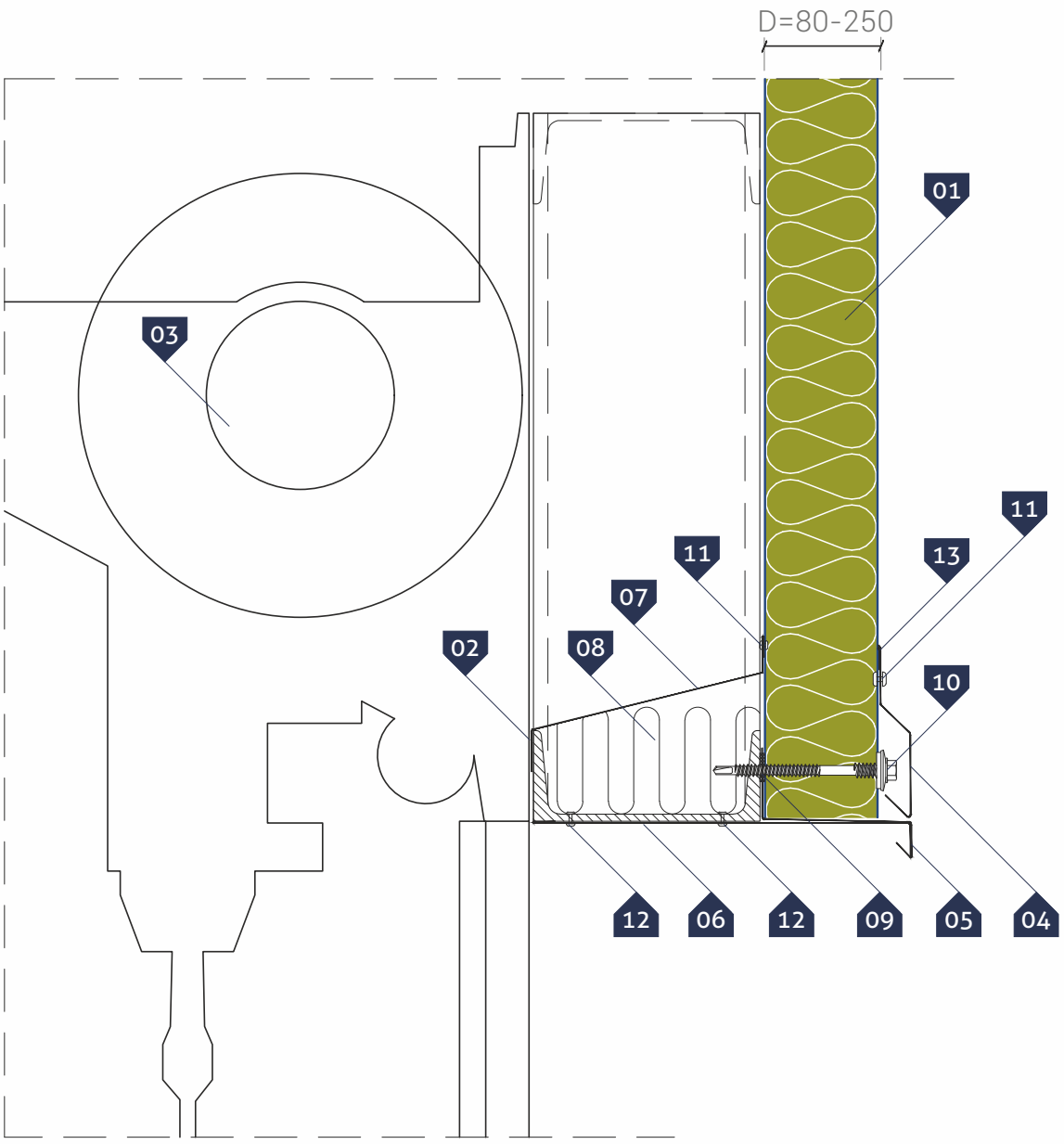
01. **GS MW** wall panel (visible mounting)
02. Steel post and transom acc. to structure design
03. Industrial door
04. Door flashing **OB-21**
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

VERTICAL ARRANGEMENT of panels
Detail of roller shutter door lintel

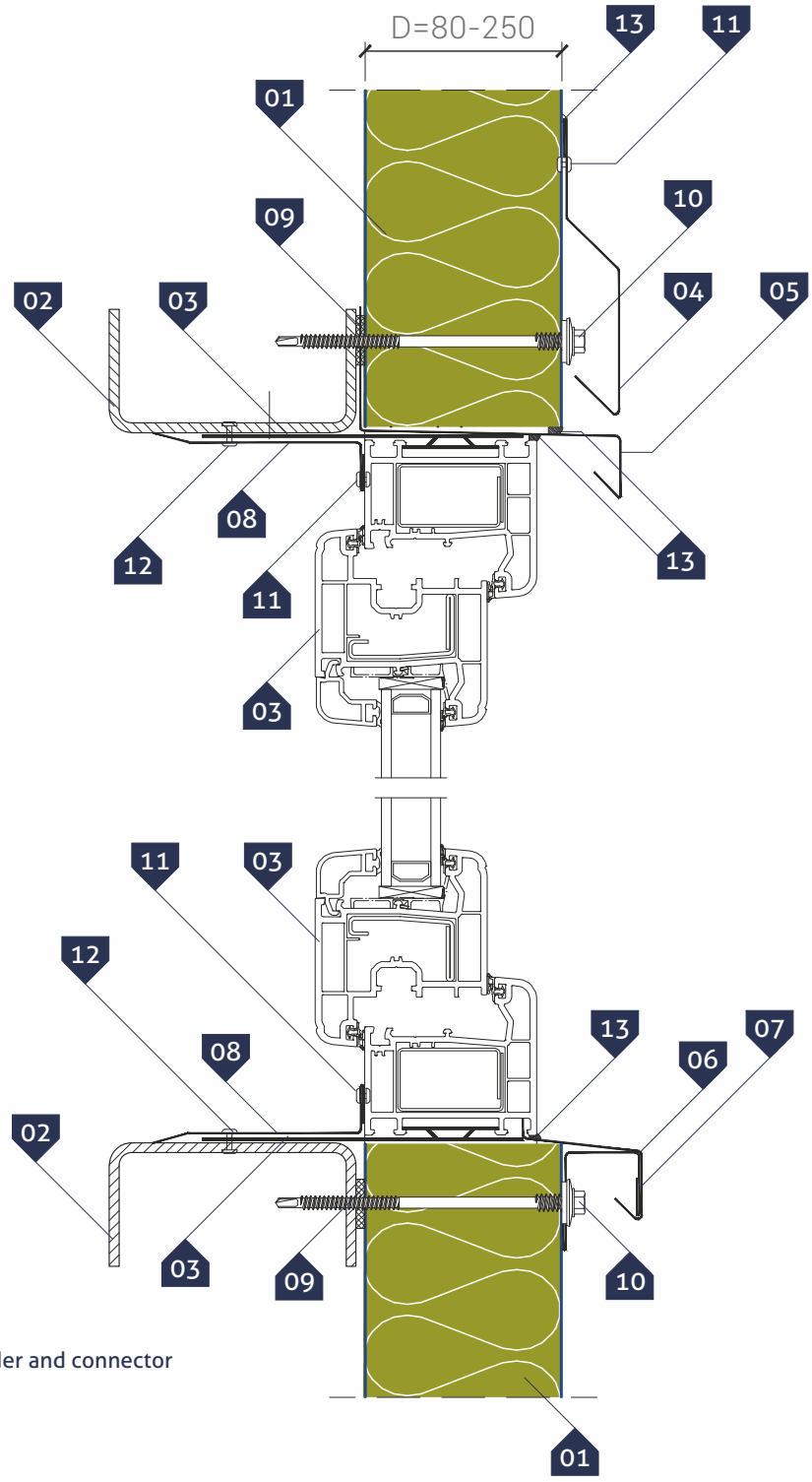
GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. Roller shutter door
04. Drip edge **OB-10**
05. Drip edge **OB-13**
06. Covering flashing **OB-20**
07. Individual covering flashing
08. Thermal insulation on the fastening
09. Polyethylene, self-adhesive sealing tape **(PES)***
10. Self-drilling connector for sandwich panels
11. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
12. Blind rivet **4,8 x 15,1** (for the structure)
13. Neutral silicone sealant

* - a recommended item



KEY:

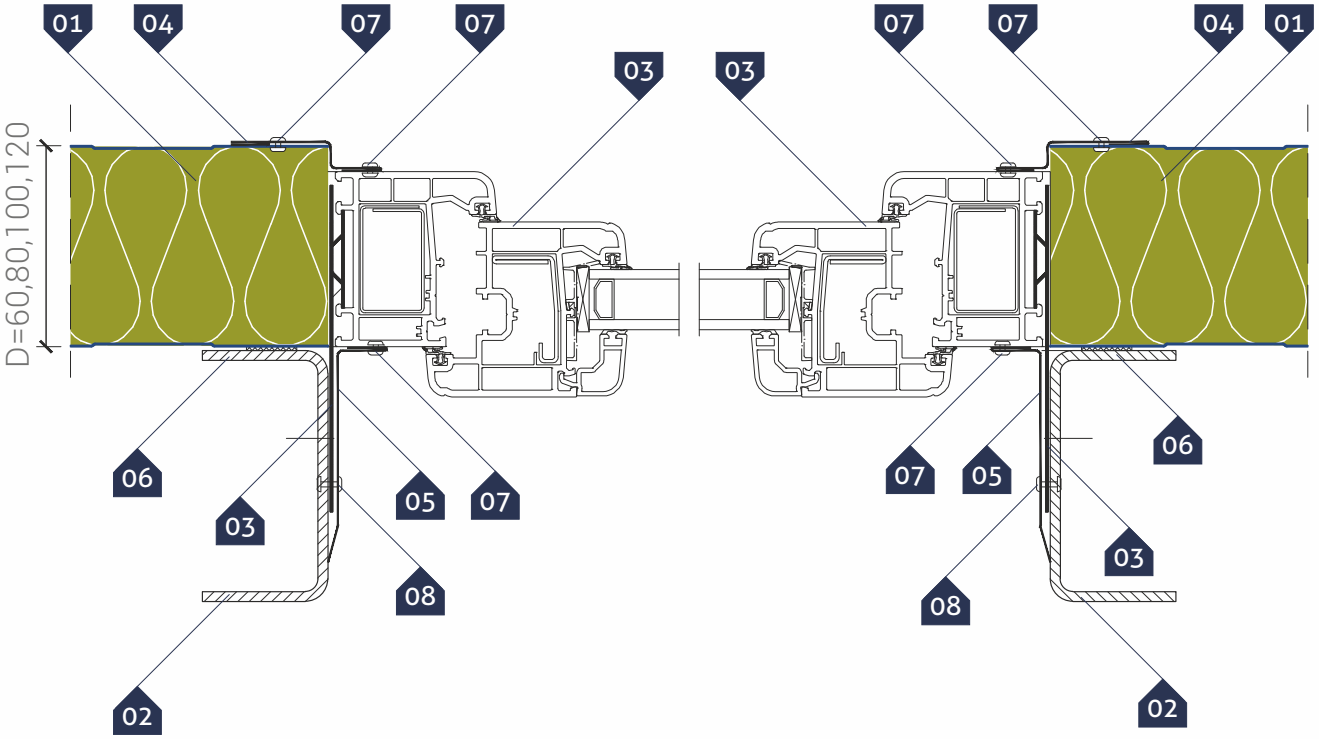
01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. **PCV** or **aluminium** window with a holder and connector
04. Drip edge **OB-10**
05. Drip edge **OB-13**
06. Cill OB. **OB-37**
07. Rigid flashing **OB-16**
08. Individual internal corner
09. Polyethylene, self-adhesive sealing tape **(PES)***
10. Polyethylene caulking foam
11. Self-drilling connector for sandwich panels
12. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
13. Blind rivet **4,8 x 15,1** (for the structure)
14. Neutral silicone sealant

* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

VERTICAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I – horizontal section

GÓR-STAL® SANDWICH PANELS

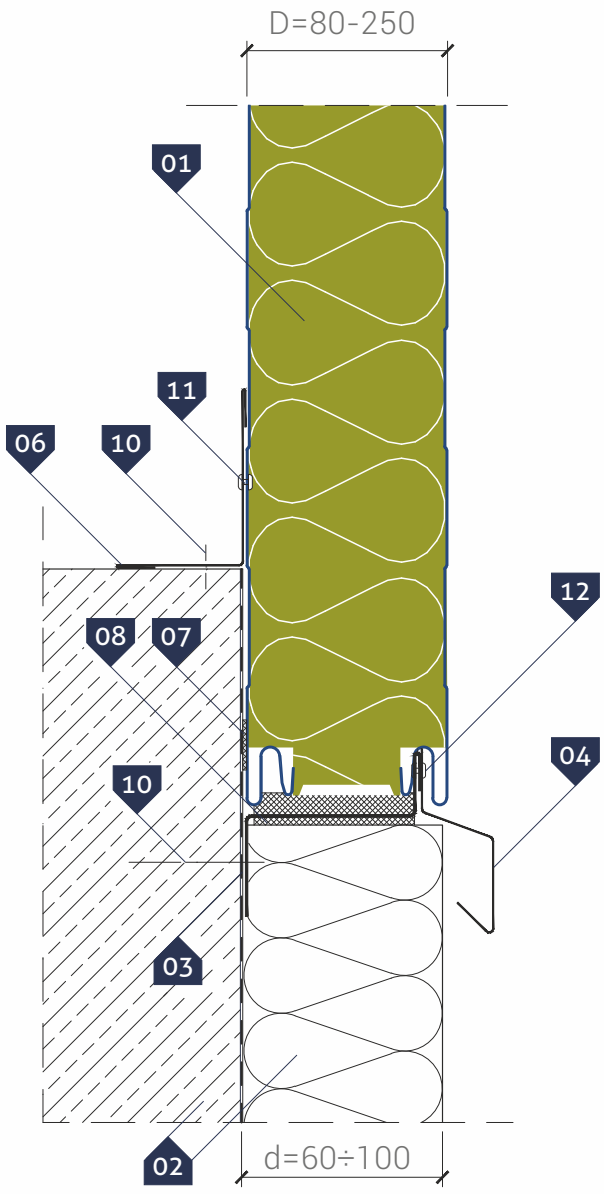


KEY:

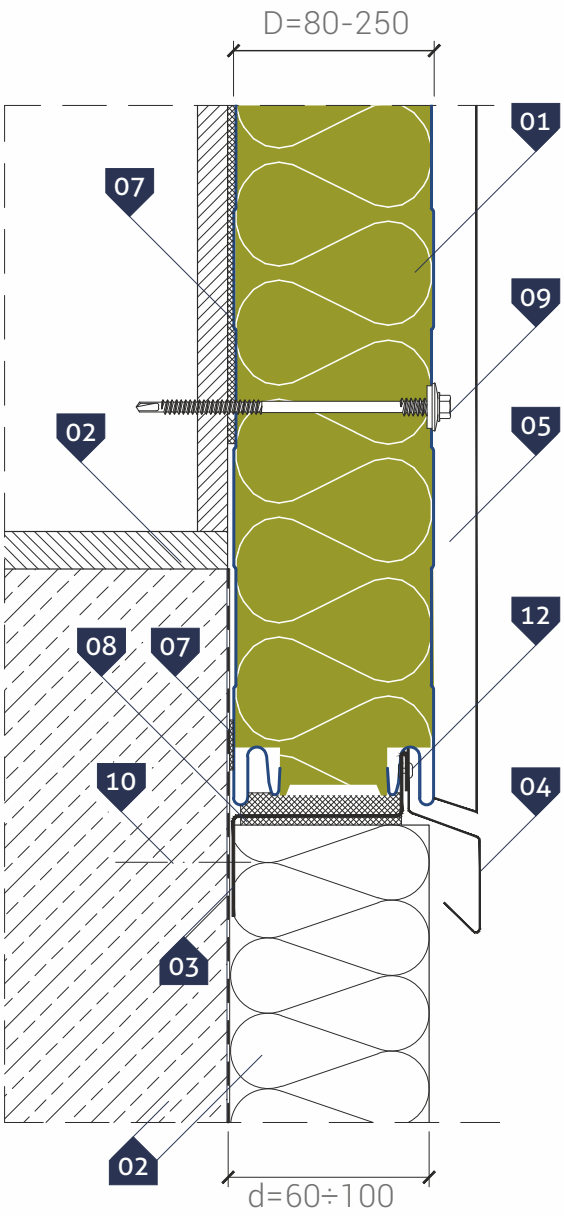
01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. **PVC** or **aluminium** window with a holder and connector
04. Individual covering flashing
05. Individual internal corner
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Polyethylene caulking foam
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
09. Blind rivet **4,8 x 15,1** (for the structure)

* - a recommended item

In the span



On the support



KEY:

01. **GS MW** wall panel (visible mounting)
02. Structural elements acc. to detailed design and thermal insulation carried out after assembly of panel
03. Edge Z-bar **OB-38**
04. Drip edge **OB-14**
05. Covering flashing for panel junction
06. Corner flashing **OB-06**
07. Polyethylene, self-adhesive sealing tape **(PES)***
08. Filling with rock mineral wool
09. Self-drilling connector for sandwich panels
10. Steel expansion joint for quick assembly
11. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
12. Rivet **4.0 x 8.0**

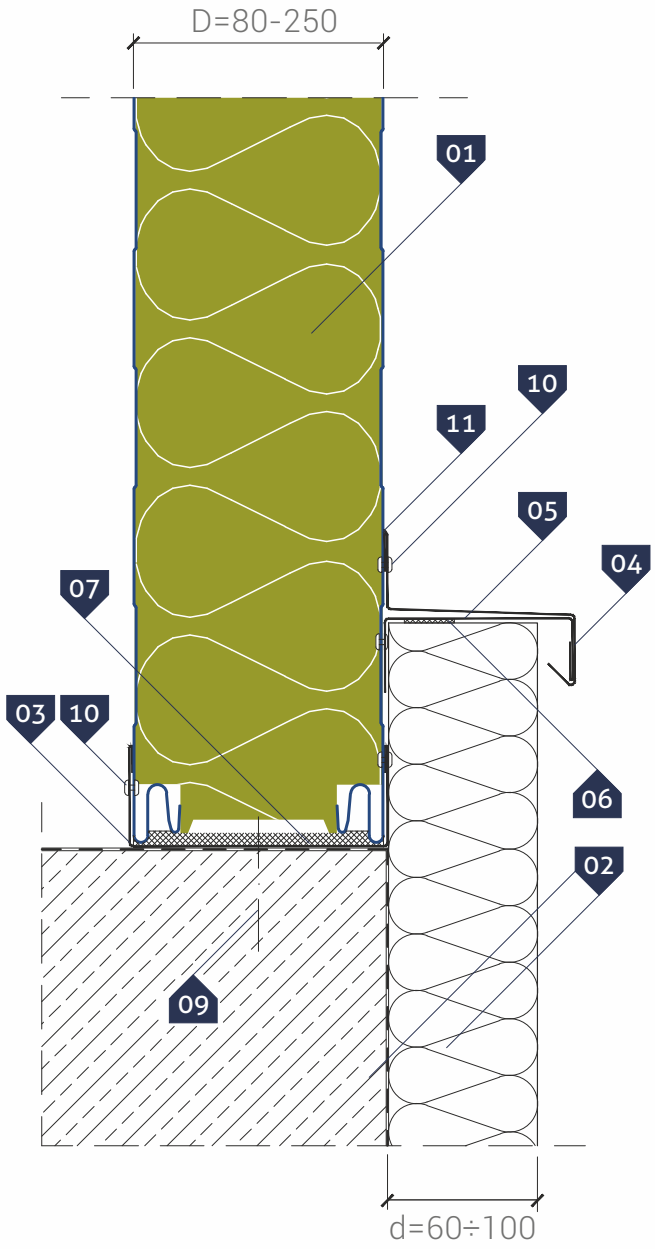
* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

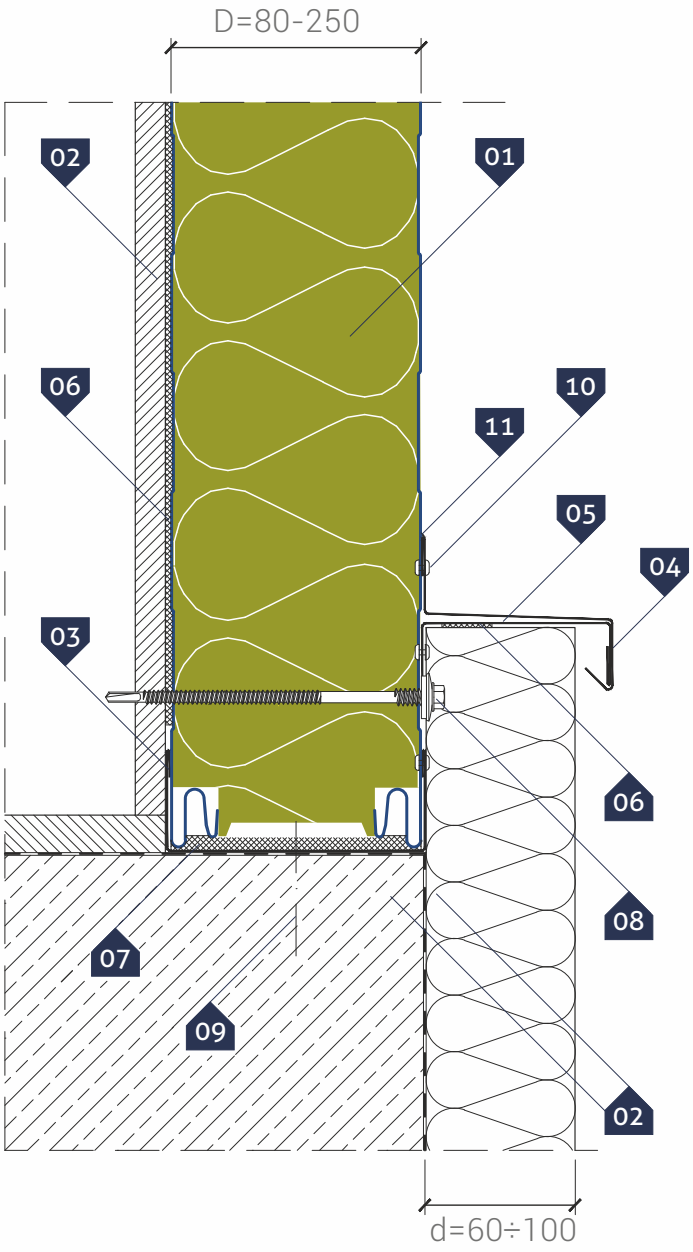
HORIZONTAL ARRANGEMENT of panels
Details of panel connection to ground beam
Type II

GÓR-STAL® SANDWICH PANELS

In the span



On the support



KEY:

01. **GS MW** wall panel (visible mounting)
02. Structural elements acc. to detailed design and thermal insulation carried out after assembly of panel
03. Flashing **OB-42**
04. Drip edge **OB-15**
05. Rigid flashing **OB-15a**
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Filling with rock mineral wool
08. Self-drilling connector for sandwich panels
09. Steel expansion joint for quick assembly
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
11. Neutral silicone sealant

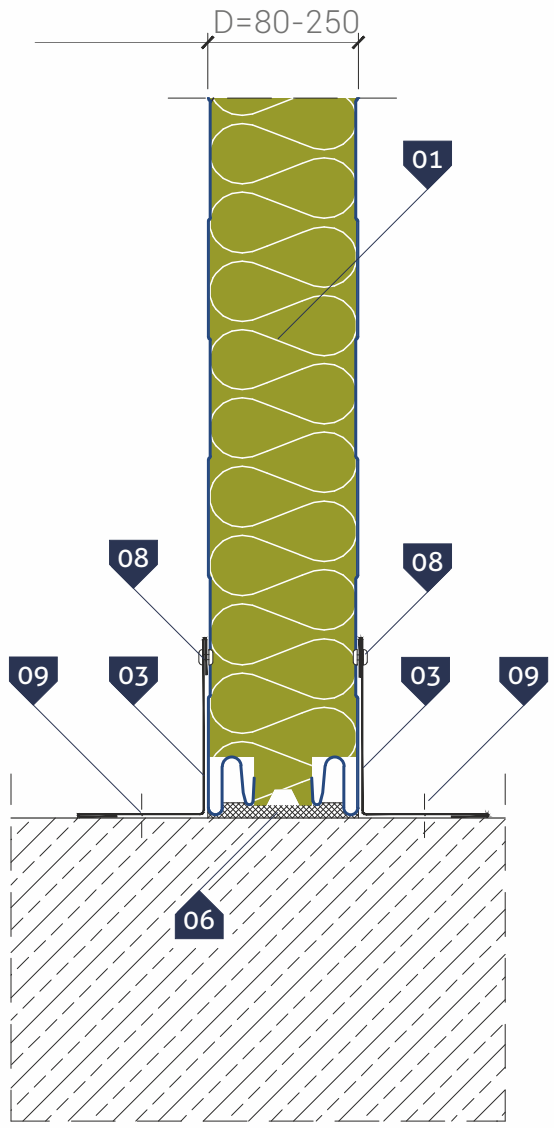
* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

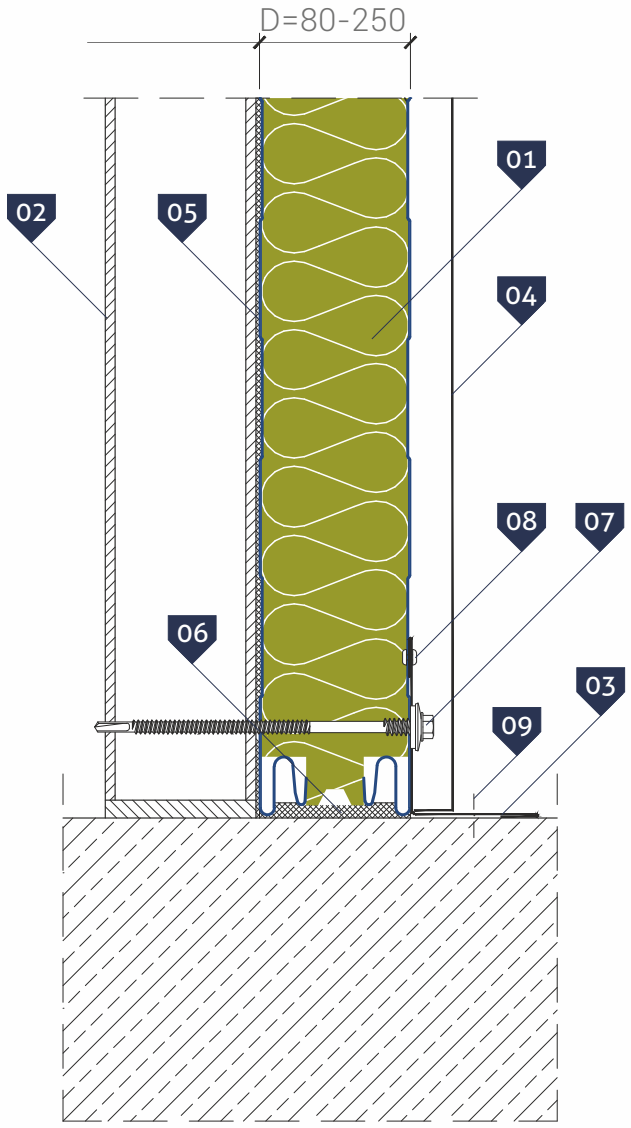
HORIZONTAL ARRANGEMENT of panels
Detail of panel connection to flooring

GÓR-STAL® SANDWICH PANELS

In the span



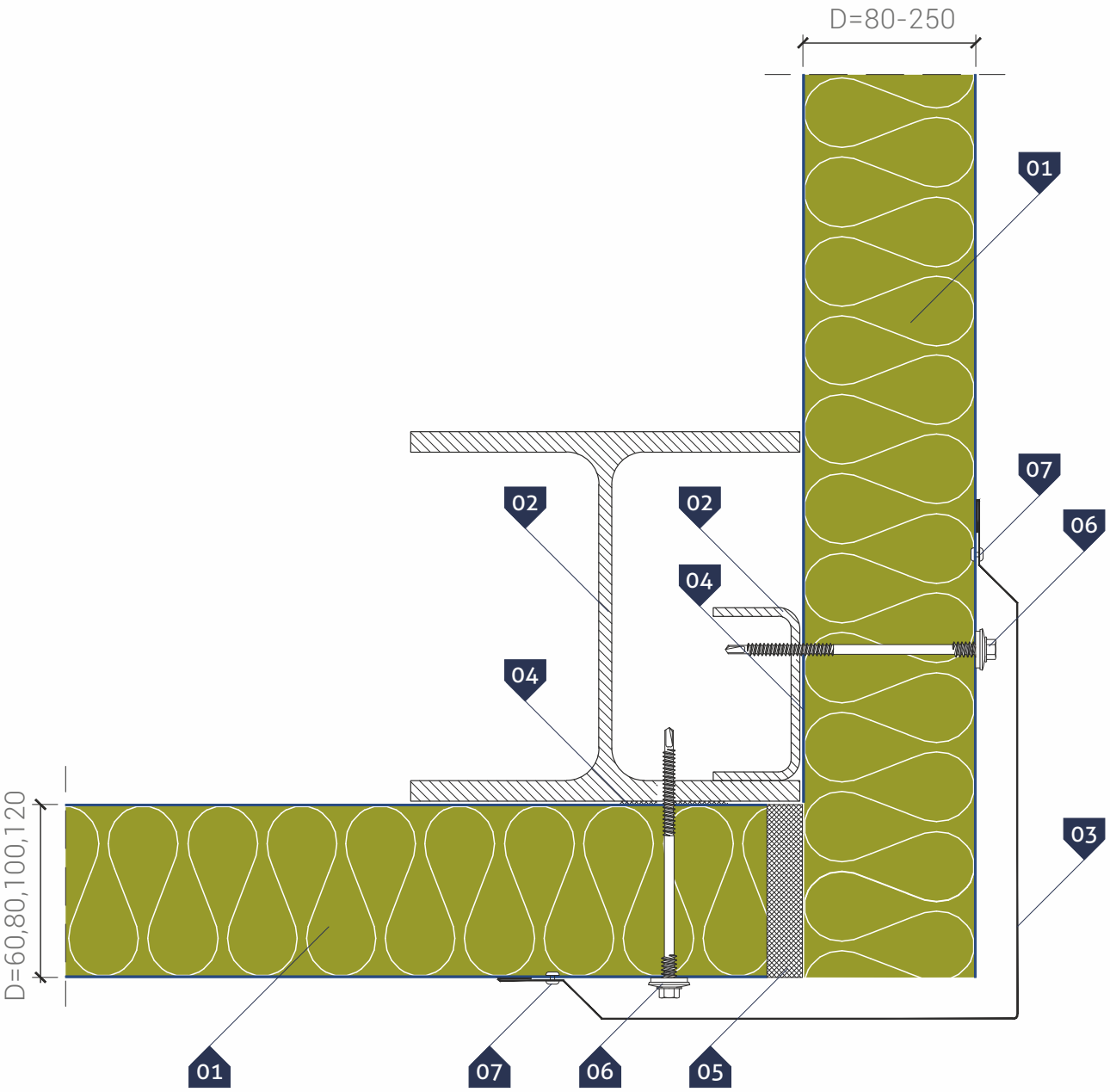
On the support



KEY:

01. **GS MW** wall panel (visible mounting)
02. Steel post acc. to structure design
03. Corner flashing **OB-06**
04. Covering flashing for panel joints
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
09. Steel expansion joint for quick assembly

* - a recommended item



KEY:

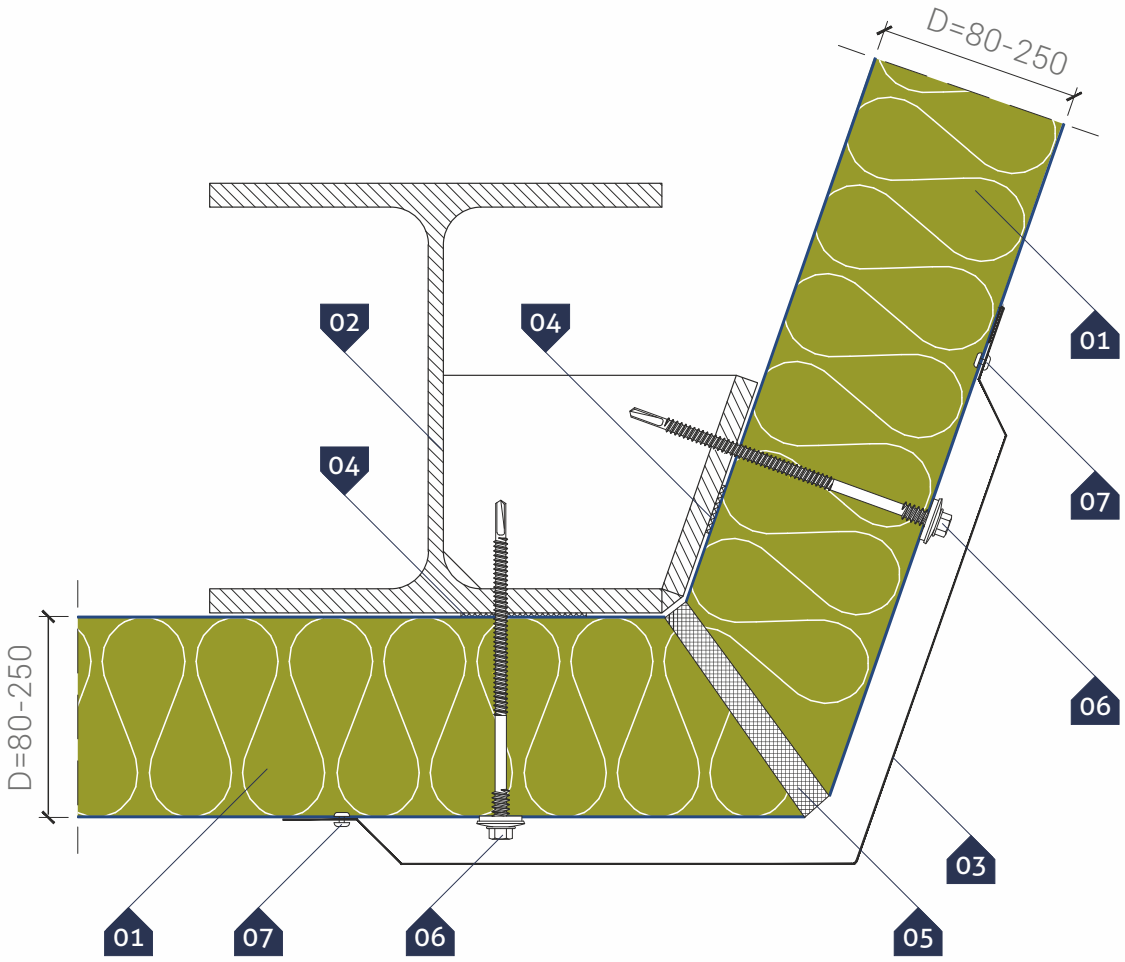
01. **GS MW** wall panel (visible mounting)
02. Steel post acc. to structure design
03. Corner flashing **OB-03**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling connector for sandwich panels
07. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

HORIZONTAL ARRANGEMENT of panels
Detail of panel connection in an optional angle corner

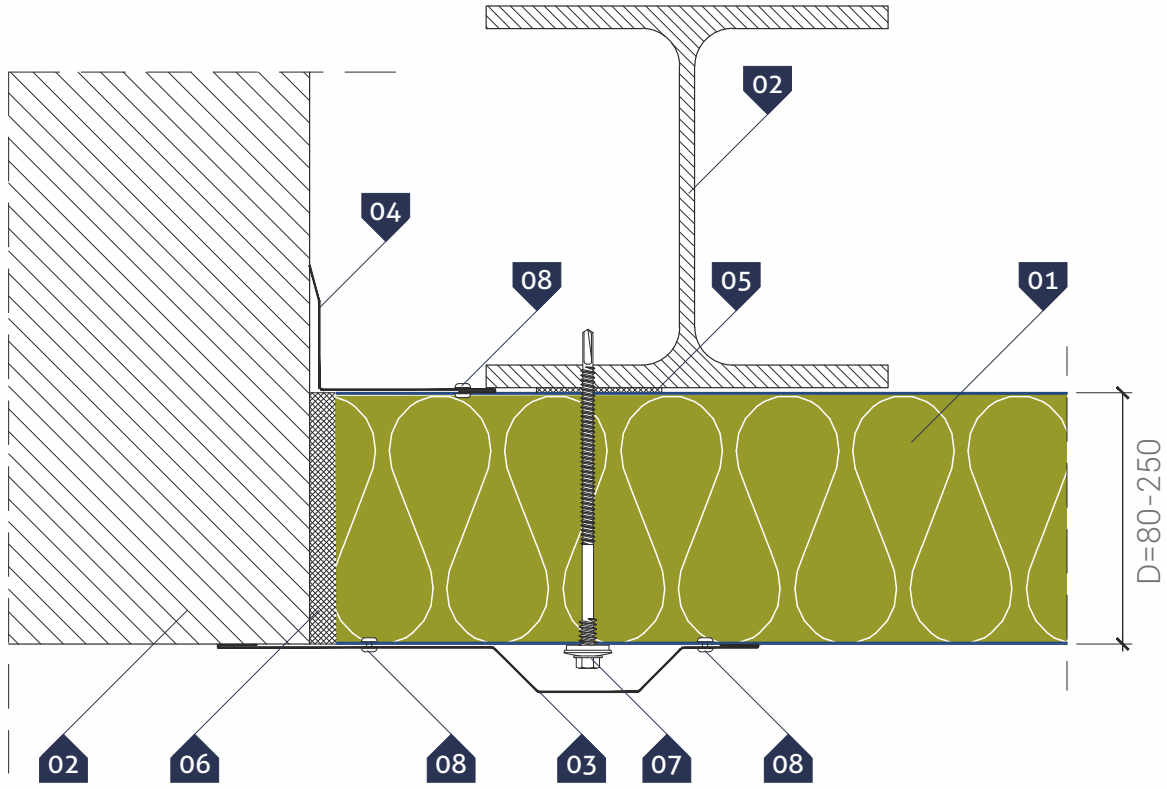
GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW** wall panel (visible mounting)
02. Steel post acc. to structure design
03. Corner flashing **OB-03**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling connector for sandwich panels
07. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

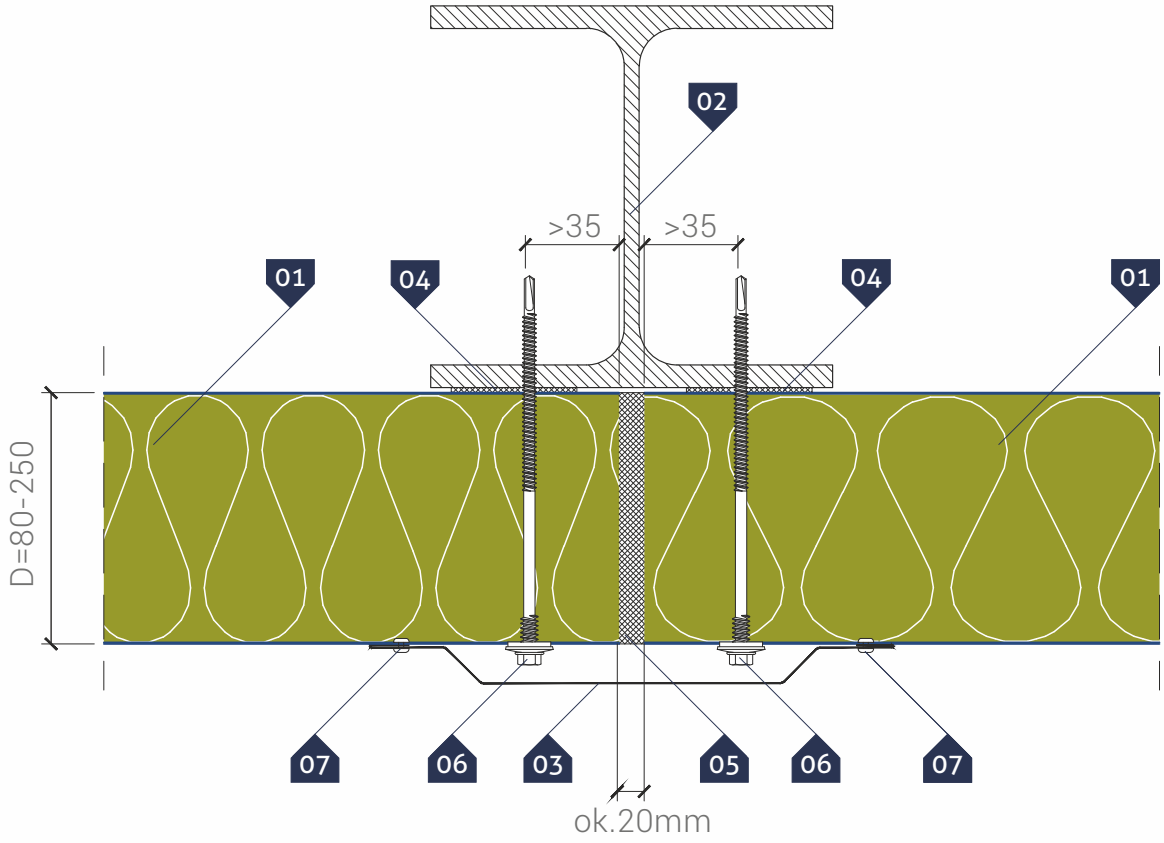
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Blockwall and post acc. to structure design
03. Covering flashing **OB-19**
04. Inner corner flashing **OB-07**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

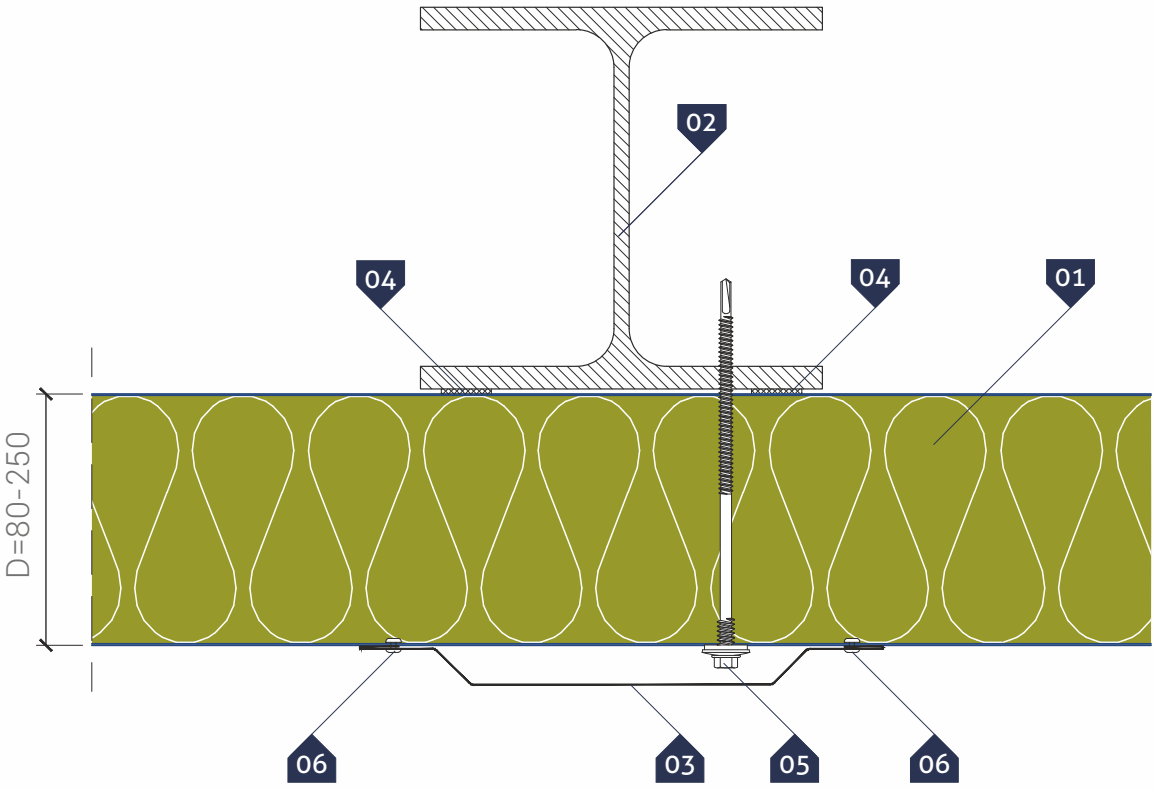
* - a recommended item



KEY:

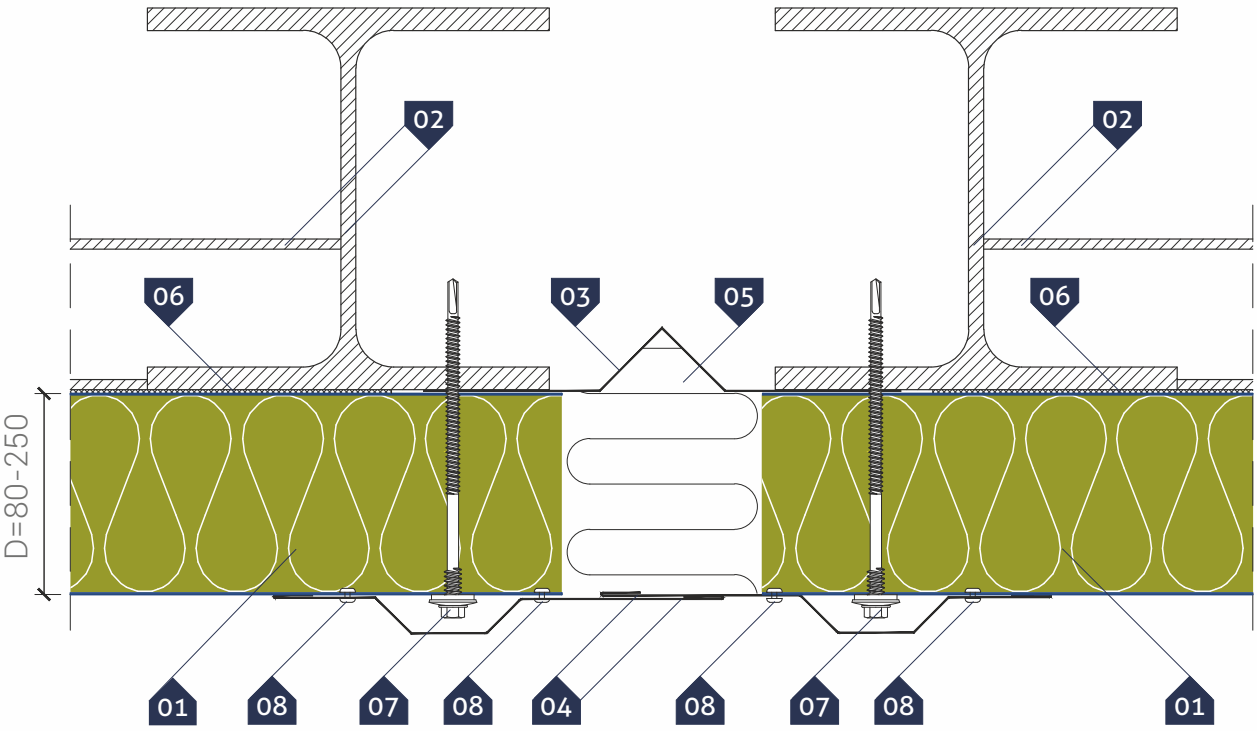
01. **GS MW** wall panel (visible mounting)
02. Steel post acc. to structure design
03. Covering flashin **OB-17**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling connector for sandwich panels
07. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:
01. **GS MW** wall panel (visible mounting)
02. Steel post acc. to structure design
03. Covering flashin **OB-17**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Self-drilling connector for sandwich panels
06. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

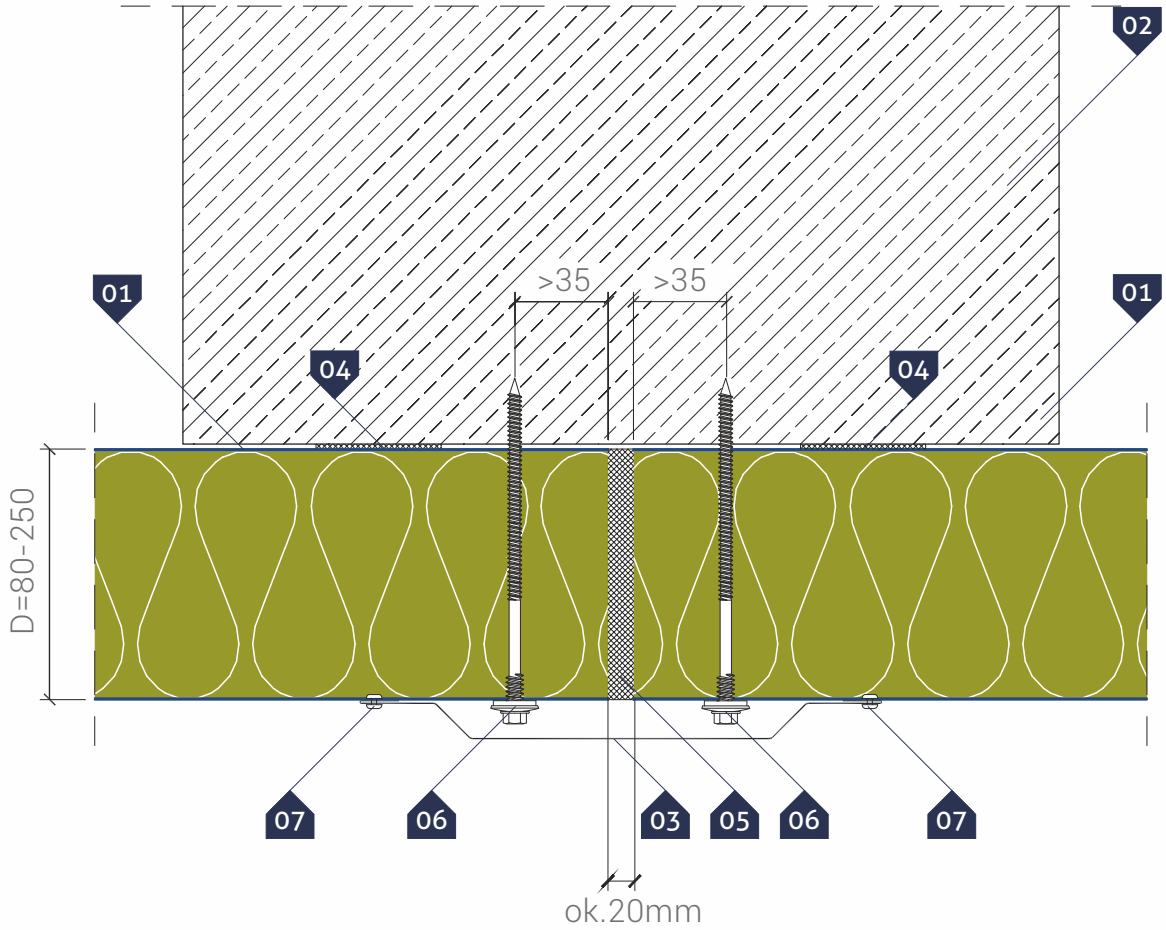
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Steel posts and transom acc. to structure design
03. Individual expansion joint flashing
04. Drip edge **OB-17**
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

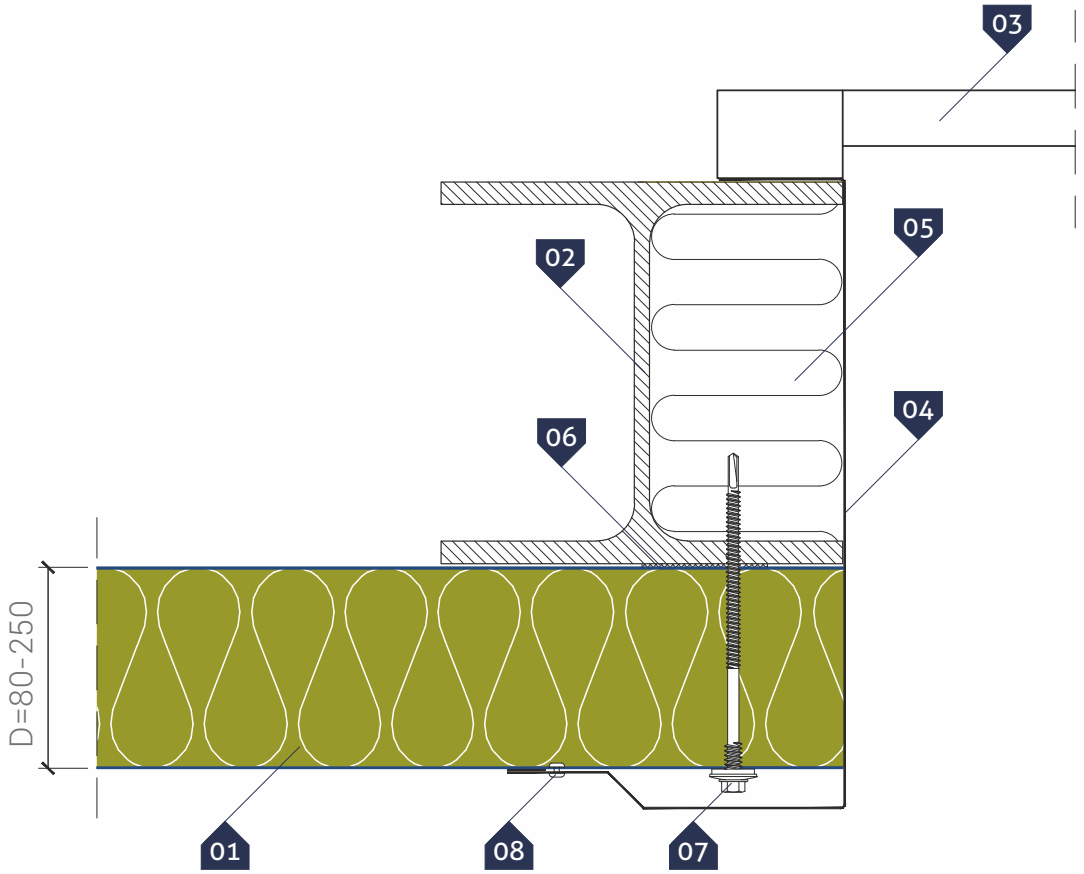
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Reinforced concrete column acc. to structure design
03. Covering flashing **OB-17**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Connector for fastening of sandwich panels to concrete
07. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

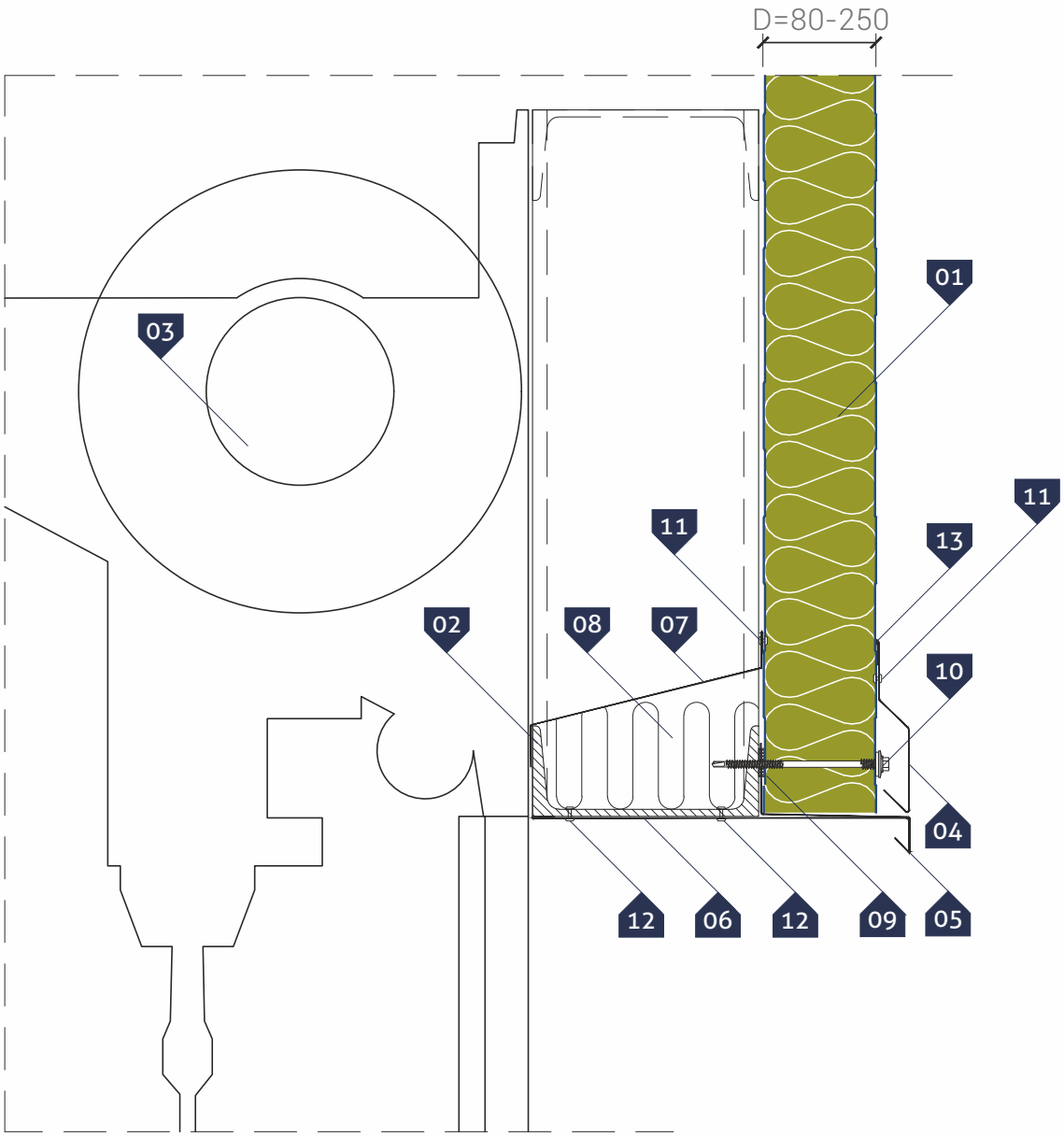
* - a recommended item



KEY:

01. **GS MW** wall panel (visible mounting)
02. Steel post acc. to structure design
03. Roller shutter door
04. Door flashing **OB-21**
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:

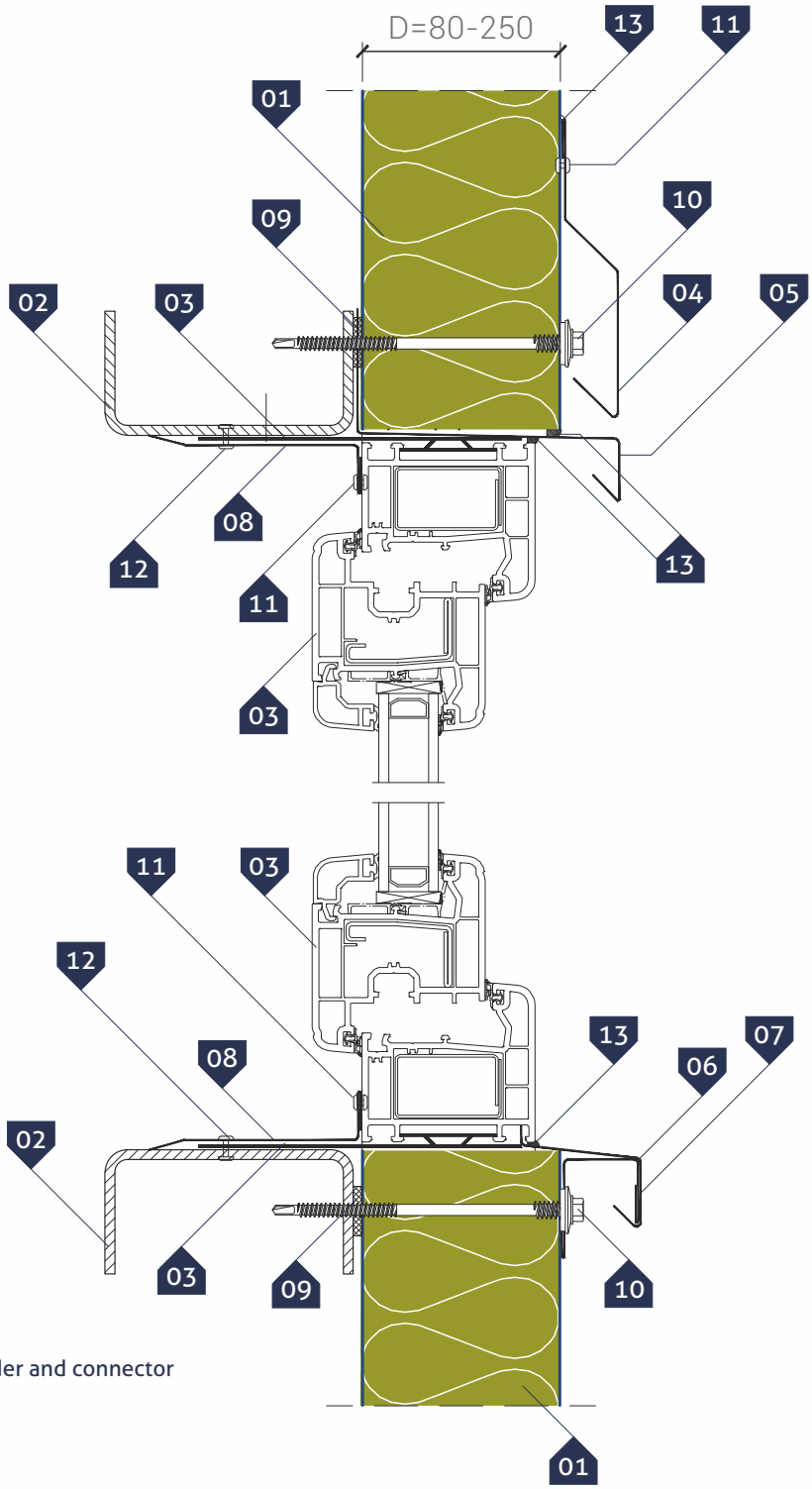
01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. Roller shutter door
04. Drip edge **OB-10**
05. Drip edge **OB-13**
05. Drip edge **OB-20**
07. Individual covering flashing
08. Thermal insulation on the fastening
09. Polyethylene, self-adhesive sealing tape **(PES)***
10. Self-drilling connector for sandwich panels
11. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
12. Blind rivet **4,8 x 15,1** (for the structure)
13. Neutral silicone sealant

* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

HORIZONTAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I – verticle section

GÓR-STAL® SANDWICH PANELS



KEY:

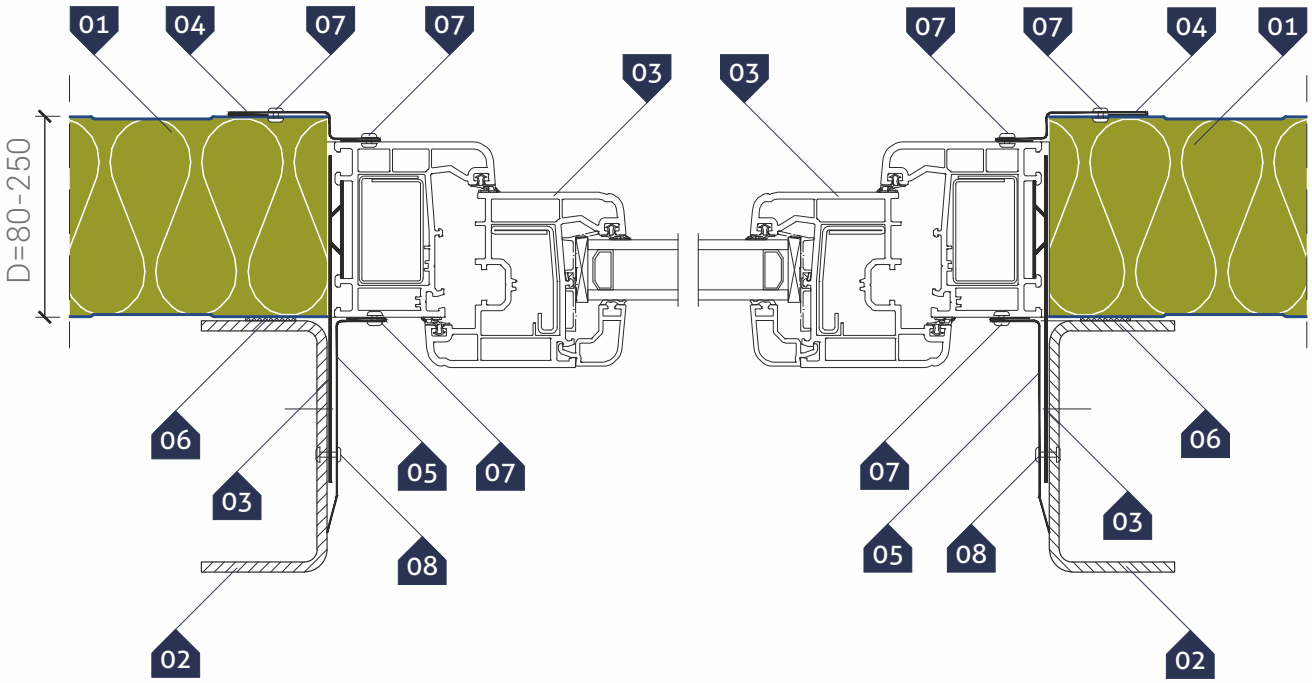
01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. **PCV** or **aluminium** window with a holder and connector
04. Drip edge **OB-10**
05. Drip edge **OB-13**
06. Cill **OB-37**
07. Rigid flashing **OB-16**
08. Individual internal corner
09. Polyethylene, self-adhesive sealing tape **(PES)***
10. Self-drilling connector for sandwich panels
11. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
12. Blind rivet **4,8 x 15,1** (for the structure)
13. Neutral silicone sealant

* - a recommended item

Wall sandwich panel GS MW S / GS MW CH (visible connector)

HORIZONTAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I - horizontal section

GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW** wall panel (visible mounting)
02. Transom acc. to structure design
03. **PVC** or **aluminium** window with a holder and connector
04. Individual covering flashing
05. Individual internal corner
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
08. Blind rivet **4,8 x 15,1** (for the structure)

* - a recommended item

APPLICATION

GS MW U wall panels are intended for the construction of walls with the required fire resistance in frame structures. Compatibility of the locks with GS insPIRe panels allows for the production of, for example, 2-meter cross belts at fire partition walls or enclosures at emergency doors. Panels can be mounted in both vertical and horizontal position, as single-span or multi-span wall elements. Hidden cam-lock, which is not visible from the outside makes the elevation look very functional and attractive architecturally.

PHYSICAL PROPERTIES

GS MW U wall panel is produced in the three thicknesses of the core: **80, 100 i 120 mm.** Panel facings are made of sheet metal galvanised on both sides according to **EN 10346** with organic polyester coating **25µm** thick**.** In sandwich panels, rock wool with a density of **105 kg/m^3 (+/-10%)** and a design thermal conductivity coefficient of **λ=0,044 W/m·K**is used as the core. The core of rock mineral wool (material with reaction to fire class A) allows to obtain high fire resistance classes of GS sandwich panels with mineral wool. The modular widths of the panels are: 1000 mm, and their standard lengths range from **2,0 m** to **16,0 m**. The tightness of panel joints is ensured by appropriately designed panel locks.

Thickness [mm]	Weight [kg/m²]		Modular width [mm]	Length: typical/available [m]	Lining standard RAL colours	
	facings 0,6/0,6 mm**	facings 0,5/0,6 mm**			external linings*	internal linings*
80	19,1	18,2	1000	2,0 - 12,0 / 16,5	3000, 5010, 6011, 7016, 7035, 8017, 9002, 9006, 9007,9010	9002, 9010
100	21,2	20,3				
120	23,3	22,4				

* available colors depending on the thickness of the cladding, panels thicknesses and modular widths (details from the Sales Representative)
**typical lining thicknesses; also available 0.6 and 0.7 mm (details from our Sales Representative)

The fire resistance class depends on the core thickness and the lock type and is characterized by the fire resistance class (values given in the table below). Acoustic parameters were determined on the basis of **EN ISO 10140-3** and **EN-ISO 354**. Wall panels can be used for partitions with acoustic insulation requirements lower than those given below. Chemical corrosion resistance - sandwich panels can be used in environments with atmospheric corrosivity categories C1, C2, C3 according to **EN ISO 12944-2**.

TECHNICAL PARAMETERS OF WOOL CORE

Thickness [mm]	Heat-transfer coefficient $U_{d,s}$ [W/m²·K]	Acoustic insulation	Reaction to fire	Fire resistance	NRO
	EN 14509	EN ISO 717-1	EN 13501-1	EN 13501-2	PN-B-02867
80	0,56*	NPD	A2-s1,d0	NPD	„NRO"
100	0,44*				
120	0,37*	32(-2;-3)		EI 120	

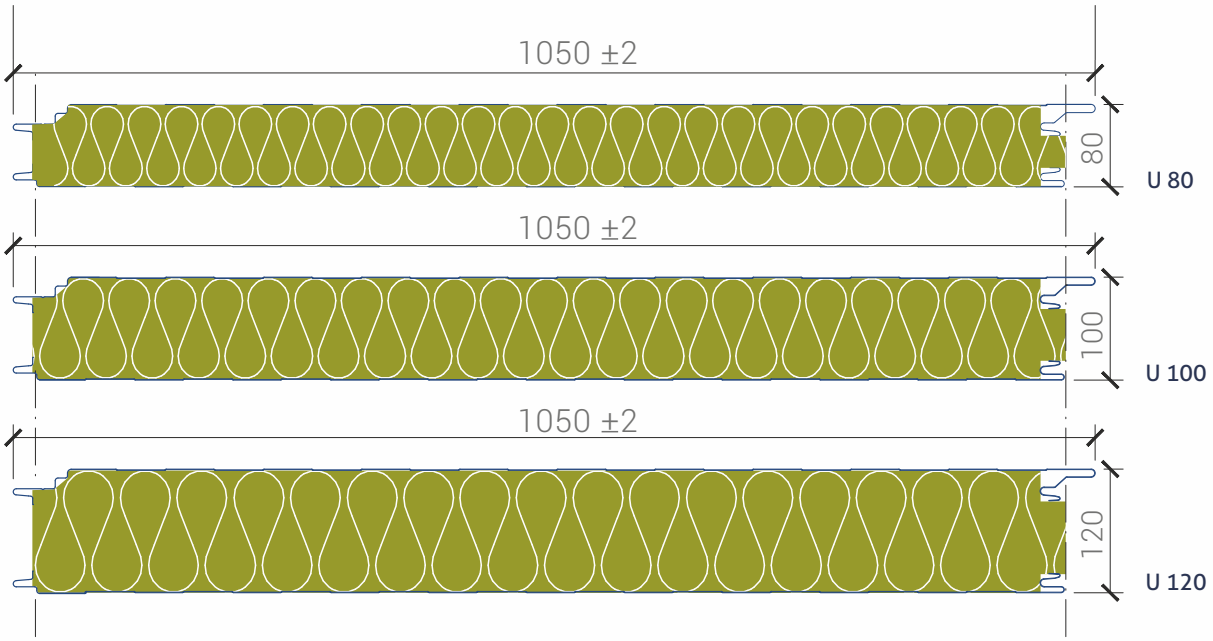
* value of U-factor for traditional core panels with a coefficient of λ=0,044 W/m·K

PACKING

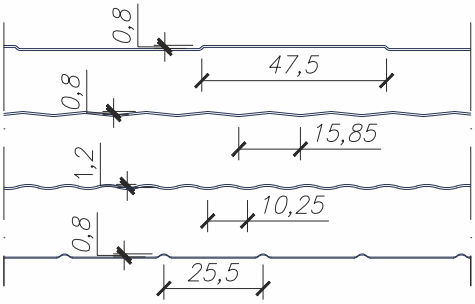
GS MW U sandwich panels are provided in packs on pallets allowing for their relocation. The table below specifies number of panels in a pack depending on panel thickness.

Panel thickness [mm]	80	100	120
Maximum number of panels in one pack	14	11	9

PANEL THICKNESS



External lining profiles



L - Linear

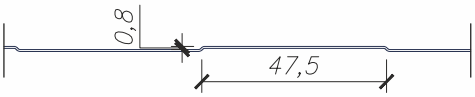
M - Mircoprofiled

F - Wavy*

R - Grooving

* - Profiling used for new orders as of February 2020. In the case when ordering panels for existing casings, please state this fact when placing the order and provide the previous order number as a reference.

Internal lining profiles



L - Linear

TABLE OF ALLOWED LOADS FOR GS MW U SANDWICH PANEL

The tables have been prepared in accordance with **EN 14509** for panels with a rock mineral wool core with light facings of a thickness of 0.5 / 0.6 mm for indoor temp. **T=20°C**. The deflection condition was assumed to be **L / 100.** For other data, separate calculations should be made. The minimum width of supports **40/60** mm. Number of connectors: **2 + 1 x PM-1** for the support. Detailed tables of permissible loads are available on the website.

GS MW U mounted as a single-span element, loaded in direction: to support (pressure)

Panel thickness	The load due to:	The maximum load [kN/m²] on the span length [m]:										
		1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
80	SGN (q_d)	3,91	2,94	2,35	1,96	1,68	1,47	0,93	0,75	0,62	0,53	0,45
	SGU (q_k)	10,85	6,74	4,38	2,94	2,02	1,42	1,02	0,74	0,54	0,40	0,30
100	SGN (q_d)	4,39	3,29	2,63	2,19	1,88	1,65	1,46	0,86	0,71	0,60	0,51
	SGU (q_k)	13,62	8,81	5,97	4,17	2,98	2,17	1,60	1,20	0,91	0,70	0,54
120	SGN (q_d)	5,66	4,25	3,40	2,83	2,43	2,12	1,05	0,85	0,70	0,59	0,50
	SGU (q_k)	10,88	6,93	5,01	3,73	2,84	2,19	1,71	1,35	1,07	0,86	0,69

GS MW U mounted as a single-span element, loaded in direction: from support(suction)

Grubość płyty	The load due to:	The maximum load [kN/m²] on the span length [m]:										
		1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
80	SGN (q_d)	3,91	2,94	2,35	1,96	1,68	1,47	1,47	1,19	0,99	0,83	0,70
	SGU (q_k)	11,23	7,06	4,66	3,18	2,23	1,60	1,16	0,86	0,65	0,50	0,38
100	SGN (q_d)	4,39	3,29	2,63	2,19	1,88	1,65	1,46	1,50	1,23	1,04	0,89
	SGU (q_k)	13,99	9,14	6,26	4,42	3,20	2,36	1,77	1,35	1,04	0,81	0,64
120	SGN (q_d)	5,66	4,25	3,40	2,83	2,43	2,12	2,22	1,79	1,48	1,25	1,06
	SGU (q_k)	10,31	7,14	5,21	3,92	3,01	2,35	1,85	1,48	1,19	0,96	0,79

GS MW U mounted as a multi-span element, loaded in direction: to support (pressure)

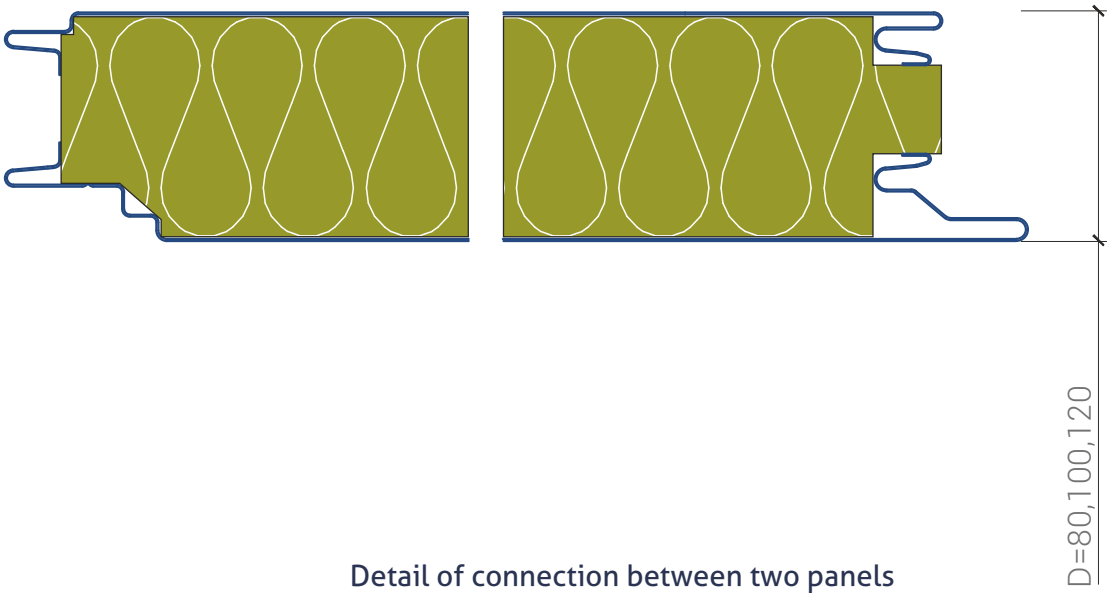
Panel thickness	The load due to:	The maximum load [kN/m²] on the span length [m]:										
		1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
80	SGN (q_d)	2,48	1,88	1,53	1,30	1,13	0,82	0,62	0,48	0,38	0,31	0,26
	SGU (q_k)	11,98	8,16	5,88	4,33	3,25	2,49	1,93	1,52	1,20	0,96	0,78
100	SGN (q_d)	2,22	1,71	1,41	1,21	1,06	0,94	0,83	0,64	0,51	0,41	0,34
	SGU (q_k)	14,55	10,05	7,41	5,62	4,33	3,39	2,68	2,15	1,75	1,43	1,17
120	SGN (q_d)	2,66	1,99	1,60	1,35	1,17	1,04	0,93	0,85	0,73	0,59	0,48
	SGU (q_k)	10,35	7,33	5,54	4,35	3,53	2,91	2,41	2,01	1,69	1,44	1,22

GS MW U mounted as a multi-span element, loaded in direction: from support(suction)

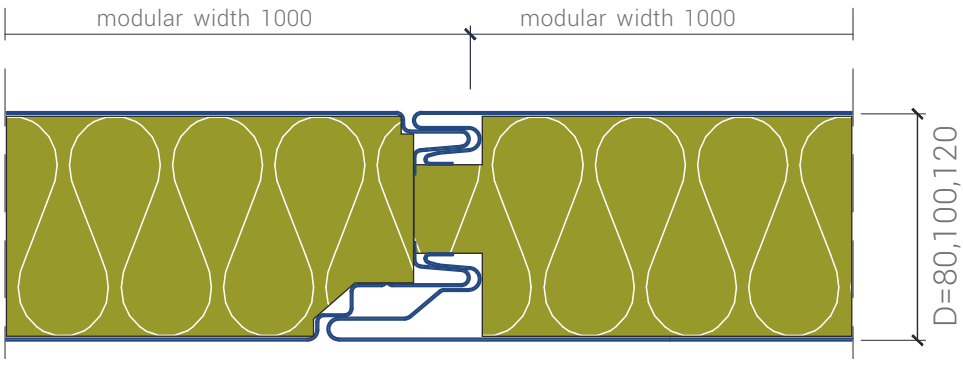
Panel thickness	The load due to:	The maximum load [kN/m²] on the span length [m]:										
		1,5	2,0	2,5	3,0	3,5	4,0	4,5	5,0	5,5	6,0	6,5
80	SGN (q_d)	2,66	2,00	1,30	0,76	0,48	0,33	0,23	0,17	0,13	0,11	-
	SGU (q_k)	12,25	8,38	6,05	4,47	3,38	2,60	2,03	1,60	1,28	1,04	0,85
100	SGN (q_d)	2,39	1,83	1,49	0,85	0,51	0,33	0,22	0,16	0,11	-	-
	SGU (q_k)	14,83	10,28	7,59	5,77	4,46	3,51	2,79	2,25	1,83	1,50	1,25
120	SGN (q_d)	2,28	1,71	1,37	0,82	0,50	0,33	0,20	0,11	-	-	-
	SGU (q_k)	10,54	7,49	5,67	4,48	3,64	3,00	2,49	2,09	1,76	1,50	1,28

Selected details of cladding made of GS MW U sandwich panels

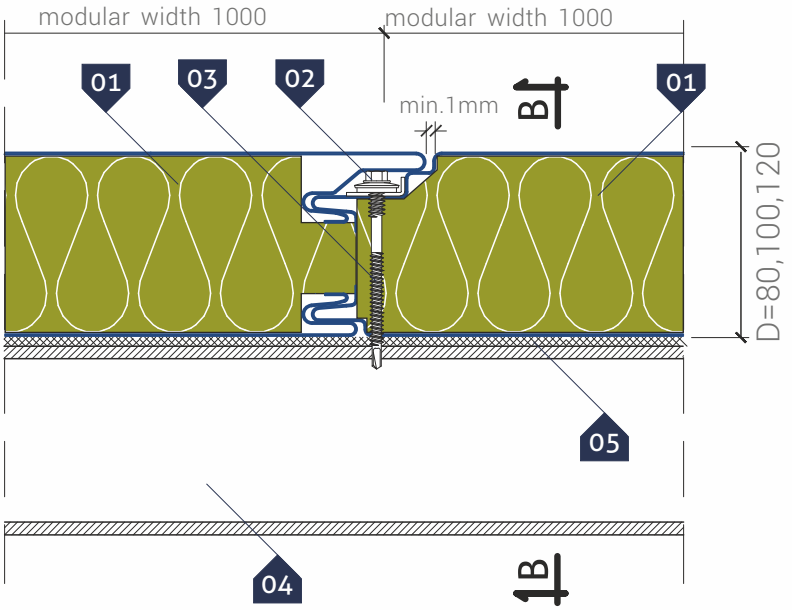
Shape of panels cam-lock



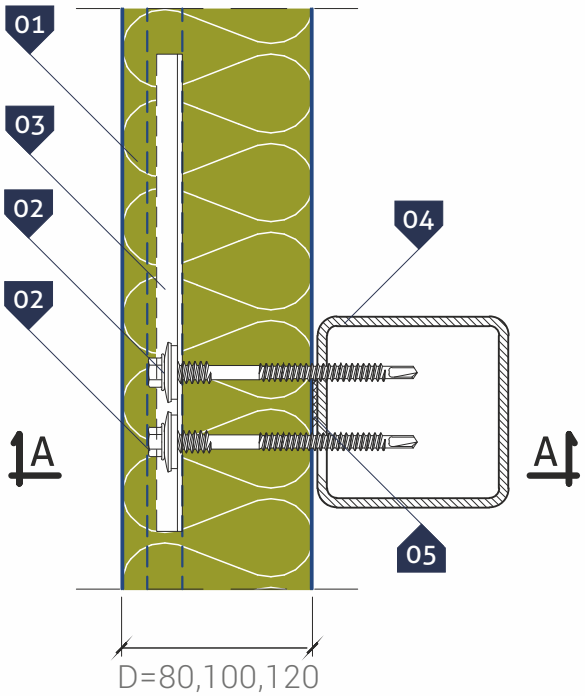
Detail of connection between two panels



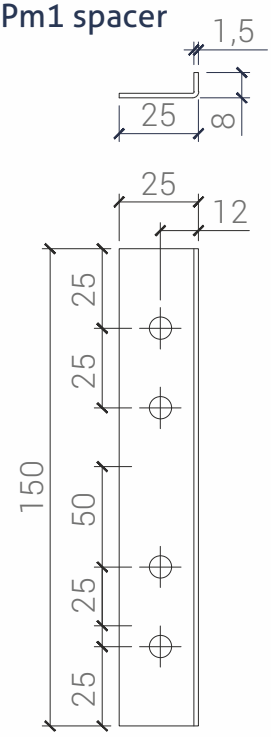
Detail of panel conection



B-B cross-section



Pm1 spacer

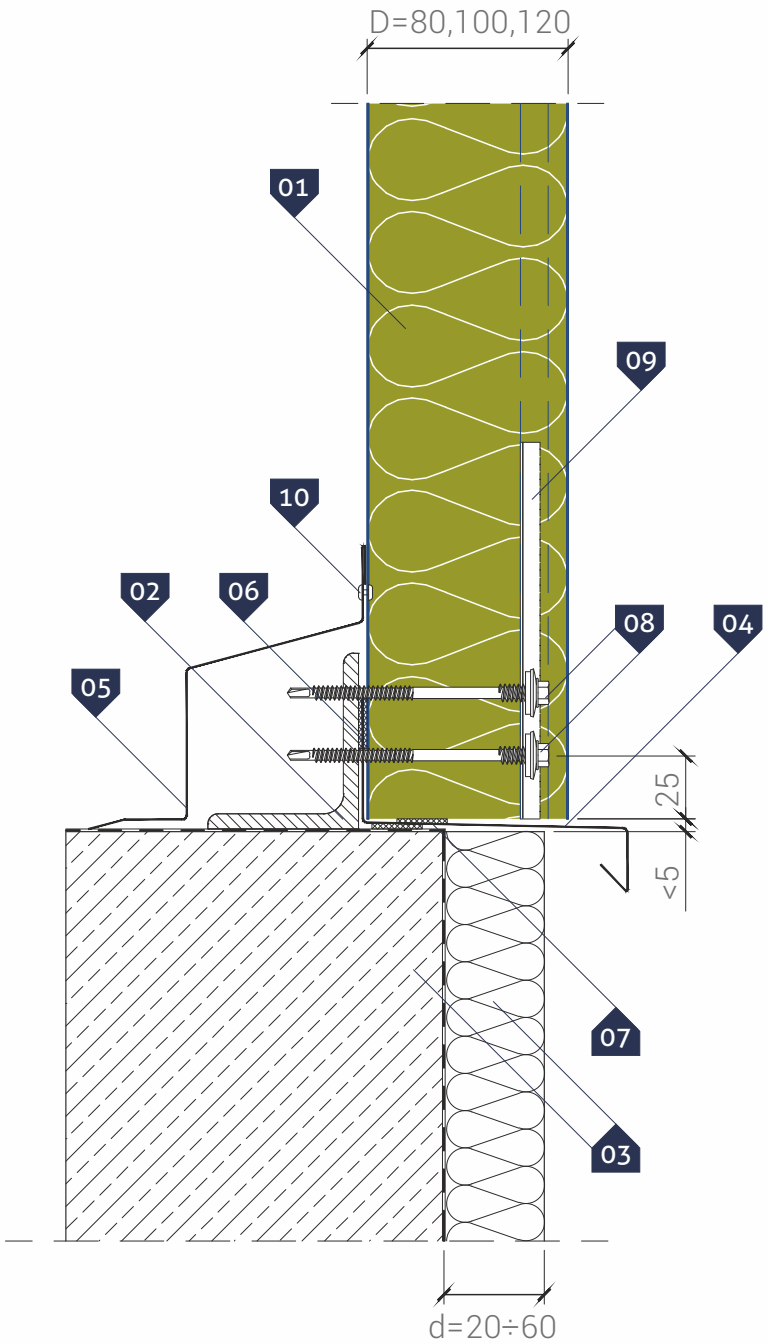


KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Self-drilling connector for sandwich panels
03. **PM1** spacer
04. Bolt acc. to the construction design
05. Polyethylene sealing tape, self-adhesive **(PES)** *

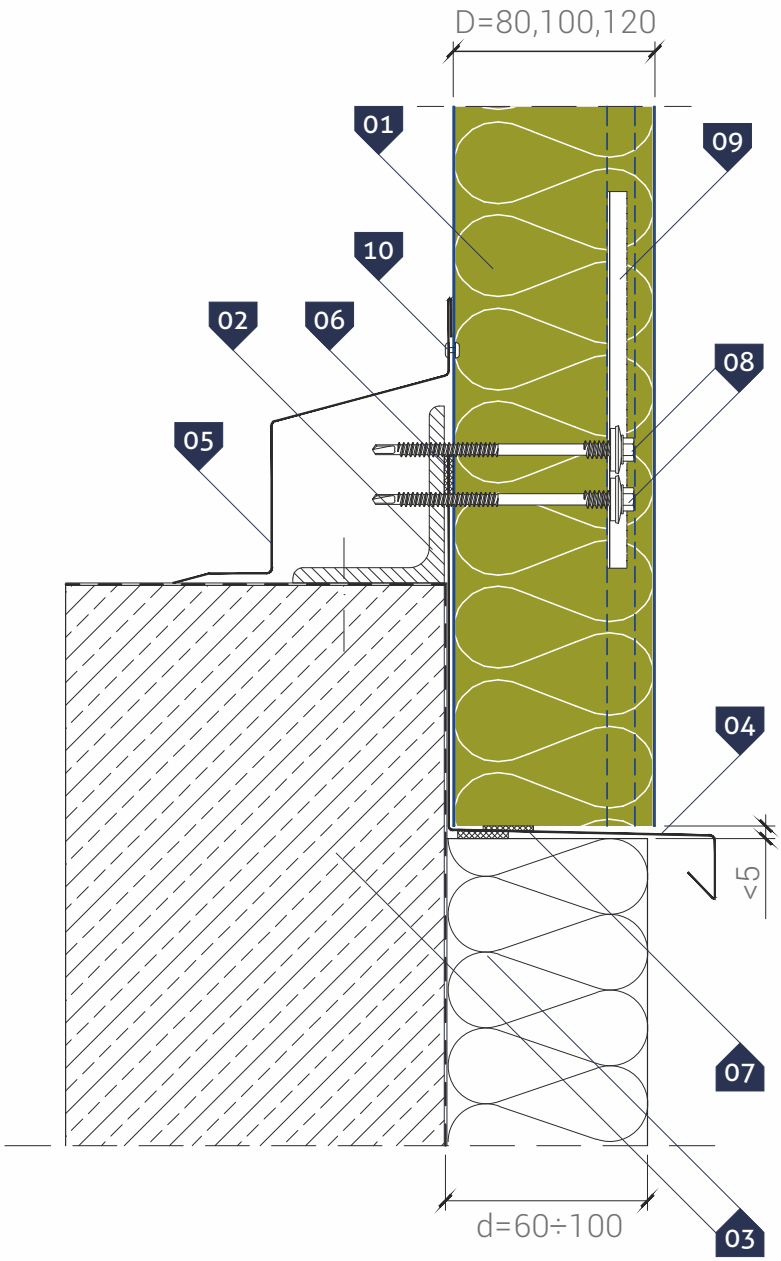
NOTE: Fasten each panel along its width to a structure with a minimum of two connectors

* - a recommended item



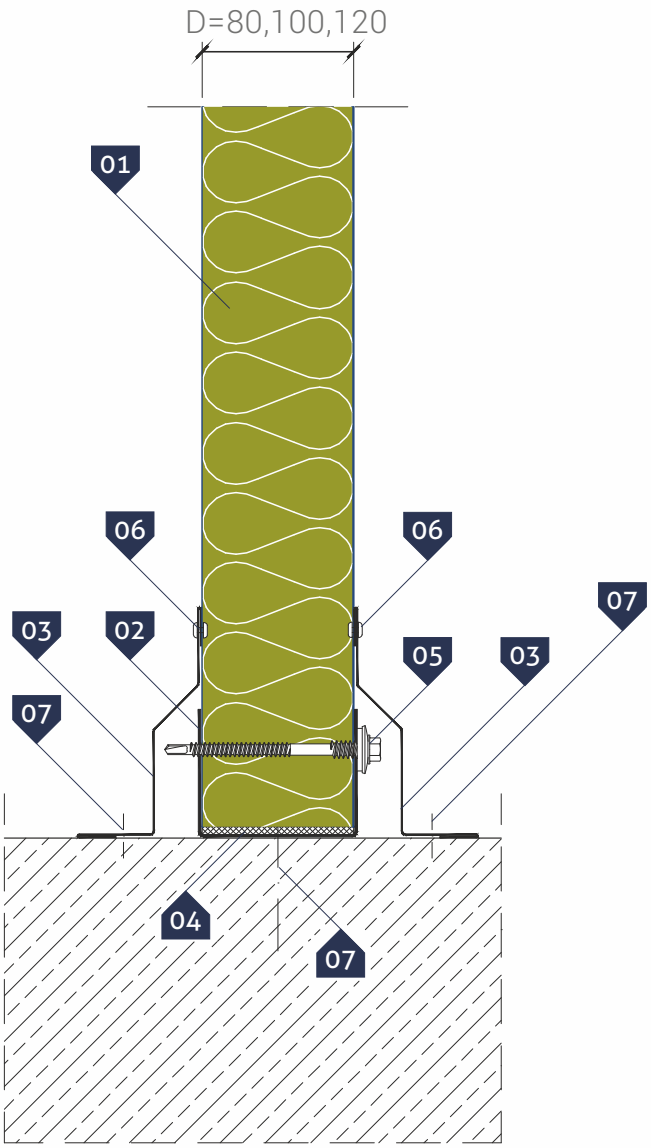
KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Steel section acc. to structure design
03. Ground beam with insulation and thermal insulation acc. to detailed design
04. Drip edge **OB-13**
05. Covering flashing **OB-09**
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Impregnated polyurethane seal
08. Self-drilling connector for sandwich panels
09. **PM1** spacer
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Steel section acc. to structure design
03. Grround beam with insulation and thermal insulation acc. to detailed design
04. Eaves **OB-13** (extended)
05. Covering flashing **OB-09**
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Impregnated polyurethane seal
08. Self-drilling connector for sandwich panels
09. **PM1** spacer
10. Tight blind rivet **4,0 x 8,0**

* - a recommended item



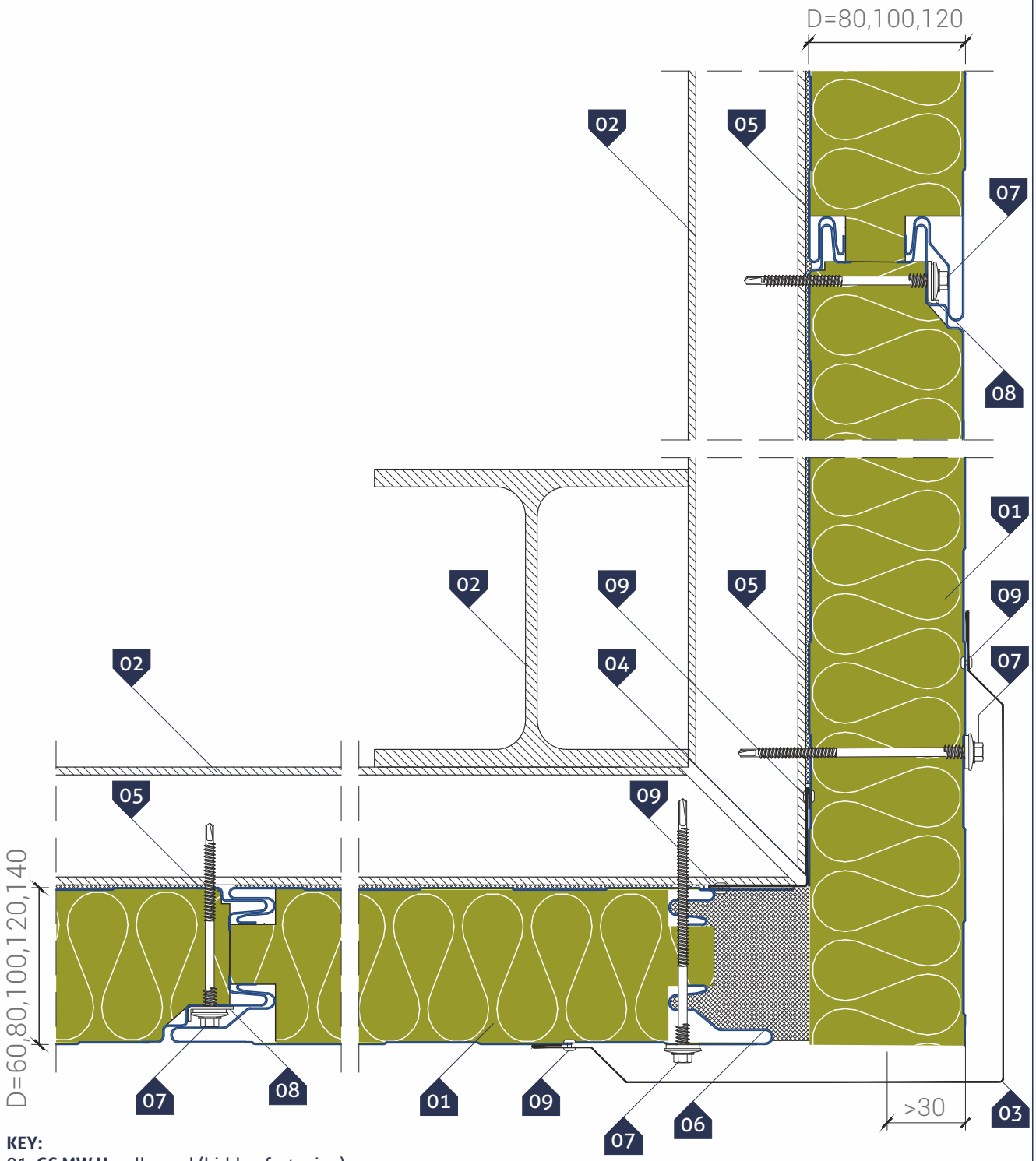
KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Edge channel section **OB-42**
03. Covering flashing **OB-05**
04. Filling with rock mineral wool
05. Self-drilling connector for sandwich panels
06. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
07. Steel expansion joint for fast assembly

Wall sandwich panel GS MW U (hidden connector)

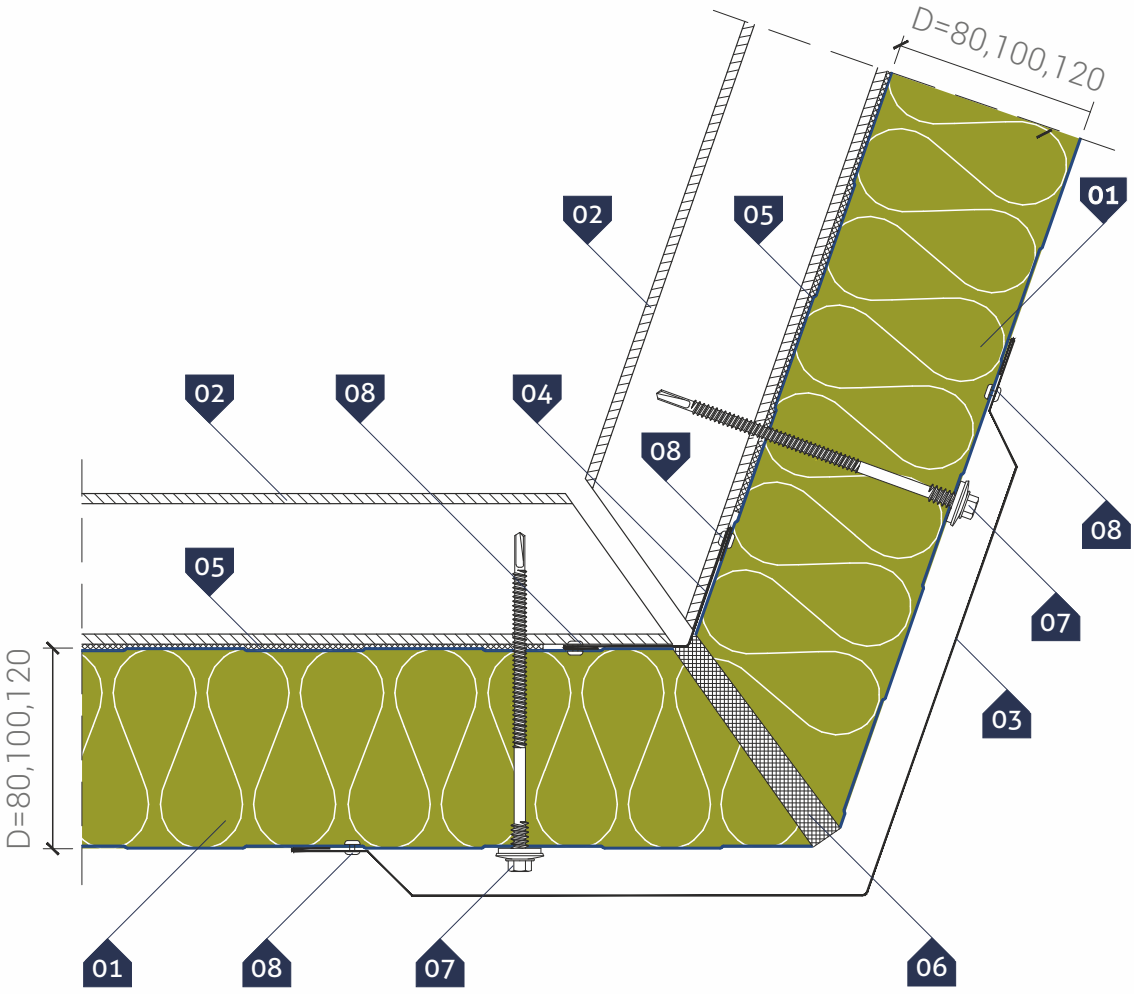
VERTICAL ARRANGEMENT of panels
Detail of panel connection in a corner
Type I

GÓR-STAL® SANDWICH PANELS



KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Steel post and transom acc. to structure design
03. Corner flashing **OB-03**
04. Corner flashing **OB-02**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. **PM1** spacer
09. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

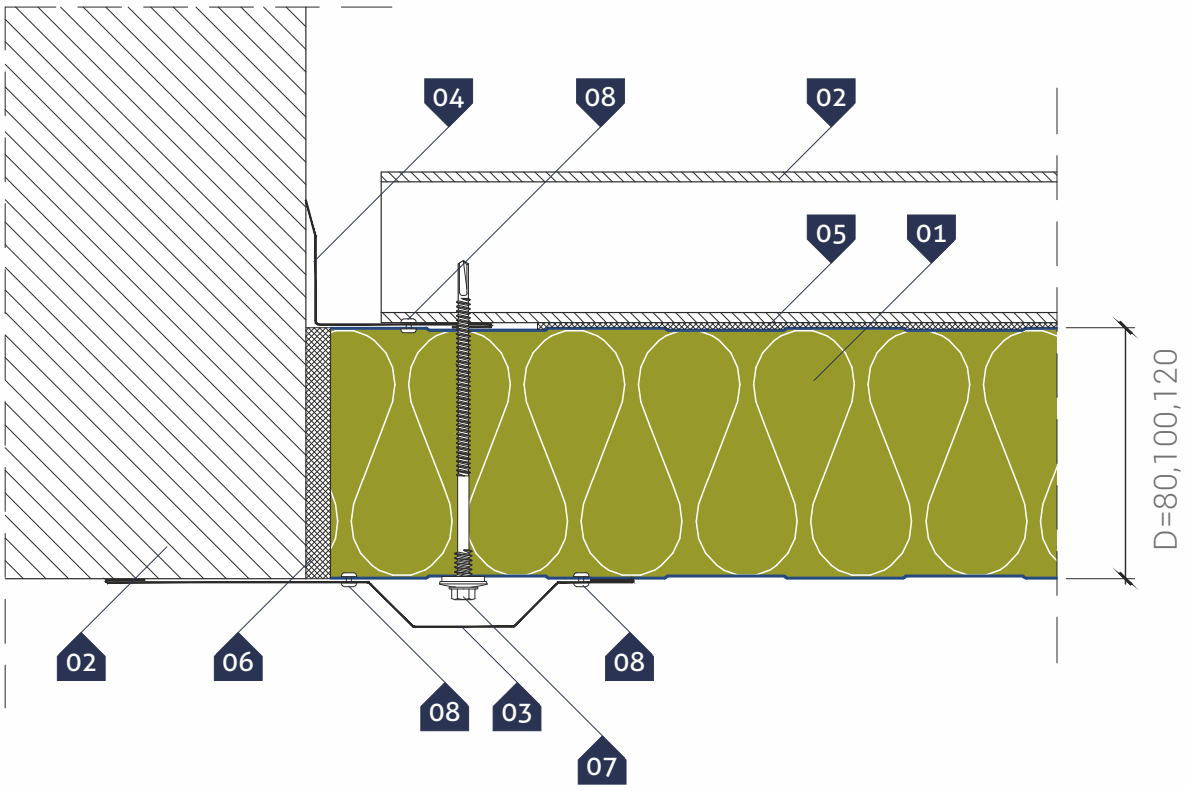
* - a recommended item



KEY:

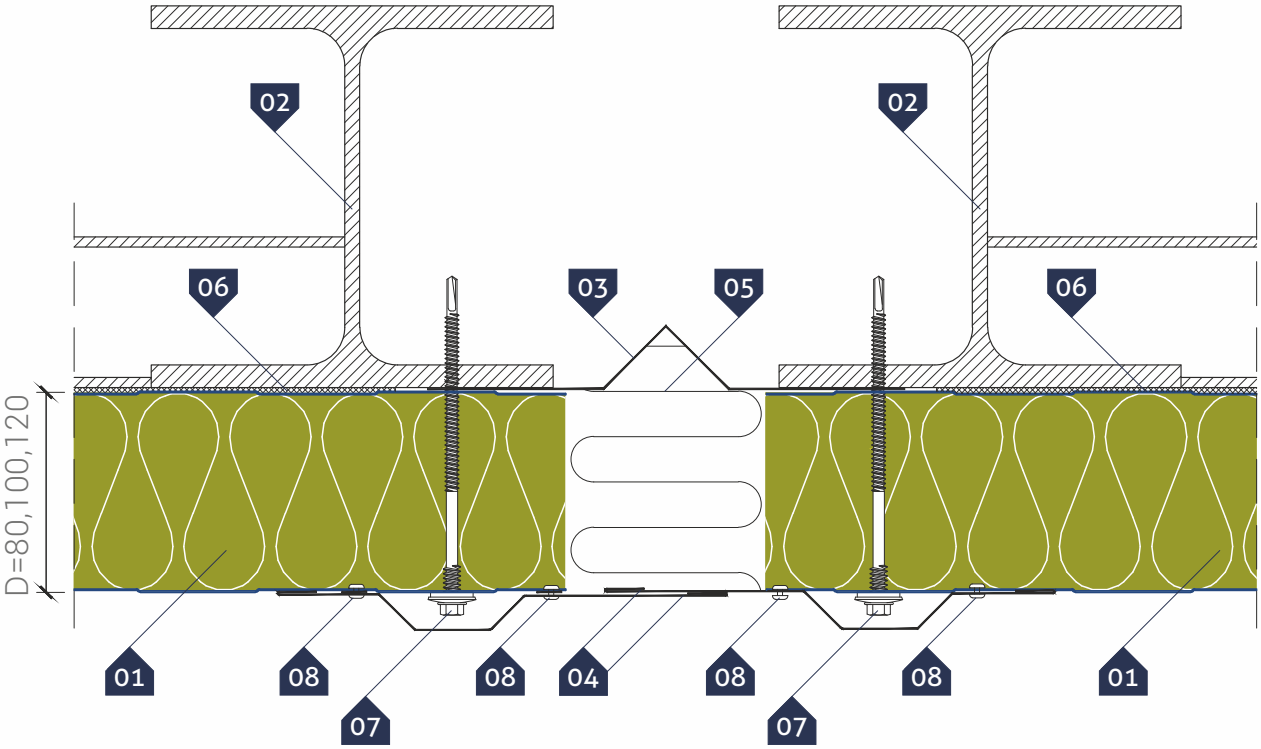
01. **GS MW U** wall panel
02. Transom acc. to structure design
03. Corner flashing **OB-03**
04. Corner flashin **OB-02**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



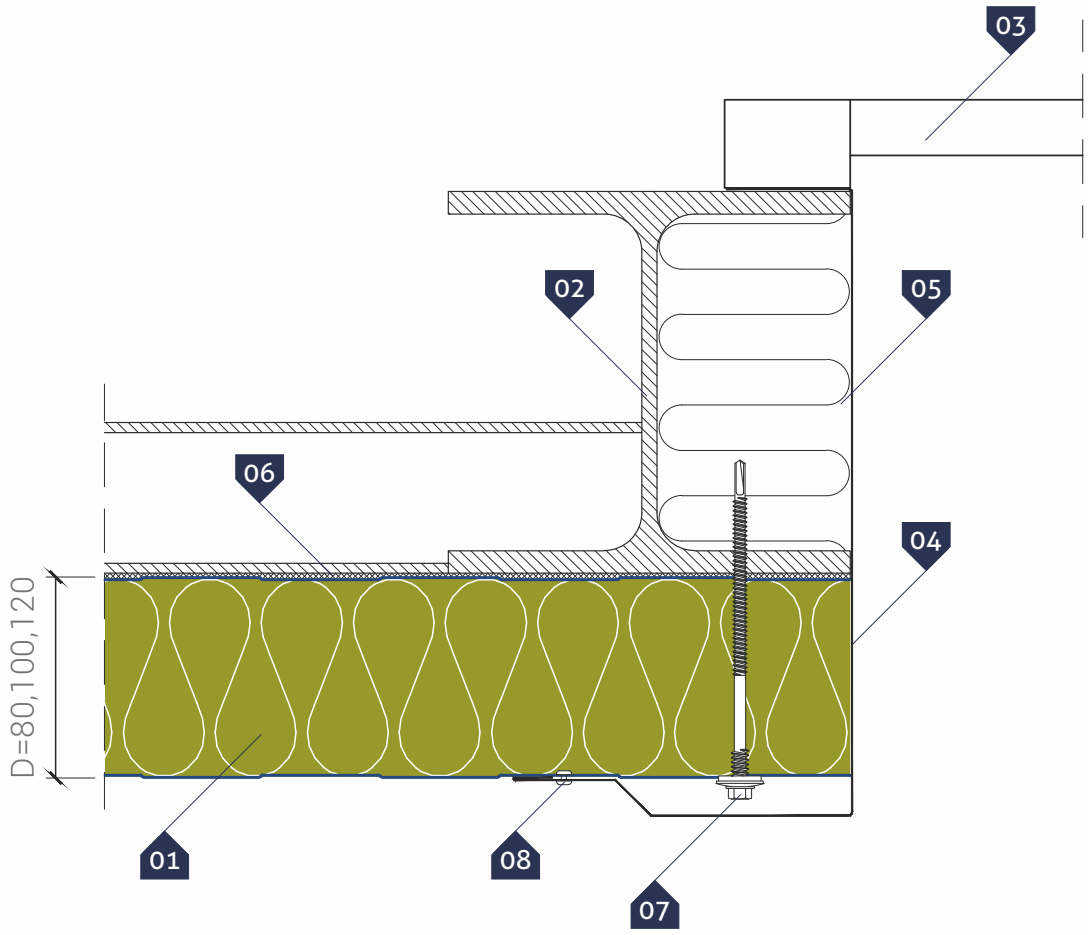
KEY:
01. **GS MW U** wall panel
02. Blockwall and transom acc. to structure design
03. Covering flashing **OB-19**
04. Inner corner flashing **OB-07**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Steel posts and transom acc. to structure design
03. Individual expansion joint flashing
04. Covering flashing **OB-17**
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8,0.**

* - a recommended item



KEY:

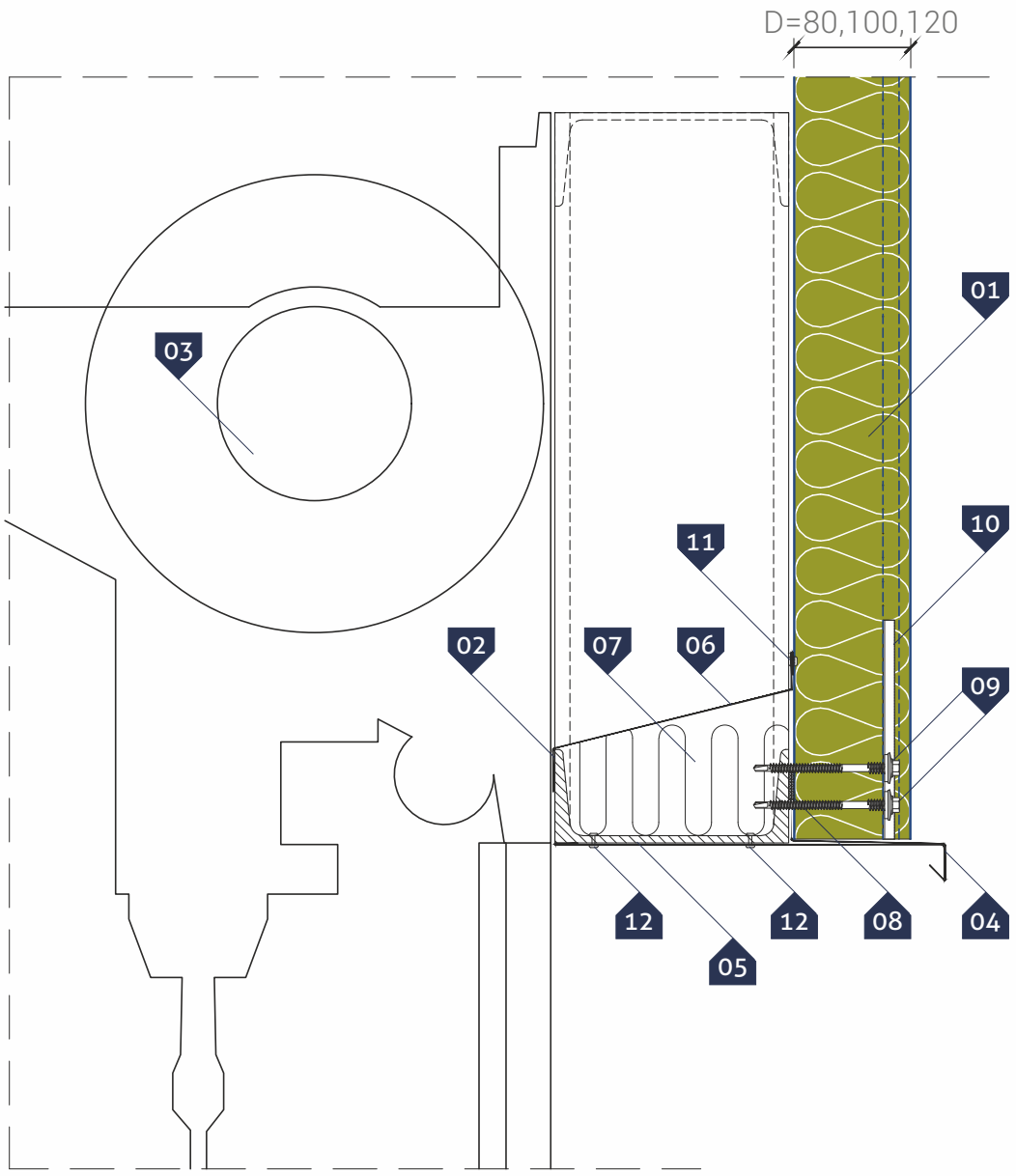
01. **GS MW U** wall panel (hidden fastening)
02. Steel post and transom acc. to structure design
03. Industrial door
04. Door flashing **OB-21**
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

VERTICAL ARRANGEMENT of panels
Detail of roller shutter door lintel

GÓR-STAL® SANDWICH PANELS



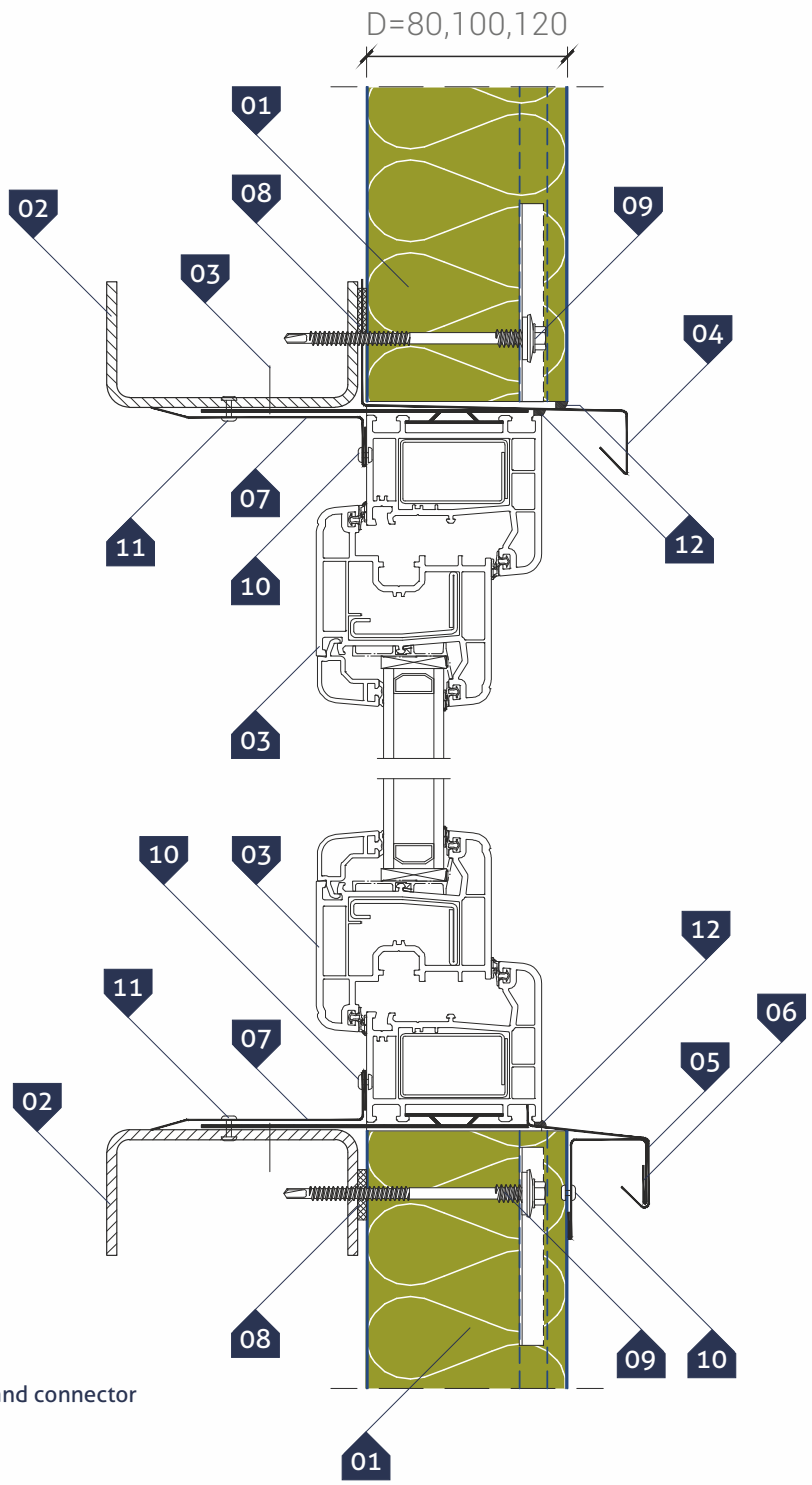
KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Transom acc. to structure design
03. Roller shutter door
04. Drip edge **OB-13**
05. Covering flashing **OB-20**
06. Individual covering flashing
07. Thermal insulation on the fastening
08. Polyethylene, self-adhesive sealing tape **(PES)***
09. Self-drilling connector for sandwich panels
10. **PM1** Podkładka montażowa
11. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
12. Blind rivet **4,8 x 15,1** (for the structure)

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

VERTICAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I – vertical section

GÓR-STAL® SANDWICH PANELS



KEY:

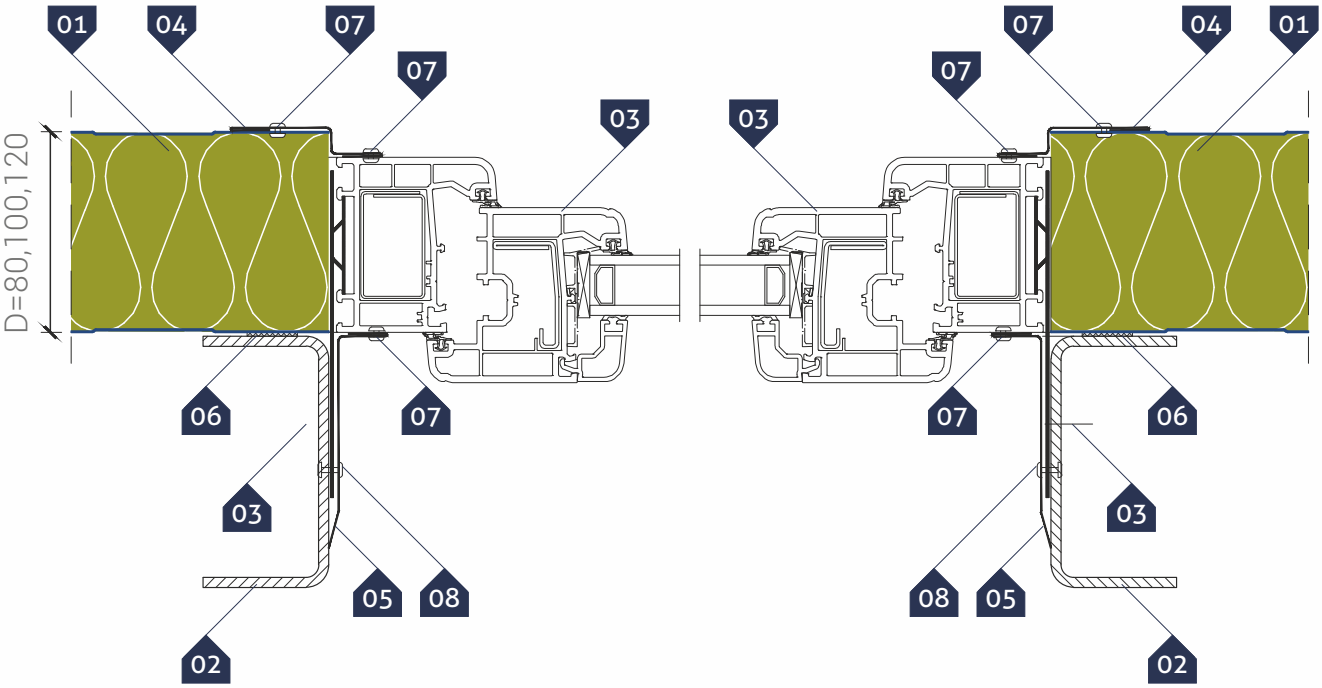
01. **GS MW U** wall panel (hidden fastening)
02. Transom acc. to structure design
03. **PCV** or **aluminium** window with a holder and connector
04. Drip edge **OB-13**
05. Cill **OB-37**
06. Stiffening flashing **OB-16**
07. Individual internal corner
08. Polyethylene, self-adhesive sealing tape **(PES)***
10. Self-drilling connector for sandwich panels
11. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
11. Blind rivet **4,8 x 15,1** (for the structure)
12. Neutral silicone sealant

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

VERTICAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I – horizontal section

GÓR-STAL® SANDWICH PANELS



KEY:

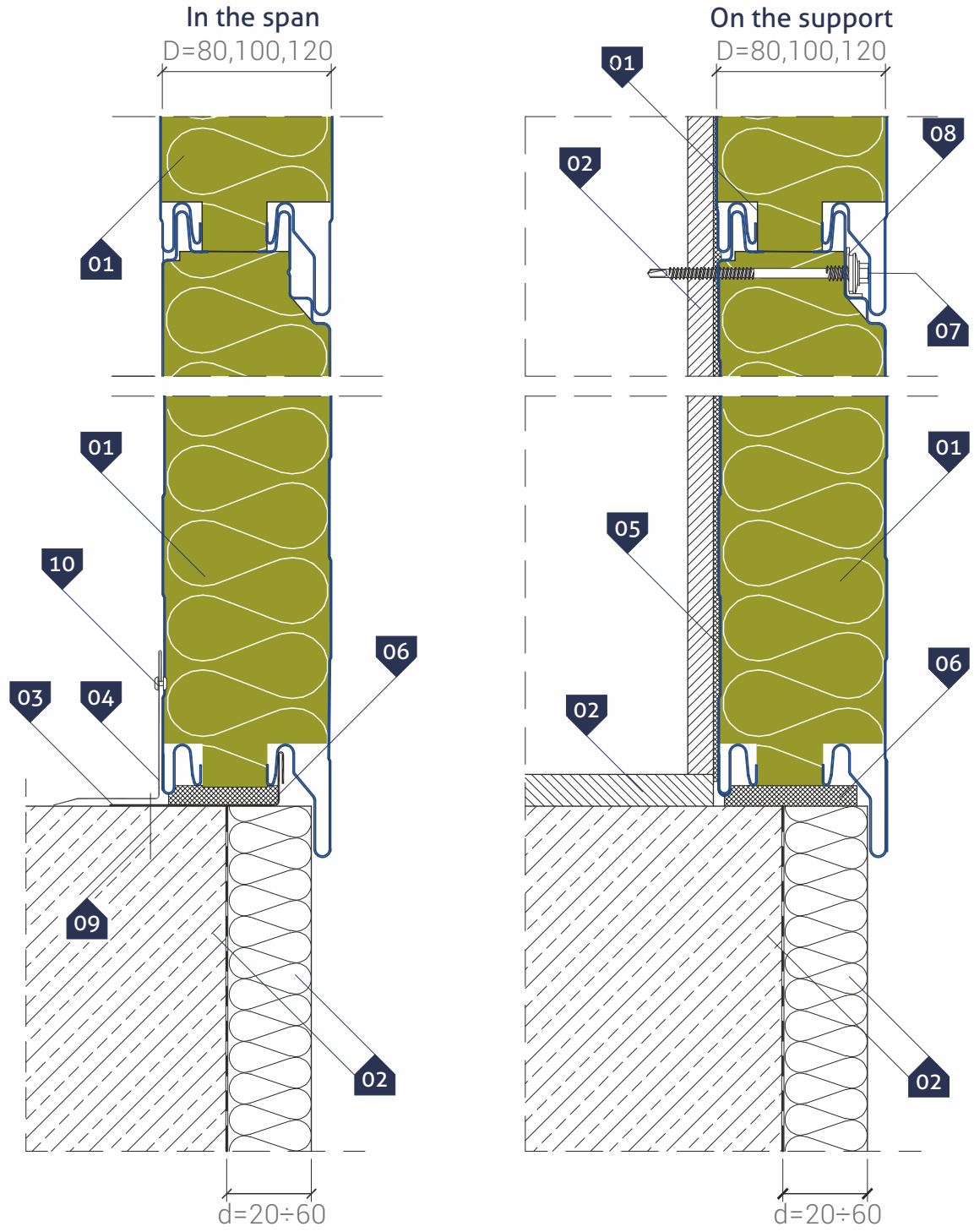
01. **GS MW U** wall panel (hidden fastening)
02. Transom acc. to structure design
03. **PCV** or **aluminium** window with a holder and connector
04. Individual covering flashing
05. Individual internal corner
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Polyurethane caulking foam
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
08. Blind rivet **4,8 x 15,1** (for the structure)

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

HORIZONTAL ARRANGEMENT of panels
Details of panel connection to ground beam
Type I

GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Structural elements acc. to detailed design and thermal insulation carried out after assembly of panel
03. Starting angle **OB-41**
04. Inner corner flashing **OB-07**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Impregnated polyurethane seal **(PURS)** or polyurethane caulking foam
07. Self-drilling connector for sandwich panels
08. **PM1** spacer
09. Steel expansion joint for quick assembly
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

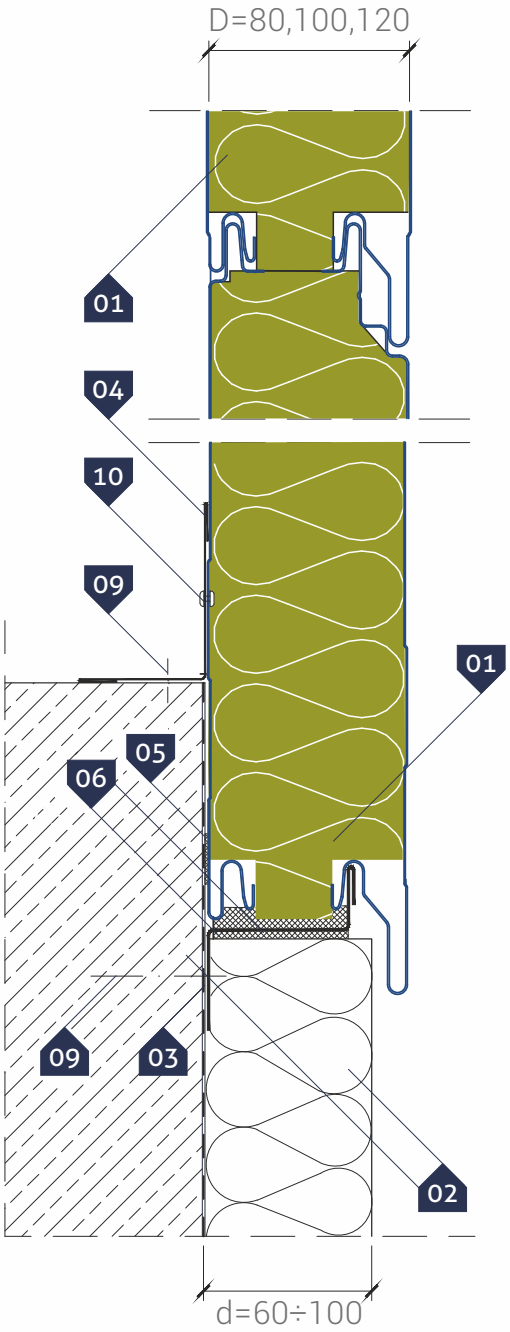
* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

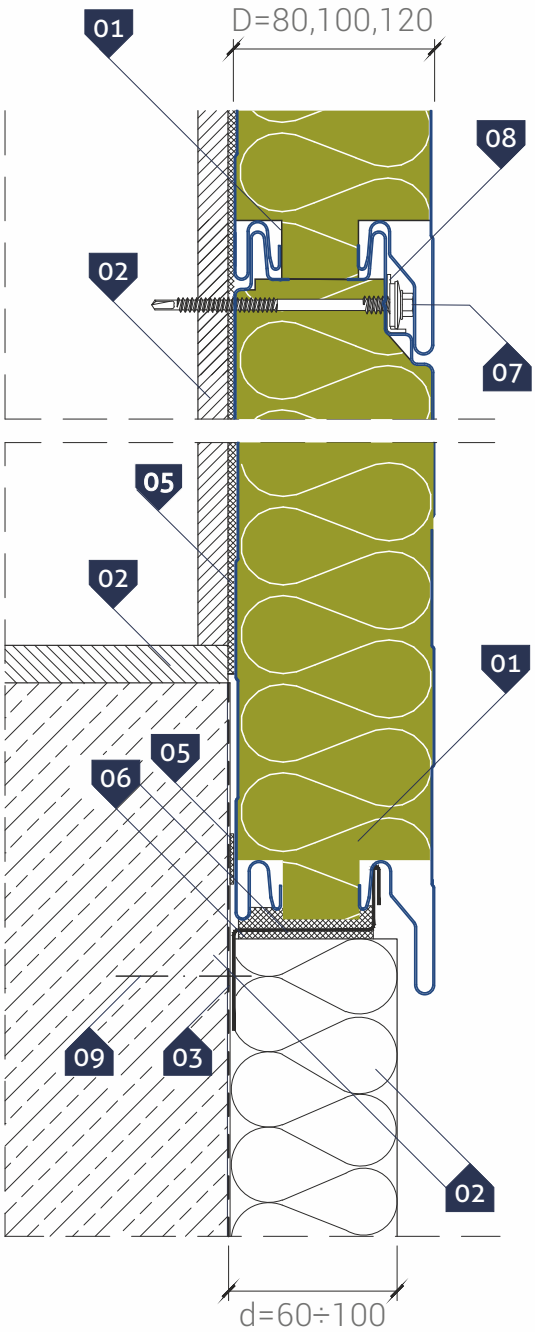
HORIZONTAL ARRANGEMENT of panels
Details of panel connection to ground beam
Type II

GÓR-STAL® SANDWICH PANELS

In the span



On the support



KEY:

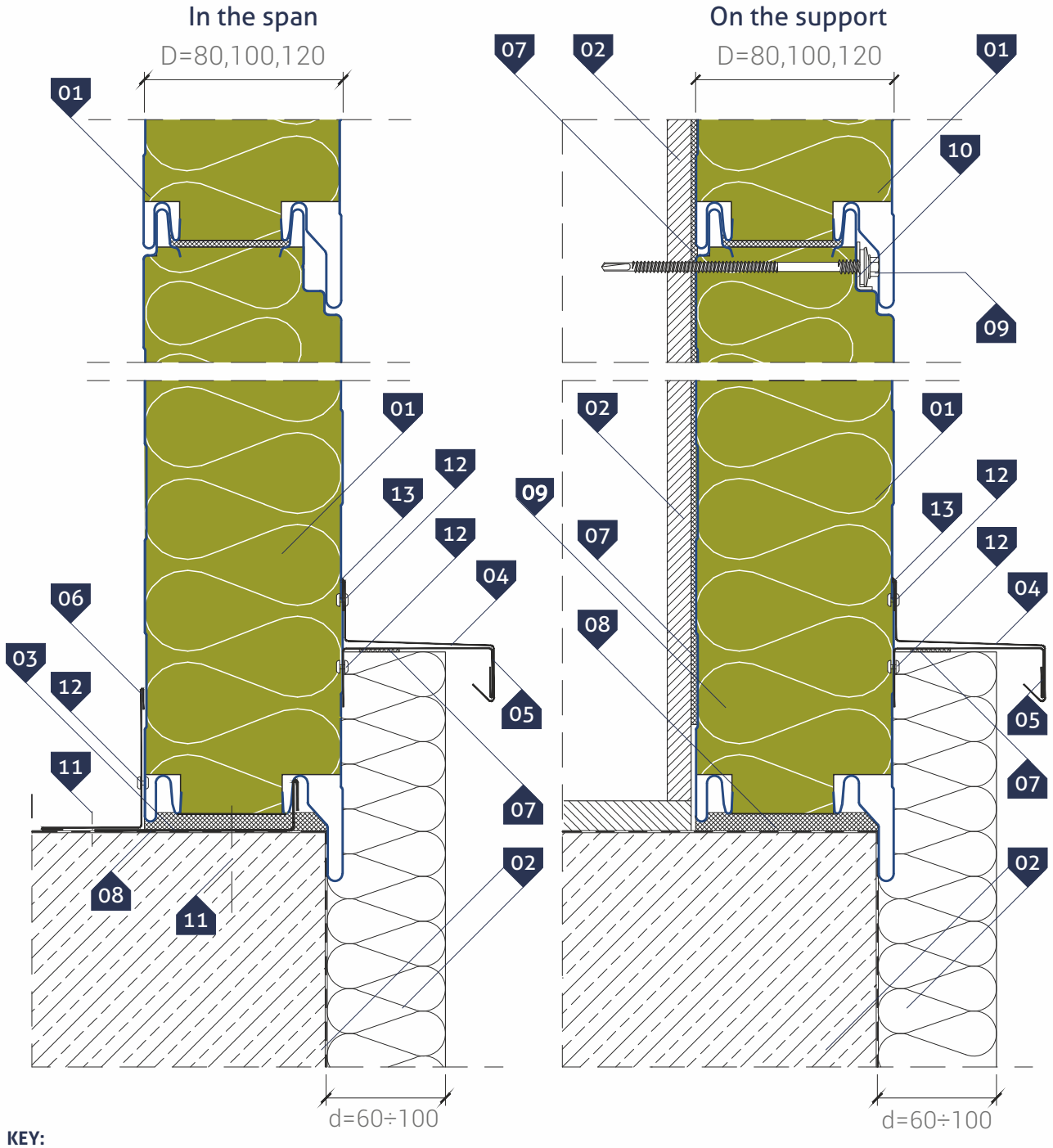
01. **GS MW U** wall panel (hidden fastening)
02. Structural elements acc. to detailed design and thermal insulation carried out after assembly of panel
03. Edge Z-bar **OB-39**
04. Inner corner flashing **OB-06**
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Impregnated polyurethane seal **(PURS)** or polyurethane caulking foam
07. Self-drilling connector for sandwich panels
08. **PM1** spacer
09. Steel expansion joint for quick assembly
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

HORIZONTAL ARRANGEMENT of panels
Details of panel connection to ground beam
Type III

GÓR-STAL® SANDWICH PANELS



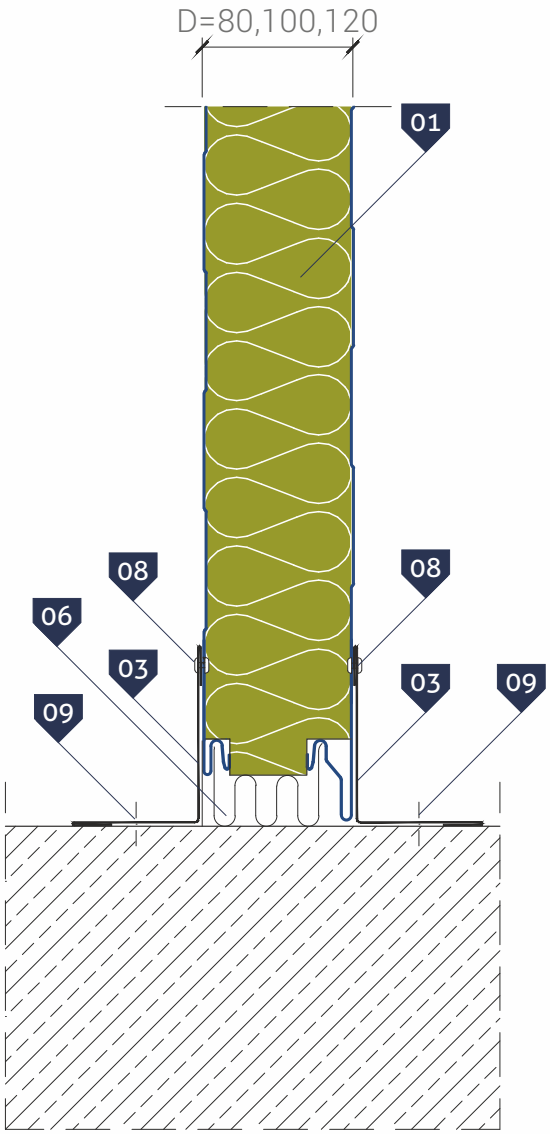
KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Structural elements acc. to detailed design and thermal insulation carried out after assembly of panel
03. Starting angle **OB-41**
04. Drip edge **OB-15**
05. Rigid flashing **OB-15a**
06. Inner corner flashing **OB-06**
07. Polyethylene, self-adhesive sealing tape **(PES)***
08. Impregnated polyurethane gasket (PURS) or polyurethane assembly foam
09. Self-drilling connector for sandwich panels
10. **PM1** spacer
11. Steel expansion joint for quick assembly
12. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
13. Neutral silicone sealant

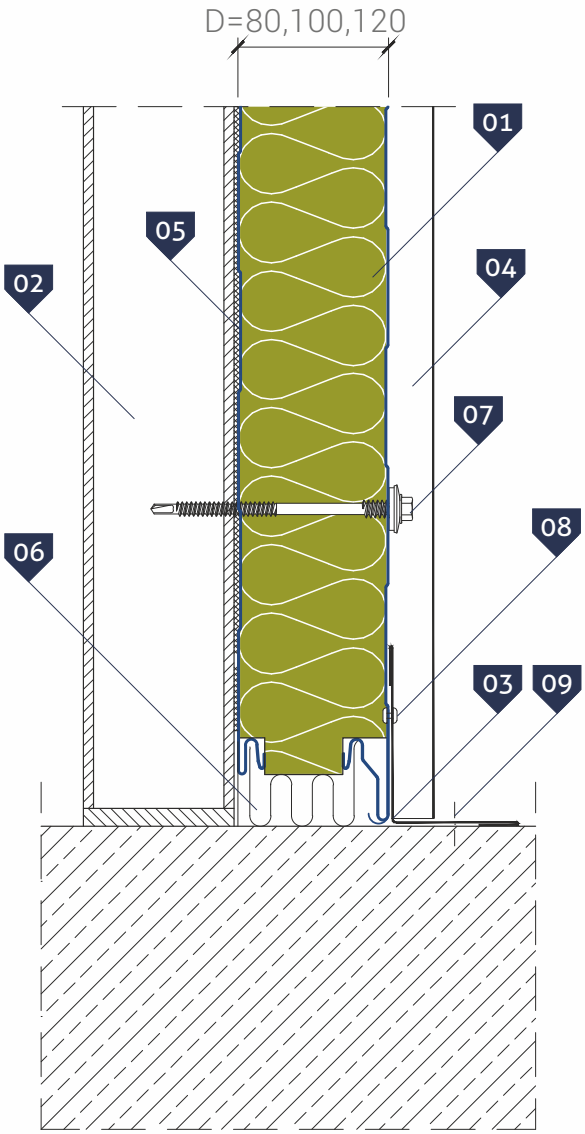
* - a recommended item

GÓR-STAL® SANDWICH PANELS

In the span



On the support



KEY:

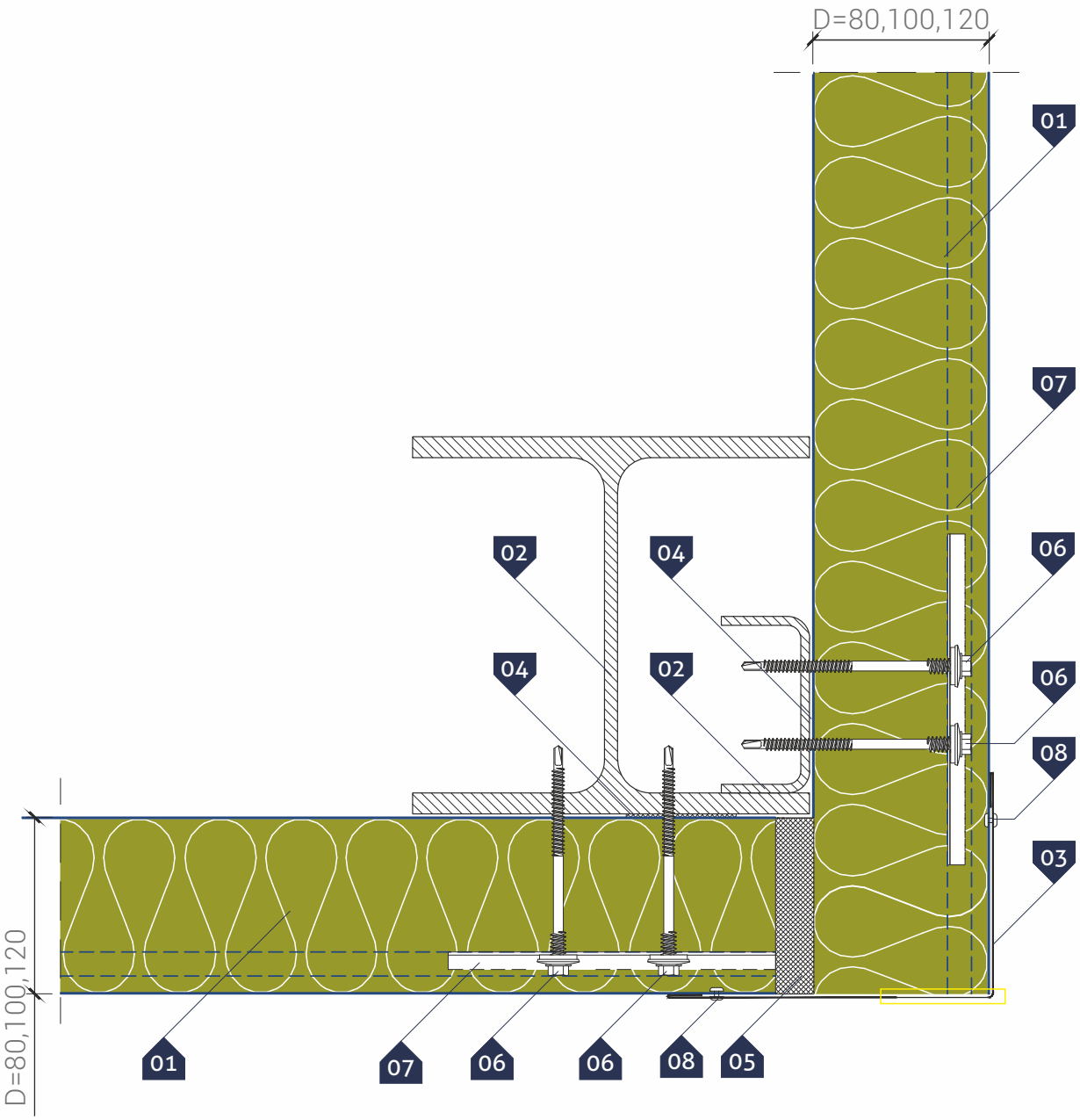
01. **GS MW U** wall panel (hidden fastening)
02. Steel post acc. to structure design
03. Inner corner flashing **OB-06**
04. Covering flashing for panel junction
05. Polyethylene, self-adhesive sealing tape **(PES)***
06. Thermal insulation carried out on the fastening
07. Self-drilling connector for sandwich panels
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
09. Steel expansion joint for quick assembly

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

HORIZONTAL ARRANGEMENT of panels
Detail of panel connection in a corner

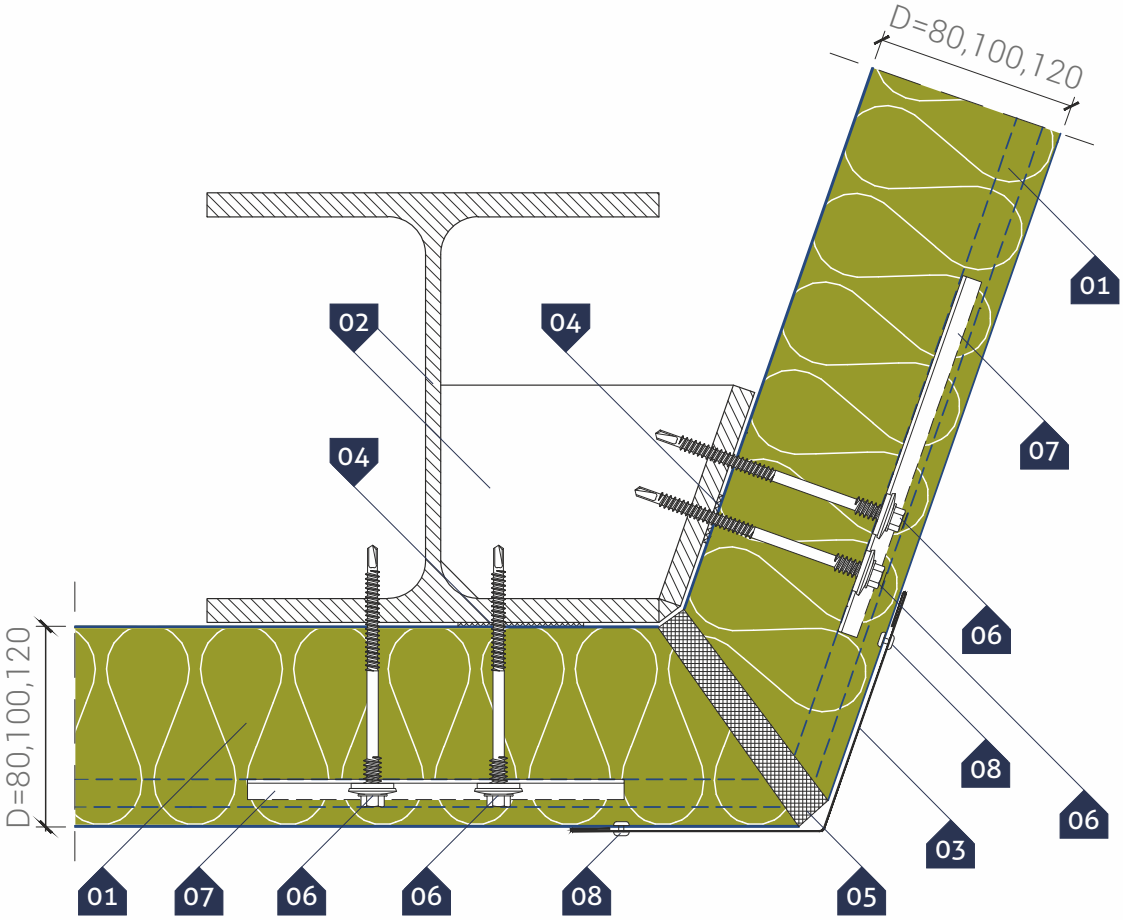
GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Steel post acc. to structure design
03. External corner flashing **OB-01**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling connector for sandwich panels
07. **PM1** spacer
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

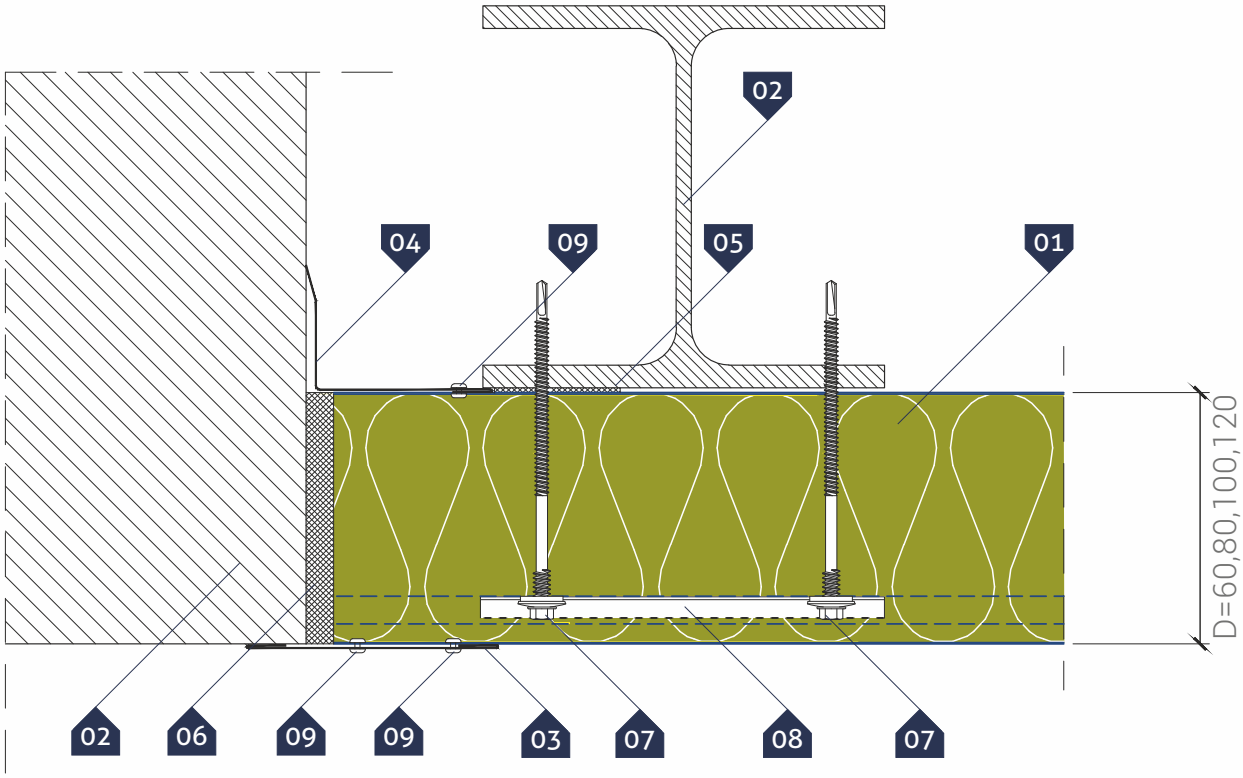
* - a recommended item



KEY:

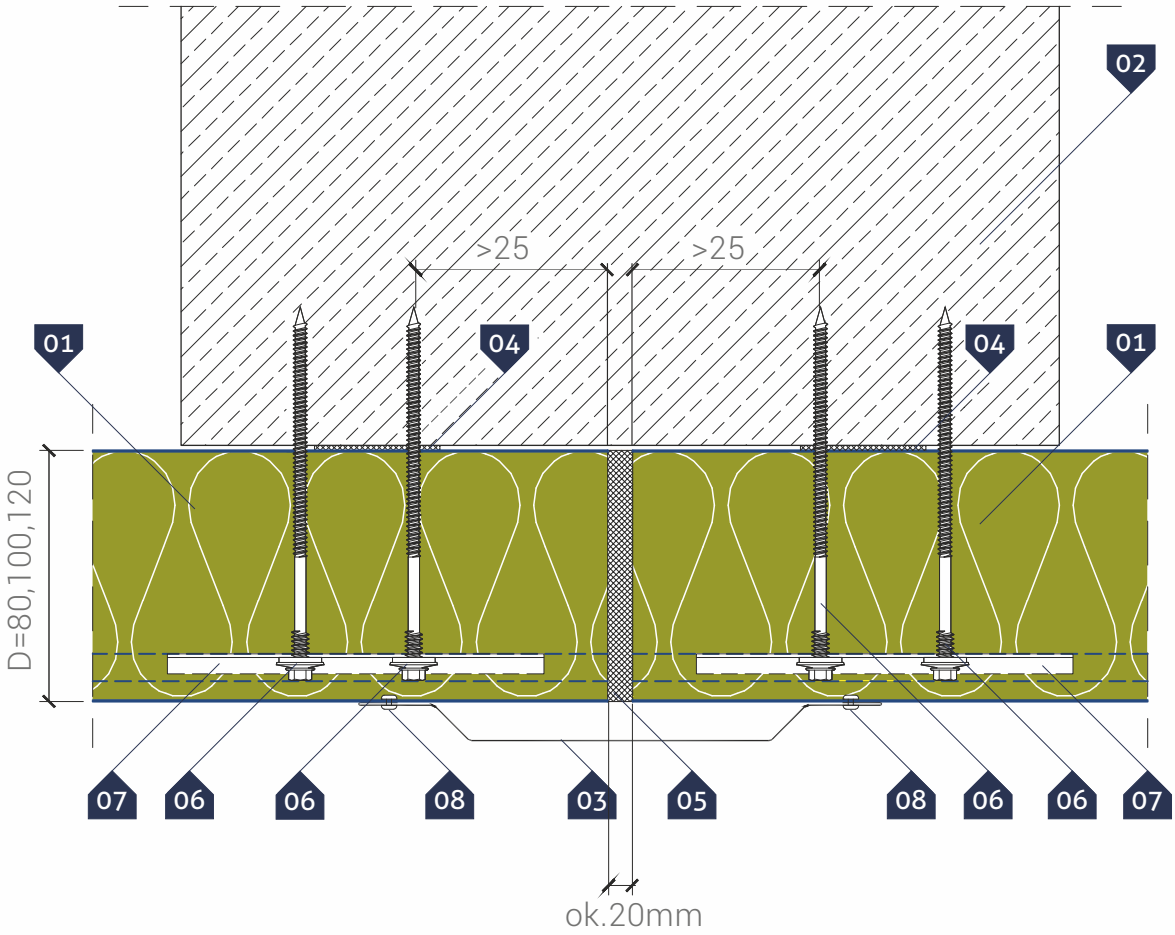
01. **GS MW U** wall panel (hidden fastening)
02. Steel post acc. to structure design
03. External corner flashing **OB-01**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling connector for sandwich panels
07. **PM1** spacer
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



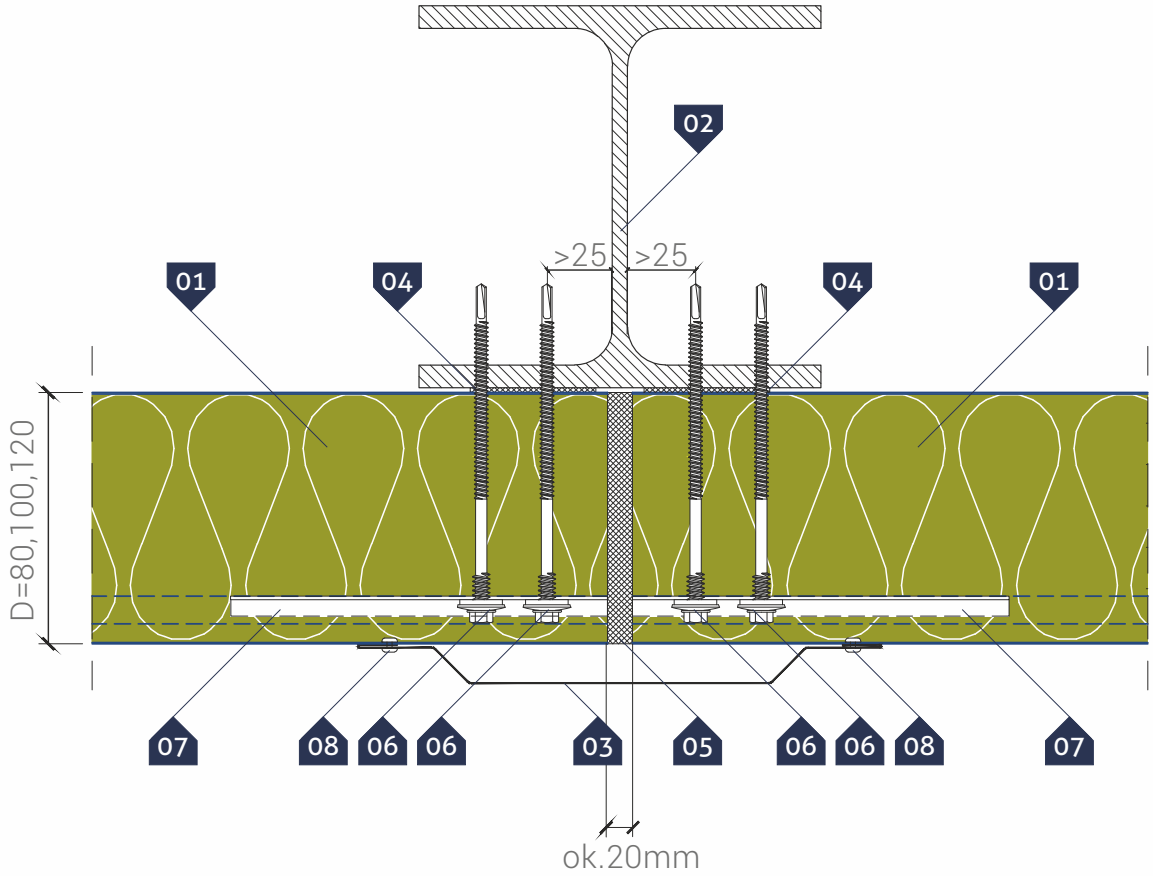
KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Blockwall and post acc. to structure design
03. Masking treatment **OB-18**
04. Inner corner flashing **OB-07**
05. Polyethylene, self-adhesive sealing tape **(PES)**
06. Filling with rock mineral wool
07. Self-drilling connector for sandwich panels
08. **PM1** spacer
09. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:
01. **GS MW U** wall panel (hidden fastening)
02. Reinforced concrete post acc. to structure design
03. Covering flashing **OB-17**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling fastener for fixing sandwich panels
07. **PM1** spacer
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

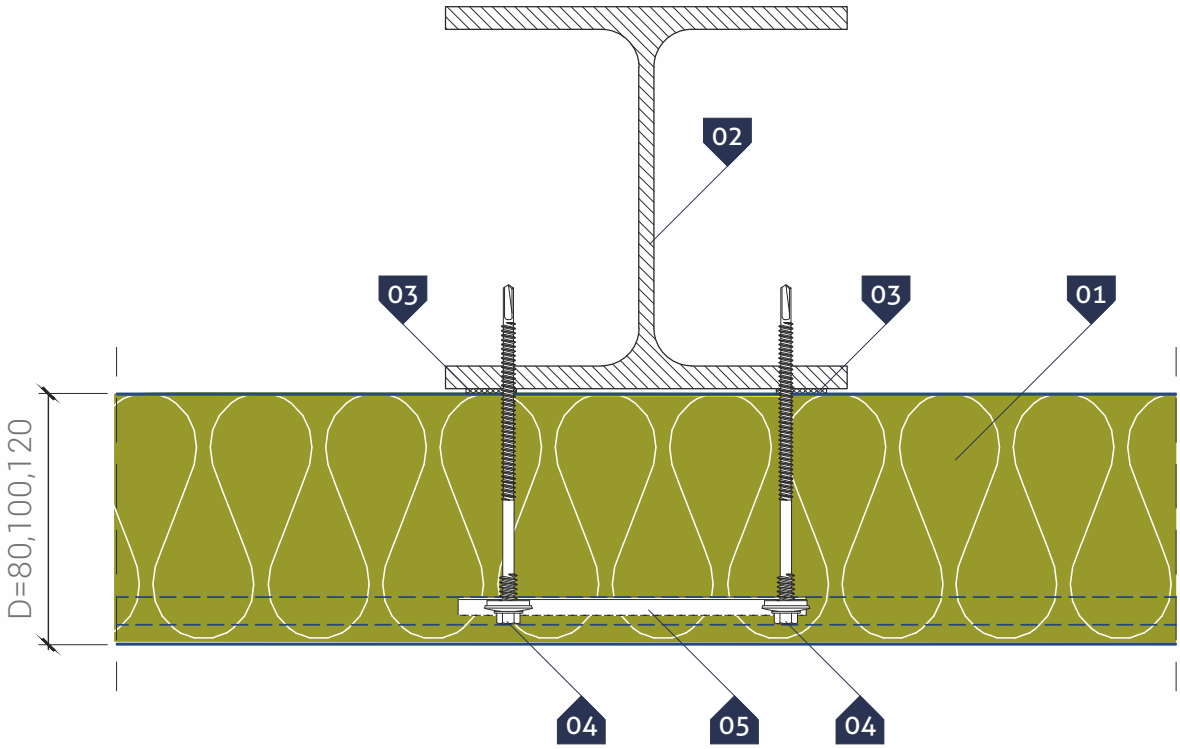
* - a recommended item



KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Steel column according to structure design
03. Covering flashing **OB-17**
04. Polyethylene, self-adhesive sealing tape **(PES)***
05. Filling with rock mineral wool
06. Self-drilling connector for sandwich panels
07. **PM1** spacer
08. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

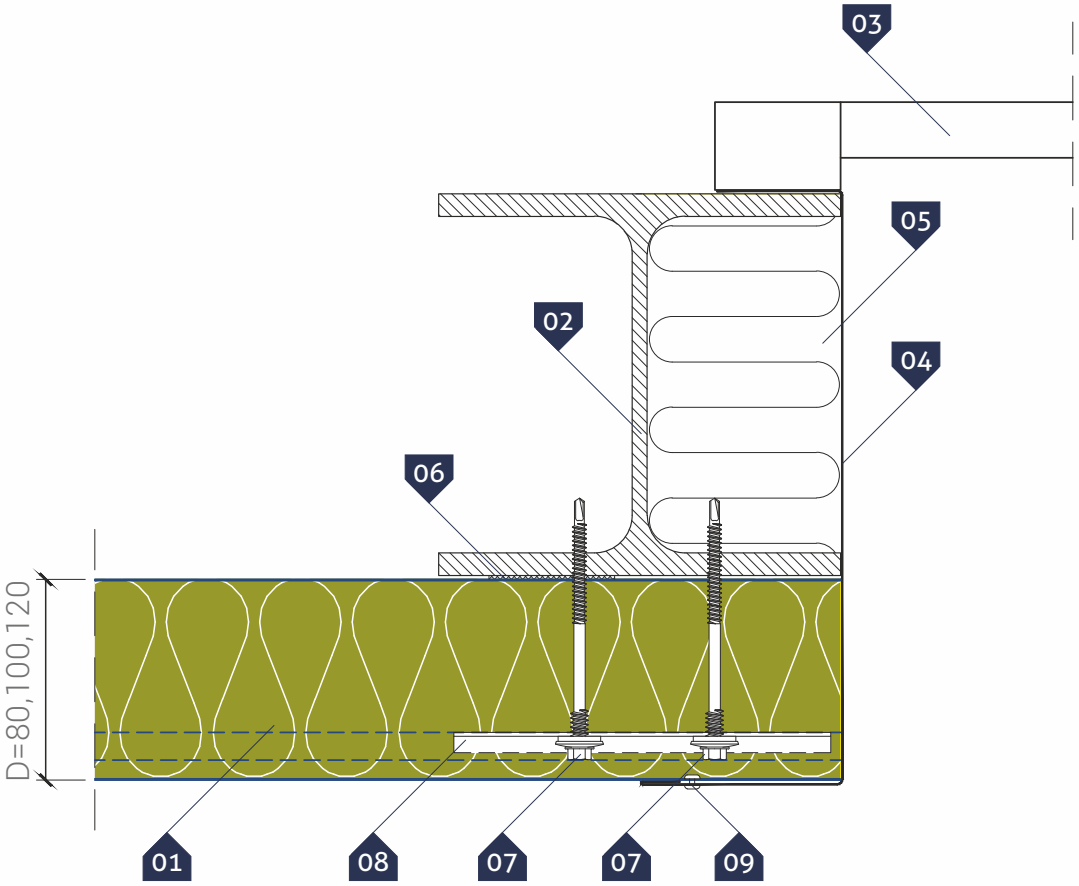
* - a recommended item



KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Steel column according to structure design
03. Polyethylene, self-adhesive sealing tape **(PES)***
04. Self-drilling connector for sandwich panels
05. **PM1** spacer

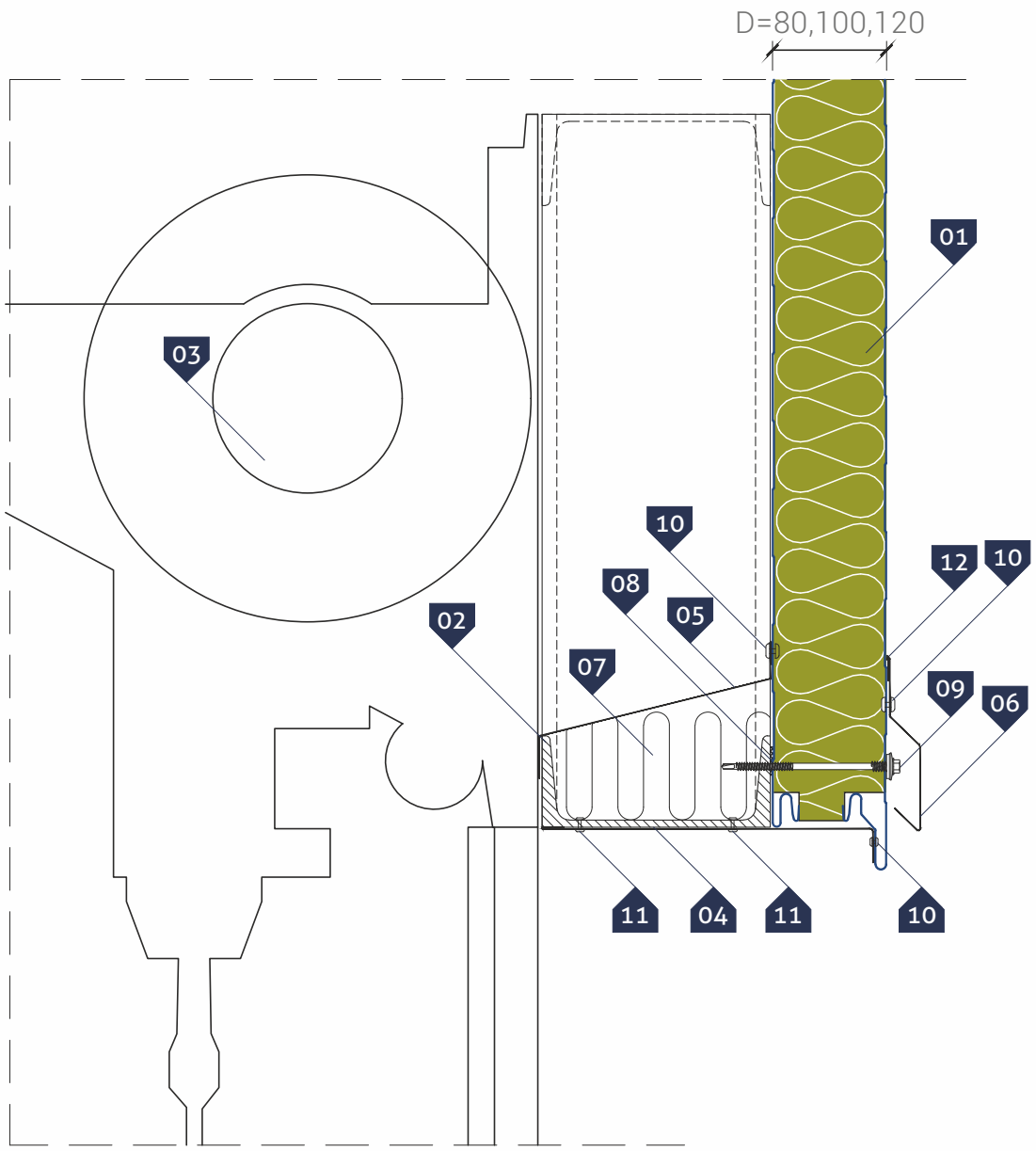
* - a recommended item



KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Steel post acc. to structure design
03. Roller shutter door
04. Individual door flashing
05. Thermal insulation on the fastening
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. **PM1** spacer
09. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**

* - a recommended item



KEY:

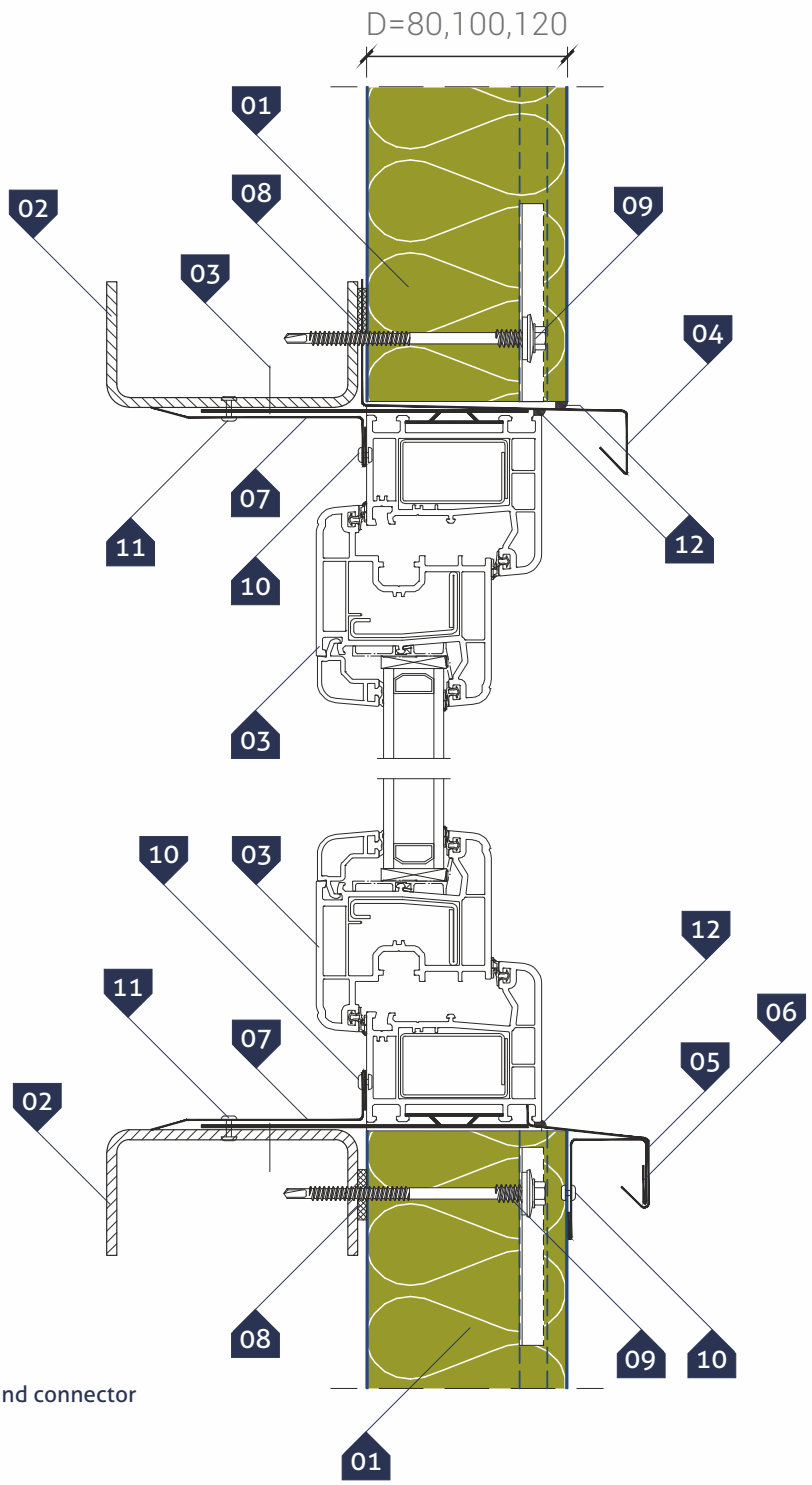
01. **GS MW U** wall panel (hidden fastening)
02. Transom acc. to structure design
03. Roller shutter door
04. Individual covering flashing
05. Individual covering flashing
06. **OB-10** drip cap
07. Thermal insulation on the fastening
08. Polyethylene, self-adhesive sealing tape **(PES)***
09. Self-drilling connector for sandwich panels
10. Rivet **4,0 x 8,0**
11. Blind rivet **4,8 x 15,1** (for the structure)
12. Neutral silicone sealant

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

HORIZONTAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I – verticle section

GÓR-STAL® SANDWICH PANELS



KEY:

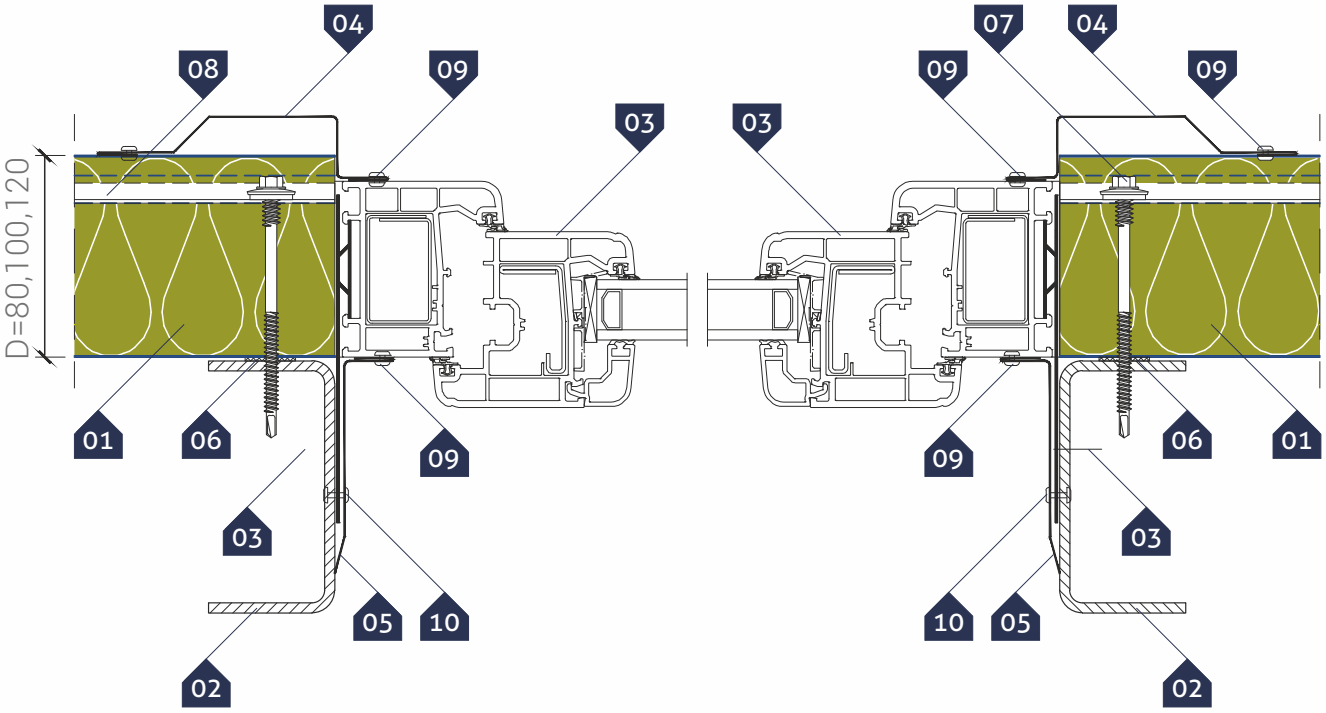
01. **GS MW U** wall panel (hidden fastening)
02. Transom acc. to structure design
03. **PCV** or **aluminium** window with a holder and connector
04. Drip edge **OB-13**
05. Cill **OB-37**
06. Rigid flashing **OB-16**
07. Individual internal corner
08. Polyethylene, self-adhesive sealing tape **(PES)***
11. Self-drilling connector for sandwich panels
12. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
13. Blind rivet **4,8 x 15,1** (for the structure)
14. Neutral silicone sealant

* - a recommended item

Wall sandwich panel GS MW U (hidden connector)

HORIZONTAL ARRANGEMENT of panels
Detail of window mounting in a sandwich panel
Type I - horizontal section

GÓR-STAL® SANDWICH PANELS



KEY:

01. **GS MW U** wall panel (hidden fastening)
02. Transom acc. to structure design
03. **PCV** or **aluminium** window with a holder and connector
04. Individual covering flashing
05. Individual internal corner
06. Polyethylene, self-adhesive sealing tape **(PES)***
07. Self-drilling connector for sandwich panels
08. **PM1** spacer
10. Self-drilling connector for steel sheets or rivet **4.0 x 8.0**
11. Blind rivet **4,8 x 15,1** (for the structure)

* - a recommended item

NOTE!

The following figures are illustrative and only show examples of machine configurations. Maximum load capacity of machines **Viavac = 1000 kg**. The machines have no restrictions on the length of the panel being lifted.

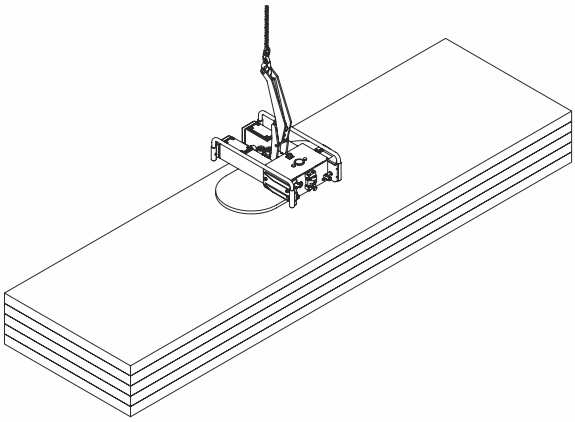
Use: for mounting roof and wall panels in vertical and horizontal layout.

The selection of a particular device from the **VIAVAC** offer depends on the type and extent of the material being lifted and the specificity of a specific installation. To eliminate the risk of damaging the panel during its transfer, always follow the instructions given by the appropriately trained technical department of the company dealing with the rental of **VIAVAC** machines. Therefore, please contact **VIAVAC** for detailed information on the selection of machines and instructions for specific installation.

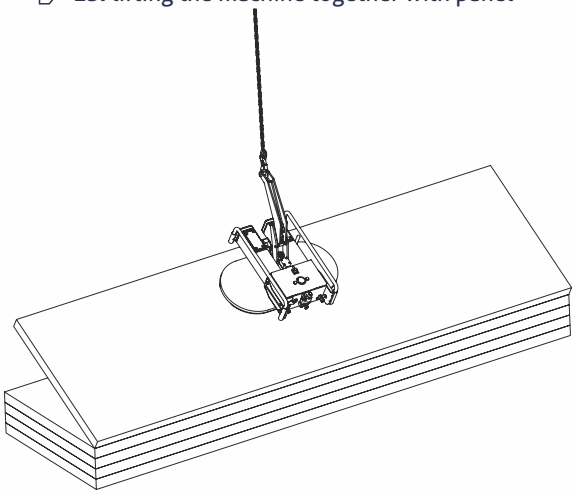
Contact:
tel. +48 68 384 39 08
http: **www.viavac.pl**

Scheme No. 1. Horizontal installation of a wall panel using the **GlassBoy** machine

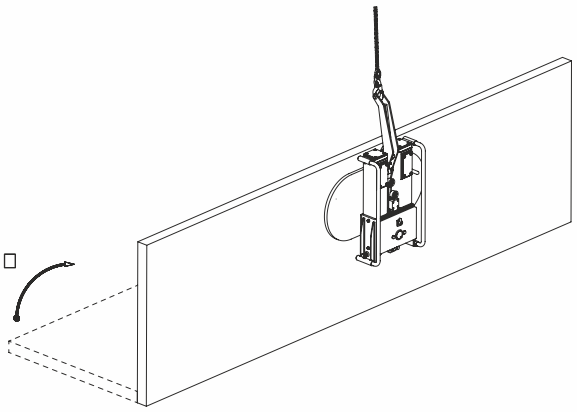
1a. situating the machine and its attachment to the panel



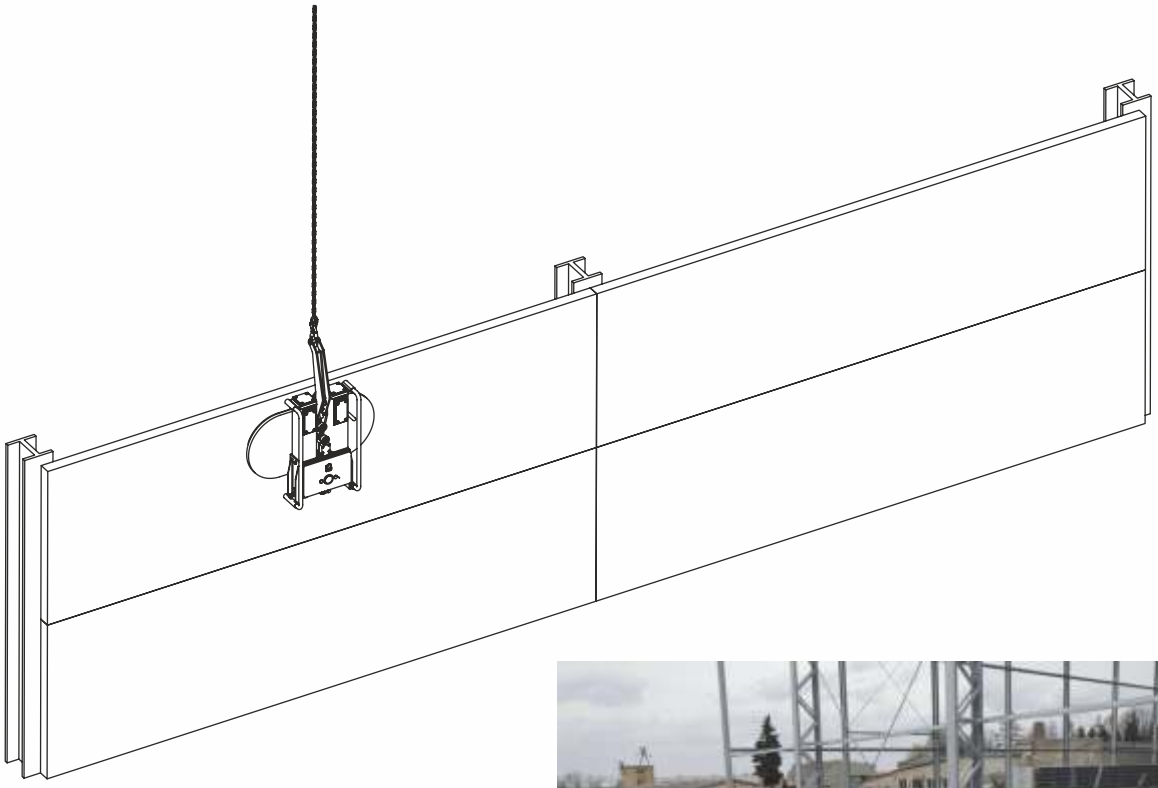
1b. lifting the machine together with panel



1c. changing the angle of the machine and transporting the plate to the place of installation

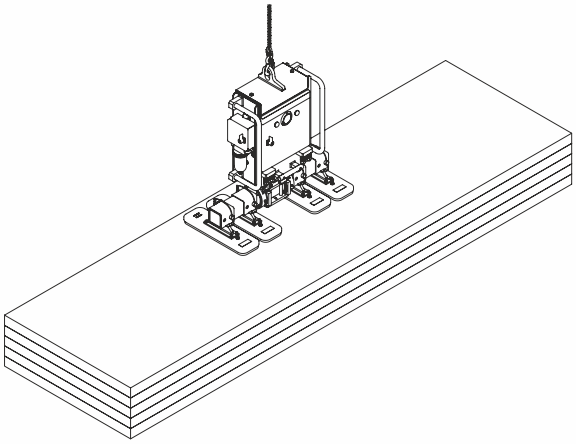


1d. installation of panel on the wall and detachment of the machine

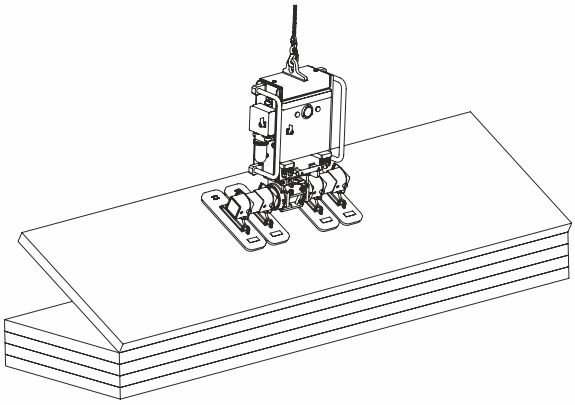


Scheme No. 2. Horizontal installation of a wall panel using the **CladBoy** machine

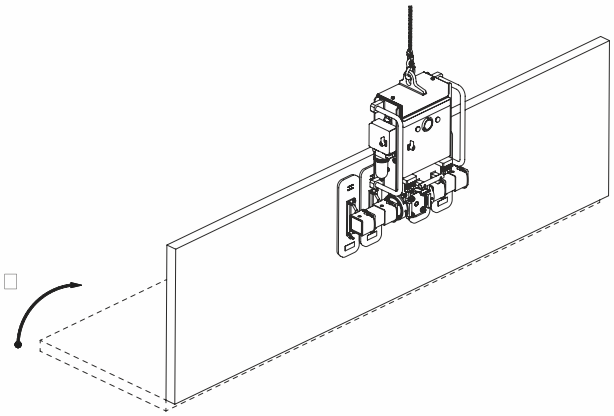
2a. situating the machine and its attachment to the panel



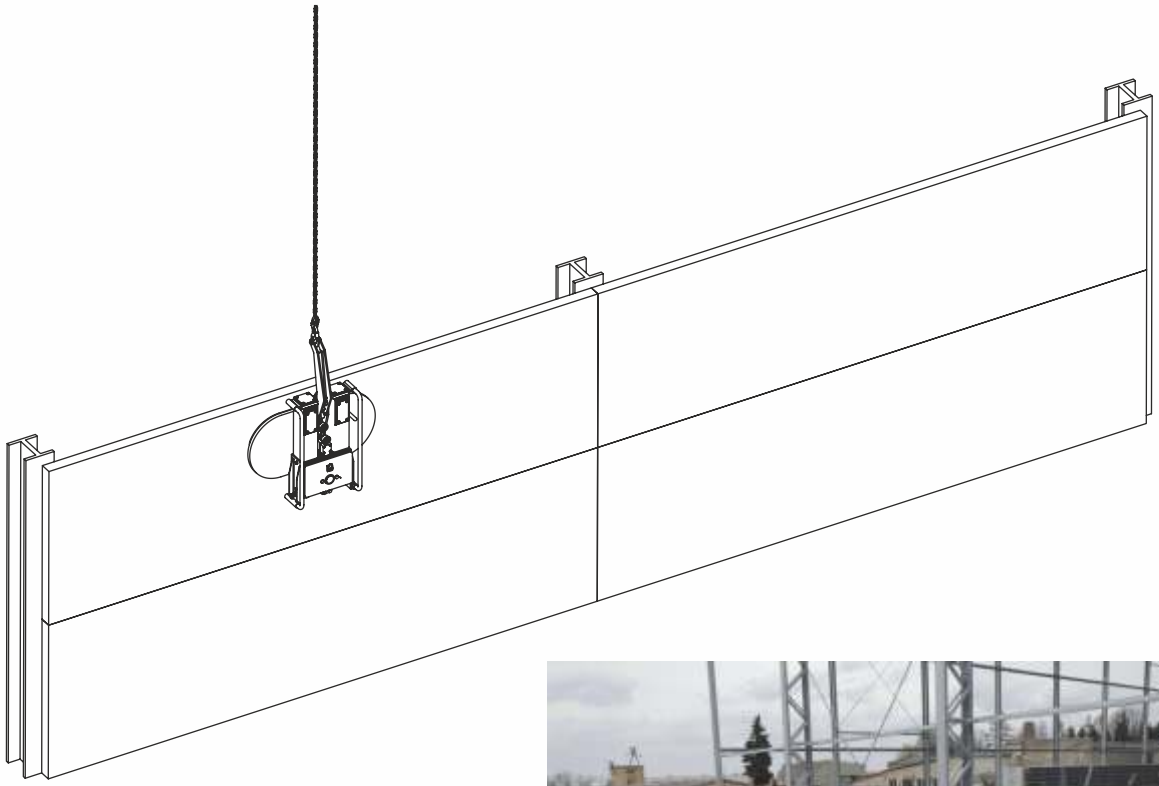
2b. lifting the machine together with panel



2c. change of the angle of the machine and transporting the panel to the place of installation

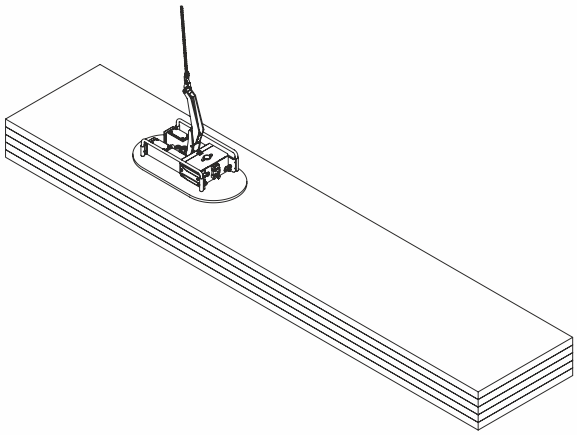


2d. installation of panel on the wall and detachment of the machine

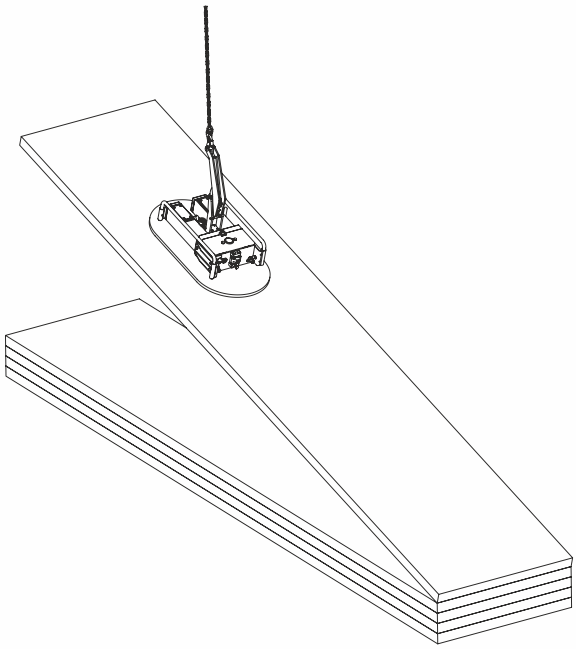


Scheme No. 3. Vertical installation of a wall panel using the **GlassBoy** machine

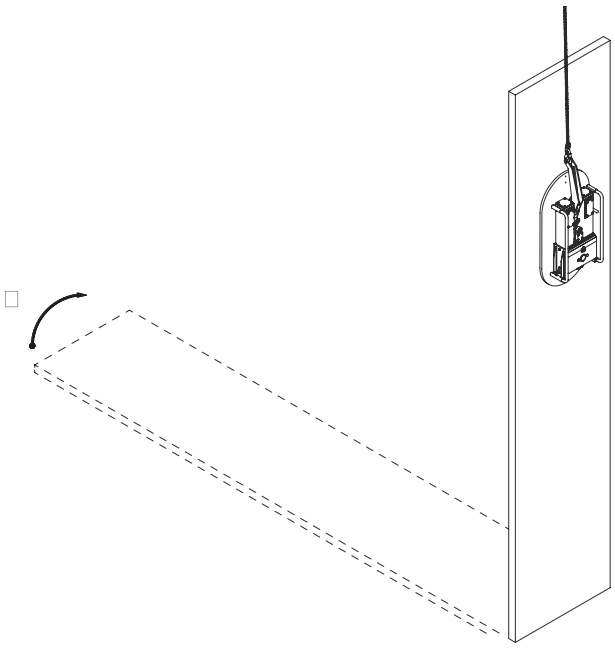
3a. situating the machine and its attachment to the panel



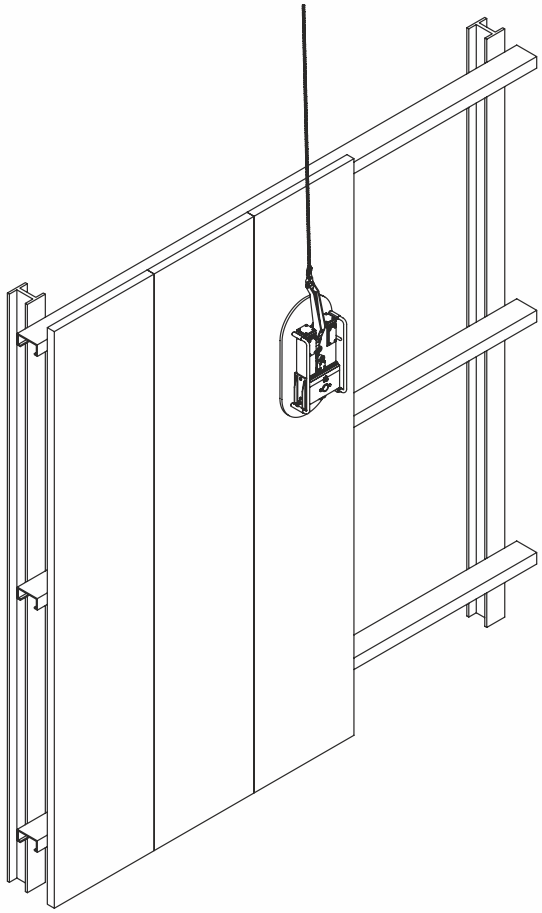
3b. lifting the machine together with panel



3c. changing the angle of the machine and transporting to the place of assembly

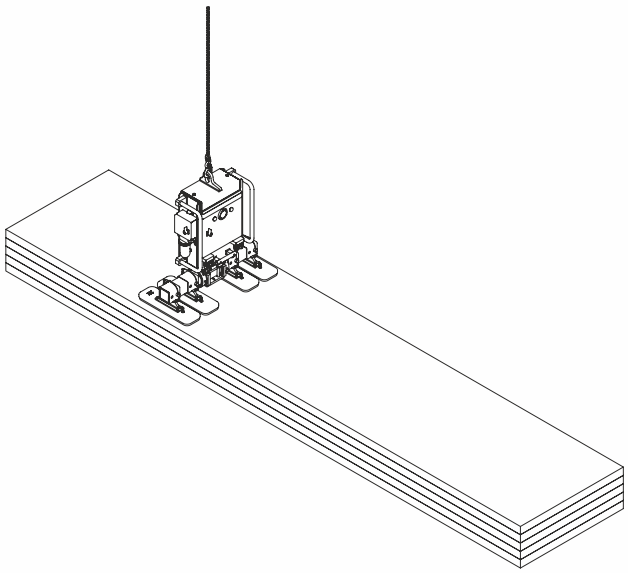


3d. installation of panel on the wall and detachment of the machine

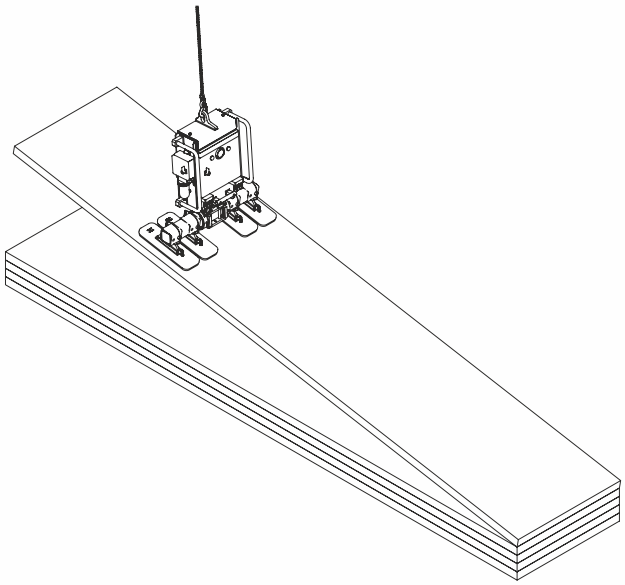


Scheme No. 4. Vertical installation of a wall panel using the **CladBoy** machine

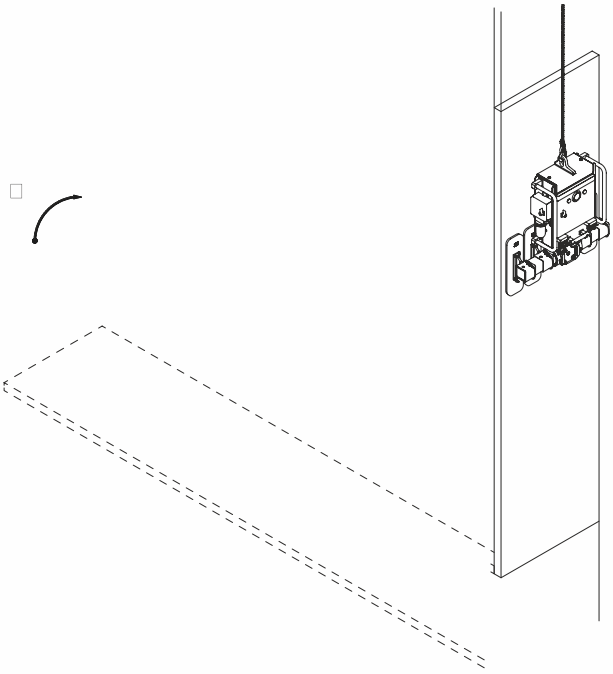
4a. situating the machine and its attachment to the panel



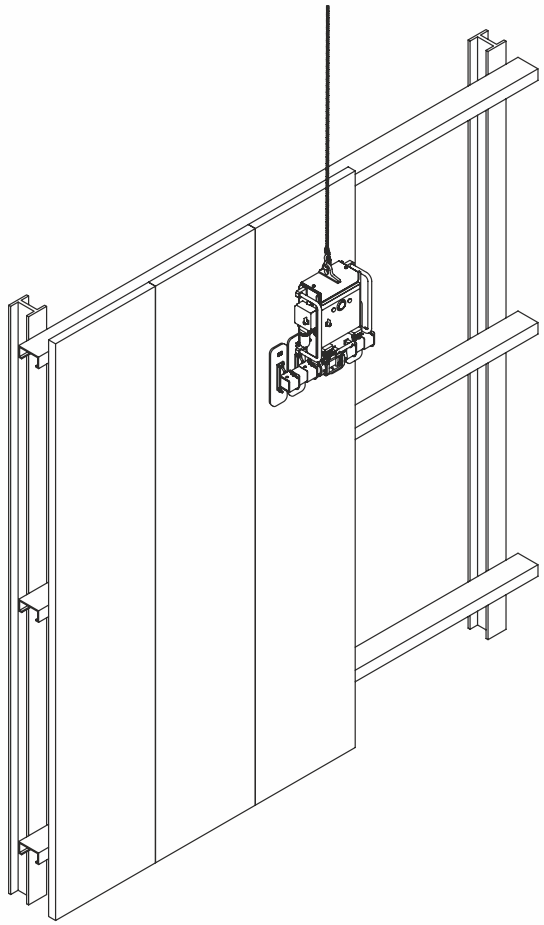
4b. lifting the machine together with panel



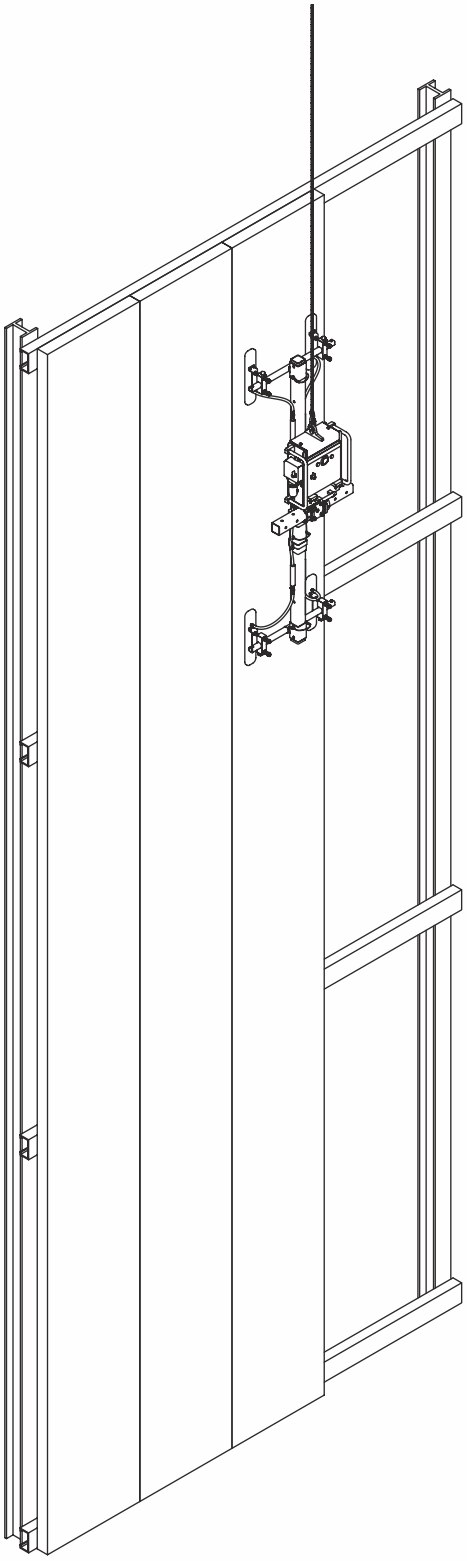
4c. change of the angle of the machine and transporting the panel to the place of installation



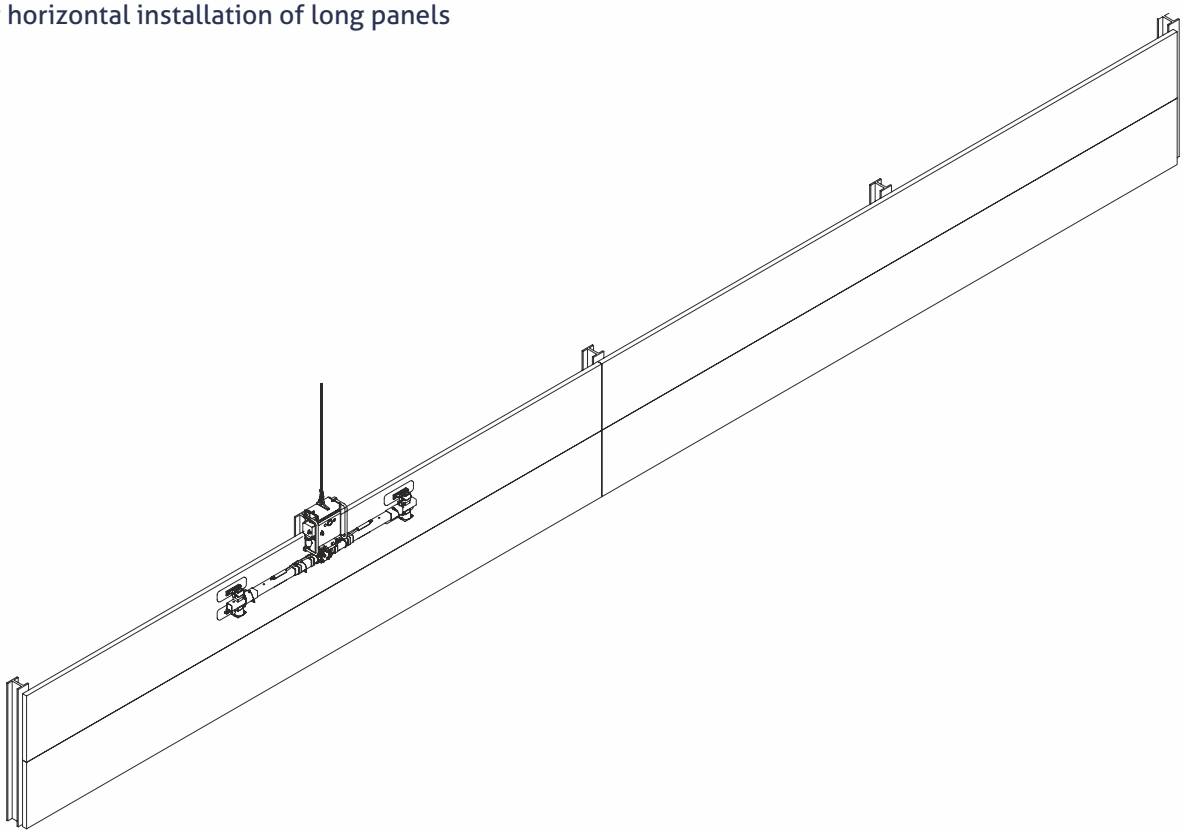
4d. installation of panel on the wall and detachment of the machine



Scheme No. 5. Sample configuration of **CladBoy** machine for vertical installation of long panels

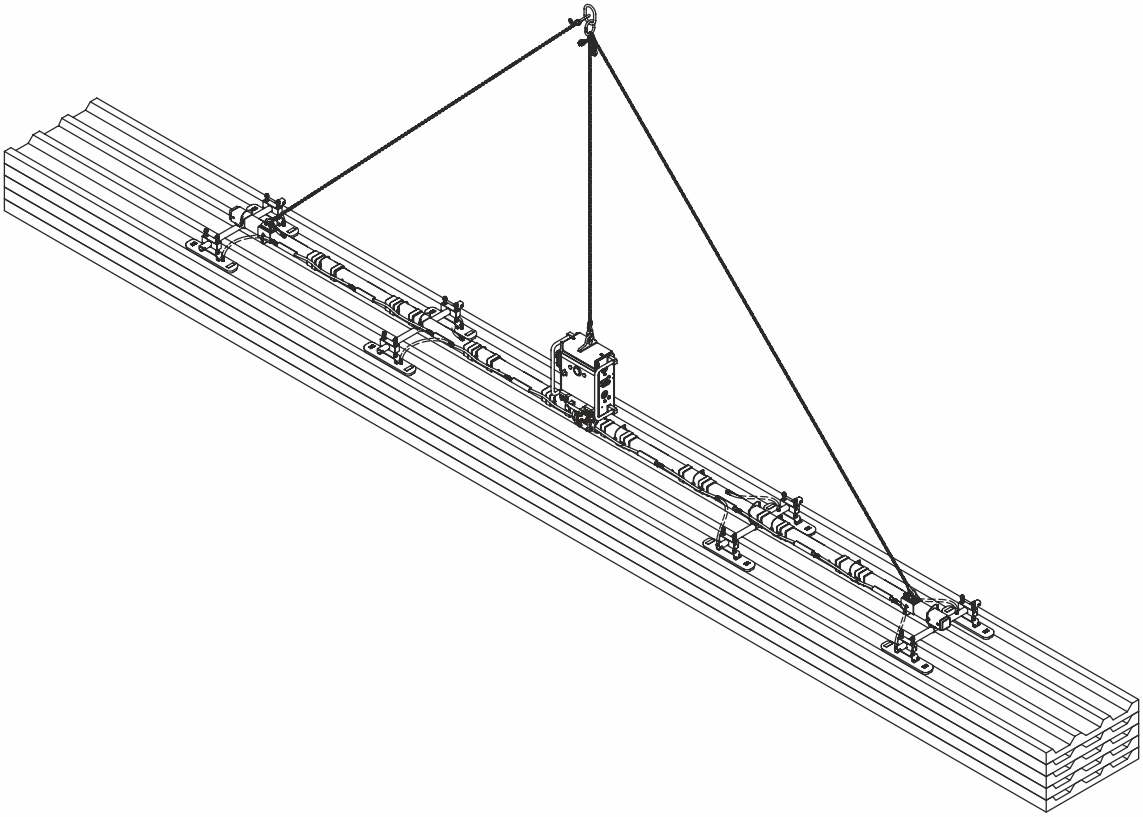


Scheme No. 6. Sample configuration of **CladBoy** machine for horizontal installation of long panels

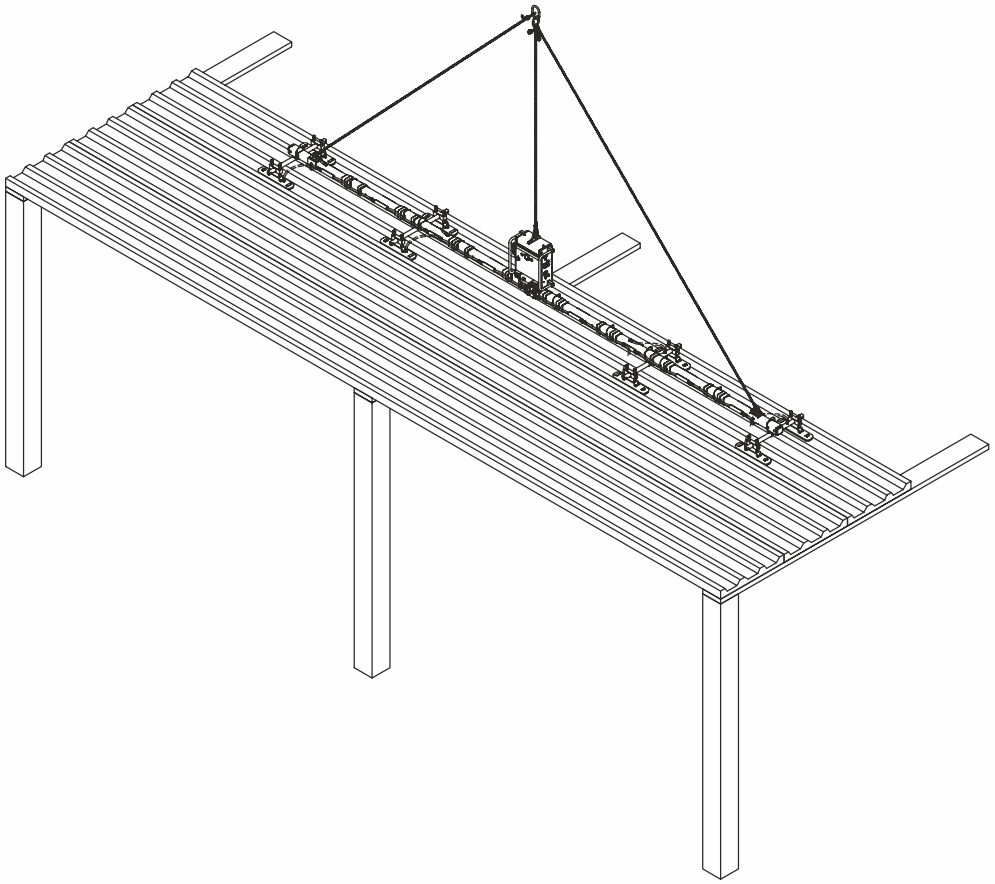


Scheme No. 7. Installation of a roof panel using **CladBoy** machine

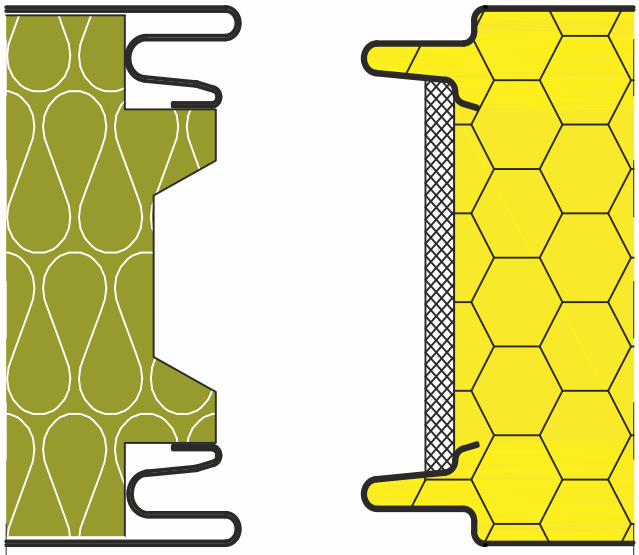
7a. situating the machine and its attachment to the panel



7b. installation of panel on the roof and detachment of the machine



1. Connecting the GS MW groove with the GS insPIRe tongue



Draw no. 1. Comparison of combined locks.
Due to the difference in the shape of the locks, it is recommended additional assembly steps are taken to ensure proper tightness of the connection.

1.1. Laying a strip of mineral wool in the groove of the GS MW panel

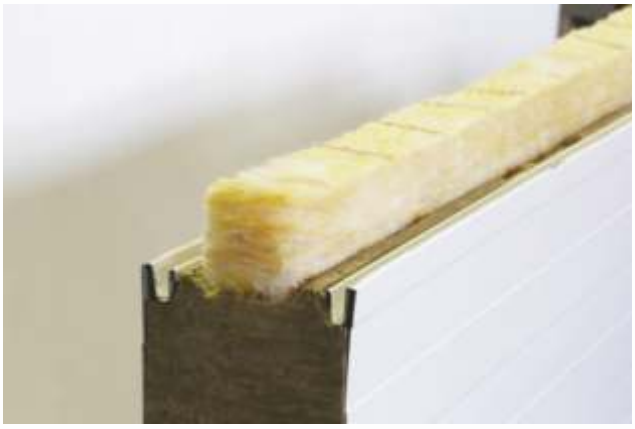


Photo. No. 1. GS MW panel groove with a mineral wool strip laid.
As a supplement to the lock, it is allowed to use mineral glass wool, cut to the appropriate size on the construction site. Recommended widths are shown in the table below.

Recommended widths of an additional strip of mineral wool				
Type of plate GS MW	CH 100	CH 120	CH 160	CH 200
width of the belt of mineral wool	35 mm	55 mm	95 mm	135 mm

To fix the wool strip in the groove, it is recommended to use double-sided adhesive tape applied on the construction site.

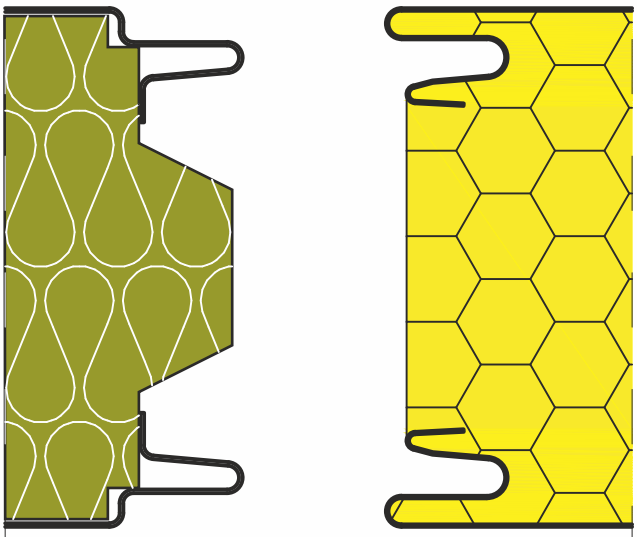
ATTENTION:
- when installed horizontally, it is allowed to replace mineral wool with low-pressure polyurethane foam

1.2. Installation of the GS insPIRe plate Photo.

Photo. No. 2. View of the connection (overview)

Photo. No. 3. View of the connection (final version)

2. Connecting the GS insPIRe groove with a GS MW tongue



Draw no. 2. Comparison of combined locks

Due to the difference in the shapes of the locks, it is necessary to perform additional assembly steps to ensure proper tightness of the connection.

2.1. Removal of the GS MW plate tongue

Photo. No. 3. Suggested way to remove the GS MW plate tongue

Photo. No. 3. PSuggested way to remove the GS MW plate tongue

cceptable ways of removing the tongue:
- manually, with a wallpaper knife,
- mechanically, using an electric milling machine

2.2. Wygładzenie powierzchni zamka GS MW po usunięciu pióra

Photo. No. 5.
The treatment of "smoothing" the surface of the GS MW lock

After the tongue is removed, smooth the surface of the zipper with a light sandpaper. Particular attention should be paid during this treatment to prevent cavities in the surface of the core and no damage to the varnish coating of the board's cladding.

Photo. No. 6.
View of the lock after "smoothing"

2.2. Smoothing the surface of the GS MW lock after removing the tongue

Photo. No. 7.
Connection view (final version)

ACCESSORIES

The supplementation of the lightweight housing system from sandwich panels is made of flashings, fasteners and sealing tapes.

FLASHINGS

Gór-Stal is equipped with a profiler able to produce steel sheet flashings up to **1,0 mm** thick and **6,0 m** long, in catalogue-typical or custom-made shapes. Available thicknesses and standard colours of the sheets are provided in the table below. The flashings are secured for transportation by means of foiling the external layer.

ATTENTION:

- it is recommended that the flashing be fastened every 30 cm with self-drilling screws to steel sheets or rivets
- possible length of non-standard flashings every 0.5 m in the range of available lengths

Sheet thickness [mm]	Csheet weight [kg/m²]	Length of standard flashings [m]	Available length of flashings [m]	Sheet standard RAL colours
0,50	4,00	3,0 i 6,0	2,0 - 6,0	3000, 5010, 6011, 7016, 7035, 8017, 9002, 9006, 9007, 9010
0,70	6,00			
1,00	8,00			zinc coating

SEALS

We supply sealing tapes presented in the technical solutions of this catalogue, as well as in other dimensions on the client's request: self-adhesive polyurethane **(PUS, PURS)**, polyethylene **(PES)** and butyl.

FASTENERS

Sandwich panels can be fastened to reinforced concrete, wooden and steel structures with use of appropriate connectors. System connectors are presented in tables below.

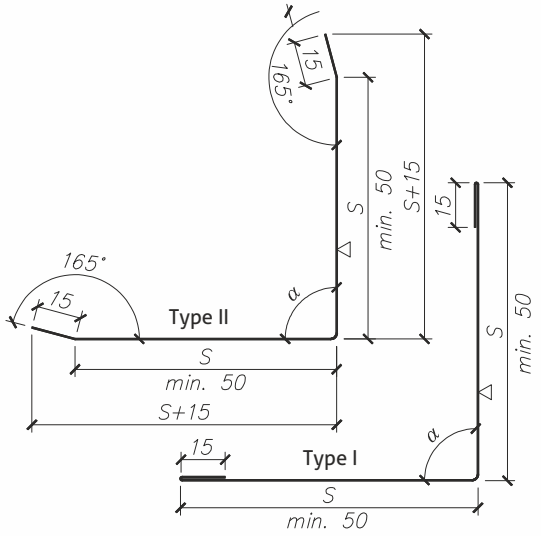
Connection	Connector dimensions [mm]
assembly of sandwich panels to steel and wooden structures	self-drilling screw with spacers – minimum length as per table below
assembly of sandwich panels to reinforced concrete structures	screws for concrete base with seals 6,4 x 100-210
assembly of flashings to sandwich panel	screw 4,8 x 20/ 4,2x16
	rivet 4,0 x 8,0
installation of flashings for thin-walled structures inside the facility	screw 4,8 x 19-25
	blind rivet 4,8 x 15,1
aesthetic finish	caps in panel colour

Sandwich panel type and thickness [mm]		Connector dimensions* [mm]
wall panel S	80	screw 5,5/6,4 x 120-140
wall panel U	80	screw 5,5/6,4 x 105-120
	100	screw 5,5/6,4 x 120-140
	120	screw 5,5/6,4 x 140-160
cold store CH	100	screw 5,5/6,4 x 140-160
	120	screw 5,5/6,4 x 160- 180
	160	screw 5,5/6,4 x 195-210
	200	screw 5,5/6,4 x 225-260
	250	screw 5,5/6,4 x 275-315

* Necessary length of fastener depends on the structure thickness (details from Sales Representative)

Flashing OB-01
outer corner

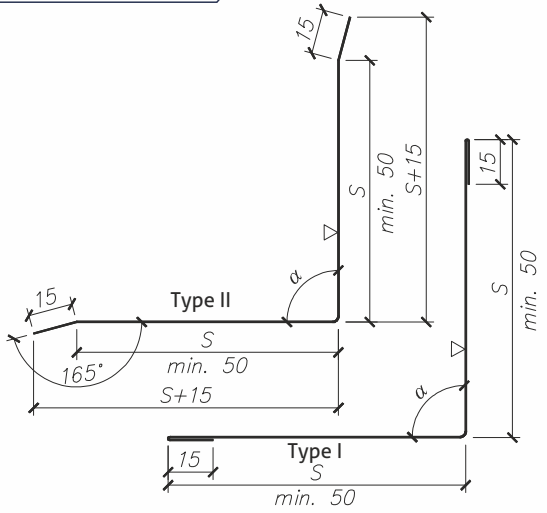
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-01/50	50	90	6000	3,12
02	OB-01/75	75			4,32
03	OB-01/100	100			5,52
04	OB-01/150	150			7,92
05	OB-01/200	200			10,32
06	OB-01/250	250			12,72
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-01/ S=..... / α= ..... / L=				
08	OB-01/ S1=..... / S2=..... / α= ..... / L=				



The use is described in detail on page 62

Flashing OB-02
inner corner

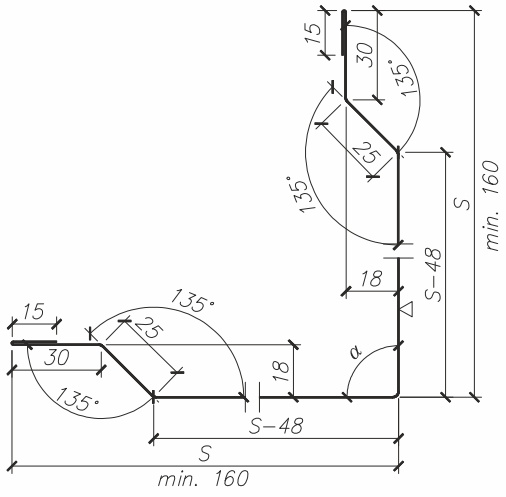
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-02/50	50	90	6000	3,12
02	OB-02/75	75			4,32
03	OB-02/100	100			5,52
04	OB-02/150	150			7,92
05	OB-02/200	200			10,32
06	OB-02/250	250			12,72
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-02/ S=..... / α= ..... / L=				
08	OB-02/ S1=..... / S2=..... / α= ..... / L=				



The use is described in detail on page 19

Flashing OB-03
outer corner, covering connectors

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-03/160	160	90	6000	8,74
02	OB-03/180	180			9,70
03	OB-03/200	200			10,66
04	OB-03/220	220			11,62
05	OB-03/240	240			12,58
06	OB-03/260	260			13,54
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-03/ S=..... / α= ..... / L=				
08	OB-03/ S1=..... / S2=..... / α= ..... / L=				



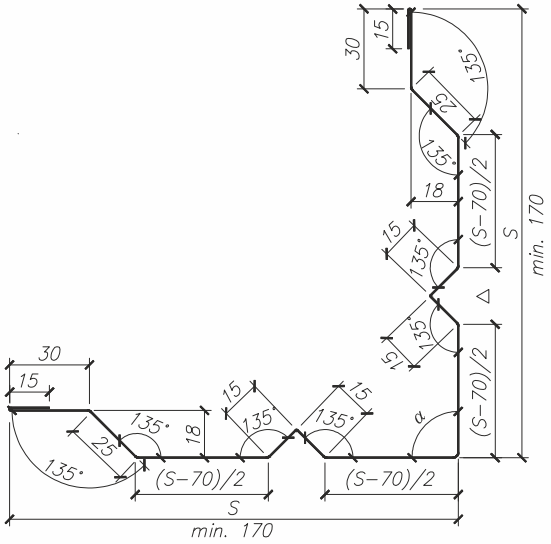
The use is described in detail on page 19

Flashing OB-03a

outer corner, covering connectors
(alternative for OB-03)

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-03a/180	180	90	6000	10,08
02	OB-03a/200	200			11,04
03	OB-03a/220	220			12,00
04	OB-03a/240	240			12,96
05	OB-03a/260	260			13,92
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
06	OB-03a/ S=..... / α= ..... / L=				
07	OB-03a/ S1=..... / S2=..... / α= ..... / L=				

NOTE:
Not described angles should be made as a right angle.



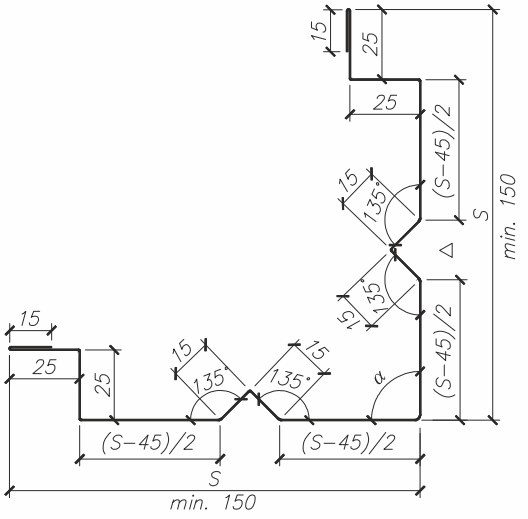
The use is described in detail on page 19

Flashing OB-03b

outer corner, covering connectorsi
(alternative for OB-03)

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-03b/160	160	90	6000	10,08
02	OB-03b/180	180			11,04
03	OB-03b/200	200			12,00
04	OB-03b/220	220			12,96
05	OB-03b/240	240			13,92
06	OB-03b/260	260			14,88
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-03b/ S=..... / α= ..... / L=				
08	OB-03b/ S1=..... / S2=..... / α= ..... / L=				

NOTE:
Not described angles should be made as a right angle.

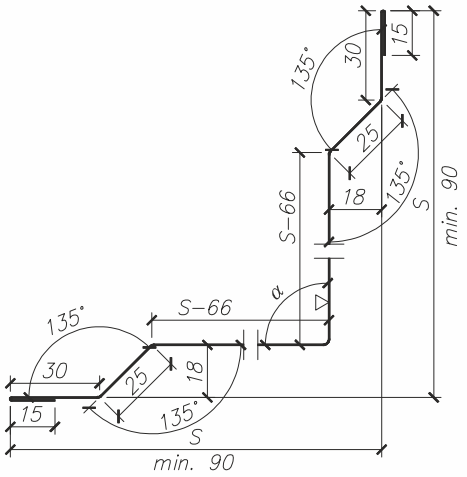


The use is described in detail on page 19

Flashing OB-04

inner corner, covering connectors

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-04/100	100	90	6000	4,99
02	OB-04/120	120			5,95
03	OB-04/150	150			7,39
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
04	OB-04/ S=..... / α= ..... / L=				
05	OB-04/ S1=..... / S2=..... / α= ..... / L=				

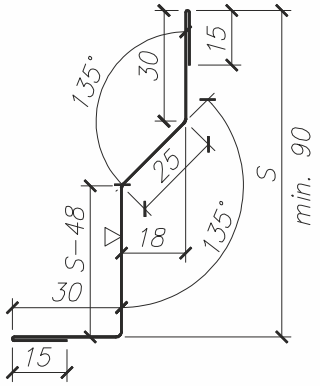


The use is described in detail on page -

Flashing OB-05
inner corner, covering at flooring

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-05/90	90	-	6000	3,77
02	OB-05/120	120			4,49
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
03	OB-05/ S=..... / L=				

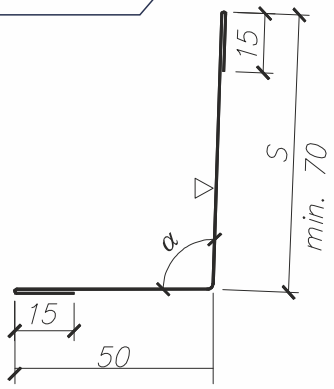
NOTE:
Not described angles should be made as a right angle.



The use is described in detail on page 18

Flashing OB-06
inner corner, covering at flooring

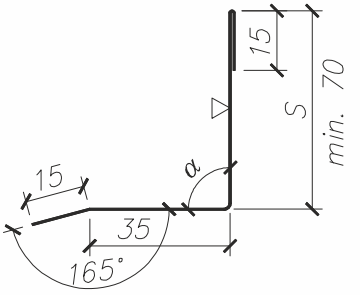
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-06/70	70	92	6000	3,60
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
02	OB-06/ S=..... / α= ..... / L=				



The use is described in detail on page 30

Flashing OB-07
covering corner

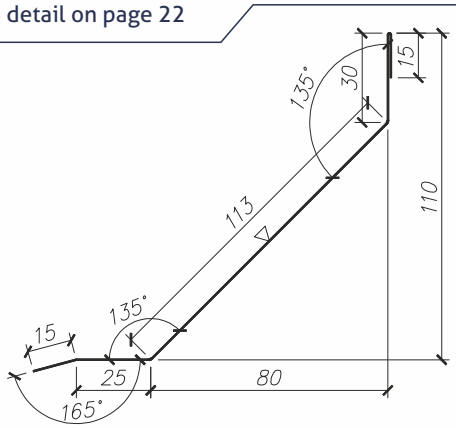
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-07/70	70	90	6000	3,24
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
02	OB-07/ S=..... / α= ..... / L=				



The use is described in detail on page 22

Flashing OB-08
inner corner, covering at grade beam

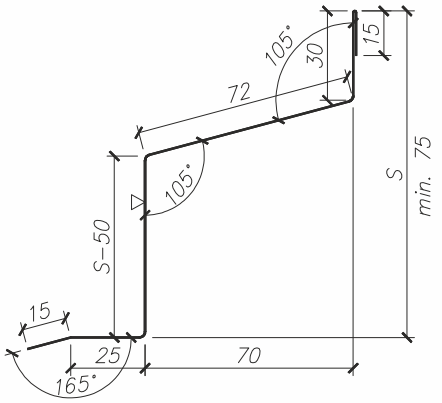
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-08	-	-	6000	4,75



The use is described in detail on page 16

Flashing OB-09
inner corner, covering at grade beam

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-09/110	110	-	6000	5,21
02	OB-09/150	150			6,17
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
03	OB-09/ S=..... / L=				

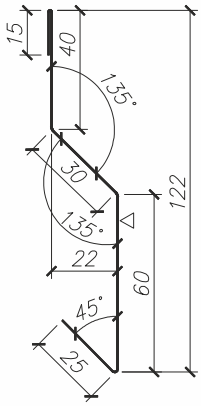


NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 48

Flashing OB-10
narrow wall drip edge

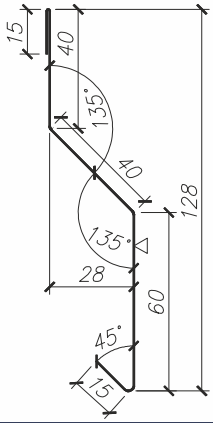
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-10	-	-	6000	4,08



The use is described in detail on page 16

Flashing OB-11
wide wall drip edge

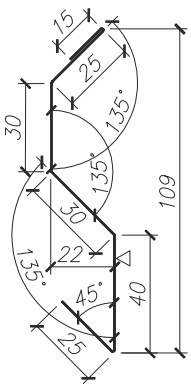
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-11	-	-	6000	4,08



The use is described in detail on page -

Flashing OB-12
wall drip edge

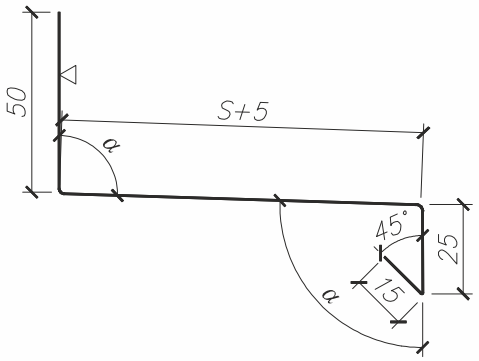
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-12	-	-	6000	3,96



The use is described in detail on page -

Flashing OB-13
plinth drip tray

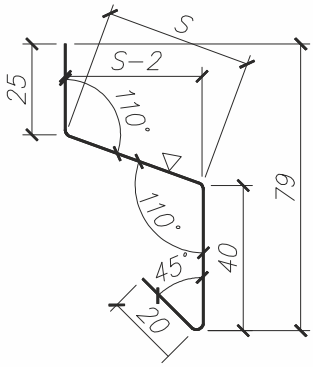
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-13/60	60	92	6000	3,72
02	OB-13/80	80			4,20
03	OB-13/100	100			4,68
04	OB-13/120	120			5,16
05	OB-13/140	140			5,64
06	OB-13/160	160			6,12
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-13/ S=..... / α= ..... / L=				



The use is described in detail on page 16

Flashing OB-14
small plinth drip tray

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-14/30	30	-	6000	2,76
02	OB-14/40	40			3,00

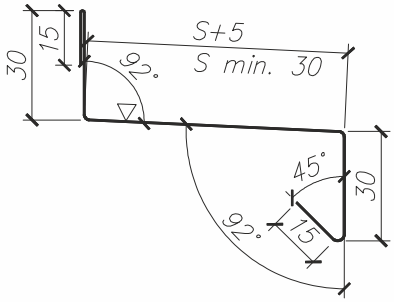


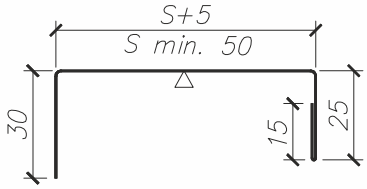
The use is described in detail on page 27

Flashing OB-15 plinth drip tray with stiffening OB-15 + OB-15a

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-15/70	70	-	6000	3,96
02	OB-15/90	90			4,44
03	OB-15/110	110			4,92
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
04	OB-15/ S=..... / L=.....				
	Standard – steel sheet 0,5 mm thick				
05	OB-15a/70	70	-	6000	3,48
06	OB-15a/90	90			3,96
07	OB-15a/110	110			4,44
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
08	OB-15a/ S=..... / L=.....				

NOTE:
Not described angles should be made as a right angle.

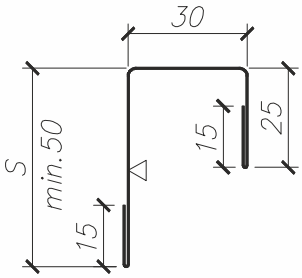




The use is described in detail on page 60

Flashing OB-16
under-gutter rigid flashing

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-16/50	50	-	6000	3,24
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
02	OB-16/ S=..... / L=				

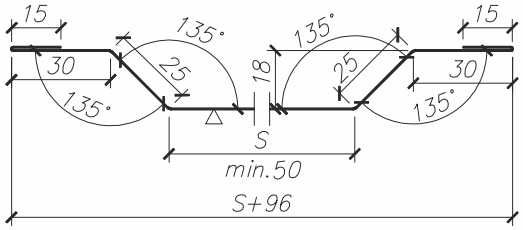


NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 25

Flashing OB-17
covering panels connection

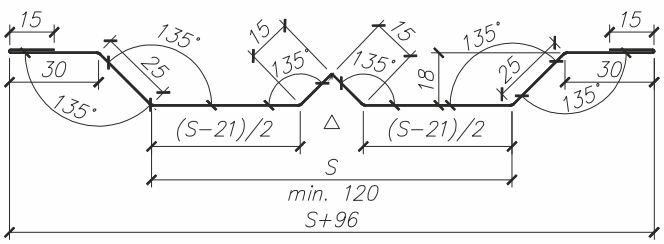
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-17/40	40	-	6000	4,32
02	OB-17/60	60			4,80
03	OB-17/80	80			5,28
04	OB-17/100	100			5,76
05	OB-17/120	120			6,24
06	OB-17/140	140			6,72
07	OB-17/160	160			7,20
08	OB-17/180	180			7,68
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
09	OB-17/ S=..... / L=				



The use is described in detail on page 33

Flashing OB-17a
covering panels connection
(alternative for OB-17)

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-17a/120	120	-	6000	6,46
02	OB-17a/140	140			6,94
03	OB-17a/160	160			7,42
04	OB-17a/180	180			7,90
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
05	OB-17a/ S=..... / L=				

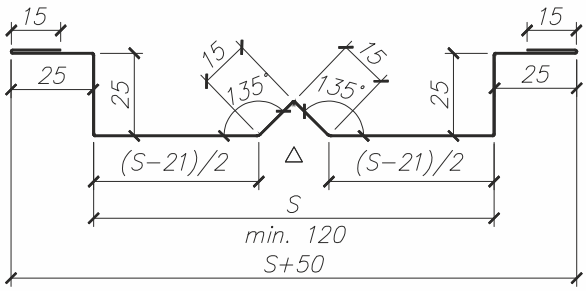


NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 33

Flashing OB-17b
covering panels connection
(alternative for OB-17)

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-17b/120	120	-	6000	6,22
02	OB-17b/140	140			6,70
03	OB-17b/160	160			7,18
04	OB-17b/180	180			7,66
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
05	OB-17b/ S=..... / L=				

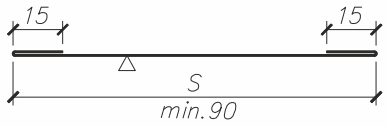


NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 33

Flashing OB-18
covering

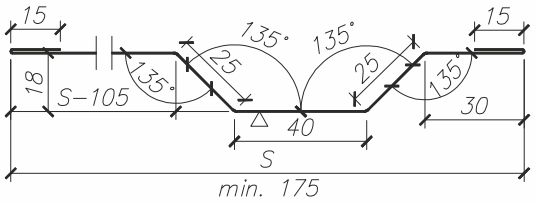
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-18/90	90	-	6000	2,88
02	OB-18/100	100			3,12
03	OB-18/120	120			3,60
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
04	OB-18/ S=..... / L=				



The use is described in detail on page 64

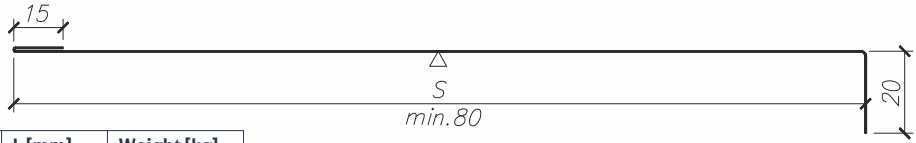
Flashing OB-19
covering

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-19/175	175	-	6000	5,28
02	OB-19/195	195			5,76
03	OB-19/215	215			6,24
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
04	OB-19/ S=..... / L=				



The use is described in detail on page 21

Flashing OB-20
covering door lintel



No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
01	OB-20/ S=..... / L=.....				

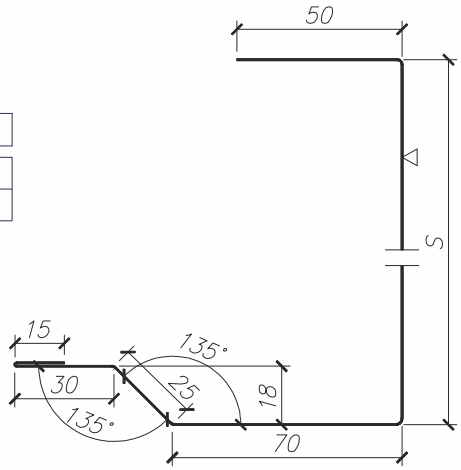
NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 24

Flashing OB-21
covering door post

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
01	OB-21/ S=..... / L=.....				

NOTE:
Not described angles should be made as a right angle.

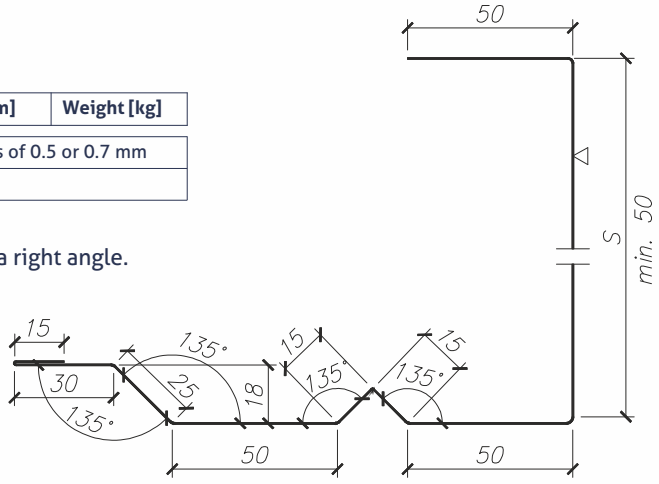


The use is described in detail on page 23

Flashing OB-21a
covering door post
(alternative for OB-21)

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
01	OB-21a/ S=..... / L=.....				

NOTE:
Not described angles should be made as a right angle.

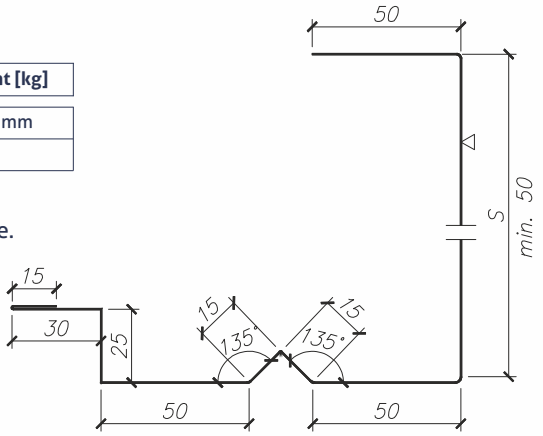


The use is described in detail on page 23

Flashing OB-21b
masking junction of panels
(alternative for OB-21)

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
01	OB-21b/ S=..... / L=.....				

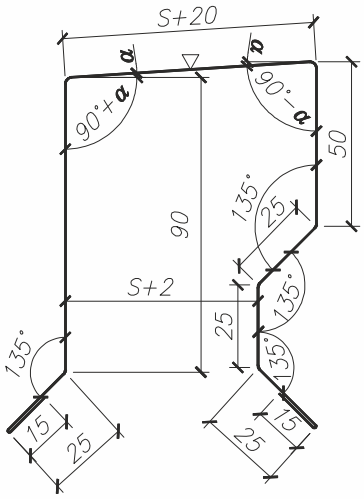
NOTE:
Not described angles should be made as a right angle.



The use is described in detail on page 23

Flashing OB-34
attic wall - type I

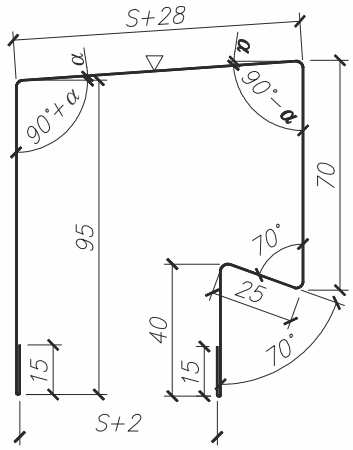
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-34/40	40	according to the order	6000	7,92
02	OB-34/60	60			8,40
03	OB-34/80	80			8,88
04	OB-34/100	100			9,36
05	OB-34/120	120			9,84
06	OB-34/140	140			10,32
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-34/ S=..... / α= ..... / L=				



The use is described in detail on page -

Flashing OB-35
attic wall - type II

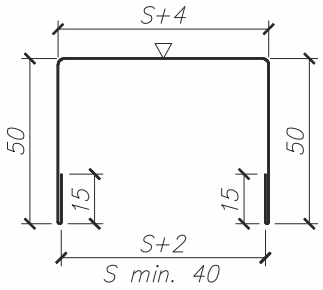
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-35/40	40	according to the order	6000	7,87
02	OB-35/60	60			8,35
03	OB-35/80	80			8,83
04	OB-35/100	100			9,31
05	OB-35/120	120			9,79
06	OB-35/140	140			10,27
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
07	OB-35/ S=..... / α= ..... / L=				



The use is described in detail on page -

Flashing OB-36
U channel section

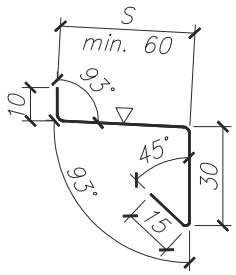
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-36/40	40	-	6000	4,18
02	OB-36/60	60			4,66
03	OB-36/80	80			5,14
04	OB-36/100	100			5,62
05	OB-36/120	120			6,10
06	OB-36/160	160			7,06
07	OB-36/200	200			8,02
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
08	OB-36/ S=..... / L=				



NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page -

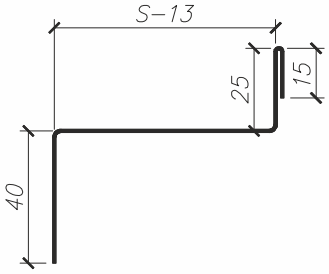
Flashing OB-37
window cill



No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 0,5 mm thick				
01	OB-37/60	60	-	6000	2,76
02	OB-37/80	80			3,24
03	OB-37/100	100			3,72
	Unusual from sheet metal with a thickness of 0.5 or 0.7 mm				
04	OB-37/ S=...../ L=				

The use is described in detail on page 26

Flashing OB-38
edge bar for S panels

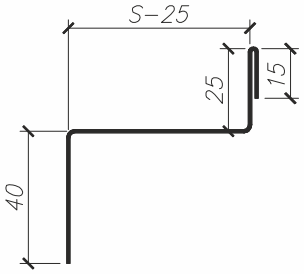


No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 1,0 mm thick				
01	OB-38/60	60	-	6000	6,10
02	OB-38/80	80			7,06
03	OB-38/100	100			8,02

NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 27

Flashing OB-39
edge bar for U panels

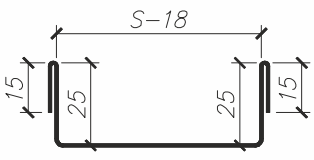


No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 1,0 mm thick				
01	OB-39/60	60	according to the order	6000	5,52
02	OB-39/80	80			6,48
03	OB-39/100	100			7,44
04	OB-39/120	120			8,40
05	OB-39/140	140			9,36

NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 59

Flashing OB-40
starting



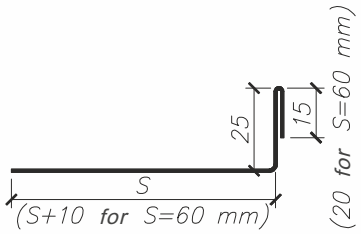
No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 1,0 mm thick				
01	OB-40/60	60	-	6000	5,86
02	OB-40/80	80			6,82
03	OB-40/100	100			7,78
04	OB-40/120	120			8,74
05	OB-40/160	160			10,66
06	OB-40/200	200			12,58

NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page -

Flashing OB-41
edge bar

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 1,0 mm thick				
01	OB-41/60	60	-	6000	5,52
02	OB-41/80	80			5,76
03	OB-41/100	100			6,72
04	OB-41/120	120			7,68
05	OB-41/140	140			8,64

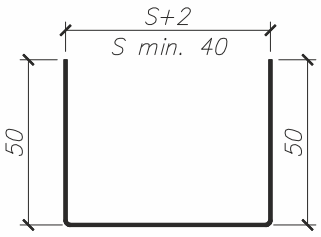


NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 58

Flashing OB-42
edge bar

No.	Symbol	S [mm]	α [°]	L [mm]	Weight [kg]
	Standard – steel sheet 1,0 mm thick				
01	OB-42/40	40	-	6000	6,82
02	OB-42/60	60			7,78
03	OB-42/80	80			8,74
04	OB-42/100	100			9,70
05	OB-42/120	120			10,66
06	OB-42/160	160			12,58
07	OB-42/200	200			14,50
	Unusual from sheet metal with a thickness of 1.0				
08	OB-42/ S=..... / L=				



NOTE:
Not described angles should be made as a right angle.

The use is described in detail on page 18

Flat metal sheets

width [mm]	available thicknesses [mm]	typical lengths [mm]	panel used ** external facing	panel used ** internal facing	available colours
1073	0,5 i 0,7*	3000 i 6000	S thickness 40 mm module 1000	S thickness 40 mm module 1000	compatible with plate tables
1108			S (apart from a thickness of 40 mm) moduł 1000, CH moduł 1000	S (apart from a thickness of 40 mm) module 1000, U, CH module 1000	
1183			U	-	
1250			S module 1140, CH module 1140	S module 1140, CH module 1140	

*- offered upon special order
** - to avoid the difference in colour, it is recommended to choose metal sheet width appropriate to the kind of panel used

GÓR-STAL®
SANDWICH PANELS

Order:
No _____ of _____

Agent:
_____

Supplier: (name, company address, phone/fax, TIN)

Gór-Stal sp. z o.o.
No. 11 Przemysłowa st.
38-300 Gorlice, Poland
Tel./Fax: + 48 18 353 98 00
Account No: 79 1140 1081 0000 5859 5500 1001

Commercial Terms:	
Payment method:	
Advance (%): _____	payable until: _____
Full payment:	
Credit limit:	
Remarks:	

Ordering pary: (name, company address, phone/fax, TIN)

Agent:
Remarks:

Delivery place: (recipient, address, city, post code, phone/fax)

L.P.	**Plate type:** GS MW S GS MW CH GS MW U	**Thickness [mm]:** 80 100 120 160 200 250 80 100 120	**Panel profiling:** L - Linear M - Microfiltered F - Wavy R - Grooved P - Flat		**Plate width [mm]:** 1000 1140	**Colour RAL:**		**Quantity:**		**Net price Unit/value:**	
			ext.	int.		ext.	int.	L. [m]	pcs.	EUR/m²	EUR
01											
02											
03											
04											
05											
06											
07											
08											
09											
10											
11											
12											
13											
14											
15											
							In total:	**[m²]:**		**[EUR]:**	

Party's Signature Ordering:

GÓR-STAL®
SANDWICH PANELS

Order:
no _____ **of** _____

To sandwich panels order:
No _____ **of** _____

Supplier: (name, company address, phone/fax, TIN)

Gór-Stal sp. z o.o.
No. 11 Przemysłowa st.
38-300 Gorlice. Poland
Tel./Fax: + 48 18 353 98 00
Account No: 79 1140 1081 0000 5859 5500 1001

Commercial Terms:

Payment method:	
Advance (%):_____	payable until:_____
Full payment:	
Credit limit:	
Remarks:	

Ordering pary: (name, company address, phone/fax, TIN)

Delivery place: (recipient, address, city, post code, phone/fax)

Flashing length: 6 m.
Defaultα = 90°
Shape of flashing acc. to technological catalogue

Ordering Party's signature:

Symbol	S [mm]	α [°]	Thickness [mm]	Length [mm]	Quantity [szt.]	Total weight	Colour RAL
OB-01							
OB-02							
OB-03							
OB-03a							
OB-03b							
OB-04							
OB-05		-					
OB-06							
OB-07							
OB-08	-	-					
OB-09		-					
OB-10	-	-					
OB-11	-	-					
OB-12	-	-					
OB-13							
OB-14	-	-					
OB-15							
OB-15a		-					
OB-16	-	-					
OB-17		-					
OB-17a		-					
OB-21		-					
OB-21a		-					
OB-21b		-					
OB-34	-	-					
OB-35		-					
OB-36		-					
OB-37		-					
OB-38		-					
OB-39		-					
OB-40		-					
OB-41		-					
OB-42		-					
				Total:			
				Net price:			
				Net value:			

ACCESSORIES	Type	Size [mm]	Quantity [pcs./l.m]	Colour RAL	
Bolts fixing the plate to the structure	Steel GT6				
	Steel G12				
	Wood / Concrete				
Screws for flashings					
Rivets					
Gasket	PE				
Gasket	PES				
Gasket	PUS				
Gasket					
Saddle washer	35-35	-			
Washer	Pm1	-			
Covering caps	-----				
Connector	ALF				

INDIVIDUAL FLASHING

GÓR-STAL®
SANDWICH PANELS

Order:
No _____ of _____

Agent:
_____

Supplier: (name, company address, phone/fax, TIN)

Gór-Stal sp. z o.o.
No. 11 Przemysłowa st.
38-300 Gorlice
Tel./Fax: + 48 18 353 98 00
Account No: 79 1140 1081 0000 5859 5500 1001

Ordering pary: (name, company address, phone/fax, TIN)

Delivery place: (recipient, address, city, post code, phone/fax)

No.	Sheet thickness [mm]:	Colour RAL:	Length [m]:	Quantity:

Nr.	Sheet thickness [mm]:	Colour RAL:	Length [m]:	Quantity:

Remark:

01. Boundary conditions:
- unfolding -> min 114 mm
- shelf width -> min 25 mm
- width of the notching/bend -> min 15 mm
- bending angle -> min 45°
- with an unfolding of above 350 mm, it is recommended to shorten the processing to 3.0 mb.

02. The flashings will be made in accordance with the above drawings and their dimensions.

Remark:

Ordering Party's signature:

The author and Gór-Stal sp. z o.o. company reserve the right to make amendments or corrections in the contents of the catalogue and technical specification without prior notice. This study does not constitute an offer within the meaning of the law.
They should be treated as the manufacturer's guidelines regarding the correct application of Gór-Stal products.
The document does not replace technical construction knowledge and cannot constitute grounds for asserting any claims against the Gór-Stal company.
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Update: 23.04.2025

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SANDWICH PANELS

GÓR-STAL sp. z o.o.
No. 11 Przemysłowa st., 38-300 Gorlice, Poland

www.gor-stal.pl

Sandwich Panels Factory
No. 11 Przemysłowa st., 38-300 Gorlice, Poland
tel./fax: +48 18 353 98 00
e-mail: gorlice@gor-stal.pl
www.gor-stal.pl

Insulation Boards Factory
No. 9 Adolfa Mitery st., 32-700 Bochnia,Poland
tel./fax: +48 14 698 20 60
e-mail: bochnia@gor-stal.pl
www.termpir.eu