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CLASSIFICATION

CLASSIFICATION OF FIRE RESISTANCE ACCORDING TO EN 13501-2: 2016 A NON-LOADBEARING PARTITION OF TYPE “SAB W120.1100-FR” MANUFACTURED BY SAB-PROFIEL BV

Classification no.	2022-Efectis-R000993
Sponsor	SAB-profiel BV Productieweg 2 3401 MG IJSSELSTEIN THE NETHERLANDS
Product name	SAB W120.1100-FR
Prepared by	Efectis Nederland BV
Notified body no.	1234
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Project number	ENL-22-000210
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Number of pages	15

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1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to “SAB W120.1100-FR” in accordance with the procedures given in EN 13501-2:2016.

1.1 NORMATIVE REFERENCES

Table 1.1: Normative references

European standard	Part
EN 1363-1:2020	Fire resistance tests – Part 1: General requirements
EN 1363-2:1999 + C1:2001	Fire resistance tests – Part 2: Alternative and additional procedures
EN 1364-1:2015	Fire resistance tests for non-loadbearing elements - Part 1: Walls
EN 13501-2:2016	Fire classification of construction products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services

1.2 REVISION INFORMATION

This is the first issue of the classification report.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, “SAB W120.1100-FR” is defined as a non-loadbearing partition.

For the dimensions and specifications of the materials and components of the examined construction, also see the figures in chapter 6. Details of the assembly of the construction are given in the paragraphs below.

2.2 DESCRIPTION

The element, “SAB W120.1100-FR” is fully described below in support of classification listed in 3.1.

2.2.1 Test Frame

The test frame was constructed of steel beams comprising a fire-resistant concrete lining (density: 1450 kg/m^3 ± 200 kg/m^3), with an aperture of 4000 x 3000 mm (w x h) with an insertion width of 240 mm.

2.2.2 Supporting Construction

Two aerated concrete piers were built into the test frame to achieve the necessary aperture dimensions.

Table 2.1: Specifications supporting construction

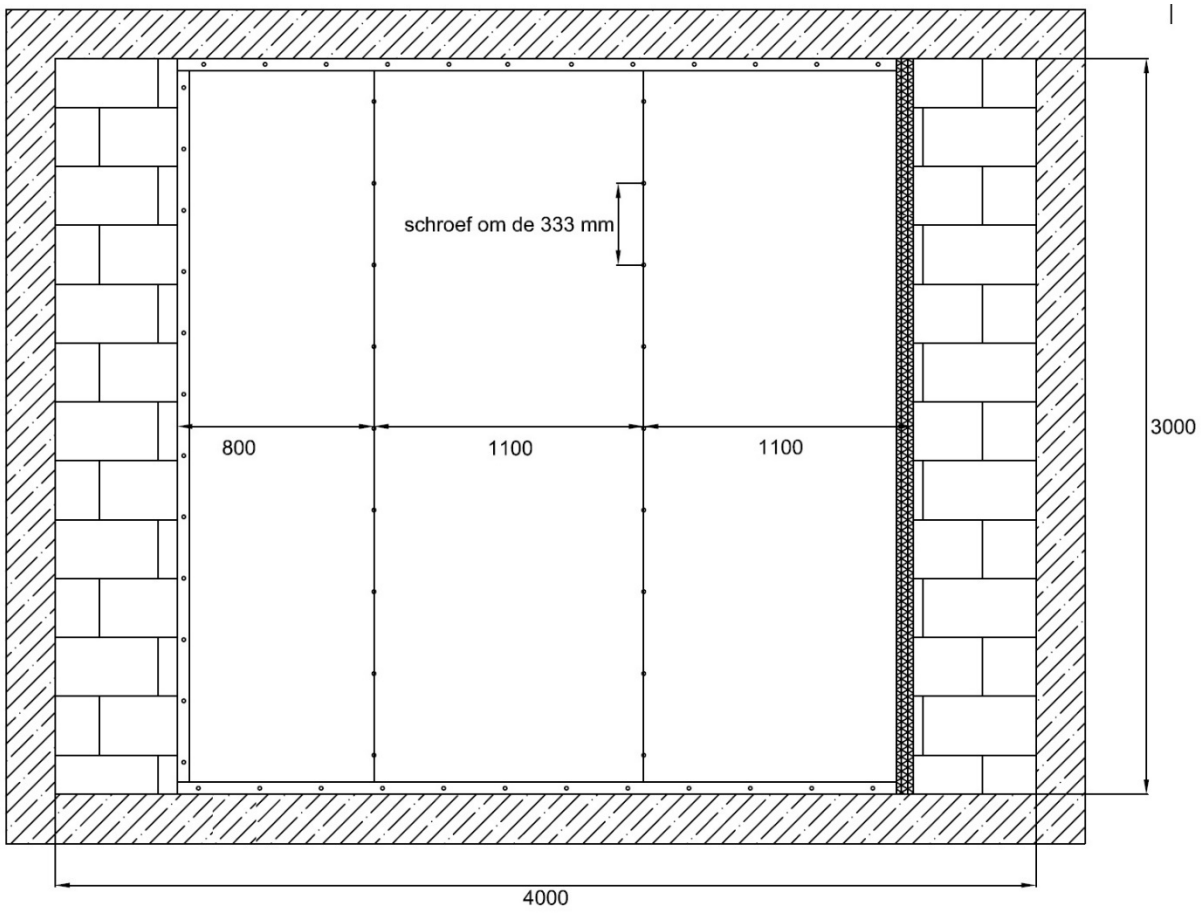
Specifications standard low density rigid supporting construction	
Overall dimensions	4000 x 3000 mm (w x h)
Aperture	3000 x 3000 mm (w x h)
Material	Aerated concrete blocks: 600 x 250 x 150 mm
Manufacturer	Ytong
Density	575 kg/m^3 ± 50 kg/m^3
Thickness	150 mm

2.2.3 Restraint / Free edge

The specimen was erected so that the right vertical edge (seen from the unexposed side) was unrestrained as described in EN 1363-1 and adjacent to a full width panel. The gap was filled with mineral wool of type Rockwool SL 970 with a density of 128 kg/m^3 to provide a seal without restricting freedom of movement. The gap was approx. 40 mm wide. The edge of the panel adjacent to the free edge was sealed as described below.

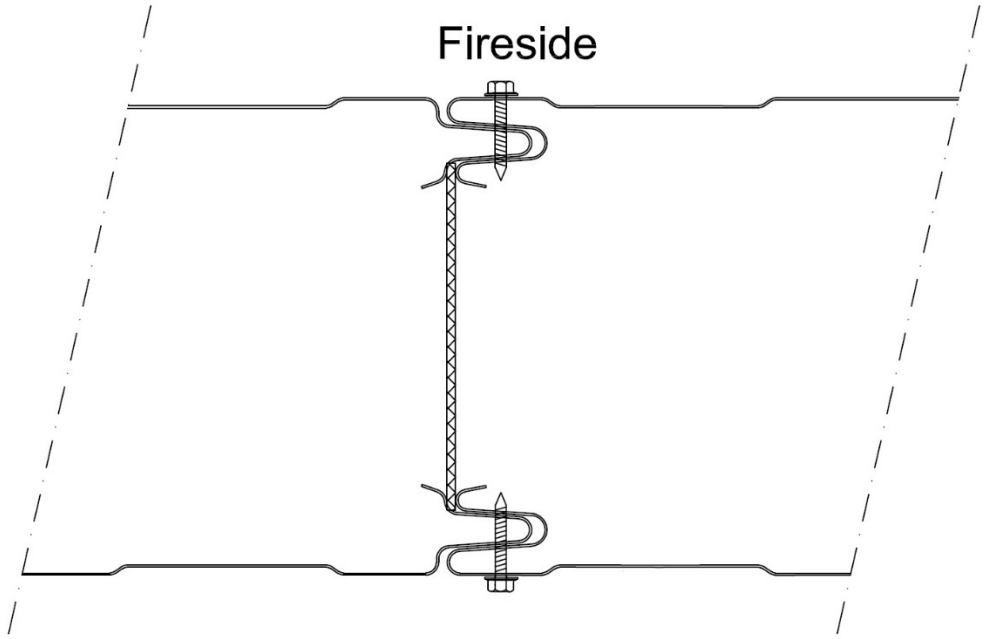
2.2.4 Partition

Specifications partition



Manufacturer	SAB-profiel BV
Type	Non-loadbearing partition consisting of sandwich panels of type “SAB W120.1100-FR”
Product name	“SAB W120.1100-FR”
Material	Steel and PIR foam
Number of panels	A total of 3 full width panels. The noggin was cut of the panels at both edges.
Directions of panels	Vertically
Overall dimensions	3000 x 3000 x 120 mm (w x h x t)
Expansion allowances	Top: 20 mm Bottom: 20 mm

2.2.5 Sandwich panel

Specifications sandwich panel	
	
Manufacturer	SAB-profiel BV
Type	Sandwich panel
Product name	“SAB W120.1100-FR”
Material	Inner sheet, unexposed side: 0.4 mm steel with a polyester coating Core: PIR foam type "SAB VIII" with a density of 40 kg/m^3 Outer sheet, exposed side: 0.5 mm steel with a polyester coating
Dimensions	1100 x 3000 x 120 mm (w x h x t)
Function	Fire resistant partition
Fixing	Panels to the supporting construction: with L-shaped profiles. The panel was on both sides fixed with screws Ø5.5 x 25 mm to the L-shaped profile, at a c.t.c of approx. 250 mm. The L-shaped profile was fixed to the supporting construction with Ø6 x 60 mm screws and 8 mm plugs at a c.t.c of approx. 500 mm The longitudinal overlap between the panels on the unexposed side with screws type “EJOT® JF3-2-5,5 x 25 – E16” at a c.t.c distance of 333 mm

2.2.6 Profiles

Specifications profiles	
Manufacturer	SAB-profiel BV
Type	U-shaped profile L-shaped profile
Material	Galvanized steel
Dimensions	U-shaped profile: 120 x 50 x 0.6 mm (w x h x t) L-shaped profile: 100 x 50 x 1.5 mm (w x h x t)
Location	U-shaped profile: at the free edge, capping the fitted sandwich panel L-shaped profile: around perimeter (except the free edge) on exposed and unexposed side
Function	U-shaped profile: sealing of the open edge of the fitted sandwich panel at the free edge L-shaped profile: connecting the sandwich panels to the supporting construction
Fixing	U-shaped profile to panel: with screws Ø5.5 x 25 mm at a c.t.c distance of approx. 250 mm L-shaped profile to supporting construction: with Ø6 x 60 mm screws and 8 mm plugs at a c.t.c distance of approx. 500 mm L-shaped profiles to panels: with screws Ø5.5 x 25 mm at a c.t.c distance of approx. 250 mm

2.2.7 Sealant (mastic)

Specifications sealant	
Manufacturer	PFC Corofil
Type	Intumescent sealant
Product name	Firestop (acoustic intumescent sealant)
Material	Acrylic based sealant containing graphite
Location	Around perimeter of partition (except free edge) between L-shaped profile and panels Around perimeter of partition (except free edge) between L-shaped profile and supporting construction
Function	Sealing of gaps between the test frame and the sandwich panels during fire

2.2.8 Mineral wool

Specifications mineral wool	
Manufacturer	Rockwool
Type	Mineral wool
Product name	Prorox SL 970
Density	115 kg/m^3
Material	Mineral wool
Location	Between sandwich panel and supporting construction at fixed edges Filling of the free edge
Function	Fire resistant sealing of gaps
Fixing	Stuffed into cavity

2.2.9 Screws

Specifications screws	
Type	Self-drilling screws
Product name	Saphir self-drilling screw: EJOT® JF3-2-5,5 x 25 – E16 SPAX T2/C2nw A9J
Material	Steel
Dimensions	Saphir self-drilling screw: EJOT® JF3-2-5,5 x 25 – E16 SPAX: Ø6.0 x 60 mm
Location	EJOT® JF3-2-5,5 x 25 – E16: around perimeter of the partition, on exposed and unexposed side, fixing the L-shaped and U-shaped profiles to the sandwich panel Ø6.0 x 60 mm (with 8 mm plugs): around the perimeter of the partition (except free edge), on exposed and unexposed side, connecting the L-shaped profile to the supporting construction.

2.3 METHOD OF ASSEMBLY

The test specimen was built in the following order:

The test specimen was built in the following order:

- Fixing of L-shaped profiles to the supporting construction on one side;
- mounting the panels to the L-shaped profiles;
- mounting the L-shaped profiles on the other side;
- sealing of gaps between specimen and supporting construction.

3. TEST REPORTS AND TEST RESULTS IN SUPPORT OF THE CLASSIFICATION

3.1 TEST REPORTS

Table 3.1: Details test report

Name of laboratory	***Name of sponsor***	***Report ref. no***	***Test standard and Date***
Efectis Nederland BV	*SAB-profiel*	2022-Efectis-R000739[Rev.1]	EN 1364-1:2015

3.2 RESULTS

Table 3.2: Main performances

Performances	**Criteria**	**Time (completed minute)**	**Failure? (time min and sec or No)**
Integrity	*Ignition of a cotton pad*	*68*	*No*
	Sustained flaming	*66*	*66:23*
	Cracks or openings in excess of given dimensions	*68*	*No*
Insulation – discrete area 1 or only one area	*Average temperature, increase of Δ140°C*	*45*	*45:10*
	Maximum temperature, Increase of Δ180°C	*28*	*28:30*
Radiation	*Maximum radiation value > 15 kW/m²*	*66*	*No*
Termination of the test at 68 minutes for the following reason: *Attainment of selected criteria*			

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with Clause 7 of EN 13501-2:2016.

4.2 CLASSIFICATION

The element, “SAB W120.1100-FR” is classified according to combinations of performance parameters and classes as described in Clause 6.7 of EN 13501-2:2016.

E60, EI20 and EW60

4.3 FIELD OF APPLICATION

4.3.1 General

The results of the fire test are directly applicable to similar constructions where one or more of the changes listed below are made and the construction continues to comply with the appropriate design code for its stiffness and stability, except with respect to the construction types covered in annex A and annex B of EN 1364-1 where specific direct field of application rules are given.

a) decrease in height;

b) increase in the thickness of the wall;

c) increase in the thickness of component materials;

d) decrease in linear dimensions of boards or panels but not thickness;

e) decrease in stud spacing;

f) decrease in distance of fixing centres;

g) increase in the number of vertical joints, of the type tested;

h) vertical joints, of the type tested.

4.3.2 Extension of width

For test specimens tested without a supporting construction, the width of an identical construction may be increased if the specimen was tested at a minimum of nominally 3 m wide with one vertical edge without restraint.

In case of EW classification, an increase in width of an identical construction is only allowed when the average unexposed surface temperature of any discrete area of the test specimen remains below 300 °C or the measured radiation remains below 6 kW/m^2. In any other case, no increase in width is allowed.

The radiation did not exceed 6 kW/m^2. Therefore, in case of EW classification the width of the construction may be increased without restriction.

4.3.3 Extension of height

The height of the construction may be increased by 1.0 m under the following conditions:

a) minimum tested height is 3 m when tested without a supporting construction or 2.8 m when tested with a supporting construction;

b) the maximum deflection of the test specimen was not in excess of 100 mm;

c) the expansion allowances are increased pro-rata.

In case of EW classification, an increase in height of an identical construction is only allowed when the average unexposed surface temperature of any discrete area of the test specimen remains below 300 °C or the measured radiation remains below 6 kW/m^2. In any other case, no increase in height is allowed.

The deflection exceeded 100 mm after 48 minutes. Therefore, the height of the construction may be increased to 1 meter for classification times under 48 minutes**.**

4.3.4 Supporting constructions

The following rules for the field of application apply.

4.3.4.1 Standard supporting constructions

For specimens tested with any standard supporting construction as defined in EN 1363-1, the result is applicable to any other supporting construction of the same type (flexible or rigid) that has the same or a greater classified fire resistance (thicker, denser, more layers of boards, as appropriate) than the one used in the test and the same horizontal and/or vertical orientation, i.e.: only vertical if the specimen was tested with the standard supporting construction fixed along the vertical edge.

5. LIMITATIONS

This classification document does not represent type approval or certification of the product.

SIGNED

A.J. Waber M.Sc.
Project leader fire resistance

APPROVED

G.M. Klijn B.Sc.
Project leader fire resistance

6. DRAWINGS

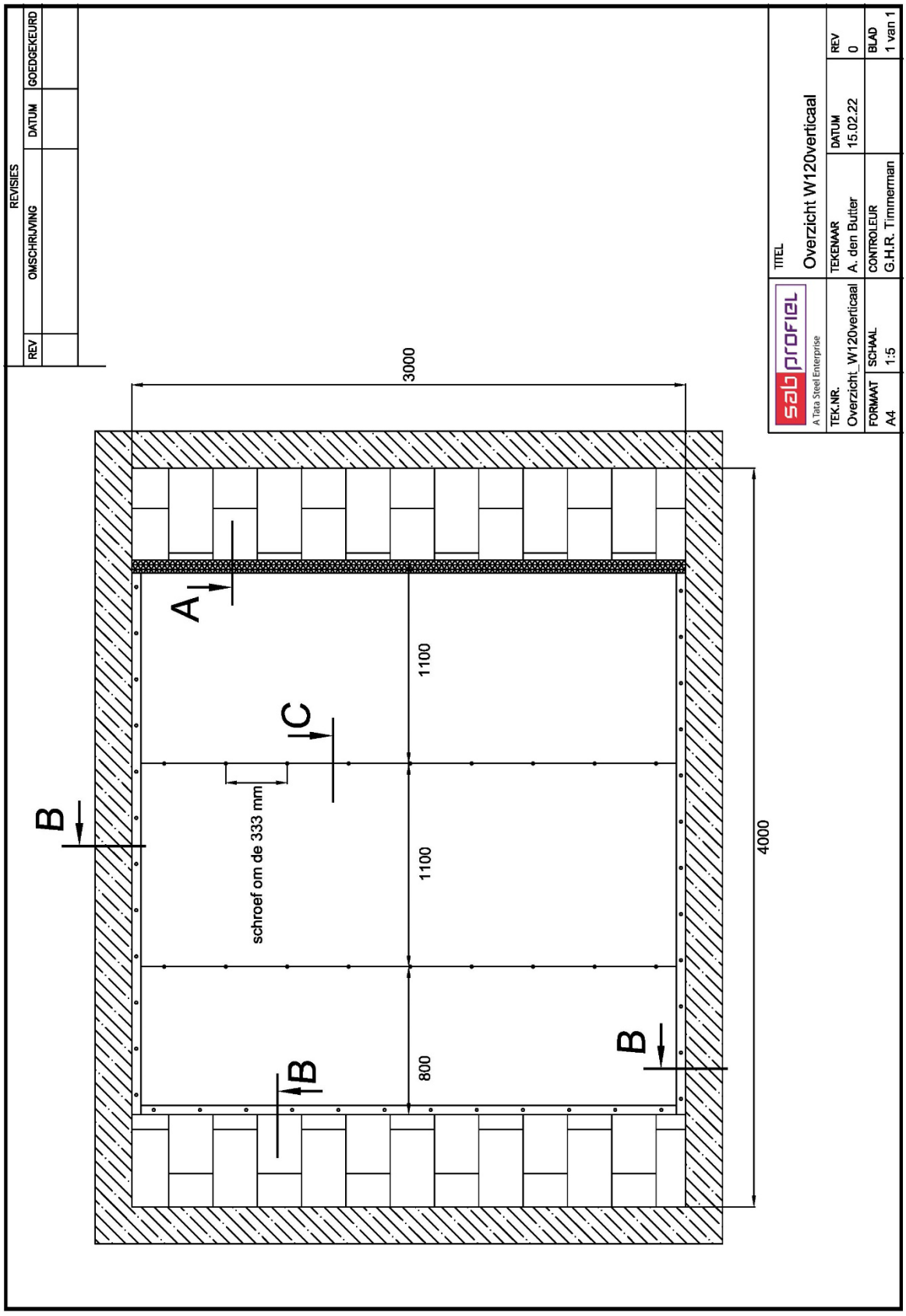


Figure 1: Front view unexposed side

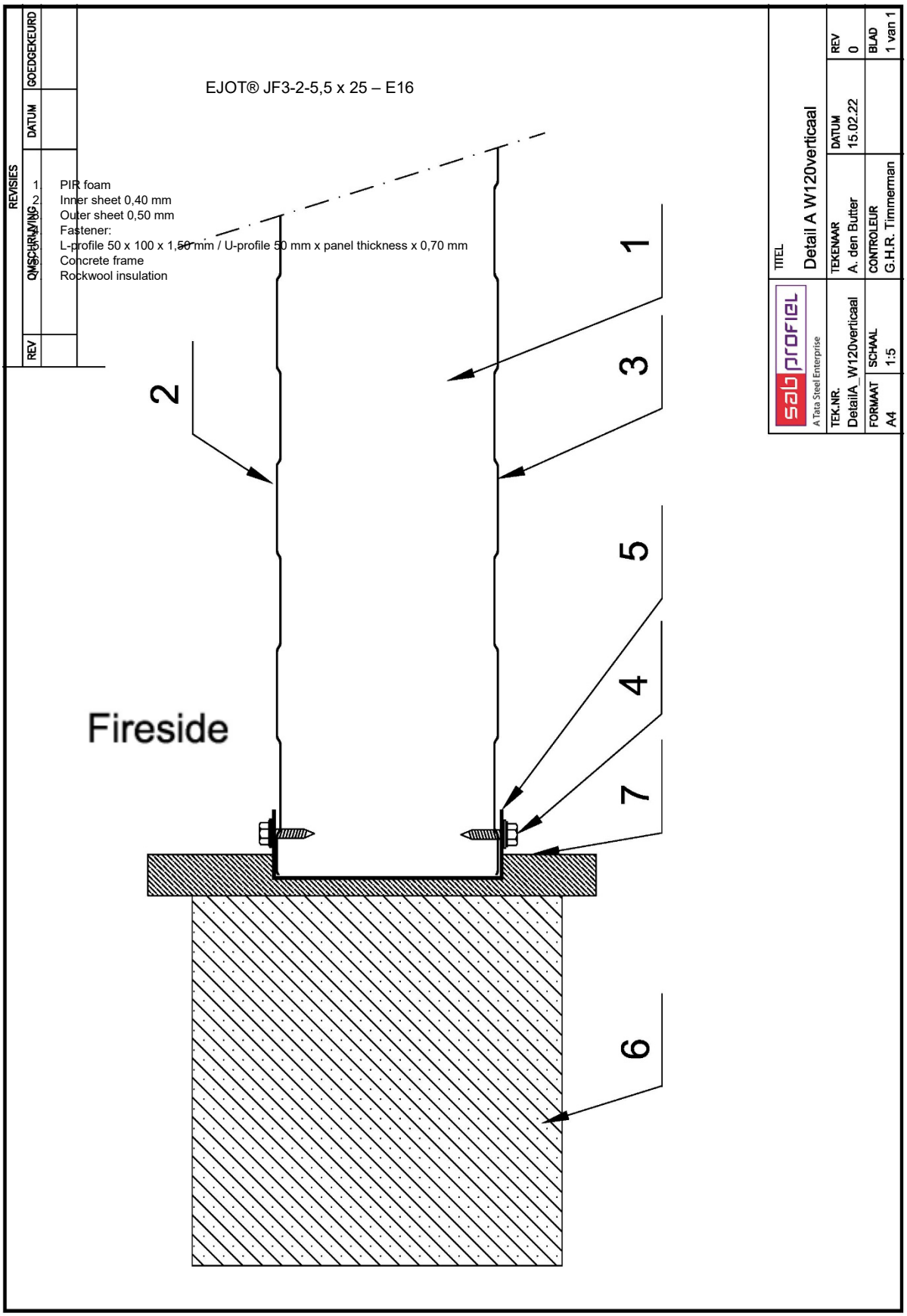


Figure 2: Detail A

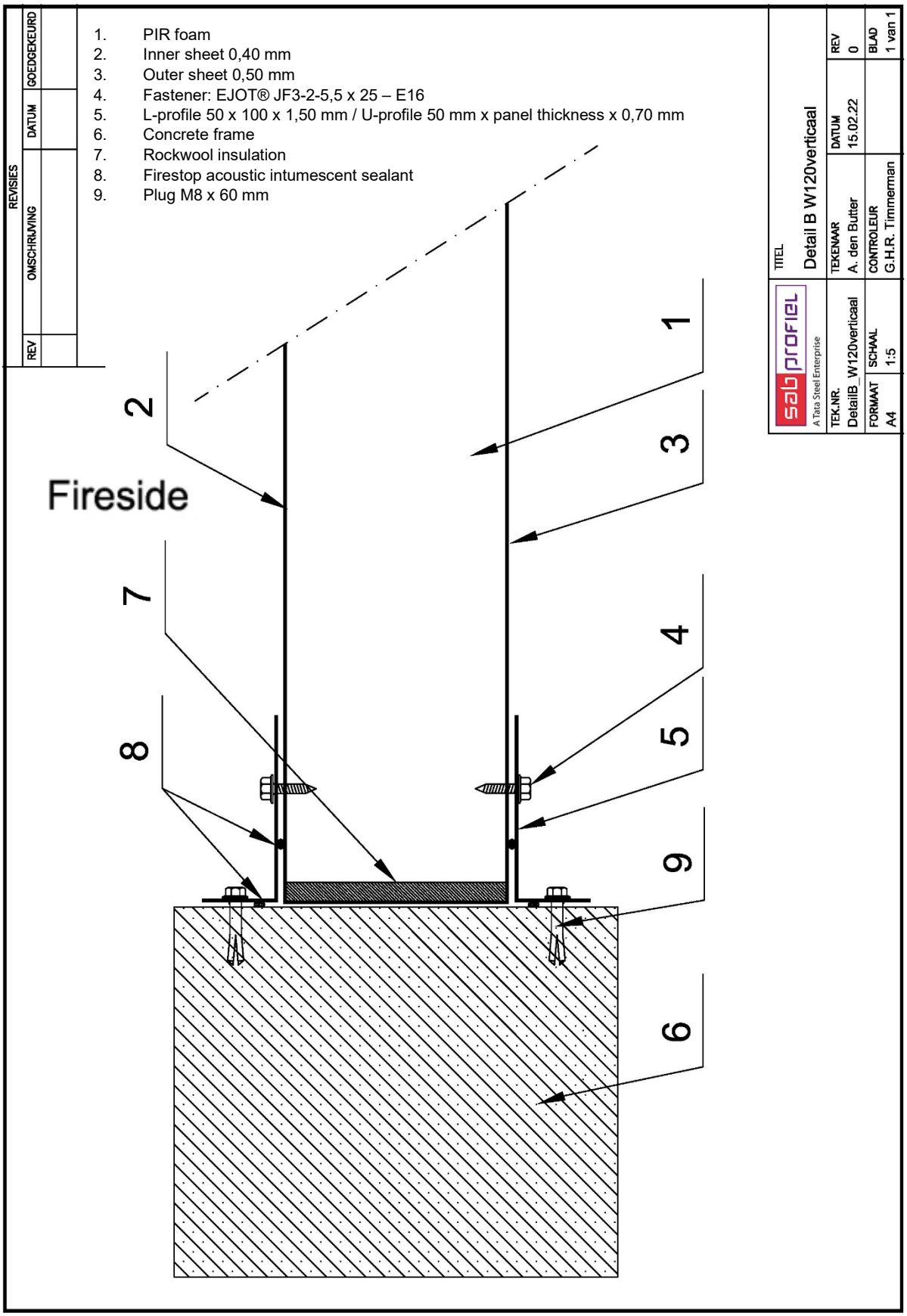


Figure 3: Detail B

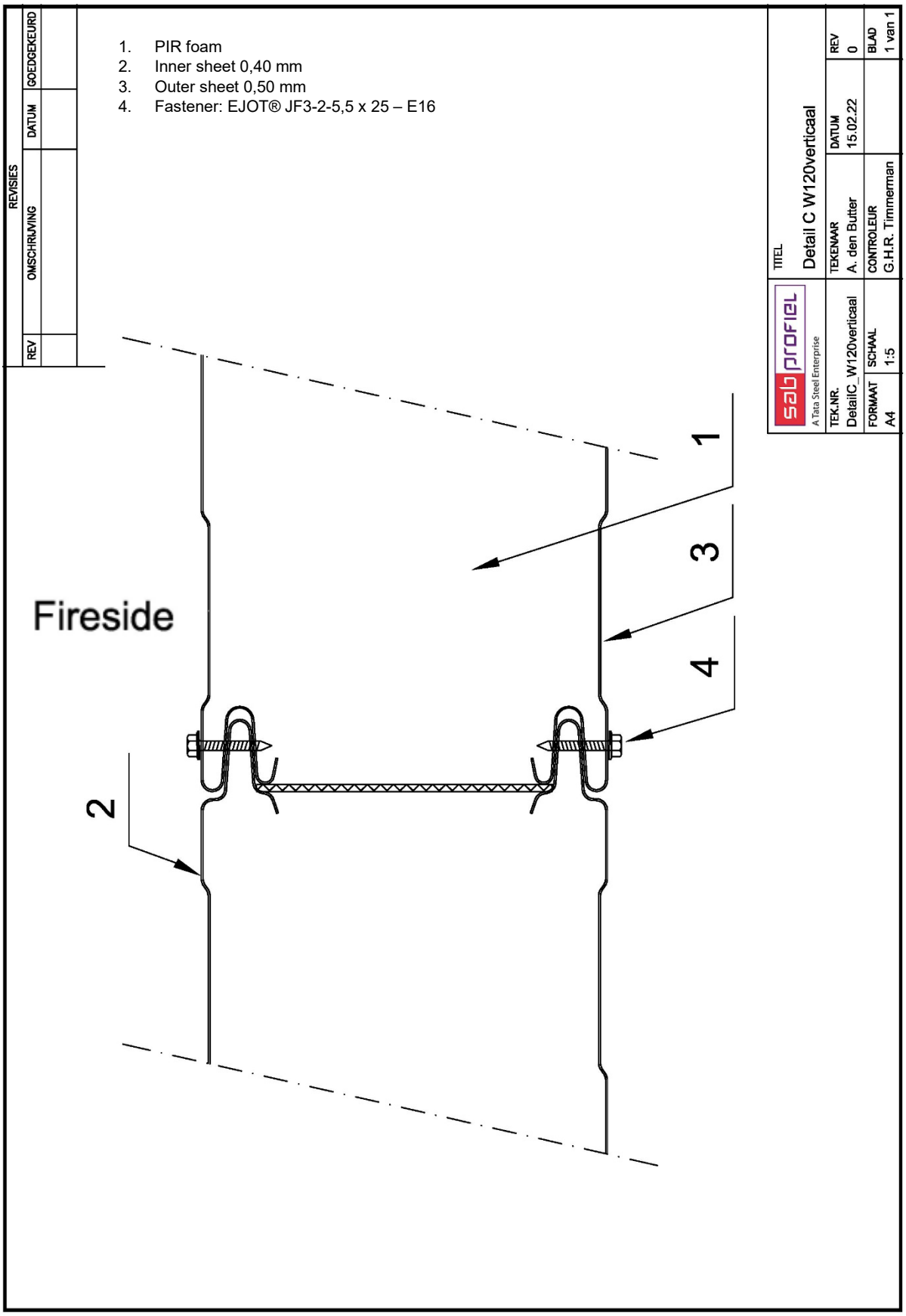


Figure 4: Detail C