CLASSIFICATION OF FIRE RESISTANCE PERFORMANCE IN ACCORDANCE WITH EN 13501-2:2007+A1:2009

Sponsor:	SAB-profiel bv Produktieweg 2-3a 3401 MG IJSSELSTEIN The Netherlands
Prepared by:	Efectis Nederland BV Centre for Fire Safety Lange Kleiweg 5 P.O. Box 1090 2280 CB RIJSWIJK The Netherlands
Notified Body No:	1234
Product name:	sandwich panel type SAB W120.1150
Classification report No.:	2011-Efectis-R0090[Rev.1]
Project number:	2010479
Issue number:	02
Date of issue:	June 2012

This report is issued by Efectis Nederland BV (previously TNO Centre for Fire Research). Efectis Nederland BV and her sister company Efectis France are full subsidiaries of Efectis Holding SAS since 1 January 2008, in which the Dutch TNO and the French CTICM participate. The activities of the TNO Centre for Fire Research were privatized in Efectis Nederland BV since 1st July 2006. This is in response to international developments and requests by customers. In order to be able to give a better answer to the customer's request and offer a more comprehensive service of high quality and a wider range of facilities, the international collaboration has been further expanded. This is done with highly experienced partners in fire safety in Norway (Sintef-NBL), Spain (Afiti-Licof), Germany (IFT), USA (South West Research Institute) and China (TFRI). Further information can be found at our website.

This classification report consists of ten pages and may only be used in its entirety.

1. Introduction

This classification report defines the classification assigned to a non-load bearing wall consisting of sandwich panels type SAB W120.1150.

2. Details of the classified product

2.1 General

The element, a non-load bearing wall constructed of sandwich panels type SAB W120.1150 is defined as a fire resistant assembly (as meant in EN 1363-1:1999 and related test standards).

2.2 Product description

The element, a non-load bearing wall constructed of sandwich panels type SAB W120.1150 is fully described in the test report. The information below is provided in order to support the classification listed in Clause 4.2.

2.2.1 General

A fire test was carried out on a non-load bearing wall made of SAB sandwich panels:
Vertically oriented SAB sandwich panels, type SAB W120.1150, with a thickness of 120 mm, frame made of steel edge profiles at the junction with the concrete lining of the test frame.

For the dimensions and specifications of the materials and components of the examined construction, see the figures. Significant details of the construction are given in the paragraphs below.

2.2.2 Test frame

The test frame was constructed of steel beams with a fire resistant concrete lining, with internal dimensions of 4000 x 3000 mm (w x h). The width of the test frame was 250 mm.
The size of the frame was reduced to 3000 x 3000 mm by using aerated concrete blocks of 250 mm thickness

2.2.3 Wall

2.2.3.1 General

The wall existed of three vertically oriented sandwich panels, with dimensions:

Height:	3000 mm
Width:	3000 mm
Thickness:	120 mm

The wall was not fixed at the right vertical side, the so called free edge, to make deflection possible.

2.2.3.2 Sandwich panels

The sandwich panels from SAB-profiel, type SAB W120.1150 had the following dimensions:

Height:	3000 mm
Width:	1150 mm
Thickness:	120 mm

- The wall was built of two full width standard panels and one fitting panel, width: 700 mm. The sandwich panels were constructed from:
- External cover (fire side) of optically profiled steel plates, with a thickness of 0.50 mm, with a 15 μm polyester coating;
- A PIR foam core, with a core density of at least 38 kg/m^3;The gap filled with Firestop sealant type Mastic SAOLS081PFC Corofil Firestop kit;
- External cover (non direct heated side) of optically profiled steel plates, with a thickness of 0.63 mm, with a 25 μm polyester coating.

2.2.4 Frame

At the vertical side of the test frame the so called free edge was placed to make distortion of the wall possible. The wall was connected to the aerated concrete with a thickness of 250 mm. At all other sides a frame was mounted on the test frame that was built of galvanized steel edge profiles with dimensions: 25 x 80 x 0.88 mm. The panels were screwed to the edge profiles met self tapping screws type: JT3-FR-2H, ∅ 4.8 x 19 mm, with a centre to centre distance of 300 mm.
The bottom of the frame was filled with Rock Wool, type Conlit 756, thickness 5 mm.

2.2.5 Joints

The joints of the sandwich panels were connected with:
- Firestop sealant type Mastic SAOLS081PFC Corofil Firestop kit;
- On the heated side with screws JT3-FR-3, ¬4.5 x 55 mm at c.t.c. distances of 500 mm.

3. Test reports and extended application reports supporting the classification

3.1 Test reports/extended application reports

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules & date
Efectis Nederland BV Centre for Fire Safety NL-2280 CB Rijswijk	SAB profiel bv	2011-Efectis-R0089	EN 1364-1:1999

3.2 Test results

Test method	Parameter	Results
EN 1364-1:1999	Integrity	
	cotton pad	Not applied
	gap gauges	31 minutes no failure
	sustained flaming	31 minutes
	Insulation	
	Average temp rise	31 minutes failure due to end of integrity
	Maximum temp rise	31 minutes failure due to end of integrity
	Radiation	31 minutes no failure

4. Classification and field of application

4.1 Reference of classification

This classification has been issued in accordance with clause 7.5.2 of EN 13501-2:2007+A1:2009.

4.2 Classification

A wall consisting of sandwich panels type SAB W120.1150 is classified according to the following combinations of performance parameters and classes as appropriate.

Fire resistance classification:
E30
EI 30
EW30

4.3 Field of direct application of test results

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.
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 distance of fixing centres

4.3.1 Extension of width

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.

4.3.2 Extension of height

The height of constructions tested at a minimum of 3 m, may be increased to 4 m with the following conditions:
b) the expansion allowances are increased pro-rata.

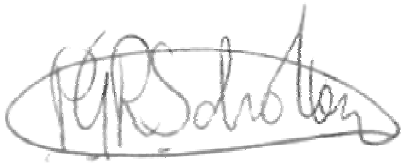
4.3.3 Supporting constructions

The result of a test of the non-load bearing wall is applicable to any other supporting construction within the same type (rigid, low density rigid or flexible) that has a greater fire resistance (thicker, denser as appropriate).

5. Limitations

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

SIGNED **APPROVED**



P.W.M. Kortekaas P.G.R. Scholten, B.Sc.

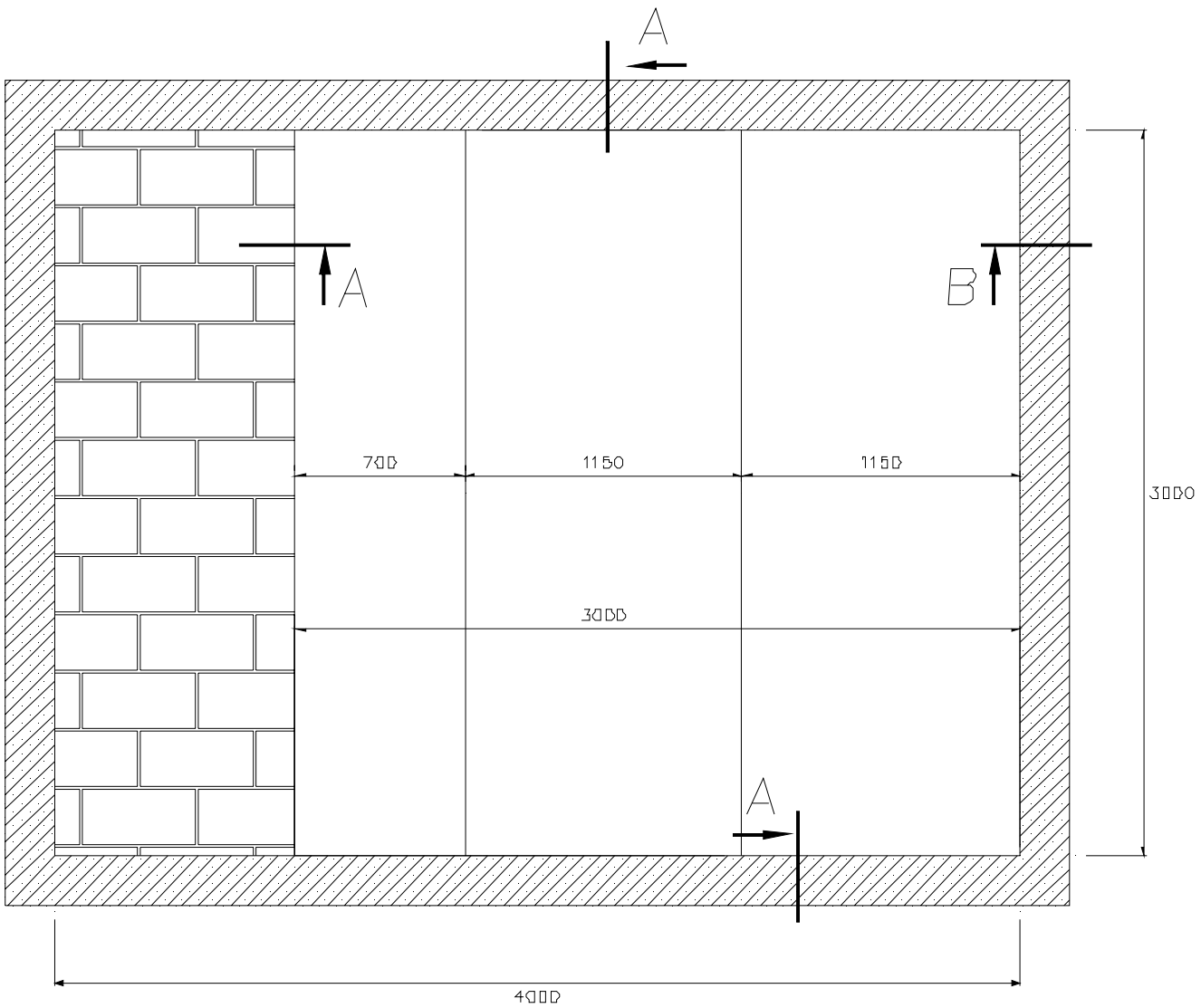


Figure 1: Dimensions of the construction at the fire side with fixings A and B

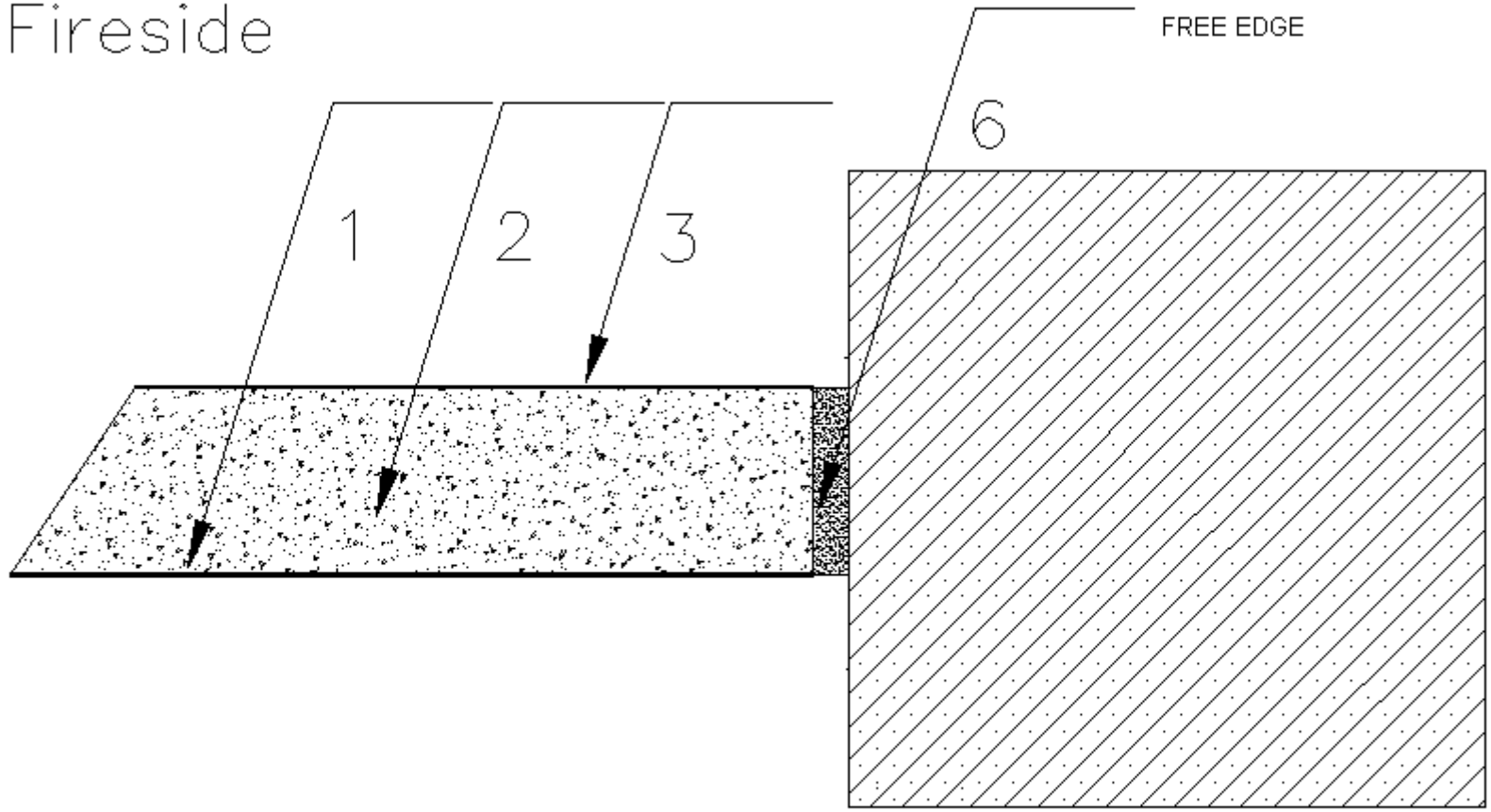


Figure 2: Section sandwich panel fixing B: the free edge

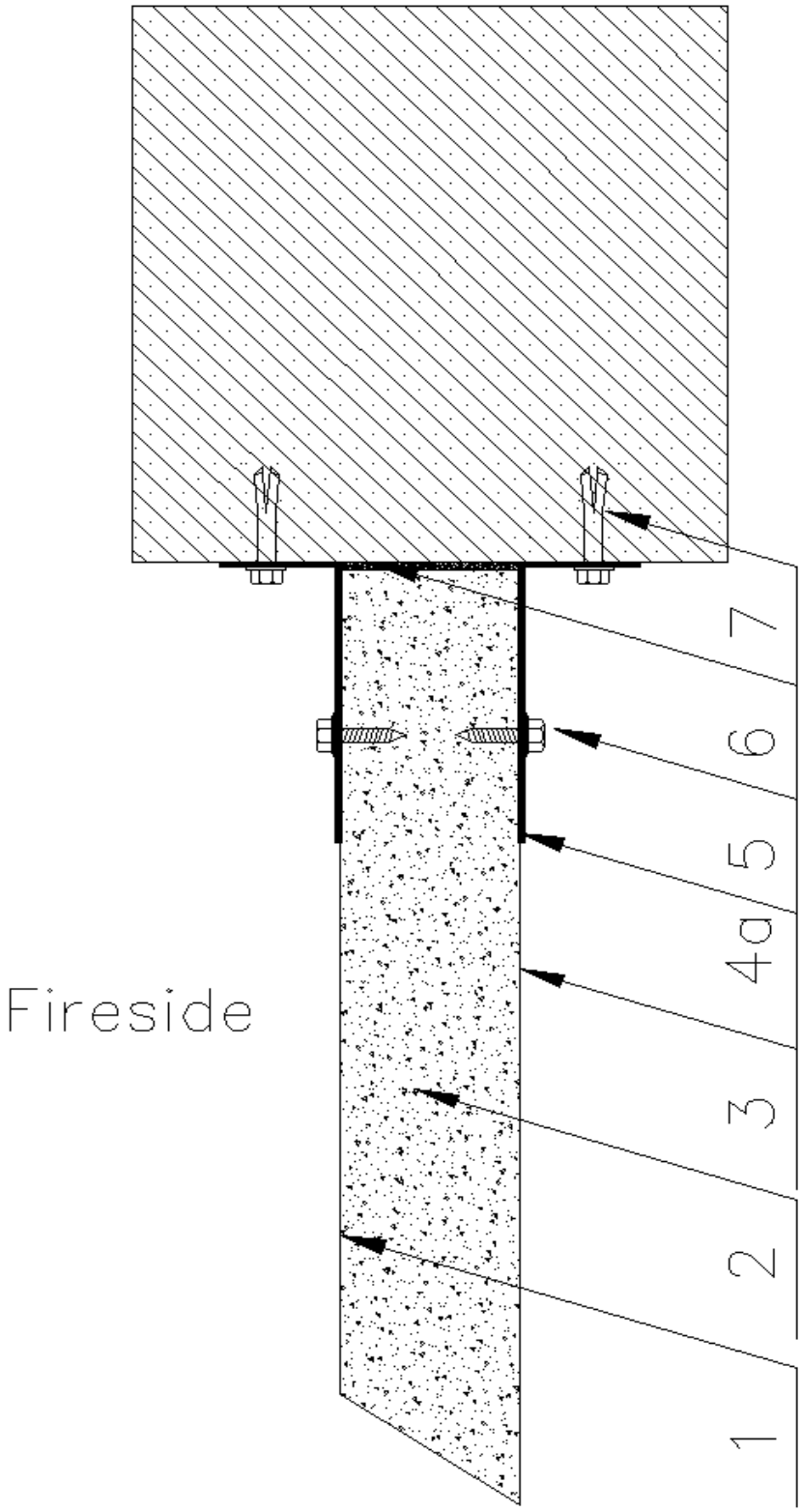


Figure 3: Section panel fixing A at the top and the vertical side at the aerated concrete pier

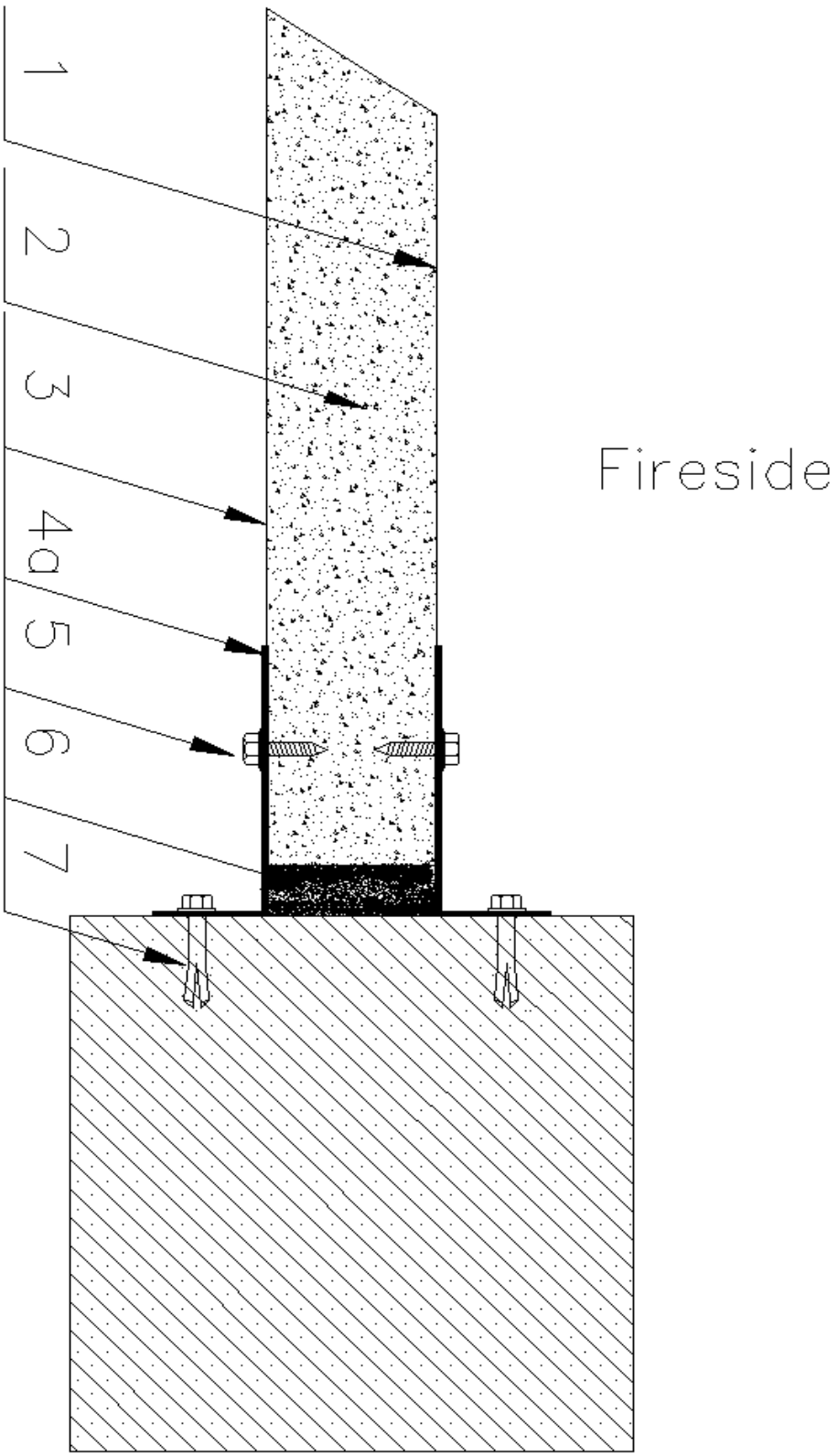


Figure 4: Section panel fixing A at the bottom concrete lining of the test frame

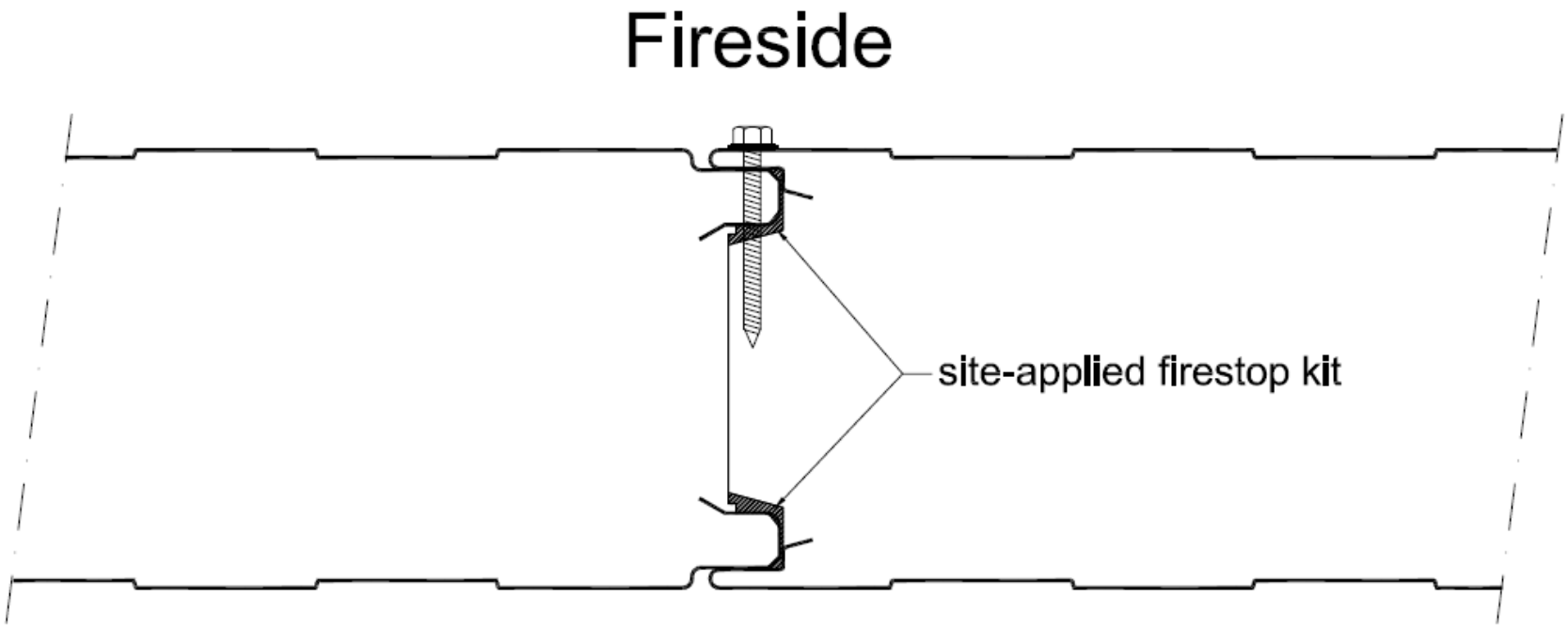


Figure 5: Joints between the panels