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ENVIRONMENT

Fire Laboratory and Fire Engineering

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Member of egolf - European Group of Organisations for
Fire Testing, Inspection and Certifications**CLASSIFICATION REPORT**
1203/22-530-2-ENClassification of fire resistance performance in
accordance with SIST EN 13501-2:2023of a non-loadbearing wall made of vertically
mounted 80 mm thick self-supporting double skin
metal faced insulating PIR panels

“PIR WALL COVERING PANEL 80 mm”

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1. Introduction

This classification report defines the resistance to fire classification assigned to non-loadbearing wall made of vertically mounted 80 mm thick self-supporting double skin metal faced insulating PIR panels **PIR WALL COVERING PANEL 80 mm** in accordance with the procedures given in SIST EN 13501-2:2023.

2. Information about the product

2.1 General

The non-loadbearing wall made of vertically mounted 80 mm thick self-supporting double skin metal faced insulating PIR panels **PIR WALL COVERING PANEL 80 mm** prevents spread of fire from room of origin considering resistance to fire performance characteristics stated in Clause 5 and 7.5.2 of SIST EN 13501-2:2023.

2.2 Product description

All dimensions in this classification report are in millimetres if not stated otherwise.

2.2.1 Composition of the panel

The composition of 80 mm thick self-supporting double skin metal faced insulating PIR wall panels **PIR WALL COVERING PANEL 80 mm** is fully described below and is the following:

- thickness of the panel was 80 mm, nominal thickness was 80 mm, width of the panel was 1000 mm;
- 20 µm thick finish polyester coating and 5 µm primer;
- lightly profiled steel-sheet Zn coated trapeze profiled facing, quality DX51D, Z100 measured thickness approximately 0,5 mm (exposed side);
- 80 mm thick polyisocyanurate PIR core (measured density 39,6 kg/m³, nominal density 40 kg/m³), produced by SYNTHESIA (PIR core components: Synthesia PIR Polyol 7730 PIR LV; ISO, MDI: Borsodchem Ongronat 2510);
- lightly profiled and trapeze shaped steel-sheet Zn coated facing, quality DX51D, Z100 measured thickness approximately 0,5 mm (unexposed side);
- 20 µm thick finish polyester coating and 5 µm primer.

2.2.2 Sealing materials

Joints between panels are sealed by means of:

- PVC foil was removed from male and female joints;
- one self-adhesive intumescent strip Promat Promaseal LXSK 40 × 2 mm and one self-adhesive intumescent strip Promat Promaseal LXSK 30 × 2 mm were placed on the insulation core in the female joint edges;
- two self-adhesive intumescent strips Promat Promaseal LXSK 30 × 2 mm were placed on the insulation core in the male joint edges;
- three self-adhesive intumescent strips Promat Promaseal LXSK of dimensions 30 × 2 were placed on the cut insulation core at the fixed side edge of the panel;
- three self-adhesive intumescent strips Promat Promaseal LXSK of dimensions 30 × 2 were placed on the insulation core at the top edge of the panels.

2.2.3 Fixing of the panels

Panels are through-fixed to the support construction at the top edge and fixed edge by means of:

- steel self-drilling screws 6,3 × 120 mm covered with the U shaped steel storm washers of dimensions 60 × 40 × 0,6 mm and ceramic wool thickness 25 mm;
- top edge of the panel are each fixed by means of three self-drilling screws at a maximum distance of 400 mm between screws respectively, positioned 100 mm away from the joint gaps between panels, at mid-width of the panel and approximately 95 mm away from the side edges of the wall;
- fixed edge of the wall is fixed by means of seven self-drilling screws of dimensions 6,3 × 120 mm, at a maximum distance of 600 mm between screws respectively.

Panels are fixed to the support construction at the bottom edge at the both (exposed and unexposed to fire) sides by means of:

- steel self-drilling screws 6,3 × 45 mm;
- bottom edge of the panel are each fixed by means of three self-drilling screws at a maximum distance of 400 mm between screws respectively, positioned 100 mm away from the joint gaps between panels, at mid-width of the panel and approximately 95 mm away from the side edges of the wall.

2.2.4 Joint fixing

Joints between panels are fixed by means of:

- steel self-drilling screws ϕ 4,3 × 19 mm;
- panels are joint-stitched between each other on both sides (exposed and unexposed to fire);
- the distance between steel self-drilling screws on both sides of the wall was 300 mm.

The non-loadbearing wall made of vertically mounted 80 mm thick self-supporting double skin metal faced insulating PIR panels **PIR WALL COVERING PANEL 80 mm** is fully described in the test report provided in support of classification detailed in clause 3.1.

3. Test reports and test results in support of the classification

3.1 Test reports

No	Laboratory	Name of sponsor	Test reports No.	Test method
[1]	ZAG	METALLEMPORIKI – TH. MAKRIS S.A.	1203/22-530-1-EN	SIST EN 1364-1:2015

3.2 Test results

The wall is symmetrical (the distances between joint-stitching bolts on both sides and geometry of the joints between the panels are symmetrical).

Test method, date of the test, test report number	Parameter	Results/Remark
SIST EN 1364-1:2015, 17. 1. 2023	Integrity (E) - sustained flaming on the unexposed side	36 minutes no failure 36 minutes no failure

Test method, date of the test, test report number	Parameter	Results/Remark
1203/22-530-1-EN	- ignition of cotton pad	36 minutes no failure
	- cracks or openings in excess of given dimensions	36 minutes no failure
	Insulation (I) - mean temperature rise >140 K - maximum temperature rise >180 K (basic fixed thermocouples)	30 minutes / 33 minutes 33 minutes 30 minutes
	Radiation (W) - time to exceed 15 kW/m ² (calculated - was not measured)	36 minutes no failure

4. Classification and field of application

4.1 Reference of classification

This classification has been carried out in accordance with Clause 7.5.2 of SIST EN 13501-2:2023.

4.2 Classification

The non-loadbearing wall made of vertically mounted 80 mm thick self-supporting double skin metal faced insulating PIR panels **PIR WALL COVERING PANEL 80 mm** is classified according to the following combinations of performance parameters and classes as appropriate. No other classification is allowed.

NOTE: The following classifications are only valid for a wall where panels are on both sides joint-stitched between each other by means of steel self-drilling screws ϕ 4,3 × 19 mm at a maximum distance of 300 mm between screws respectively.

E	15	20	30
EI	15	20	30
EW	15	20	30

Fire resistance classification: E 30 / EI 30 / EW 30

4.3 Field of direct application of test results

This classification is valid for non-loadbearing walls made of vertically mounted 80 mm thick self-supporting double skin metal faced insulating PIR panels **PIR WALL COVERING PANEL 80 mm**.

According to SIST EN 1364-1:2015 are the results of the fire test 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. Other changes are not allowed.

4.3.1 General:

- a) Decrease in height of the wall;
- 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.

4.3.2 Extension of width:

The width of an identical construction may be increased because the specimen was tested at minimum of nominally 3 metres wide with one vertical edge without restraint..

4.3.3 Extension of height:

The height of an identical construction may be increased up to 5 meters for classification up to and including E 20, EI 20 and EW 20.

4.3.4 Supporting construction:

The test results are applicable to high density rigid supporting constructions with at least the same fire resistance as the test specimen;

5. Limitations

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

6. Additional statements

Standard SIST EN 13501-2:2023 is identical to EN 13501-2:2023.

Standard SIST EN 1364-1:2015 is identical to EN 1364-1:2015.

Person undertaking classification: Dominik Gerdej, univ. dipl. inž. str.

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