FIRE RESISTANCE CLASSIFICATION REPORT No. 17658B

Owner of the classification report

Siniat nv
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Introduction

This classification report defines the classification assigned to a non-loadbearing shaft wall – type: Siniat E-2-75-105DF+GW60 – 2x15 Prégyflam, in accordance with the procedures given in EN 13501-2:2007+A1:2009: Fire classification of products and building elements – Part 2: Classification using data from fire resistance tests, excluding ventilation services.

This classification report consists of 10 pages and 2 annexes and may only be used or reproduced in its entirety. Fire possible on both sides.

1 Details of classified product

1.1 General

The element, type: Siniat E-2-75-105DF+GW60 – 2x15 Prégyflam, is defined as a non-loadbearing shaft wall.

1.2 Description

The element, a non-loadbearing shaft wall – type: Siniat E-2-75-105DF+GW60 – 2x15 Prégyflam, is fully described below, in support of this classification. The drawings of the test element as it was tested, are enclosed in the annexes 1 till 2 of this classification report.

1.2.1 Composition of the test specimen as tested

The test specimen is a non-loadbearing shaft wall composed of a metal frame which is provided by two layers of plasterboard at one side. The test specimen is asymmetrical.

Outer dimensions of the test specimen:

- height: 3000 mm;
- width: 3000 mm;
- thickness: 105 mm.

1.2.1.1 Metal frame

The metal frame is composed of horizontal U-profiles at the upper and lower horizontal edge connection. In between these, the vertical C-profiles are installed.

Edge profiles

[1] U-profile – brand and type: Siniat UW 75 – material: steel – thickness: 0.6 mm – section dimensions: 40 mm x 75 mm x 40 mm – length: 2950 mm.

- position: applied horizontally at the upper and lower horizontal edge connection of the partition with the concrete furnace frame;
- fixing:
  - by means of nail plugs [2];
  - to the horizontal edges of the concrete furnace frame;
  - c/c distance: 800 mm, first fixing point at 100 mm.

[2] Nail plug – brand and type: Siniat Nail Plug 6 x 60 mm – material: steel – diameter: 3.8 mm – length: 63 mm – with PVC-plug – diameter: 6 mm – length: 60 mm.

[3] C-profile – brand and type: Siniat CW 75 – material: steel – thickness: 0.6 mm – outer section dimensions: 6 mm x 49 mm x 73.8 mm x 51 mm x 6 mm – length: 2985 mm.

- position: applied vertically in between the horizontal edge profiles [1], at the fixed and free vertical edge connection of the partition with the concrete furnace frame;
- fixing C-profile at the fixed vertical edge connection:
  - by means of nail plugs [2];
  - to the vertical edge of the concrete furnace frame;
  - c/c distance: 800 mm, first fixing point at 100 mm;
- clearances:
  - at the top: 10 mm;
  - at the bottom: 0 mm;
- at the free vertical edge connection, the C-profile is not connected to the furnace frame.

[4] Sealing strip – brand and type: Siniat acoustic sealing strip 9 mm – material: polyethylene (PE) with closed cells – section dimensions: 5 mm x 9 mm.

- number: 2 strips along the full length of the profiles;
- position:
  - applied on the back of the horizontal edge profiles [1];
  - applied on the back of the vertical edge profile [3] at the fixed edge of the concrete furnace frame;
- fixing: self-adhesive.

Intermediary profiles

[3] C-profile – brand and type: Siniat CW 75 – material: steel – thickness: 0.6 mm – outer section dimensions: 6 mm x 49 mm x 73.8 mm x 51 mm x 6 mm – length: 2985 mm.

- position: placed vertically in between the horizontal edge profiles [1];
- fixing: clamped in between the flanges of the U-profiles;
- axis distance: 600 mm;
- clearances:
  - at the top: 10 mm;
  - at the bottom: 0 mm.

1.2.1.2 Lining

The metal frame is provided by a double layer of plasterboard at one side. The vertical joints are located at the vertical mullions and are placed staggered. Each layer of boards is provided with a horizontal joint which is placed in a staggered manner in comparison with the other layer.

[5] Plasterboard – brand and type: Siniat Prégyflam STD BA15 – classification according to EN 520: DF – thickness: 15 mm – maximal dimensions: 1200 mm x 2600 mm – with longitudinal chamfered edges over 60 mm up to a thickness of 13 mm – surface mass: 13.53 kg/m² (MV) – moisture content: 0.53% at 55°C.

- horizontal joint placed at 700 mm from the top, for the 1st layer of boards;
- horizontal joint placed at 400 mm from the top, for the 2nd layer of boards;

1st layer of boards

- fixing:
  - by means of drywall screws [6];
  - to the vertical profiles of the frame;
  - c/c distance: 750 mm, 1st fixing point at 80 mm from the horizontal edges of the board;

2nd layer of boards

- fixing:
  - by means of drywall screws [7];
  - to the vertical and horizontal profiles of the frame;
  - c/c distance: 300 mm, 1st fixing point at 60 mm from the horizontal edges of the board.

[6] Drywall screws – brand and type: Siniat SB 25 Drywall screws – material: phosphated steel – diameter: 3.5 mm – length: 25 mm.

[7] Drywall screws – brand and type: Siniat SB 45 Drywall screws – material: phosphated steel – diameter: 3,5 mm – length: 45 mm.

1.2.1.3 Insulation

[8] Insulation – brand and type: confidentially communicated to the laboratory – material: glass wool – thickness: 60 mm – maximal dimensions: 600 mm x 1350 mm – volume mass: 15.0 kg/m³ (MV).

- provided with a glass veil – thickness: 0.25 mm (MV) – at the visible side;
- position: applied inside the partition;
- fixing: slightly clamped between the flanges of the metal frame.

1.2.1.4 Finishing products

[9] Mesh joint tape – brand and type: Siniat Joint Tape 50 mm – thickness: 0.2 mm – width: 47 mm.

- position: applied on the visible vertical joints of the 2nd layer of boards;
- fixing: self-adhesive.

[10] Jointfiller – brand and type: Siniat Filler B45.

- position: applied on all visible joints and screw heads.

2 Test reports/EXAP reports and test results in support of the classification

2.1 Test reports/EXAP reports

Name of the laboratory	Report ref. no.	Name of the owner	Date of the test	Method
WFRGENT nv	17657A	Siniat nv	17/03/2016	EN 1364-1:2015
WFRGENT nv	17658A	Siniat nv	16/03/2016	EN 1364-1:2015

Exposure conditions during the fire resistance test:

Temperature/time curve: standard as in EN 1363-1:2012.

Direction of exposure: The test specimen is an asymmetrical construction.
The shaft wall has been tested in both directions of exposure.

No extra load supplementary to the own weight of the shaft wall was applied during the test.

One vertical edge is free, the other edges are fixed.

2.2 Test results

Shaft wall with the side of the profiles exposed to the fire (Test report: 17657A)

Parameters	Results
Thermal insulation – I	
ΔT_m = 140°C	75 minutes, no failure(1)
ΔT_M = 180°C	71 minutes
Integrity – E	
Spontaneous and sustained flaming	75 minutes, no failure(1)
Failure with gap gauge ∅ 6 mm	75 minutes, no failure(1)
Failure with gap gauge ∅ 25 mm	75 minutes, no failure(1)
Ignition of cotton pad	75 minutes, no failure(1)
Radiation – W	
Radiation intensity = 15 kW/m²	75 minutes, no failure(1)

(1) The test was stopped after 75 minutes in consultation with the sponsor.

Shaft wall with the side of the boards exposed to the fire (Test report: 17658A)

Parameters	Results
Thermal insulation – I	
ΔT_m = 140°C	75 minutes, no failure(1)
ΔT_M = 180°C	62 minutes
Integrity – E	
Spontaneous and sustained flaming	75 minutes, no failure(1)
Failure with gap gauge ∅ 6 mm	75 minutes, no failure(1)
Failure with gap gauge ∅ 25 mm	75 minutes, no failure(1)
Ignition of cotton pad	75 minutes, no failure(1)
Radiation – W	
Radiation intensity = 15 kW/m²	75 minutes, no failure(1)

(1) The test was stopped after 75 minutes in consultation with the sponsor.

3 Classification and field of application

3.1 Reference of classification

This classification has been carried out in accordance with clause 7 of EN 13501-2:2007+A1:2009.

3.2 Classification

The element, a non-loadbearing shaft wall – type: Siniat E-2-75-105DF+GW60 – 2x15 Prégyflam, is classified according to the following combinations of performance parameters and classes as appropriate. No other classifications are permitted.

The classifications are valid for both directions of exposure of the shaft wall.

EI 60 , EI 45, EI 30, EI 20, EI 15

EW 60, EW 30, EW 20

E 60, E 30, E 20

3.3 Field of direct application

This classification is valid for the following end use applications according to EN 1364-1:2015.

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) unlimited increase and decrease of the width of the wall;
b) unlimited decrease in height of the wall of 3 m;
c) increase in height of the wall to 4 m, if the expansion allowances are increased pro-rata;
d) increase in the thickness of the wall (≥ 105 mm);
e) increase in the thickness of component materials:
   - profile width (≥ 75 mm);
   - board thickness of the 1st layer of boards (≥ 15 mm);
   - board thickness of the 2nd layer of boards (≥ 15 mm);
   - insulation thickness (≥ 60 mm);
f) decrease in linear dimensions of the boards, but not the thickness:
   - width (≤ 1200 mm);
   - height (≤ 2600 mm);
g) decrease in stud spacing (≤ 600 mm);
h) decrease in distance of fixing centres:
   - of the steel frame to the edges of the surrounding building structure (≤ 800 mm);
   - of the screws fixing the 1st layer of boards to the vertical profiles of the steel frame (≤ 750 mm);
   - of the screws fixing the 2nd layer of boards to the vertical and horizontal profiles of the steel frame (≤ 300 mm);
i) increase in the number of horizontal joints of both layers of boards;
j) increase in the number of vertical joints of both layers of boards;
k) only horizontal and vertical joints (of the type tested) are permitted.

4 Limitations

This classification report does not represent type approval nor certification of the product.

The classification assigned to the product in this report is appropriate to a Declaration of Performance (DoP) of the essential characteristics of the construction product by the manufacturer within the context of System 1 Assessment and Verification of Constancy of Performance (AVCP).

Under the Construction Products Regulation (CPR: EU 305/2011), such a Declaration of Performance (DoP) is a requirement for affixing the CE marking.

The test laboratory has played no part in sampling the product for the test, although it holds appropriate references, supplied by the manufacturer, to provide evidence for the traceability of the samples tested.

Provisions of Regulation (EU) 305/2011, commonly known as the Construction Products Regulation (CPR), prevail over any conflicting provisions in the harmonised standards and technical specifications.

SIGNED

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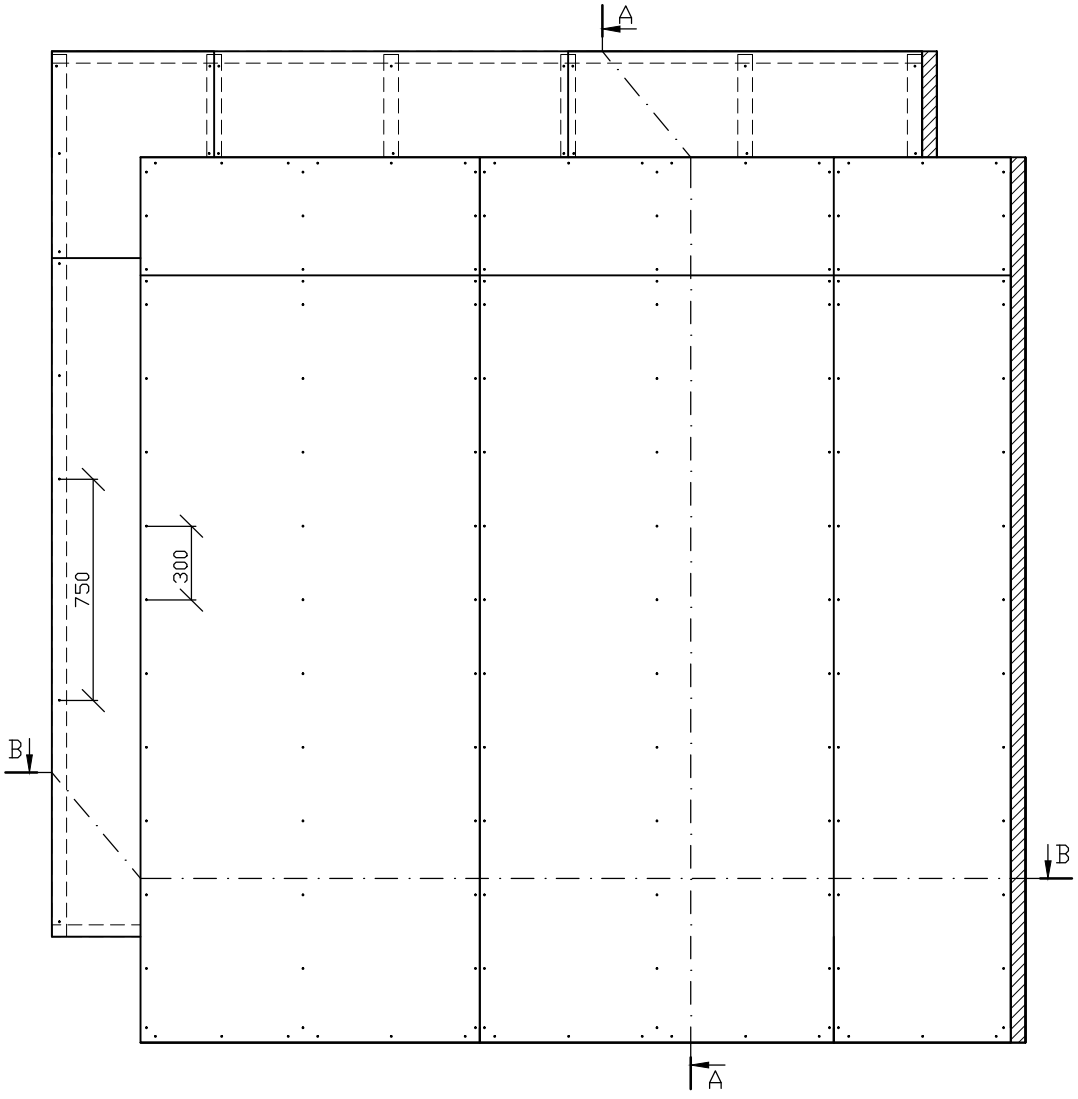
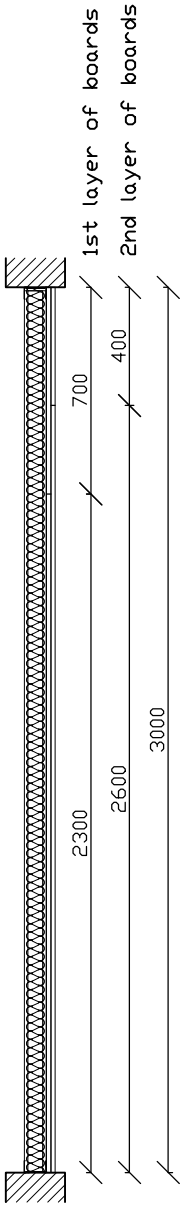
This document is the original version of the classification report and is written in English.

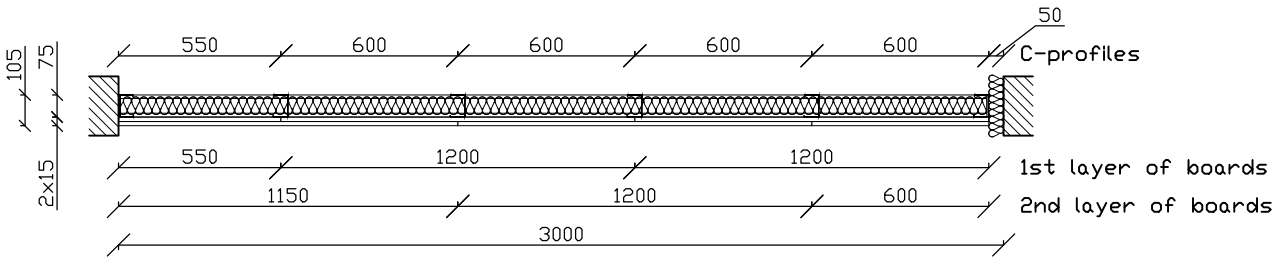
The authenticity of the electronic signatures is assured by Belgium Root CA.

Lay-out of the boards - sections A-A and B-B - dimensions.





Section A-A



Section B-B

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Sections A-A and B-B - details.