FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION FIRES-JR-007-15-NURE

Loadbearing wall Frame Factory, type FF REI120

FIRE RESISTANCE EXPERT JUDGEMENT REPORT WITH CLASSIFICATION

FIRES-JR-007-15-NURE

Name of the product: Loadbearing wall Frame Factory, type FF REI120

Sponsor:
FRAME FACTORY Sp. z.o.o.
ul.Brzozowa 8A
97-400 Bełchatów
Poland

Prepared by:
FIRES, s.r.o.
Approved Body No. SK01
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

Task No.: PR-14-0429
Date of issue: 29. 01. 2015

Reports: 3
Copy No.: 2

Distribution list:

Copy No. 1	FIRES, s. r. o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic (electronic version)
Copy No. 2	FRAME FACTORY Sp. z.o.o., ul.Brzozowa 8A, 97-400 Bełchatów, Polan (electronic version)
Copy No. 3	FRAME FACTORY Sp. z.o.o., ul.Brzozowa 8A, 97-400 Bełchatów, Polan

FIRES, s.r.o., Osloboditeľov 282, 059 35 Batizovce, Slovak Republic
tel. 00421 52 775 22 98, fax. 00421 52 788 14 12, www.fires.sk
Notified Body No. 1396, Approved Body No. SK01, Member of EGOLF

1. INTRODUCTION

This expert judgment report with classification defines the resistance to fire classification assigned to element Loadbearing wall Frame Factory, type FF REI120 in accordance with the classes given in EN 13501-2 + A1: 2009.

This expert judgment report defines field of application which is outside the field of direct application according test standard or outside the field of extended application according to relevant extended application standard. This expert judgment expresses the opinion of the FIRES and is based on the experience or internal rules of FIRES.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Loadbearing wall Frame Factory, type FF REI120, is defined as a loadbearing wall with a fire separating function.

2.2 PRODUCT DESCRIPTION

Overall thickness of wall is 211 mm

: Construction of wall is made of vertically and horizontally oriented steel C150-channel stud profiles (150 x 41 x 11) mm with service holes, made of cold rolled steel sheet 1,6 mm thick, grade of steel S350GD Z275 (manufacturer: FRAME FACTORY Sp. z.o.o.).

Vertical C150 profiles are placed at the edges of wall and next in spacing 600 mm. Horizontal C150 profiles are placed at the horizontal edges of wall, next 560 mm from the top of wall and 1220 mm from the bottom of wall. Profiles are jointed together by means of steel screws (∅ 4,8 x 19) mm (manufacturer: Grabber) from both faces of wall.

Dimension of service holes in C150-channel stud profiles:
: vertical C150 profiles: two service holes ∅ 34,2 mm at the top of wall in distance 200 mm and 300 mm from the top and three service holes ∅ 34,1 mm at the bottom of wall placed 300 mm, 400 mm and 500 mm from the bottom edge.
: horizontal C150 profiles: service hole ∅ 34,2 mm each 700 mm

: Construction of wall is covered by two layers of fire resistance plaster boards type DF (K714F) acc. to EN 520 (manufacturer: Knauf Sp. z o.o.), each 15 mm thick, with bulk density ≥867 kg/m^3 on the both wall faces. The maximal dimension of one board is (1200 x 2600) mm. The steel sheet 0,5 mm thick is placed between individual layers of plaster boards.

The boards of the first layer of DF plaster boards are fixed to the C150 profiles by means of steel self taping screws TB (∅ 3,5 x 25) mm (manufacturer: Knauf Sp. z o.o.), the boards of second layer of DF plaster boards are fixed to the each C150 profile by means of steel self taping screws TB (∅ 3,5 x 55) mm (manufacturer: Knauf Sp. z o.o.). The screws are placed at the edges of boards and next in spacing 200 mm.

The joints of DF boards of each layer are covered by mastic KNAUF UNIFLOTT (manufacturer: Knauf Sp. z o.o.), with using of the reinforcement tape 5 cm wide.

: The core of wall is filled by mineral wool insulation Nobasil MPS (reaction to fire A1), 150 mm thick, with bulk density ≥ 50 kg/m^3 (manufacturer: Knauf Insulation s.r.o.).

More detailed information about product construction is shown in drawings which crate a part of test report.

3. TEST REPORTS AND EXTENDED APPLICATION REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST REPORTS AND EXTENDED APPLICATION REPORTS

No.	Name of laboratory	Name of sponsor	Test report No.	Date of the test	Test method
[1]	FIRES, s.r.o., Batizovce, SR	FRAME FACTORY Sp. z.o.o., Bełchatów, Poland	FIRES-FR-211-14-AUNE	20. 11. 2014	EN 1365-1:2012/AC:2013

[1] Test specimen was conditioned according to EN 1363-1 before the fire resistance test

3.2 TEST RESULTS

No./ Test method	Parameter		Results
[1]	applied load		axial loading 38,4 kN/m (19,2 kN / C150 profile)
	supporting construction		-
	temperature curve		standard temperature time curve
	loadbearing capacity		120 minutes no failure
	integrity	cotton pad	120 minutes no failure
		gap gauges	120 minutes no failure
		sustained flaming	120 minutes no failure
	thermal insulation	I	120 minutes no failure
	radiation		120 minutes no failure
	mechanical action		-

[1] The test was discontinued after period of 120 minute of test.

4. CHANGES OF THE PRODUCT OR END USE CONDITIONS OUTSIDE OF THE FIELD OF DIRECT OR EXTENDED APPLICATION

Following changes of the product or end use conditions were permitted:
1. Increase in wall height up to 6 m

5. ARGUMENTS IN FAVOR OF THE EXTENSION

1. *Test specimen, 3000 mm high, construction of wall made of 6 vertically and 4 horizontally oriented C150-channel stud profiles, was subject of test. Applied loading* 38,4 kN/m (19,2 kN / C150 profile) simulated stress in C profiles, 6 000 high. Increase in wall height up to 6 000 mm is allowed under condition that stress moment in C profiles is not higher than during the test.

6. CLASSIFICATION AND FIELD OF APPLICATION

6.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with classes defined in clause 7.3.2 of EN 13501-2: 2007 + A1: 2009.

6.2 CLASSIFICATION

The element, Loadbearing wall Frame Factory, type FF REI120, is classified according to the following combinations of performance parameters and classes as appropriate.

Fire resistance classification:
REI 120 / REW 120

6.3 FIELD OF APPLICATION

This classification is valid for the following end use applications:

Dimensions of wall and insulation boards	Maximal height of wall is 6000 mm under condition given in clause 5; Decrease in height is allowed; Increase in the width of wall is allowed; Increase in the thickness of the wall is allowed; Increase in the thickness of component materials is allowed; Decrease in linear dimensions of boards is allowed, but not thickness;
Fixation of materials	Decrease in stud spacing when insulation boards are fixed is allowed; Decrease in distance of fixing centres is allowed; Increase in the number of horizontal joints of boards;
loading	Decrease in the applied loading, as tested, is allowed; Only axial loading of wall is allowed;

7. LIMITATIONS

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

The classification is valid until 29. 01. 2020 provided that the product, field of application and standards and regulations are not changed.

Approved:

Ing. Štefan Rástocký
leader of the testing laboratory

Signed:

Michaela Gorlická
technician of the testing laboratory