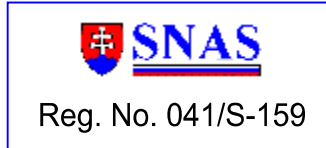


CLASSIFICATION OF FIRE RESISTANCE FIRES-CR-006-15-AUPE

Floor, system Frame Factory, type FF REI 60

This is an electronic version of a classification report which was made as a copy of classification report officially issued in a paper form. The electronic version of a classification report shall be used only for informative purpose. Any information listed in this classification report is the property of the sponsor and shall not be used or published without written permission. Contents of this file may only be modified by the editor i.e. FIRES, s.r.o., Batizovce. Sponsor is allowed to publish this classification report in parts only with written permission of the editor.



CLASSIFICATION OF FIRE RESISTANCE IN ACCORDANCE WITH EN 13501-2: 2007 + A1: 2009 with direct field of application

FIRES-CR-006-15-AUPE

Name of the product: Floor, system Frame Factory, type FF REI 60

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

Prepared by: FIRES, s.r.o.
Osloboditeľov 282
059 35 Batizovce
Slovak Republic

Tested property: Fire resistance
Test method: EN 1365-2
Type of test: Accredited / Notified (NB 1396)

Task No.: PR-14-0392
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, Poland
(electronic version)
Copy No. 3 FRAME FACTORY Sp. z.o.o., ul.Brzozowa 8A, 97-400 Bełchatów, Poland

This classification report may only be used or reproduced in its entirety.

This report includes accreditation mark SNAS with additional mark ILAC-MRA. SNAS is signatory of ILAC-MRA, Mutual recognition agreement (of accreditation), which is focused on promoting of international acceptance of accredited laboratory data and reducing technical barriers to trade, such as the retesting of products on markets of signatories. More information about ILAC-MRA is on www.ilac.org. Signatories of ILAC-MRA are e.g. SNAS (Slovakia), CAI (Czech Republic), PCA (Poland), DakS (Germany) or BMWA (Austria). Up to date list of ILAC-MRA signatories is on www.ilac.org/documents/mra_signatories.pdf. FIRES, s.r.o. Batizovce is full member of EGOLF also, more information www.egolf.org.uk.



1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to element Floor, system Frame Factory, type FF REI 60 in accordance with the procedures given in EN 13501-2: 2007 + A1: 2009.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Floor, system Frame Factory, type FF REI 60, is defined as a loadbearing floor.

2.2 PRODUCT DESCRIPTION

Overall thickness of floor: 382 mm

Description from the top of floor:

: **Two layers of MgO Green boards** (manufacturer: LS Tech-Homes S.A) with bulk density 946 kg/m^3 are fixed at the top of floor. The first layer, 20 mm thick is fixed to the steel construction by means of steel self-tapping screws TN ($\varnothing 4,2 \times 42$) mm and the second (top) layer, 11 mm thick is fixed to the steel construction by means of steel self-tapping screws TN ($\varnothing 4,2 \times 60$) mm. Position of screws: at the edges of each board and next in spacing 400 mm – 600 mm around the perimeter of each board and to the each steel cross beam.

The joints of MgO Green boards (both layers) are covered by mastic CEKOL[®] C-40 (manufacturer: CEDAT Sp. z o.o.), with using of the glass fiber tape 10 cm wide.

: **Construction of floor** (longer edges) is made of double C254-channel profiles (254 x 50 x 15) mm with service holes $\varnothing 63,5$ mm and $\varnothing 165$ mm, turned with back to each other, (manufacturer: FRAME FACTORY Sp. z.o.o.) apart from edges, where single C254-channel profiles are used. The C254-channel profiles are made of cold rolled steel sheet, 2 mm thick (grade of steel S350GD Z275).

The floor is closed at its shorter edges by means of U260-channel profiles (manufacturer: FRAME FACTORY Sp. z.o.o.), with dimensions (259,5 x 58,5) mm, made of cold rolled steel sheet, 2 mm thick (grade of steel S350GD Z275).

The longitudinal C254-channel profiles are jointed together by steel self tapping screws ($\varnothing 5,8 \times 32$) mm, placed 50 mm from the edges of profiles and next in spacing 400 mm.

Distance between double C254-channel profiles is 500 mm.

Cavity of floor is not filled.



Double C254-channel profiles

U260-channel profile



C254-channel profiles are fixed to the U260-channel profiles by means of steel self tapping screws (Ø 5,8 x 32) mm through the cutting in U profiles:



: **The steel brackets**, Knauf Apertura “U” Mounting Brackets (manufacturer: Knauf) are fixed to the bottom edge of C254-channel profiles by means of steel self tapping screws TN (Ø 5,8 x 32) mm. These brackets are placed 50 mm from the edges of C254-channel profiles and next in spacing 407 mm:

: **The mineral wired insulation mat WM 660 K GG** (steel grid is applied on the one face of mat), 50 mm thick, with bulk density 100 kg/m³ (manufacturer: Knauf Insulation) is placed at the bottom face of steel construction. The steel grid is at the bottom face of mat and it is fixed to the steel brackets Knauf Apertura “U” Mounting Brackets:



: **The steel CD-60** profiles Knauf with dimensions (60 x 27) mm are placed across to steel floor construction and they are fixed to the steel brackets Knauf Apertura “U” Mounting Brackets by means of double steel wafer head screws M4,2 x 13 mm. The CD-60 profiles are placed under the mineral wired wool mat WM 660 K GG:





: **Two layers of MgO Green boards** (manufacturer: LS Tech-Homes S.A), each 11 mm thick, with bulk density 946 kg/m^3 are fixed to the CD-60 profiles by means of steel self-tapping screws TN ($\varnothing 4,2 \times 42$) mm first layer and TN ($\varnothing 4,2 \times 60$) mm second layer of boards. Position of screws: at the edges of each board and next in spacing 200 mm – 250 mm around the perimeter of each board and to the each CD-60 profile.

The joints of MgO Green boards (both layers) are covered by mastic CEKOL[®] C-40 (manufacturer: CEDAT Sp. z o.o.), with using of the glass fiber tape 10 cm wide.

More detailed information about product construction is shown in drawings [1].

3. TEST REPORTS IN SUPPORT OF CLASSIFICATION

3.1 TEST 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., Poland	FIRES-FR-194-14-AUNE	24. 10. 2014	EN 1365-2

[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] EN 1365-2	applied loading to the top of floor	$6,71 \text{ kN/m}^2$ $M_{0\max} = 30,20 \text{ kNm}$	
	applied loading from the bottom of floor – hung loadings	12 kg/m^2	
	supporting construction	two support in spacing 4000 mm (single span beam)	
	temperature curve	standard temperature time curve	
	loadbearing capacity	83 minutes	
	integrity	cotton pad	84 minutes no failure
		gap gauges	84 minutes no failure
		sustained flaming	84 minutes no failure
	thermal insulation	I	84 minutes no failure
	radiation		84 minutes no failure
other parameters		test from the bottom of specimen	

[1] The fire test was terminated after period of 84 minutes because specimen loading capacity is failed.



4. CLASSIFICATION AND FIELD OF APPLICATION

4.1 REFERENCE OF CLASSIFICATION

This classification has been carried out in accordance with clause 7.3.3 of EN 13501-2: 2007 + A1: 2009.

4.2 CLASSIFICATION

The element, **Floor, system Frame Factory, type FF REI 60**, is classified according to the following combinations of performance parameters and classes as appropriate.

<p>Fire resistance classification: REI 60</p>

4.3 FIELD OF APPLICATION

This classification is directly applicable to a similar untested floor construction according to EN 1365-2:2014 provided the following is true:

Thickness of materials	Increase in thickness of used insulation materials and steel loadbearing construction is allowed under condition that the increased thickness is considered by static analysis because of increased dead-weight of the product and the maximal loading and bending moments are not changed as tested;
Bottom hung elements	Using of bottom hung elements is allowed under condition maximal loading is not increased as tested;
Construction element (loading)	The maximum moments and shear forces, which when calculated on the same basis as the test load, shall not be greater than those tested;
Pitch angle of the roof construction	Results are valid for installation in practice 0° up to 15° relative to plane;
Cavity	The height of cavity (height of the beam) and the minimum distance between the ceiling and the structural members are equal to or greater than those tested; No material is added to the cavity unless the same amount of material was included in the test specimen;

5. LIMITATIONS

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

The classification is valid 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