

CLASSIFICATION OF FIRE RESISTANCE FIRES-CR-194-12-AUPE

Load-bearing single-span ceiling structure with AQUAPANEL® Floor boards



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

FIRES-CR-194-12-AUPE

Name of the product: Load-bearing single-span ceiling structure with AQUAPANEL® Floor boards

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1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to Load-bearing single-span ceiling structure with AQUAPANEL® Floor boards in accordance with the procedures given in EN 13501-2 + A1: 2009.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL

The element, Load-bearing single-span ceiling structure with AQUAPANEL® Floor boards, is defined as load-bearing floor with the fire resistance from above.

2.2 PRODUCT DESCRIPTION

Dimensions of load-bearing single-span ceiling structure with AQUAPANEL® Floor boards: (4100 x 3120) mm (length x width).

The load-bearing structure is composed of four steel trapezoidal profiles (100/275 mm, sheet thickness 0,75 mm), 4050 mm long and 3 x 825 mm thick (three trapezoidal profiles) and one 645 mm thick steel trapezoidal profile. These profiles are fixed to one another with screws to create a coherent load-bearing ceiling structure. The supports on both sides are flat steel bars 100 mm wide and a moveable and immovable supports are made by means of a roller and a prismatic bar. In order to determine the location of the flat bar, it is fixed with screws to the steel trapezoidal profiles. Edge beams are laid at the plane of the notches of steel trapezoidal profiles in the hollow spaces of the upper belts of the trapezoidal profiles, additionally, to introduce support forces.

The floor structure on the ceiling made of trapezoidal profiles is made in the following manner: 0,2 mm thick steel sheets are laid directly on trapezoidal profiles to create a closed area. A floating layer of 15 mm thick fire proof plasterboards is laid on those sheets, in the direction of spans of trapezoidal profile sheets. The fire proof plaster boards are butt jointed. A floating layer of dry 22 mm thick KNAUF AQUAPANEL cement boards is also laid on those boards, perpendicularly to the direction of spans of trapezoidal profile sheets. The KNAUF AQUAPANEL dry cement screed boards have a groove in which AQUAPANEL flat bolts are embedded, and additionally the boards are joined by means of AQUAPANEL slot adhesive to create bonding of the boards. Once the floor surface is completed, the surface of KNAUF AQUAPANEL dry cement screed boards is closed by AQUAPANEL Grundierung primer.

More detailed information about product construction is shown in report [1] acc. to the paragraph 3.1.

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]	MFPA Leipzig GmbH, Leipzig, Germany	Knauf Sp. z o.o., Warszawa, Poland	PB III/08-183	01. 07. 2008	DIN 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] DIN EN 1365-2	applied load	dead-weight of product = 0,54 kN/m ² , additional applied load = 1,00 kN/m ²	
	supporting construction	supports in distance of 3 800 mm	
	temperature curve	standard temperature time curve	
	loadbearing capacity	62 minutes no failure	
	integrity	cotton pad	62 minutes no failure
		gap gauges	62 minutes no failure
		sustained flaming	62 minutes no failure
	thermal insulation	average (140 K)	61 minutes
		maximum (180 K)	61 minutes
	radiation	-	
	mechanical action	-	
	self closing	-	
	direction of fire exposure	fire exposure from above	

The fire test was terminated in the 62nd minute at the request of test sponsor.

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 + A1: 2009.

4.2 CLASSIFICATION

Load-bearing single-span ceiling structure with AQUAPANEL® Floor boards is classified according to the following combinations of performance parameters and classes as appropriate.

**Fire resistance classification:
REI 60**

Note: The fire resistance classification is valid only in case the product is exposed to fire from above.

4.3 FIELD OF APPLICATION

This classification is valid according to EN 1365-2 for the following end use applications:

Thickness of materials	It is allowed to increase the thickness of materials (AQUAPANEL dry cement screed boards, fireproof plaster boards) under the condition that the higher thickness is considered by static analysis because of increased dead-weight of the product.
Loading	Maximum bending moments and maximum normal force calculated on the same base as during the fire test may not be higher than bending moments and normal force arisen at fire test [1] acc. to paragraph 3 of the document.



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.

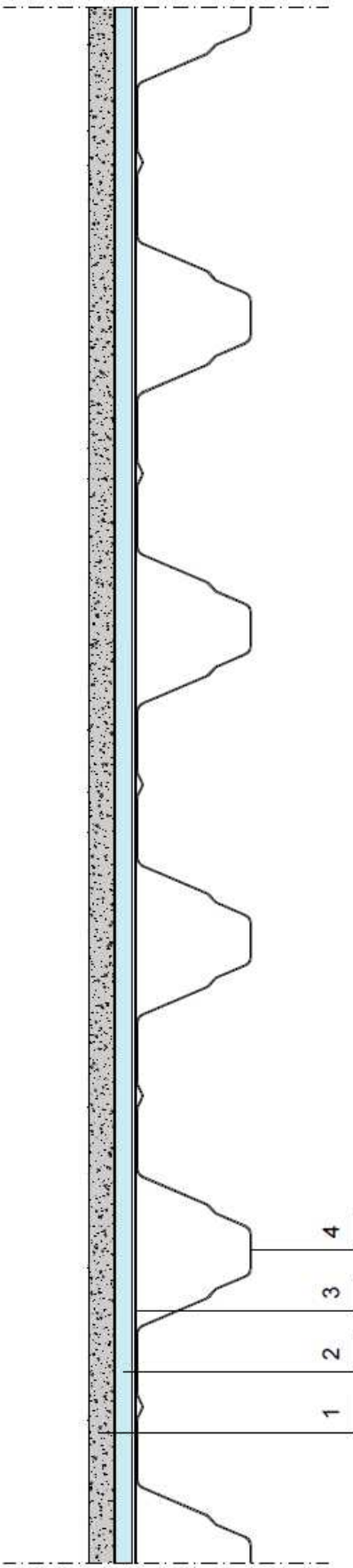
Approved:

Signed:

Ing. Štefan Rástocký
leader of the testing laboratory



Ing. Miroslava Rákociová
technician of the testing laboratory



- Description:
- 1 - 22 mm Aquapanel Cement Board Floor
 - 2 - 15 mm Fire-Resistant Plasterboard (F / GKF)
 - 3 - Steel sheet 0,2 mm
 - 4 - Trapezoidal profile 100 / 275 / 0,75 mm