

## **CLASSIFICATION OF FIRE RESISTANCE**

### **FIRES-CR-251-23-AUPE**

**Non-loadbearing insulated double metal stud frame partition Knauf W115, clad on both sides with two layers of 12,5 mm thick Knauf GKF boards and insulated with two layers of 50 mm thick Isolena Optimal sheep wool with Ionic Protect®**

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# CLASSIFICATION OF FIRE RESISTANCE IN ACCORDANCE WITH EN 13501-2: 2023 with direct field of application

## FIRES-CR-251-23-AUPE

**Name of the product:** Non-loadbearing insulated double metal stud frame partition Knauf W115, clad on both sides with two layers of 12,5 mm thick Knauf GKF boards and insulated with two layers of 50 mm thick Isolena Optimal sheep wool with Ionic Protect®

**Sponsor:** Isolena Naturfaservliese GmbH  
Klosterstraße 20  
A-4730 Waizenkirchen  
Austria

**Prepared by:** FIRES, s.r.o.  
Notified Body No. 1396  
Osloboditeľov 282  
059 35 Batizovce  
Slovak Republic

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## 1. INTRODUCTION

This classification report defines the resistance to fire classification assigned to element non-loadbearing insulated double metal stud frame partition Knauf W115, clad on both sides with two layers of 12,5 mm thick Knauf GKF boards and insulated with two layers of 50 mm thick Isolena Optimal sheep wool with Ionic Protect® in accordance with the procedures given in EN 13501-2: 2023.

## 2. DETAILS OF CLASSIFIED PRODUCT

### 2.1 GENERAL

The element, non-loadbearing insulated double metal stud frame partition Knauf W115, clad on both sides with two layers of 12,5 mm thick Knauf GKF boards and insulated with two layers of 50 mm thick Isolena Optimal sheep wool with Ionic Protect®, is defined as a non-loadbearing wall with fire separating capabilities.

### 2.2 PRODUCT DESCRIPTION

The product is a non-loadbearing insulated double metal stud frame partition Knauf W115, clad on both sides with two layers of 12,5 mm thick Knauf GKF boards (type DF according to EN 520) and insulated with two layers of 50 mm thick Isolena Optimal sheep wool with Ionic Protect®.

#### Dimensions

overall dimensions of the tested product	3000 x 2850 x 155 mm (height x width x thickness)
maximum dimensions of Knauf GKF board	2500 x 1250 mm (height x width)

#### Double metal frame construction

The double metal frame construction consists of Knauf UW50/40/0,6 runners placed along the upper and lower horizontal edges of the wall and fixed to the supporting construction. The distance between the runners (span length) is 3000 mm. The vertical Knauf CW50/50/0,6 studs are placed along the edges of the wall and at maximum 625 mm centres. The studs are freely inserted into the runners without additional fixing. A 100 mm long, 50 mm wide and 3,0 mm thick strip of Knauf PE sealing tape is placed every 500 mm between the frames (between the runners and the studs).

#### Wall cladding

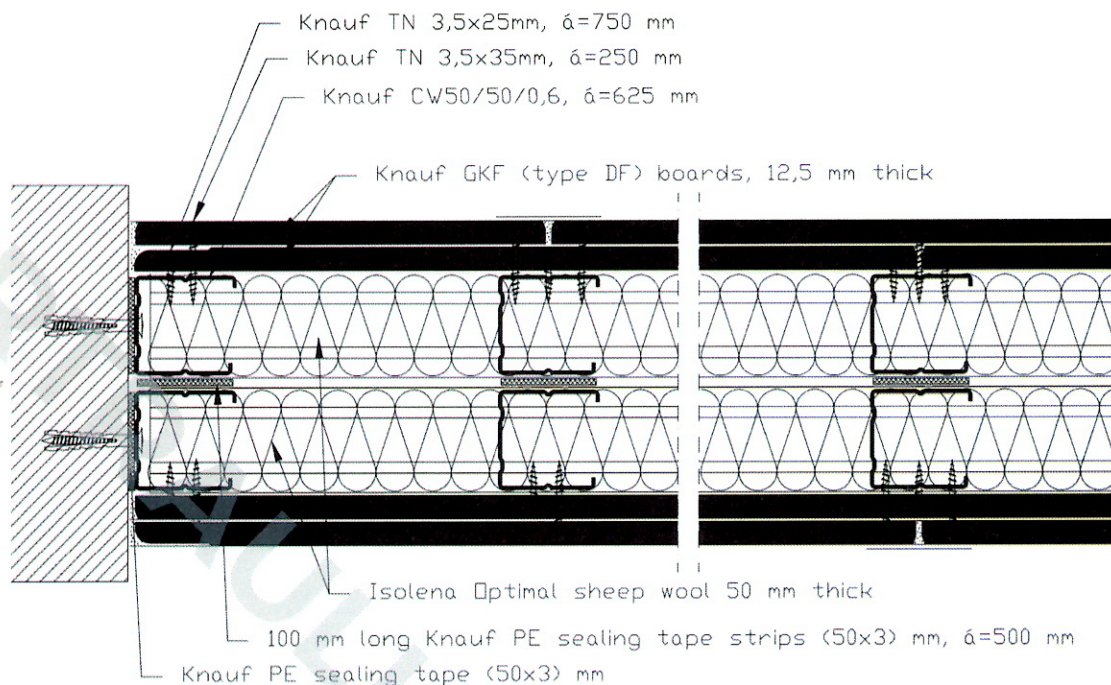
Two layers of 12,5 mm thick Knauf GKF gypsum plasterboards (type DF according to EN 520) with a bulk density of 878,08 kg/m<sup>3</sup> are screwed vertically to both sides of the metal frame. The first layer is fixed with Knauf TN screws 3,5 x 25 mm at maximum 750 mm centres and the second layer is fixed with Knauf TN screws 3,5 x 35 mm at maximum 250 mm centres. The vertical joints of the boards are staggered by 625 mm between layers and the horizontal joints by 2000 mm.

The board joints in the first layer are covered with Knauf Uniflott gypsum filler without reinforcement tape. The board joints in the second layer and the gaps between the boards and the supporting structure are covered with Knauf fiberglass reinforcement tape and Knauf Uniflott gypsum filler. The screws in both layers are covered with gypsum filler.

#### Wall insulation

The cavity in the wall is filled with two layers of 50 mm thick and 650 mm wide Isolena Optimal sheep wool with Ionic Protect® rolls (manufacturer: Isolena Naturfaservliese GmbH) with a bulk density of 19,6 kg.m<sup>-3</sup> fitted between the studs.





More detailed information on the product construction is given in the drawings in the test report [1] and Appendix 1 of this report.

### 2.3 PRODUCT FIXATION

The product is fixed to a 250 mm thick rigid supporting construction with a bulk density of 650 kg/m<sup>3</sup> ±200 kg/m<sup>3</sup>.

The Knauf UW50/40/0,6 runners placed along the upper and lower horizontal edges of the wall and the studs Knauf CW50/50/0,6 placed along the vertical wall edges are fixed to the supporting construction with suitable screws/anchors at maximum 1000 mm centres. Knauf PE sealing tape 50 mm wide and 3,0 mm thick is glued to the back of the runners and the vertical studs along the edges of the wall.

More detailed information on the product fixation is given in the drawings in the test report [1] and Appendix 1 of this report.

## 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	Type of the test
[1]	FIRES, s.r.o., Batizovce, SR	Isolena Naturfaservliese GmbH Waizenkirchen, AT	FIRES-FR-346- 23-AUNE	15. 12. 2023	EN 1364-1: 2015	Accredited

### 3.2 TEST SPECIMENS

Test report No.	Samples information	Conditioning	Pre-fire tests
[1]	-	The materials used for the test specimen were stored in the hall of the testing laboratory and conditioned in accordance with EN 1363-1.	-



**3.3 TEST RESULTS**

No./ Test method	Parameter	Results	
[1] EN 1364-1: 2015	applied load	-	
	supporting construction	rigid supporting construction made of 250 mm thick aerated concrete blocks with bulk density 650 kg/m <sup>3</sup> ±200 kg/m <sup>3</sup>	
	temperature curve	standard temperature/time curve	
	loadbearing capacity (R)	-	
	integrity (E)	cotton pad	120 minutes no failure
		gap gauges	120 minutes no failure
		sustained flaming	120 minutes no failure
	thermal insulation (I)	average temperature (140 K)	117 minutes
		maximal temperature (180 K)	116 minutes
	thermal radiation (W) - 15 kW.m <sup>-2</sup>	120 minutes no failure	
	mechanical action	-	
	specimen orientation	symmetrical construction of the specimen	
	other parameters	- specimen tested with the supporting construction along the vertical edges of the specimen according to cl. 6.1 of EN 1364-1, - the wall's deflection didn't exceed 100 mm, - one vertical specimen edge was free (without fixation to supporting construction)	

[1] The test was discontinued in 121<sup>st</sup> 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 7.5.2 of EN 13501-2: 2023.

**4.2 CLASSIFICATION**

The element, **non-loadbearing insulated double metal stud frame partition Knauf W115, clad on both sides with two layers of 12,5 mm thick Knauf GKF boards and insulated with two layers of 50 mm thick Isolena Optimal sheep wool with Ionic Protect®**, is classified according to the following combinations of performance parameters and classes as appropriate.

**Fire resistance classification:**  
**E 120 / EI 90 / EW 120**





### 4.3 FIELD OF APPLICATION

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

Change of the dimensions	<ul style="list-style-type: none"> <li>- decrease of the wall height and width is allowed,</li> <li>- increase in the height of the wall is allowed by 1,0 m (maximum height is 4000 mm) provided that the expansion allowances are increased pro-rata,</li> <li>- width of the wall can be freely increased,</li> <li>- increase of the wall thickness and increase of the thickness of component materials is allowed,</li> </ul>
Construction of the wall	<ul style="list-style-type: none"> <li>- decrease in linear dimensions of boards is allowed, but not thickness,</li> <li>- increase of dimensions of used profiles is allowed,</li> <li>- decrease in distance between studs is allowed,</li> <li>- decrease in distance of fixing centres is allowed,</li> <li>- increase in the number of horizontal/vertical joints is allowed,</li> <li>- usage of installations such as electrical sockets, switches, etc. is not allowed,</li> </ul>
Supporting construction	<ul style="list-style-type: none"> <li>- product can be fixed to the supporting construction on vertical edges according to EN 1364-1, cl. 13.4.1 b) with minimum bulk density of <math>650 \text{ kg/m}^3 \pm 200 \text{ kg/m}^3</math> and with minimum thickness of 250 mm,</li> <li>- increase in fixation points of the wall to the supporting construction is allowed.</li> </ul>

### 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 by:

Ing. Marek Gorlický  
Head of the Testing Laboratory

Prepared by:

Dávid Šubert  
Technician of the Testing Laboratory





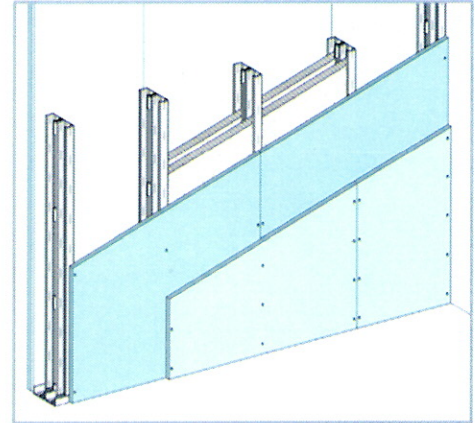
APPENDIX 1 – Drawing of the product construction

**W115 Knauf Metallständerwand mit ISOLENA Schafwolle**

Konstruktionsdetails für den direkten Anwendungsbereich (DIAP)



- Doppelständerwerk Knauf  $\geq$  CW 50, Ständerachsabstand  $\leq$  625 mm
- Beplankung beidseitig mit Knauf Feuerschutzplatten GKF/DF  $\geq$  2 x 12,5 mm
- Dämmung aus Schafwolle ISOLENA OPTIMAL  $\geq$  2 x 50 mm
- Fertigwanddicke:  $\geq$  155 mm
- Maximal zulässige Wandhöhe: 4,0 m
- Feuerwiderstandsklasse: EI 90



Details

Horizontalschnitte

Vertikalschnitte

<p><b>Anschluss an Massivwand</b></p> <p>Knauf Spachtelmasse Anschlussdichtung Knauf UW-Profil Knauf CW-Profil</p>	<p><b>Deckenanschluss an Rohdecke</b></p> <p>Knauf Spachtelmasse Anschlussdichtung Knauf UW-Profil Knauf CW-Profil</p>
<p><b>Plattenstoß</b></p> <p>Knauf CW-Profil Knauf UW-Profil selbstklebendes Dämmstreifenstück, a <math>\leq</math> 500 mm Knauf Spachtelmasse Schnellbauschraube TN Knauf GKF/DF 12,5 mm</p>	<p><b>Plattenstoß</b></p> <p>selbstklebendes Dämmstreifenstück, a <math>\leq</math> 500 mm Schnellbauschraube TN Horizontalstoß mit Knauf Fugendeckstreifen Knauf GKF/DF 12,5 mm Dämmstoff Schafwolle ISOLENA OPTIMAL 50 mm</p>
<p>Schemazeichnung – Maße in mm</p> <p>Entkopplung durch selbstklebende Dämmstreifenstücke</p> <ul style="list-style-type: none"> <li>■ Auf gesamter Wandhöhe, Achsabstand <math>\leq</math> 500 mm</li> </ul>	<p><b>Bodenanschluss auf Rohboden</b></p> <p>Knauf GKF/DF 12,5 mm Knauf CW-Profil selbstklebendes Dämmstreifenstück, a <math>\leq</math> 500 mm Schnellbauschraube TN Knauf UW-Profil</p>