HMCS-FEU

NATIONAL TECHNICAL UNIVERSITY OF ATHENS
School of Mechanical Engineering
Heterogeneous Mixtures & Combustion Systems
Fire Engineering Unit
Heroon Polytechniou 9 – Athens 15780, Greece

REACTION TO FIRE CLASSIFICATION REPORT

IN ACCORDANCE WITH EN 13501-1 : 2019

Sponsor: 3DPANEL S.A.,
Knosou Avenue 20,
Heraklion 71306, Crete, GREECE

Product name: "3D PANEL 3Δ"

Prepared by: National Technical University of Athens,
School of Mechanical Engineering,
Heterogeneous Mixtures & Combustion Systems
Fire Engineering Unit (HMCS-FEU),
Heroon Polytechniou 9 - Athens 15780, Greece

Classification report No.: EDOK_0301-20210302-3DP

Issue No.: 01

Date of issue: 02 March 2021

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The HMCS-FEU laboratory is accredited by the Hellenic Accreditation Council (ESYD) under the terms of the ELOT EN ISO/IEC 17025 : 2017 standard to carry out reaction to fire tests.

Testing
Accred. No. 1191

1. INTRODUCTION

This classification report defines the classification assigned to the reinforced wall with embedded insulation "3D PANEL 3Δ", in accordance with the procedures given in EN 13501-1: 2019.

2. DETAILS OF CLASSIFIED PRODUCT

The product, "3D PANEL 3Δ", is a reinforced wall with embedded insulation. The product consists of 5 main layers, arranged in a symmetrical configuration. The main characteristics of the tested product are presented in the Table below.

General description	Reinforced wall with embedded insulation
Product reference	3D PANEL 3Δ
Name of manufacturer	3DPANEL SA
Colour	White
Thickness	190 mm
Material details	**- Final coating**: Cement based coating (10 mm, 1.8 kg/m^2, 1800 kg/m^3) **- Reinforced cement mortar**: Cement based mortar, reinforced with galvanized steel mesh (50 mm, 90 kg/m^2, 1800 kg/m^3) **- Mineral wool**: Thermal insulation (70 mm, 7 kg/m^2, 100 kg/m^3) **- Reinforced cement mortar**: Cement based mortar, reinforced with galvanized steel mesh (50 mm, 90 kg/m^2, 1800 kg/m^3) **- Final coating**: Cement based coating (10 mm, 1.8 kg/m^2, 1800 kg/m^3)
End use applications	Construction

3. TEST REPORTS AND RESULTS IN SUPPORT OF CLASSIFICATION

The tests were conducted at the request of 3DPANEL S.A., the sponsor of the test, following their application EPOI_0201-IN21019-3DP.

3.1. Test Reports

This classification is based on the test reports listed below:

Laboratory	Sponsor	Test report number	Test method
HMCS-FEU	3DPANEL S.A.	EDOK_0203-20210225-3DP	EN ISO 1716 : 2018
HMCS-FEU	3DPANEL S.A.	EDOK_0203-20210226-3DP	EN ISO 1716 : 2018
HMCS-FEU	3DPANEL S.A.	EDOK_0203-20210301-3DP	EN ISO 1716 : 2018
HMCS-FEU	3DPANEL S.A.	EDOK_0204-20210222-3DP	EN ISO 1182 : 2010
HMCS-FEU	3DPANEL S.A.	EDOK_0204-20210223-3DP	EN ISO 1182 : 2010
HMCS-FEU	3DPANEL S.A.	EDOK_0204-20210224-3DP	EN ISO 1182 : 2010

3.2. Results

The test results listed below show the worst case as found in the test programme performed and reported according to the table above.

Test method: EN ISO 1716 : 2018					
No. of tests	**Component**	**Type***	**Area density (kg/m²)**	**PCS (MJ/kg)**	**PCS (MJ/m²)**
3	1. Final coating	S	3.6	**0.00**	0.00
3	2. Reinforced cement mortar	S	180	**1.62**	292.24
3	3. Mineral wool	S	7	**1.57**	11.00
Product "3D PANEL 3Δ"		NH	190.6	**1.59**	303.24
* S: Substantial component, NH: Non-homogeneous product					

Test method: EN ISO 1182 : 2010					
No. of tests	**Component**	**Type***	**Mass loss Δm (%)**	**Temperature rise ΔT (°C)**	**Flaming duration t_f (s)**
5	1. Final coating	S	9.18	0.71	0
5	2. Reinforced cement mortar	S	10.49	5.13	0
5	3. Mineral wool	S	3.94	8.43	0
* S: Substantial component					

4. CLASSIFICATION AND FIELD OF APPLICATION

4.1. Reference of Classification

This classification has been carried out in accordance with clauses 8.3.2 and 11.8.2 of EN 13501-1 : 2019.

4.2. Classification

The product **"3D PANEL 3Δ"**:
In relation to its **"reaction to fire behaviour"** is classified: **A1**
In relation to **"smoke production"** is additionally classified: **-**
In relation to **"flaming droplets and particles"** is additionally classified: **-**

Fire Behaviour		Smoke Production			Flaming Droplets	
A1						

3D PANEL 3Δ	
Reaction to Fire Classification:	**A1**

4.3 Field of Application

This classification is valid for the following end use applications: **Construction applications.**

5. LIMITATIONS

- NOTE: Performing "Non-Combustibility" reaction to fire tests according to EN ISO 1182 : 2010 is outside the scope of accreditation of the HMCS-FEU laboratory by the Hellenic Accreditation Council (ESYD).
- This classification document does not represent type approval or certification of the product.
- The origin and description of the specimens was stated by the sponsor.
- The test results relate only to the specimens that were delivered by the sponsor to HMCS-FEU.
- If the tested product is used in different combinations, especially with other types of coatings, thickness or density ranges than those reported in Sections 2 and 3.1, its reaction to fire performance may be negatively affected, so that the classification performance reported in Section 4.2 would be no longer valid. Therefore, the reaction to fire performance of the product when a parameter, different than the ones explicitly reported in Section 4.3, is modified must be tested and classified separately.

PERFORMED BY:

Dionysios Kolaitis, Ph.D.
Technical Manager HMCS-FEU

EXAMINED AND APPROVED BY:

Maria Founti, Ph.D.
Director of HMCS-FEU