



Test Report

Date: 16 September 2019

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CLASSIFICATION OF REACTION TO FIRE PERFORMANCE IN ACCORDANCE WITH EN 13501-1:2007+A1:2009

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1. INTRODUCTION

This classification report defines the classification assigned to multi-layered wall panels in accordance with the procedures given in EN 13501-1:2007+A1:2009.

2. DETAILS OF CLASSIFIED PRODUCT

2.1 GENERAL DESCRIPTION

The product is a multi-layered structure for wall panels. It is a building element for loading-bearing walls that includes seven layers with three different types of constituents.

2.2 USAGE

Components of sandwich structures of prefabricated wooden houses. They used as load-bearing masonry and their static design is similar to that of load-bearing masonry structures

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2.3 MAIN CONSTITUENTS

- Oriented Structure Boards (OSB) class 3: a product made from thin strands stacked on each other in oriented layers connected by a synthetic resin.
- Extruded polystyrene (XPS) foam board insulation
- Moisture resistant Medium Density Fiberboard (MDF) for load-bearing use in dry and wet conditions

2.4 GEOMETRY

- A core layer of anhydrous MDF with a thickness of 30mm
- Two layers of MDF with a thickness of 16mm at each side of the core
- Two layers of XPS foam board insulation with a thickness of 30mm at each side of the 16mm MDF
- Two outer layers of OSB class 3 with a thickness of 9mm

3. STANDARDS, RESULTS AND CRITERIA IN SUPPORT OF THIS CLASSIFICATION

3.1 STANDARDS

Test methods according to standards EN ISO 11925-2:2010 and EN 13823:2014.

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3.2 TEST RESULTS

Test method	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance with Parameters
EN ISO 11925-2				
surface flame impingement	$F_s \leq 150$ mm	6	56.4	-
	Ignition of filter paper		-	Compliant
Edge flame impingement	$F_s \leq 150$ mm	6	52.6	-
	Ignition of filter paper		-	Compliant
EN 13823				
	FIGRA _{0,2MJ} [W/s]	3	272	-
	FIGRA _{0,4MJ} [W/s]		272	-
	THR _{600s} [MJ]		4.5	-
	LFS < edge		-	Compliant
	SMOGRA [m ² /s ²]		9.2	-
	TSP _{600s} [m ²]		53	-
	Flaming debris - flaming ≤ 10 s - flaming > 10 s		-	Compliant Compliant

3.3 CLASSIFICATION CRITERIA

Fire classification of construction products and building elements Excluding floorings and linear pipe thermal insulation products			
Classification criteria			
Class	B	C	D
Test method(s)			
EN ISO 11925-2 Exposure = 30 s	$F_s \leq 150$ mm within 60 s Ignition of the paper in EN ISO 11925-2 results in a d2 classification.		
EN 13823	FIGRA _{0,2 MJ} ≤ 120 W/s LFS < edge of specimen THR _{600s} ≤ 7.5 MJ	FIGRA _{0,4 MJ} ≤ 250 W/s LFS < edge of specimen THR _{600s} ≤ 15 MJ	FIGRA _{0,4 MJ} ≤ 750 W/s
Additional classification			
Smoke production	s1 = SMOGRA ≤ 30 m ² /s ² and TSP _{600s} ≤ 50 m ² ; s2 = SMOGRA ≤ 180 m ² /s ² and TSP _{600s} ≤ 200 m ² ; s3 = not s1 or s2		
Flaming Droplets/particles	d0 = no flaming droplets/ particles in EN 13823 within 600 s; d1 = no flaming droplets/ particles persisting longer than 10 s in EN 13823 within 600 s; d2 = not d0 or d1.		



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4. CLASSIFICATION

This classification has been carried out in accordance with clause 11 of EN 13501-1:2007+ A1:2009.

The multi-layered wall structure, in relation to its reaction to fire behaviour is classified:

D

The additional classification in relation to smoke production is:

s2

The additional classification in relation to flaming droplets / particles is:

d0

Reaction to fire classification: D – s2, d0

Ioannina, 16 September 2019

Professor Theodore Matikas

Director of MSS-NDE Laboratory, University of Ioannina, Greece

Ioannina, 18.09.2019
ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ
ΒΕΒΑΙΩΝΕΤΑΙ ΤΟ ΚΗΛΙΟ ΤΗΣ
ΥΠΟΓΡΑΦΗΣ
Η ΠΡΑΞΗ ΑΥΤΗΣ ΤΗΣ ΔΙΑΤ. ΙΩΑΝΝΙΝΩΝ
ΚΑΤΑ ΤΗΝ ΚΑΤΑΤΗ
ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ

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