



Mfpa Leipzig GmbH

Testing, Inspection and Certification Authority for
Construction Products and Construction Types

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Classification Report No. KB 3.2/14-013-3

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Subject matter:

Classification of a load-bearing, space-enclosing, thermally-insulating, solid timber wall construction lined on one side with 18 mm thick gypsum - plasterboards with a one-sided fire load according to DIN EN 13501-2: 2010-2*

Client:

Massiv-Holz-Mauer Entwicklungs GmbH

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Person in charge:

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1 Introduction

This classification report defines the classification assigned to the load-bearing, space-enclosing and thermally-insulating solid timber wall construction in accordance with the procedure specified in DIN EN 13501-2: 2010-2.

2 Details of the classified product

2.1 General

The wall construction, consisting of solid timber elements and panelling on one side, is defined as a load-bearing, space-enclosing, thermally-insulating wall construction that is to be classified in accordance with DIN EN 1365-1 in conjunction with DIN EN 13501-2 section 7.3.2. Its function is to resist fire corresponding to the characteristic fire behaviour in accordance with section 5.2.1 - 5.2.3 of DIN EN 13501-2: 2010-2.

2.2 Structural design of the wall construction

Table 1 *List of structural details of the tested wall construction*

Position	Material/ dimensions	Remark(s)
Supporting structure:	<p>Wall elements made of 9 layers of cross-wise laminated spruce boards with relief grooves and a fluted surface</p> <p>Element thickness $d \geq 205$ mm</p> <p>Element size lower part of wall: $B \times H = 1000$ mm x 500 mm</p> <p>Element size upper part of wall: $B \times H = 1000$ mm x 2500 mm</p>	<p>Element connection:</p> <p>The elements are jointed together by screws (WT-t-8.2x240) at an angle of 45°.</p> <p>Vertical and horizontal contact surfaces of the individual elements are to be provided with an all-over wax coating.</p>
Lining on one side of wall	<p>Gypsum plasterboard $d \geq 18.0$ mm</p> <p>Max. board size: $b \times h \leq 1250$ mm x 2500 mm</p> <p>Joints and screw heads stopped Cross joints are allowed.</p>	<p>Fasteners:</p> <p>Plasterboard drywall screws $\geq 30 \times 3.9$ mm Gap $a \leq 250$ mm Gap between rows ≤ 625 mm</p>

The height of the wall construction may not exceed 3000 mm.

The load on the wall construction is limited to 140 kN/m.

Further structural details as well as the materials used and their building material characteristic values can be found in the test report PB III/B 03 – 157 from 22.10.2003 of MFPA Leipzig GmbH.



3 Test reports and test results supporting this classification

3.1 Test reports

Table 2 *Compilation of test reports*

Organisation that performed the test	Applicant	Number of the test report	Test standard
MFPFA Leipzig GmbH Hans-Weigel-Str. 2 b 04319 Leipzig	MHM Entwicklungs GmbH	PB III/B 03 – 157 from 22.10.2003	DIN EN 1365-1: 1999-10, in conjunction with DIN EN 1363-1: 1999-10

3.2 Test results

Table 3 *Compilation of the test results*

Test method	Parameter	Test results with load on the	
		layer of 18 mm gypsum plasterboards	un-panelled solid timber wall
DIN EN 1365-1: 2013-08 in conjunction with DIN EN 1363-1: 2012-10	Strength (R)		
	Vertical compression $C = h/100$ [mm]	Limit not reached	
	Speed of vertical compression $dC/dt = 3 h/1000$ [mm/min]	Limit not reached	
	Integrity (E)		
	Combustion of the cotton ball	no combustion	
	Appearance of gaps	no gaps	
	Appearance of flames on the opposite side	no sustained appearance of flames	
	Thermal insulation (I) – Rise in temperature on the side to which no flames are applied above the initial temperature after the 90th minute of test		
	Mean value > 140 K	2 K	4 K
	max. single value > 180 K	26 K	13 K

4 Classification and direct field of application

4.1 Reference for classification

This classification was carried out in accordance with DIN EN 13501-2: 2010-02, section 7.



4.2 Classification

This classification has been carried out in compliance with section 7.3.2 of DIN EN 13501-2: 2010-02.

The load-bearing, space-enclosing,, thermally-insulating solid timber wall construction (solid timber wall) with panelling on one side of gypsum plasterboards according to section 2.2 has been classified on the basis of the following combinations of performance parameters and classes for a one-sided fire load on the side lined with gypsum plasterboards and/or the un-panelled side of the wall. Other classifications are not allowed.

R	E	I	W	-	t	-	M	P	C	IncSlow	sn	ef	r
R	E	I	-	-	90	-	-	-	-	-	-	-	-

Fire protection effect: REI-90

4.3 Direct field of application

The results of the fire test are directly applicable to similar designs in which one or several of the changes listed below have been carried out and for which the design continues to meet the requirements of the corresponding design standard in terms of its rigidity and strength. Further changes are not allowed.

- Reduction of the height of the wall,
- Increase in the width of the wall,
- Increase in the thickness of the wall,
- Increase in the thickness of individual components (corresponding materials),
- Reduction of the length of boards and panels, though not the thickness,
- Reduction of the gaps between fastenings,
- Increase in the number of horizontal joints,
- Reduction of the applied load.
- On account of two fire tests on each side, the classification REI-90 applies for the asymmetric wall construction with a load from the outside to the inside acc. to section 2.2.





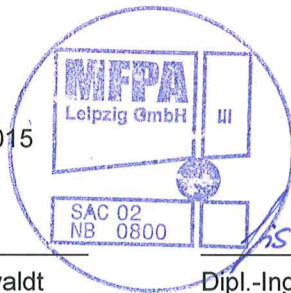
5 Restrictions

The classification document is not a type approval or certification of the product. It does not replace any building authority certificate that may be necessary according to German building laws (state building code).

This classification report is valid for an unlimited period. It is the responsibility of the certification body to check whether the relevant test and classification standards are valid and/or that no significant changes have been made that may have an effect on the safety level.

Leipzig, 30 June 2015

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