MFPA Leipzig GmbH
Testing, Inspection and Certification Authority for
Construction Products and Construction Types

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# Classification Report No. KB 3.2/14-013-2

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*Translation of the original German document KB 3.2/14-013-2*

**Subject matter:** Classification of a load-bearing, space-enclosing and thermally-insulating MHM wall element with a lining of 9.5 mm thick gypsum plasterboards (GP boards) on the side facing away from the fire and 15 mm thick plasterboard fire bats (PBF bats) on the side facing the fire with a one-sided fire load acc. to DIN EN 13501-2: 2010-2*

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**Person in charge:** Dipl.-Wirtsch.-Ing. S. Kramer

The classification report is not a type approval or product certification. It does not replace any building authority certificate that may be necessary according to German building laws (state building code) and is only valid in conjunction with the corresponding test report.

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ilac-MRA DAkkS Deutsche Akkreditierungsstelle D-PL-11021-01-00

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# 1 Introduction

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

# 2 Details of the classified product

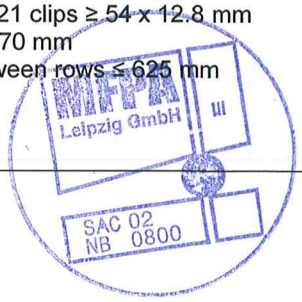
## 2.1 General

The MHM wall element with a lining of 9.5 mm thick gypsum plasterboards (GP boards) on the side facing away from the fire and 15 mm thick plasterboard fire bats (PBF bats) on the side facing the fire is defined as a load-bearing, space enclosing, thermally-insulating wall structure that is 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: | MHM wall element of soft wood<br>Board width b ≥ 180 mm<br>Board thickness $d_e$ ≥ 23 mm<br>Element thickness d ≥ 160 mm | Element connection:<br>At least 2 aluminium ribbed nails at each board intersection.<br>Boards rough sawn in longitudinal direction, on one side with grooves to a depth of 3 mm.<br>The MHM wall was smoothed on one side. The opposite side is rough sawn. |
| Lining<br>Inner side of wall<br>(side facing fire) | Plasterboard fire bats (PBF bats)<br>d ≥ 15.0 mm<br>Max. board size:<br>b x h ≤ 1250 mm x 2000 mm<br>Joints stopped with Knauf Uniflot.<br>Cross joints are allowed. | Fasteners:<br>Senco N21 clips ≥ 54 x 12.8 mm<br>Gap A ≤ 70 mm<br>Gap between rows ≤ 625 mm |
| Lining<br>Outer side of wall<br>(side facing away from the fire) | Gypsum plasterboards (GP boards)<br>d ≥ 9.5 mm<br>Max. board size:<br>b x h ≤ 1250 mm x 2000 mm<br>Joints stopped with Knauf Uniflot.<br>Cross joints are allowed. | Fasteners:<br>Senco N21 clips ≥ 54 x 12.8 mm<br>Gap A ≤ 70 mm<br>Gap between rows ≤ 625 mm |



**Details of the installation of the electrical installations box**

| Electrical installation boxes may be installed in the wall construction on the side facing the fire in the following variants. | | |
|---|---|---|
| Cavity wall box | PVC electrical devices box<br>≤ Ø 68 mm<br>Depth t ≤ 47 mm | Single coat of paint with DBU dispersion fire protection coating (ETA 13/0165) in box bore.<br>Application amount: ≥ 1kg/m² |
| Kaiser fire protection box | HWD 90<br>≤ Ø 74 mm<br>Depth t ≤ 44 mm | Approval by construction supervision authorities<br>Z-19.21-1788 |

The height of the wall construction may not exceed 3,200 mm.

The load on the wall construction is limited to 35 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 3.2/14-013-1 from 16.10.2014 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 |
|---|---|---|---|
| MFPA Leipzig GmbH<br>Hans-Weigel-Str. 2 b<br>04319 Leipzig | **MHM Entwicklungs GmbH** | PB 3.2/14-013-1<br>from 16.10.2014 | DIN EN 1365-1: 2013-08,<br>in conjunction with<br>DIN EN 1363-1: 2012-10 |

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## 3.2 Test results

**Table 3** *Compilation of the test results*

| Test method | Parameter | Test results |
|---|---|---|
| **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 |
| | max. single value > 180 K | 4 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 MHM wall element according to section 2.2 has been classified on the basis of the following combinations of performance parameters and classes. 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**

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### 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.
- Electrical installation boxes in accordance with section 2.2 may be installed in the room side of the wall.

## 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, 04 December 2014

MFPA Leipzig GmbH SAC 02 NB 0800

| Dipl.-Ing. S. Hauswaldt | Dipl.-Ing. H. Fischkandl | Dipl.-Wirtsch.-Ing. S. Kramer |
|---|---|---|
| *Head of Business Division* | *Head of Laboratory* | *Testing Engineer* |