

## Resistance to fire classification report

Classification report No:

K-3248/0546-MPA-BS

Product name:

Suspended ceiling made of 12,5 mm thick "Fermacell Gipsfaser (gypsum fibre)"-boards + 12,5 mm thick "Fermacell Powerpanel H<sub>2</sub>O"-boards fixed at the bottom of a suspended metal section and with an 40 mm thick mineral wool insulation above in conjunction with a revision flap.

Sponsor:

XELLA Trockenbau-Systeme GmbH  
Dammstraße 25  
D 47119 Duisburg

Date of issue:

06.11.2006



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**1 Introduction**

This resistance to fire classification report defines the classification, assigned to the suspended ceiling made of 12,5 mm thick "Fermacell Gipsfaser (gypsum fibre)"-boards + 12,5 mm thick "Fermacell Powerpanel H<sub>2</sub>O"-boards fixed at the bottom of a suspended metal section and with an 40 mm thick mineral wool insulation above in conjunction with a revision flap in accordance with the procedures given in DIN EN 13 501-2 : 2003-12.

**2 Details of the classified element**

**2.1 Type of function**

The element is defined as a suspended ceiling made of 12,5 mm thick "Fermacell Gipsfaser (gypsum fibre)"-boards + 12,5 mm thick "Fermacell Powerpanel H<sub>2</sub>O"-boards fixed at the bottom of a suspended metal section and with an 40 mm thick mineral wool insulation above in conjunction with a revision flap. Its function is to resist fire in respect of the fire performance characteristics given in clause 5 of DIN EN 13 501-2 : 2003-12.

**2.2 Description**

The above mentioned element is fully described in the test report in support of this classification listed in clause 3.

**3 Test reports and test results in support of this classification**

This classification report is supported by the following test reports.

| Name of Laboratory | Name of sponsor                         | Test reports / extended application report Nos. | Test method / extended application rules & date  |
|--------------------|---|---|--|
| MPA Braunschweig   | XELLA Trockenbau-Systeme GmbH, Duisburg | (3369/3266) – Schm from 20.10.2006              | DIN EN 1364-2 : 1999-10, DIN EN 1363-1 : 1999-10 |

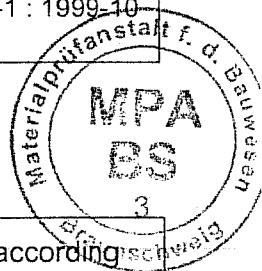


Table 1: Exposure conditions:

|                               |  |
|-------------------------------|--|
| Temperature/time curve:       | temperature-time curve (standardized) according DIN EN 1363-1 : 1999-10 clause 5.1.1 |
| Direction of fire exposure:   | asymmetrical specimen, heated from above   |
| Number of fire exposed sides: | one  |
| Applied load:                 | non load bearing construction  |
| Support conditions:           | supported on two sides (two horizontal edges free)                                   |

**Table 2: Test results**

|  |    |
|--|----|
| <b>Loadbearing capacity (R)</b>  |    |
| Time of collapse (min.):   | -  |
| Deformation criterion exceeded after (min.):   | -  |
| <b>Integrity (E)</b>   |    |
| Time of ignition of cotton pad (min.):   | 59 |
| Time of occurrence of sustained flaming (min.):  | 59 |
| Time of failure of gap gauge criterion (min.):   | 59 |
| <b>Thermal insulation (I)</b>  |    |
| Time after which the mean temperature rise at the unexposed side exceeds 140 °C (min.):    | 59 |
| Time after which the maximum temperature rise at the unexposed side exceeds 180 °C (min.): | 59 |



**4 Classification and direct field of application**

**4.1 Reference of classification**

This classification has been carried out in accordance with clause 7.5.4 of DIN EN 13 501-2 : 2003-12.

**4.2 Classification**

The above mentioned element is classified according to the following combinations of performance parameters and classes. No other classifications are permitted.

|   |    |    |   |   |   |   |   |   |   |   |   |
|---|----|----|---|---|---|---|---|---|---|---|---|
| R | E  | I  | W | - | T | - | M | C | S | G | K |
| - | 45 | 45 | - | - | - | - | - | - | - | - | - |

Classification of fire resistance: EI 45 (a→b)

**4.3 Field of direct application**

The following deviations to the element are directly applicable according the provisions of DIN EN 13 501-2 : 2003-12 in conjunction with DIN EN 1364-2 : 1999-10. Furthermore the construction has to comply with the appropriate design code for its stiffness and stability.

**4.3.1 Size**

The Test results achieved for a test-specimen with the dimensions of 4 m x 3 m or more are applicable to suspended ceiling constructions with any dimensions, provided that the number

of the suspending-hangers per area will not be increased, i.e., neither the distance between the suspending-hangers or the span of the load carrying profile nor the load of the suspending-hangers shall be increased.

#### 4.3.2 Length of the suspending-hangers

Test results are applicable to ceilings suspended by steel hangers, whose length are equal or shorter than the tested hangers.

#### 4.3.3 Load carrying system with heating from above

Test results apply for all load carrying systems, whose fire resistance is equal or greater than the one of the test specimen, i.e. slabs with densities and/or thicknesses equal or greater than the tested one, and for any steel beams having a lower section factor and at least the same fire protection.

#### 4.3.4 Wires, pipes etc. above the suspended ceiling

Test results are only applicable to the inclusion as wires, pipes etc. above the suspended ceiling, provided they are installed in such a manner, that they give no additional load to the ceiling during fire.

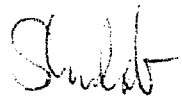

### 5 Limitations

#### 5.1 Restrictions

The period of validity of this classification report is limitless.

#### 5.2 Warning

This report does not represent type approval or certification of the element.

| Classification report | Name         | Signature <sup>a)</sup>   | Date       |
|-----------------------|--------------|---|------------|
| Prepared by           | S. Schmieder |  | 06.11.2006 |
| Reviewed by           | A. Rohling   |  | 06.11.2006 |

<sup>a)</sup>For and on behalf of: Materialprüfanstalt für das Bauwesen, Braunschweig

