



CENTRUM STAVEBNÍHO INŽENÝRSTVÍ a.s.

Zkušebna fyzikálních vlastností materiálů, konstrukcí a budov - Praha
Zkušební laboratoř č. 1007.4 akreditovaná ČIA dle ČSN EN ISO/IEC 17025
Pražská 16, 102 00 Praha 10 Hostivař

TEST REPORT

Nr. 15/1204/P733



Job Nr.: Z-15/485/P235

Nr. of pages: 4 + appendixes

Nr. of copies: 2

Copy Nr.: 1

Name of test:

Determination of flammability class of construction products

Material/product/construction:

ALUMINANCE FR

Sponsor:

ERA LABORATUVARLARI A.Ş.
TOSB TAYSAD Organize San. Böl. 1. CD.
15. Yol No: 1 Şekerpınar - Çayırova Kocaeli-TURKEY

Manufacturer:

Zahit Alüminyum San. Ve Tic. A.Ş.
Hacı Sabancı Organize San. Bölgesi Cumhuriyet Bulvarı No:22
Yakapınar, ADANA /TURKEY

Test specimens delivery date:

19th August 2015

Workplace:

Fire technical laboratory

Location:

Pražská 16, Praha 10 – Hostivař

Date of test:

23rd October 2015

Date of issue:

29th October 2015

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1. Test assignment

The test has been done on the base of order issued on 3rd September 2015.

2. Test methods

- DIN 4102-1:1998 Fire behaviour of building materials and building components - Part 1: Building materials; concepts, requirements and tests.
- DIN 4102-16:1998 Fire behaviour of building materials and building components - Part 16: "Brandschacht" tests.
- DIN 4102-15:1990 Fire behaviour of building materials and elements "Brandschacht".

3. Test specimens

The test specimens were delivered by manufacturer. Marking of the test specimens in laboratory: 15/P733/1-3.

Composition: Painted aluminium plates, thermoplastic core: % 70 Mg (OH)₂ %30 PE

Thickness of Filler material :3 mm

Consumption of paint: 0,076 kg /m²

Thickness of paint: 20 μm

Primer+paint:28 μm

Mass per unit area of aluminium plate:1,4 kg / m²

Appearance: Aluminium composite board. Thickness 4 mm, mass per unit area 7,66 kg/m². Face side white, back side gold. Test specimens 1 and 2 exposed from face side, test specimen 3 exposed from back side.

Fixing method: Fixed on the metal holder according to DIN 4102-15, table 1, detail 1.

4. Test equipment

- 1) Test device according to DIN 4102 teil 15 „Brandschacht“ (Reg. Nr. 744)
- 2) Yardstick (Reg. Nr. 148)
- 3) Digital stop watch (Reg. Nr. 4)
- 4) Flow meter (Reg. Nr. 300)
- 5) Flow meter (Reg. Nr. 301)
- 6) Thermometer / relative humidity meter (Reg. Nr. 74)
- 7) Digital anemometer (Reg. Nr. 67)
- 8) AD converter (Reg. Nr. 45)
- 9) Weighing scale OWA Labor (Reg. Nr. 6)
- 10) Non-coated thermocouple 0,5 mm (Reg. Nr. 119)
- 11) Non-coated thermocouple 0,5 mm (Reg. Nr. 120)
- 12) Non-coated thermocouple 0,5 mm (Reg. Nr. 121)
- 13) Non-coated thermocouple 1,5 mm (Reg. Nr. 122)
- 14) Non-coated thermocouple 1,5 mm (Reg. Nr. 123)
- 15) Non-coated thermocouple 1,5 mm (Reg. Nr. 134)
- 16) Non-coated thermocouple 1,5 mm (Reg. Nr. 135)

5. Test results and conclusion

Conditioning: 14 days at temperature T = (23 ± 2) °C

Testing conditions in laboratory: T = 23 °C

relative humidity RH = (50 ± 3) %

relative humidity RH = 32 %

Measuring and observations	Test specimen No.		
	1	2	3
Residual length of the every test specimen [cm]	52, 55, 54, 53	56, 56, 53, 52	52, 57, 54 ,56
Residual length average value of the test specimen [cm]	53,5	54,3	54,8
The highest smoke temperature [°C]	185,5	179,5	181,6
Time to accomplish of the highest temperature of the smoke [min:s]	10:00	9:57	9:51
The highest flame level above the bottom edge of the test specimen [cm]	40	40	40
Time to accomplish the highest flame level [min:s]	10:00	10:00	10:00
Smoke production [%.min]	4,7	4,8	5,1
Maximum light attenuation [%]	1,2	1,2	1,8
Time to accomplish the maximum smoke density [min:s]	9:55	9:47	9:58
Time of sustained burning after end of test [s]	8	6	11
Time of gloving after end of test [s]	0	0	0
Flaming droplets / particles [yes/no]	no	no	no
Burning time of fallen particles [s]	(-)	(-)	(-)

Testing according to DIN 4102-1:1998, clause 6.2.5 (Baustoffklasse B2):

The product *ALUMINANCE FR* does comply with requirements given in DIN 4102 – 1:1998 for B2 classification. Measured values and test results are showed in the Test report No. 15/407/P157 issued on 23rd February 2015 by CSI a.s, Fire technical laboratory.

Conclusion:

The tested sample of *ALUMINANCE FR* **does comply** with requirements given in the standard DIN 4102 – 1 for classification:

DIN 4102-B1.



6. Measurement uncertainty

Expanded measurement uncertainty of length is $\pm 4,0$ cm.

Expanded measurement uncertainty of smoke density is $\pm 9,8$ s.

Expanded measurement uncertainty of temperature $\pm 5,8$ °C.

Mentioned expanded uncertainties are obtained by multiplying the standard uncertainties by a coverage factor $k=2$, which corresponded to a level of confidence of 95 %. Standard uncertainties have been determined in accordance with document „EA 4/02“.

7. Declaration

The test results relate to the behaviour of the test specimen of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product of use. The results of tests are concerned only with the subject of testing. The test report shall be reproduced in full only.

Measured by: Pavel Martan



Test report prepared by: Vít Slaboch



Distribution of test reports:

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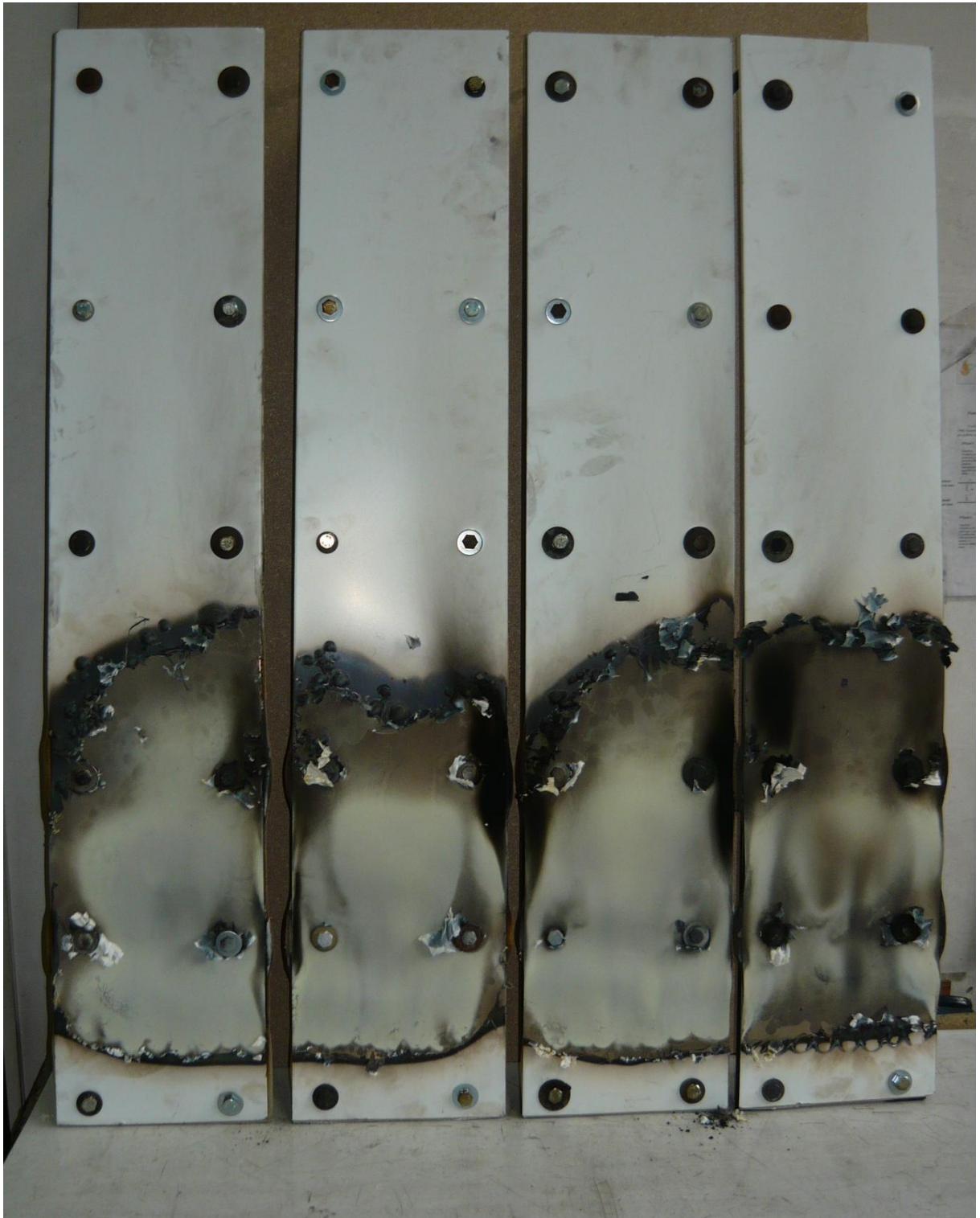
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List of appendixes:

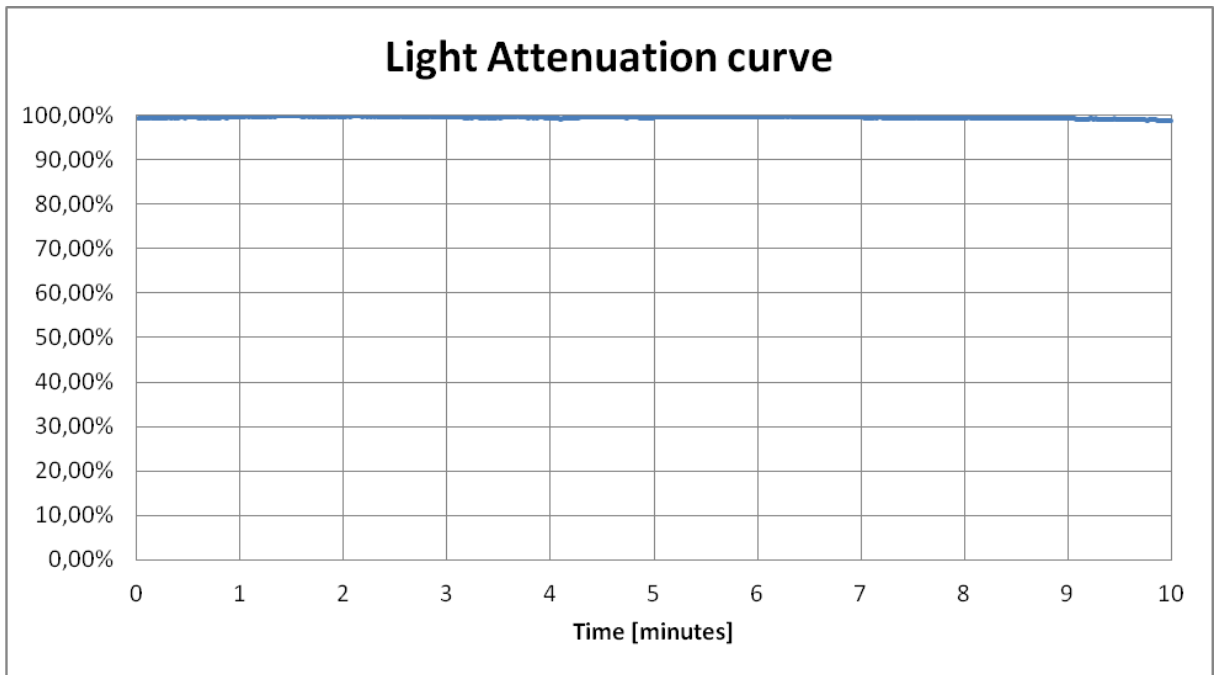
Appendix Nr. 1: The photograph of the test specimens after testing (test specimen Nr. 1)

Appendix Nr. 1: Light attenuation curve and smoke temperature curve (test specimen Nr. 1)

END OF TEST REPORT



Light attenuation curve - test specimen Nr. 1:



Smoke temperature curve - test specimen Nr. 1:

