

# PRÜFZEUGNIS (Test Certificate) \*)

902 4577 000/E

Auftraggeber/Sponsor: DEKRA Testing and Certification GmbH  
Handwerkstraße 15  
70565 Stuttgart

Betreff/Ref.: Reaction-to-fire test according to DIN 4102 part 1,  
Baustoffklasse B2

Prüfmaterial/Test material: HF-absorber "Universal-Delta"

Datum/Date of issuing: 30. August 2012

Gültigkeitsdauer/  
Period of Validity: until 31. May 2017

Hinweis/Warning: The tested building-material not being used as a construction product according to German building regulations MBO § 2, part 9, clause 1, no "Allgemeines bauaufsichtliches Prüfzeugnis" is required. This test certificate is not valid, if the tested product is utilised according to German building regulations (MBO § 20, part 3). This test certificate is in no case a substitute for any required certification according to German building regulations. In cases where approvals are required by German building regulations and authorities, this test certificate may be utilised for issuing these approvals according to Bauregelliste:  
- Übereinstimmungsnachweise (certificate of conformity)  
- Verwendbarkeitsnachweise (certificate of usability)  
Allgemeines bauaufsichtliches Prüfzeugnis, Allgemeine bauaufsichtliche Zulassung).

The notes in annex D of DIN 4102-1 with reference to third-party-control are to be considered in particular. In cases of doubt, the German version is valid.

\*) This test certificate is the English version of Prüfzeugnis 902 3736 000 dated 11. May 2012.  
In cases of doubt, the German version is valid.



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On 5th April 2012 we had been requested to perform reaction to fire tests according to DIN 4102, part 1, class B2.

### 1. Description of the product tested

The pyramidal-shaped HF-absorber as stated by the sponsor is made of a plastic material ( ), which is filled with ecowool ( ) and carbon fibers ( )

Thickness of the plastic: 1,35 mm \*

Density of the plastic: 1150 kg/m<sup>3</sup> \*

Mass per unit area of the plastic: 1560 kg/m<sup>2</sup> \*

\*) measured values

Field of application: Lining of anechoic chambers  
Trade name: "Universal-Delta"  
Sampling: by customer  
Receipt of samples: 10th April 2012 (receipt-No.: 12/119)  
Quantity: - 15 absorber in the colour light grey  
- 15 absorber in the colour light red  
- 15 absorber in the colour darkt grey



### 2. Sample preparation

The samples, 190 mm x 90 mm and 230 mm x 90 mm, had been cut from the product representatively.

### 3. Test procedure

The tests had been performed according to standard DIN 4102, part 1 (May 1998 edition), clause 6.2.5, with surface flame-application 40 mm above the samples bottom edge and with edge exposure to the mid point on the bottom, 1,5 mm behind the surface.

For conducting these tests, additional specimen had been backed by substrates of

- Fibre cement board (FC) acc. to DIN 4102-16, clause 4.3 a)
- Steel sheet acc. to DIN 4102-16, clause 4.3 d)

4. Test results

Test No.	1	2	3	4	5	6	7	8
Exposure conditions*	K				F			
Substrate	FC	Steel	--	absorber	FC	Steel	--	
Colour	light grey							
Ignition	s	immediatly			4	6	6	4
Max. flameheight								
within 20 s	cm	5	6	9	4	3	8	5
reached after	s	15	15	15	15	15	15	15
Measuring mark reached after	s	-	-	-	-	-	-	-
Flames ceased after	s	15	15	15	15	15	16	17
Flames extinguished after	s	-	-	-	-	-	-	-
End of afterglowing	s	-	-	-	-	-	-	-
Smoke development	very high							
Filter paper ignited	-	-	-	-	-	-	-	-

Test No.	9	10	11	12	13	14	15	16
Exposure conditions*	K				F			
Substrate	FC	Steel	--	absorber	FC	Steel	--	
Colour	light red							
Ignition	s	immediatly			6	6	5	6
Max. flameheight								
within 20 s	cm	6	6	9	5	5	8	7
reached after	s	15	15	15	15	15	15	15
Measuring mark reached after	s	-	-	-	-	-	-	-
Flames ceased after	s	15	16	16	15	15	16	16
Flames extinguished after	s	-	-	-	-	-	-	-
End of afterglowing	s	-	-	-	-	-	-	-
Smoke development	very high							
Filter paper ignited	-	-	-	-	-	-	-	-

Test No.	17	18	19	20	21	22	23
Exposure conditions*	K				F		
Substrate	FC	Steel	absorber	FC	Steel	--	
Colour	dark grey						
Ignition	s	immediatly		6	5	6	6
Max. flameheight							
within 20 s	cm	7	4	5	5	6	6
reached after	s	15	15	15	15	15	15
Measuring mark reached after	s	-	-	-	-	-	-
Flames ceased after	s	17	15	15	15	16	17
Flames extinguished after	s	-	-	-	-	-	-
End of afterglowing	s	-	-	-	-	-	-
Smoke development	very high						
Filter paper ignited	-	-	-	-	-	-	-

\* K = edge exposure; F = surface exposure



5. Classification

All samples passed the test acc. to DIN 4102, part 1, clause 6.2.5.

Thus, the HF-absorber as described in clause 1 meets the requirements for building materials of class B2 according to DIN 4102, part 1 (May 1998 edition).

The material did not show any burning droplets or glowing. The plastic boards are classified as not burning dripping acc. to DIN 4102, part 1, clause 6.2.6.

6. Notes

- 6.1. The HF-absorber must be labelled according to DIN 4102, part 1, clause 7 as follows:

DIN 4102 – B2

- 6.2. Classification into class B2 is valid solely for the HF-absorber as described in clause 1 alone or in direct connection with massive mineral substrates or on metallic substrates.

Used in connection with other materials its fire performance is likely to be influenced this negatively, that the given classification in clause 5 is no longer valid. Fire performance in connection with other materials is to be tested and classified separately.

If the HF-absorber is coated with flammable layers, its fire performance is to be tested and classified separately, too.

- 6.3. Classification in clause 5 of this test certificate expires by 31. May 2017.  
Validity may be extended on request.  
Therefore, additional tests may be necessary.

- 6.4. This test certificate is in no case any substitute for  
„Allgemeines bauaufsichtliches Prüfzeugnis“ or  
„Allgemeine bauaufsichtliche Zulassung“.

Abteilung Brandschutz / Fire Safety Department  
Referat Brandverhalten von Baustoffen / Section Reaction-to-Fire

Der Bearbeiter  
(The Engineer in Charge)



Dipl.-Ing. (FH) Frank Waibel



Der Leiter der Prüfstelle  
(Head of Notified Fire Testing Department)



Dr. rer. nat. Stefan Lehner,  
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