

Evidence of Performance

Reaction in the case of fire of building materials



Test report 261 34423-e
Translation of Test Report 261 34423
dated 13 March 2008

Client **HEKIM YAPI END.SAN.VE TIC.A.S.**
Guzelyali Mah. E--5
Karayolu Uzeri
34903 Pendik Istanbul
Turkey

Basis

EN ISO 13501-1 : 2002

Fire classification of construction products and building elements

Part 1: Classification using test data from reaction to fire tests

Manufacturer/
supplier **see client**

Product/
building material **fibre-cement sheet / type NT**

Designation **"Hekimboard fibre-cement flat sheet"**

Dimensions **thickness: 7.9 mm**

Scope of
application **as facade cladding
for lining walls and ceilings**

Special features **- none -**

Instructions for use

– This test report does not provide evidence of specified use as set out by the relevant national Building Supervisory Authorities.

– The test report may be used as a basis for issuing a classification report.

Validity

The listed data and results refer exclusively to the tested test specimen described in this report. The test does not allow any statements regarding other performance and quality features of the tested building material.

Order **Testing the combustion heat as per EN ISO 1716
Non-combustibility test as per EN ISO 1182**



Combustion heat: PCS = 0.9 MJ / kg

Non-combustibility test:

$\Delta T = 6 \text{ }^\circ\text{C}$, $\Delta m = 14 \%$, $t_f = 0 \text{ s}$

Results

Notes on publication

The **ift** guidance sheet "Conditions and notes for using the **ift**-test documents" applies.

The cover sheet can be used as abstract.

Content

The test report comprises a total of 6 pages.

- 1 Object
- 2 Procedure
- 3 Detailed results

ift Rosenheim
28 April 2008

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Test Engineer
ift Centre for Fire Testing



1 Object

1.1 Description of test specimen

Building material	Fibre-cement sheet / type NT
Manufacturer	HEKIM YAPI END.SAN.VE TIC.A.S.
Date of manufacture	July 2007 ¹⁾
Product designation	"Hekimboard fibre-cement flat sheet"
Sheet dimensions	
Width x length	1500 mm x 1250 mm (supplied)
Thickness	7.9 mm
Description	The fibre-cement sheet was ground smooth on one side. The opposite side had a lattice-type texture.
Main constituents	Portland cement ¹⁾ Quartz meal ¹⁾ Cellulose fibre ¹⁾
Colour	grey
Mass per unit area	11.80 kg/m ²
Density of sheet	1495.10 kg/m ³

The description is based on an inspection of the test specimen at the Centre for Fire Testing of the ift Rosenheim in Nuremberg. Item designations and item numbers were provided by the client. (Details provided by the manufacturer are marked ¹⁾.) Exact details of the composition are available at the ift Rosenheim. The details were examined solely on the basis of the characteristics to be verified.

2 Procedure

2.1 Sampling

The samples were selected by the client: Hekim Yapi. From the large-format sheets supplied, the ift Rosenheim cut samples measuring 21 cm x 30 cm, which were sent to test institute Hoch for further processing. Further preparations of the samples were carried out by the test institute Hoch.

Process for selecting test specimen

The test specimens were sampled from series production.

Table 1: Test specimen list

POS	Quantity	Pk.-no.	Received date	Designation	Test	Colour	Dimensions (mm)
1	approx. 10 m ²	22529	30 Aug 07	"Hekimboard fibre-cement flat sheet"	VW NB	grey	8 mm
VW... Combustion heat NB Non-combustibility furnace POS ... Item Pk.-Nr. ...Test specimen number							

2.2 Sample preparation and conditioning details

2.2.1 Selection and preparation of samples to determine combustion heat

For the fire tests, samples were taken as per EN ISO 1716:2002, clause 5.2, then chopped up (see clause 5.4) and prepared for the 'pot method' as per clause 5.8.

2.2.2 Selection and preparation of samples for the non-combustibility test

For the furnace test, the supplied material was used to produce cylindrical test specimen with dimensions as per DIN EN ISO 1182:2002, part 5.12.

The test specimens were kiln-dried for 22 hours at 60 °C ± 5 °C as per EN ISO 1182:2002, part 6.

2.3 Methods

Table 2: Relevant standards and boundary conditions

	Combustion heat	Non-combustibility test
Basis	EN ISO 1716 : 2002 DIN EN 12467	EN ISO 1182 : 2002 DIN EN 12467
Boundary conditions	As per standard specifications: The test specimens were conditioned as per EN 13238 : 2001.	As per standard specifications: The test specimens were conditioned as per EN 13238 : 2001 and then kiln-dried as per EN ISO 1182:2002.
Deviation	As per standard specifications : There were no deviations from the test procedure or the test conditions.	As per standard specifications : There were no deviations from the test procedure or the test conditions.
Test location	Test institute Hoch, notified body no.: 1508	Test institute Hoch, notified body no.: 1508
Test order number	No. PB-Hoch-071023	No. PB-Hoch-071023
Sample residues and untested specimen	Disposal by ift	Disposal by ift

2.4 Testing

Testing body Test institute Hoch, notified body no. 1508
Lerchenweg 1, 97650 Fladungen

Table 3: Test sequence - register

POS	Test	Specimen no.	Tester	Test date
1	Combustion heat	22529-001	D. Günzel	Calendar week 42 / 2007
2	Non-combustibility furnace	22529-002	D. Günzel	Calendar week 42 / 2007

3 Detailed results

3.1 Combustion heat as per EN ISO 1716

Table 4: Measured data / observation for test specimen: "Hekimboard fibre-cement flat sheet"
Pk. (test spec.) no. 22529-001, material thickness 7.9 mm

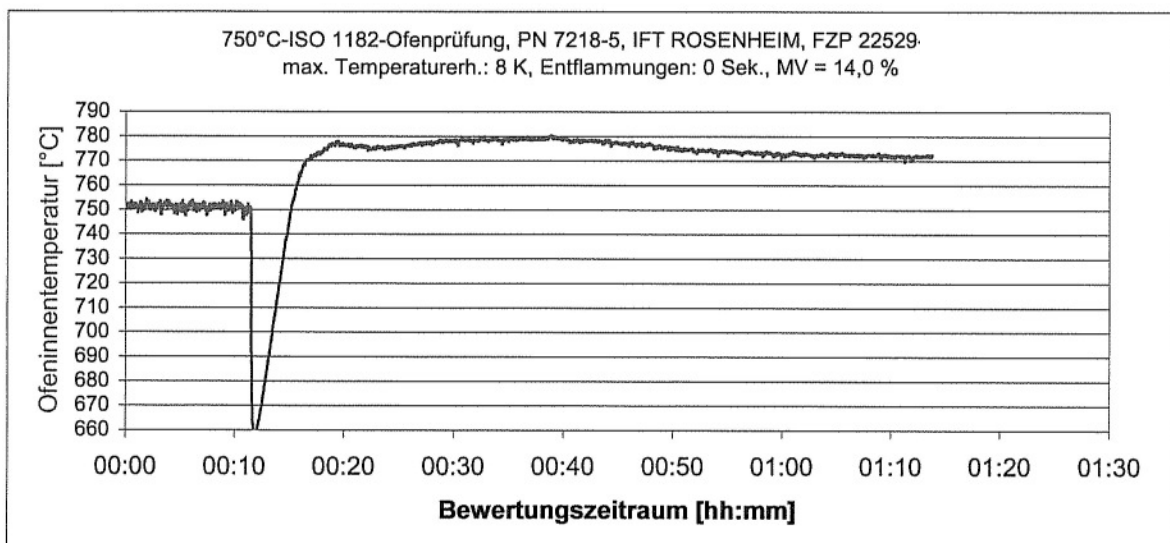
Test no.	1	2	3	4	5	Average value
PCS (MJ/kg)	0.926	0.953	0.957	--	--	0.9 MJ/kg
Observations during testing: - none -						
Water equivalent E: 0.0089 MJ/K						

3.2 Non-combustibility test as per EN ISO 1182

Table 5: Measured data / observation for test specimen: "Hekimboard fibre-cement flat sheet"
Pk. (test spec.) no. 22529-002, material thickness 7.9 mm

Test no. 7218	1	2	3	4	5	Dimension
Begin of combustion	*	*	*	*	*	min:s
Duration of combustion	*	*	*	*	*	s
max. temperature increase	5	7	5	5	8	°C
Loss of mass	13.8	13.7	13.9	13.4	14.0	%
Special observations: -						
Visual appearance after the test: slight brown discolouring						
Comments and explanations regarding the test procedure: -						
*) no occurrence of events						

Beispiel für den Temperaturverlauf bei der ISO1182-Ofenprüfung:



Example of temperature curve during the ISO 1182 furnace testing: 750°C-ISO 1182 furnace testing, PN 7218-5, IFT ROSENHEIM, FZP 22529-001

max temperature rise: 8 K, combustions: 0 sec, MV = 14.0%, Inside temperature of furnace [°C], Period of evaluation [hh:mm]

3.3 Summary of test results

Table 6 Test results: "Hekimboard fibre-cement flat sheet"
Pk. (test spec.) no. 22529, material thickness 7.9 mm

Construction product: fibre-cement sheet / type NT				Test report number: 261 34423		
Test method	Parameter	Criteria for class A1		Number of tests	constant parameters average (m)	discrete parameters
		constant parameters	discrete parameters			
EN ISO 1716	PCS ⁽¹⁾ + ⁽²⁾ + ⁽⁴⁾	≤ 2.0 MJ/kg	(-)	3	0.9 MJ/kg (m)	(-)
	PCS ⁽²⁾ + ⁽³⁾	≤ 1.4 MJ/m ²	(-)		(-)	(-)
	PCI ⁽⁵⁾	(-)	(-)		(-)	(-)
EN ISO 1182	ΔT ⁽¹⁾	ΔT ≤ 30 °C	(-)	3	ΔT = 6 °C (m)	(-)
	Δm ⁽¹⁾	Δm ≤ 50 %	(-)		Δm = 14 % (m)	(-)
	t _f ⁽¹⁾	t _f ≤ 0 s	(-)		t _f = 0 s (m)	(-)

(-) not applicable
⁽¹⁾ for non-homogenous construction products the parameters have to be stated for each substantial component
⁽²⁾ for non-homogenous construction products the parameters have to be stated for each outer non-substantial component
⁽³⁾ for non-homogenous construction products the parameters have to be stated for each inner non-substantial component
⁽⁴⁾ the parameter for the product as a whole
⁽⁵⁾ the associated PCI value if required for classification (i.e. after successful appeal procedure)

3.4 Instructions for use

The test results only relate to the reaction of the test specimen of a construction product under the specific test conditions during testing; they must not be taken as the only test criterion for evaluating the potential fire hazard of the construction product in an application. This test report may be used as a basis for issuing a classification report. It does not replace building control evidence of performance that may be required under State Building Legislation (MBO §17, section 3).