

Orderer: Tapetenfabrik
Gebr. Rasch GmbH & Co. KG
Raschplatz 1
49565 Bramsche

Order from: 10.03.2008 – Bestellung Bü46549

Order: Tests of the fire behaviour according to DIN 4102-1: 1998-05,
fire class B1, of wallpaper „Produktgruppe Relief auf Papier“
item number 544510

This test report consists of 7 pages.
The test material has been consumed.

In case of any dispute German version is decisive. The test is not subject to publication and is not for general publication. It may be written after use by the testing instance. The test results may only be used for the purpose of the test.



1. Test material**1.1 Sampling and delivery**

date: - / by orderer
delivery: 26.03.2008
number of samples: 1 roll
dimension: 10,05 m x 0,53 m

1.2 Informations about the samples

name: „Relief auf Papier“
item number: 544510
thickness: 0,77 mm
weight per unit area: 190 g/m²

1.3 Mounting

The wallpaper was pasted on plasterboards with a wallpaper paste.

2. Fire tests**2.1 Review**

All fire tests were carried out according to DIN 4102-1: 1998-05.

character and location of tests

tests	amount of tests	lab
Single-flame source test	10	MPA BAU HANNOVER
Brandschacht-test	1	

2.2 Brandschacht-test

The Result of the Brandschacht-test are compiled in the next table. The development of smoke temperature is shown in fig. 1, the appearance of samples after burning in fig. 3.

The integral value

$$I = \int_{0 \text{ min}}^{10 \text{ min}} S \cdot dt$$

was calculated from the curve in fig. 2

results of the Brandschacht-test

test		A
max. vertical flame spread time after beginning	cm min:s	60 01:43
melting and burning through time after beginning	min:s	—
flames on the reverse side of samples time after beginning	min:s	—
flaming droplets/particles		—
residual length		
single values	cm	46
	cm	49
	cm	46
	cm	43
mean value	cm	46
max. smoke temperature time after beginning	° C min:s	108 07:19
subsequent fire	min:s	—
smoke intensity		
max. opacity of the smoke	%	10
integral value I	min·%	13

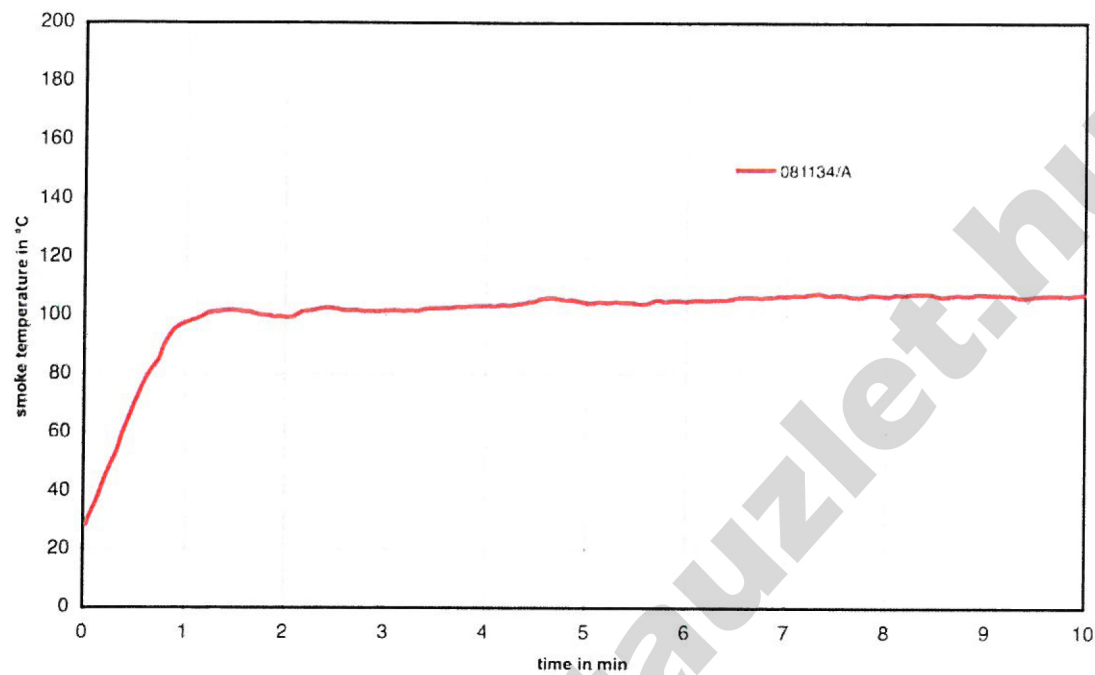


fig 1: smoke temperature

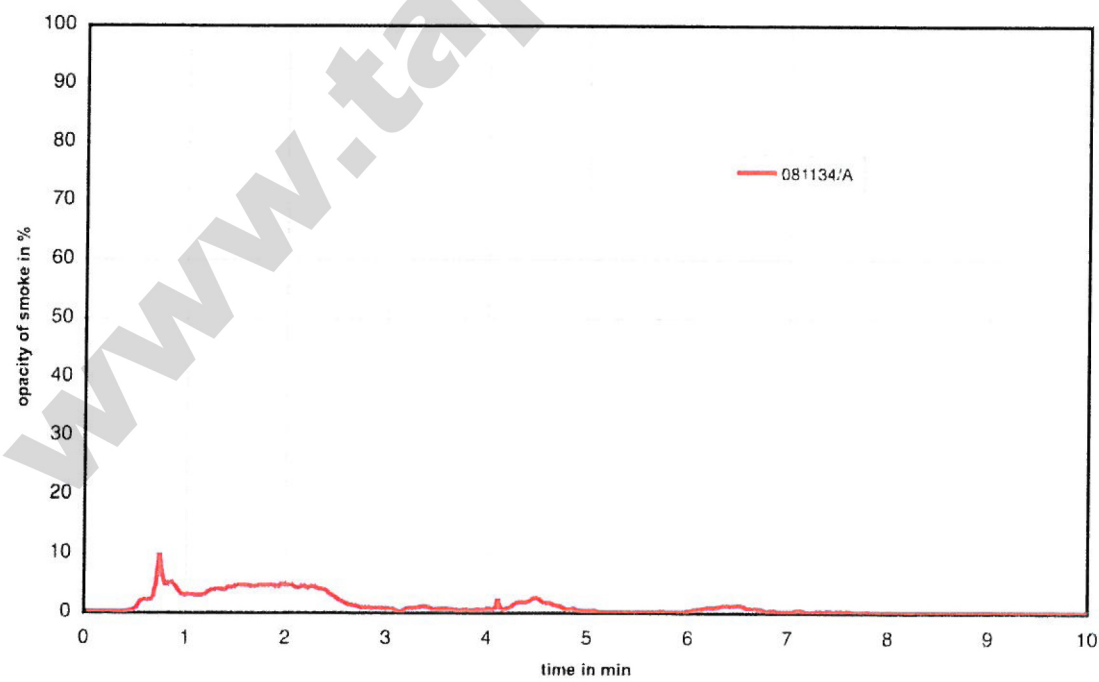
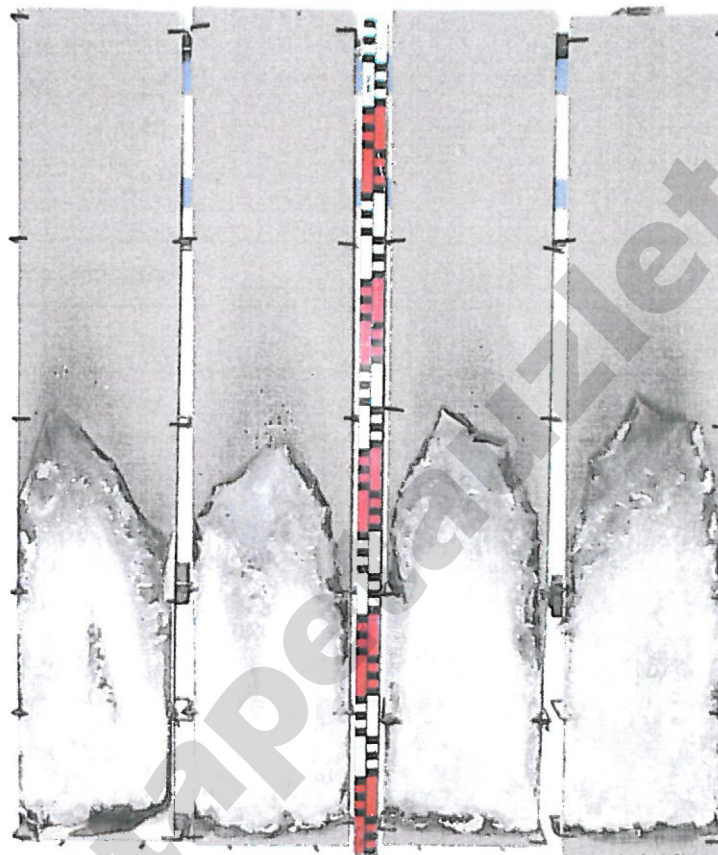


fig 2: opacity of smoke



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fig. 3: Appearance of specimen A
after 10-minutes burning

2.3 Single-flame source test

The tests were carried out as edge flame attacks according to DIN 4102-1: 1998-05 clause 6.2.5.2 and as surface flame attacks according to DIN 4102-1:1998-05 clause 6.2.5.3.

flame application time: 15 s

observation time: 20 s

number of tests: 10

position of flame application		edge					surface				
specimen no.		1	2	3	4	5	6	7	8	9	10
ignition occurs after	s	0,3	0,3	0,3	0,4	0,4	2,3	1,8	2,0	1,5	1,7
duration of flames	s	15,2	14,9	15,0	15,0	15,0	12,8	13,6	13,6	13,9	13,8
max. vertical flame spread	mm	40	30	40	30	40	40	40	40	40	40
smoke production		moderate									
flaming droplets/particles		no ignition of the filter paper									

Requirement: max. vertical flame spread < 150 mm

3. Summary

summary of test results

name		Produktgruppe „Relief auf Papier“ item number 544510
thickness	mm	0,77
weight per unit area	g/m ²	190
Brandschacht-test		
max. vertical flame spread	cm	60
residual length	cm	46
max. smoke temperature	°C	108
flaming droplets/particles		—
max. opacity of smoke	%	10
max. integral value	min·%	13
single-flame source test		
max. flame spread	mm	40
flaming droplets/particles		—

4. Classification

The product „Relief auf Papier“, item number 544510 with a weight per unit area of 190 g/m², fulfils the requirements of DIN 4102-1 – B1 and is thus classified in relation to its reaction to fire.

During the tests there were no flaming droplets/particles according to DIN 4102-1.

5. Notes

In Germany this test report can be used only for a building material, not for a building product.

For sale on the German market, other special papers according to the German “Landesbauordnung” are needed in addition.

This test report can be used for these special papers.

The validity of this test report expires on 30.04.2013.

Hannover, 16.04.2008

Head of fire laboratory



(ORR Dipl.-Ing. Restorff)



Technician



(Dipl.-Ing. Piechulla)