

# TEST-CERTIFICATE

**No. 230004952**

English version

Testing according to DIN 4102-1 (May 1998)

**Sponsor:** AVERY DENNISON Mat's BV  
Rijndijk 86  
  
2394 AJ Hazerwoude  
Niederlande

**Date of application:** 20.04.2005  
**Date of sampling:** Samples were send in by the sponsor  
**Samples delivered on:** 20.04.2005  
**Date of testing:** 04.05.2005, 19.05.2005 and 20.05.2005

**Order**  
Testing according to DIN 4102-1 (May 1998) class B1

**Description / Name of tested product**  
Adhesive foil, named as "AVERY® 500 EVENT FILM MATT" or "AVERY® 500 EVENT FILM GLOSS"

**Applied test procedure**  
DIN 4102 part 1 (May 1998)

This test certificate does not replace the attestation of use according to the German building regulations if necessary. It can be used for the application of such attestation of use. This test certificate is a translation of the original test certificate 230004952 issued 20. May 2005 in German language and is only allowed to use together with the original test certificate.

This test certificate is valid until 19.05.2010.  
The test results only relate to the above named product.  
Any change in form or content to a test certificate can only be made by the approval of MPA NRW.  
This test certificate consists of 11 pages and 1 enclosure.



**Testing material**

**Description of samples**

a) Information coming from the sponsor:

The material named as "AVERY® 500 EVENT FILM MATT" or "AVERY® 500 EVENT FILM GLOSS" is an adhesive foil made of PVC with adhesive applied on one side, semi permanent, acrylic-based.

Foil thickness: approx. 0,075 mm

Colour of the foil: different colours, matt and gloss.

b) measured values of the samples:

The adhesive foil was tested in the colours black, white and red in each case matt and gloss, to consider a possible influence of the colours to the fire-behaviour.

Table 1: Measurements of the tested material:

		lowest value	average value	highest value
Thickness	mm	--	approx. 0,1	--
Weight per unit area	g/m <sup>2</sup>	--	approx. 105	--
Bulk density	kg/m <sup>3</sup>	--	--	--

**Special remark:** The foils were mounted on 0,88 mm thick steel sheet for the testing.



row-no.		Results of the Brandschachttest (part 1)			
		measurements test specimen			
		A	B	C	D
1	<u>No. of test specimen arrangement according to DIN 4102 part 15, table 1</u>	7	7	7	7
2	<u>Max. flame height above bottom edge</u>	70	60	70	70
	cm Time <sup>1)</sup> min : s	1:00	1:00	1:00	1:00
4	<u>Melt through / burn through</u> Time <sup>1)</sup> min : s	--	--	--	--
5	<u>Observations on the backside of the specimens</u> Flames/smouldering Time <sup>1)</sup> min : s	--	--	--	--
6	Discolouration Time <sup>1)</sup> min : s	--	--	--	--
7	<u>Burning droplets</u> Start <sup>1)</sup> min : s	--	--	--	--
8	<u>Extent</u> sporadic burning droplets	--	--	--	--
9	continually falling particles	--	--	--	--
10	<u>Falling particles which burns</u> Start <sup>1)</sup> min : s	--	--	--	--
11	sporadic falling parts	--	--	--	--
12	continually falling particles	--	--	--	--
13	Duration of the burning on the screen bottom (max.) min : s	--	--	--	--
14	<u>Interference of the burner flame by dripping /falling particles</u> Time <sup>1)</sup> min : s	--	--	--	--
15	<u>Early termination of the test</u> End of burning at the specimen <sup>1)</sup> min : s	--	--	--	--
16	Time of early cancellation of the test <sup>1)</sup> min : s	--	--	--	--

<sup>1)</sup> Time counting from the start of the test



row-no.		Results of the Brandschachttest (part 2)							
		measurements test specimen							
		A	B	C	C		D		
17	<u>Continuous burning after termination of the test</u>								
	Duration min : s	--	--	--					
18	Number of specimens	--	--	--					
19	Front side of the specimen	--	--	--					
20	Back side of the specimen	--	--	--					
21	Flame length cm	--	--	--					
<u>Smouldering after termination of the test</u>									
22	Duration min : s	--	--	0:12					
23	Number of specimens	--	--	2					
<u>Location</u>									
24	Lower half of the specimens	--	--	X					
25	Upper half of the specimens	--	--	--					
26	Front side of the specimen	--	--	X					
27	Back side of the specimen	--	--	--					
<u>Smoke density</u>									
28	≤ 400 % x min	23	14	31				21	
29	400 % x min	--	--	--				--	
30	Diagram in appendix no.	--	--	--				--	
<u>Residual length</u> <sup>2)</sup>		49	47	45	46	49	49	48	
31	Single values cm	49	42	48	49	48	49	47	
32	Average values cm	47	47	49				48	
33	Photo of the specimen on page	--	--	--				--	
<u>Smoke temperature</u>									
34	Maximum value of the averaged values °C	115	116	115				110	
35	Time <sup>1)</sup> min : s	8:00	10:00	10:00				10:00	
36	Diagram in appendix no.	--	--	--				--	
37	<u>Remarks:</u> Specimen A: Matt Film white Specimen B: Gloss Film white Specimen C: Matt Film black Specimen D: Gloss Film black								



row-no.		Results of the Brandschachttest (part 1)			
		measurements test specimen			
		E	F	--	--
1	<u>No. of test specimen arrangement according to DIN 4102 part 15, table 1</u>	7	7	--	--
2	<u>Max. flame height above bottom edge</u> cm	70	70	--	--
	Time <sup>1)</sup> min : s	1:00	1:00	--	--
4	<u>Melt through / burn through</u> Time <sup>1)</sup> min : s	--	--	--	--
5	<u>Observations on the backside of the specimens</u> Flames/smouldering Time <sup>1)</sup> min : s	--	--	--	--
	6 Discolouration Time <sup>1)</sup> min : s	--	--	--	--
7	<u>Burning droplets</u> Start <sup>1)</sup> min : s	--	--	--	--
	8 <u>Extent</u> sporadic burning droplets	--	--	--	--
9	continually falling particles	--	--	--	--
10	<u>Falling particles which burns</u> Start <sup>1)</sup> min : s	--	--	--	--
	11 sporadic falling parts	--	--	--	--
12	continually falling particles	--	--	--	--
13	Duration of the burning on the screen bottom (max.) min : s	--	--	--	--
14	<u>Interference of the burner flame by dripping /falling particles</u> Time <sup>1)</sup> min : s	--	--	--	--
	15	<u>Early termination of the test</u> End of burning at the specimen <sup>1)</sup> min : s	--	--	--
16		Time of early cancellation of the test <sup>1)</sup> min : s	--	--	--

<sup>1)</sup> Time counting from the start of the test



row-no.		Results of the Brandschachttest (part 2)							
		measurements test specimen							
		E	F	--	--				
17	<u>Continuous burning after termination of the test</u>								
	Duration min : s	--	--	--	--				
18	Number of specimens	--	--	--	--				
19	Front side of the specimen	--	--	--	--				
20	Back side of the specimen	--	--	--	--				
21	Flame length cm	--	--	--	--				
<u>Smouldering after termination of the test</u>									
22	Duration min : s	0:25	0:25	--	--				
23	Number of specimens	4	2	--	--				
<u>Location</u>									
24	Lower half of the specimens	x	x	--	--				
25	Upper half of the specimens	--	--	--	--				
26	Front side of the specimen	x	x	--	--				
27	Back side of the specimen	--	--	--	--				
<u>Smoke density</u>									
28	≤ 400 % x min	24	22	--	--				
29	400 % x min	--	--	--	--				
30	Diagram in appendix no.	--	1	--	--				
<u>Residual length</u> <sup>2)</sup>									
31	Single values cm	47	46	48	47	-	-	-	-
		48	48	47	47	-	-	-	-
32	Average values cm	47	47	--	--				
33	Photo of the specimen on page	--	7	--	--				
<u>Smoke temperature</u>									
34	Maximum value of the averaged values °C	113	116	--	--				
35	Time <sup>1)</sup> min : s	10:00	10:00	--	--				
36	Diagram in appendix no.	--	--	--	--				
37	<u>Remarks:</u> Specimen E: matt red Specimen F: gloss red								



Appearance of the specimen



Picture 1: Appearance of specimen F after the test



**Results of the testing (Normalentflammbarkeitsuntersuchungen) according to DIN 4102-01**

(Tests with flaming the edge)

Edge protection: --

Point of application of the flames: lower leading edge

Testing material: "AVERY® 500 EVENT FILM MATT", matt white

Specimen no.		1	2	3	4	5
(Times stated from start of test)						
Ignition	(s)	1	1	1	1	1
Flame passing the limit mark	(s)	--	--	--	--	--
Self extinguishment	(s)	15	15	15	15	15
Max. height of the flames	(cm)	1	1	1	1	1
End of after-burning	(s)	--	--	--	--	--
End of after-smouldering	(s)	--	--	--	--	--
Flames were extinguished after	(s)	--	--	--	--	--
Smoke development				very small		
Falling of burning particles / droplets time	(s)	--	--	--	--	--

Point of application of the flames: lower leading edge

Testing material: "AVERY® 500 EVENT FILM GLOSS", gloss white

Specimen no.		1	2	3	4	5
(Times stated from start of test)						
Ignition	(s)	1	1	1	1	1
Flame passing the limit mark	(s)	--	--	--	--	--
Self extinguishment	(s)	15	15	15	15	15
Max. height of the flames	(cm)	1	1	1	1	1
End of after-burning	(s)	--	--	--	--	--
End of after-smouldering	(s)	--	--	--	--	--
Flames were extinguished after	(s)	--	--	--	--	--
Smoke development				very small		
Falling of burning particles / droplets time	(s)	--	--	--	--	--



**Results of the testing (Normalentflammbarkeitsuntersuchungen) according to DIN 4102-01**

(Tests with flaming the edge)

Edge protection: --

Point of application of the flames: lower leading edge

Testing material: "AVERY® 500 EVENT FILM MATT", matt black

Specimen no.		1	2	3	4	5
(Times stated from start of test)						
Ignition	(s)	1	1	1	1	1
Flame passing the limit mark	(s)	--	--	--	--	--
Self extinguishment	(s)	15	15	15	15	15
Max. height of the flames	(cm)	1	1	1	1	1
End of after-burning	(s)	--	--	--	--	--
End of after-smouldering	(s)	--	--	--	--	--
Flames were extinguished after	(s)	--	--	--	--	--
Smoke development				very small		
Falling of burning particles / droplets time	(s)	--	--	--	--	--

Point of application of the flames: lower leading edge

Testing material: "AVERY® 500 EVENT FILM GLOSS", gloss black

Specimen no.		1	2	3	4	5
(Times stated from start of test)						
Ignition	(s)	1	1	1	1	1
Flame passing the limit mark	(s)	--	--	--	--	--
Self extinguishment	(s)	15	15	15	15	15
Max. height of the flames	(cm)	1	1	1	1	1
End of after-burning	(s)	--	--	--	--	--
End of after-smouldering	(s)	--	--	--	--	--
Flames were extinguished after	(s)	--	--	--	--	--
Smoke development				very small		
Falling of burning particles / droplets time	(s)	--	--	--	--	--



**Results of the testing (Normalentflammbarkeitsuntersuchungen) according to DIN 4102-01**

(Tests with flaming the edge)

Edge protection: --

Point of application of the flames: lower leading edge

Testing material: "AVERY® 500 EVENT FILM MATT", Matt Film red

Specimen no.		1	2	3	4	5
(Times stated from start of test)						
Ignition	(s)	1	1	1	1	1
Flame passing the limit mark	(s)	--	--	--	--	--
Self extinguishment	(s)	15	15	15	15	15
Max. height of the flames	(cm)	1	1	1	1	1
End of after-burning	(s)	--	--	--	--	--
End of after-smouldering	(s)	--	--	--	--	--
Flames were extinguished after	(s)	--	--	--	--	--
Smoke development				very small		
Falling of burning particles / droplets time	(s)	--	--	--	--	--

Point of application of the flames: lower leading edge

Testing material: "AVERY® 500 EVENT FILM GLOSS", Gloss Film red

Specimen no.		1	2	3	4	5
(Times stated from start of test)						
Ignition	(s)	1	1	1	1	1
Flame passing the limit mark	(s)	--	--	--	--	--
Self extinguishment	(s)	15	15	15	15	15
Max. height of the flames	(cm)	1	1	1	1	1
End of after-burning	(s)	--	--	--	--	--
End of after-smouldering	(s)	--	--	--	--	--
Flames were extinguished after	(s)	--	--	--	--	--
Smoke development				very small		
Falling of burning particles / droplets time	(s)	--	--	--	--	--



### Assessment

The adhesive foils described on page 2 named "AVERY® 500 EVENT FILM MATT" or "AVERY® 500 EVENT FILM GLOSS" fulfilled the requirements of building products according to Baustoffklasse B2. According to the results, the product as tested in the described arrangement also fulfil the requirements of building products according to Baustoffklasse B1. In consequence the product can be classified as Baustoffklasse B1 (schwerentflammbare Baustoffe) according to DIN 4102 part 1 (May 1998). This assessment is only valid, if the testing material is applied on steel substrate. The material may not be weathered in the outside.

The material is not producing burning droplets / particles.

### Special remark

The test certificate is valid till 19 May 2010. The period of validity can be extended on application.

Since the material is used as base material for the production of wall papers it is no building product according to §2 chapter 9 no. 1 MBO. An "allgemeines bauaufsichtliches Prüfzeugnis" of the test institute respectively an "allgemeine bauaufsichtliche Zulassung" of "Deutsches Institut für Bautechnik, Berlin" is not necessary.

This test report is not valid, if the tested material is used as building product according to the German building regulations.

### Marking

The above mentioned material has to be marked as following:

- „Only „schwerentflammbar“ (class DIN 4102-B1) on steel substrate“

The marking shall be done on the material, on an enclosed paper or on the packaging or, if this would be too difficult, on the delivery-note or an enclosure to the delivery-note.

This test certificate is solely valid in combination with the original test certificate issue in German language and dated of 20 May 2005. In case of doubt, the certificate issued in German language is valid.

Erwitte, 20 May 2005

On behalf

*O. Rickert*

Dipl.-Ing. Olaf Rickert  
(Person in charge)





# Analysis

## "Brandschacht" test

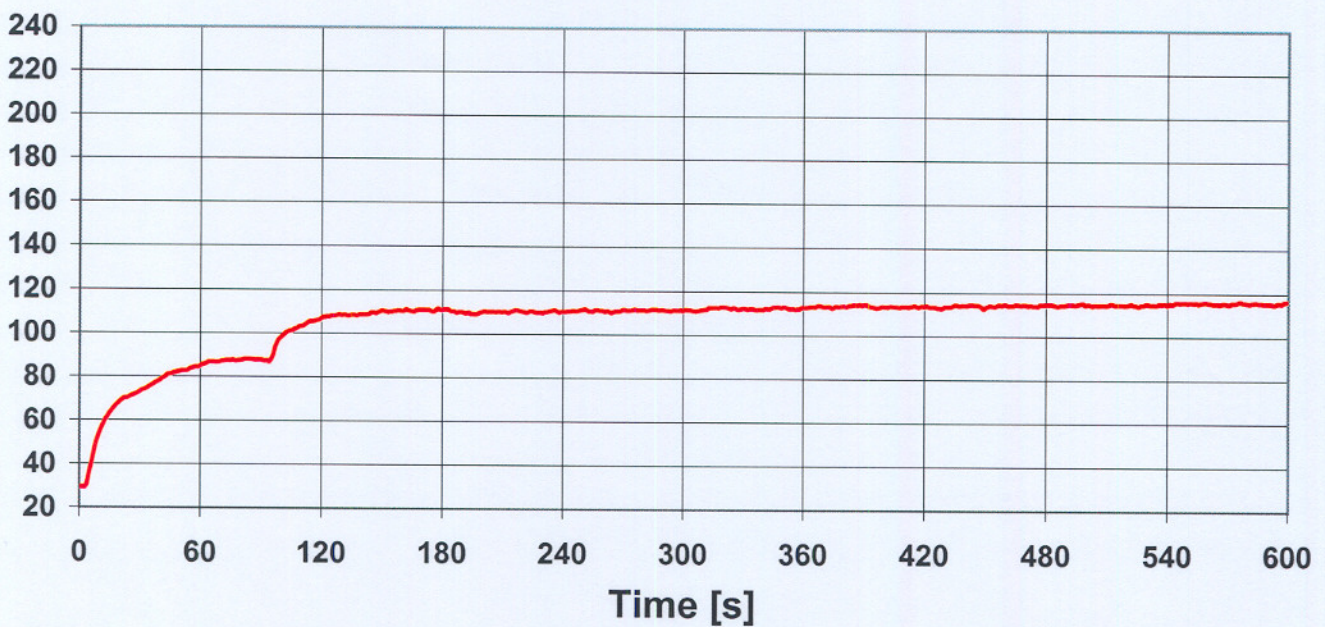
Max. flue gas temperature: 116 °C  
bei [min : s] 10 : 00

Smoke release [% x min]: 22

Enclosure 1 of test certificate  
no. 230004952 dated 20.05.2005

T [°C]

average flue gas temperature



SD [%]

Smoke density

