

PRÜFZEUGNIS (Test Certificate)

PZ 900 6806 026-459-var/E *)

Auftraggeber: (Client)	Akzo Nobel Hilden GmbH Düsseldorfer Straße 96-100 40721 Hilden
Betreff: Subject	Reaction to fire testing according to DIN 4102-1, "Baustoffklasse B1"
Prüfmaterial: (Test material)	Multi-layer coating system with the primer filler "Wigranit® 2K-PUR-Isolierfüller IF" or "QUANTUM® COLOR IP350" and the base coat "Wigranit TOP Color WTC Farbton" or "QUANTUM COLOR T4850-20 Farbton", optionally with an additional 2K-PUR clear/top coat "Crystal-lit® CL-XX" or "QUANTUM® T260-XX" or "QUANTUM® T263-90", in several gloss levels, applied to flame-retardant (DIN 4102-B1) chip-board – also veneered – as a flame-retardant building material (Baustoffklasse DIN 4102-B1).
Datum: (Date)	4 th August 2026
Gültigkeitsdauer: (Period of Validity)	until 31 st August 2031
Hinweis: (Notes)	The tested building-material not being used as a construction product according to German building regulations MBO § 2, Abs. 10, no "allgemeines bauaufsichtliches Prüfzeugnis" is required. This test certificate is not valid, if the tested product is utilised as construction product according to German building regulations (MBO § 17, Abs. 1). 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 as a basis for issuing these approvals: - for regulated construction products for the prescribed certificates of conformity - for non-regulated construction products for the required certificates of usability. The notes in annex D of DIN 4102-1:1998 with reference to third-party-control are to be considered in particular.

*) This test certificate is the English version of our test certificate PZ 900 6806 026-459 dated 4th August 2026. In cases of doubt, the German version applies.

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1. Material description

The multi-layer coating system with the primer filler "Wigranit® 2K-PUR-Isolierfüller IF" or "QUANTUM® COLOR IP350" and the base coat "Wigranit TOP Color WTC Farbton" or "QUANTUM COLOR T4850-20 Farbton", optionally with an additional 2K-PUR clear/top coat "Crystallit® CL-XX" or "QUANTUM® T260-XX" or "QUANTUM® T263-90", is applied to flame-retardant (DIN 4102-B1) chipboard – also veneered.

Mixing ratio (by weight):	Primer filler : hardener 10 : 1 Base coat : hardener 5 : 1 (2-layer system, samples A–C) Base coat : hardener 10 : 1 (3-layer system, samples D–G) Top coat : hardener 10 : 1 (3-layer system, samples D–G)	
Application rate (wet):	Primer filler 1 × 200 g/m ² Base coat 1 × 120 g/m ² Top coat 1 × 120 g/m ² (3-layer system, samples D–G)	
Type of application:	Compressed air spraying	
Field of application:	Interior fitting	
Trade name:	Primer filler: "Isolierfüller IF" or "QUANTUM® COLOR IP350" Base coat: "Wigranit TOP Color WTC Farbton" "QUANTUM COLOR T4850-20 Farbton" Hardener: "PUR5085" or "HPU6300" Top coat: "Crystallit® CL-XX" (CL-8, CL-9, CL-0, CL-H, CL-TM) "QUANTUM® T260-XX" (-05, -10, -15 and -30) as well as "QUANTUM® T263-90" Hardener: "PUR5085" or "HPU6300"	
Receipt of samples:	20 th August 2025	(Receipt-No. 25/252)
Quantity:	2-layer system (samples A-C) 3 fire shaft specimen sets in red, black and white (1000 × 190 × 12 mm) (5 boards each) 3-layer system (samples D-G) 4 fire shaft specimen sets, coated white, in strongly "glossy" and "matt" with top coat layer (1000 × 190 × 12 mm) (5 boards each)	

2. Sample preparation

5 specimens of flame-retardant (DIN 4102-B1) chipboard, 1000 mm × 190 mm × 12 mm, were coated on one side with the coating system at the manufacturing plant in accordance with the manufacturer's instructions. The substrate boards were provided by the MPA.

For the B2 tests, 190 mm × 90 mm specimens were cut from the coated chipboard specimens.

3. Test procedure

The tests were performed according to DIN 4102-1:1998 and DIN 4102-16:2021 using the fire shaft ("Brandschacht") according to DIN 4102-15:1990 and the "Zulassungsgrundsätze für den Nachweis der Schwerentflammbarkeit von Baustoffen" (version August 1994), issued by Deutsches Institut für Bautechnik, Berlin.

4. Test results

4.1 Tests according to DIN 4102-1:1998 clause 6.2, Baustoffklasse B2

Sample A

Test no.		1	2	3	4	5
Colour (sample A)		"black"				
Flame application		edge				
Ignition	s	0	0	0	0	0
Maximum flame height						
within 20 s	cm	4	4	4	4	4
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	16	15	15	15
Flames extinguished by inter- vention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Test no.		6	7	8	9	10
Colour		"black"				
Flame application		face				
Ignition	s	3	4	3	3	3
Maximum flame height						
within 20 s	cm	4	4	4	4	4
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	15	15
Flames extinguished by inter- vention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Sample B

Test no.		11	12	13	14	15
Colour		"red"				
Flame application		edge				
Ignition	s	0	0	0	0	0
Maximum flame height						
within 20 s	cm	4	4	4	4	4
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	16	15
Flames extinguished by in- tervention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Test no.		16	17	18	19	20
Colour		"red"				
Flame application		face				
Ignition	s	3	3	3	4	3
Maximum flame height						
within 20 s	cm	5	5	5	5	5
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	15	15
Flames extinguished by in- tervention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Sample C

Test no.		21	22	23	24	25
Colour		"white"				
Flame application		edge				
Ignition	s	0	0	0	0	0
Maximum flame height						
within 20 s	cm	4	4	4	4	4
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	15	15
Flames extinguished by in- tervention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Test no.		26	27	28	29	30
Colour		"white"				
Flame application		face				
Ignition	s	3	3	3	3	3
Maximum flame height						
within 20 s	cm	4	4	4	4	4
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	15	15
Flames extinguished by in- tervention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Sample D

Test no.		31	32	33	34	35
Colour		"white glossy"				
Flame application		edge				
Ignition	s	0	0	0	0	0
Maximum flame height						
within 20 s	cm	5	4	5	5	5
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	16	15	16
Flames extinguished by inter- vention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Test no.		36	37	38	39	40
Colour		"white glossy"				
Flame application		surface				
Ignition	s	3	4	3	3	3
Maximum flame height						
within 20 s	cm	5	5	5	6	5
reached after	s	15	15	15	13	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	15	15
Flames extinguished by inter- vention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Sample G

Test no.		41	42	43	44	45
Colour		"white matt"				
Flame application		edge				
Ignition	s	0	0	0	0	0
Maximum flame height						
within 20 s	cm	4	5	4	4	5
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	16	15	15	16
Flames extinguished by inter- vention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

Test no.		46	47	48	49	50
Colour		"white matt"				
Flame application		surface				
Ignition	s	4	4	3	4	3
Maximum flame height						
within 20 s	cm	4	5	5	4	5
reached after	s	15	15	15	15	15
Measurement mark reached	s	-	-	-	-	-
Flames extinguished after	s	15	15	15	15	15
Flames extinguished by inter- vention after	s	-	-	-	-	-
End of glowing	s	-	-	-	-	-
Burning droplets	s	-	-	-	-	-
Filter paper ignited	s	-	-	-	-	-
Smoke development		low				

4.2. Test according to DIN 4102-1:1998, clause 6.1 – “Baustoffklasse B1”

Fire shaft test A:	on black material	Fire shaft test D:	on white glossy material
Fire shaft test B:	on red material	Fire shaft test E:	on white glossy material
Fire shaft test C:	on white material	Fire shaft test F:	on white glossy material
		Fire shaft test G:	on white matt material

The fire shaft tests were carried out on free-hanging specimens without any substrates.

4.2.1 Results of the fire shaft tests (“Brandschacht”) (part 1) - samples A-C

Line-No		Test		
		A	B	C
1	<u>No. of specimen arrangement according to DIN 4102-15:1990, table 1</u>	7	7	7
2	<u>Max. flame height</u> above the lower edge of the sample	90	90	80
3	Time of appearance 1)	1:35	2:00	1:25
4	<u>Melting through/burning through</u> Time of appearance 1)	-	-	-
5	<u>Observations on reverse face of specimen</u> flames/glowing Time of appearance 1)	-	-	-
6	discoloration Time of appearance 1)	-	-	-
7	<u>Burning droplets</u> Beginning 1)	-	-	-
8	Continued burning on sieve tray	-	-	-
9	Occasional dripping specimen material	-	-	-
10	Continuous dripping specimen material	-	-	-
11	<u>Burning falling specimen parts</u> Beginning 1)	-	-	-
12	Extent: Occasional falling specimen parts	-	-	-
13	Continuous falling specimen parts	-	-	-
14	Duration of continued burning on the sieve tray (max.)	-	-	-
15	<u>Impairment of the burner flame by drip- ping/falling material</u> Time of appearance 1)	-	-	-
16	<u>Premature end of experiment</u> End of burning on specimens 1)	-	-	-
	Time of test termination, if applicable	-	-	-

1) Times measured from the start of the test.

4.2.2 Results of the fire shaft tests ("Brandschacht") (part 2) - samples A-C

Line-No		Test		
		A	B	C
	<u>Afterburning after the end of the test</u>			
17	Duration min/s	-	-	-
18	Number of specimens			
19	On front face of the specimen			
20	On reverse face of the specimen			
21	Flame length cm	-	-	-
	<u>Afterglow after end of test</u>			
22	Duration min/s	-	-	-
23	Number of specimens			
	Location of occurrence:			
24	lower half of specimen			
25	upper half of specimen			
26	On front face of the specimen			
27	On reverse face of the specimen			
	<u>Smoke density</u>			
28	≤ 400 % x min	7	7	6
29	≥ 400 % x min			
	(very heavy smoke development)	-	-	-
30	Diagram in annex no.	1	2	3
	<u>Residual lengths</u>			
31	Individual values cm	21 / 24 25 / 20	20 / 21 20 / 19	24 / 23 25 / 23
32	Mean values of specimens cm	23 *)	20 *)	24 *)
33	Photo of specimen in annex no.	8	9	10
	<u>Flue gas temperature</u>			
34	Maximum of mean value °C	137	144	144
35	Time of appearance min/s	4:25	4:18	4:37
36	Diagram in annex no.	1	2	3
37	*Residual length of carrier boards was 17 cm			

According to DIN 4102-16:2021, clause 5.2, the scope of testing for the colour variants could be reduced.

4.2.3 Results of the fire shaft tests ("Brandschacht") (part 1) - samples D-G

Line-No		Test			
		D	E	F	G
1	No. of specimen arrangement according to DIN 4102-15, table 1	7	7	7	7
2	Max. flame height above the lower edge of the sample cm	>100	100	100	>100
3	Time of appearance 1) min/s	1:50	2:45	2:40	2:05
4	Melting through/burning through Time of appearance 1) min/s	-	-	-	-
5	Observations on reverse face of specimen flames/glowing Time of appearance 1) min/s	-	-	-	-
6	discoloration Time of appearance 1) min/s	-	-	-	-
7	Burning droplets Beginning 1) min/s	-	-	-	-
	Continued burning on sieve tray s				
8	Occasional dripping specimen material	-	-	-	-
9	Continuous dripping specimen material	-	-	-	-
10	Burning falling specimen parts Beginning 1) min/s	-	-	-	-
	Extent:				
11	Occasional falling specimen parts	-	-	-	-
12	Continuous falling specimen parts	-	-	-	-
13	Duration of continued burning on the sieve tray (max.) min/s	-	-	-	-
14	Impairment of the burner flame by dripping/falling material Time of appearance 1) min/s	-	-	-	-
	Premature end of experiment				
15	End of burning on specimens 1) min/s	-	-	-	-
16	Time of test termination, if applicable min/s	-	-	-	-

1) Times measured from the start of the test.

4.2.4 Results of the fire shaft tests ("Brandschacht") (part 2) - samples D-G

Line-No		Test			
		D	E	F	G
	<u>Afterburning after the end of the test</u>				
17	Duration min/s	-	-	-	-
18	Number of specimens				
19	On front face of the specimen				
20	On reverse face of the specimen				
21	Flame length cm	-	-	-	-
	<u>Afterglow after end of test</u>				
22	Duration min/s	-	-	-	-
23	Number of specimens				
24	Location of occurrence: lower half of specimen				
25	upper half of specimen				
26	On front face of the specimen				
27	On reverse face of the specimen				
	<u>Smoke density</u>				
28	≤ 400 % x min	8	11	15	8
29	≥ 400 % x min (very heavy smoke development)	-	-	-	-
30	Diagram in annex no.	4	5	6	7
	<u>Residual lengths</u>				
31	Individual values cm	20 / 20 17 / 18	20 / 18 20 / 20	21 / 18 20 / 19	19 / 20 20 / 19
32	Mean values of specimens cm	19 *)	20 *)	20 *)	20 *)
33	Photo of specimen in annex no.	11	12	13	14
	<u>Flue gas temperature</u>				
34	Maximum of mean value °C	158	150	153	157
35	Time of appearance min/s	2:23	3:07	3:06	2:39
36	Diagram in annex no.	4	5	6	7
37	*Residual length of carrier boards was 17 cm				

5. Classification

All samples passed the fire shaft test according to DIN 4102-1:1998, clause 6.1.2.2 and the test according to DIN 4102-1:1998, clause 6.2 for Baustoffklasse B2.

Therefore, the product described in section 1 fulfils the requirements for flame-retardant building materials of Baustoffklasse B1 according to DIN 4102-1:1998.

No specimen parts fell off burning or glowing during the test according to DIN 4102-1:1998, clause 6.2.5, and DIN 4102-16:2021.

According to DIN 4102-16:2021, clause 10.3, the building material is considered not to produce burning droplets.

6. Notes

- 6.1 The containers of the coating system must be labelled according to DIN 4102-1:1998, clause 7 with the following marking:

“DIN 4102 – B1,

***aufgebracht auf schwerentflammbaren (DIN 4102-B1) Holzspanplatten –
auch furniert –”***

- 6.2 The assessment in section 5 applies only to the coating system described in section 1 and tested as described in section 3, applied to “schwerentflammbar” (DIN 4102-B1) chipboard – also veneered.

When used in combination with other building materials, in particular other substrates, its fire behaviour may be adversely affected to such an extent that the assessment in section 5 is no longer valid.

The reaction-to-fire in combination with other building materials/substrates must be demonstrated separately.

- 6.3 For external applications, it must be demonstrated in accordance with DIN 4102-16:2021, clause 7.2 that the requirements for building materials of Baustoffklasse B1 (“schwerentflammbar”) are also fulfilled after 2 and 5 years of outdoor weathering. This verification has not (yet) been provided.

- 6.4 The validity of the assessment in section 5 of this test certificate ends on 31st August 2031.

The period of validity may be extended upon application.

Verification testing is necessary for this purpose.

- 6.5 This test certificate does not replace an “allgemeines bauaufsichtliches Prüfzeugnis (abP)” or an “allgemeine bauaufsichtliche Zulassung (abZ)” that may be required.

Abteilung Brandschutz
Referat Brandverhalten von Baustoffen



The engineer in charge

Dr. Sebastian B. Wachsmann

Dept. head of testing institute

Dipl.-Ing. (FH) Frank Waibel

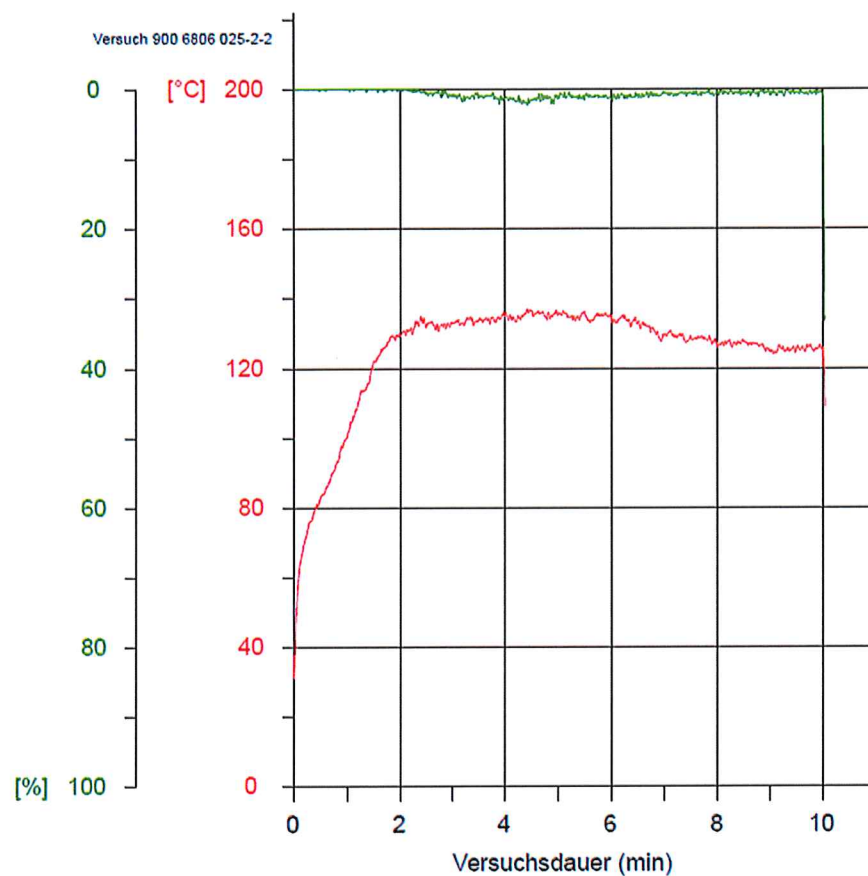


Abb. 1 Verlauf des Brandschachtversuchs A

max. Rauchgastemp.	137 °C
erreicht nach	4:25 min:sec
max. Rauchdichte	2 %
Integralwert	7 %*min

Figure 1: Results of fire shaft test A ("Brandschachtversuch"),
(smoke density, flue gas temperature)

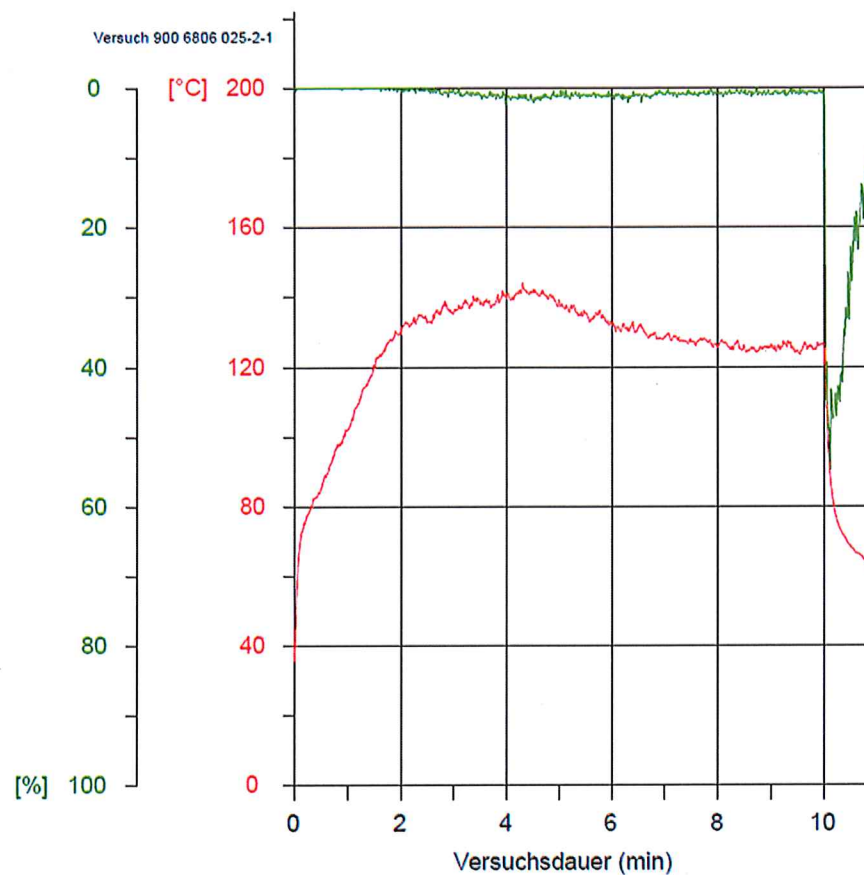


Abb. 2 Verlauf des Brandschachtversuchs B

max. Rauchgastemp.	144 °C
erreicht nach	4:18 min:sec
max. Rauchdichte	2 %
Integralwert	7 %*min

Figure 2: Results of fire shaft test B ("Brandschachtversuch"),
(smoke density, flue gas temperature)

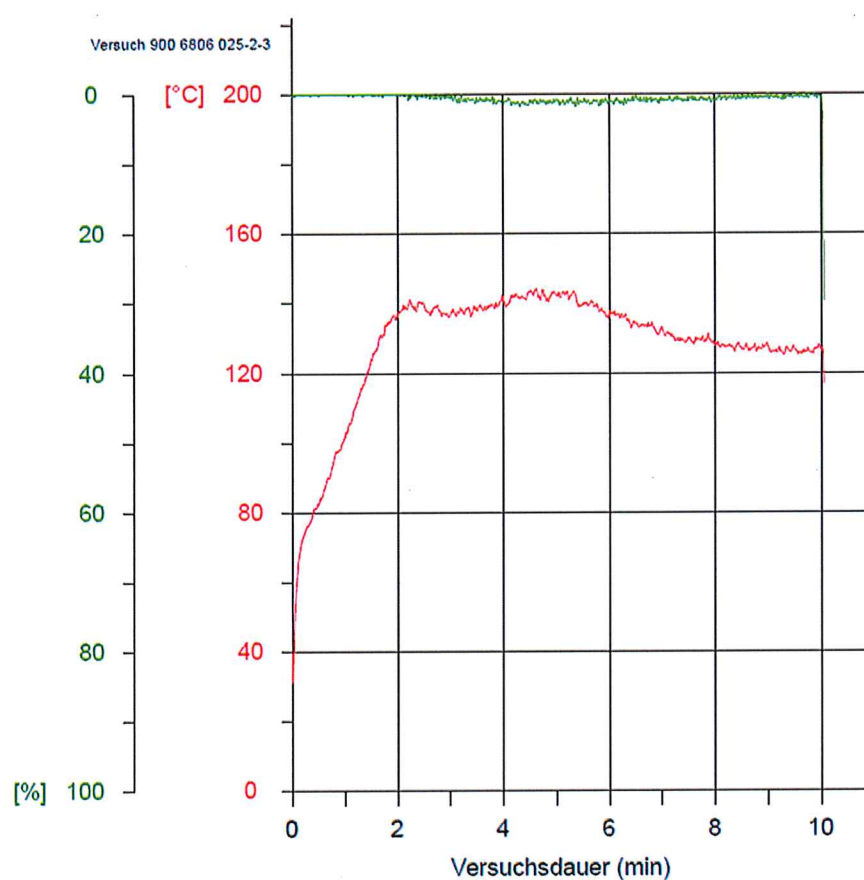


Abb. 3 Verlauf des Brandschachtversuchs C

max. Rauchgastemp.	144 °C
erreicht nach	4:37 min:sec
max. Rauchdichte	2 %
Integralwert	6 %*min

Figure 3: Results of fire shaft test C ("Brandschachtversuch"),
(smoke density, flue gas temperature)

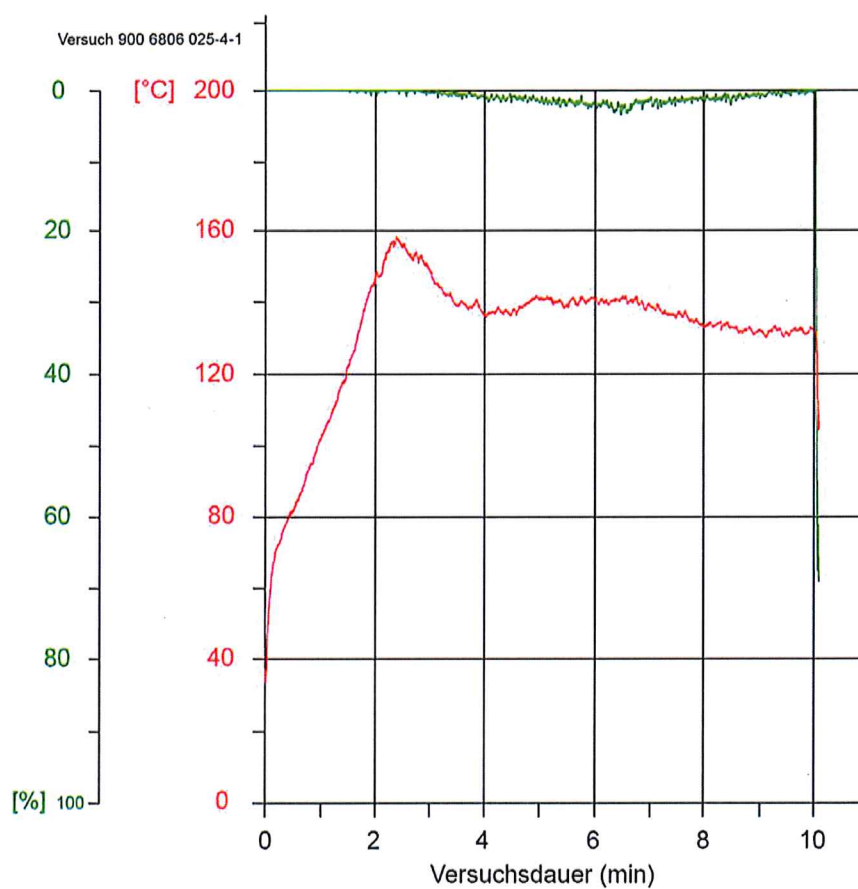


Abb. 4 Verlauf des Brandschachtversuchs D

max. Rauchgastemp.	158 °C
erreicht nach	2:23 min:sec
max. Rauchdichte	3 %
Integralwert	8 %*min

Figure 4: Results of fire shaft test D ("Brandschachtversuch"),
(smoke density, flue gas temperature)

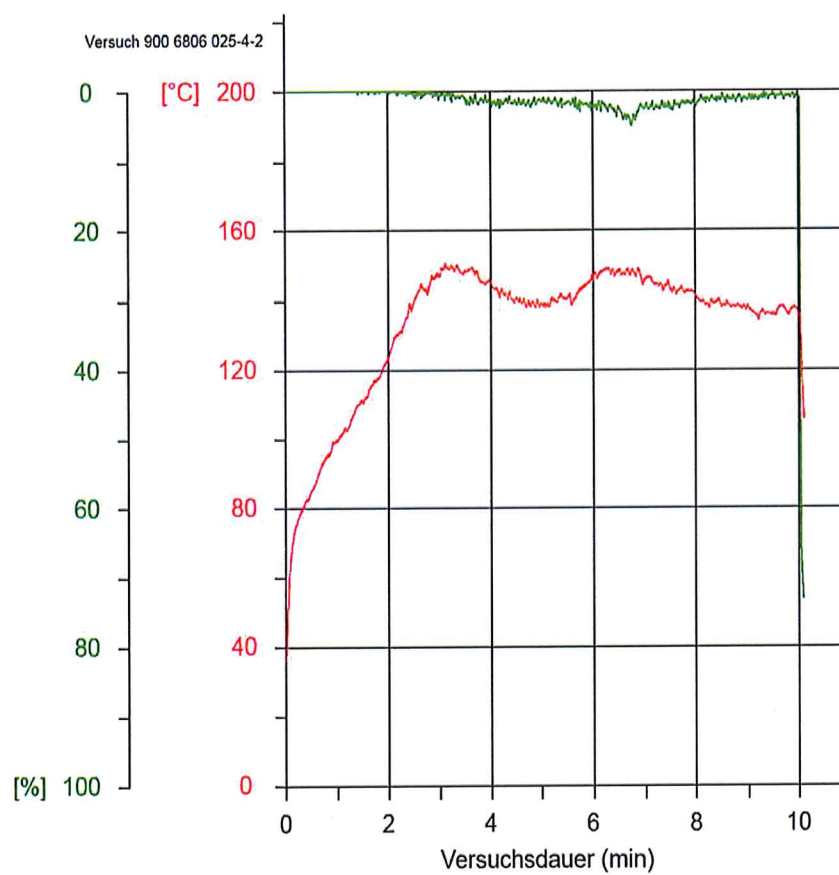


Abb. 5 Verlauf des Brandschachtversuchs E

max. Rauchgastemp.	150 °C
erreicht nach	3:07 min:sec
max. Rauchdichte	5 %
Integralwert	11 %*min

Figure 5: Results of fire shaft test E ("Brandschachtversuch"),
(smoke density, flue gas temperature)

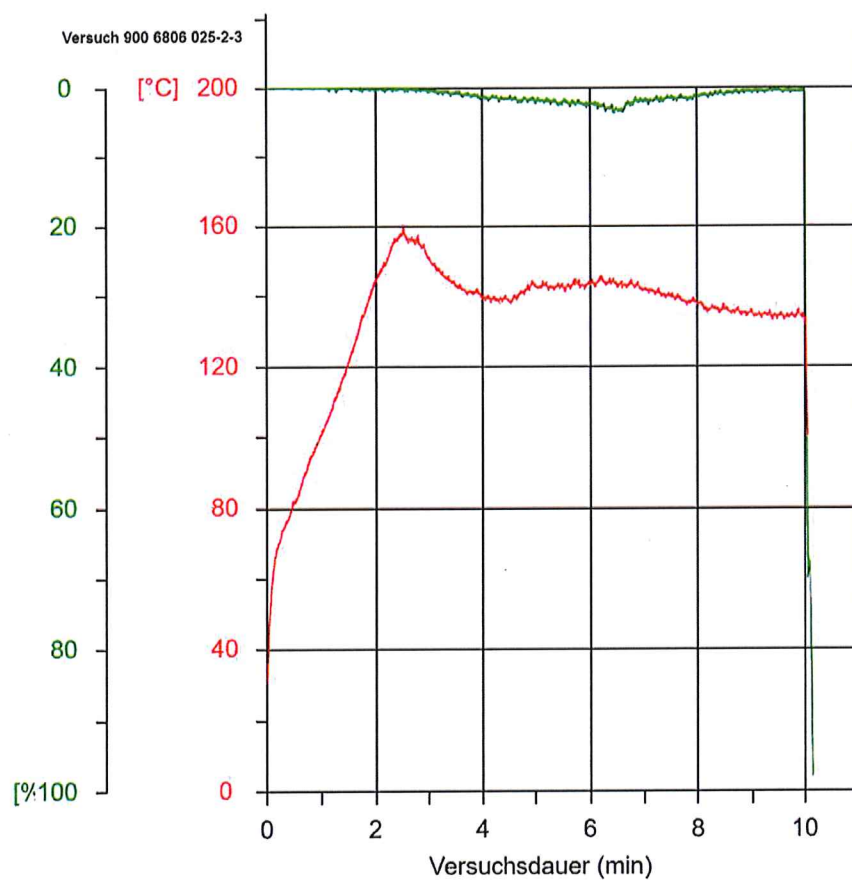


Abb. 6 Verlauf des Brandschachtversuchs F

max. Rauchgastemp.	158 °C
erreicht nach	2:23 min:sec
max. Rauchdichte	3 %
Integralwert	8 %*min

Figure 6: Results of fire shaft test F ("Brandschachtversuch"),
(smoke density, flue gas temperature)

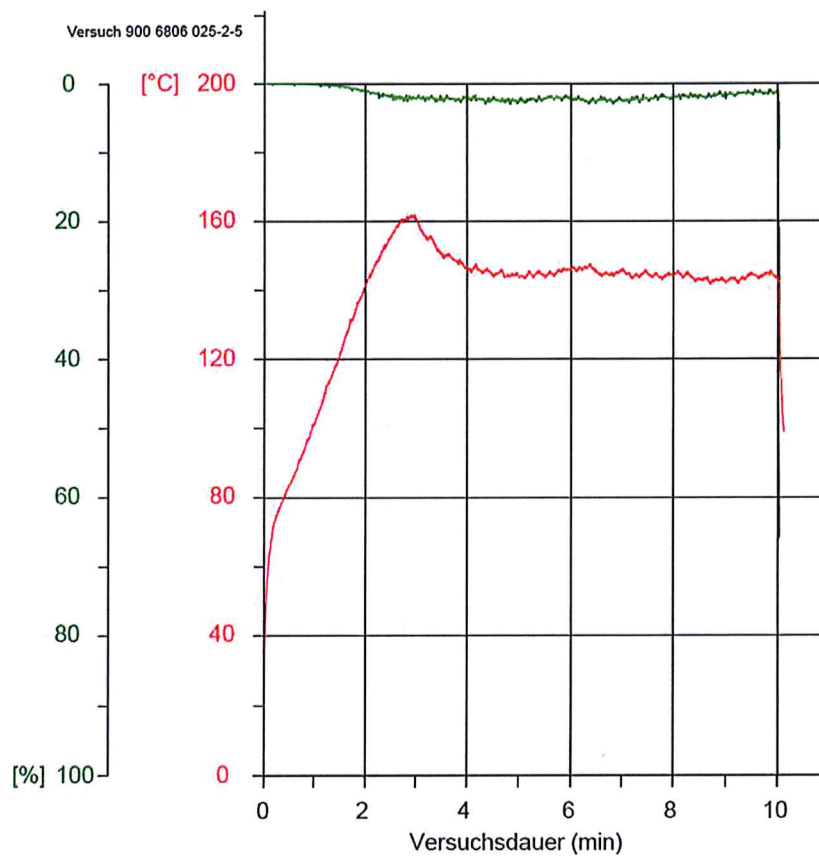


Abb. 7 Verlauf des Brandschachtversuchs G

max. Rauchgastemp.	161 °C
erreicht nach	2:12 min:sec
max. Rauchdichte	3 %
Integralwert	7 %*min

Figure 7: Results of fire shaft test G ("Brandschachtversuch"),
(smoke density, flue gas temperature)



Fig. 8: Picture of the sample after the Brandschacht test A.

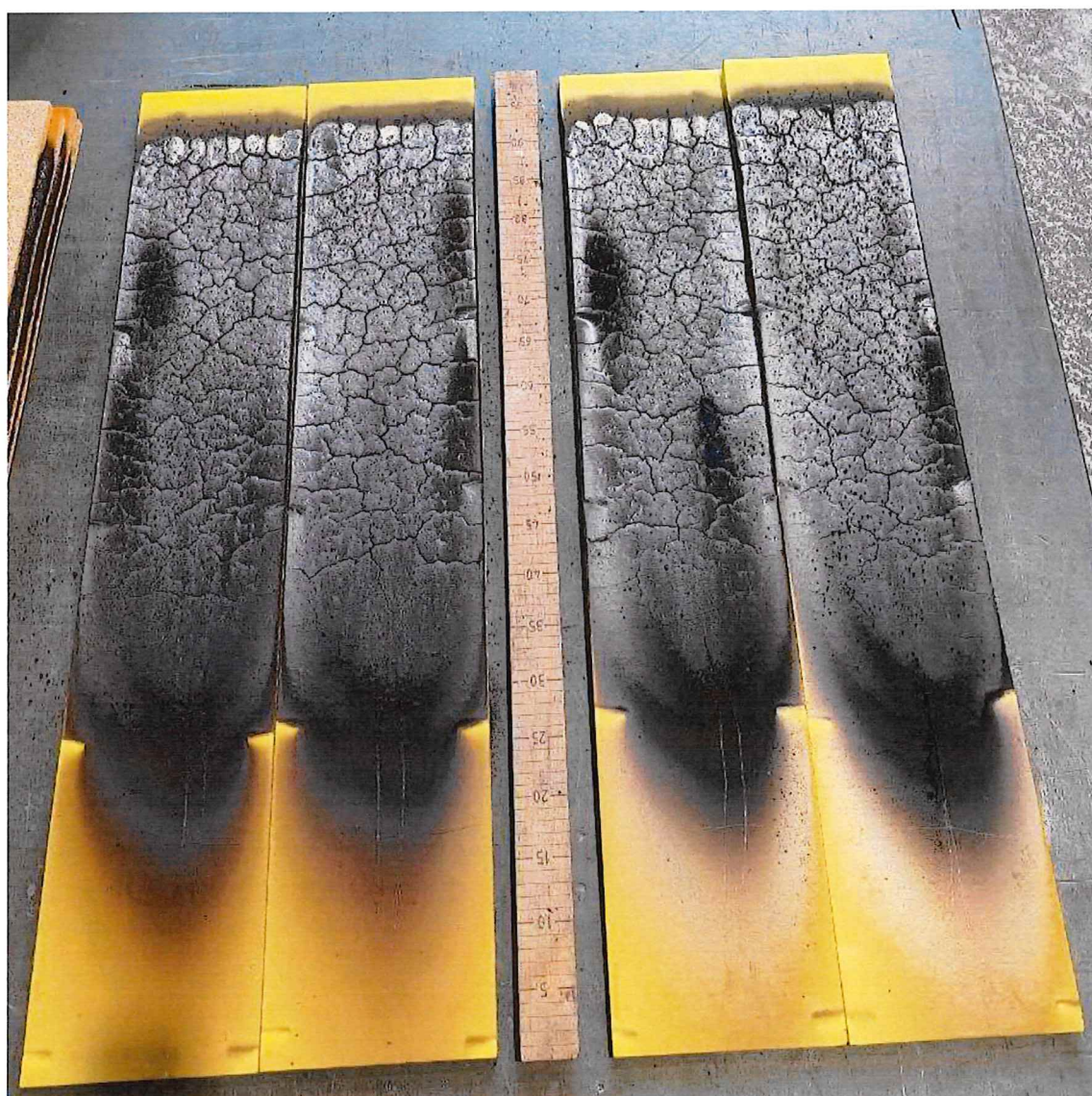


Fig. 9: Picture of the sample after the Brandschacht test B.



Fig. 10: Picture of the sample after the Brinell test C.

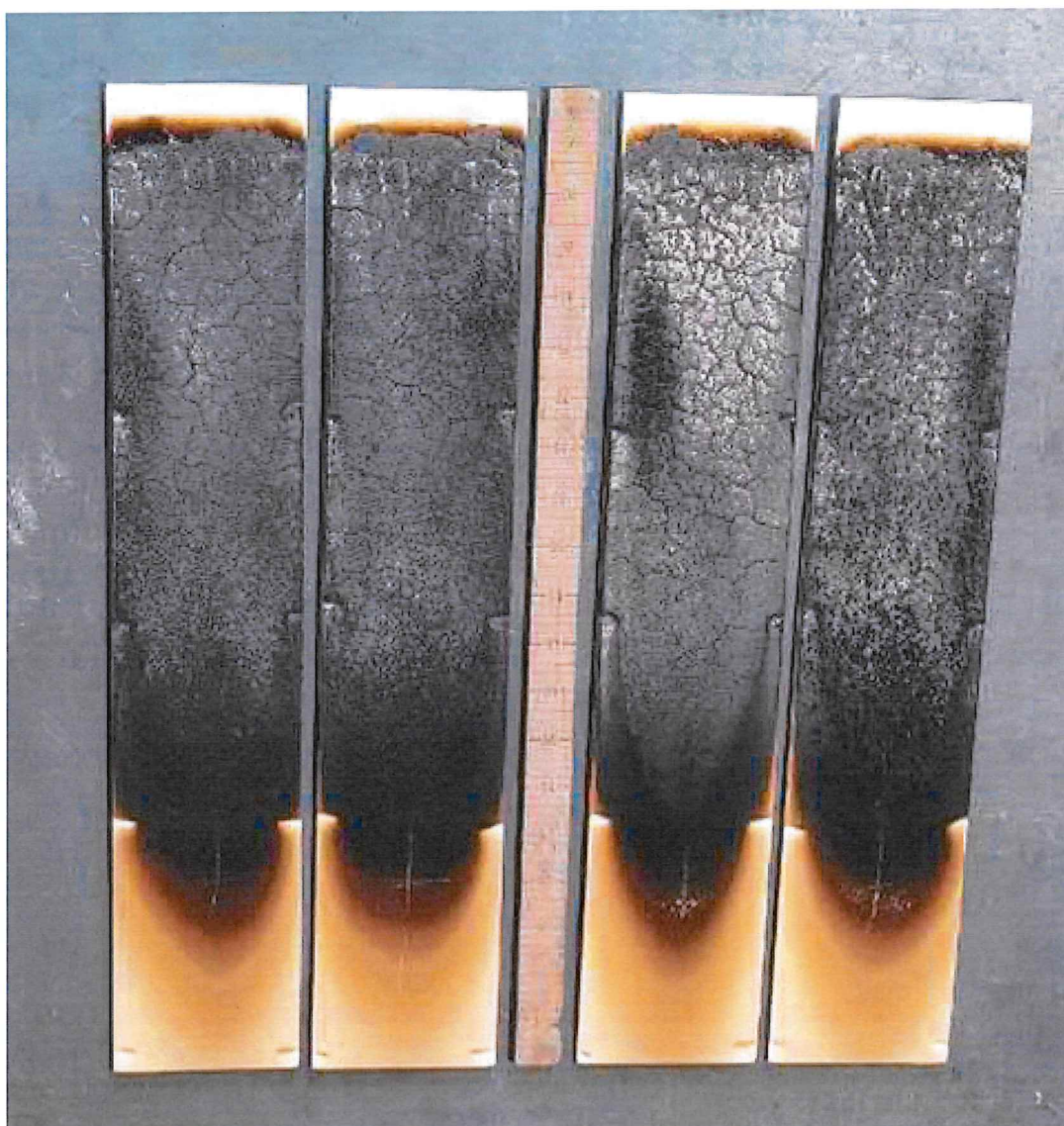


Fig. 11: Picture of the sample after the Brandschacht test D.

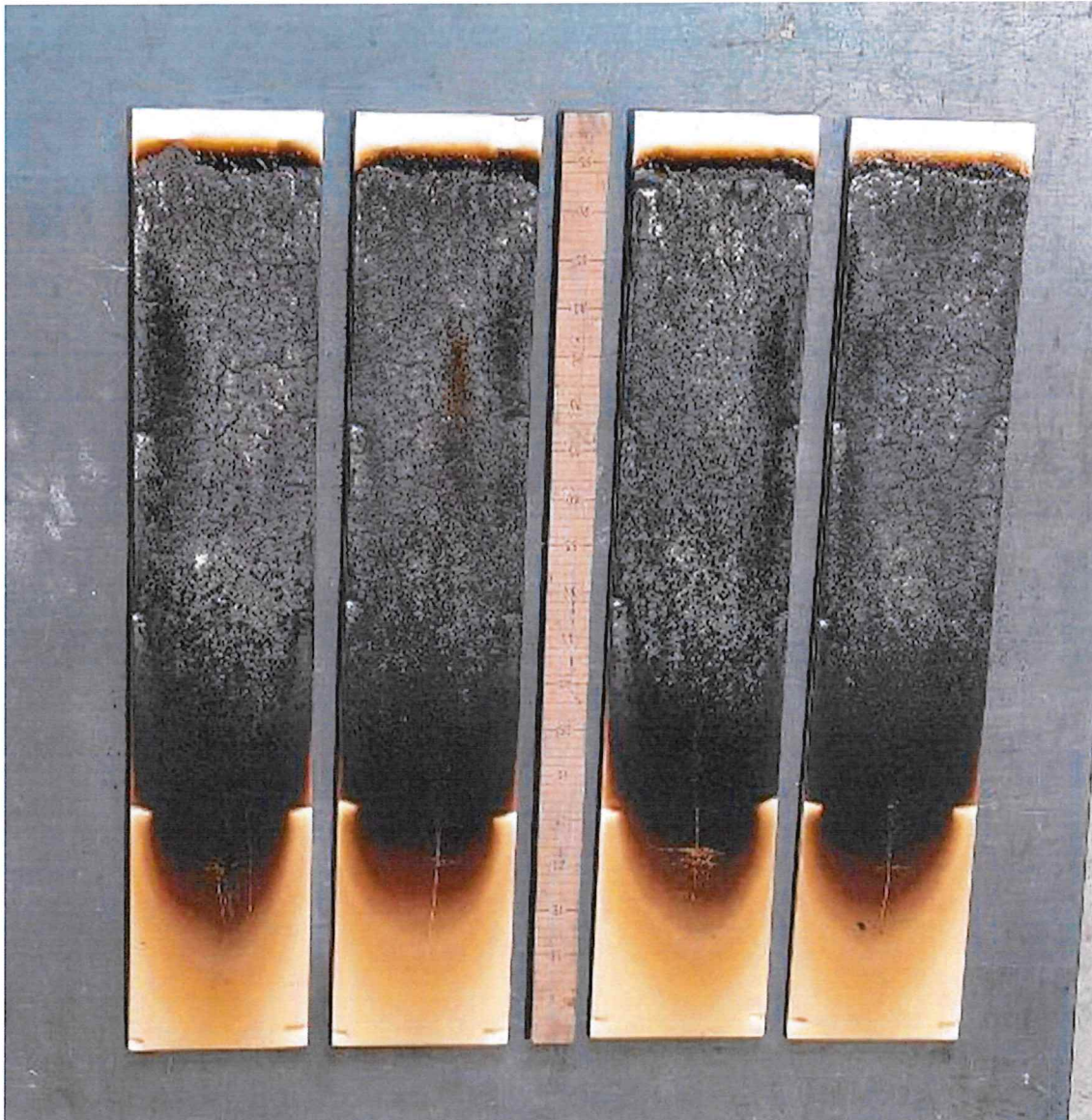


Fig. 12: Picture of the sample after the Brandschacht test E.

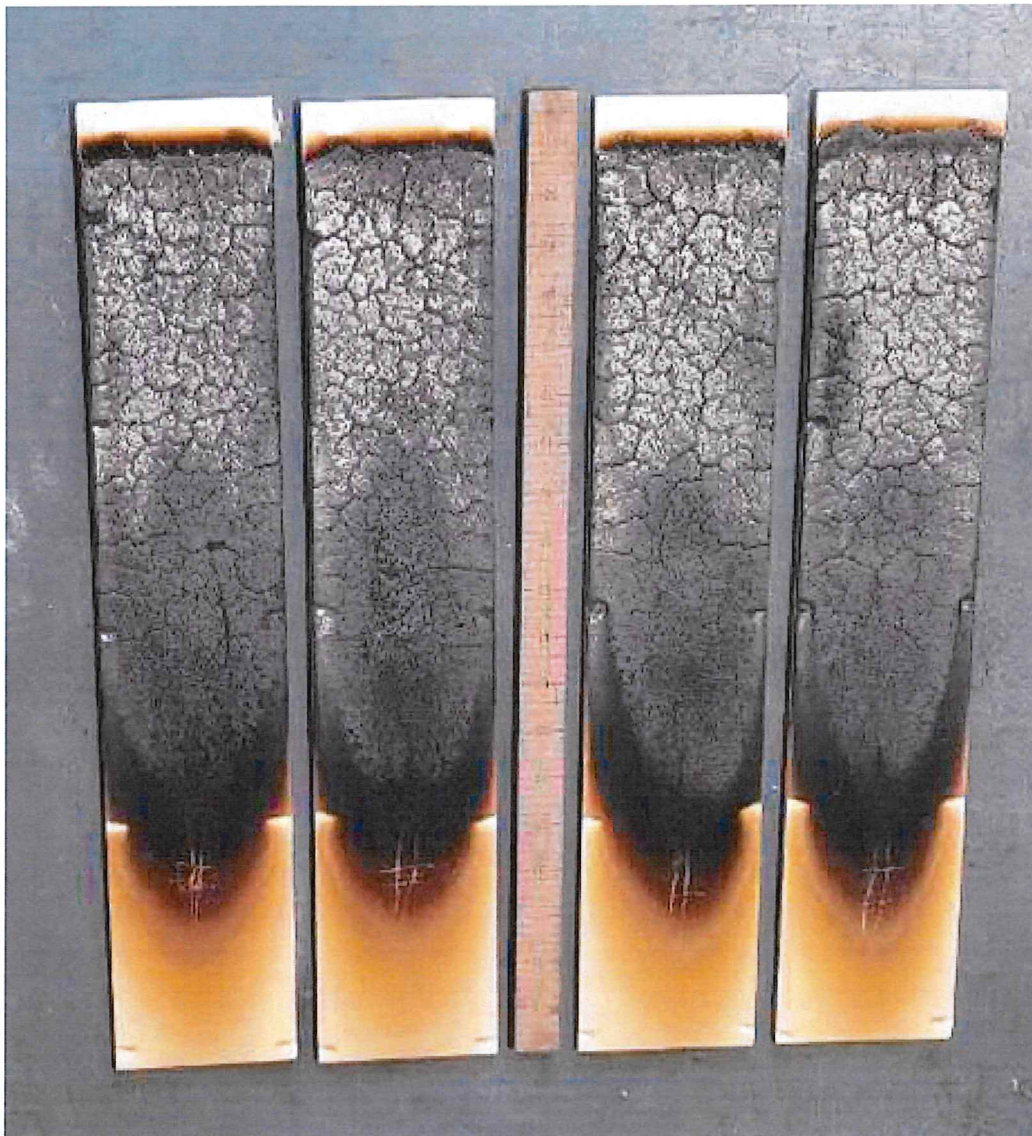


Fig. 13: Picture of the sample after the Brandschacht test F.

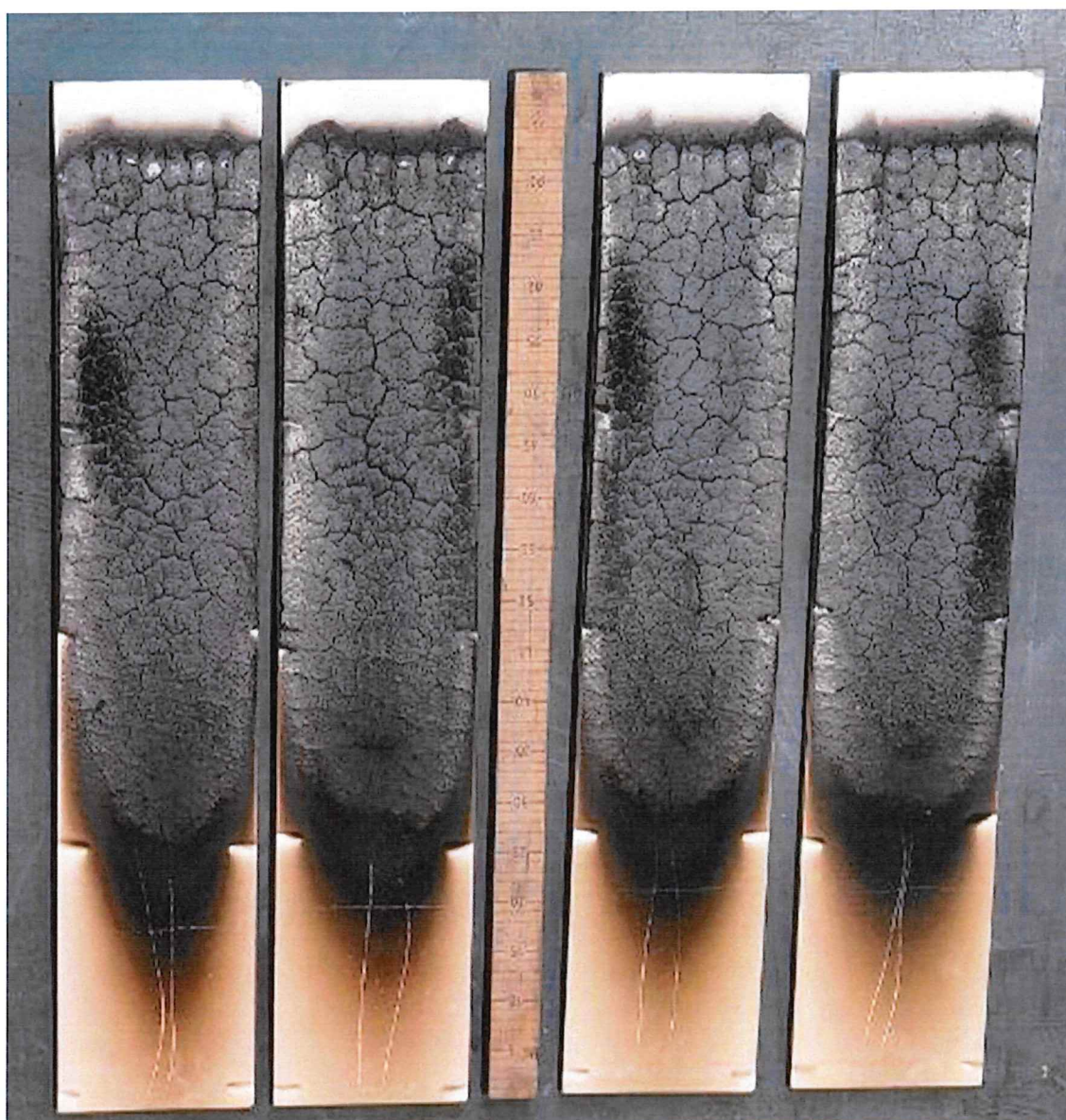


Fig. 14: Picture of the sample after the Brandschacht test G.

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