



VERNICI E COLORANTI PER LEGNO

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REACTION TO FIRE TESTING

Acc. to DIN 4102 B1

For the product

VERNICE IGNIFUGA OCV869RF

Fire-retardant Acrylic Transparent Varnish



PRÜFZEUGNIS (Test Certificate)

903 1169 000/PZ-1/E *)

Auftraggeber:
(Client) Kemichal S.r.l.
Via dell'Artigianato 2
35010 Trebaseleghe (PD)
ITALY

Betreff:
Subject Reaction to fire testing according to DIN 4102, Baustoffklasse B1

Prüfmaterial:
(Test Material) Multilayer varnish system „OCV869RF“ on schwerentflammbar
(DIN 4102-B1) particle board - also veneered - as a
schwerentflammbar building material (Baustoffklasse DIN 4102-B1)

Datum:
(Date) 12th May 2016

Gültigkeitsdauer:
(Period of Validity) Until 31th May 2021

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. 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 (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.

*) *This test certificate is the English version of our test certificate 903 1169 000/PZ-1 dated 12th May 2016. In cases of doubt, the German version is valid.*



Dieses Prüfzeugnis umfasst 6 Textseiten und 8 Beilagen. Textseiten und Beilagen sind mit unserem Dienstsiegel versehen. Die Vervielfältigung und Veröffentlichung des Prüfzeugnisses, sowohl in vollem als auch in gekürztem Wortlaut sowie die Verwendung zur Werbung ist nur mit schriftlicher Genehmigung der MPA Universität Stuttgart zulässig. Das Prüfzeugnis wird unbeschadet der Rechte Dritter, insbesondere privater Schutzrechte, erteilt. Gerichtsstand und Erfüllungsort ist Stuttgart.

1. Material description

Transparent multilayer varnish system „OCV869RF“ on the basis of acrylic with different degrees of gloss applied on schwerentflammbar (DIN 4102-B1) particle board - also veneered -.

The hardener “C340S” must be used for the varnish.

Application rate (wet): 3 x 150 g/m²

Mixing ratio (by weight): varnish : hardener = 5 : 1

Field of application: Interior fittings

Trade name: „OCV 869RF“

Receipt of samples: 21st January 2016 (receipt-No. 16/16) and
and 12th April 2016 (receipt-No. 16/111)

Quantity: varnished particle boards, 1000 mm x 190 mm:

a) 12 x „G10“, degree of gloss: matt

b) 12 x „G50“, degree of gloss: glossy

2. Sample preparation

Test specimen made of schwerentflammbar (DIN 4102-B1) particle boards, 1000 mm x 190 mm x 12 mm, were prepared in the manufacturing company in order of the MPA.

The boards had been provided by the MPA.

3. Test procedure

The tests had been performed according to standard DIN 4102, part 1 (May 1998 edition) and part 16 (September 2015 edition) using the Brandschacht according to DIN 4102, part 15, (May 1990 edition) and the „Zulassungsgrundsätze für den Nachweis der Schwerentflammbarkeit von Baustoffen (Baustoffklasse DIN 4102-B1), issued by Deutsches Institut für Bautechnik, Berlin“.

Test specimen for the B2-test, 190 mm x 90 mm, were cut from the varnished particle boards.



4. Test results

4.1 Test according to DIN 4102, clause 6.2, Baustoffklasse B2

Material	a)		
Specimen-No.:	1	2	3
Max. flame height within 20 s	4	4	4
Burning droplets	none	none	None

Material	b)				
Specimen-No.:	1	2	3	4	5
Max. flame height within 20 s	4	5	4	4	4
Burning droplets	none	none	none	none	none

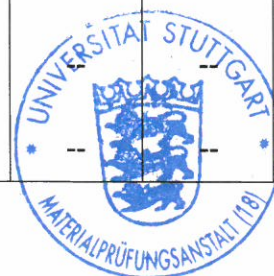


4.2. Test according to DIN 4102, clause 6.1 – Baustoffklasse B1

4.2.1. Results of Brandschacht tests (part 1)

Line No.		Test Results Specimen Assembly			
		A	B	C	D
1	<u>No. of fastening method</u> according to DIN 4102, table 1	7	7	7	7
2	<u>Max. flame height</u>				
	cm	90-100	> 100	> 100	> 100
3	<u>Time of appearance</u> ¹⁾ min : s	1:55	1:45	2:00	2:15
4	<u>Occurrence of holes in the material</u> <u>Time of appearance</u> ¹⁾ min : s	--	--	--	--
5	<u>Observations of the reverse face of the specimen</u> Flames / Glowing <u>Time of appearance</u> ¹⁾ min : s	--	--	--	--
6	Discolouring <u>Time of appearance</u> ¹⁾ min : s	--	--	--	--
7	<u>Burning droplets</u> <u>Time of appearance</u> ¹⁾ min:s	--	--	--	--
8	Single drops				
9	Continuously dripping				
10	<u>Separation of burning debris</u> <u>Time of appearance</u> ¹⁾ min : s	--	--	--	--
11	Amount Single pieces				
12	Continuously falling pieces				
13	<u>Burning material on the screening surface</u> <u>Duration (max.)</u> min : s	--	--	--	--
14	<u>Reduction of burner flames by falling droplets or debris</u> <u>Time of occurrence</u> ¹⁾ min : s	--	--	--	--
15	<u>End of test (premature)</u> <u>End of fire reaction on the specimen</u> ¹⁾ min : s	--	--	--	--
16	<u>Time of premature finishing the test, if done so</u> ¹⁾ min : s	--	--	--	--

¹⁾ Elapsed time from the start of the test (t=0) shall be recorded



4.2.2. Results of Brandschacht tests (part 2)

Line No.		Test Results Specimen Assembly			
		A	B	C	D
17	<u>Afterflame</u> Duration min : s	--	--	--	--
18	Number of specimen				
19	On front face of the specimen				
20	On reverse face of the specimen				
21	Flame height cm	--	--	--	--
22	<u>Afterglow</u> Duration min : s	--	--	--	--
23	Number of specimen				
24	Location of glowing Low half on the specimen				
25	Upper half of the specimen				
26	Front face of the specimen				
27	Reverse face of the specimen				
	<u>Smoke density (area below the curve)</u>	-	-	-	-
28	$\leq 400 \% \cdot \text{min}$	10	19	18	15
29	$\geq 400 \% \cdot \text{min}$ (very strong smoke development)	--	--	--	--
30	Graph in annex No.	1	2	3	4
31	<u>Residual length</u> Single results of each specimen cm	21 24 25 23	22 24 23 23	24 23 23 23	22 22 23 23
32	Average of each specimen assembly cm	23 ^{*)}	23 ^{*)}	23 ^{*)}	23 ^{*)}
33	Photo of the test assembly in annex No.	5	6	7	8
	<u>Flue gas temperature</u>				
34	Maximum of the average value °C	149	183	151	166
35	Time of appearance ¹⁾ min : s	3:38	2:54	4:17	3:01
36	Graph in annex No.	1	2	3	4
37	Notes:	Residual length of the non varnished particle board: *)25 cm			

5. Classification

The tested samples met the requirements for building materials according to DIN 4102, part 1, clause 6.1.2.2 and clause 6.2 for class B2.

Thus, the material as described in clause 1 and 2 meets the requirements for building materials according to class B1 of DIN 4102, part 1 (May 1998 edition).



6. Notes

- 6.1 The multilayer varnish system „OCV 869RF“ must be labeled according to DIN 4102, part 1, clause 7 as follows:

DIN 4102 - B1, applied on schwerentflammbar (DIN 4102-B1) particle board

- 6.2 Classification in clause 5 is valid solely for the material as described in clause 1.

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.

- 6.3 According to DIN 4102-16, clause 6.2 for building materials that are intended to be used in outside conditions, it must be proven that the requirements for Baustoffklasse B1 ("schwerentflammbar") are met after a 2- and 5years' weathering-period, too. This proof is not (yet) given.

- 6.4 Classification in clause 5 of this test certificate expires to be valid by 31. May 2021. Validity may be extended on request. For extension additional tests may be necessary.

- 6.5 This test certificate is in no case a substitute for „allgemeines bauaufsichtliches Prüfzeugnis“ or „allgemeine bauaufsichtliche Zulassung“.

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

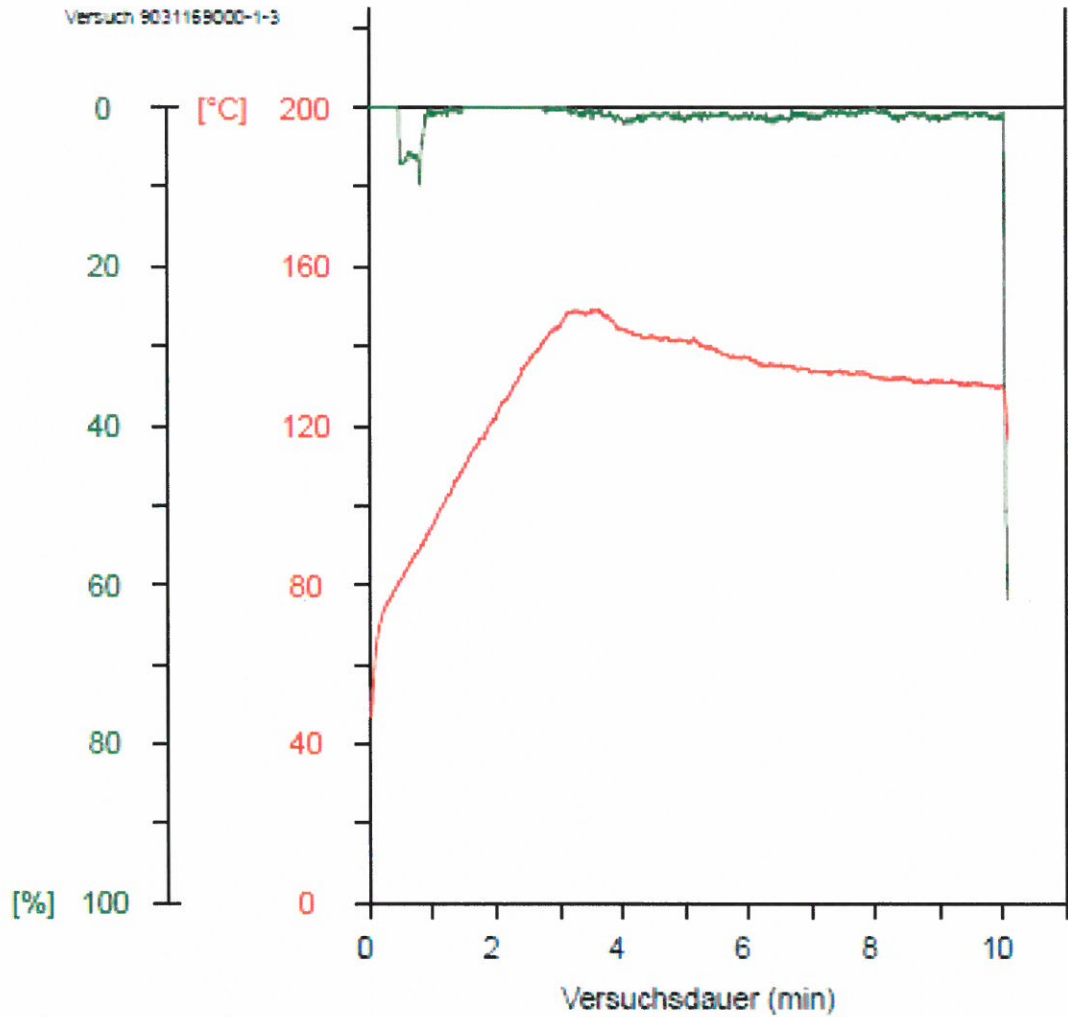
The Engineer in Charge

Dr. Sebastian Dantz



Head of Notified Fire Testing Department

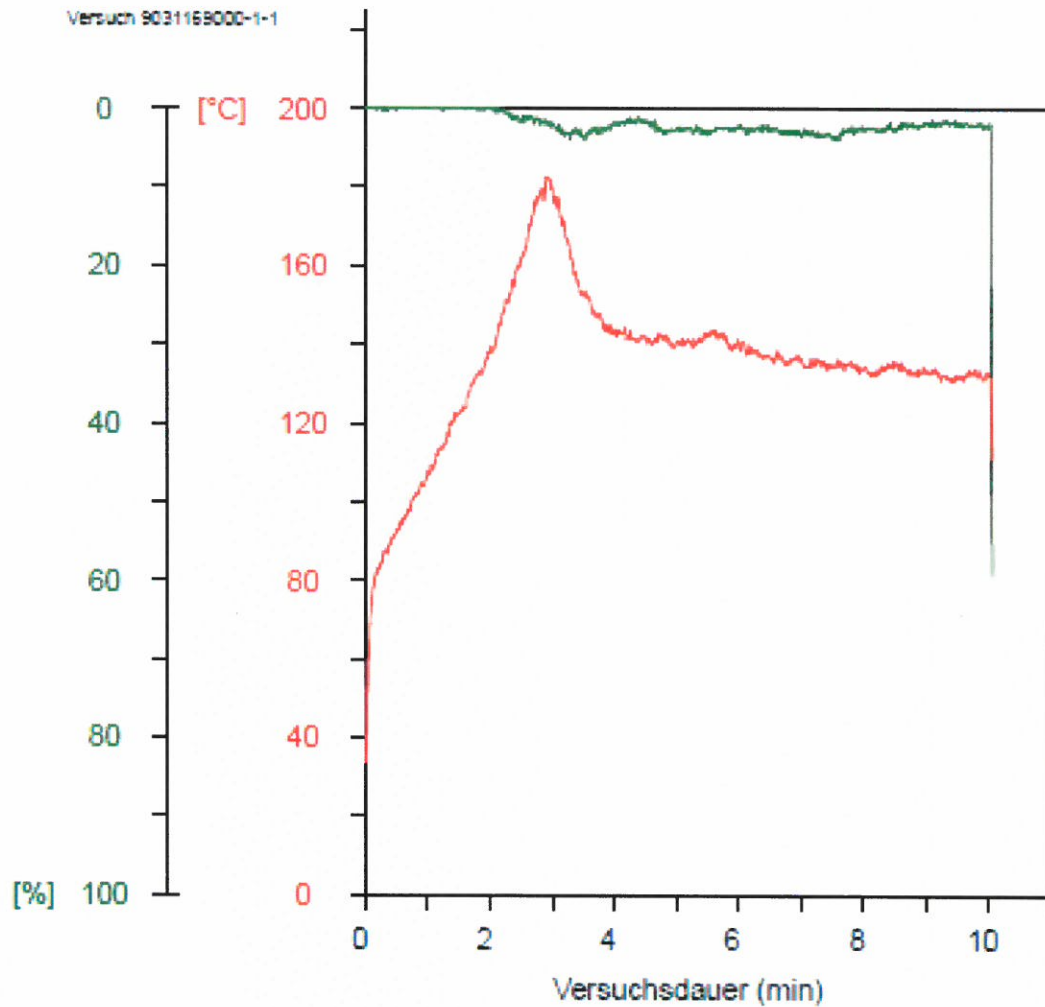
Dr. Stefan Lehner, Ltd. Akad. Direktor



max. Rauchgastemp.	149 °C
erreicht nach	3:38 min:sec
max. Rauchdichte	10 %
Integralwert	10 %*min

Figure 1: Results of Brandschacht test A

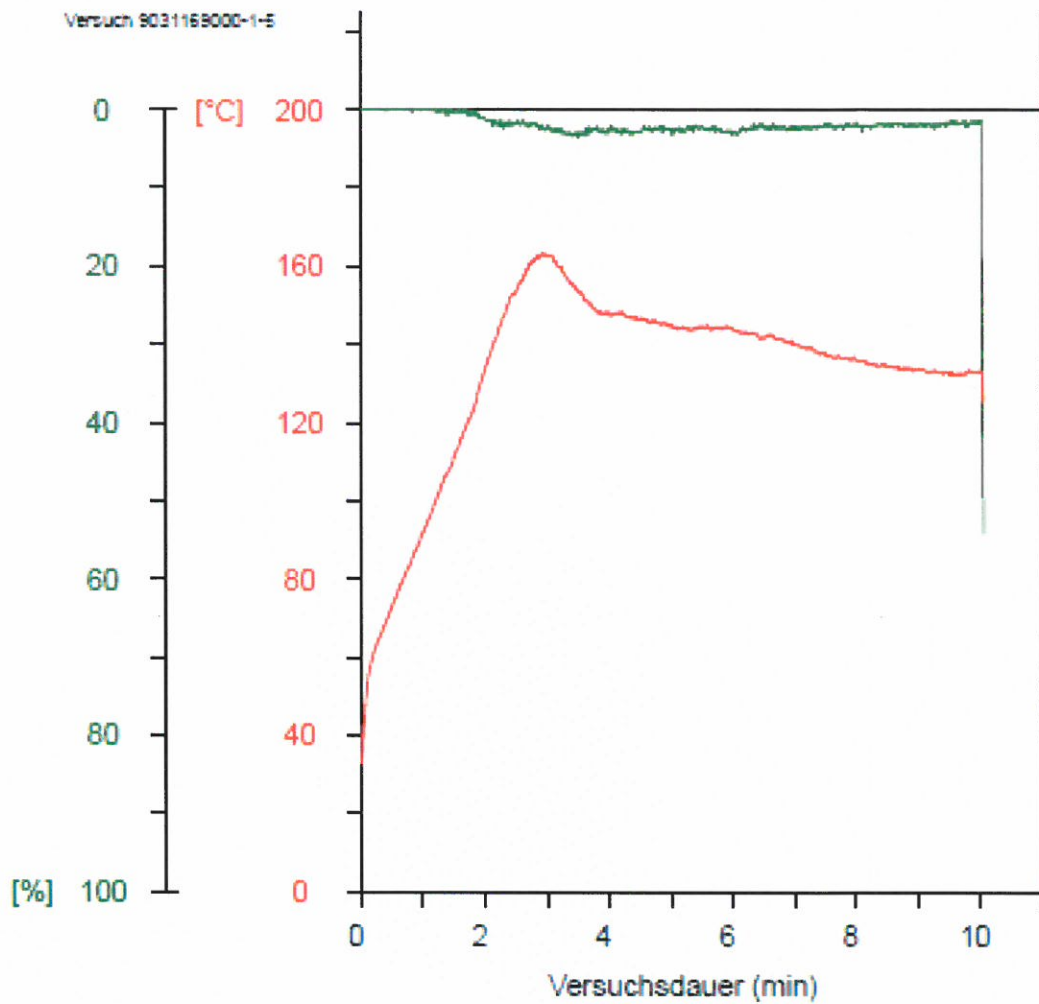




max. Rauchgastemp.	183 °C
erreicht nach	2:54 min:sec
max. Rauchdichte	4 %
Integralwert	19 %*min

Figure 2: Results of Brandschacht test B

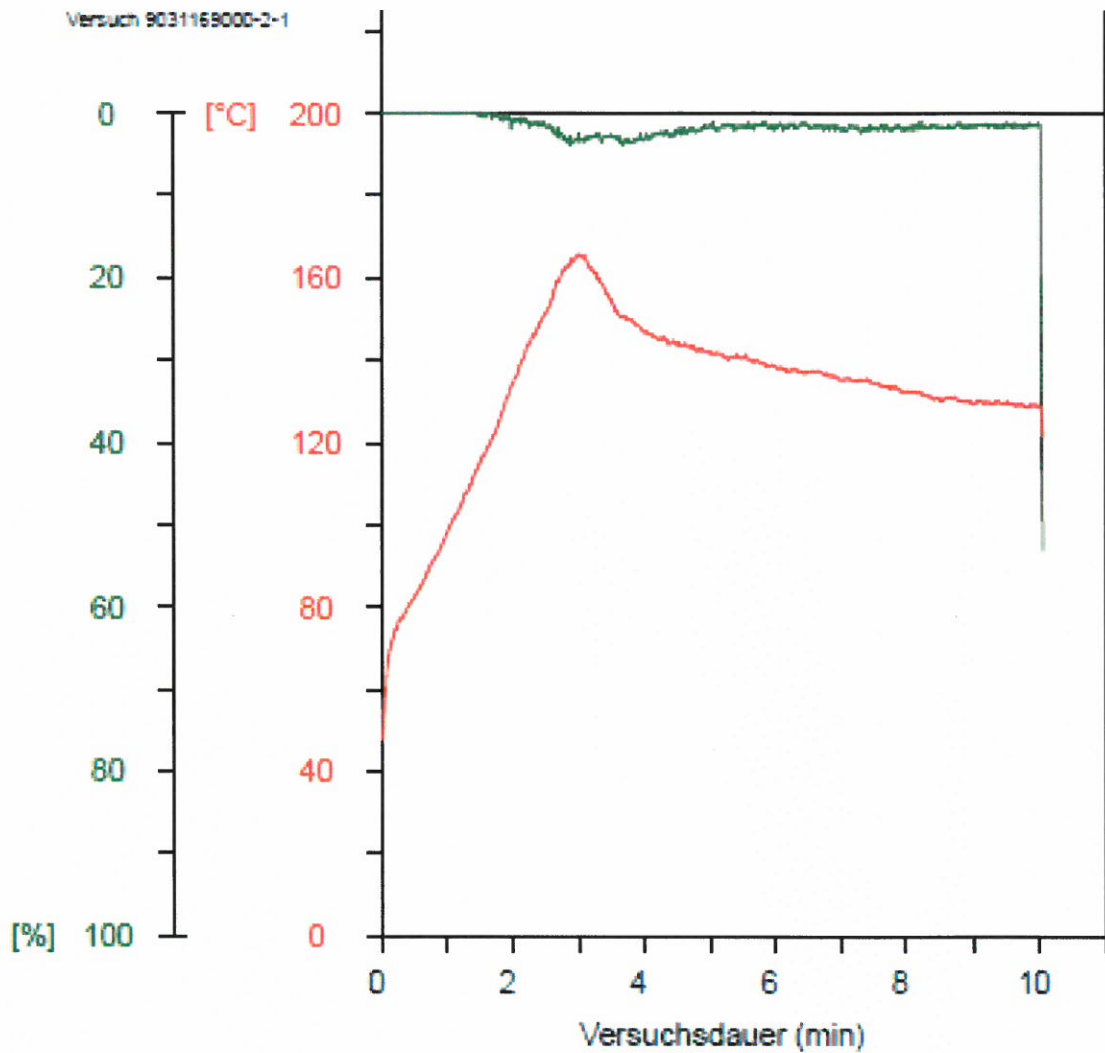




max. Rauchgastemp.	163 °C
erreicht nach	2:57 min:sec
max. Rauchdichte	3 %
Integralwert	18 %*min

Figure 3: Results of Brandschacht test C





max. Rauchgastemp.	166 °C
erreicht nach	3:01 min:sec
max. Rauchdichte	4 %
Integralwert	15 %*min

Figure 4: Results of Brandschacht test D



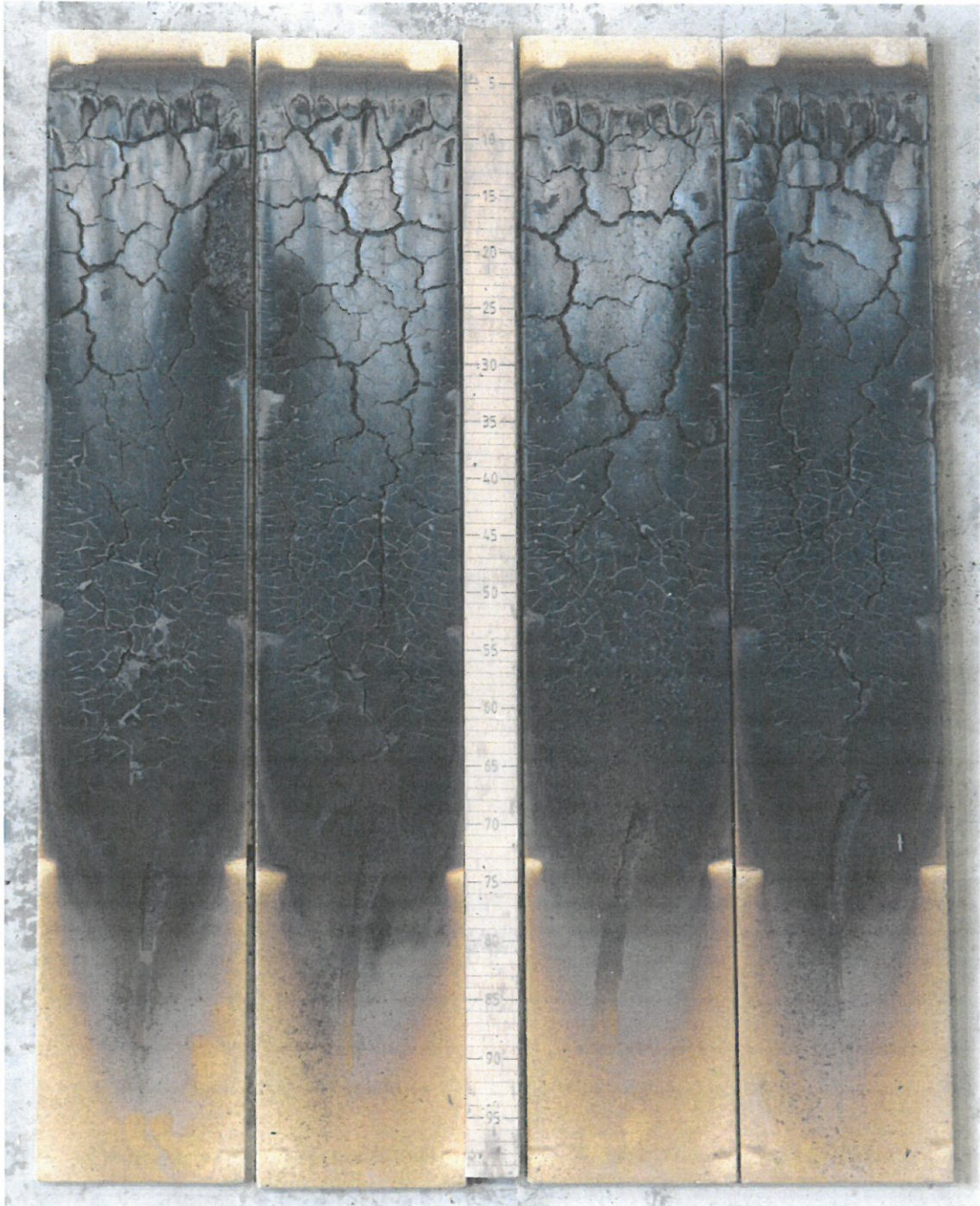


Figure 5: Appearance of the samples A after test



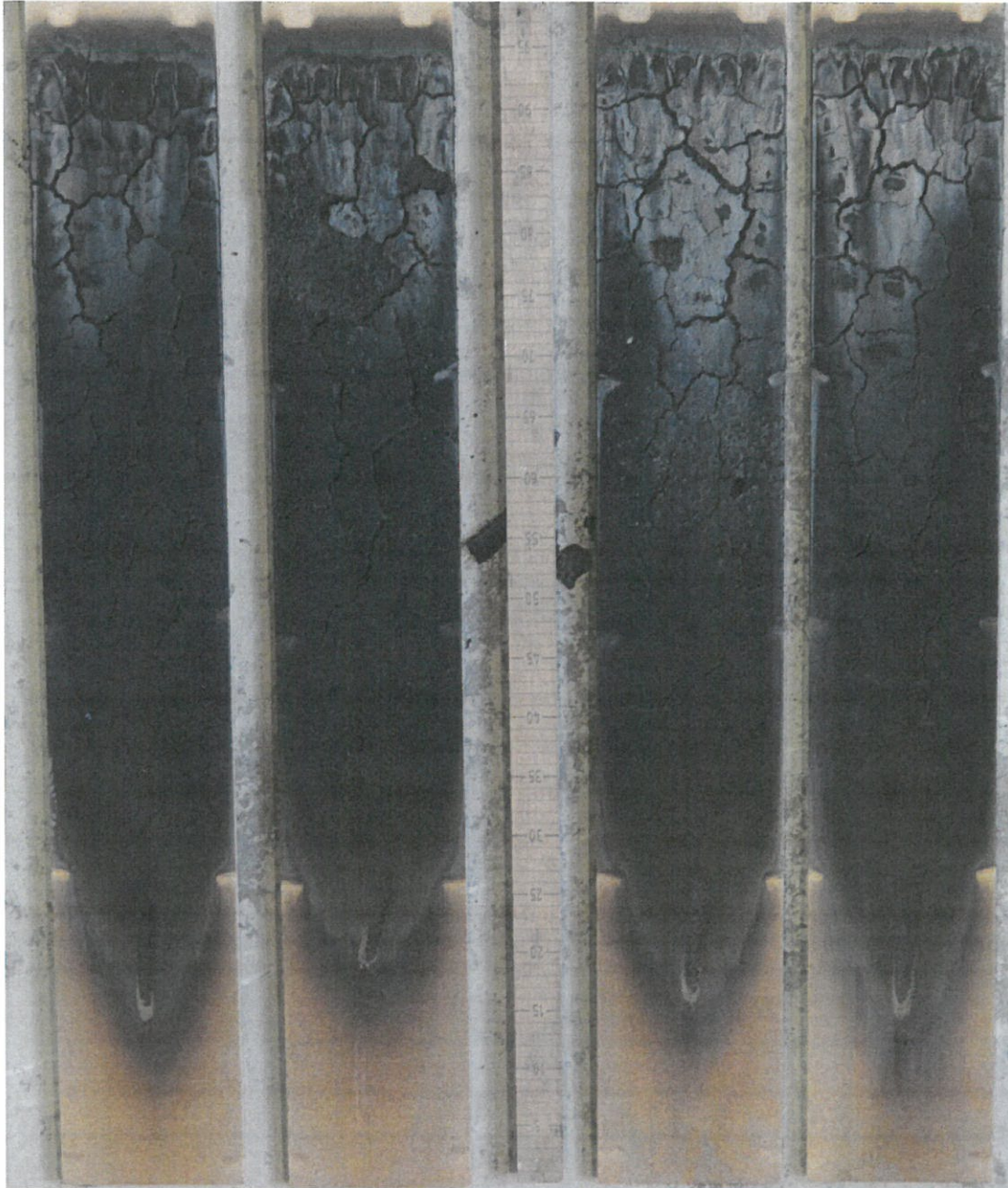


Figure 6: Appearance of the samples B after test



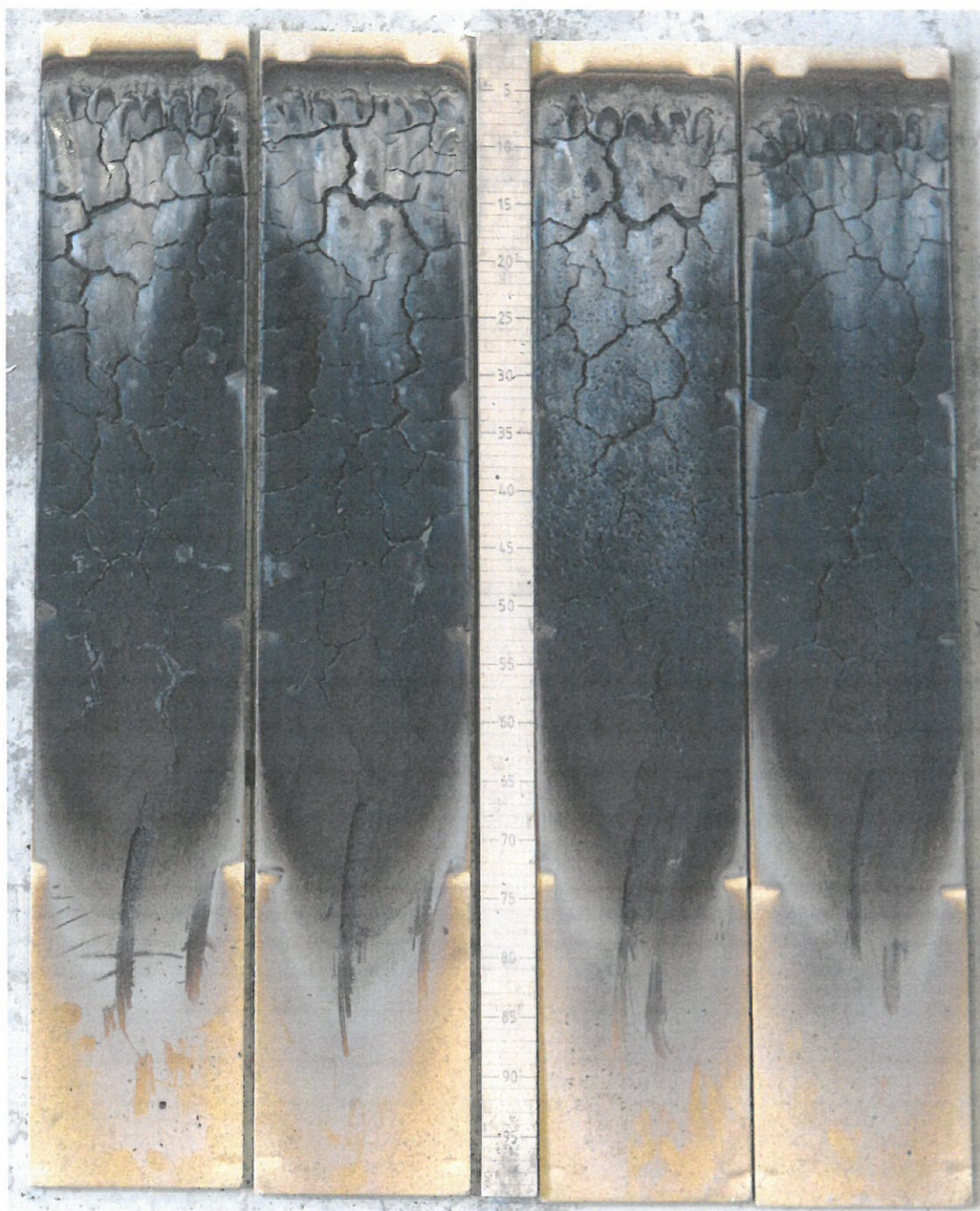


Figure 7: Appearance of the samples C after test



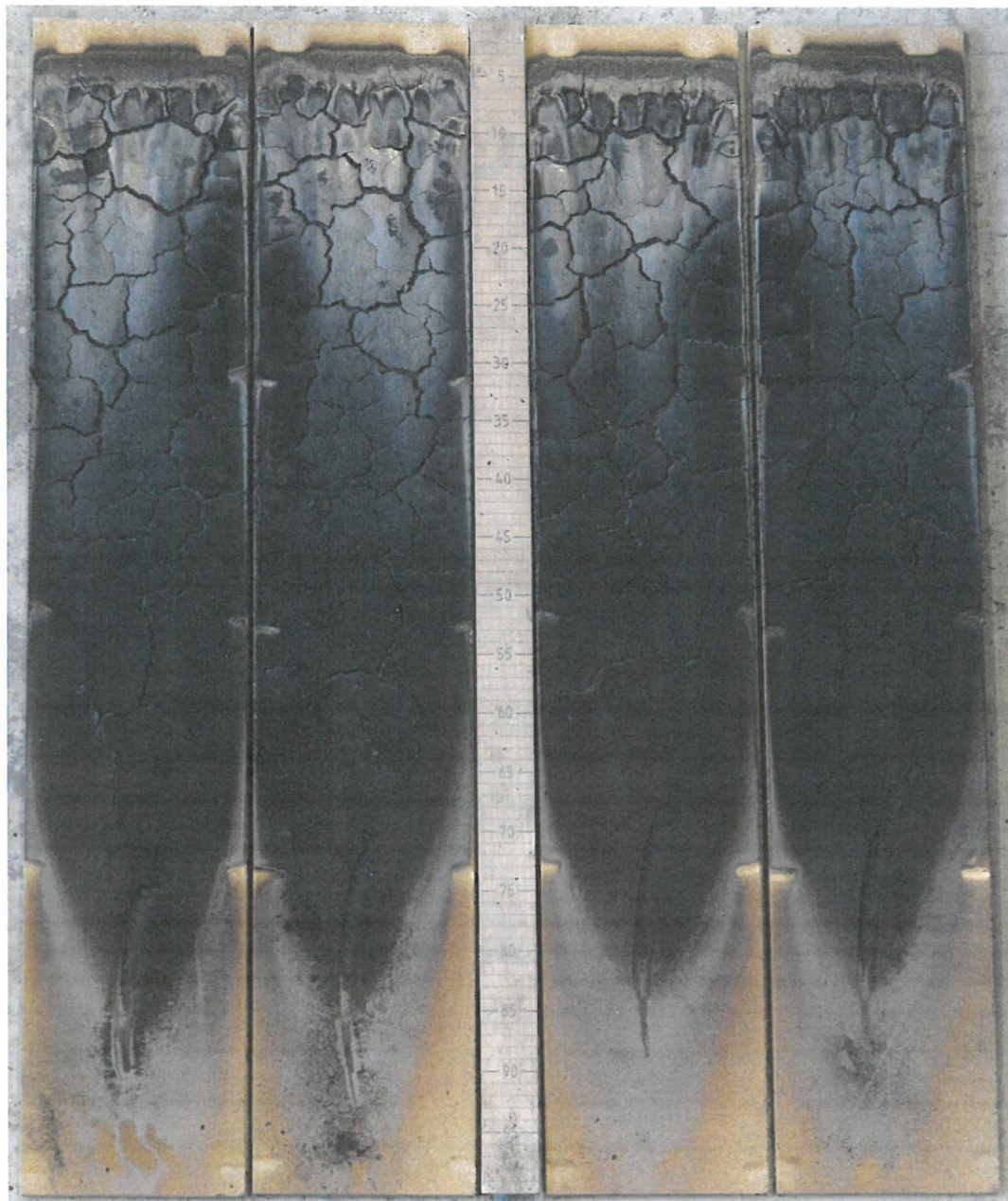


Figure 8: Appearance of the samples D after test

