

IBS-Institute, Linz, Austria

Test Certificate

BV-ref. no. 4321/12

Date: 22 february 2012

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Subject of testing: Anti-flaming agent type "Ceracoat Anti fire " (fire retardant) – on linen fabric, applied on both sides half and half
Total quantity layed on: 63 g/m²

Classification: B1, "inflammable with difficulty"
Tr 1, "non dripping"
Q1, "weakly smoking"

Applicant: Ceracoat Group
Flawilerstrasse 31
CH-9500 WIL

Date of application: 31 january 2012
Date of test: 1 february 2012
Expert: Ing. R. KIBLER

This report contains:

Pages: 5
Enclosures: 1 test protocol
2 technical data sheets

Validity: until 1 january 2025 – according to ÖNORM B 3800, part 2

Subject of testing: Anti-flaming agent type "Ceracoat Anti fire " (fire retardant) – on linen fabric, applied on both sides half and half



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8570 Weinfelden (Switzerland), 2014-09-24



Bases for testing:

ÖNORM B 3800, part 1:

"Behavior in case of fire of materials, except building materials"

Edition: 1 november 2005

ÖNORM B 3800, part 2

"Behavior in case of fire of building materials and construction units –
construction units: definitions, requirements, tests"

Edition: 1 march 1997

withdrawn on: 1 january 2004

Note:

Because of the still lacking national legislation regarding construction/building concerning European classification according to EN 13501-1 the aforementioned historical standard is further consulted as bases regarding duration of validity.

Air conditioning before execution of tests:

Standard climate 23° C/50 % humidity. The test samples were stored before testing at 23° C +/- 2° C and 50 % +/- 5 % humidity until the approximative mass constancy. The impregnated linen fabric was stored in the standard climate at least for two weeks before the tests.

Description of test samples according to applicant data:

Antiflame agent, type "Ceracoat FLAMEFOX" (fire retardant) on linen fabric

Fabric data:

100 % linen, prebleached, woven as canvas with a weight per area unit of 165 g/m², thread density: length thread: 21 cross thread: 17,5

Each sample fabric was treated by spraying in two steps resulting in a total spray-on quantity of dry substance antiflame agent of 63 g/m². The antiflame agent was applied half and half on both sides, evenly and full-laminar. The test samples were backed with 12 mm CaSi-plates (A "non inflammable").

The technical data of the antiflame agent can be viewed in the appendix.

Temperature of test samples:

The test samples had a temperature of 23° C before test started.





The tests were carried out on:

1 february 2012

Results of the fire tests:

The detailed test results of the combustibility test with exploration of the dripping behavior can be viewed in the enclosed test protocol.

General description of the execution of tests:

Examination of hard inflammability:

The material samples received from the applicant with measurements of 800 x 300 mm are tested in the Schlyter-test appliance.

Combustion tests are thus carried out in vertical insertion position with test samples inserted in parallel position (distance 50 mm). During a period of 15 minutes a test sample is fire treated by a six-nozzle-serial burner (propane-nitrogene-air mixture) covering a full surface in the lower area of the sample.

According to ÖNORM B 3800, part 1, a maximum of 40 cm of charred length should not be exceeded; the test sample not exposed to flammation should not catch fire and the period of afterburning resp. afterglowing should not exceed 1 minute resp. 5 minutes.

Test of smoke intensity

There were drawn representative samples with measurements 30 x 30 x 4 mm and were submitted to fire tests according to the standards in the Lüscher-smoke intensity test appliance. There the samples were exposed to a burner flame length of 150 mm on one side laminar.

The density of smoke gas arising in this case was measured by a narrow tape photo element (photoelectric measuring instrument and the light turbidity was displayed.

The determined value is only a measure for the smoke gas density and does not anyhow consider any eventual toxic effect of the arising smoke gases.

The above mentioned general description of the test procedure is only of informative character. Detailed test procedures with measures of test preparation can only be viewed from ÖNORM B 3800, part 1.





Observations of test:

(see also enclosed test protocol)

- Discoloration can already be observed 45 sec after test start
- Blistering and melting cannot be observed.
- After 5 minutes max. the test material catches fire in the area of direct flame exposure.
- An expansion of the flame area beyond the area of direct flame exposure is only observed on sample 3 after 3 min.
- A dropping of parts of the test sample is not observed.
- The max. after burning amounted to 45 sec and the max. after glowing amounted to 4 minutes.
- The destroyed length amounts to max. 16 cm.
- The average light turbidity amounts to approx. 7 %

Evaluation:

As it may already be stated concerning the accomplished burning tests according to the conditions of the already mentioned ÖNORMs, all the tested samples fulfil these standards and therefore can be designated as **B1, "inflammable with difficulty"**. Further the samples in question can be classified as **Tr 1, "non dripping"** in the drop formation class and as **Q1, "weakly smoking"** in the smoke formation class.

The achieved test results refer only to the test samples presented for testing.

Mechanical or chemical admission is to be avoided in any case.

After cleaning of the antiframe protected linen fabric it has to be re-impregnated.



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Duration of validity:

From the test date (1 february 2012) thirteen years **until 1 february 2025** according to ÖNORM B 3800, part 2. The duration of validity expires prematurely, if technical modifications on the tested product as described herein or if the lay-on quantity of the ant flame agent falls below the quantity as stated herein or if the ant flame protected fabric is not re-impregnated after cleaning.

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