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www.reaction-to-fire.de

Test laboratory for the fire behavior of building materials, Dipl.-Ing. (FH) Andreas Hoch Testing, supervising and certifying body, authorized by the building supervision authority

TEST REPORT PZ-Hoch-231244

on the reaction to fire according to DIN 4102, part 1

Translation of the German test report - no guarantee for translation of technical terms

company	Vescom B.V.
	Sint Jozefstraat 20
	NL-5753 AV Deurne
description of samples	fabric of 92 % wool and 8 % polyamide in three different colours
name of the material	"Bowen"
sampling	by the company
content of request	Proof of flammability to classify building materials to class B2 ("normal entflammbar") according to the German standard DIN 4102, part 1.
validity of test report	30.09.2028
result	The product complies in any colour freely suspended or in a distance > 40 mm to same or other plain materials with the requirements of class B2 for "normal entflammbare" building materials according to the German standard DIN 4102, part 1, (May 1998).
This test report includes 5	pages. result achieved with additional FR finite

Remarks:

For legal interests only the German original version is relevant.

If the above-mentioned building material is not used as product according to MBO § 2, Abs. 9, No. 1, there is no need for a general building supervisory test report.

This test report is not valid if the examined building material is used as product in the meaning of state building prescriptions (MBO § 17, Abs. 3).

This test report does not replace an eventually necessary proof of applicability concerning building supervisory or building laws in the meaning of state building prescriptions. This has to be verified by:

- "allgemeine bauaufsichtliche Zulassung" (general building inspectorate approval) or by
- "allgemeines bauaufsichtliches Prüfzeugnis" (general building inspectorate certificate) or by
- "Zustimmung im Einzelfall" (exceptional approval)

This test report can underlie building supervisory procedures

- for regular building products for the prescribed proofs of conformity
- for non-regular building products for the needed proofs of applicability.

This test report must not be published and copied without preceding agreement of the test laboratory and if agreed, only during validity and unchanged concerning appearance and contents.

Mitglied der eg	Durch die DAkkS nach DIN EN ISO/IEC 17025 akkreditiertes Prüflaboratoriun Die Akkreditierung gilt für die in der Urkunde aufgeführten Prüfverfahre	n. en
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additional FR finish



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1. <u>Properties and composition of the test material in as-delivered condition</u>

PN 37902	"Bowen 16" fabric of 92 % wool and 8 % polyam Side A is a little bit lighter than side <u>characteristic values determined by</u> area weight: about 290 g/m ²	nide in green B <u>the test laboratory:</u> thickness: about 0,64mm
PN 37904	"Bowen 17" fabric of 92 % wool and 8 % polyam Side A and side B are the same thickness \approx 1,11 mm area weight \approx 405 g/m ²	nide in grey
PN 37903	"Bowen 18" fabric of 92 % wool and 8 % polyam Side A is a little bit lighter than side thickness \approx 1,97 mm	nide in red B

More details of the composition of the test samples are not known to the laboratory. Some reference samples are stored in a depot.

2. <u>Preparation and conditioning of the samples</u>

area weight $\approx 403 \text{ g/m}^2$

From the delivered material samples were cut for the edge and surface test with the dimensions 9×19 cm and 9×23 cm.

The samples were kept in the climate chamber (23/50) according to DIN 50014-23/50-2 for a minimum of 14 days.

3. Arrangement of samples

- freely suspended

4. Date of test 17.10.2023



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5.

<u>Results of the fire tests</u> The fire test was carried out according to the German standard DIN 4102-1 clause 6.2 (edition May 1998).

table 1: PN 37903	edge test									surface test			
no substrate	edge test surface test surface test i 2 3 4 5 6 7 8 1 2 3 4 1 2 3 4 5 6 7 8 1 2 3 4 AL BL AQ BQ AL AL AL AL BL AQ BQ -/- -/- -/- -/- -/- s 5 5 1 1 1 1 1 1 1 1 2 3 4 5 6 7 8 1 2 3 4 5 6 7 8 1 2 3 4 5 5 5 5 5 5 5 7 6 7 6 7 2 2 2 2 5 5 5 5 7 6 7 6 7 2 2 2 2 5 5 5 2 19 16 19 21 24 18 -/- -/- -/- -/- 5 5												
Sample No.	1	2	3	4	5	6	7	8	1	2	3	4	Dim
side	AL	BL	AQ	BQ	AL	AL	AL	AL	AL	BL	AQ	BQ	
ignition ¹⁾	1	1	1	1	1	1	1	1	-/-	-/-	-/-	-/-	s
top flames at the limit ¹⁾²⁾	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	s
max. flame height 1)2)	10	7	7	7	6	7	6	7	2	2	2	2	cm
time ^{1) 2)}	14	9	11	13	8	9	11	8	-/-	-/-	-/-	-/-	s
self-extinguishing of the flames termination of burning ¹⁾	55	22	19	16	19	21	24	18	-/-	-/-	-/-	-/-	s
start of glowing ¹⁾	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	s
end of glowing ¹⁾⁾	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	s
the flames were extinguished after ¹⁾⁾	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	s
smoke development (visually)	moderate low												
burning particles / droplets within 20 s1	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	-/-	s
Appearance after the test: The samples were burned	d cone	-shap	ed wi	th a r	nax. v	width	of 2 c	mxh	eight	17 cr	n.		

table 2: PN 37902		edge test surface test									
no substrate			tes	sted	freely	/ sus	penc	led			u l
Sample No.	1	2	3	4	5	1	2	3	4	5	ensid
side	AL	BL	AQ	BQ		AL	BL	AQ	BQ		Dim
ignition ¹⁾	1	1	1	1		-/-	-/-	-/-	-/-		s
top flames at the limit ¹⁾²⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s
max. flame height 1)2)	7	9	9	7		2	2	2	2		cm
time ^{1) 2)}	18	14	12	9		-/-	-/-	-/-	-/-		s
self-extinguishing of the flames termination of burning ¹⁾	30	26	16	15		-/-	-/-	-/-	-/-		s
start of glowing ¹⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s
end of glowing ¹⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s
the flames were extinguished after ¹⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s
smoke development (visually)		m	odera	ate				low			
burning particles / droplets within 20 s1	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s
Appearance after the test: The samples were burne	ed cone	-shape	ed with	n a ma	x. widt	h of 2	cm x l	neight	14 cm		
¹⁾ time from the beginning ³⁾ acc. to DIN 4102-16		2)	withir	n 20 se	econds	;					
-/- no occurrence no dataA frontsideB = backsideK = warp directionS = weft direction		L	surface test tested freely suspended 3 4 5 1 2 3 4 5 L AQ BQ AL BL AQ BQ 1 1 1 -/- -/- -/- -/- s '- -/- -/- -/- -/- -/- -/- s 9 7 2 2 2 2 cm 4 12 9 -/- -/- -/- -/- s 6 16 15 -/- -/- -/- s s - -/- -/- -/- -/- -/- s s s - -/- -/- -/- -/- -/- s s s - -/- -/- -/- -/- -/- s s s - -/- -/- -/- -/- -/-								



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table 3: PN 37904		edge test surface test																		
no substrate		tested freely suspended																		
Sample No.	1	2	3	4	5	1	2	3	4	5	nensi									
side	AL	BL	AQ	BQ		AL	BL	AQ	BQ		Din									
ignition ¹⁾	6	3	5	3		-/-	-/-	-/-	_/_		s									
top flames at the limit ¹⁾²⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s									
max. flame height ¹⁾²⁾	5	7	6	4		2	2	2	2		cm									
time ^{1) 2)}	10	8	12	9		-/-	-/-	-/-	-/-		s									
self-extinguishing of the flames termination of burning ¹⁾	26	25	20	16		-/-	-/-	-/-	-/-		s									
start of glowing ¹⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s									
end of glowing ¹⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s									
the flames were extinguished after ¹⁾	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s									
smoke development (visually)		low						low							low					
burning particles / droplets within 20 s ¹	-/-	-/-	-/-	-/-		-/-	-/-	-/-	-/-		s									
Appearance after the test: The samples were burned cone-shaped with a max. width of 2 cm x height 10 cm.																				

time from the beginning

³⁾ acc. to DIN 4102-16

-/- no occurrence A frontside

K = warp direction

-- no data B = backside

S = weft direction

L = lengthwise

²⁾ within 20 seconds

Q = crosswise



6. Remarks to the setting of the test -none

7. Classification

7.1 Building material class

Based on the test results described above the material complies with the requirements of the building material class "normal entflammbar" DIN 4102 - B2.

The classification is valid for, freely suspended or in a distance > 40 mm to same or other plain materials.

7.2 Test for falling of burning particles (droplets)

The material shows no burning particles / droplets as described in DIN 4102-1, clause 6.2.6.1.

8. Additional directions

This test report is no substitute for a General Building Inspectorate Certificate. For legal interests only the German original version is relevant.

This report is only valid for the material as described under paragraph 1. In combination with other materials or with additional coatings or grounds etc. the burning behaviour may differ. The fire performance of other than the parameters given above has to be tested and classified separately.

This test report is not valid, as soon as the material is used as a building product in the sense of the "Landesbauordnungen" (state building requirements, MBO § 17, par. 3). According DIN 4102, section 7, the material has to be marked:

DIN 4102 – B2

9. Validity of the test report

This test report is valid to date specified on page 1.

The test report becomes invalid in case the standards on which the tests are based are changed.

Fladungen, 19.10.2023

Clerk in charge

Felina Hah

(Felina Hahn)



Head of the test laboratory

(Dipl.-Ing.(FH) Andreas Hoch)