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Bru Textiles
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Test Report No. 5214011946

Test assignment

Determination of the Fire code rating (BKZ) according to the Directive for Fire Police Prescriptions, Building Materials and Building Elements, Part B (Test Conditions), Edition 1988. Flammability tested in accordance with SN 198'898 (1987) and smoke density in accordance with the VKF (Association of Cantonal Fire Insurance).

Client
Sampling

Bru Textiles Satenrozen 2A 2550 Kontich Belgium
By the client

Test object

FR-One Genial

Client reference	Tineke Verbruggen
Order date	27 January 2016
Test object received	28 January 2016
Tests performed	02 February 2016 till 03 February 2016
Number of pages	6
Attachments	no
Archival of material	The remaining test material will be archived for 1 year

This report has a validity of five years, until 04 February 2021.

401 – ell/kml/zep - controlled by: *gml*

Swiss Federal Laboratories for Materials Science and Technology
St. Gallen, 04 February 2016

Expert

J. El Issawi

El Issawi-Frischknecht Leonie



Abt. 401: STS 0083

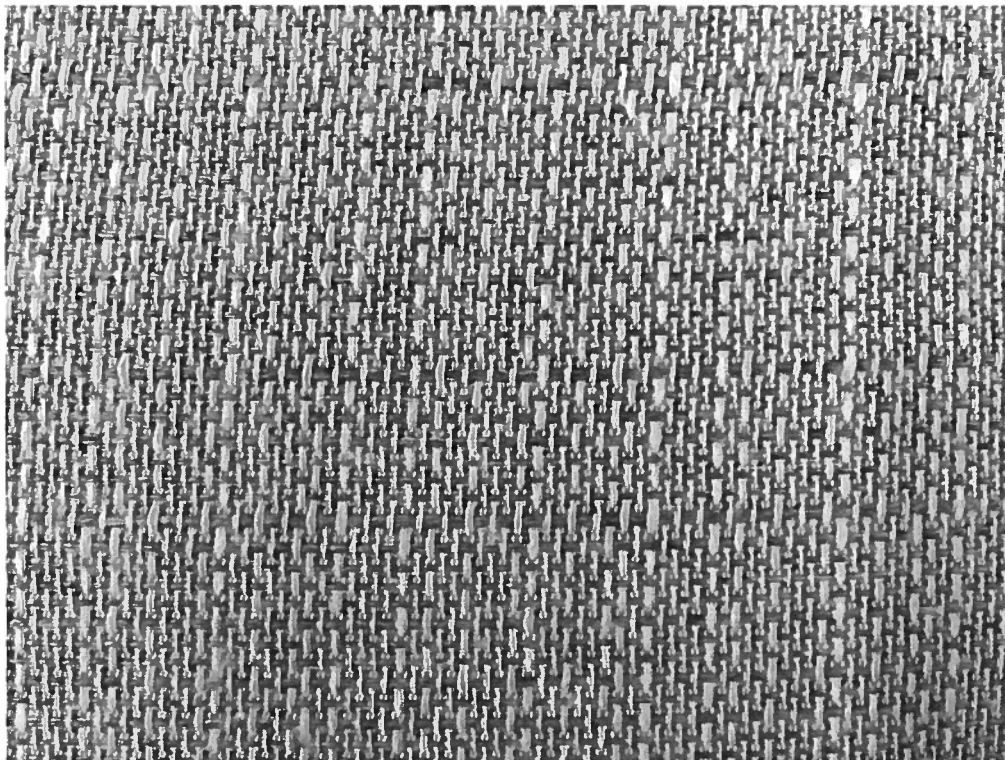
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Test sample (decl.)

Object	FR-One Genial
Material composition	100%Polyester inherent FR
Weight approx. (g/m ²)	265 g/m ² (measured 256 g/m ²)
Thickness approx. (mm)	Not decl.
Colour	lightbrown
Received material	1.5x3 m

Picture



Normative reference

- SNV 95150 (*withdrawn 1993-01-01*)

Determination of flammability in accordance with SN 198'898 (1987)

(*Withdrawn 1999-07-01*)

Test procedure

The conditioned samples are hung in a burning chamber. The lower edges of the samples are put into contact with a propane gas flame (40 ± 2 mm in length) for 3 s and 15 s. The burner is inclined by 30° relative to the vertical line. The damage length and the afterglow time are assessed for samples which do not ignite. For samples that do ignite the afterflame time is recorded and where applicable the rate of flame spread between two markings is determined.

Test conditions

Acclimatization	≥ 24 h at (20 ± 2) °C / (65 ± 4) % RH	
Marker threads	cotton 50/3 dtex	
Propane	calorific value approx. 46 MJ/kg	
Air movement	(0.1 to 0.2) m/s	
Test room climate	21.3 °C / 26.9 % RH	
Numbers of samples	20 (10 in the longitudinal and 10 in the transverse direction)	
Size of specimen	105 x 450 mm	
Weight	<u>mass per unit area (g/m²)</u>	<u>weights (g)</u>
	≤ 200	100
	201 - 500	250
	501 - 750	350
	> 750	450
Specimen	original state	

Deviation(s) from the standard

1. Samples were not pre-treated (laundered/drycleaned) prior to analysis.

Requirements according VKF

Determination of **flammability 5** is reached when at least **18 of the 20 samples** meet all of the below requirements.

Peak of flame	≤ 400 mm
Afterflame time max.	< 5 s
Afterglow time max.	≤ 300 s
Damaged length max.	≤ 150 mm

Result(s)

No.	Flamespread over time [mm/s]	Peak of flame [>400mm]	Afterflame time [s]	Afterglow time [s]	Damage length [mm]	Melt and / or drop off
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Longitudinal: Ignition time 3 s

1	-	no	0	-	40	melt
2	-	no	1	-	46	melt
3	-	no	0	-	46	melt
4	-	no	-	-	38	melt
5	-	no	-	-	38	melt

Longitudinal: Ignition time 15 s

1	-	no	-	-	73	melt
2	-	no	-	-	65	melt
3	-	no	-	-	62	melt and drop off
4	-	no	-	-	54	melt
5	-	no	-	-	73	melt

Transverse: Ignition time 3 s

1	-	no	-	-	41	melt
2	-	no	1	-	41	melt
3	-	no	-	-	38	melt
4	-	no	0	-	41	melt
5	-	no	-	-	37	melt

Transverse: Ignition time 15 s

1	-	no	-	-	88	melt
2	-	no	-	-	79	melt
3	-	no	-	-	80	melt
4	-	no	-	-	67	melt
5	-	no	-	-	78	melt

Wählen Sie ein Element aus.

The tested article "FR-One Genial" fulfils the flammability 5 requirements of VKF.

Determination of the Smoke Density in accordance with VKF

Test procedure

Smoke density is determined by exposing the test sample (30 x 30 x 4 mm and/or least 2 g) to a defined flame in a standardized device with a controlled air flow until the sample has been completely burnt. In the course of this test, the maximum measurable light absorption of the generated smoke is determined by photometry.

Test conditions

Propane	pressure approx. 0.5 bar
Flame height	150 mm
Air influx	(6.0 till 6.5) l/s
Sample holder	bowl
Number of specimens	total 3 (up to 6)
Specimen size	30 x 30 mm
	2 g
Specimen	original state

Deviation(s) from the standard

1. 2 g subsample used rather than a 4 mm Thickness sample
2. Samples were not pre-treated (laundered/drycleaned) prior to analysis.

Requirements

The smoke density is determined for three tests. Should the results not agree, up to six tests will be conducted and the maximum and minimum values excluded; the average of the results is used for the classification.

Classification

Criterion for the classification of light absorption

Classification	Maximum light Absorption
smoke generation 1 (strong smoke generation)	> 90%
smoke generation 2 (medium smoke generation)	> 50 - 90%
smoke generation 3 (slight smoke generation)	0 - 50%

Result(s)

	Sample 1	Sample 2	Sample 3	Sample 4	Average
Maximum light absorption (%)	79	78	78	-	78

Average light absorption: 78 % - *smoke generation 2 (medium smoke generation)*

Classification according to the Directive for Fire Police Prescriptions, Building Materials and Building Elements, Part B (Test Conditions), Edition 1988¹

Fire Protection Classification : 5.2

(Class 5.2 stands for "low combustibile / medium smoke generation")²

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¹ Association of Swiss Canton Fire Insurance Companies (VKF) / Bundesgasse 20 / CH-3001 Bern / Phone: +41 (0)31 320 22 22 / www.vkf.ch

² Specimen in original state / without pre-treatment tested