



**FIRE
TECHNOLOGY
SERVICES**

Confidential Report

Our Ref: 27/03686F/10/15

Notified Body
for PPE Directive,
Construction Products
Regulation & Marine
Equipment Directive
I.D. No. 0338 & 0339

**Fire Technology Services
A division of BTTG T & C Ltd
Wira House, West Park Ring Road,
Leeds, LS16 6QL**

Tel No: +44 (0)113 2591999





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Kvadrat A/S

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Client: Kvadrat A/S
Lundbergsvej 10
8400 Ebeltoft
Denmark

Job Title: **Fire Test on One Sample of Material**

Clients Order Ref: ---

Date of Receipt: 08 October 2015

Description of Sample: One sample of material, referenced: **Reflex by Raf Simons, 87% new wool, 8% viscose, 5% nylon.**

Work Requested: Fire Technology Services were requested to carry out a fire test on the sample supplied to BS EN 1021:Parts 1 & 2:2014.





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FIRE TESTS ACCORDING TO BS EN 1021-1:2014
Assessment of the ignitability of upholstered furniture. Part I. Ignition Source : Smouldering cigarette

Date of Test: 06/11/2015

Conditioning

The sample was water-soaked and dried in accordance with Annex D of this standard. After drying the sample was conditioned for at least 16 hours at a temperature of $23\pm 2^{\circ}\text{C}$ and relative humidity of $50\pm 5\%$.

The sample was tested in a room of volume 25m^3 and 23°C .

Procedure

The test was carried out in accordance with BS EN 1021-1:2014. The sponsor sampled the material and the specimens were cut from the sample received to the dimensions set out in the standard.

The specimens were mounted over fillings of standard non-FR polyurethane foam of density about 22Kg/m^3 .

Tests were made using ignition source 0.

Requirements

The specimens shall not:-

Smouldering Criteria

- a) display escalating combustion requiring active extinction.
- b) smoulder or burn until it is essentially consumed within the test duration.
- c) smoulder or burn to the extremities of the specimen, or through the full thickness, within the duration of the test.
- d) smoulder for more than one hour.
- e) on final examination, show evidence of progressive smouldering.

Flaming Criteria

- a) show evidence of flaming initiated by a smouldering source.





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Results

	Cigarette			Comments
	1	2	3 ¹	
Smouldering Criteria (Yes/No)				
Unsafe escalating combustion	No	No	--	
Test assembly consumed	No	No	--	
Smoulders to extremities	No	No	--	
Smoulders through thickness	No	No	--	
Smoulders more than 1 hour	No	No	--	
In final examination, presence of progressive smouldering	No	No	--	
Ignitability Performance (Yes/No)				
Occurrence of flames	No	No	--	
Ignition / Non Ignition (I/NI)	NI	NI	--	

¹ Results for cigarette 3, only if applicable.

Note

The test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.

Comments

A NI designation indicates that the sample meets the performance requirements of BS EN 1021-1.





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FIRE TESTS ACCORDING TO BS EN 1021-2:2014 Assessment of the ignitability of upholstered furniture. Part 2. Ignition Source : Match flame equivalent.

Date of Test: 06/11/2015

Conditioning

The sample was water-soaked and dried in accordance with Annex D of this standard. After drying the sample was conditioned for at least 16 hours at a temperature of $23\pm 2^{\circ}\text{C}$ and relative humidity of $50\pm 5\%$.

The sample was tested in a room of volume 25m^3 and 23°C .

Procedure

The test was carried out in accordance with BS EN 1021-2:2014. The sponsor sampled the material and the specimens were cut from the sample received to the dimensions set out in the standard.

The specimens were mounted over fillings of standard non-FR polyurethane foam of density about $22\text{Kg}/\text{m}^3$.

Tests were made using ignition source 1.





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Requirements

The specimens shall not:-

Smouldering Criteria

- a) display escalating combustion requiring active extinction.
- b) smoulders until it is essentially consumed within the test duration.
- c) smoulder to the extremities of the specimen, or through the full thickness, within the duration of the test.
- d) smoulder for more than one hour.
- e) show evidence of charring, other than discolouration, for more than 100mm in any direction apart from the nearest part of the original position of the source.

Flaming Criteria

- a) display escalating combustion requiring active extinction.
- b) burns until it is essentially consumed within the test duration.
- c) burns to the extremities of the specimen, or through the full thickness, within the duration of the test.
- d) exhibit any flaming for more than 120 seconds after removal of the burner tube.





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Results

	Match Flame Equivalent		Comments
	1	2	
Smouldering Criteria (Yes/No)			
Unsafe escalating combustion	No	No	
Test assembly consumed	No	No	
Smoulders to extremities	No	No	
Smoulders through thickness	No	No	
Smoulders more than 1 hour	No	No	
In final examination, presence of progressive smouldering	No	No	
Ignitability Performance (Yes/No)			
Unsafe escalating combustion	No	No	
Test assembly consumed	No	No	
Flames to extremities	No	No	
Flames through thickness	No	No	
Flames longer than 120 seconds	No	No	
Ignition / Non Ignition (I/NI)	NI	NI	

Note

The test results relate only to the ignitability of the combination of materials under the particular conditions of test; they are not intended as a means of assessing the full potential fire hazard of the materials in use.





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Comments

A NI designation indicates that the sample meets the performance requirements of BS EN 1021-2.

Uncertainty of measurement has not been taken into account when presenting the test result. The relevant uncertainty value is included as an annex which forms an integral part of the report.

Reported by:..... *A. Shute* A Shute, Fire Technician

Countersigned by:..... *M. NUNNEY* P Doherty, Operational Head
PP M. NUNNEY

Enquiries concerning this report should be addressed to Customer Services.





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Uncertainty Budget - Annex

The overall uncertainty budget for both BS EN 1021:Part 1 and 2:2014 is as follows:-

Timings: ± 2 seconds.





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Uncertainty Budget - Annex

The overall uncertainty budget IMO FTP Code 2010:Part 8 is as follows:-

Measurements: $\pm 1\text{mm}$
Timings: ± 2 seconds

