



REPORT

issued by an Accredited Testing Laboratory

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Page
1 (2)



Back App Europe AB
Box 68
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Ignitability of upholstered furniture according to EN 1021-1 and EN 1021-2

(1 appendix)

Introduction

SP has by request of Back App Europe AB performed fire tests according to EN 1021-1 and EN 1021-2. The purpose of the tests is as a basis for technical fire classification.

Product

The fabric was tested with a standard non-flame retardant polyether foam with nominal density 20-22 kg/m³.

According to the client:

Product	Material	Manufacturer	Nominal data
VELITO, art. 12-08 Back App Nordic Wool part nr. 10010	88 % pure new wool 12 % polyamide	Baltic Textile Company	400 g/m ²

Sampling

The sample was delivered by the client. It is not known to SP Fire Technology if the product received is representative of the mean production characteristics.

The sample was received on March 20, 2013 at SP Fire Technology.

Test results

The furniture upholstery combination was tested with cigarette (EN 1021-1) and match flame equivalent (EN 1021-2) as ignition sources.

The ignition sources were applied in a position along the junction between seat and back. Special care was taken to note any progressive smouldering and/or flaming combustion in the combination.

No progressive smouldering or flaming occurred within the 60 minute test time (non-ignition). The test results are given in appendix 1.

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

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Criteria

Section 3 in EN 1021-1, 2006 and EN 1021-2, 2006 describing "Criteria of ignition" with regards to "Progressive smouldering ignition" (3.1) and "Flaming ignition" (3.2).

Assessment

The tested furniture upholstery combination, consisting of fabric called "VELITO", together with standard polyether foam with nominal density 20-22 kg/m³, meets the technical fire requirements according to EN 1021-1 and EN 1021-2.

SP Technical Research Institute of Sweden Fire Technology - Fire Dynamics

Performed by



Anna Bergstrand

Examined by



Per Thureson

Appendix

1. Test results

Appendix 1

Test results - EN 1021-1, 2006 and EN 1021-2, 2006

Product

According to the client:

Product	Material	Manufacturer	Nominal data
VELITO, art. 12-08 Back App Nordic Wool part nr. 10010	88 % pure new wool 12 % polyamide	Baltic Textile Company	400 g/m ²

Application

The fabric was tested with a non-flame retardant polyether foam with nominal density 20-22 kg/m³.

Observations, EN 1021-1, ignition source cigarette

Table 1. Observations during the cigarette tests.

Test no	1	2
The cigarette was applied in a position along the junction between seat and back, min:s	00:00	00:00
Cover ignited, min:s	-*	-*
Filling ignited, min:s	-*	-*
The cigarette died out, min:s	24:34	24:10
The test was finished, min:s	60:00	60:00

* Ignition/Flaming ignition of the materials was not observed.

Table 2. Test criteria and assessment, cigarette test.

	Test no	
	1	2
<i>"Smouldering criteria"</i>	Yes/No	
Unsafe escalating combustion (3.1 a)	No	No
Test assembly consumed (3.1 b)	No	No
Smoulders to extremities (3.1 c)	No	No
Smoulders through thickness (3.1 c)	No	No
Smoulders more than 1 h (3.1 d)	No	No
In final examination, presence of active smouldering (3.1 e)	No	No
<i>"Flaming criteria"</i>		
Occurrence of flames (3.2)	No	No

Appendix 1

Observations, EN 1021-2, ignition source small flame

Table 3. Observations during the match flame tests.

Test no	1	2	3
The ignition source was applied in a position along the junction between seat and back, min:s	00:00	00:00	00:00
Cover ignited, min:s	-*	-*	-*
Filling ignited, min:s	-*	-*	-*
The ignition source was removed, min:s	00:15	00:15	00:15
The test was finished, min:s	60:00	60:00	60:00

* Ignition/Flaming ignition of the materials was not observed.

Table 4. Test criteria and assessment, match flame test.

	Match flame equivalent		
	1	2	3
<i>"Smouldering criteria"</i>			
	Yes/No		
Unsafe escalating combustion (3.1 a)	No	No	No
Test assembly consumed (3.1 b)	No	No	No
Smoulders to extremities (3.1 c)	No	No	No
Smoulders through thickness (3.1 c)	No	No	No
Smoulders more than 1 h (3.1 d)	No	No	No
In the final examination, presence of active smouldering (3.1 e)	No	No	No
<i>"Flaming criteria"</i>			
Unsafe escalating combustion (3.2 a)	No	No	No
Test assembly consumed (3.2 b)	No	No	No
Flames to extremities (3.2 c)	No	No	No
Flames through thickness (3.1 c)	No	No	No
Flames longer than 120 s (3.2 d)	No	No	No



Appendix 1

Measured data of tested product

Thickness 1.6 – 1.7 mm.

Area weight 410 g/m².

Pre treatment

According to the client, the cover material has not been chemically treated to reduce ignitability. The cover material has therefore not been subjected to the water soaking and drying procedure described in Annex D before testing.

Conditioning

The tested product was conditioned for a minimum of 24 h at a temperature of (23 ± 2) °C and a relative humidity of (50 ± 5) %.

Date of test

April 11, 2013.

Back App Europe AB
Box 68
334 21 ANDERSTORP

Ignitability of upholstered furniture according to BS 5852:Part 1 (2 appendices)

Introduction

SP has by request of Back App Europe AB performed fire tests according to BS 5852:Part 1:1979. The purpose of the tests is as a basis for technical fire classification in accordance with the "1988 No. 1324 Consumer Protection - The Furniture and Furnishings (Fire) (Safety) Regulations 1988, Schedule 4 and Schedule 5, Part 1.

Product

The fabric was tested together with a non-flame retardant polyurethane foam with a nominal density of 20-22 kg/m³.

According to the client:

Product	Material	Manufacturer	Nominal data
VELITO, art. 12-08 Back App Nordic Wool part nr. 10010	88 % pure new wool 12 % polyamide	Baltic Textile Company	400 g/m ²

Sampling

The sample was delivered by the client. It is not known to SP Fire Technology if the product received is representative of the mean production characteristics.

The sample was received on March 20, 2013 at SP Fire Technology.

Test results

The furniture upholstery combination was tested with cigarette (source 0) and match flame equivalent (source 1) as ignition sources.

The ignition sources were applied in a position along the junction between seat and back. Special care was taken to note any progressive smouldering and/or flaming combustion in the combination.

The test results are given in appendix 1-2.

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

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Criteria

1988 No. 1324 Consumer Protection - The Furniture and Furnishings (Fire) (Safety) Regulations 1988, Schedule 4 (Based on BS 5852:Part 1:1979).

Clause 9.2 and 9.3 in BS 5852:Part 1:1979 describing progressive smouldering failure and flaming failure.

Assessment

The tested furniture upholstery combination complies with the "1988 No. 1324 Consumer Protection - The Furniture and Furnishings (Fire) (Safety) Regulations 1988, Schedule 4.

The tested furniture upholstery combination complies with the "1988 No. 1324 Consumer Protection - The Furniture and Furnishings (Fire) (Safety) Regulations 1988, Schedule 5, Part 1.

Deviation from standard

The test was performed on a test rig according to EN 1021-1:2006. This test rig is identical to the test rig in BS 5852-1 except for an extra plate at the end of the outer parts of the back and seat. This helps the filling from slipping and improves the repeatability of the test standard. This deviation was considered as having no influence on the test results (except for the better).

SP Technical Research Institute of Sweden Fire Technology - Fire Dynamics

Performed by



Anna Bergstrand

Examined by



Per Thureson

Appendices

1. Test results – Schedule 4
2. Test results – Schedule 5, Part 1

Appendix 1

Test results – Schedule 4, BS 5852:Part 1:1979

Product

According to the client:

Product	Material	Manufacturer	Nominal data
VELITO, art. 12-08 Back App Nordic Wool part nr. 10010	88 % pure new wool 12 % polyamide	Baltic Textile Company	400 g/m ²

Application

The fabric was tested together with a non-flame retardant polyurethane foam with a nominal density of 20-22 kg/m³.

Observations, cigarette test (ignition source 0)

Table 1. Observations during the cigarette tests. (min:sec)

Test no	1	2
The cigarette was applied in a position along the junction between seat and back	00:00	00:00
Cover ignited	-*	-*
Filling ignited	-*	-*
The cigarette died out	24:34	24:10
The test was finished	60:00	60:00

* Ignition/Flaming ignition of the materials was not observed.

Observations after the fire test, cigarette (ignition source 0)

No progressive smouldering or flaming occurred within the 60 minute test time (non-ignition).

Measured data of tested product

Thickness 1.6 – 1.7 mm.
Area weight 410 g/m².

Pre-treatment

According to the client, the cover material has not been chemically treated to reduce ignitability. The cover material has therefore not been subjected to the procedure described in BS 5651:1973 before testing.

Conditioning

The tested product was conditioned for a minimum of 24 h at a temperature of (23 ± 2) °C and a relative humidity of (50 ± 5) %.

Date of test

April 11, 2013.

Appendix 2

Test results –Schedule 5, part 1, BS 5852:Part 1:1979

Product

According to the client:

Product	Material	Manufacturer	Nominal data
VELITO, art. 12-08 Back App Nordic Wool part nr. 10010	88 % pure new wool 12 % polyamide	Baltic Textile Company	400 g/m ²

Application

The fabric was tested together with a non-flame retardant polyurethane foam with a nominal density of 20-22 kg/m³.

Observations, match flame equivalent (ignition source 1)

Table 1. Observations during the gas flame tests. (min:sec)

Test no	1	2
The ignition source was applied in a position along the junction between seat and back	00:00	00:00
Cover ignited	00:16	00:17
Filling ignited	-*	-*
The ignition source was removed	00:20	00:20
The flames in the cover died out	00:20	00:20
The test was finished	60:00	60:00

* Ignition/Flaming ignition of the materials was not observed.

Observations after the fire test, match flame equivalent (ignition source 1)

No progressive smouldering or flaming occurred within the 60 minute test time (non-ignition).

Measured data of tested product

Thickness 1.6 – 1.7 mm.
Area weight 410 g/m².

Pre-treatment

According to the client, the cover material has not been chemically treated to reduce ignitability. The cover material has therefore not been subjected to the procedure described in BS 5651:1973 before testing.

Conditioning

The tested product was conditioned for a minimum of 24 h at a temperature of (23 ± 2) °C and a relative humidity of (50 ± 5) %.

Date of test

April 11, 2013.