



Report nr.	<b>1501655-003</b>
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TEST	M.U.	RESULTS
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**15066 UPHOLSTERY FURNITURE: assessment of the ignitability by SMOULDERING CIGARETTE**

**Method:** TB 117: 2013

**Instrument:** Mock-up Tester

Test executed on:

COVER FABRIC

Ignition source applied:

source 0 (SMOULDERING CIGARETTE)

Materials of test assembly:

Upholstery filling: NON fire retardant polyurethane foam with a density of 28 kg/m<sup>3</sup>

Inner cover: -

Outer cover: SEE ARTICLE DESCRIPTION

TEST RESULT:

SAMPLE PASSES THE TEST

Note: to assess the ignitability of this sample, the test has been carried out using a NON fire-retardant polyurethane foam with a density of 28 kg/m<sup>3</sup> as filling of the upholstered seating. The test result could be different using another type of filling material.

Annex n.:

6F

Details of the test results related to each specimen can be seen in the annex of this test report.

**15566 UPHOLSTERY FURNITURE: assessment of the ignitability by SMOULDERING CIGARETTE**

**Method:** UNI EN 1021-1:2014

**Instrument:** Small Test Rig for Flammability test

Sample pretreatment:

sample wasn't submitted to any pretreatment because it wasn't chemically treated with flame retardant

Ignition source applied:

source 0 (SMOULDERING CIGARETTE)

Materials of test assembly:

Upholstery filling: fire retardant polyurethane foam with a density of 30 kg/m<sup>3</sup>

Inner cover: -

Outer cover: SEE ARTICLE DESCRIPTION

TEST RESULT:

SAMPLE PASSES THE TEST - NON IGNITION

Note: to assess the ignitability of this sample, the test has been carried out using a fire-retardant polyurethane foam with a density of 30 kg/m<sup>3</sup> as filling of the upholstered seating. The test result could be different using another type of filling material.

Annex n.:

7F



Report nr.

1501655-003

**TEST**

**M.U.**

**RESULTS**

**15576 UPHOLSTERY FURNITURE: assessment of the ignitability by MATCH FLAME EQUIVALENT**

**Method:** UNI EN 1021-2:2014

**Instrument:** Small Test Rig and burner for Flammability test

**Sample pretreatment:**

sample wasn't submitted to any pretreatment because it wasn't chemically treated with flame retardant

**Ignition source applied:**

source 1 (MATCH FLAME EQUIVALENT)

**Materials of test assembly:**

Upholstery filling: fire retardant polyurethane foam with a density of 30 kg/m<sup>3</sup>

Inner cover: -

Outer cover: SEE ARTICLE DESCRIPTION

**TEST RESULT:**

**SAMPLE PASSES THE TEST - NON IGNITION**

Note: to assess the ignitability of this sample, the test has been carried out using a fire-retardant polyurethane foam with a density of 30 kg/m<sup>3</sup> as filling of the upholstered seating. The test result could be different using another type of filling material.

Annex n.:

8F

**END OF REPORT**

Supervisor Head  
Dr. Giovanna Baglio

Technical Head  
Prof. Mario Frigerio



Annex n. 6F to test report n. 1501655-003

**DETAILS OF TEST RESULTS**

**Test executed according to TB 117:2013  
 Requirements, Test procedure and Apparatus for testing the Smolder Resistance of  
 Materials used in Upholstered Furniture**

Sample description: **S12788 / ALAMO**

Declared composition: **100% Trevira**

Conditioning of test specimen and ignition source: **24 h at 21 ± 3 °C, <55% r.h.**

Testing temperature and r.h.: **19°C, 43% r.h.**

Filling specification: **NON FIRE-RETARDANT polyurethane foam with a density of 28 kg/m<sup>3</sup>**

Date of test: **09.03.2015**

**Type of fabric: COVER FABRIC**

Specimen number	1	2	3
Total combustion of the cigarette (YES / NO)	YES	YES	YES
Time of progressive smouldering from placement of the source (min)	32	33	38
Combustion of the sample (YES / NO)	YES	YES	YES
Size of the damage in the vertical direction (mm)	20	20	22
Combustion observed in polyurethane backing (YES / NO)	YES	YES	YES
<b>CIGARETTE TEST RESULT (PASS/FAIL)</b>	<b>PASS</b>	<b>PASS</b>	<b>PASS</b>

**Cover Fabric Classification (ref. TB 117:2013)**

A single mock-up test specimen fails to meet the requirements if any of the following criteria occurs:

- a) The mock-up test specimen continues to smolder after the 45 minute test duration;
- b) A vertical char length of more than 45 mm develops on the cover fabric
- c) The mock-up test specimen transitions to open flaming.

2. The cover fabric passes the test if three initial mock-up specimens pass the test, i.e., the cigarettes burn their full length and the mock-ups are no longer smoldering.

3. If more than one initial specimen fails, the cover fabric fails the test.

4. If any one of the three initial specimens fails, repeat the test on additional three specimens.

5. If all three additional specimens pass the test, the cover fabric passes the test. If any one of the additional three specimens fails, the cover fabric fails the test.

*The following test result 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 material in use.*



**Annex n. 7F to test report n. 1501655-003**

**DETAILS OF TEST RESULTS**

**Test executed according to UNI EN 1021-1:2014 (EN 1021-1:2014)  
 Furniture - Assessment of the ignitability of upholstered furniture  
 Part 1: Ignition source: smouldering cigarette**

Article description: **S12788 | ALAMO**

Declared composition: **100% Trevira**

Materials of test assembly:

Upholstery filling: **fire-retardant polyurethane foam with a density of 30 kg/m<sup>3</sup>**

Inner cover: -

Outer cover: **see article description**

Conditioning of test specimen: **23 ± 2 °C, 50 ± 5 % r.h.**

Testing temperature and r.h.: **19 °C, 38 % r.h.**

Sample pre-treatment: **sample wasn't submitted to any pretreatment because it wasn't chemically treated with flame retardant**

Date of test: **10.03.2015**

<b>SMOULDERING CRITERIA:</b>	<b>first cigarette</b>	<b>second cigarette</b>	<b>third cigarette</b>	<b>Comments</b>
<b>Smouldering criteria:</b>				
Unsafe escalating combustion	NO	NO	-	-
Test assembly consumed	NO	NO	-	-
Smoulders to extremities	NO	NO	-	-
Smoulders through thickness	NO	NO	-	-
Smoulders more than 1 h	NO	NO	-	Time elapsed between placing the cigarette and extinguishing 1 <sup>st</sup> cigarette: 25 min 2 <sup>nd</sup> cigarette: 26 min
In final examination, presence of active smouldering	NO	NO	-	-
<b>Flaming criteria:</b>				
Evidence of flames	NO	NO	-	-

YES = criteria observed

NO = criteria not observed

**TEST RESULT: SAMPLE PASSES THE TEST - NON IGNITION**

*The above 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 material in use.*

*The probability that the observation criteria mentioned represent the true is equal to 95%.*

*The expanded uncertainty is calculated by multiplying the combined standard uncertainty for a coverage factor K = 2, which for a normal distribution leads to a confidence level of approximately 95%.*



**Annex n. 8F to test report n. 1501655-003**

**DETAILS OF TEST RESULTS**

**Test executed according to UNI EN 1021-2:2006 (EN 1021-1:2006)  
 Furniture - Assessment of the ignitability of upholstered furniture  
 Part 2: Ignition source: match flame equivalent**

Article description: **S12788 I ALAMO**

Declared composition: **100% Trevira**

Materials of test assembly:

Upholstery filling: **fire-retardant polyurethane foam with a density of 30 kg/m<sup>3</sup>**

Inner cover: -

Outer cover: **see article description**

Conditioning of test specimen: **23 ± 2 °C, 50 ± 5 % r.h.**

Testing temperature and r.h.: **18 °C, 40 % r.h.**

Sample pre-treatment: **sample wasn't submitted to any pretreatment because it wasn't chemically treated with flame retardant**

Date of test: **12.03.2015**

<b>SMOULDERING CRITERIA:</b>	<b>1st test</b>	<b>2nd test</b>	<b>3rd test</b>	<b>Comments</b>
<b>Smouldering criteria:</b>				
Unsafe escalating combustion	NO	NO	NO	-
Test assembly consumed	NO	NO	NO	-
Smoulders to extremities	NO	NO	NO	-
Smoulders through thickness	NO	NO	NO	-
Smoulders more than 1 hour	NO	NO	NO	Time smouldering: 1st test: 18 s 2nd test: 20 s 3rd test: 20 s
In final examination, presence of active smouldering	NO	NO	NO	-
<b>Flaming criteria:</b>				
Unsafe escalating combustion	NO	NO	NO	-
Test assembly consumed	NO	NO	NO	-
Flames to extremities	NO	NO	NO	-
Flames through thickness	NO	NO	NO	-
Flames more than 120 s	NO	NO	NO	Time flaming: 1st test: 1 s 2nd test: 2 s 3rd test: 1 s

**YES = criteria observed**

**NO = criteria not observed**

**TEST RESULT: SAMPLE PASSES THE TEST - NON IGNITION**

*The above 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 material in use.*

*The probability that the observation criteria mentioned represent the true is equal to 95%.*

*The expanded uncertainty is calculated by multiplying the combined standard uncertainty for a coverage factor K = 2, which for a normal distribution leads to a confidence level of approximately 95%.*