

Handled by, department

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Fire Technology

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Elmo Leather AB
512 81 SVENLJUNGA

Ignitability of upholstered furniture according to IMO Resolution A.652(16)

(1 appendix)

Product

Upholstered furniture combination consisting of:

Lightly pigmented chrome tanned leather from Scandinavian cattle hide called "Elmotech".
The leather had a nominal thickness of 1.3 - 1.5 mm.

The cover material was tested with filling material consisting of non flame retardant standard polyether foam with nominal density 21 kg/m³.

Manufacturer

Cover material: Elmo Leather AB, Svenljunga, Sweden.

Polyether foam: Recticel AB, Gislaved, Sweden.

Purpose of test

Basis for technical fire classification.

Sampling

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

The cover material was received on October 25, 2007 at SP Fire Technology.

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Test results

The upholstery combination was tested with cigarette and match flame equivalent 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.

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.

Criteria

In the test with smouldering cigarette the combination of cover and foam should not ignite and burn with open flame, or generate progressive smouldering within one hour after that the cigarette was applied.

In the test with gas flame the combination of cover and foam should not ignite and burn with open flame during more than 120 seconds after the removal of the ignition source, or generate progressive smouldering within one hour after that the gas flame was applied.

Assessment

The tested furniture upholstery combination, consisting of cover material called "Elmotech", together with standard polyether foam with nominal density 21 kg/m³ meets the technical fire requirements according to IMO Resolution A.652(16).

SP Sveriges Tekniska Forskningsinstitut
Fire Technology - Materials Reaction to Fire



Per Thureson
Technical Manager



Ida Larsson
Technical Officer

Appendix

1 Test results

Appendix 1

IMO Resolution A.652(16), 1989

Ignition source: Cigarette

Product

Upholstered furniture combination consisting of:

Lightly pigmented chrome tanned leather from Scandinavian cattle hide called "Elmotech".
The leather had a nominal thickness of 1.3 - 1.5 mm.

The cover material was tested with filling material consisting of non flame retardant standard polyether foam with nominal density 21 kg/m³.

Observations

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	28:15	21:25
The glow was extinguished, min:s	-	-
The test was finished, min:s	60:00	60:00

* Ignition of the materials was not observed.

Observations after the fire test

Test no	1		2	
	Cover	Filling	Cover	Filling
Total charred length in:				
Cigarette length axis, back, mm	1	0	2	0
Up along back, mm	3	0	2	0
Depth, back, mm	-	0	-	0
Cigarette length axis, seat, mm	1	0	2	0
Forward, seat, mm	2	0	4	0
Depth, seat, mm	-	0	-	0
Charred to full depth of back	No		No	
Charred to full depth of seat	No		No	

Appendix 1

IMO Resolution A.652(16), 1989
Ignition source: Match flame equivalent

Observations

Test no	1	2
The ignition source was applied in a position along the junction between seat and back, min:s	00:00	00:00
The ignition source was removed, min:s	00:20	00:20
Cover ignited, min:s	_*	_*
Filling ignited, min:s	_*	_*
Flames in the cover died out, min:s	-	-
Flames in the filling died out, min:s	-	-
The glow was extinguished, min:s	-	-
The test was finished, min:s	60:00	60:00

* Ignition of the materials was not observed.

Observations after the fire test

Test no	1		2	
	Cover	Filling	Cover	Filling
Total charred length in:				
Burner length axis, back, mm	9	0	7	0
Up along back, mm	62	0	66	0
Depth, back, mm	-	0	-	0
Burner length axis, seat, mm	5	0	2	0
Forward, seat, mm	7	0	8	0
Depth, seat, mm	-	0	-	0
Charred to full depth of back	No		No	
Charred to full depth of seat	No		No	

Appendix I

Measured data of tested product

Thickness cover material 1.7 – 2.2 mm.

Area weight cover material 700 - 1000 g/m².

Pre-treatment

None.

Conditioning

16 h at temperature 23 ± 2 °C and relative humidity (50 ± 5) %.

Date of test

November 14, 2007.