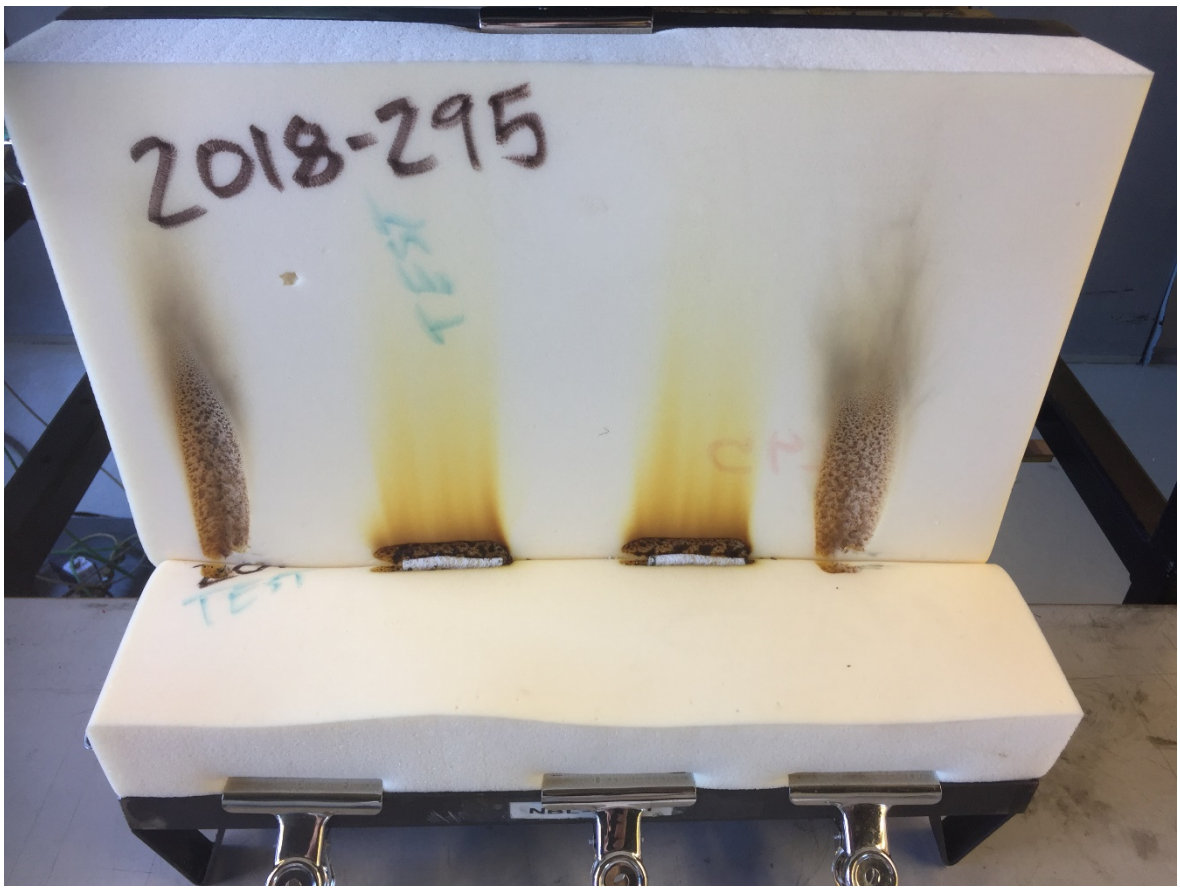
Test report – Sandella Fabrikken AS

Fire test of filling material F-333 HR

Test according to IMO 2010 FTP Code, Part 8

Author:
Robert Olofsson



RISE Fire Research
RISE Report F18 130005-19

Fire test of filling material F-333 HR

NORWEGIAN ACCREDITATION TEST 014

VERSION	DATE
1	2018-03-21

AUTHOR
Robert Olofsson

CLIENT	CLIENT'S REF.
Sandella Fabrikken AS Sykkylvsvegen 413 6230 Sykkylven Norge	Ingemar Eliassen

PROJECT NO.	NO. PAGES INCL. APPENDICES:
130005-19	6

TEST OBJECT	TEST OBJECT RECEIVED
Filling material, F-333 HR Standardskum	2018-03-09

TEST PROGRAMME	TEST LOCATION	DATE OF TEST
IMO 2010 FTP Code, Part 8	RISE Fire Research	2018-03-15

SUMMARY:
The filling material F-333 HR Standardskum (foam) was tested according to IMO 2010 FTP Code, Part 8. The test was performed as an independent test for the filling material and tested without cover material, see Appendix 3, section 2 of IMO 2010 FTP Code, Part 8.

The product F-333 HR Standardskum satisfies the criteria for ignitability of filling materials used in upholstered furniture when subjected to either a smouldering cigarette or a lighted match, according to IMO 2010 FTP Code, Part 8.

PREPARED BY	SIGNATURE
Robert Olofsson, Engineer	

APPROVED BY	SIGNATURE
Karolina Storesund, Research scientist	

REPORT NO.	CLASSIFICATION
F18 130005-19	Restricted

History

VERSION	DATE	VERSION DESCRIPTION
1	2018-03-21	First version.

Contents

1 PRODUCT DESCRIPTION

The information given in sections 1.1, 1.2 and 1.4 were given by the client.

1.1 Type of product

The product F-333 HR Standardskum is a filling material (foam) used in upholstered furniture.

1.2 Manufacturer, place of production

Sandella Fabrikken AS, Sykkylvsvegen 413, 6230 Sykkylven, Norway.

1.3 Sampling

The tested material was selected and sent to the laboratory by the client. The laboratory received the material 2018-03-09. It is not known to RISE Fire Research AS if the fire characteristics of the product received are representative of the fire characteristics of the average product.

1.4 Material properties

Foam of quality F-333 HR Standardskum:

Type of material:	Foam/filling material
Nominal density:	Not stated by the client.
Fire retardant:	Not stated by the client.

1.5 Test specimen

The received filling material was arranged in a test rig representing the seat and back in a chair, see appendix A for further details. The test was performed as an independent test for the filling material and tested without cover material, see Appendix 3, section 2 of IMO 2010 FTP Code, Part 8.

Foam of quality F-333 HR Standardskum:

Measured thickness:	75 mm
Measured density:	51 kg/m^3
Colour:	Cream

2 TESTING

Operator:	Robert Olofsson, Engineer
Conditioning of the test material:	The test material was stored first in indoor ambient conditions for 72 hours and then in an atmosphere with relative humidity of (50 ± 5) % and a temperature of (23 ± 2) °C for at least 16 hours immediately before the test.
Number of single tests:	2 with smouldering cigarette and 2 with flame ignition source.
Duration of the tests:	1 hour for smouldering cigarette tests and 2 minutes and 20 seconds for flame ignition source tests.

3 REMARKS / DEVIATIONS

According to IMO 2010 FTPC Part 8, the following statement shall be given in the test report:

"The test results relate to the behavior of the test specimens of a product under the particular conditions of the test; they are not intended to be the sole criterion for assessing the potential fire hazard of the product in use."

4 TEST RESULTS

The tests were performed in a room under indoor ambient conditions, having a temperature of (20 ± 5) °C and a relative humidity of 20% to 70%.

Test results for the cigarettes batch used:

	Cigarette 1	Cigarette 2
Length:	70 mm	70 mm
Diameter:	8 mm	8 mm
Mass:	0.90 g	0.93 g
Smouldering rate:	10:27 min/50 mm	10:27 min/50 mm

Positioning of ignition sources:

- The cigarettes were placed in the junction between the horizontal and vertical parts of the test pieces, at least 50 mm from the nearest side edge or from any marks left by any previous cigarette test.
- The flame was held along the junction between the horizontal and vertical parts of the test specimen for 20 seconds, at least 50 mm from the nearest side edge or from any marks left by any previous test.

Table 1 *Results from testing of the upholstery combination of leather of quality **Sierra** on filling of non-flame-retardant flexible polyether foam according to IMO 2010 FTP Code, part 8*

Ignition source: Cigarettes	***Cigarette 1***	***Cigarette 2***
Damaged area (burning and/or char):	S: 77 mm × 15 mm B: 77 mm × 25 mm	S: 76 mm × 15 mm B: 76 mm × 25 mm
Progressive smouldering or flaming within 60 minutes:	No	No
Observations/comments:	No particular observations	No particular observations
Final examination:	Pass	Pass
Ignition source: Propane flame	***Propane flame 1***	***Propane flame 2***
Damaged area (burning and/or char):	S: 23 mm × 16 mm B: 40 mm × 120 mm	S: 20 mm × 20 mm B: 30 mm × 150 mm
Progressive smouldering or flaming 120 seconds after removal of burner tube:	No	No
Observations/comments:	No particular observations	No particular observations
Final examination:	Pass	Pass

S: Seat *B: Back*

A Test procedure and criteria for classification

A.1 Test procedure

IMO FTP Code 2010, Part 8 describes a method for assessment of ignitability of material combinations in upholstered furniture. Ignition sources applied are a smouldering cigarette and a small flame.

The test is performed on a test rig described in IMO 2010 FTP Code, Part 8:

- Dimensions of seat: 450 mm x 150 mm.
- Dimensions of back: 450 mm x 300 mm.

All tests are performed in a room under indoor ambient conditions having a temperature of 20 ± 5 °C and a relative humidity of 20% to 70%.

Two parallel tests are conducted with smouldering cigarette and small flame exposure respectively. The cigarettes and small flames are positioned/held along the junction between the horizontal and vertical parts of the test specimen.

During testing with smouldering cigarette, the cigarette is allowed to smoulder completely, while the small flame is removed after 20 seconds exposure. Development of fire in the test object is observed.

The test specimens consist of a seat a back, having dimensions:

- Dimensions of seat: 450 mm x 150 mm x 75 mm.
- Dimensions of back: 450 ± 5 mm x 300 ± 5 mm x 75 ± 2 mm.

Cover size:

Dimensions required for each test: 800 ± 10 mm x 650 ± 10 mm.

Upholstery filling:

Dimensions required for each test:	450 ± 5 mm x 150 ± 5 mm x 75 ± 2 mm thick 450 ± 5 mm x 300 ± 5 mm x 75 ± 2 mm thick

A.2 Criteria for classification

The tested object shall not show any sign of development of smouldering fire or flames within one hour after the smouldering cigarette has been placed in position.

The tested object shall show no sign of development of smouldering fire or flames more than 120 seconds after the ignition flame has been removed from the object.

If both of these criteria are fulfilled, the tested material combination satisfies the criteria to ignitability of upholstered furniture according to IMO 2010 FTP Code, Part 8.

RISE Fire Research AS

Postal address:	P. O. Box 4767 Sluppen, 7465 Trondheim
Telephone:	+47 464 18 000
E-mail:	post@risefr.no
Internet:	www.risefr.no