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**ASTM E 162 Surface Flammability
of "Moniflex as manufactured by Isoflex AB"**

A Report To:	Isoflex AB Soldatvägen 1 783 50 Gustafs Sweden
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Submitted By:	Exova Warringtonfire North America
Report No.	16-002-411(A) 2 pages + appendix
Date:	July 28, 2016

ACCREDITATION To ISO/IEC 17025 for a defined Scope of Testing by the International Accreditation Service

SPECIFICATIONS OF ORDER

Determine surface flammability in accordance with ASTM E 162, as per Exova GmbH reference Order No. E04316000341 dated July 12, 2016.

IDENTIFICATION

Cellulose based insulation material, identified as "Moniflex as manufactured by Isoflex AB".

(Exova sample identification number 16-002-S0411)

TEST RESULTS

ASTM E 162-15b

Surface Flammability of Materials Using a Radiant Heat Energy Source. (Is = Flame Spread Index).

	<u>Es</u>	<u>Q</u>	<u>Is</u>	<u>Observations</u>
1:	1.0	1.0	1	Maximum flame front propagation to a distance of 0.5 inches.
2:	1.0	0.9	1	Material melts.No flaming runnin or flaming dripping observed.
3:	1.0	0.5	1	Note: Specimens were supported with 1" hexagonal wire
4:	1.0	0.9	<u>1</u>	mesh. Test duration: 5 minutes
Rounded Average:			0	
Specified Maximum:			25	No flaming running or flaming dripping permitted
NFPA 130 (2014 Edition)				

CONCLUSIONS

The cellulose based insulation material identified in this report, meets NFPA 130 (2014 Edition) requirements as they pertain to surface flammability (ASTM E 162).

Note: This is an electronic copy of the report. Signatures are on file with the original report.

Marc Laniel,
Technician.

Ian Smith,
Technical Manager.

Note: This report and service are covered under Exova Canada Inc. Standard Terms and Conditions of Contract which may be found on the Exova website (www.exova.com), or by calling 1-866-263-9268.

APPENDIX

(1 Page)

Summary of Test Procedure

ASTM E 162-15bSurface Flammability of Materials Using a Radiant Energy Source.

As specified, four specimens, 6 x 18 inches in size, are pre-dried for 24 hours at 60°C. Section 10.1 of ASTM E 162-15b states to then condition the specimens to "equilibrium (constant weight)" but does not specify a definition or procedure with respect to establishing the "constant weight". Therefore, prior to testing, the specimens are then conditioned for a minimum period of 24 hours at 50 ± 5% relative humidity and 23 ± 3°C.

Each specimen is mounted into a holder and inclined at 30° from the vertical in front of a 12 x 18 inch gas-fired radiant panel. The orientation of the specimen is such that ignition is forced near its upper edge by a pilot flame, and the flame front progresses downwards.

A factor derived from the rate of progress of the flame-front and the rate of heat liberation by the material under test is calculated as follows and then reported after rounding the average of the tests to the nearest multiple of 5:

$$I_s = F_s \cdot Q$$

Where: I_s is the flame spread index

F_s is the flame spread factor

Q is the heat evolution factor

For thermal and acoustical insulation, NFPA 130 (2014 Edition) specify a maximum I_s acceptance criterion of 25 for thermal and acoustical insulation, with no flaming running or dripping allowed.