

Exova
2395 Speakman Dr.
Mississauga
Ontario
Canada
L5K 1B3

T: +1 (905) 822-4111
F: +1 (905) 823-1446
E: sales@exova.com
W: www.exova.com



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**EVALUATION OF “COLORSEAL SEISMIC” FOAM EXPANSION JOINT MATERIAL
FOR STEADY STATE THERMAL TRANSMISSION PROPERTIES BY MEANS OF
A HEAT FLOW METER IN ACCORDANCE WITH ASTM C518 – 04**

A Report to:	Emseal Corporation 120 Carrier Drive Rexdale, Ontario M9W 5R1
Attention:	Bill Witherspoon
Telephone:	(416) 740 2090 x 220
Fax:	(416) 740 0233
Email:	bwitherspoon@emseal.com
Proposal No.:	09-006-6587
Report No.:	09-06-M0374-A, Revision 1 3 Pages
Date:	January 14, 2010

1.0 INTRODUCTION

At the request of Emseal Corporation, Exova was retained to evaluate a sample of foam expansion joint material for thermal transmission properties, in accordance with ASTM C518 – 04 “Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus”. The details of the proposed service are provided in Proposal No. 09-006-5687

Upon receipt, the sample was assigned the following Exova Sample No.:

Client Sample Identification	Exova Sample No.
“Emseal Colorseal Seismic” Foam Expansion Joint Material	09-06-M0374-A

The material was evaluated in its condensed state. The material was held in a wooden cavity with outside dimensions of 300 mm x 300 mm. The frame height was less than that of the sample so that contact was ensured between the sample and the measurement plates.

2.0 PROCEDURE

The sample was evaluated in accordance with the following standard test method:

Test Description	Test Method
Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	ASTM C518 – 04

Sample: 300 mm x 300 mm by 100 mm (nominal)
Conditioning: > 40 hrs at 23°C and 50% RH
Conditioning Room 3028, MII# A11354
Test Conditions: 24°C mean temperature
22°C delta T across the sample
Apparatus: LaserComp Fox 314 Heat Flow Meter (MII # A14505)
Orientation: Top and Bottom Faces Horizontal
Heat Flow Vertical (Through Faces)
Test Date: 2009-10-20

3.0 REVISION

2010-01-14 The report was revised to correct a typographical error in the sample name throughout the report. No technical changes were made.

4.0 RESULTS

A summary of results is presented below. In all cases, SI units are the primary units of measure.

Table 1 – Thermal Transmission Properties			
ASTM C 518 – 04			
Exova Sample No.: 09-06-M0374-A			
Description	Result		
	Units:	Metric	British
Specimen Thickness mm [in.]		100.69	[3.964]
Upper Surface Temperature °C [°F]		13.02	[55.44]
Lower Surface Temperature °C [°F]		35.02	[95.04]
Temperature Differential °C [°F]		22.00	[39.60]
Mean Temperature °C [°F]		24.02	[75.24]
Rate of Heat Flux W/m ² [Btu/h.ft ²]		14.43	[4.57]
Thermal Conductance W/m ² K [Btu/h.ft ² .°F]		0.66	[0.12]
Thermal Resistance K.m ² /W [°F.ft ² .h/Btu]		1.52	[8.66]
Thermal Conductivity W/m.K [Btu.in./h.ft ² .°F]		0.0660	[0.4579]
Thermal Resistivity K.m/W [°F.ft ² .h/Btu.in.]		15.14	[2.184]

5.0 CONCLUSION

The foam expansion joint material submitted by Emseal Corporation has a thermal resistance of 1.5 K·m²/W (R-8.6), at test thickness of 100.7 mm (4.0 inches).

Reported by:


David Beauchamp, B.Sc., Ext. 228
Scientist, Building Performance Centre
Products Testing Group

Approved by:


Franz Bauer, Ext. 403
Manager, Building Performance Centre
Products Testing Group

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