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**EVALUATION OF “IBS COMPRESSION SEAL” FOR ABU DHABI  
INTERNATIONAL AIRPORT FOR STEADY STATE THERMAL TRANSMISSION  
PROPERTIES BY MEANS OF A HEAT FLOW METER  
IN ACCORDANCE WITH ASTM C518 – 04**

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A Report to:	Prospec Specialties Inc. Suite 400, 3601 Highway 7 Markham, ON L3R 0M3
Attention:	Clarke Wilson
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Proposal No.:	09-006-6587
Report No.:	09-06-M0374-A, Revision 2 3 pages
Date:	January 29, 2015

## 1.0 INTRODUCTION

The material submitted for testing has been warranted by the manufacturer to be identical to the private labelled material by Prospec Specialties Inc. material, identified as “IBS Compression Seal,” in both composition and manufacturing process.

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.
IBS Compression Seal	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.
- 2015-01-28 The report was revised to be reported to Prospec Specialties Inc. and the sample identification was changed to the private label of “IBS Compression Seal.”

**4.0 RESULTS**

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


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

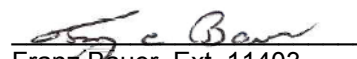
**5.0 CONCLUSION**

The foam expansion joint material submitted for testing has a thermal resistance of 1.5 K·m<sup>2</sup>/W (R-8.6), at test thickness of 100.7 mm (4.0 inches).

**Reported by:**

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