

TEST REPORT



Intertek

REPORT NUMBER: 101220551COQ-001

ORIGINAL ISSUE DATE: June 27, 2013

EVALUATION CENTER

INTERTEK TESTING SERVICES NA LTD.
1500 BRIGANTINE DRIVE
COQUITLAM, BC V3K 7C1

RENDERED TO

MANSONVILLE PLASTICS (BC) LTD.
19402 – 56TH AVENUE
SURREY, BC V3S 6K4

PRODUCT EVALUATED: Freezer/Cooler Floor Panel
EVALUATION PROPERTY: Uniformly Distributed and Concentrated Loads

Report of Structural Insulated Panel for compliance with the selected requirements of the following:

- **2010 National Building Code of Canada**
 - **Section 4.1.5.3 Full and Partial Loading**
 - **Section 4.1.5.9 Concentrated Loads**

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2 Introduction

Intertek Testing Services NA Ltd. (Intertek) has conducted proof load tests for Mansonville Plastics (BC) Ltd. on a freezer/cooler floor panel. The testing was conducted in accordance with the following:

- 2010 National Building Code of Canada (NBC)
 - Section 4.1.5.3 Full and Partial Loading
 - Section 4.1.5.9 Concentrated Loads

The testing was completed during the month of June 2013.

3 Test Samples

3.1. SAMPLE SELECTION

The client submitted two (2) panel assemblies to the Evaluation Center on June 10, 2013 (Coquitlam ID# VAN1306100923-001). Samples were not independently selected for testing.

3.2. SAMPLE AND ASSEMBLY DESCRIPTION

The samples were identified as Freezer/Cooler Floor Panels measuring nominal 3 ft. x 3 ft. x 4 in. thick. The panels consist of an expanded polystyrene (EPS) foam core sandwiched between 24ga steel inner and outer skins.

4 Testing and Evaluation Methods

4.1. CONDITIONING

The panels were maintained in standard laboratory conditions for a minimum of 24 hours at a temperature of $23 \pm 2^{\circ}\text{C}$ ($73 \pm 4^{\circ}\text{F}$) and relative humidity of $50 \pm 5\%$ prior to testing.

4.2. REQUIREMENTS

2010 NBC: Section 4.1.5.3 Full and Partial Loading

The uniformly distributed live load shall be not less than the value listed in Table 4.1.5.3., which may be reduced as provided in Article 4.1.5.8., applied uniformly over the entire area or on any portions of the area, whichever produces the most critical effects in the members concerned.

2010 NBC: Section 4.1.5.9 Concentrated Loads

The specified live load due to possible concentrations of load resulting from the use of an area of floor or roof shall not be less than that listed in Table 4.1.5.9. applied over the loaded area noted and located so as to cause maximum effects, except that for occupancies not listed in Table 4.1.5.9., the concentrations of load shall be determined in accordance with Article 4.1.5.2.

4.3. UNIFORMLY DISTRIBUTED LOAD TEST

The uniformly distributed load test was conducted per the requirements of the 2010 NBC, Section 4.1.5.3. Per the client's request, a minimum specified load of 100 psf (4.8 kPa) was required. Testing was conducted using the chamber method for uniformly distributed loading. One (1) freezer/cooler floor panel was placed in a horizontal uniformly distributed load testing apparatus and was supported on two (2) ends with nominal 2 in. x 4 in. SPF lumber. A polyethylene film was applied loosely over the entire sample with extra folds of material at each corner. The air within the test chamber was then evacuated using a vacuum pump, inducing a uniformly distributed load to the sample. The load was increased continuously until the required uniform load of 100 psf (4.8 kPa) was reached. The load was held for one minute and then released. The panel was then inspected for failure or any sign of visible damage.

4.4. CONCENTRATED LOAD TEST

The concentrated load test was conducted per requirements of the 2010 NBC, Section 4.1.5.9. Per the client's request, a minimum specified concentrated load of 2023 lbs (9.0 kN) was required for "*Floors of offices, manufacturing buildings, hospital wards and stages*". One (1) freezer/cooler floor panel was placed into a rigid test frame. A hydraulic ram and load cell assembly was used to apply the required load to the test sample. A load of 2023 lbs (9.0 kN) was applied to the test sample through a 29.5 in. x 29.5 in. (750 mm x 750 mm) steel loading plate. The test panel was loaded at a continuous rate to achieve the specified load. The load was held for one minute and then released. The panel was then inspected for failure or any sign of visible damage.

5 Testing and Evaluation Results

5.1. RESULTS AND OBSERVATIONS

The product test results are shown in Table 1 below (a complete set of test data is provided in Appendix A).

Table 1. Test Results			
Description	Section	Property	Pass/Fail
Freezer / Cooler Floor Panel	4.1.5.3	Uniformly Distributed Load Test, 100 psf (4.8 kPa)	Pass
	4.1.5.9	Concentrated Load Test, 2023 lbs (9.0 kN)	Pass


6 Conclusion

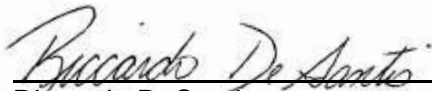
The freezer/cooler floor panel product in this report has complied with the loads specified in the following:

- 2010 National Building Code of Canada (NBC)
 - Section 4.1.5.3 Full and Partial Loading
 - Section 4.1.5.9 Concentrated Loads

The product test results are presented in Section 5 of this report.

INTERTEK TESTING SERVICES NA LTD.

Reported by: 
Chris Chang, P.Eng.
Engineer, Building Products

Reviewed by: 
Riccardo DeSantis
Manager, Building Products

APPENDIX A: Test Data (2 pages)



Company	Mansonville Plastics (BC) Ltd.	Technician(s)	Chris Chang <i>CC</i>
Project No.	G101220551	Reviewer	Riccardo DeSantis <i>RD</i>
Models	Freezer / Cooler Floor Panels	Start/End Date	June 25-27, 2013
Product Name	Same as above	Sample ID	VAN1306100923-001
Standard	2010 National Building Code, Section 4.1.5.3 Full and Partial Loading, Section 4.1.5.9 Concentrated Loads		

Test Data Package

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Test: **Uniformly Distributed Loads and Concentrated Loads**
Date: 27-Jun-13
Client: Mansonville Plastics (BC) Ltd.
Product: **Freezer / Cooler Floor Panel**
Method: 2010 National Building Code (NBC)
Section 4.1.5.3 Full and Partial Loading
Section 4.1.5.9 Concentrated Loads
Conditioning: Minimum 24 hours at a temperature of 23 ± 2°C and relative humidity of 50 ± 5%
Equipment: 5k lbf Capacity Load Cell (Intertek ID# 9-0343, cal due October 11, 2013)
Digitron 2027P Digital Manometer (Intertek ID# P60173, cal due May 8, 2014)
MicroLogPro EC750 Temperature and Humidity Indicator (Intertek ID# P60608, cal due February 2014)
Time/Temp/RH: 8:30AM / 21.6°C / 63.6%

Project #: G101220551
Eng/Tech: Blair Hendry *BH*
Reviewer: Riccardo DeSantis *R.D.*

Description	Section	Requirement	Pass/Fail	Observations
Freezer/Cooler Floor Panel	4.1.5.3	100 psf (4.8 kPa)	Pass	No sign of any change
	4.1.5.9	2023 lbs (9.0 kN)	Pass	No sign of any change