



Date June 23, 2003

Project No. 3044735

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Report No. 2

Client No. 34817

**Description** **Testing of Plastic Foam Insulation Integra-Spec Insulating Concrete System for Phil-Insul Corporation**

**Manufactured by** **Contour Products-Facility, Kansas City, Kansas**

**Client** Phil-Insul Corporation  
Unit 11U- 735 Arlington Park Place  
Kingston, Ontario  
K7M 8M8

Attention: Jo-Ann Zorzi

## **Introduction**

This report covers testing of the physical properties of Type 2 expanded polystyrene (EPS) plastic foam insulation used in Phil-Insul Corporation Integra-Spec Insulating Concrete System manufactured by Contour Products, Kansas City, Kansas facility from one (1) bead type identified as BASF BFL 327. Tests were performed in accordance with CAN/ULC-S701-01 "Standard for Thermal Insulation Polystyrene, Boards and Pipe Covering". The samples were tested for flexural strength, and compressive strength.

In addition the samples were tested for density according to method ASTM C303-98.

The BASF BFL 327 Type was sampled by Gene Wheat of Intertek Testing Services NA Ltd. on June 3, 2003 from Contour Products – Kansas City, Kansas facility. Samples were received for testing June 9, 2003. Testing was performed between the dates of June 16, 2003 and June 18, 2003.

Test equipment used is shown in Appendix attached to this report.

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## **Product Description**

Foam Description: Phil-Insul Integra-Spec Insulating Concrete System manufactured at Contour Products Kansas City, Kansas facility.

Material: Expanded polystyrene foam manufactured from one (1) bead type identified as BASF BFL 327.

Foam Panel Dimensions: 12" high X 48" long X 2-1/2" thick each side

Color: White

Web Description: High Impact Polystyrene reinforcing webs are cast into EPS foam to create a positive connection between interior and exterior EPS walls and to serve as an anchor point for surface finishing materials.

Web Material: High Impact Polystyrene

Web Spacing: Every 8" (203 mm) horizontally

Web Color: Black

**Summary of Test Results**

**BASF BFL327**

| Property                | CAN/ULC-S701-01 Requirement Number | Result   | Requirement (Type 2)    | Comment         |
|-------------------------|------------------------------------|--|-------------------------|-----------------|
| 1. Flexural Strength    | 5.1.1 table 1                      | 291 kPa (42.3 psi)                                   | Min 240 kPa (34.8 psi)  | Met requirement |
| 2. Compressive Strength | 5.1.1 table 1                      | 138 kpa (20.0 psi) @ 10% deformation                 | Min. 110 kPa (16.0 psi) | Met requirement |
| 3. Density              | Not Given                          | 24.14 kg/m <sup>3</sup> (1.507 lbs/ft <sup>3</sup> ) | Not Specified           |                 |

**Test Results**

1. Flexural Strength: ASTM C203-99: Method 1, Procedure B

**BASF BFL 327**

| Sample/ Specimen No. | Span mm (in.) | Thickness mm (in) | Width mm (in) | Break Load N (lb.) | Maximum Fiber Stress kPa (psi) | Requirement Min. kPa (psi) |
|----------------------|---------------|-------------------|---------------|--------------------|--------------------------------|----------------------------|
| 1/1                  | 254 (10)      | 24.8 (0.978)      | 101.1 (3.979) | 47.1 (10.59)       | 288 (41.8)                     |                            |
| 1/2                  | 254 (10)      | 24.9 (0.979)      | 101.1 (3.979) | 48.0 (10.78)       | 293 (42.4)                     |                            |
| 1/3                  | 254 (10)      | 25.0 (0.985)      | 101.3 (3.990) | 47.5 (10.68)       | 286 (41.4)                     |                            |
| 2/1                  | 254 (10)      | 24.7 (0.971)      | 101.3 (3.988) | 47.4 (10.65)       | 293 (42.5)                     |                            |
| 2/2                  | 254 (10)      | 24.7 (0.971)      | 101.1 (3.979) | 48.2 (10.83)       | 299 (43.3)                     |                            |
| 2/3                  | 254 (10)      | 24.9 (0.979)      | 101.2 (3.984) | 48.0 (10.79)       | 292 (42.4)                     |                            |
| 3/1                  | 254 (10)      | 25.2 (0.992)      | 101.1 (3.980) | 50.2 (11.28)       | 298 (43.2)                     |                            |
| 3/2                  | 254 (10)      | 24.9 (0.980)      | 101.2 (3.983) | 47.6 (10.70)       | 289 (42.0)                     |                            |
| 3/3                  | 254 (10)      | 24.9 (0.980)      | 101.0 (3.977) | 46.8 (10.53)       | 285 (41.4)                     |                            |
| Average              |               |                   |               |                    | 291 (42.3)                     | Min 240 (34.8)             |



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## **Conclusions**

### Physical Properties of Expanded Polystyrene

The one (1) bead type of expandable polystyrene plastic foam insulation identified as BASF BFL 327 in this report has met the requirements of CAN/ULC-S701-01 *"Standard for Thermal Insulation, Polystyrene Boards and Pipe Covering,"* for the compressive resistance, and flexural strength requirements for a Type 2 classified material.

Tested and reported by: Paul Roberts

**Respectfully submitted,**

INTERTEK TESTING SERVICES NA LTD.



Paul Roberts  
Physical Testing Services

**REVIEWED BY:**



Vern W. Jones, C.E.T.  
Manager  
Physical Testing Services

PR/VWJ/pr  
2 cc: client  
cc: ITS, Coquitlam, B.C.

## **APPENDIX**

### TEST EQUIPMENT

1. Specimens were weighed using an Ohaus Model GT4100 Balance.
2. Compressive resistance properties were measured using a Baldwin/UTS Universal testing machine.
3. Flexural strength properties were measured using an Instron Model 1000 Tester with a 100 pound capacity serial number 1926 weight beam.
4. Dimensions were measured using a Starrett vernier.
5. Specimens were conditioned using a Hot Pack, 175 Series Environmental Chamber, Model No. 47532, Serial No. 74571.