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Legacy report on the BOCA® *National Building Code/1999*

DIVISION 07 – THERMAL AND MOISTURE PROTECTION Section 07410 – Metal Roof and Wall Panels

ZER-O-LOC FOAM PLASTIC COMPOSITE PANELS

ZER-O-LOC ENTERPRISES LTD.
4740 VANGUARD ROAD
RICHMOND, B.C.
CANADA V6X 2P8

EVALUATION SCOPE

Compliance with the following code:

BOCA *National Building Code/1999*

- Section 1606.9 Interior Walls and Partitions
- Section 2603.3 Surface-burning characteristics
- Section 2603.9 Alternative approval
- Section 2603.2 Labeling
- Section 1704.3 Labeling

1.0 DESCRIPTION OF EVALUATION

This report evaluates the use of Zer-O-Loc foam plastic composite building panels of varying thickness for interior use in nonloadbearing walls.

The Zer-O-Loc foam plastic composite building panels have also been evaluated for flameresistance of the foam plastic core in order to allow the use of the panel without a thermal barrier, through a review of fire testing.

2.0 DESCRIPTION AND USE OF PRODUCT

2.1 GENERAL DESCRIPTION

The Zer-O-Loc panel is a factory-assembled composite building panel composed of an expanded polystyrene (EPS) foam plastic core with galvanized steel skins on both faces.

The foam plastic core has a nominal density of 0.97 lb/ft³ (15.6 kg/m³) and is manufactured from Styropor EPS Bead Type BF 326 produced by BASF Corporation. The skins are formed from a minimum 0.0179 inch (26 gauge) (0.38 mm) thick steel and are roll formed to provide a fully aligned sleeve joint. The skins are galvanized to a G-90 coating. The skins are pressure heat-bonded to the EPS utilizing a two-component (isocyanate and polyol) polyure-

thane adhesive. The panel thickness varies from a minimum of 2 inches (51 mm) to a maximum of 6 inches (152 mm) for walls and 6 inches (152 mm) for ceilings. The panels come in standard widths of 46 inches (1168 mm) and the lengths can be specified to order.

2.2 USE AND APPLICATION

Zer-O-Loc foam plastic composite building panels are intended for use in buildings where cold storage or processing operations requires refrigeration. Zer-O-Loc foam plastic composite building panels are also intended for use as non-fire-resistance rated, nonloadbearing interior wall assemblies. The Zer-O-Loc foam plastic composite building panels are also intended for use as nonloadbearing interior ceiling panels. The panels are intended for use as a component of interior walls, as well as ceilings of buildings equipped throughout with an automatic sprinkler system in accordance with Section 906.2.1 of the BOCA *National Building Code/1999*, of buildings of Type 1, 2, 3, 4, and 5 construction, without the installation of thermal barrier protection. The panels shall be installed in accordance with the manufacturer's erection drawings as referenced in this report and subject to the limitations of this report.

The Zer-O-Loc foam plastic composite building panels are manufactured having a sleeve joint configuration (See Figure 1 at the end of this report). Prior to erection of the panels, two small beads of butyl sealant shall be applied at the junction of the metal and foam plastic core, the full length of the panel, and at the receiving end of the panel. Once the sealant has been applied, the panels are installed by sliding the panels together until the foam plastic cores are in contact. For the installation of the panels in areas subject to repeated damp conditions and moisture accumulation, the panel joints shall be sealed using a silicone sealant from the floor to ceiling, as well as the panel joints in the ceiling. Installation details of the panels for interior and exterior applications are illustrated in *Zer-O-Loc Standard Details*, dated June 16, 1996.

3.0 CONDITIONS OF USE

This report is limited to the applications and products as stated in this report. The ICC-ES Subcommittee on National Codes intends that the report be used by the code official to determine that the report subject complies with the code requirements specifically addressed, provided that this product is installed in accordance with the following conditions:

- 3.1 The use of the Zer-O-Loc foam plastic composite building panels in loadbearing applications for wall, ceiling, or roof assemblies is outside the scope of this report.

ICC-ES legacy reports are not to be construed as representing aesthetics or any other attributes not specifically addressed, nor are they to be construed as an endorsement of the subject of the report or a recommendation for its use. There is no warranty by ICC Evaluation Service, Inc., express or implied, as to any finding or other matter in this report, or as to any product covered by the report.

- 3.2 The use of Zer-O-Loc foam plastic composite building panels in fire-resistance rated assemblies is outside the scope of this report.
- 3.3 The use of the Zer-O-Loc foam plastic composite building panels in ceiling applications is limited to buildings equipped throughout with an automatic sprinkler system in accordance with Section 906.2.1 of the *BOCA National Building Code/1999*.
- 3.4 The use of Zer-O-Loc foam plastic composite building panels as an exterior wall panel is outside the scope of this report.
- 3.5 Zer-O-Loc foam plastic composite building panels listed in this report shall bear a label in accordance with Section 1704.3 of the *BOCA National Building Code/1999*, containing the identifying information stated in Section 6.0 of this report.
- 3.6 Zer-O-Loc foam plastic composite building panels listed in this report shall be installed in accordance with the manufacturer's erection drawings and this report.
- 3.7 This report is limited to the evaluation of Zer-O-Loc foam plastic composite building panels with a maximum thickness of 6 inches (152 mm).
- 3.8 This report is subject to periodic re-examination. For information on the current status of this report, contact the ICC-ES.

4.0 INFORMATION SUBMITTED

4.1 LIVE LOADS

Inchcape Testing Services/Warnock Hersey uniform load test data (Report No. 2/88 File No. ZL 288D) issued January 30, 1989, for Zer-O-Loc, manufactured by Zer-O-Loc Enterprises, Ltd. was submitted and contains procedures regulating the horizontal load design of the panels. The test panels met the following criteria: Panel size - 4 feet wide x 16 feet long x 4 in. thick; Core material - 4 in. thick Zer-O-Loc EPS type 1; Skin Material - Both sides 26 gauge galvanized steel; Test span - 180 in. The tests performed indicate that panels having a minimum thickness of 4 in. and a maximum span of 180 in. have adequate strength to resist a horizontal load of not less than 5 lbf/ft² (0.239 kPa).

4.2 FOAM PLASTICS

4.2.1 Underwriters Laboratories Inc., File R5817(N), dated September 28, 1994, was submitted and contains data indicating that the maximum 6 in. (152 mm) thick foam plastic core manufactured from Styropor EPS Bead Type BF 326 has a flame spread rating of 15 and a smoke-developed rating of 125, when tested in accordance with ASTM E84.

4.2.2 Underwriters Laboratories Inc. of Canada, File A-4215.1, Performance Evaluation of a Zer-O-Loc Insulation System, dated May 30, 1995, was submitted and contains results of fire testing of Zer-O-Loc foam plastic composite wall and ceiling panels (nominal thickness of 10 in. (250 mm) for wall panels and 8 in. (200 mm) for ceiling panels with a foam plastic core having a nominal density of 0.97 lb/ft³ (15.6 kg/m³), performed in accordance with UL Procedure 1715 (ULC/ORD-C376-1995). The test results indicate that in a room corner fire test, burning did not

extend to the wall extremities, flames did not project through the doorway and the extent of fire damage diminished proportionally to the distance from the corner, and the panels tested met the criteria stated in UL Procedure 1715.

4.3 LABELING REQUIREMENTS

Inchcape Testing Services/Warnock Hersey Quality Policy Manual and Quality Procedure Manual, issued April 23, 1997, for Zer-O-Loc, manufactured by Zer-O-Loc Enterprises, Ltd. was submitted and contains procedures regulating the labeling and quality control of the expanded polystyrene (EPS) foam plastic core for the Zer-O-Loc factory-assembled composite building panel. *Inchcape Testing Services/Warnock Hersey* is identified as the third-party labeling agency. *Inchcape Testing Services/Warnock Hersey* and the manufacturer, Zer-O-Loc Enterprises Ltd., are both signatory to the *Inchcape Testing Services/Warnock Hersey Quality Policy Manual and Quality Procedure Manual*.

5.0 INFORMATION REQUIRED ON CONSTRUCTION DOCUMENTS

To aid in the use of this report, the following represents the minimum level of information to be reflected on construction documents in order to determine compliance with this research report.

- 5.1 The language "See ICC-ES Legacy Report No. 96-43."
- 5.2 The panel type and designation, panel skin thickness, panel width, thickness and length, and panel surface finish.
- 5.3 The manufacturer's erection drawings.

6.0 PRODUCT IDENTIFICATION

All Zer-O-Loc foam plastic composite building panels manufactured in accordance with this research report shall be marked at the plant with the identifying language "See ICC-ES Legacy Report No. 96-43."

The foam plastic core of Zer-O-Loc foam plastic composite building panels listed in this report shall also bear the label of *Inchcape Testing Services/Warnock Hersey*, in accordance with Section 1704.3 of the *BOCA National Building Code/1999*. The label shall contain the name of the manufacturer, the panel designation, the name of the quality control agency, and the flame spread and smoke-developed ratings of the foam plastic core.

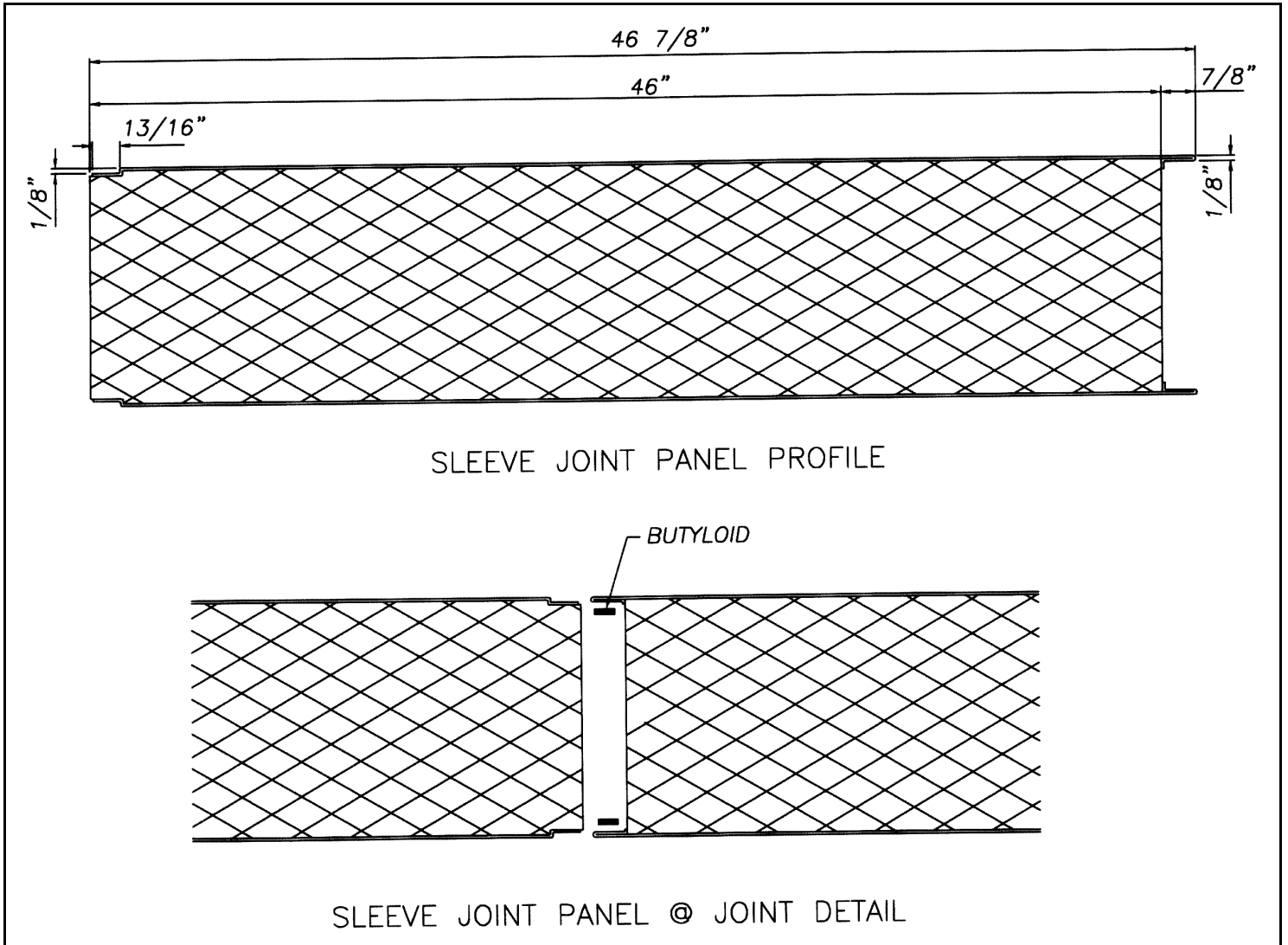


Figure 1*

*THIS DRAWING IS FOR ILLUSTRATION PURPOSES ONLY. IT IS NOT INTENDED FOR USE AS A CONSTRUCTION DOCUMENT FOR THE PURPOSE OF DESIGN, FABRICATION OR ERECTION.