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**DIVISION: 07—THERMAL AND MOISTURE PROTECTION**  
**Section: 07410—Metal Roof and Wall Panels**

**REPORT HOLDER:**

**ALCAN COMPOSITES USA INC.**  
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**EVALUATION SUBJECT:**

**ALUCOBOND® EXTERIOR AND INTERIOR WALL PANELS**

**1.0 EVALUATION SCOPE**

**Compliance with the following codes:**

- 2000 *International Building Code*® (IBC)
- 2002 *Accumulative Supplement to the International Codes*™
- BOCA® *National Building Code/1999* (BNBC)
- 1997 *Uniform Building Code*™ (UBC)

**Properties evaluated:**

- Transverse load resistance
- Fire resistance
- Interior finish classification

**2.0 USES**

Alucobond® panels are to be used as exterior wall cladding or interior wall finish in accordance with the codes specifically listed in Section 1.0 of this report and the conditions of use noted in Section 5.0.

**3.0 DESCRIPTION**

**3.1 General:**

Alucobond® panels are prefabricated aluminum composite material (ACM) sandwich panels constructed of an extruded low-density thermoplastic, polyethylene core that is faced on both sides with aluminum facers. The panels are fabricated in a variety of sizes, and the overall panel thicknesses are 0.118, 0.157 and 0.236 inch (3, 4 and 6 mm). The panels have a Class I flame-spread classification and a smoke-developed rating of less than 450 when tested in accordance with ASTM E 84.

**3.2 Materials:**

**3.2.1 Facings:** The aluminum facer materials are 0.020 inch (0.51mm) thick and are produced from aluminum alloy 5005-

H24 [minimum tensile yield strength of 18 kips per square inch (124 MPa)] or 3000 Series [minimum tensile yield strength of 15 kips per square inch (103 MPa)]. The facings have either an anodized coating or a factory-applied fluoropolymer paint surface finish. When the panels are anodized, the facings are AA 5005 Wrought Alloy.

**3.2.2 Core:** The core material is a black extruded polyethylene plastic in a nominal thickness of 0.079 to 0.197 inch (2 to 5 mm), depending on the finished panel thickness, having a nominal density of 65 pounds per cubic foot (1041 kg/m<sup>3</sup>).

**3.2.3 Attachment Accessories:** Extrusions, angles, corner brackets, and stiffeners are manufactured from 6063-T5 aluminum alloy.

**3.2.4 Silicone Sealant:** One-component structural silicone sealant shall comply with ASTM C 1184.

**4.0 INSTALLATION**

**4.1 Panel Attachment:**

The panels are attached to the supporting members by either a rout-and-return or continuous edge grip (CEG) method of support described in Sections 4.1.1 and 4.1.2.

**4.1.1 Alucobond® Rout and Return:** The rout-and-return assembly consists of flat panels formed into shallow “pans” by means of routing a groove in the back face of the panel and mechanically folding all four sides. The minimum folded edge width shall be of sufficient depth so that the fasteners will not be closer to the edge of the panel than 2.5 times the fastener diameter. The panels are attached to the building frame in one of two methods.

In one method of attachment, the panels are attached to the building frame with aluminum clip angles that are attached to the folded edges of the panel with two pop rivets for each clip angle. The clip angles are fastened to the building frame with a No. 12, self-drilling, corrosion-resistant metal screw. Other fasteners are permitted for use when the performance is demonstrated to be equivalent by engineering calculations. See Figure 1 of this report for an example of this installation. The pop rivets are <sup>3</sup>/<sub>16</sub>-inch-diameter (4.8 mm), 5052 Alloy aluminum rivets with 7178 Alloy mandrels. Clip angles are fabricated from 6063 Alloy-T5 Temper aluminum of the size noted in Figure 1 of this report. The clip angles are attached to each panel edge at 4 inches (102 mm) from each corner and 24 inches (610 mm) on center. The maximum panel size is 60 inches (1524 mm) wide by 144 inches (3658 mm) long.

In the other method of attachment, an aluminum extrusion of 6063 Alloy-T6 Temper is attached to the folded edge of the panel using No.10, self-drilling, metal screws spaced 24 inches (610 mm) on center. The extrusion is hooked into an aluminum clip that is attached to the building frame with two No. 12, self-drilling, corrosion-resistant screws spaced 24 inches (610 mm) on center along the length of the extrusion. See Figure 2 of this report for an example of this installation.

**4.1.2 Continuous Edge Grip Method:** A 0.06-inch-wide-by-0.30-inch-deep (1.5 mm by 8 mm) groove is factory-routed in the edge of the core material. An extruded aluminum frame is cut to size, mitered and attached with structural silicone sealant between the panel back and the extrusion. Panel stiffeners are installed at 24 inches (610 mm) on center on the backside of the panels with silicone sealant. Panels are attached to structural framing along the panel perimeter with No. 12-24, self-drilling fasteners at a maximum of 16 inches on center. Minimum screw penetration beyond the structural support shall be twice the shank diameter. See Figure 3 of this report for an example of this installation.

#### 4.2 Allowable Transverse Load:

Alucobond® panels shall be assembled and installed as set forth in this report. In jurisdictions adopting the BNBC and the IBC, the maximum allowable transverse load is 36 pounds per square foot (1,724 Pa), negative or positive. In jurisdictions adopting the UBC, the maximum allowable transverse load is 45 pounds per square foot (2,154 Pa), negative or positive.

### 5.0 CONDITIONS OF USE

The Alucobond® panels described in this report comply with, or are suitable alternatives to what is specified in, those codes specifically listed in Section 1.0 of this report, subject to the following conditions:

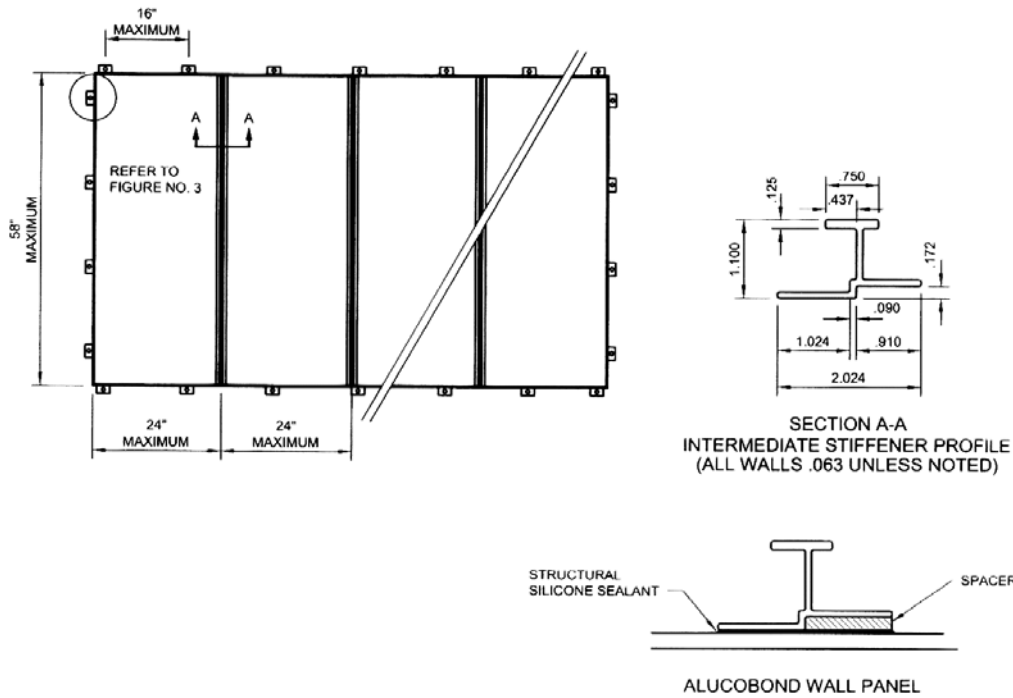
- 5.1 Installation complies with this report, the manufacturer's published instructions and the applicable code.
- 5.2 Allowable transverse loads are set forth in Section 4.2 this report.
- 5.3 The design of the structural support system and panel connections to the framing members shall be submitted to and approved by the building official.
- 5.4 Alucobond® panels may be used where light-transmitting exterior wall panels are permitted under the limitations specified in Section 2603.5 of the UBC.
- 5.5 Alucobond® panels may be used where glazing of unprotected openings is permitted under limitations set forth in Section 2604 of the UBC.
- 5.6 Panels may be used as an interior finish where:
  - 5.6.1 Class I, II and III materials are permitted under Chapter 8 of the UBC and BNBC.
  - 5.6.2 Class A, B and C materials are permitted under Chapter 8 of the IBC.
- 5.7 Evidence of weather tightness of the wall cladding system in accordance with Section 1407.6 of the IBC, Section 1404.3 of the BNBC and Section 1402.1 of the UBC shall be to the satisfaction of the building official.
- 5.8 The panels may be used as plastic panels and signs under the limitations specified in Section 404.3.7 of the UBC.
- 5.9 Under the UBC, the panels are limited to combustible, nonfire-rated, Type V construction.
- 5.10 Under the IBC, panels are permitted in noncombustible construction provided installation is limited to the following heights:
  - 5.10.1 A maximum of 40 feet in height above the grade plane, under the limitations specified in Section 1407.10.1 of the IBC.
  - 5.10.2 A maximum of 50 feet in height above the grade plane, under the limitations specified in Section 1407.10.2 of the IBC.
- 5.11 The Alucobond® panels are produced in Benton, Kentucky, under a quality control program with inspections by Southwest Research Institute (AA-665).

### 6.0 EVIDENCE SUBMITTED

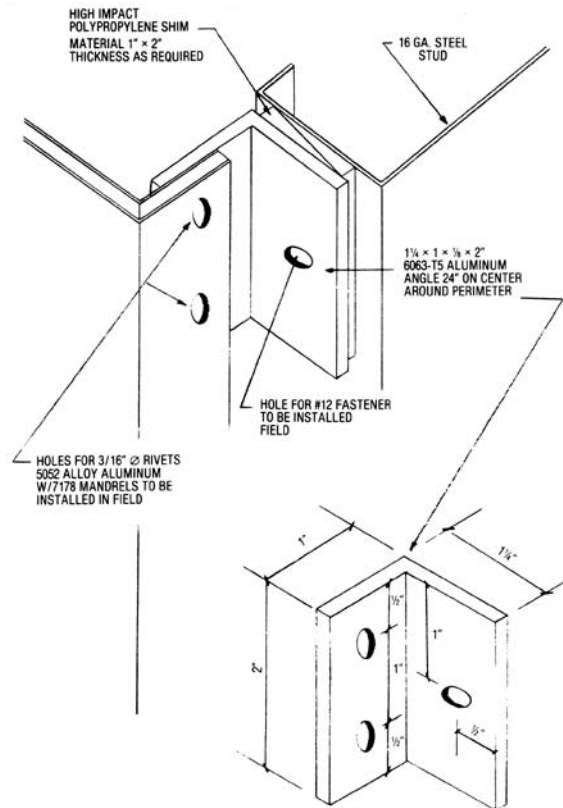
- 6.1 Installation instructions.
- 6.2 Reports of tests in accordance with ASTM E 108, UBC 26-3, UL 104, UBC 26-2, and ASTM E 84 (UBC 8-1); and reports of transverse wind load resistance and physical properties testing.
- 6.3 Data in accordance with the ICC-ES Interim Criteria for Metal-faced Core Wall Panels on Noncombustible Exterior Walls (AC25), dated January 1992, revised May 1995.
- 6.4 A quality control manual.

### 7.0 IDENTIFICATION

The panels are identified by a label indicating the name and address of Alcan Composites USA Inc.; the product name; the panel thickness; the evaluation report number (ESR-1114); the flame-spread and smoke-developed indices; and the name of the quality control agency, Southwest Research Institute (AA-665).

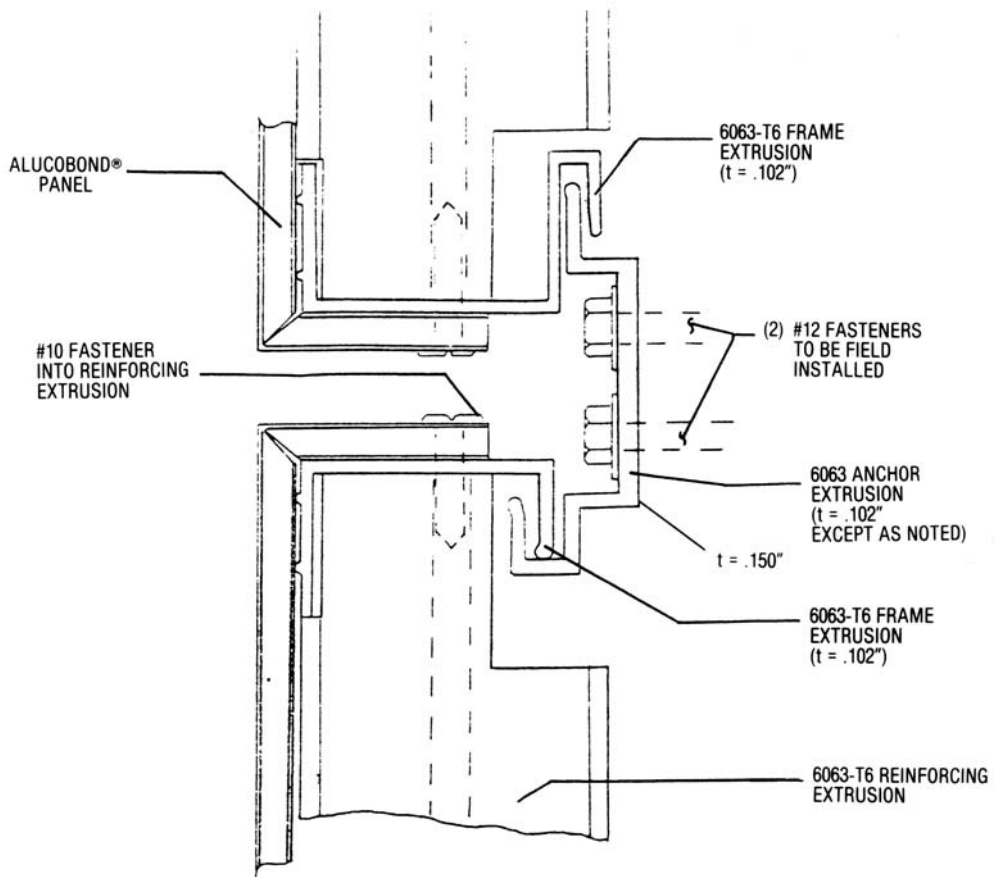


**ROUT-AND-RETURN ATTACHMENT SYSTEM**

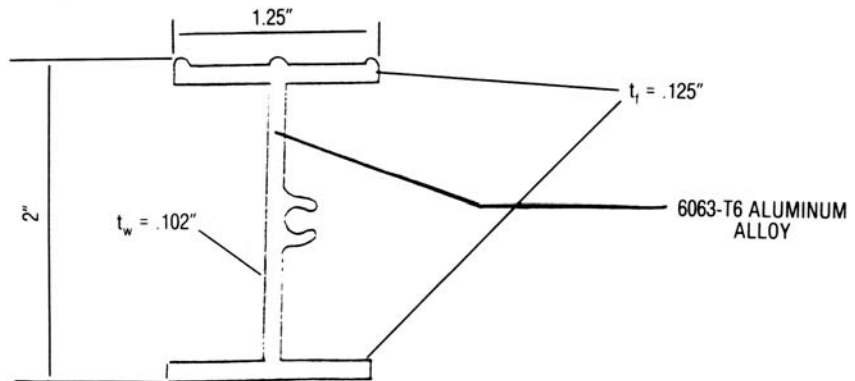


**ROUT-AND-RETURN SYSTEM ALUCOBOND PANEL ANCHORAGE**

FIGURE 1

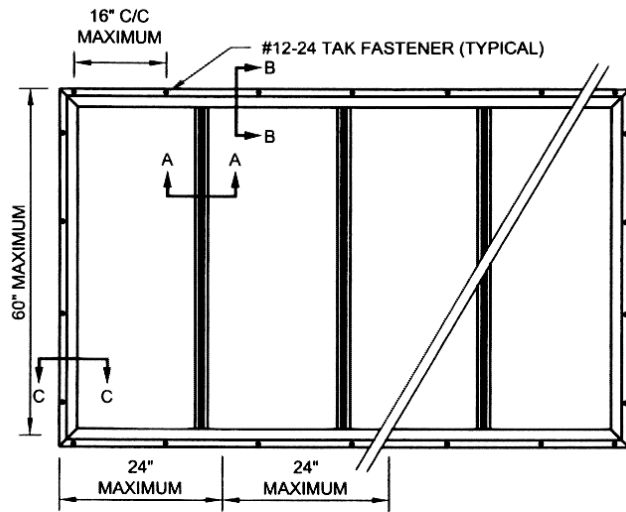


**CONNECTION DETAIL**

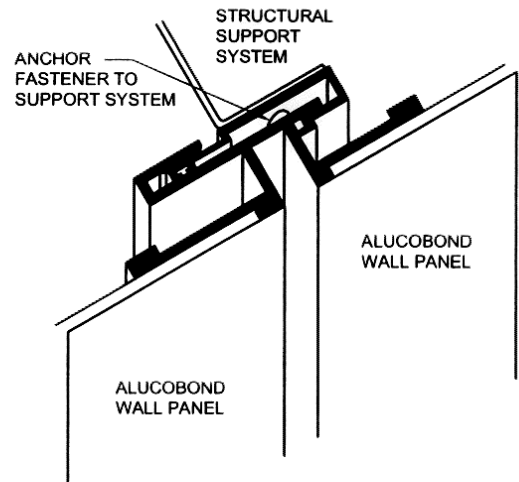


**REINFORCING EXTRUSION**

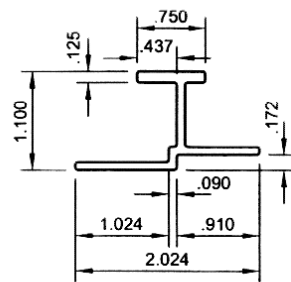
**FIGURE 2**



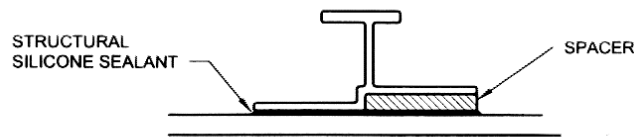
PANEL EXTRUSION LAYOUT



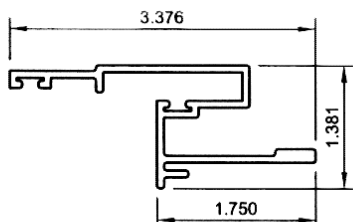
TYPICAL PANEL - PANEL JOINT PROFILE



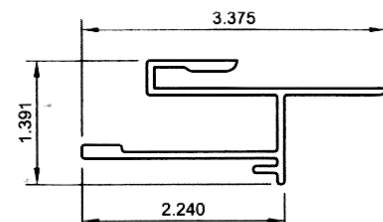
SECTION A-A  
INTERMEDIATE STIFFENER PROFILE  
(ALL WALLS .063 UNLESS NOTED)



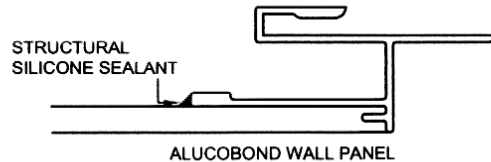
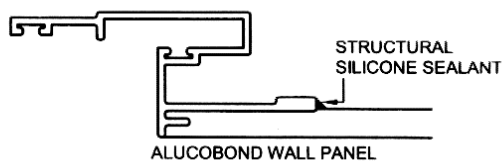
ALUCOBOND WALL PANEL



SECTION B-B  
FRAME PROFILE  
(ALL WALLS .063 UNLESS NOTED)



SECTION C-C  
FRAME PROFILE  
(ALL WALLS .063 UNLESS NOTED)



CEG ATTACHMENT SYSTEM

FIGURE 3