QAI LABORATORIES
CERTIFICATION TESTING INSPECTION

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CLIENT: **EASYTRIM REVEALS, INC.**
4115 72 Avenue SE
Calgary, AB T2C 2G5

Evaluation No: T1195-1rev1	**Revision Date:** October 19, 2017

Product ID: EasyTrim Reveals 4 mm thickness, QuickPanel system, with Larson® FR aluminum composite panels (ACP) by Alucoil.

AUTHORIZATION: Authorized by Jeremie Green of EasyTrim Reveals, Inc. on September 20, 2017 per QAI proposal 17MM09191 dated September 19, 2017.

EVALUATION REQUESTED: Engineering evaluation of EasyTrim Reveals 4 mm thickness QuickPanel system, installed per this evaluation, for maintaining compliance with Section 3.1.5.5 of the National Building Code of Canada, referencing the following method:

- CAN/ULC-S134-13 *Standard Method of Fire Test of Exterior Wall Assemblies*.

DISCLAIMER: This letter is issued only to EasyTrim Reveals, Inc. to be used in deliberations with the City of Calgary for the construction of the Holiday Inn Hotel and Suites at 20 Freeport Place, Lot 2, Calgary AB and shall not be relied upon, without prior written authorization from QAI and CHM Fire Consultants, by any other party or in conjunction with any other project.

CONCLUSIONS: EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR ACP when installed in accordance with this evaluation, has a maximum heat flux of 35 kW/m^2 or less at 3.5 m above the opening, and has a maximum flame spread of 5.0 m or less above the opening, when tested in accordance with CAN/ULC S134-13.

The installation outlined in Appendix A of this evaluation for EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR ACP is considered to meet Section 3.1.5.5 of the National Building Code of Canada (NBC 2015).

Prepared By:

Matt Lansdowne
Director of Engineering

Signed for and on behalf of QAI Laboratories Ltd.

Lawrence Gibson
Executive Vice President

PROFESSIONAL ENGINEER ALBERTA
STEVEN T. CRAFT
Oct. 20/17

EVALUATION PURPOSE:

QAI Laboratories Ltd. (QAI) has evaluated EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR ACP by Alucoil for use in non-combustible construction per Section 3.5.5 of the National Building Code of Canada 2015 (NBC 2015).

This evaluated was conducted to determine if EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR ACP, when used as outlined in this report, would maintain a maximum heat flux of 35 kW/m2 or less at 3.5 m above the opening, and would exhibit maximum flame spread of 5.0 m or less above the opening, when tested to CAN/ULC S134-14 Standard Method of Fire Test of Exterior Wall Assemblies.

The site under evaluation was described as follows: Holiday Inn Hotel and Suites to be constructed at 20 Freeport Place, Lot 2, Calgary AB. The hotel consists of 6 storeys, is sprinklered throughout and is constructed of Non-combustible construction.

PRODUCT DESCRIPTION:

EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR ACP by Alucoil is an exterior cladding system for use in commercial and residential construction. The ACP panels are connected to code complying substructure, with connection details determined and approved by the authority having jurisdiction to ensure resistance of the appropriate anticipated service loads.

The Easytrim QuickPanel system is installed over exterior (outboard) insulation and water resistive barriers, providing the primary plane of protection to the exterior, all with aesthetic quality.

4 mm ACP Larson® FR by Alucoil is an aluminum composite panel, consisting of thin aluminum skins bonded to a mineral fire resistant (FR) core.

Larson® FR ACP by Alucoil is an Intertek Testing Services North America (Intertek) listed product (SPEC ID: 28441), with follow up inspections conducted by Intertek to ensure formulation consistency of this product to various fire performance methods.

EasyTrim QuickPanel system installation evaluated in this report include installation over mineral wool board insulation (Roxul Cavity Rock), a combustible water resistive barrier (Henry Company BluiSkin or Tyvek), and minimum 16 mm (5/8 inch) Type X exterior gypsum sheathing complying with ASTM C1177-13 *Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing* listed by an approved agency.

REFERENCED STANDARDS AND REPORTS:

- National Building Code of Canada 2015 (NBC 2015).
- CAN/ULC S134-92 *Standard Method of Fire Test of Exterior Wall Assemblies* (CAN/ULC S134-92).
- Intertek Listing SPEC ID: 28331.
- Alucoiil Larson® FR CAN/ULC S134 National Research Council Canada client test report A1-001148.1 dated July 9, 2012 (NRC test report A1-001148.1).

ENGINEERING EVALUATION:

6 mm Larson® FR ACP by Alucoil CAN/ULC S134-92 Testing NRC Report A1-001148.1

This evaluation reviews 6 mm Alucoiil Larson® FR ACP CAN/ULC S134 test report as detailed in NRC test report A1-001148.1 dated July 9, 2012. The noted tested assembly was found to have a maximum heat flux of 24.9 kW/m^2 at 3.5 meters above the opening, and to have a flame spread of less than 2.5 meters above the opening during testing to CAN/ULC S134-92. This system was found to comply with the requirements for use in non-combustible construction where incorporating combustible materials in exterior walls per Section 3.1.5.5. through testing to CAN/ULC S134-13.

The above Alucoil Larson® FR ACP tested assembly was composed of 6 mm thick Larson® FR by Alucoil. The Larson® FR ACP panels were mechanically secured at top and bottom of the panel to underlying steel hat channel through support clips. The steel hat channel was 19 mm (3/4 inches) deep, fixed horizontally at 1220 mm (48 inches) on center spacing, to coincide with panel top and bottom edge. Steel hat channel was anchored through underlying Type X 16 mm (5/8 inch) gpsum wall board, into the underlying concrete masonry test fixture with Tapcon anchors.

Review of the noted test assembly information showed the heat flux to achieve 24.9 kW/m^2 at 3.5 meters along the furnace window opening center line. Flame spread was observed at 2.5 meters above the furnace opening. Post test photos showed localized damage in a conical pattern to 2.5 meters above the furnace opening, with the greatest damage done at 2.0 meters or less.

EasyTrim Reveals QuickPanel System with 4 mm Larson® FR ACP by Alucoil

EasyTrim Reveals 4 mm thickness QuickPanel system evaluated by QAI incorporates 4 mm Larson® FR ACP, installed over steel hat channel, with outboard Roxul Cavity Rock insulation, over a combustible water resistive barrer protecting a 16 mm (5/8 inch) Type X exterior gypsum sheathing. Details of the proposed installation can be found in Appendix A.

EasyTrim Reveals proposed QuickPanel system includes 4 mm Larson® FR ACP. These panels are of identical construction to the 6 mm thick tested Larson® FR ACP by Alucoil. The reduction to 4 mm thick represents a 33% reduction in combustible cladding from testing conducted on 6 mm Larson® FR ACP by Alucoil outlined in NRC report A1-001148.1 dated July 9, 2012.

The installation of the 4 mm Larson® FR ACP panels in the proposed QuickPanel system directly connects panel extrusion to steel Z-girts located horizontally and spaced 609 mm (24 inches on center), which Z-girts anchored to the code complying wall system. ROXUL Cavity Rock mineral wool board insulation is friction fit between the horizontal steel Z-girts, proving exterior insulation. No vertical air gaps are provided in the installation that would promote interior flame spread along inside surface of the assembly.

Roxul Cavity Rock is described as a non-combustible insulation, when evaluated to CAN/ULC S114-05 *Standard Method of Tests for Determination of Non-Combustibility in Building Materials* by Roxul (See Appendix C). Based on the NRC report A1-001148.1 dated July 9, 2012 the Roxul Cavity Rock insulation s anticipated to experience temperatures of < 400ºC on the exterior side, well below exposure temperatures outlined in CAN/ULC S114-05 and therefore is expected to provide an effective thermal barrier to the underlying combustible water resistive barrier behind it.

Henry Company Blueskin or Tyvek water resistive barrier is sandwiched between the horizontal Z-girts, with Roxul Cavity Rock protection. The Roxul Cavity Rock is expected to reduce thermal transmission during a fire event providing protection to the water resistive barrier. The ignition temperature of Henry Blueskin and Tyvek are anticipated at approximately 350^{O}C (typical for synthetic underlays). Given the protection of the Roxul Cavity Rock the likely temperature exposure of the water barrier should be well below this temperature. Additionally, the proposed installation does not provide available oxygen at the water resistive barrier / outboard insulation interface. If any combustion of the water resistive barrier were experienced, the lack of oxygen exchange capacity would not promote combustion.

As the Larson® FR ACP panel fuel load is reduced by 33%, and the installation remains unchanged for connection to substructure, with the inclusion of non-combustible Roxul Cavity Rock insulation to protect the combustible water resistive barrier from potential contribution during a fire event, QAI considers the installation outlined in Appendix A to maintain a heat flux of maximum of 35 kW/m2 or less at 3.5 m above the opening, and to maintain a maximum flame spread of 5.0 m or less above the opening.

Review by QAI found CAN/ULC S134-92 and CAN/ULC S134-13 equivalent. As such, the above rationale applies to CAN/ULC S134-13.

CONCLUSIONS:

QAI has evaluated EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR ACPby Alucoil installation found in Appendix A of this report, for use in non-combustible construction per Section 3.5.5 of the National Building Code of Canada 2015 (NBC 2015).

Based on the rationale presented in this report, it is QAI's professional opinion the proposed EasyTrim Reveals 4 mm thickness QuickPanel system with Larson® FR by Alucoil installation incorporating Roxul Cavity Rock and synthetic Henry Company Blueskin, or Tyvek water resistsaive barrier meets the criteria of use of combustible exterior cladding for use in non-combustible construction as outlined in Section 3.1.5.5 of the National Building Code of Canada, as the noted assembly would exhibit the following when tested to CAN/ULC S134-13 *Standard Method of Fire Test of Exterior Wall Assemblies*:

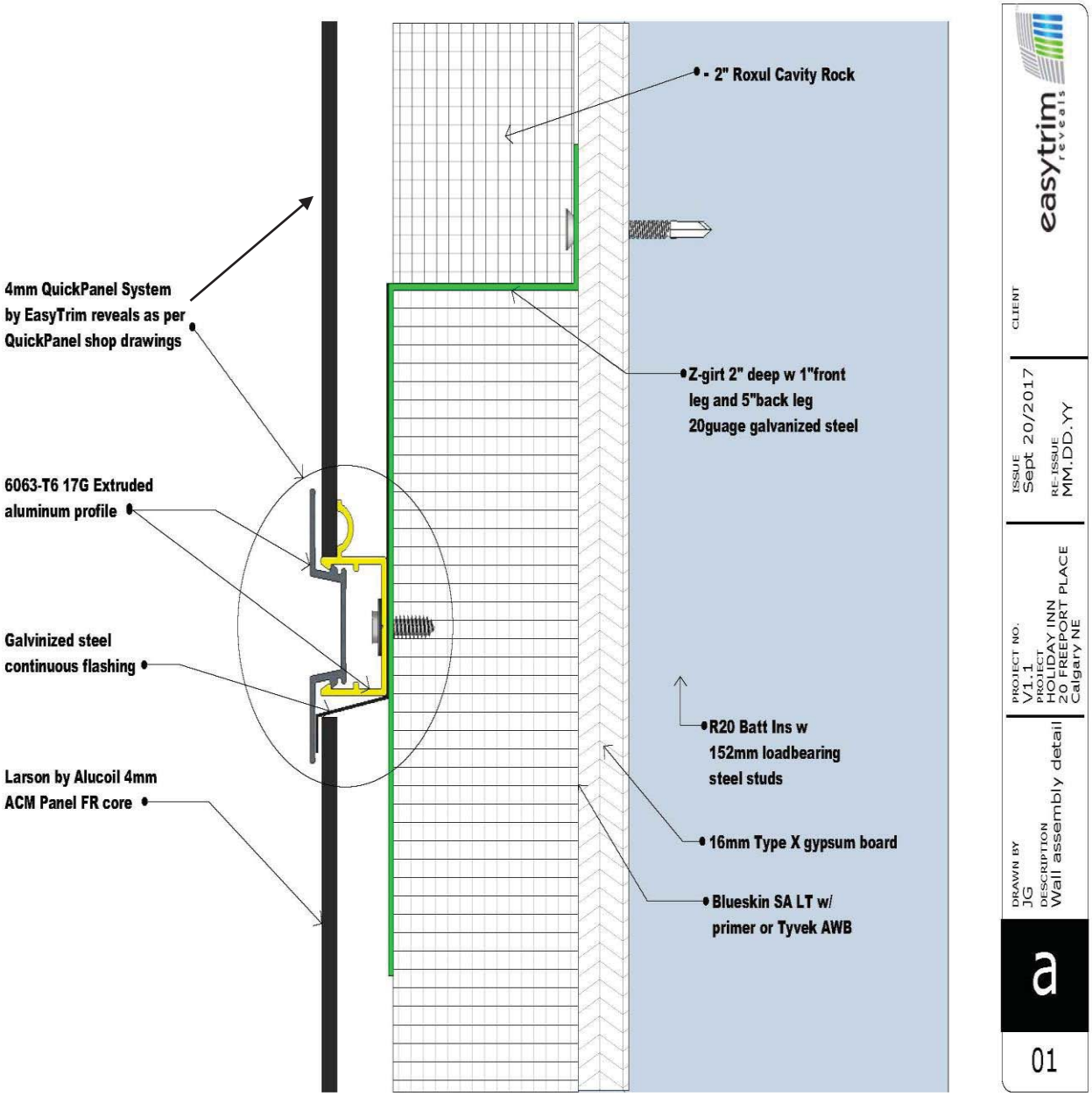
1. Maximum heat flux of 35 kW/m^2 at 3.5 m above the opening
2. Exhibit maximum flame spread of 5.0 m above the opening.

See Appendix A for evaluated installation.

REVISION HISTORY:

19/10/2017: Update to include site under evaluation, and disclaimer of use on cover page.

APPENDIX A - EasyTrim Reveals 4 mm QuickPanel System with Larson® FR



APPENDIX B - Larson® FR by Alucoil Intertek SPEC ID: 28441

Report prepared for: Spec Direct (Free User) on 10/19/2012 1:17:53 PM

SpecDirect powered by Intertek

Intertek

LISTING INFORMATION OF Alucoil - larson® by Alucoil® FR 4 mm and 6 mm ACM Panels

SPEC ID: 28441

Alucoil North America LLC
1976 Joe Rogers Jr Blvd

Manning, SC 29102

larson® by Alucoil® FR 4 mm and 6 mm ACM Panels consist of 0.5 mm aluminum skins on both sides with a proprietary, fire resistant (FR) core with a total panel thickness of 4mm or 6 mm.

RATINGS

ASTM E84	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
larson® by Alucoil® FR 4 mm ACM Panels	5	5

CAN/ULC S102	FLAME SPREAD INDEX	SMOKE DEVELOPED INDEX
larson® by Alucoil® FR 6 mm ACM Panels	0	0

ASTM E119 / CAN/ULC S101	FIRE RESISTANCE	DESIGN NUMBER
larson® by Alucoil® FR 4 mm ACM Panels*	1 hour	ANA/MCMWP 60-01
*The 1-hour fire resistance rating is applicable to only the interior side of the wall system. See Design Listing for further details.		

CAN/ULC S134	HEAT FLUX INDEX @ 3.5 m	FLAME SPREAD
larson® by Alucoil® FR 6 mm ACM Panels	24.93 kW/m^2	2.5 m

See Design Listing ANA/MCMWP 25-01.

The NFPA 285 (Design Listing ANA/MCMWP 30-01) and ICC-ES AC25 requirements were met using the larson® by Alucoil® FR 4 mm ACM Panels

Attribute	Value
CSI Code	07 42 13 Metal Wall Panels
Fire Resistance	1 Hour Fire Rating
Listed or Inspected	LISTED
Report Number	G100624209
Criteria	CAN / ULC S134 (1992)
Criteria	CAN / ULC S101 (2007)
Criteria	NFPA 285 (2006)
Criteria	ASTM E119 (2010)
Criteria	ASTM E84 (2010b)
Criteria	CAN / ULC S102 (2010)

Report prepared for: Spec Direct (Free User) on 10/19/2012 1:17:53 PM

SpecDIRECT POWERED BY Intertek

Criteria	ASTM E84 (2012)
Criteria	ASTM E119 (2012)
Criteria	NFPA 285 (2012)
Criteria	ICC-ES AC25 (2010)
Intertek Services	Certification
Listing Section	WALL ASSEMBLIES
Test Original Issue Date	December 9, 2010
Verification Testing	YES
Verification Test Type	FTIR

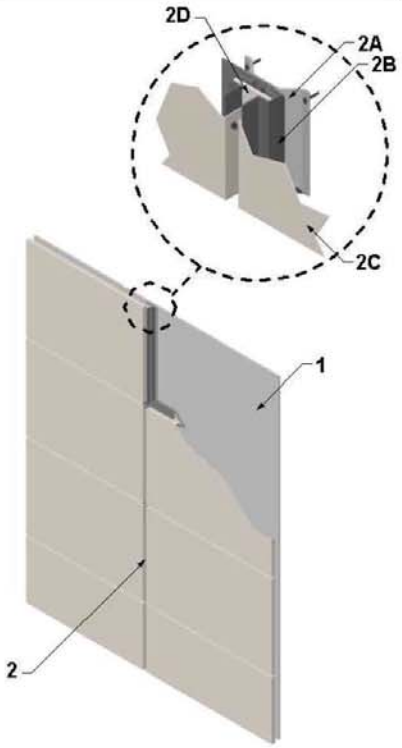
DRAWING INDEX

ANA/MCMWP 25-01
ANA/MCMWP 30-01
ANA/MCMWP 60-01

ANA/MCMWP 25-01

Division 7 – Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 13.23 Metal Composite Material Wall Panels

Design Number: ANA / MCMWP 25-01
EXTERIOR WALL SYSTEMS
Alucoil® North America, LLC
Iarson® by Alucoil® FR 6 mm ACM Panels
CAN/ULC S 134 (1992)
Meets the Requirements of Section 3.1.5.5 of the National Building Code of Canada, 2010



1. EXTERIOR WALL ASSEMBLY: Incorporate construction features in the exterior wall assembly as described in Item 2. Secure exterior veneer to existing wall assembly as follows:

2. CERTIFIED COMPANY: Alucoil® North America, LLC

   CERTIFIED PRODUCT: Aluminum Composite Panels

Date Created: August 28, 2012
Project No: 100596374SAT-018C

Intertek

ANA/MCMWP 25-01 (page 2 of 2)

Division 7 – Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 13.23 Metal Composite Material Wall Panels

MODEL: larson® by Alucoil® FR 6 mm ACM Panels

EXTERIOR VENEER: Install an ACM (Aluminum Composite Metal Panel) system consisting of the following elements:

A. HAT BAR: Secure hat bars oriented vertically to the base wall assembly (Item 1) using appropriately sized fasteners specified by the manufacturer. Hat bars coincide with the vertical joints of the aluminum composite panel (Item 2C) vertical joints.

B. SUPPORT PANEL CLIPS: Install support panel clips to the top side of the larson® by Alucoil® FR 6 mm ACM Panels (Item 2C) spaced approximately 12 in. on center (oc) then secure assembly to the exterior side of hat bar (Item 2A).

C. ALUMINUM COMPOSITE METAL PANEL: Install larson® by Alucoil® FR 6 mm ACM Panels by friction fitting the bottom of the panel into the starter extrusion (not show), and secure the top of the panel using two 3/4 in. (19 mm) pan head fasteners inserted through the support panel clips (Item 2B) into the hat bar (Item 2A).

D. SPLINE: Insert and friction fit a nominal 2 in. wide pre-cut strip of larson® by Alucoil® FR 6 mm ACM Panel in the support panel clips (Item 2B) in all vertical and horizontal panel joints.

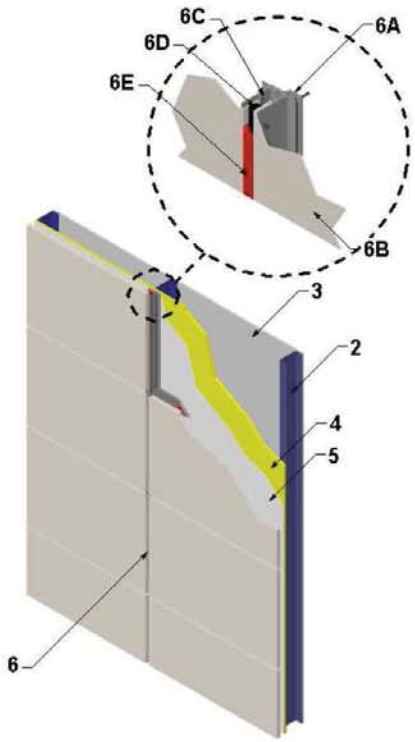
Date Created: August 28, 2012
Project No: 100596374SAT-018C

Intertek

ANA/MCMWP 30-01

Division 7 – Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 13.23 Metal Composite Material Wall Panels

Design Number: ANA / MCMWP 30-01
EXTERIOR WALL SYSTEMS
Alucoil® North America, LLC
larson® by Alucoil® FR 4 mm ACM Panels
NFPA 285 – Meets Conditions of Acceptance



Item 1: Exterior Wall Assembly

1. EXTERIOR WALL ASSEMBLY: Incorporate construction features in the exterior wall assembly as described in Items 2 through 6.
2. STEEL FRAMING (ITEM 2): Install nominal 3-5/8 in., 20 GA steel studs spaced nominally 24 in. on center (oc). Attach steel studs to 20 GA top and bottom steel tracks using nominal 7/16 in. long pan head framing screws attached to the front and back of each steel stud.

Date Created: August 28, 2012
Project No: 100596374SAT-018B

Intertek

ANA/MCMWP 30-01 (page 2 of 2)

Division 7 – Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 13.23 Metal Composite Material Wall Panels

3. INTERIOR GYPSUM: Apply one (1) layer of 5/8 in. thick, Type X gypsum board to the interior side of the steel framing (Item 2) with the long dimension parallel to the steel studs. Secure using #6 1-1/4 in. long, Type S, screws spaced nominally 8 in. oc around the perimeter and 12 in. oc in the field.

   A. JOINT TAPE AND COMPOUND – (Not Shown) Apply a level 2 finish of vinyl or casein, dry or premixed joint compound applied in two coats to all exposed fastener heads and gypsum board joints. Embed minimum 2 in. wide paper, plastic, or fiberglass tape in first layer of compound over joints in gypsum board (Item 3).

4. EXTERIOR SHEATHING: Install 5/8 in. thick DensGlass® Gold exterior sheathing to the exterior side of the steel framing (Item 2) with the long dimension perpendicular to the steel studs. Secure using #6 1-1/4 in. long, Type S, screws spaced nominally 8 in. oc around the perimeter and 12 in. oc in the field.

5. WEATHER BARRIER: Install a single layer of vapor permeable barrier to the exterior side of the exterior sheathing (Item 4) with minimum 2 in. overlaps at the seams.

6. CERTIFIED COMPANY: Alucoil® North America, LLC

   CERTIFIED PRODUCT: Aluminum Composite Panels

   MODEL: Iarson® by Alucoil® FR 4 mm ACM Panels

   EXTERIOR VENEER: Install an ACM (Aluminum Composite Metal Panel) system consisting of the following elements:

   A. "L" CHANNELS: Install vertical aluminum "L" shaped channels secured through the exterior sheathing (Item 4) into the steel framing (Item 2) around the perimeter of the assembly. Secure clip extrusion channel into steel framing (Item 2) using #12-11 X 2 in. long self-drilling screws spaced maximum 24 in. oc.

   B. ALUMINUM COMPOSITE METAL PANEL: Install Alucoil® FR 6 mm ACM Panels to "L" channels (Item 7A) flush to the exterior sheathing (Item 4). Secure panels to "L" channels using #12-11 X 3/4 in. long stainless steel fasteners spaced nominal 18 in. oc.

   C. ALUMINUM EXTRUSIONS: Secure aluminum composite metal panels (Item 6B) in the field of the assembly using aluminum extrusions attached directly to the panels using #10 X 3/4 in. self-drilling hex head plated steel fasteners.

   D. BACKER ROD: Install nominal 1/2 in. diameter Tundra Foam, open cell backer rod in all horizontal and vertical seams between aluminum composite panels.

   E. SEALANT: Install DOW 795 over the backer rod (Item 6D) to bring the surface flush with the adjacent aluminum composite panels (Item 6B).

Date Created: August 28, 2012
Project No: 100596374SAT-018B

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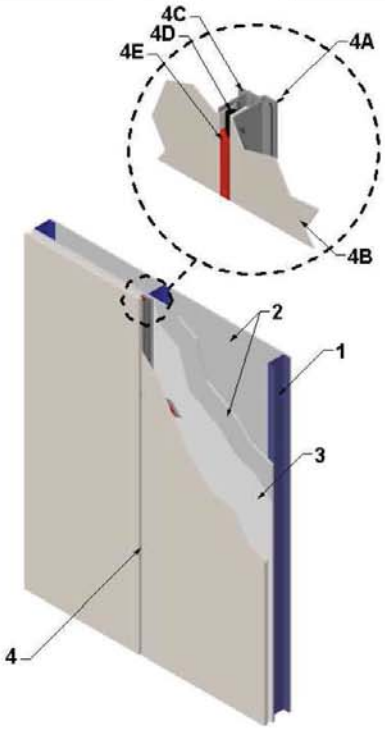
ANA/MCMWP 60-01

Division 7 – Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 13.23 Metal Composite Material Wall Panels

Design Number ANA/MCMWP 60-01
Non-Load Bearing Wall System
Alucoil® North America, LLC
Iarson® by Alucoil® FR 4 mm ACM Panels
ASTM E 119 (2012)
CAN/ULC S 101 (2007)
Rating: 1 Hour
Interior Exposure Only



Construct 1-hour rated gypsum wall assembly using the following elements:

1. STEEL STUDS: Install nominal 3-5/8 in. deep, 18 gauge (GA) galvanized steel studs spaced maximum 16 in. on center (oc). Friction-fit steel studs into 20 GA galvanized steel floor and ceiling track (Not Shown). Install lateral bracing (not shown) nominal 5 ft. oc vertically.

Date Revised: August 28, 2012
Project No: 100596374SAT-018A

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ANA/MCMWP 60-01 (page 2 of 2)

Division 7 – Thermal and Moisture Protection
07 42 00 Wall Panels
07 42 13.23 Metal Composite Material Wall Panels

2. GYPSUM BOARD: Install nominal 5/8 in. thick Type X gypsum board to the interior and exterior sides of wall assembly. Install gypsum board with long edge perpendicular to steel studs and secure using #6 X 1-1/4 in. long self drilling zinc plated drywall screws spaced 8 in. oc around the perimeter and 12 in. oc in the field. Offset horizontal joints minimum 24 in. oc. After gypsum board is attached, apply a level 2 finish consisting of the following elements: Vinyl or casein, dry or premixed joint compound applied to the gypsum board in two coats to cover all exposed screw heads and gypsum board butt joints. Embed a minimum 2 in. wide paper, plastic, or fiberglass tape in first layer of compound over butt joints of the gypsum board.

3. WEATHER BARRIER: Install a single layer of vapor permeable barrier to the exterior side of the exterior gypsum board (Item 2) with minimum 2 in. overlaps at the seams.

4. CERTIFIED COMPANY: Alucoil® North America, LLC

   CERTIFIED PRODUCT: Aluminum Composite Panels

   MODEL: Iarson® by Alucoil® FR 4 mm ACM Panels

   EXTERIOR VENEER: Install an ACM (Aluminum Composite Metal Panel) system consisting of the following elements:

A. "L" CHANNELS: Install vertical aluminum "L" shaped channels secured through the exterior sheathing (Item 4) into the steel framing (Item 2) around the perimeter of the assembly. Secure clip extrusion channel into steel framing (Item 2) using #12-11 X 2 in. long self-drilling screws spaced maximum 24 in. oc.

B. ALUMINUM COMPOSITE METAL PANEL: Install Alucoil® FR 6 mm ACM Panels to "L" channels (Item 7A) flush to the exterior sheathing (Item 4). Secure panels to "L" channels using #12-11 X 3/4 in. long stainless steel fasteners spaced nominal 18 in. oc.

C. ALUMINUM EXTRUSIONS: Secure aluminum composite metal panels (Item 6B) in the field of the assembly using aluminum extrusions attached directly to the panels using #10 X 3/4 in. self-drilling hex head plated steel fasteners.

D. BACKER ROD: Install nominal 1/2 in. diameter Tundra Foam, open cell backer rod in all horizontal and vertical seams between aluminum composite panels.

E. SEALANT: Install DOW 795 over the backer rod (Item 6D) to bring the surface flush with the adjacent aluminum composite panels (Item 6B).

Date Revised: August 28, 2012
Project No: 100596374SAT-018A

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APPENDIX C – ROXUL Cavity Rock Specifications

CAVITYROCK®

Technical Data Sheet
Board Insulation 07210*. Board Insulation 07 21 13**
Cavity Wall Unit Masonry 04 27 23**

ROXUL CAVITYROCK®

Cavity Wall and Rainscreen Insulation

Product Description & Application

ROXUL CAVITYROCK® is a semi-rigid, mineral wool insulation board designed for exterior cavity wall and rainscreen applications.

	Performance	Test Standard
Compliance	Mineral Fiber Block and Board Thermal Insulation - Type IVB Compliant MEA Approval, New York City Approval For information on CAN/ULC S702 compliance, contact ROXUL Technical Support	ASTM C612 236 - 05 - M
Reaction to Fire	Flame spread index = 0 ; Smoke developed index = 0 Flame spread index = 0 ; Smoke developed index = 0 Determination of Non Combustibility of Building Materials - Non Combustible Behaviour of materials at 750°C - Non Combustible	ASTM E84 (UL 723) CAN/ULC S102 CAN/ULC S114 ASTM E136
Density (thickness: 1", 1.5") Density (thickness: 2")	Monolithic Density of 5.3 lbs/ft³ (85 kgs/m³) Monolithic Density of 4.4 lbs/ft³ (70 kgs/m³)	ASTM C303
Density (thickness ≥ 2.5")	Dual Density - 6.2 lbs/ft³ (100 kgs/m³) outer layer and 4.1 lbs/ft³ (65 kgs/m³) inner layer	ASTM C303
Corrosion Resistance	Stress Corrosion Cracking Tendency of Austenitic Stainless Steel - Passed Corrosion of Steel - Passed	ASTM C795 ASTM C665
Thermal Resistance	R-Value / inch @ 75°F 4.3 hr.ft2.F/Btu RSI value / 25.4mm @ 24°C 0.75 m2K/W	ASTM C518 (C177)
Reaction to Moisture	Moisture Sorption - 0.03% by volume Water Vapor Transmission, Desiccant Method - 1555ng/Pa.s.m2 (27 perm) Determination of Fungi Resistance - Passed	ASTM C1104 ASTM E96 ASTM C1338
Thickness Dimensions	1" (25.4mm) to 4" (101.6mm) in 1/2" increments. 5" (127mm) and 6" (152.4mm) 24"x48" (610mm x 1219mm) and 16"x48" (406mm x 1219mm)	

Acoustical Performance — ASTM C423

Thickness	125 Hz	250 Hz	500 Hz	1000 Hz	2000Hz	4000 Hz	NRC
1.5"	1.19	0.55	1.03	1.06	1.02	1.01	0.9
2"	0.26	0.71	1.14	1.09	1.04	1.03	1
3"	0.72	0.93	0.88	0.84	0.9	0.97	0.9

Issued 08-23-17
Supersedes 05-19-17

NOTE: *Mast Format 1995 Edition **Master Format 2004 Edition. As ROXUL Inc has no control over installation design and workmanship, accessory materials or application conditions, ROXUL Inc. does not warranty the performance or results of any installation containing ROXUL Inc's products. ROXUL Inc's overall liability and the remedies available are limited by the general terms and conditions of sale. This warranty is in lieu of all other warranties and conditions expressed or implied, including the warranties of merchantability and fitness for a particular purpose.

ROXUL™

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