
PART 1: GENERAL

1.1 WORK INCLUDED

- .1 Work of this section is to furnish all material, labour and equipment to complete the installation of aluminum composite panel cladding systems as shown on drawings and specified herein.**

1.2 RELATED SECTIONS

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| 1. Structural Metal Framing | Section 05100 |
| 2. Cold Formed Metal Framing | Section 05400 |
| 3. Building Insulation | Section 07210 |
| 4. Air/Vapour Barriers | Section 07200 |
| 5. Metal Flashing and Trims | Section 07620 |
| 6. Sealants, Caulking and Seals | Section 07900 |
| 7. Windows | Section 08500 |

1.3 QUALITY ASSURANCE

- .1 Panel manufacturer shall have a minimum of 5 years experience.**
- .2 Manufacturer/Installer shall be authorized by panel manufacturer.**
- .3 Sealant materials and application shall be authorized by panel manufacturer.**
- .4 Maximum deviations from vertical and horizontal alignment of panels: 1/4" in 20'-0" (6mm in 6m).**
- .5 Provide [____" x ____" (____ mm x ____ mm)] mock-up, including components as follows: [____]. Apply to illustrate component application, including materials, attachments, anchors and perimeter sealant. Mock-up to include junction with walls and/or other construction.**
- .6 Mock-ups will be used:**
 - .1 To judge workmanship, substrate preparation, operation of equipment and material application.**
 - .2 For testing to determine compliance with performance requirements.**
- .7 Allow 24 hours for inspection of mock-up before proceeding with work.**
- .8 When accepted, mock-up will demonstrate minimum standard of quality required for this work. Approved mock-up may remain as part of finished work.**

1.4 DELIVERY AND STORAGE

- .1 All units and/or their components shall be transported in a manner to preclude damage.**
- .2 Protect finish and edges in accordance with panel manufacturers recommendations.**
- .3 Remove all units, which are cracked, bent or chipped beyond repair and replace with new.**
- .4 Store all materials in a cool, dry location, out of sunlight, protected from weather and damage. Ensure that materials do not come in contact with ground or other damp substrates.**
- .5 Leave protective covering in place until final cleaning of building. Provide instructions for removal of protective covering.**

1.5 GUARANTEE/WARRANTY

- .1 The work in this section shall be fully guaranteed by the manufacturer for a period of 3 years from the date of substantial completion of this contract against deterioration of components of the system under normal climatic conditions.**

1.6 DESIGN CRITERIA

SPEC NOTE: Insert expected temperature range for locality of building including allowance for skin temperature heat gain in sunlight on coloured finish.

- .1 Design metal composite panels in accordance with relevant building codes**
- .2 Design members to withstand dead load and wind loads in accordance with building codes and applicable local regulations, to maximum allowable deflection of 1/180th of span.**
- .3 For the Rainscreen System, provide for positive drainage of condensation occurring within wall construction and water entering at joints, to exterior face of wall in accordance with "Rain Screen Principles."**
- .4 Design metal composite panels to allow for movement of air between exterior and interior side of metal cladding.**
- .5 Provide an effective air barrier to prevent infiltration and/or exfiltration of air through wall assembly.**

- .6 Design metal composite panels to accommodate specified fabrication tolerances.

PART 2: PRODUCTS

2.1 MANUFACTURER

- .1 Metal Composite Panel Manufacturer: Alcotex, 520 Clarke Rd,
London, ON N5V 2C7; Phone: (877) 252-6839; Fax: (877) 252-6838;
E-mail: sales@alcotex.ca Web: www.alcotex.com

2.2 MATERIALS

SPEC NOTE: Specify composite panels to suit project requirements and edit materials and finishes to suit.

- .1 Metal composite panels: Panel system shall meet specified requirements for materials and be provided by Alcotex.

- .1 Composition: Front-side - Aluminum roll – coated with more than 70% of PVdF.

Core - Anti-toxic low density polyethylene.

Rear-side - Aluminum coated with chrome or polyester.

PVdF – Polyvinylidien fluoride.

- .2 Thickness: 5/32”(4mm) 1/8”~1/4”(3~6mm) available upon request.

- .3 Panel Weight: 5/32”(4mm); 1.12 lbs/ft² (5.44 kgs/m²).

- .4 Width: 3’-4”(1020mm), 4’-1”(1250mm), 5’-2”(1575mm).
Special widths are available upon request.

- .5 Length: No limit. Within 19’-8”(6000mm) is recommended for delivery and handling.

- .2 General Properties:

- .1 Thermal Conductivity (Average 20 +/- 5 °C): ASTM D 976

- .2 Deflection Temperature: ASTM D 648

- .3 Linear Strength: ASTM D 696

- .4 Yield Strength: ASTM E 8

- .5 Tensile Strength: ASTM E 8

- .6 Elongation: ASTM E 8

- .7 Flexural Elasticity: ASTM C 393

- .3 Flashings and Trims: To be approved by manufacturer – [included] [excluded] or refer to Section 07620.

- .4 **Joint system: Joint spacing shall be as recommended by manufacturer.**
 - .1 **System I: caulked joint - exterior sealant and backer rod**
 - .2 **System II: colour seal joint**
 - .3 **System III: dry joint - progressive**
 - .4 **System IV: dry joint – non-progressive**
- .5 **Isolation Coating: Bond breaker tape as recommended by manufacturer.**
- .6 **Insulation: Semi-rigid insulation with thickness as shown on drawings, shall be approved by manufacturer, or refer to Section 07210.**
- .7 **Sub-girts/Sub-framing: Shall be back to back galvanized steel angles as required and shall be designed to accommodate expansion and contraction, dynamic movements and design load requirements.**
- .8 **Fasteners and anchors: The type, size, quantity and spacing of all connectors, fasteners and other anchorage devices shall be as required to suit the performance standards, and be approved by manufacturer.**
- .9 **Air/Vapour Barrier: To be approved by manufacturer, or refer to Section 07200.**

2.3 FABRICATION

- .1 **Composition: Two sheets of aluminum sandwiching an anti-toxic low density polyethylene core formed in a continuous process.**
- .2 **All panels to be formed to specified dimensions, in accordance with shop drawings, with tolerances to accommodate thermal movement between panels and structural members. Radii of curved panels to be accurately formed in manufacturer's plant.**
- .3 **Tolerances: Maintain the following tolerances**

Width	: +/- 5/64" (+/- 2mm)
Length	: +1/8" (+3mm) [not allowed minus error]
Thickness	: 5/32" (4mm) +/-0.2mm (+/-1/128")
Squareness	: Max. +/-5/64" (+2mm)
Bow	: Max. 0.5%
- .4 **Panel lines, breaks and angles shall be sharp, true and surfaces free from warp or buckle.**

- .5 Take field measurements prior to completion of shop fabrication. Co-ordinate fabrication schedule with construction progress to avoid delay of work. Keep field fabrication to a minimum with majority of fabrication being done under controlled shop conditions.**
- .6 Allow for field adjustments, as recommended by manufacturer, where final dimensions cannot be established by field measurement before completion of panel manufacturing.**
- .7 Panel surfaces shall be free of scratches or marks caused during fabrication and/or erection.**
- .8 System shall be fabricated to provide a structurally sound and watertight installation.**
- .9 Provide weep holes at bottom edge of panels.**

2.4 FINISHES

- .1 Colour: As selected from manufacturer's standard colours.**
 - .1 Solid, Pearl and Stone**
- .2 Polyvinylidien Fluoride (PVdF) Coating Finish: 1.0 mil (+/-0.2mil)**
- .3 Panels shall comply with the following specifications, latest edition:**
 - .1 ASTM D 968 Falling Sand: Abrasion Resistance**
 - .2 ASTM D 1308, AAMA 605.2-91, TEST # 7.7.3.1: Acid Pollutants**
 - .3 ASTM D 3359: Adhesion**
 - .4 ASTM D 1308: Alkali Resistance**
 - .5 ASTM D 659: Chalk Resistance**
 - .6 ASTM D 2244: Colour Retention**
 - .7 ASTM D 2248: Detergent Resistance**
 - .8 ASTM D 4145: Flexibility (T-Bend)**
 - .9 ASTM D 3363: Hardness**
 - .10 ASTM D 2247, ASTM D 714: Humidity**
 - .11 AAMA 605.2-91, TEST # 7.7.3.1: Mortar Resistance**

PART 3: EXECUTION

3.1 INSPECTION

- .1 Prior to installation, all finished panels shall be inspected for blemishes, chips and flatness. Any panel not meeting the requirements of this specification shall be rejected.**
- .2 Verify dimensions, tolerances, and method of attachment with other work on site.**
- .3 Verify substrate on site to determine that conditions are acceptable for product installation in accordance with manufacturer's instructions.**
- .4 Surfaces to receive panel system must be even, smooth, sound, clean, dry and free from defects. Defects must be reported in writing to [Architect] [Engineer] [Consultant]. Do not commence work until framing and substrate are in satisfactory condition.**

3.2 INSTALLATION

- .1 Install metal composite panels in accordance with approved drawings and manufacturer's instructions.**
- .2 Do not install component parts that are observed to be defective, including warped, bowed, dented and broken members.**
- .3 Erect metal work square, plumb, straight and true, accurately fitted with tight joints and intersections.**
- .4 Install insulation using adhesive to ensure continuous thermal barrier in conjunction with air/vapour barrier formed by liner sheet.**
- .5 Install panel system to internal [sub-girts] [girts] with [concealed] [coloured] fasteners.**
- .6 Provide alignment bars, brackets, clips, inserts, shims as required to securely fasten wall system to building structure.**
- .7 Anchor panels securely in accordance with approved shop drawings using [concealed] [exposed], non-corrosive fasteners of type and location recommended by manufacturer. Anchorage system shall allow for necessary thermal movement and structural support.**
- .8 Protect metal surfaces in contact with concrete, masonry mortar, plaster or other cementitious surface with a protective film coating.**

- .9 Attachment system: Allow for free and noiseless vertical and horizontal thermal movement due to expansion and contraction. Buckling of panels, opening of joints, undue stress on fasteners, failure of sealants or any other detrimental effects due to thermal movement is not permitted.
- .10 Confirm dimensions in order to prevent oil canning.
- .11 Do not cut, trim, weld or braze component parts during erection in a manner that would damage finish, decrease strength, or result in visual imperfection or failure in performance. Return component parts that require alteration to shop for refabrication, if possible, or for replacement with new parts.
- .12 Separate dissimilar metals and use [gasketed fasteners] [isolation shim] [isolation tape] where needed to eliminate possibility of corrosive or electrolytic action between metals.
- .13 Caulk between work of this section and work of other sections to meet specified requirements and to provide a watertight installation.
- .14 Upon complete installation of cladding system, owner shall be provided with proper cleaning and maintenance instructions.

3.3 ADJUSTMENT AND CLEANING

- .1 Repair or replace installed products that are damaged. Remove construction debris from project site and dispose of in an environmentally responsible manner.
- .2 Repair panels with minor damage.
- .3 Remove masking film after adjacent materials have been cleaned.
- .4 Clean exposed panel surfaces of all smears, dirt and grime in accordance with manufacturer's recommendations.
- .5 Remove excess sealant with an approved solvent.
- .6 Ensure weep holes and drainage channels are unobstructed and free of dirt and sealants.

END OF SECTION