

ENGAGE BP SPEC NOTE: The purpose of this guide specification is to assist the specifier in correctly specifying aluminum siding products and their installation. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact Engage Building Products to assist in appropriate product selections and for detailing assistance. Red text in brackets indicates a selection needs to be made.

1. GENERAL
	* + 1. GENERAL PROVISIONS
				1. Attention is directed to the CONTRACT AND GENERAL CONDITIONS and all Sections within DIVISION 01 - GENERAL REQUIREMENTS which are hereby made a part of this Section of the Specifications.
			2. DESCRIPTION OF WORK
				1. Provide design and engineering, labor, material, equipment, related services, and supervision required, including, but not limited to, manufacturing, fabrication, erection, and installation for the Work of this section, including but not limited to the following:

Aluminum-faced compositewall panels.

Attachment Systems: For rain screen type panel system according to custom design indicated on the Drawings.

Aluminum extrusions, supports, anchors, fasteners, and sealants required.

* + - 1. REFERENCES
				1. General: The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only. The edition/revision of the referenced publications shall be the latest date as of the date of the Contract Documents, unless otherwise specified.
				2. American Architectural Manufacturers Association (AAMA):

AAMA 2605, Voluntary Specification, Performance Requirements, and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

* + - * 1. ASTM (ASTM):

ASTM B209/B209M, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate. 2. ASTM B221/B221M, Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Shapes, and Tubes.

ASTM D1781, Standard Test Method for Climbing Drum Peel for Adhesives.

ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials.

ASTM E330, Standard Test Method for Structural Performance of Exterior Windows, Curtain Walls, and Doors by Uniform Static Air Pressure Difference.

* + - * 1. National Association of Architectural Metal Manufacturers (NAAMM):

NAAMM MFM, Metal Finishes Manual.

* + - * 1. South Coast Air Quality Management District (SCAQMD):

SCAQMD Rule #1168, Adhesive and Sealant Applications, including most recent amendments.

* + - * 1. US Green Building Council LEED v4.1
				2. Preinstallation Conference: Prior to installation commencing at a date and time acceptable to the Owner [and the Consultant],

Location: Project site, at date and time acceptable to the Owner and the Consultant.

Attendees: At minimum, the Contractor, Installer, and trades requiring coordination with the work.

Agenda: Review the following.

Material selections, installation procedures, and coordination with other trades.

Finalize construction schedule, availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

Methods and procedures related to installation, including manufacturer's written instructions.

Support Conditions: Verify compliance, alignment, and attachment to structural members.

Flashings: For wall penetrations, openings.

Governing regulations and requirements for insurance, and authorities having jurisdiction.

Temporary protection; during and after installation.

Procedures for damaged panel repair after installation.

* + - 1. SUBMITTALS
				1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
				2. Product Data: Sufficient information to determine compliance with the Drawings and Specifications.

Manufacturer’s information sheets marked to include products proposed for use.

Includes, but is not limited to, construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of metal-faced composite wall panel and accessory.

Storage and handling recommendations.

* + - * 1. Shop Drawings: For each product and accessory required.

Include information not fully detailed in manufacturer’s standard product data, including, but not limited to:

Installation Layouts: For metal-faced composite wall panels

Details: Edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.

Accessories: Include details of the flashing, trim, and anchorage, at a scale of not less than 1-1/2 inches per 12 inches [38.1 mm per 304.8 mm].

Distinguish between factory- and field-assembled work.

* + - * 1. Samples:

For initial color selection.

For metal-faced composite wall panels with factory-applied color finishes.

Manufacturer’s color charts showing the full range of colors and finishes available.

Finishes Involving Normal Color Variations: Include samples showing the full range of variations expected.

Exposed Sealants: Each type and color required. Install joint sealants in 1/2-inch [12.7 mm] wide joints formed between two 6-inch [152.4mm] long strips of material matching the appearance of metal panels adjacent to joint sealants.

* + - * 1. Delegated-Design Submittal: For metal panel assembly indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
				2. Exterior Wall Certification: Submit manufacturer’s certification that exterior wall panels, as designed in the assemblies indicated on the Drawings, has been tested to meet the requirements of NFPA 285 and passed.
				3. Field quality-control reports.

ENGAGE BP SPEC NOTE: When project is pursuing a sustainable rating system, retain Sustainable Design Submittal paragraph and edit to correspond to the specific Project requirements. Modify based on rating system being pursued.

* + - * 1. LEED Submittals: Provide documentation of how the requirements of Credit will be met:

Product Data for Credit MR 2.1 and 2.2: For products being recycled, documentation of total weight of project waste diverted from landfill.

Product Data for Credit MR 4.1 and MR 4.2: For products that have recycled content, documentation including percentages by weight of post-consumer and pre-consumer recycled content.

Include statement indicating costs for each product having recycled content.

Product Data for Credit MR 5.1 and Credit MR 5.2: Submit data, including location and distance from Project of Material: manufacturer and point of extraction, harvest, or recovery for main raw material.

Include statement indicating cost for each regional Material: and the fraction by weight that is considered regional.

* + - 1. QUALITY ASSURANCE
				1. Qualifications:

Installer Qualifications: An employer of workers trained and approved by manufacturer.

A minimum of 5 years of experience, and has completed systems similar in material, design, and extent to that indicated for the Project and with record of successful performance.

Installer's Responsibilities: Include fabricating and installing metal panel assemblies and providing professional engineering services needed to assume engineering responsibility.

* + - * 1. Regulatory Requirements: Comply with applicable requirements of the laws, codes, ordinances, and regulations of Federal, State, and local authorities having jurisdiction.

Obtain necessary approvals from such authorities.

* + - * 1. Source Limitations: Obtain each type of metal panel through one source from a single manufacturer.
				2. Fire Test Performance for Exterior Wall: Passes NFPA 285, Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components.
				3. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

Use manufacturer's standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

* + - * 1. Mock-Ups: Build mockups to verify selections made and to demonstrate aesthetic effects and to set quality standards for fabrication and installation.

Demonstrate prepared substrate, support/attachment framing, panel façade, exterior finishes, and aesthetic appearance.

Confirm mock-up conforms with manufacturer’s instructions and provisions of contract documents.

To be accepted in writing by the architect or general contractor before commencement of work.

* + - 1. DELIVERY, STORAGE, AND HANDLING
				1. Deliver materials to the project site in Supplier’s or Manufacturer’s original wrappings and containers, labeled with Supplier’s or Manufacturer’s name, material or product brand name, and lot number, if any.

Handle components, sheets, aluminum composite wall panels, and other manufactured items according to Manufacturer’s instruction so as not to be damaged or deformed.

Package all materials for protection during transportation and handling.

* + - * 1. Materials Storage: Store in original, undamaged packages and containers, inside a wellventilated area protected from weather, moisture, soiling, extreme temperatures, and humidity.

Unload, and store metal-faced composite wall panels in a manner to prevent bending, warping, twisting, and surface damage.

Metal-faced composite wall panels:

Cover with suitable weathertight and ventilated covering.

Ensure dryness, with positive slope for drainage of water.

Do not store in contact with other materials that might cause staining, denting, or other surface damage.

Storage space is not to exceed 120 degrees F (67 degrees C).

Handling: Prevent damage to surfaces, edges, and ends of wall panels. Reject and remove damaged Material: from site.

* + - * 1. Retain strippable protective covering on composite wall panel for period of panel installation.
			1. PROJECT CONDITIONS
				1. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit assembly of metal composite material panels to be performed according to manufacturers' written instructions and warranty requirements.
				2. Field Measurements: Verify locations of structural members and wall opening dimensions by field measurements before metal panel fabrication and indicate measurements on Shop Drawings.

Established Dimensions: Where field measurements cannot be made without delaying the Work, either establish framing and opening dimensions and proceed with fabricating metal panels without field measurements or allow for field trimming of panels. Coordinate wall construction to ensure that actual building dimensions, locations of structural members, and openings correspond to established dimensions.

* + - 1. COORDINATION
				1. Coordination: Coordinate composite panel systems with rain drainage work, flashing, trim, and construction of walls and other adjoining work to provide a leak proof, secure, and non-corrosive installation.
			2. WARRANTY
				1. Panel System: 15-Year Limited Product Warranty against faults and defects in materials and workmanship attributed to the manufacturer. The panel system warranty shall be countersigned by the manufacturer and the Installer.

Failures include, but are not limited to, the following: a. Structural failures, including rupturing, cracking, or puncturing. b. Deterioration of metals and other materials beyond normal weathering.

* + - * 1. Finish Warranty: Submit a written warranty, signed by manufacturer, covering failure of the factory-applied exterior finish within the specified warranty period. Deterioration of finish includes, but shall not be limited to, color fade, chalking, cracking, peeling, and loss of film integrity.

Warranty Period for PVdF Finish: 20 years from date of Substantial Completion.

* + - * 1. Additional Owner Rights: The warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.
1. PRODUCTS
	* + 1. DISTRIBUTOR
				1. Materials Distributor:

Gentek Building Products, 1001 Corporate Drive, Burlington, ON, Canada, L7L 5V5
Contact: Martin Miville-Dechene, Business Development Manager
M: (905) 208-7007; E: martin\_miville-dechene@gentek.ca; W: [www.gentek.ca](http://www.gentek.ca)

* + - 1. METAL COMPOSITE MATERIAL WALL PANELS
				1. General: Aluminum-faced composite wall panels fabricated from two metal facings bonded to solid, extruded fire retardant core.

Aluminum Face Sheets:

Thickness: 0.020 inch (0.508 mm).

Aluminum Alloy: 3000 Series or equivalent.

* + - * 1. Overall Panel Thickness: 0.157 inch (4 mm).
				2. Fire Resistant (FR) Core: Tested in accordance with ASTM E84, Class A building material rating. NFPA 285 Testing Compliant.

With Center Panel Joint: Flame Spread: 15. Smoke Developed Rating: 30.

No Center Panel Joint: Flame Spread: 0. Smoke Developed Rating: 0.

Bond Integrity: Tested in accordance with ASTM D1781.

When simulating resistance to panel delamination, there is to be no adhesive failure of the bond between the core and the skin, or cohesive failure of the core itself below the following values:

Peel Strength: FR Core:

As Manufactured: 22.5 inch-lbs per inch` (0.100 N·per mm).

After 21 Days Soaking in Water at 70 degrees F (21 degrees)

22.5 inch-lbs per inch` (0.100 N·per mm).

* + - * 1. Tolerances:

Width: ±0.08 inch (±2.03 mm).

Length: ±0.16 inch (±4.06 mm).

Panel Bow: Maximum 0.8 percent of any 72 inch (1829 mm) panel dimension.

Squareness: Maximum 0.20 inch (5.08 mm).

Flatness: Maximum deviation from panel flatness shall be 1/8 inch (3 mm) in 5 feet (1524 mm) on panel in any direction for assembled units (non-accumulative, no oil-canning).

* + - * 1. Attachment Assembly Components: Formed from extruded aluminum.

Include manufacturer's standard perimeter extrusions, panel stiffeners, panel clips and anchor channels.

* + - * 1. Attachment Assembly: Manufacturer's standard rainscreen system.
			1. MATERIALS AND ACCESSORIES
				1. Aluminum: Aluminum Extrusions: ASTM B221/B221M, Alloy 6063-T6.
				2. Rain Screen Furring Spacers: UV resistant and ROHS compliant rigid PVC compound.
				3. Perforated Vented & Non Vented Through-Wall Flashing: Provide 0.013 inch (.33 mm) painted 2 sides galvanized steel.
				4. Flashing and trim formed from same material as metal composite material panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, sills, jambs, corners, endwalls, framed openings, rakes, fasciae, parapet caps, soffits, reveals, and fillers.

Match material, finish, and color as facings of adjacent panels, unless otherwise indicated.

* + - * 1. Fasteners: Weather sealed screws and .75 inch [19 mm] 18g brad nails.
				2. Panel Fasteners: Self-tapping screws designed to withstand design loads. Provide exposed fasteners with heads matching color of metal composite material panels by means of plastic caps or factory-applied coating. Provide EPDM or PVC sealing washers for exposed fasteners.
				3. Panel Sealants: ASTM C920; elastomeric silicone sealant; of type, grade, class, and use classifications required to seal joints in metal composite material panels and remain weathertight; and as recommended in writing by metal composite material panel manufacturer.

Sealants Within Panel System: Provide Tremco Spectrem 1 Sealant or manufacturer approved equal.

Comply with requirements of Section 079200 - JOINT SEALANTS. H. Panel Accessories: Components for a complete, weathertight panel system including trim, copings, fasciae, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal composite material panels unless otherwise indicated.

ENGAGE BP SPEC NOTE: QuickPanel has many color and texture options available. Refer to the QuickPanel Website [www.engagebp.com](http://www.engagebp.com) for a current listing of color and texture options. Enter color selection below.

* + - 1. FINISHES
				1. Comply with NAAMM MFM for architectural metal products for recommendations for applying and designating finishes.

Aluminum Finishes: Finish designations prefixed by AA comply with the system established by the Aluminum Association for designating aluminum finishes.

* + - * 1. PVDF Fluoropolymer: AAMA 2605. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
				2. FEVE Fluoropolymer: AAMA 2605. One-coat fluoropolymer finish containing 100 percent fluorinated ethylene vinyl ether resin in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions.
				3. Color: [As selected by Owner from manufacturer’s standard finish guide] [Custom color matched].
			1. WALL PANEL SYSTEM DESCRIPTION
				1. Panels: FR (fire-rated mineral core) panels with high performance PVdF or FEVE coatings.

Panel Platform: 6063-T6 extruded aluminum.

ENGAGE BP SPEC NOTE: Select one of the following options and delete options not required on the Project.

Back Plate Profiles: [vertical,] [horizontal,] [outside corner,] [inside corner,] [multi-angle inside corner,] [multi-angle outside corner,] [vertical material transition,] [outside corner material transition,] [soffit,] [alternate soffit,] [horizontal wall penetration,] [vertical wall penetration,] [base section,] [window jamb,] [and] [window sill].

Inside corner.

Top Caps: With high performance PVdF PPG Duranar coatings.

Rainscreen Furring Spacers.

Brake Metal Flashings.

Perforated Vented Through-Wall Flashing.

Concealed Sealant.

Concealed Weather Sealed Fasteners.

Adhesive Tape,

1. EXECUTION
	* + 1. EXAMINATION
				1. Verification of Conditions: Examine areas and conditions under which the work is to be installed, and notify the Contractor in writing, with a copy to the Owner and the Architect, of any conditions detrimental to the proper and timely completion of the work.
				2. Do not proceed with the work until unsatisfactory conditions have been corrected.

Examine substrates, areas, and conditions, with the Installer present, for compliance with requirements for installation tolerances, metal-faced composite wall panel supports, and other conditions affecting performance of the work.

Examine wall framing to verify that girts, angles, channels, studs, and other structural panel support members and anchorage have been installed within alignment tolerances required by metal-faced composite wall panel manufacturer.

Examine wall sheathing to verify that sheathing joints are supported by framing or blocking, and that installation is within flatness tolerances required by metal-faced composite wall panel manufacturer.

Verify that weather-resistant sheathing paper has been installed over sheathing or backing substrate to prevent air infiltration or water penetration.

Examine roughing-in for components and systems penetrating metal-faced composite wall panels to verify actual locations of penetrations relative to seam locations of panels before panel installation.

The beginning of the work shall indicate acceptance of the areas and conditions as satisfactory by the Installer.

* + - 1. PREPARATION
				1. Coordination: Coordinate setting drawings, diagrams, templates, instructions, and directions for installation of anchorages that are to be embedded in concrete or masonry construction. Coordinate delivery of such items to the Project Site.
				2. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages according to ASTM C754 and metal composite material panel manufacturer's written recommendations.
			2. INSTALLATION OF COMPOSITE WALL PANEL
				1. General: Install metal-faced composite wall panels in accordance with manufacturer’s written instructions in orientation (note Metallic and Mica finished panels are directional), sizes, and locations indicated on the Drawings. Install panels perpendicular to girts and sub-girts unless otherwise indicated.

Install panel system in accordance with manufacturer’s installation instructions and drawings.

Ensure continuity of building envelope air barrier and vapor.

Shim or otherwise plumb substrates receiving metal-faced composite wall panels.

Anchor panels securely in accordance with reviewed shop drawings to allow for necessary thermal movement and structural support.

Conform to panel fabricator’s instructions for installation of concealed fasteners.

Do not install component parts that are observed to be defective, including, but not limited to, warped, bowed, dented, scraped, and broken members.

Do not cut, trim, weld, or braze component parts during erection in manner which would damage finish, decrease strength, or result in visual imperfection or failure in performance. Return component parts, which require alteration to shop for re-fabrication, if possible, or for replacement with new parts.

* + - * 1. Fasteners, Aluminum Panels: Use aluminum or stainless-steel fasteners for surfaces exposed to the exterior; use aluminum or galvanized steel fasteners for surfaces exposed to the interior.
				2. Metal Protection: Where dissimilar metals contact each other or corrosive substrates, protect against galvanic action as recommended in writing by metal composite material panel manufacturer.
				3. Attachment Assembly, General: Install attachment assembly required to support metal composite material wall panels and to provide a complete weathertight wall system, including subgirts, perimeter extrusions, tracks, drainage channels, panel clips, and anchor channels.

Include attachment to supports, panel-to-panel joinery, panel-to-dissimilar-material joinery, and panel-system joint seals.

Do not begin installation until the weather barrier and flashings that will be concealed by metal panels are installed.

* + - * 1. Rainscreen Installation: Install using manufacturer's standard assembly with vertical channel that provides support and secondary drainage assembly, draining at base of wall. Notch vertical channel to receive support pins. Install vertical channels supported by channel brackets or adjuster angles and at locations, spacings, and with fasteners recommended by manufacturer. Attach metal composite material wall panels by inserting horizontal support pins into notches in vertical channels and into flanges of panels. Leave horizontal and vertical joints with open reveal.

Install wall panels to allow individual panels to be installed and removed without disturbing adjacent panels.

Do not apply sealants to joints unless otherwise indicated.

* + - 1. ACCESSORY INSTALLATION
				1. Accessories, General: Install accessories with positive anchorage to building and weathertight mounting and provide for thermal expansion. Coordinate installation with flashings and other components.

Install components required for a complete metal composite material panel assembly including trim, copings, corners, seam covers, flashings, sealants, gaskets, fillers, closure strips, and similar items. Provide types indicated by metal composite material panel manufacturer; or, if not indicated, provide types recommended in writing by metal composite material panel manufacturer.

* + - * 1. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant.

Install exposed flashing and trim that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance.

Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 feet (3 m) with no joints allowed within 24 inches (605 mm) of corner or intersection. Where lapped expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joints).

* + - 1. ERECTION TOLERANCES
				1. Maximum variation from plane or location shown on shop drawings shall be .5 inch (13 mm) in 30 feet (9.14 m) of length and up to .75 inch (19 mm) in 300 feet (91.44 m).
				2. Maximum deviation for vertical member shall be 0.10 inch (2.54 mm) in 25 feet (7.62 m) run.
				3. Maximum deviation for a horizontal member shall be 0.10 inch (2.54 mm) in 25 feet (7.62 m) run. D. The maximum offset from true alignment between two adjacent members abutting end to end, in line shall be 0.03 inch (0.76 mm).
			2. FIELD QUALITY CONTROL
				1. Testing Agency: Engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.
				2. Water-Spray Test: After installation, test area of assembly as directed by Architect for water penetration according to AAMA 501.2.
				3. Manufacturer's Field Service: Engage a factory-authorized service representative inspect completed metal panel installation, including accessories.
				4. Remove and replace metal panels where tests and inspections indicate that they do not comply with specified requirements.
				5. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
				6. Prepare test and inspection reports.
			3. ADJUSTING AND CLEANING
				1. Remove temporary protective coverings and strippable films, if any, as metal-faced composite wall panels are installed unless otherwise indicated in manufacturer’s written installation instructions.
				2. On completion of metal-faced composite wall panel installation, clean finished surfaces as recommended by panel manufacturer. Maintain in a clean condition during construction.
				3. After metal-faced composite wall panel installation, clear base drainage channels of obstructions, dirt, and sealant.
				4. Replace metal-faced composite wall panels that have been damaged or have deteriorated beyond successful repair by finish touch-up or similar minor repair procedures.
				5. Any additional protection, after installation, shall be the responsibility of the general contractor to remove.
				6. Final cleaning shall not be part of the work of this Section.
			4. PROTECTION
				1. Protect installed products and components from damage during construction.
				2. Repair damage to adjacent materials caused by composite metal building panel installation.

END OF SECTION