



**TFC SERIES 2000
ROUTE AND RETURN 1-3/4" DRY RAIN SCREEN SYSTEM**

**SECTION 07 42 13
METAL COMPOSITE MATERIAL WALL PANELS**

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preformed, pre-finished metal composite material (MCM) panels.
 - 1. Route and Return 1-3/4" System Depth.
 - 2. Matching flashing and trim.

- B. Related Requirements

Note to Specifier: Select appropriate Sections below or add other related Section.

 - 1. Section 05 12 00 – Structural Steel Framing: Panel support framing.
 - 2. Section 05 40 00 – Cold-Formed Metal Framing: Panel support framing.
 - 3. Section 06 10 00 – Rough Carpentry: Panel support framing.
 - 4. Section 07 25 00 – Weather Barriers: Water-resistive barrier behind wall panel system.
 - 5. Section 07 92 00 – Joint Sealants: Sealing joints between adjacent construction materials.

1.02 SUBMITTALS

Note to Specifier: Revise Section number in paragraph below as appropriate

- A. Submit the following in accordance with Section 01330 [Other]:
 - 1. Product Data – MCM Sheets: Manufacturer's product literature for the panel specified.
 - 2. Shop Drawings: Indicate thickness of Panel Material and detail joint locations; including joints necessary to accommodate thermal movement if enough joints are not drawn.
 - 3. Samples
 - a. Samples of each finish and color or colors selected.
 - b. Sample size is determined by manufacturer.

1.03 QUALITY ASSURANCE

- A. Field Measurements: Verify actual building dimensions by scanning with Leica 3D Field Scan Technology before fabrication.
- B. Manufacturer Qualifications: Minimum of 10 years of experience in manufacturing panels similar to those specified.
- C. Installer Qualifications: Company specializing in performing work of the type specified with a minimum of 5 years or more.
- D. Certified by MCA as a Premium MCM Fabricator.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to the project site in manufacturer's original crating, with each panel properly labeled per installation purposes. Handle materials carefully to avoid damage to panels and finishes.

1.05 WARRANTY

- A. The manufacturer shall warrant the materials to be free of faults and that the warranty shall be extended by paint manufacturer's standard multi-year finish warranty.

PART 2 PRODUCTS

2.01 MANUFACTURER

- A. TFC a division of Centurion Industries Inc.
1107 N Taylor Road, Garrett, IN 46793
Ph: 260-357-6665

- B. Basis of Design

- 1. Metal Composite Wall Panels (MCM)

2.02 WALL PANEL SYSTEM

- A. Wall and Soffit Panel System: Metal panels, fasteners, and anchors designed to be supported by framing or other substrate provided by others; provide installed panel system capable of maintaining specified performance without defects, damage or failure.
 - 1. Provide structural design by or under direct supervision of a Qualified Professional Engineer licensed in the State in which the Project is located.
 - 2. Provide panel jointing.
 - 3. Anchor panels to supporting framing.

2.03 PERFORMANCE REQUIREMENTS

- A. Thermal Movement: Provide for free and noiseless vertical and horizontal thermal movement due to expansion and contraction under material temperature range of minus 40 degrees Fahrenheit to 180 degrees Fahrenheit without buckling, opening of joints, undue stress on fasteners, or other detrimental effects; allow for ambient temperature at time of fabrication, assembly, and erection procedures.
- B. Wind Performance: Provide system tested in accordance with ASTM E330 to 30 psf without permanent deformation or failures of structural members under the following conditions:
 - 1. Inward and Outward Design Wind Pressures: As required by applicable Code.
 - 2. Maximum deflection of perimeter framing member of L/60 normal to plane of the wall; maximum deflection of individual panels of L/90.
 - 3. Maximum anchor deflection in any direction of 1/16 inch at connection points of framing members to anchors.
- C. Fire Performance: Tested in accordance with, and complying with acceptance criteria of NFPA 285 when fire-rated MCM material is specified and on building elevations over 40 feet above finished floor.
- D. Air Infiltration: Tested in accordance with, and complying with acceptance criteria of ASTM E283 to 6.24 psf.
- E. Water Control: Tested in accordance with, and complying with acceptance criteria of ASTM E331 to 60 psf.

2.04 PANELS

- A. Panels: 1-3/4 inch deep pans formed of metal composite material sheet by routing back edges of sheet, removing corners, and folding edges.

1. Provide concealed attachment to supporting structure by adhering attachment members to folded tabs of panel.
2. Panel stiffeners attached to backside of panels per standard spacing of 24" on center, unless specified to be calculated by a Professional Engineer; then calculations determine required spacing.
4. Fabricate panels under controlled shop conditions.
5. Where final dimensions cannot be established by field measurement before commencement of manufacturing, make allowance for field adjustments without requiring field fabrication of panels.
8. Fabricate as indicated on drawings.
 - a. Make panel lines, breaks, curves, and angles sharp and true.
 - b. Keep plane surfaces free from warp or buckle.
 - c. Keep panel surfaces free of scratches or marks caused during fabrication.
9. Provide joint details providing a structurally sound wall panel system that allows no uncontrolled water penetration on inside face of panel system.
 - a. Joint seepage water and condensate water are not considered uncontrolled water by Architect.

2.05 MATERIALS

A. Composite Panel: Extruded thermoplastic core faced with 2 sheets of ASTM B209 .020 inch thick aluminum

Note to Specifier: Select the thickness in subparagraph below for composite panel.

1. Thickness: [3-mm] [4-mm] [6-mm]

2.06 FINISHES

Note to Specifier: Select paragraphs A, B or C below for finish type.

A. Painted Finishes:

1. AAMA 2603/2604/2605 rated fluoropolymer
2. FEVE or PVDF Resin (Lumiflon, Kynar, ect.) :

Note to Specifier: Custom colors are available but are subject to an additional charge and quantity; Contact manufacturer for details.

- a. Color: Selected by Architect from manufacturer's standard colors
- Note to Specifier: Verify number of coats with manufacturer, dependent on color selection*
- b. Number of Coats: [2-coat] [3-coat] [4-coat]
- c. Provide factory applied strippable plastic film for protection during fabrication and installation.

B. Anodized Finishes per vendor selection and availability.

C. Natural Metals per vendor selection and availability.

2.07 ACCESSORIES

A. 1/8" Extruded Aluminum Frame Extrusion around panel perimeter.

B. 1/8" Extruded Aluminum Clips.

C. Fasteners: As recommended by TFC.

D. Stiffeners: 1-1/4" x 1-1/4" .090 Aluminum Tube spaced 24" on center, unless specified to be calculated by a Professional Engineer; then calculations determine required spacing.

2.08 FABRICATION

A. Shop fabricate all composite panels. Field modifications and on-site fabrication is dependent on field conditions at time of field scan/measurement.

B. Fabricate panels with lines, brakes, and angles sharp and true, and with surface free from wave, warp or buckle.

C. Fabricate panels with grain direction of all panels oriented in one direction, unless indicated otherwise on the drawings.

D. 1. Do not mix finish grain direction, unless approved by Architect.
MCM Reveal to match panel color.

PART 3 EXECUTION

3.01 EXAMINATION

A. Examine dimensions, tolerances, and interfaces with other work.

1. Verify that water-resistive barrier system is properly installed and interfaced with the adjacent weather barrier substrate materials.

B. Examine substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions. Acceptance and approval of existing conditions is indicated by proceeding with the work.

C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

A. Protect adjacent work areas and finish surfaces from damage during installation.

3.03 INSTALLATION

A. Do not install products that are defective, including warped, bowed, dented, and broken members, and members with damaged finishes.

B. Comply with instructions and recommendations of MCM sheet manufacturer and wall system manufacturer, as well as with approved shop drawings.

C. Provide a concealed fastener installation system, with no fasteners exposed.

D. Install panels with lines, brakes, and angles sharp and true, and with surfaces free from wave, warp, or buckle.

E. Install wall system securely allowing for necessary thermal and structural movement; comply with wall system manufacturer's instructions for installation of concealed fasteners.

F. Do not handle or tool products during erection in manner that damages finish, decreases strength, or results 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.

G. Do not form panels in field unless required by wall system manufacturer and approved by the Architect; comply with MCM sheet manufacturer's instructions and recommendations for field forming.

H. Separate dissimilar metals; use gasket fasteners, isolation shims, or isolation tape where needed to eliminate possibility of electrolytic action between metals.

I. Where composite panels abut or joins adjacent dissimilar metals, execute joint to facilitate drainage and eliminate possibility of corrosion.

J. Install square, plumb, straight, and true, accurately fitted, with tight joints and intersections.

K. Replace damaged products as necessary.

3.04 CLEANING

A. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.

B. Remove temporary coverings and protection of adjacent work areas.

C. Clean installed products in accordance with manufacturer's instructions.

3.05 PROTECTION

A. Protect installed panel system from damage until Date of Substantial Completion.

END OF SECTION