Guide Specifications

2012 Master Format™ Section 07 42 13.19

Metl-Span® Tuff Wall® Panel

PART 1 – GENERAL

1.1 Work Included

A. Pre-insulated metal panel cladding where indicated on the drawings. Also included are all necessary trims, fasteners, sealants and gaskets as required for a weathertight installation. Panels shall be secured to the structure with concealed clips and fasteners in the sidejoints.
   1. Steel faced factory foamed-in-place with compatible joinery.
   2. Extruded aluminum trim related to the walls and its intersection with adjacent materials.
   3. Sealants between panels and their intersection.

1.2 Related Section

A. Section 07 62 00 – Sheet Metal Flashing and Trim
B. Section 07 92 00 – Joint Sealants

1.3 References

G. ASTM E 283 – Standard Method for Determining the Rate of Air Leakage Through Exterior Window, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

1.4 Performance Requirements

A. Structural and Wind load Tests:
   1. The design load/deflection criteria shall be verified from tests per ASTM E72 “Chamber Method” using a 20 psf (.96 kPa) simulated wind load. A deflection limit of L/180 for exterior wall panels, L/120 for partition and liner walls and L/240 for ceiling panels shall apply.

B. Thermal Performance:
   1. When tested in accordance with ASTM C518, “measurement of steady state thermal transmission”, the panels shall provide a K-factor of .14 btu/sf/hr./deg. F at a 75°F (24°C) mean temperature.

C. Vapor Barrier:
   1. Air Infiltration: Air infiltration shall not exceed .06 cfm per square foot of wall area when tested in accordance with ASTM E283 at a static pressure of 12 psf (.576 kPa)
   2. Static Water Penetration: There shall be no uncontrolled water penetration through the panel joints at a static pressure of 20 psf (.96 kPa) when tested in accordance with ASTM E331.
   3. Dynamic Water Penetration: There shall be no uncontrolled water penetration through the panel joints when subjected to a 95 mph (153 kph) slip stream air flow and application of water for a 15 minute period in accordance with AAMA501.1

D. Fire:
   1. Surface Burning Characteristics: The insulated core shall have been tested in accordance with ASTM E84 for surface burning characteristics. The core shall have a maximum flame spread of 25 and a smoke developed rating of 450.
   2. Factory Mutual Research Corporation (FMRC) Standard 4880, 50′ (15.24 m) High Corner Test for Unlimited Height Structures: The panel assembly shall not support a self-propagating fire which reaches any limits of the 50 foot (15.24 m) high corner test structure as evidenced by flaming or material damage of the ceiling of the assembly.
      Note to Specifier: Approval is applicable to structures of unlimited height.
   3. FM Approval Standard 4881, Standard for Class 1 Exterior Wall Systems.
      Note: Panels to be installed per Factory Mutual guidelines for required listings.

E. Bond Strength:
   1. Fatigue Test: The panel shall withstand deflection cycling at L/180 to two million alternate cycles with no evidence of delamination, core cracking or permanent bowing.
   2. Freeze/Heat Cycling: The panel shall exhibit no delamination, surface blistering or permanent bowing when subjected to cyclic temperature extremes of -20°F (-28°C) to +180°F (+82°C) for twenty-one (21) eight hour cycles.
   3. Humidity Test: The panel shall exhibit no delamination or metal corrosion at interface when subjected to a 140°F (60°C) temperature and 100% relative humidity for a total of 1200 hours.
   4. Autoclave Test: The panel shall exhibit no delamination of the foam core from metal skins when exposed to 2 psi (.122 kg/sq. cm) pressure at a temperature of 212°F (100°C) for a total of 2 ½ hours.
1.5 Quality Assurance

A. **Installer Qualifications:** Installed by a contractor with a minimum of five (5) years’ experience with this type of construction, and documentation indicating successful completion of contracts for projects of similar size, scope and materials.

B. **Manufacturer’s Qualifications:** The manufacturer shall have a minimum of ten (10) years’ experience in production of factory foamed-in-place insulated metal panels.

1.6 Submittals

A. Complete shop drawings, including elevations, fastening patterns and sections of each condition shall be submitted for approval prior to fabrication. Such drawings shall also include material type, metal thickness, paint finish and manufacturer’s installation suggestions.

B. Submit under provisions of Section 01 33 00.

C. Manufacturer’s data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Material type, metal thickness and finish.
   4. Installation methods.

D. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer’s full range of available colors and patterns.

E. Panel Samples: Submit 1′-0″ (30.48 cm) by full width sample panel indicating the metal, texture and finish proposed.

F. Manufacturer’s Certificates: Certify products meet or exceed specified requirements.

1.7 Substitutions

A. Materials, accessories and testing specified shall establish the minimum level of quality, performance, dimension and appearance required of any substitution.

B. No substitution will be considered unless a written request to the specifying architect is received for approval at least ten (10) days prior to the established bid date. Evidence shall be submitted to demonstrate equivalency to the products and performance levels specified. Laminated panels shall not be considered acceptable substitutes for the specified foamed-in-place panels.

C. A complete description of the substitution including details referenced to the wall panel shown on the contract drawings.

D. Independent test reports verifying compliance with specified performance requirements.

E. A detailed listing of each specification item with which the substitution does not fully comply.

F. The manufacturer or wall panel contractor proposing the substitution shall pay the costs of any other subcontractor affected by the proposed substitution.

1.8 Finish Warranty

A. Submit Manufacturer’s ten (10) year limited warranty on the exterior texture finish. The textured finish will not peel, flake or crack.

   **Note to Specifier:** No warranty is offered for the interior painted surface of the panel.

**PART 2 – PRODUCTS**
2.1 Acceptable Manufacturer:

A. Tuff Wall® Insulated Metal Wall Panels as manufactured by Metl-Span of Lewisville, TX, 75057, USA, Phone: (972) 221-6656, Fax: (972) 420-9382, Email: panel@metlspan.com Website: www.metlspan.com.

2.2 Panel Design

A. Requests for substitutions will be considered in accordance with provisions of Section 01 23 00 (previously 01230).
B. Panel – General Requirements: Metl-Span Tuff Wall Panel – Roll-formed exterior and interior steel sheet faces chemically bonded to continuously foamed-in-place polyurethane core; laminated panels are not acceptable.
C. Exterior Face: G-90 galvanized stucco embossed steel, minimum Grade 33 and/or AZ-50 Aluminum-Zinc stucco embossed steel, minimum Grade 33 in 24ga (0.0250”) and 22ga (0.0312”), factory cleaned, pretreated, primed and coated with a baked-on color base coat compatible with the Tuff Cote® finish system which gives the masonry look of stucco.
D. Interior Face: G-90 galvanized stucco embossed painted steel, minimum Grade 33 and/or AZ-50 Aluminum-Zinc stucco embossed painted steel, minimum Grade 33 in 26ga (0.0187”), 24ga (0.0250”), 22ga (0.0312”), unless otherwise indicated.
E. Longitudinal Joint Sealants: Field applied.
F. Foam Core: Non-CFC, Class I, polyurethane.
G. Exterior Finish: Tuff Cote Finish System, a hard, aggregated fiber reinforced polymer finish available in seven (7) colors (Antique Bronze, Light Gray, Light Stone, Medium Beige, Surrey Beige, Stucco White and Warm Limestone). The finish can be field painted should an accent stripe or other color be required.
H. Interior Finish: The interior face sheet shall be a nominal 0.2 mil (5 microns) primer followed by a nominal 0.7 mil (17.5 microns) polyester coating in USDA compliant Igloo White.
I. Metl-Span Tuff Wall Panel: Concealed fastener wall panels with offset double tongue and groove joinery and an extended metal shelf allowing fasteners to penetrate both metal faces with clips concealed in the side joint.
   1. Exterior Face Profile: Non-profiled
   2. Interior Face Profile: Mesa Wave Pattern, 1/8” deep; Light Mesa, 1/16” deep – Light Mesa not available for the 5” and 6” thick panels.
   3. Module Width: 36” (TW36), 42” (TW42)
   4. Thickness: 2”, 2.5”, 3”, 4”, 5” or 6” (Available only in the Mesa Profile in the 5” & 6” thicknesses in any of the module widths)
   5. Trimless ends provided at panel ends if required.
   6. Foam core shall be continuously foamed-in-place, Non-CFC polyurethane.
   7. Flashing and trim shall be brake-formed sheet metal in the same thickness and finish to match the panels.
   8. Manufacturer’s standard extruded aluminum trim painted to match the panel is available.

PART 3 – EXECUTION

3.1 Examination
A. Panel installer shall examine all structural steel before beginning installation to insure that all supporting members are straight, level, plumb and satisfactory for panel installation.
B. Do not begin installation until unsatisfactory conditions are corrected.
C. Beginning of installation shall signify the structure and adjacent conditions as being proper and acceptable.
D. Start of installation shall signify structure and adjacent conditions as being proper and acceptable.

3.2 Delivery, Storage and Handling

A. Protect products of metal roof panel system during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage.
B. Deliver, unload, store, and erect insulated metal wall panels and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.
C. Store in accordance with Manufacturer’s written instruction.
D. Shield foam insulated metal wall panels from direct sunlight until installation.
E. Store products off the ground, with panels sloped for drainage and covered to protect factory finishes from damage. Stack bundles no more than two (2) high.

3.3 Installation

A. Installation of panels shall be made in accordance with manufacturer’s recommended procedures, approved shop drawings, installation guide book and manufacturer’s handbook of construction details.
B. Flashing and trim shall be installed true and in proper alignment. Sealant shall be installed where indicated, without skips and voids, to insure weather tightness and integrity of the vapor barrier.
   Note to Specifier: The use of touch-up paint is not recommended for minor surface scratches. However, it is recommended to always use touch-up paint if the scratch goes to bare metal. When using touch-up paint, it should be limited to small areas. Touch-up paint will never match coil-coated finishes’ longevity, color and gloss.

3.4 Damaged Material

A. Replace damaged panels and other components of work that cannot be repaired by finish touch-up or similar minor repair.
B. The panel installer shall inspect and approve each completed wall area and shall be responsible for protection of completed work from damage by other trades.

3.5 Cleaning

A. Replace damaged panels and other components of work, which cannot be repaired by finish touch-up or similar minor repair.
B. Wipe finished surfaces clean of any filings caused by drilling or cutting to prevent rust staining.
C. Protective film on trim should be removed before exposure to sunlight.
All specifications and designs are subject to change without notice.