



Metl-Span EcoScreen® Perforated Screen Wall Panels

Metl-Span EcoScreen Perforated Screen Wall Panels offer a variety of aesthetic solutions to equipment and other screening design requirements. EcoScreen Panels may be installed horizontally or vertically. Panels are available with coated aluminum and uncoated stainless-steel substrates. EcoScreen Panels are manufactured in four profiles and seven perforation pattern treatments, providing a range of solutions to creative designers.

Metl-Span EcoScreen Panels are manufactured and coated with Metl-Span's Kynar 500® or Hylar 5000®-based fluoropolymer finishes. Highly UV resistant and durable in the face of chemical and air borne pollution, salt spray and wind-driven sand, Metl-Span coatings set the standard for the industry. Metl-Span coatings are available in standard colors and additional custom colors. Panels are also available in Type 304 stainless steel with a 2B (bright, cold-rolled) finish.

Metl-Span perforated panels are used as a single-skin application over secondary or primary structural members surrounding rooftop equipment or providing a visual screen for semi-enclosed areas. Their unique fabrication provides a 10 to 40 percent open area for the effect of a translucent screen to control light, air movement and the appearance of operations behind the screen.

Consult your local Metl-Span representative for design assistance. Contact Metl-Span, Lewisville, TX, (972)221-6656, Email: info@metlspan.com, www.metlspan.com for a list of offices.

Metl-Span is a world leader in the manufacture of metal building products and systems for commercial, industrial, architectural and cold storage walls and roofs. Metl-Span is also a world-class coil coater, coating a wide range of products for customers in numerous industries.

SECTION 07 42 13.04

METAL WALL PANELS, PERFORATED

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Metal Screen Wall System over Primary [and Secondary] Framing: Single-skin exposed fastener perforated metal wall panels.

Specifier: Retain subparagraph below when retaining secondary metal framing such as subgirts or furring members over masonry in this section.

- 1. Metal screen wall system includes secondary metal framing for panel attachment.

1.2 RELATED REQUIREMENTS

Specifier: Edit list below to correspond to Project.

- A. Division 01 Section "Sustainable Design Requirements" for related LEED general requirements.
- B. Division 05 Section "Structural Steel Framing" for primary structural members supporting metal screen wall system.
- C. Division 07 Section "Sheet Metal Flashing and Trim" for sheet metal copings, flashings, reglets and roof drainage items.

1.3 DEFINITIONS

1.4 REFERENCES

- A. American Architectural Manufacturer's Association (AAMA):
 - 1. AAMA 620 - Voluntary Specification for High Performance Organic Coatings on Coil Coated Architectural Aluminum Substrates.
 - 2. AAMA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.
- B. American Society of Civil Engineers (ASCE):
 - 1. ASCE 7 - Minimum Design Loads for Buildings and Other Structures.
- C. ASTM International (ASTM):
 - 1. ASTM A 666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
 - 2. ASTM B 209 - Specification for Aluminum and Aluminum Alloy Sheet and Plate.
 - 3. ASTM C 754 - Specification for Installation of Steel Framing Members to Receive Screw Attached Gypsum Panel Products.

4. ASTM E 72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction.

D. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA):

1. Architectural Sheet Metal Manual.

1.5 PERFORMANCE REQUIREMENTS

Specifier: Add requirements to this Article if Project requirements include delegated design by Contractor.

- A. General: Provide metal wall panel assemblies meeting performance requirements as determined by application of specified tests by a qualified testing agency on manufacturer's standard assemblies.
- B. Structural Performance: Provide metal wall panel assemblies capable of withstanding the effects of indicated loads and stresses within limits and under conditions indicated:

Specifier: Consult structural engineer and edit below as required by local codes. Insert structural data below if not indicated on drawings.

1. Wind Loads: Determine loads based on uniform pressure, importance factor, exposure category, and basic wind speed indicated on drawings.
2. Limits of Deflection: Metal wall panel assembly shall withstand scheduled wind pressure with the following allowable deflection:
 - a. Maximum allowable deflection

Specifier: Select one of the following two subparagraphs based upon the selected panel depth and configuration.

- 1) Single Skin Panels Less than 1-inch (25-mm) in Depth: Limited to L/90 deflection of panel perimeter normal to plane of wall.
- 2) Single Skin Panels greater than 1-inch (25-mm) in Depth: Limited to L/120 deflection of panel perimeter normal to plane of wall.
3. Secondary Metal Framing: Design secondary metal framing for metal wall panel assembly according to AISI's "Standard for Cold-Formed Steel Framing - General Provisions."

Specifier: Delete paragraph below if not applicable.

- C. Florida State Building Code Compliance: Provide wall panels that comply with the requirements for installation under Florida State Building Code aside of the High Velocity Hurricane Zones.

Specifier: For horizontal applications, and other applications where thermal movement is an issue, retain the requirements below.

- D. Thermal Movements: Allow for thermal movements from variations in ambient. Accommodate movement of support structure caused by thermal expansion and contraction.

1.6 QUALITY ASSURANCE

- A. Manufacturer/Source: Provide metal wall panel and panel accessories from a single manufacturer.

Specifier: Retain paragraph below if Owner allows substitutions but requires strict control over qualifying of substitutions.

- B. Manufacturer Qualifications: Approved manufacturer listed in this Section with minimum 10 years experience in manufacture of similar products in successful use in similar applications.
1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
 - a. Product data, including certified independent test data indicating compliance with requirements.
 - b. Samples of each component.
 - c. Project references: Minimum of 5 installations not less than 5 years old, with Owner and Architect contact information.
 - d. Sample warranty.
 2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
 3. Approved manufacturers must meet separate requirements of Submittals Article.
- C. Installer Qualifications: Experienced Installer with minimum of 5 years experience with successfully completed projects of a similar nature and scope.

1.7 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Conduct preinstallation meeting at site attended by Owner, Architect, manufacturer's representative, and other trade contractors.
1. Coordinate building framing [and secondary framing] in relation to metal wall panel assembly.

1.8 ACTION SUBMITTALS

- A. Product Data: Manufacturer's data sheets, for specified products.
1. Include data indicating compliance with performance requirements.

Specifier: Retain and edit below to comply with Project requirements for LEED or other sustainable design requirements.

- B. LEED Submittals:
1. Credit MR 4.1: Product data indicating the following:
 - a. Percentages by weight of post-consumer and pre-consumer recycled content.
 - b. Total weight of products provided.

- C. Shop Drawings: Provide shop drawings prepared by manufacturer or manufacturer's authorized Installer. Include full elevations showing openings and penetrations. Include details of each condition of installation and attachment. Provide details at a minimum scale 1-1/2-inch per foot (1:8) of all required trim and extrusions needed for a complete installation.
 - 1. Indicate points of supporting structure that must coordinate with metal wall panel assembly installation.
 - 2. Note locations where separation of dissimilar materials is required, and indicate method to be used.
 - 3. Indicate adjacent material types and methods to be used to prevent staining effect on metal wall panels caused by water runoff.
- D. Samples for Initial Selection: For each product specified. Provide representative color charts of manufacturer's full range of colors.
- E. Samples for Verification: Provide 12-inch (300 mm) section of panel(s) showing finishes. Provide 12-inch (300 mm) long pieces of trim pieces and other exposed components.

1.9 INFORMATIONAL SUBMITTALS

- A. Product Test Reports: Indicating compliance of products with requirements, from a qualified independent testing agency.

Specifier: Retain paragraphs below when Project requirements include compliance with Federal Buy American provisions. Metl-Span Metal Wall Panels comply with requirement.

- B. Buy American Certification: Submit documentation certifying that products are manufactured in the USA.

Specifier: Delete paragraph below if not applicable.

- C. State of Florida Product Approval aside of High Velocity Hurricane Zone.
- D. Qualification Information: For Installer firm.
- E. Manufacturer's warranty: Submit sample warranty.

1.10 CLOSEOUT SUBMITTALS

- A. Maintenance data.

1.11 DELIVERY, STORAGE, AND HANDLING

- A. Protect metal wall panel products during shipping, handling, and storage to prevent staining, denting, deterioration of components or other damage.
 - 1. Deliver, unload, store, and erect metal wall panel products and accessory items without misshaping panels or exposing panels to surface damage from weather or construction operations.

1.12 WARRANTY

Specifier: Warranty terms below are available from Metl-Span. Verify that other allowable manufacturers furnish warranty meeting requirements.

- A. Special Manufacturer's Warranty: On manufacturer's standard form, in which manufacturer agrees to repair or replace components of metal wall panel assemblies that fail in materials and workmanship within [two] years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis of Design: **Metl-Span, EcoScreen Perforated Screen Wall.** Provide basis of design product, [or comparable product approved by Architect prior to bid].
 - 1. Metl-Span; Lewisville, TX 75019. Tel: (877)585-9969. Tel: (972)221-6656. Fax: (972)420-9382. Email: info@metlspan.com. Web: www.metlspan.com.

2.2 METAL WALL PANEL MATERIALS

Specifier: Select screenwall panel metal type required for project.

- A. Aluminum Face Sheet: Smooth surface coil-coated, ASTM B209, 3003-H14 alloy, 0.040 inch (1.0 mm) nominal thickness.
- B. Stainless-Steel Face Sheet: ASTM A 666, architectural grade, 0.036 inch/20 gage (0.91 mm) nominal thickness, Type 304, bright, non-directional polish, No. 2B.

2.3 PERFORATED METAL WALL PANELS

- A. Metal Wall Panels, General: Factory-formed, exposed fastener panels with interconnecting side joints, fastened to supports with exposed fasteners.

Specifier: Retain one or more of six profiles listed below as required for project.

- B. Panel Profile: Ribbed profile with lap joint **MWP#___**:
 - 1. Basis of Design Product: **Metl-Span, BR5-36.**
 - 2. Panel Coverage: 36 inches (914 mm).
 - 3. Panel Height: 1.50 inches (38 mm).
 - 4. Rib Spacing: 5 at 7.20 inches (183 mm) o.c.
- C. Panel Profile: Ribbed profile with lap joint **MWP#___**:
 - 1. Basis of Design Product: **Metl-Span, MR3-36.**
 - 2. Panel Coverage: 36 inches (914 mm).
 - 3. Panel Height: 3.0 inches (76 mm).
 - 4. Rib Spacing: 3 at 12 inches (305 mm) o.c.

D. Panel Profile: Symmetrical corrugated profile with lap joint. **MWP#**____:

1. Basis of Design Product: **Metl-Span, Econolap 3/4 inch.**
2. Panel Coverage: 34.66 inches (880 mm).
3. Panel Height: 0.75 inches (19 mm).
4. Corrugation Spacing: 2.66 inches (68 mm) o.c.

E. Panel Profile: Symmetrical rib profile with lap joint **MWP#**____:

1. Basis of Design Product: **Metl-Span, Style-Rib.**
2. Panel Coverage: 36 inches (914 mm).
3. Panel Depth: 1.50 inches (38 mm).
4. Rib Spacing: 5 at 7.2 inches (183 mm) o.c.

F. Panel Pattern:

Specifier: Select pattern and perforation from seven options below. If more than one panel profile, pattern, and perforation combination, copy required paragraphs below and combine with panel profile descriptions above.

1. Pattern and Perforation: Staggered pattern, 3/8 inch (10 mm) perforations at 9/16 inch (14 mm) spacing, with 40 percent open area.
2. Pattern and Perforation: Reverse pattern, 1/8 inch (3 mm) perforations at 3/8 inch (10 mm) spacing, with 10 percent open area.
3. Pattern and Perforation: Reverse pattern, 1/8 inch (3 mm) perforations at 1/4 inch (6 mm) spacing, with 23 percent open area.
4. Pattern and Perforation: Reverse pattern, 1/4 inch (6 mm) perforations at 1/2 inch (13 mm) spacing, with 23 percent open area.
5. Pattern and Perforation: Staggered pattern, 1/8 inch (3 mm) perforations at 7/32 inch (6 mm) spacing, with 30 percent open area.
6. Pattern and Perforation: Staggered pattern, 3/16 inch (5 mm) perforations at 5/16 inch (8 mm) spacing, with 33 percent open area.
7. Pattern and Perforation: Staggered pattern, 1/8 inch (3 mm) perforations at 3/16 inch (5 mm) spacing, with 40 percent open area.

2.4 METAL WALL PANEL ACCESSORIES

- A. Metal Wall Panel Accessories, General: Provide complete metal wall panel assembly incorporating trim, copings, fascia, parapet caps, sills, inside and outside corners, and miscellaneous flashings. Fabricate accessories in accordance with SMACNA Manual. Provide manufacturer's factory-formed clips, shims, flashings, and caps for a complete installation.
- B. Formed Flashing and Trim: Match material, thickness, and color of metal wall panel face sheets.
- C. Fasteners: Self-tapping 300 series stainless steel screws, No. 14 minimum, hex-head, with 15mm diameter stainless steel metal washers with bonded EPDM, and other acceptable fasteners recommended by panel manufacturer.

Specifier: Retain article only if secondary framing is part of work of this Section.

2.5 SECONDARY METAL FRAMING

- A. Miscellaneous Framing Components, General: Cold-formed metallic-coated steel sheet, ASTM A 653/A 653M, G90 (Z180).

1. Hat Channels: 0.053 inch/16 ga. (1.34 mm) minimum.
2. Sill Channels: 0.053 inch/16 ga. (1.34 mm) minimum.

2.6 METAL WALL PANEL FINISHES

Specifier: Select aluminum face sheet finish system from options below. Delete all finish options if specifying stainless steel face sheet.

- A. Exposed Coil-Coated Finish System:

1. Fluoropolymer Two-Coat System: 0.2-mil nominal primer with 0.8-mil nominal 70 percent PVDF fluoropolymer color coat, AAMA 620.

a. Basis of Design: **Metl-Span Fluoropon finish.**

- B. Color:

1. Exterior Surface: [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color].
2. Interior Surface: [Manufacturer's standard primer color] [As indicated] [As selected by Architect from manufacturer's standard colors] [Match Architect's custom color].

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine metal wall panel substrate with Installer present. Inspect for erection tolerances and other conditions that would adversely affect installation of metal wall panels.
- B. Wall Substrate: Confirm that wall substrate is within tolerances acceptable to metal wall panel system manufacturer.
1. Maximum substrate and framing deviations from flat plane acceptable:
 - a. 1/4-inch in 20 feet vertically or horizontally.
 - b. 1/2-inch across building elevation.
 - c. 1/8-inch in 5 feet.

Specifier: Retain one, two, or three following paragraphs as appropriate to Project.

- C. Framing: Inspect framing that will support metal wall panels to determine if support components are installed as indicated on approved shop drawings. Confirm presence of acceptable framing members at recommended spacing to match installation requirements of metal wall panels.
- D. Openings: Verify that openings and penetrations match layout on shop drawings.

- E. Advise G.C., in writing, of out-of-tolerance work and other deficient conditions prior to proceeding with metal wall panel system installation.

Specifier: Retain article only if secondary framing is part of work of this Section.

3.2 SECONDARY FRAMING INSTALLATION

- A. Secondary Metal Subgirt Framing: Install secondary metal framing components to tolerances indicated, as shown on approved shop drawings. Install secondary metal framing and other metal panel supports per ASTM C 1007 and metal wall panel manufacturer's recommendations.

3.3 METAL WALL PANEL INSTALLATION

- A. General: Install metal wall panels in accordance with approved shop drawings and manufacturer's recommendations. Install metal wall panels in orientation, sizes, and locations indicated. Anchor metal wall panels and other components securely in place.
- B. Attach panels to metal framing using recommended screws, fasteners, sealants, and adhesives indicated on approved shop drawings.
 - 1. Provide escutcheons for pipe and conduit penetrating panels.
 - 2. Dissimilar Materials: Where elements of metal wall panel system will come into contact with dissimilar materials, separate faces and edges in contact with dissimilar materials utilizing non-metallic shims or closed cell foam material at each fastening point as recommended by manufacturer.

3.4 ACCESSORY INSTALLATION

- A. General: Install metal wall panel accessories with positive anchorage to building. Coordinate installation with flashings and other components.
 - 1. Install related flashings and sheet metal trim per requirements of Division 07 Section "Sheet Metal Flashing and Trim."
 - 2. Install components required for a complete metal wall panel assembly, including trim, copings, corners, and similar items.
 - 3. Comply with performance requirements and manufacturer's written installation instructions.
 - 4. Set units true to line and level as indicated.

3.5 CLEANING AND PROTECTION

- A. Remove temporary protective films. Clean finished surfaces as recommended by metal wall panel manufacturer. Maintain in a clean condition during construction.
- B. Replace damaged panels and accessories that cannot be repaired by finish touch-up or minor repair.

END OF SECTION