

Millennium Forms, LLC
550 E. Centralia St.
Elkhorn, WI 53121
Phone: 262.723.7778
Website: www.millenniumforms.com
E-mail: info@millenniumforms.com

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Product Guide Specification

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The Project Resource Manual—CSI Manual of Practice*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all Specifier Notes when editing this section.

Section numbers and titles are from *MasterFormat* 1995 Edition, with numbers and titles from *MasterFormat* 2004 Edition in brackets. Delete version not required.

Brackets indicate options in text to be filled in or deleted by the author; they should NOT be visible in final document.

SECTION 07 42 15 [07422]

STAINLESS STEEL WALL TILES

Specifier Notes: This section covers Millennium Forms, LLC stainless steel roof/wall tiles. Consult Millennium Forms for assistance in editing this section for the specific application.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Stainless steel wall tiles.

1.2 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with work directly related to this section.

- A. Section 06 10 00 [06100] – Rough Carpentry: Wall sheathing

- B. Section 07 25 00 [07270] – Air and Vapor Barriers
- C. Section 07 62 00 [07620] – Sheet Metal Flashing and Trim.
- D. Section 07 92 00 [07920] – Joint Sealants.

1.3 REFERENCES

Specifier Notes: List standards referenced in this section, complete with designations and titles. This article does not require compliance with standards, but is merely a listing of those used.

- A. ASTM A240/A240M – Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications; 2015.
- B. ASTM D4479/D4479M – Standard Specifications for Asphalt Roof Coatings – Asbestos-Free; 2000
- C. ASTM E8/E8M – Standard Test Methods for Tension Testing of Metallic Materials; 2013.
- D. ASTM E18/E18M - Standard Test Methods for Rockwell Hardness of Metallic Materials; 2014.

1.4 SUBMITTALS

- A. See Section 01 33 00 [01300] – Submittal Procedures for additional requirements.
- B. Product Data: Submit manufacturer’s product data, including surface preparation and installation instructions.

Specifier Notes: Millennium Forms, LLC Light Interference Color (LIC) process is created through a prismatic separation of light on the surface of stainless steel. Light conditions, viewing angles and the standard tolerances of chemical recipes within stainless steel will create a variation in the perceived color. Additionally, each LIC color Millennium Forms, LLC offers is produced as a range of color (color range). Each tile, because of these differences, will be its own signature tile. Prior to production Millennium Forms, LLC will submit initial sample tiles in the specified color. The initial sample tiles are samples only and *may not be an exact match* to what will be provided for the project. The Project Reference photo or document is a representation of the color range that can be expected within the specified color. (“Color range” refers to the achievable: light, medium, dark range of a color.)

- C. Initial Samples: Submit one (1) or more samples of stainless steel of each Light Interference Color (LIC) requested, to show the natural variation and color range possible.
 Submittal Samples: Submit three (3) samples of stainless steel of each Light Interference Color (LIC) requested to show the natural variation and color range of the product using material specifically sourced for the project. (Color range refers to the achievable light, medium, dark range of a color.) Submittal samples of light, medium, and dark are sent to customer for approval. When applicable, one (1) sample set is sent

to be approved by the Architect, one (1) sample set to be approved by the Sub-Contractor, one (1) sample set to be approved by the General Contractor.

- D. Specific Project Reference: Submit manufacturer photograph(s) showing design intent of the finish range that can be expected within LIC stainless steel wall panels.
- E. Manufacturer's Certification: Submit manufacturer's certification that materials comply with specified requirements and are suitable for intended application.
- F. Installation Instructions: Manufacturer's written instructions including surface preparation and installation procedures.
- G. LEED Submittals: Provide certificate stating average recycled content of steel products made up of postconsumer and preconsumer recycled content is not less than 70 percent.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. Storage: Store materials in clean, dry area in accordance with manufacturer's instructions.
- B. Handling: Protect materials during handling and installation to prevent damage.

1.6 WARRANTY

- A. See Section 01 78 00 – [01780] – Closeout Submittals for additional information.
- B. Submit manufacturer's standard limited liability warranty stating that roofing tiles will be free from manufacturing defects which adversely affect tile's performance.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Millennium Forms, LLC, 550 East Centralia Street, Elkhorn, WI 53121 Phone 262.723.7778 Website www.millenniumforms.com E-mail info@millenniumforms.com
- B. Substitutions: Not allowed [See Section 01 60 00 [01600] – Product Requirements].

2.2 STAINLESS STEEL WALL TILES

- A. Stainless Steel Wall Tiles:
 - 1. Description: Individual roof/wall tiles with 4-sided interlocking design, self-aligning tab, and concealed nailing strip with 2 holes. Progressive Die Stamped System.

Specifier Notes: Specify type of stainless steel. Type 316 has greater corrosion resistance and is typically used for marine applications. Type 316 should be specified for installations within 2
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miles of seawater and salt air. Some urban applications due to high use of road salt will also require the use of Type 316. Consult others for site specific information. Type 316 has a premium when compared to Type 304.

Select appropriate material. Type 304 is default.

2. Material: ASTM A240/A240M, stainless steel sheet.
 - a. Type 304
 - b. Type 316

Specifier Notes: Specify Size & Weight to be used on Project.

3. Size:
 - a. Flat Tile: 15 inches by 9-5/8 inches; Exposure: 14-1/2 inches by 8-5/16 inches +/- 1/16 inch.
 - b. Cupped Tile: 15 inches by 9-5/8 inches; Exposure: 14-1/2 inches by 8-5/16 inches +/- 1/16 inch.
 - c. TS Tile: 7-3/4 inches by 17-1/4 inches; Exposure: 7-1/4 inches by 16-1/4 inches +/- 1/16 inch.
 - d. Diamond Tile: 8-5/8 inches by 9- 3/4 inches; Exposure: 8 inches by 8 3/8 inches +/-1/16 inch.
4. Weight: (mill tolerances apply)
 - a. Qty 1 Flat Tile: 0.842 lbs/ part
 - b. Qty 1 Cupped Tile: 0.842 lbs/part
 - b. Qty 1 TS Tile: 0.784 lbs./part.
 - c. Qty 1 Diamond Tile: 0.416 lbs/part
5. Thickness: 0.018 inch, or 26 gauge (mill tolerances apply).
6. Density: 0.287 lbs./cu. in.
7. Temper: Annealed.
8. Tensile Strength, ASTM E8/E8M: 90,000 psi.
9. Yield Strength, ASTM E8/E8M, 0.2 Percent Extension Under Load: 40,000 psi.
10. Elongation, ASTM E8/E8M: 55 percent in 2 Inches.
11. Rockwell Hardness, ASTM E18/E18M: B82.
12. Thermal Conductivity: 9.2 BTU/sq. ft./hr./degree F at 68 degrees F.
13. Recycled Content: 75 percent
14. Performance Ratings:
 - a. Wind: 110 mph.

Specifier Notes: For tiles specify tile style(s) used on project.

16. Millennium Tile Style:
 - a. Flat Tile
 - b. Cupped Tile
 - c. TS Tile
 - d. Diamond Tile

Specifier Notes: Specify finish of material. Consult Millennium Forms, LLC for availability of different finishes.

Mill (2B) is a matte looking surface finish and has less reflectivity when compared to bright.
Bright (BA) is a mirror finish

17. Finish:
 - a. 2B (mill) mill tolerances apply
 - b. BA (bright) mill tolerances apply

Specifier Notes: Select applicable materials and color(s), consult Millennium Forms, LLC- Delete options not specified

Light Interference Color (LIC): is an electrochemical process to color stainless steel without the use of dyes or pigments. The process uses acids and electricity to grow a chrome oxide (chromate) layer on the stainless steel. The thickness of the chromate acts like a prism creating the changing color that is seen on the surface of the metal. As a result, each LIC color is produced with a range from light to dark. Specifier Notes: Select applicable color(s), consult Millennium Forms, LLC

1. Color:
 - a. Natural (no color)
 - b. Pewter [satin etched surface available on Mill (2B) finish]
 - c. Bronze (LIC)
 - d. Charcoal [only available in #4 Polish finish] (LIC)
 - e. Blue (LIC)
 - f. Slate (LIC) [only available in 2B-Mill finish]
 - g. Bronze-Gold (LIC)
 - h. Burgundy (LIC)
 - i. Purple-Blue (LIC) [only available in Bright (BA) finish]
 - j. Peacock (LIC)
 - k. Blue-Green (LIC)

2.3 ACCESSORIES

- A. Trim and Flashing: Same material and color as stainless steel tiles, except where otherwise noted; See Section 07 62 00 [07620] - Sheet Metal Trim and Flashing for additional fabrication requirements.

Specifier Notes: Edit the following list as required.

1. False Starter: 1-3/4 by 120 inches; 24-gauge

2. Inside Corners: 6-1/8 by 6-1/8 by 120 inches; 24-gauge; consist of two (2) J-Channels and one (1) inside Corner Cap
 3. 1-Piece Outside Corners: 120 inches long; 24-gauge
 4. 3-Piece Outside Corners: 120 inches long; 24-gauge; consist of two (2) J-Channels and one (1) Outside Corner Cap (2 by 2 inches).
 5. J-Channels: 3-3/8 by 1/2 by 120 inches; 24-gauge
 6. Head Flashing: 1-1/2 by 1-3/4 by 120 inches; 24-gauge
 7. Continuous Ridge: 4-1/2 by 4-1/2 by 120 inches; 24-gauge; consists of two (2) cleats and one (1) ridge cap.
- B. Underlayment: ASTM D 226/D 226M, Type II (No. 30) asphalt-saturated felt.
- C. Air and Water Barrier: See Section 07 25 00 [07270] – Weather Barriers. Shall be rated for high-temperature resistance.
- D. Fasteners: Stainless steel, ring-shank roofing nails or stainless steel screws. Fasteners must match alloy of tile material.
1. Minimum Length: 3d (1-1/4 inches)
- E. Joint Sealants: Exterior-grade, high-temperature, silicone joint sealant, as specified in Section 07 92 00 [07920].
- F. Bituminous Paint: Asphaltic mastic, ASTM D4479/D4479M, Type I.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine areas to receive stainless steel wall tiles.
- B. Notify Architect of conditions that would adversely affect installation.
- C. Do not begin surface preparation or installation until unacceptable conditions are corrected.
- D. Ensure wall sheathing is solid with a minimum thickness of:
 1. Plywood: 1/2 inch.
 2. Oriented Strand Board (OSB): 19/32 inch.
- E. Ensure weather barrier is properly installed and undamaged.

3.2 SURFACE PREPARATION

- A. Prepare surfaces in accordance with manufacturer's instructions.
- B. Ensure surfaces to receive stainless steel roof tiles are smooth and even.

<p>Specifier Note: Delete the following if not used in wall assembly</p>
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- C. Install drainage/ventilation mat in accordance with manufacturer's instructions.

3.3 INSTALLATION

- A. Install stainless steel wall tiles in accordance with manufacturer's instructions.
- B. Pull tiles from several boxes during the installation to ensure random color variation.
- C. Install wall tiles to achieve wind resistance of 110 mph.
- D. Install wall tiles to provide watertight installation.
- E. Use specified fasteners at spacing in accordance with manufacturer's instructions.

Specifier Note: Most common source of galvanic action is from copper or galvanized sheet metal draining onto stainless steel.

- F. Prevent Electrolysis:
 - 1. Prevent dissimilar metals and corrosive nonmetallic materials from coming into direct contact with stainless steel materials.
 - 2. Do not allow water to flow from dissimilar metals to stainless steel materials.
- G. Install trim and flashing in accordance with manufacturer's instructions.
- H. Joint Sealants:
 - 1. Install joint sealants as specified in Section 07 92 00 [07920].
 - 2. Install joint sealants at overlapping flashing and exposed fastener heads.

3.4 PROTECTION

- A. Protect installed stainless steel wall tiles to ensure that, except for normal weathering, tiles will be without damage or deterioration at time of substantial completion.

END OF SECTION