

## 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 13 [07410]

#### ZALMAG® STEEL WALL TILES

Specifier Notes: This section covers Millennium Forms, LLC ZALMAG® STEEL wall tiles. Consult Millennium Forms for assistance in editing this section for the specific application.

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Galvanized ZALMAG® 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 A1046/A1046M – Standard Specification for Steel Sheet, Zinc-Aluminum-Magnesium Alloy-Coated by the Hot-Dip Process, 2014.
- 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 - Standard Test Methods for Rockwell Hardness of Metallic Materials; 2014.

### 1.4 SUBMITTALS

- A. See Section 01 33 00 [01330] – Submittal Procedures for additional requirements.
- B. Product Data: Submit manufacturer’s product data describing product characteristics including sizes, connection methods, finishes, and accessories.
- C. Initial Samples: Submit one (1) or more samples of each finish of ZALMAG® steel roof tiles to show the natural variation and color range possible.  
Submittal Samples: Submit three (3) samples of each finish of ZALMAG® steel roof tiles from material sourced specifically for project, to show the natural variation and color range expected for this specific project.
- D. Manufacturer’s Certification: Submit manufacturer’s certification that materials comply with specified requirements and are suitable for intended application.
- E. Installation Instructions: Manufacturer’s written instructions including surface preparation and installation procedures

### 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.
- C. Handling: Protect materials during handling and installation to prevent damage.

## 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](http://www.millenniumforms.com) E-mail [info@millenniumforms.com](mailto:info@millenniumforms.com)

- B. Substitutions: Not allowed [See Section 01 60 00 [01600] – Product Requirements].

## 2.2 MATERIALS

### A. ZALMAG® STEEL Roof/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.
2. Material: ZALMAG® STEEL.
  - a. Base Material: ASTM A1046/A1046M, with corrosion-resistant coating.
  - b. Coating consists of Zinc, Aluminum, Magnesium and Silicon.

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 T.S. Tile: 0.784 lbs./part.
  - c. Qty 1 Diamond Tile: 0.416 lbs/part
5. Thickness: 0.018 inch +/- .002 inch (26-gage), mill tolerances apply.
6. Density: 0.284 lbs./cu. in.
7. Temper: Hot Rolled
8. Tensile Strength: ASTM E8/E8M, 50,000 psi.
9. Yield Strength: ASTM E8/E8M, 27,600 psi.
10. Elongation: ASTM E8/E8/M 22%
11. Rockwell Hardness: ASTM E18, 58
12. Thermal Conductivity: 360 BTU-in/hr-ft<sup>2</sup>-°F
13. Performance Ratings:
  - a. Wind: 110 mph.

Specifier Notes: For Millennium Forms, specify tile style(s) to be used on Project.

14. Millennium Forms Tile Style:
  - a. Flat Tile
  - b. Cupped Tile
  - c. T.S. Tile
  - d. Diamond Tile

Specifier Notes: Select applicable finish(es). ZALMAG® is offered in three (3) finishes: Natural, Pre-Patina II. and Black. Pre-Patina II and Black are coatings produced as a range of both color and finish. The range of color varies due to the natural variations in the base metal surface, as well as the ZALMAG®'s natural weathering process.

15. Finish:
  - a. Natural
  - b. Pre-Patina II (color range)
  - c. Black (color range)

## 2.3 ACCESSORIES

- A. Trim and Flashing: Same material, finish, and gauge as ZALMAG® wall tiles except where otherwise noted; See Section 07 62 00 [07620] - Sheet Metal Trim and Flashing for additional fabrication requirements.

Specifier Notes: Edit the follow list as required.

1. False Starter: 1-3/4 by 120 inches; 24-gage
  2. Inside Corners: 6-1/8 by 6-1/8 by 120 inches; 24-gage
  3. 1-Piece Outside Corners: 120 inches long; 24-gage
  4. 3-Piece Outside Corners: 120 inches long; 24-gage; consist of 2 J-channels and 1 Outside Corner Cap (2 by 2 inches).
  5. J-Channels: 3-3/8 by 1/2 by 120 inches; 24-gage
  6. Head Flashing: 1-1/2 by 1-3/4 by 120 inches; 24-gage
- B. Underlayment: ASTM D 226/D 226M, No. 30 asphalt-saturated felt.
  - C. Air and Water Barrier: See Section 07 25 00 [07270] – Weather Barriers. High temperature rated must be used
  - D. Fasteners: Galvanized steel, ring-shank roofing nails.
    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 D 4479/D 4479M, Type I.

## PART 3 EXECUTION

### 3.1 EXAMINATION

- A. Examine substrate to receive ZALMAG® 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.  
High temperature rated must be used

### 3.2 SURFACE PREPARATION

- A. Prepare surfaces in accordance with manufacturer's instructions.
- B. Ensure surfaces to receive ZALMAG® steel wall tiles are smooth and even, and that there are no protruding nail heads.

Specifier Note: Delete the following if not used in wall assembly

- C. Install drainage/ventilation mat in accordance with manufacturer's instructions.

### 3.3 INSTALLATION

Specifier Notes: Select appropriate installation process to prevent "color clumping" and ensure random color range distribution throughout project. The Random Sort option has a premium and is not the default method.

- A. Install by:
  - 1. pulling tiles from four to five boxes (or more) during installation to assure random variation of finish and color
  - 2. following the approved Random Sort instructions from Millennium Forms.
- B. Use specified fasteners at spacing in accordance with manufacturer's instructions.

Specifier Note: Most common source of galvanic action is from zinc to copper.

- C. Prevent Electrolysis:
  - 1. Prevent dissimilar metals and corrosive nonmetallic materials from coming into direct contact with ZALMAG® steel materials.
  - 2. Do not allow water to flow from dissimilar metals to ZALMAG® steel materials.
- D. Install trim and flashing in accordance with manufacturer's instructions.
- E. 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 ZALMAG® 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**