
SECTION 07 61 00

METAL SHINGLE ROOFING

PART 1 - GENERAL

1.01 DESCRIPTION

- A. Preformed, prefinished metal roofing.
- B. Metal flashings including but not limited to:
 - 1. Drip flashings
 - 2. Rake flashings and counterflashings
 - 3. Head flashings
 - 4. Metal roof jacks at penetrations and attachments
 - 5. Valley transition flashing
 - 6. Ridge flashing
- C. Miscellaneous trim, closures, and accessories.
- C. Fastening devices.

1.02 RELATED SECTIONS

- A. Section 00 24 13: Scope of Work.

1.03 REFERENCES

- A. American Iron & Steel Institute (AISI) Specification for the Design of Coldformed Steel Structural Members.
- B. ASTM A-653 & ASTM A924 Steel Sheet, Zinc-Coated (Galvanized)
- C. Spec Data Sheet - Galvalume Sheet Metal by Bethlehem Corp.
- D. SMACNA - Architectural Sheet Metal Manual.

1.04 ASSEMBLY DESCRIPTION

- A. The roofing assembly includes preformed sheet metal shingles, related accessories, valleys, hips, ridges, eaves, corners, rakes, miscellaneous flashing and attaching devices.

1.05 SUBMITTALS

- A. Product Data – Submit product data for metal shingles, flashings and fasteners.
- B. Shop Drawings - Submit detailed drawings showing layout of shingles, anchoring details, joint details, trim, flashing, and accessories. Show details of weatherproofing, terminations, and penetrations of metal work.
- C. Submit a sample of each type of roof shingle, complete with factory finish.

1.06 QUALITY ASSURANCE

- A. Manufacturer shall specialize in Architectural Sheet Metal Products with ten (10) years minimum experience.
- B. No product substitutions shall be permitted without meeting specifications.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Upon receipt of shingles and other materials, installer shall examine the shipment for damage and completeness.
- B. Shingles should be stored in a clean, dry place and out of direct sunlight. One end should be elevated to allow moisture to run off.
- C. Shingles with strippable film must not be stored in the open, exposed to the sun.
- D. Stack all materials to prevent damage and to allow for adequate ventilation.

1.08 WARRANTY

- A. Paint finish shall have a twenty year guarantee against cracking, peeling and fade (not to exceed 5 N.B.S. units).

PART 2 PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Berridge Manufacturing Company, Houston, Texas.
 - 1. Berridge Victorian Metal Shingles with, or approved equal.
 - a. Shingles to have a stamped scalloped design, and factory applied painted finish
 - b. Color: Colonial red.
 - 2. Each Shingle shall have 9" by 12" exposure to the weather.

3. Shingles to be of overlapping, Interlocking Design, fastened to solid substrate with concealed fasteners.
4. Shingles to be of non-combustible 24-Gauge Steel with Class A Fire Rating.

2.02 SHINGLE MATERIALS

- A. Prefinished metal shall be Aluminum-Zinc Alloy Coated (AZ-50 Galvalume®) Steel Sheet, 24-Gauge, ASTM 792-08, Grade 40, yield strength 40 ksi min.
- B. Finish shall be full strength Kynar 500® or Hylar 5000™ fluoropolymer coating applied by the manufacturer on a continuous coil coating line, with a top side dry film thickness of 0.75 ± 0.05 mil over 0.20 ± 0.05 mil prime coat, to provide a total top side dry film thickness of 0.95 ± 0.10 mil. Bottom side shall be coated with a primer and beige urethane coating with a total dry film thickness of 0.35 ± 0.05 mil. Finish shall conform to all tests for adhesion, flexibility, and longevity as specified by the Kynar 500® or Hylar 5000™ finish supplier.
- C. Strippable film shall be applied to the top side of all prefinished metal to protect the finish during fabrication, shipping and field handling. This strippable film MUST be removed immediately before installation.
- D. Field protection must be provided by the contractor at the job site so stacked material is not exposed to weather and moisture.
- E. Flashing may be factory fabricated or field fabricated. Unless otherwise specified all exposed adjacent flashing shall be of the same material and finish as panel system.

2.03 SHEATHING

- A. As specified in Structural Drawings; where not indicated in Structural Drawings, $\frac{1}{2}$ " thick wood oriented strand board.

2.04 UNDERLAYMENT

- A. 30 Unperforated asphalt saturated roofing felt underlayment.

2.05 FLASHING

- A. Use manufacturer's flashing for the Victorian shingle system or match flashing details.
- B. All flashing to be fabricated in 10'-0" lengths with square end cuts only.
- C. All exposed adjacent flashing shall be of the same material and finish as the roof shingles.
- D. Hem all exposed edges of flashing on underside, 1/2 inch.

2.06 ACCESSORY MATERIALS

A. Fasteners:

1. Fasteners: Stainless Steel per manufacturer's recommendation, with washers where required. #10 or #12 pancake head wood screw for Berridge shingles.
2. See Structural Drawings.
3. Flashing and metal fasteners: wood screws, and other suitable fasteners designed to withstand design loads.

B. Self-adhered flashing - where necessary at penetrations and other specific roofing conditions:

1. Grace Ice and Water Shield High-Temperature, or equivalent substitute.

C. Asphalt Roofing Cement: ASTM D4586, Type II, asbestos free.

D. Weatherproofing Sealant: Tremco, Spectrum I or equal. Do not use clear caulk.

PART 3 EXECUTION

3.01 INSPECTION

- A. Examine roof framing and existing skip sheathing after existing metal shingles and building paper have been removed. Verify all wood members are solid, strong and free from dry rot or other damage. Remove any exposed sharp edges that might puncture roofing or underlayment.

3.02 INSTALLATION

A. Substrate:

1. Install sheathing with staggered end joints. End joints should meet at either a joist or a rafter.
2. Use blocking or "H" clips on sheathing if joints do not remain flat under weight of workmen.
3. Use shims to keep entire substrate even. Substrate should be level to slope to within $\frac{1}{4}$ " in 20'-0".
4. All cuts at penetrations should be tight, without gaps.
5. Use wood framed cricket at chimney.
6. Make sure substrate joints are tight at all hips, valleys and ridges.

B. Underlayment:

1. Use one (1) layer of #30 asphalt roofing felt paper for main roof slopes, and two (2) layers at valley conditions, eaves and penetrations.
2. Install valley felt first. Start main field of underlayment at eave and install horizontally, parallel to eave. Overlap 6" minimum, with 18" endlaps.
3. Ensure that all fastener heads are totally flush with the substrate.
4. Weather-lap and seal watertight with asphalt roofing cement items projecting through or mounted on roof.

C. Metal Shingles:

1. Comply with manufacturer's standard instructions and conform to standards set forth in the Architectural Sheet Metal Manual published by SMACNA, in order to achieve a watertight installation.
2. Install shingles in such a manner that horizontal lines are true and level and vertical lines are plumb.
3. Install starter and edge trim before installing shingles.
4. Start shingles at lower left eave corner. Stagger each row of shingles.
5. Remove protective strippable film prior to installation of roof shingles.
6. Attach shingles using manufacturer's standard clips and fasteners spaced in accordance with approved shop drawings.
7. Do not allow shingles or trim to come into contact with dissimilar materials.
8. Do not allow traffic on completed roof. If required, provide cushioned walk boards.
9. Protect installed shingles and trim from damage caused by adjacent construction until completion of installation.
10. Remove and replace any shingles or components which are damaged beyond successful repair.

3.03 CLEANING

- A. Clean any grease, finger marks or stains from the shingles per manufacturer's recommendations.
- B. Remove all scrap and construction debris from the site.

END OF SECTION