

**SECTION 07 32 16
CONCRETE ROOFING TILES**

PART 1 GENERAL

1.1 RELATED DOCUMENTS

- A. The provisions of the General Conditions, Supplementary Conditions, and the Sections included under Division 1, General Requirements, are included as a part of this Section.

1.2 SECTION INCLUDES

- A. Cement Tile Roofing System and all accessories.

1.3 REFERENCES

- A. ASCE 7 – Minimum Design Loads for Buildings and Other Structures
- B. ASTM D224 – Standard Specification for Smooth-Surfaced Asphalt Roll Roofing (Organic Felt)
- C. ASTM D226/D226M – Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing
- D. ASTM D228/D228M – Standard Testing Methods for Sampling, and Analysis of Asphalt Roll Roofing, Cap Sheets, and Shingles Used in Roofing and Waterproofing
- E. ASTM D6380 – Standard Specification for Asphalt Roll Roofing (Organic Felt)
- F. ASTM D2178/D2178M – Standard Specification for Asphalt Glass (Felt) Used in Roofing and Waterproofing
- G. ASTM D4586/D4586M – Standard Specification for Asphalt Roof Cement, Asbestos Free
- H. NRCA - Roofing Manual
- I. UL 790 – Standard Test Methods of Fire Tests for Roof Coverings
- J. UL 580 – Tests for Wind Uplift Resistance for Roof Assemblies
- K. FBC - Florida Building Code

1.4 SUBMITTALS

- A. Shop Drawings: Submit complete installation details of roofing, flashing, nailing, roof slopes, and flashing layout.
- B. Product Data: Submit latest edition of acceptable manufacturer's roofing and flashing specifications selected, including list of materials proposed for use, and manufacturer's product data sheets for other products.
- C. Samples: Submit two samples of each tile used in blend showing full color range.
- D. Certificates:
 - 1. Florida Product Approval or Miami-Dade Notice of Acceptance.
- E. Sample Warranty: Submit specimen copy of manufacturer's warranty with Product Data submittal, including evidence of application for warranty.
- F. Submit fall protection plan/system for use both during construction and owners use after construction for roof repair, meeting OSHA requirements.

1.5 PRE-INSTALLATION CONFERENCE

- A. Prior to start of roofing installation and accessory work, conduct an on-site meeting with installer, architect, owner, manufacturer's representative, districts roofing inspector, and other parties with a direct involvement in the process.

1.6 QUALITY ASSURANCE

- A. Manufacturer: Company specializing in manufacturing the products specified herein for a minimum of 10-years documented experience.
- B. Installer: Company specializing in installation of cement tile roofing with minimum 5-years documented experience and approved in writing by manufacturer of accepted roofing system.

- C. All work shall conform to NRCA Roofing Manual and to manufacturers strict instructions.
- D. Requirements of Regulatory Agencies:
 - 1. Underwriter's Laboratories, Inc. - Class A fire hazard classification.
- E. Pre-Installation Conference:
 - 1. Prior to installation of roofing system, conduct a pre-installation conference at the project site.
 - 2. Attendance: Owners Representative, Architect, Contractor, job superintendent, subcontractors, and suppliers related to roofing work.
 - 3. Agenda: Review project conditions, application, coordination with other work, and protection of completed roofing.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Deliver materials in manufacturer's original, unopened containers or packages with labels intact and legible, including required fire resistance classification labels.
- B. Store and handle material per manufacturer's requirements.
- C. Rooftop Storage: Evenly disperse material to avoid concentrated loading.

1.8 PROJECT CONDITIONS

- A. Proceed with roofing work only if existing conditions permit work in accordance with manufacturer's recommendations and warranty requirements.

1.9 SPECIAL WARRANTY

- A. Installer's Warranty: Provide a written warranty signed by the Roofing Installer and the Contractor agreeing to replace or repair defective components and workmanship within the total roofing system for a period of two years after the Substantial Completion date.
- B. Manufacturer's Warranty: Provide a written warranty signed by the Manufacturer of the primary roofing materials agreeing to replace or repair defective roof membrane and flashing materials and workmanship as required to maintain the roofing system in a watertight condition at no expense to the Owner for a period of 20 years after the Substantial Completion date.
 - 1. In addition, provide a written warranty signed by the manufacturer of the primary roofing materials agreeing to allow the Owner to make emergency repairs to the roof without voiding the manufacturer's warranty.
 - 2. The additional warranty shall include specifications on the repairs of the membrane the Owner may do without voiding the warranty.
 - 3. Warranty shall include coverage up to design wind loads against damage due to wind uplift.
- C. Provide on-site inspections by roofing manufacturer's representative during installation of roofing.
- D. Manufacturer's Certification: Submit written certification signed by the manufacturer stating that the roofing system manufacturer will provide warranties and that this specification meets the requirements of the 20 year warranty.

PART 2 PRODUCTS

2.1 ROOFING SYSTEM

- A. The cement tile roofing system shall be complete with all required cover, pan, ridge, hip tile, closure tile, and accessories.
- B. Cement Tile Roofing systems and underlayment as well as all accessories and appurtenances comprise the "Roofing System."

1. This roofing system shall be part of a single source warranty and meet all requirements of the FBC Product Approval System.
- C. Miscellaneous:
 1. Roof Membrane: "Ice and Water Guard" as manufactured by Protecto Wrap Company.
 - a. No substitutions without pre-approved by the Architect and District prior to installation.
 2. Nails: 11-gauge corrosive resistant of length to penetrate $\frac{3}{4}$ " into sheathing.
 3. Wood Nailers: Provide pressured treated material.
 4. Tile Lock: Install as per manufactures recommendation.
 5. Mortar: Install per manufacturers' recommendation.
 6. Flashing: See Section 07 62 00 for requirements.
 7. Preparation: Clean and seal non-sealed roof tile on site, and paint all roof accessories to match roof tiles.

PART 3 EXECUTION

3.1 PRE-INSTALLATION REQUIREMENTS

- A. Do not start installation of accessories or membrane without the presence of the Manufacturer's Technical Representative. This requirement shall not be waived.
- B. Install all vents; drains, curbs, nailers, blocking, insulation, and projections through the roof before starting installation of roofing.

3.2 PREPARATION OF SUBSTRATE

- A. Roofing Membrane: The manufacturer's Technical Service Representative shall carefully inspect the substrate receiving the roofing and provide a written report.
- B. Install all nails, blocking, vertical surfaces, etc. prior to proceeding with membrane installation.

3.3 INSTALLATION OF CEMENT ROOFING TILE

- A. Install in accordance with accepted roofing manufacturer's specifications.
- B. Metal Base Flashing:
 1. Install in accordance with requirements of roofing system manufacturer.
 2. Install where roofing system abuts vertical surfaces and at other locations detailed.
- C. Roof Drip:
 1. Provide continuous metal drip edge at entire roof perimeter.
 - a. Prior to application of metal edging treatment, extend additional layer of roofing felts up over metal edging and secure to wood nailer with base felt extended and folded back over ply felts.
 2. After metal edging is in place, flash as recommended by roofing manufacturer. Completely flood coat with bitumen topping.
- D. Flashings: Install aluminum flashings, then flash with plastic cement and felt in such a manner as to prevent leaks.

3.4 CLEANING

- A. Clean up debris, excess materials, and equipment and remove from site.
- B. Remove excess materials from tile and adjacent surfaces.

3.5 PROTECTION

- A. Keep men and material off roof after installation to avoid damage to roofing system.
- B. Replace any damaged tiles from work or by work of other trades.

END OF SECTION