**PART 1 - GENERAL**

**1.01 SUMMARY**

A. Provisions of Division 01 apply to this section.

B. Section Includes:

1. Fiberglass shingle roofing.

C. Related Sections:

1. Section 06 10 00: Rough Carpentry.

2. Section 07 60 00: Flashing and Sheet Metal.

3. Section 07 70 00: Roof Specialties and Accessories.

4. Division 23: Mechanical.

5. Division 26: Electrical.

**1.02 SYSTEM DESCRIPTION**

A. Performance Requirements: Flashing, counter-flashing and thru-roof penetration flashing shall be installed in accordance with NRCA, SMACNA, and manufacturer's recommendations.

B. Regulatory Requirements:

1. Comply with CBC, Chapter 15A.

2. Comply with requirements for UL Class A Rating.

**1.03 SUBMITTALS**

A. Shop Drawings: Submit Shop Drawings and details illustrating locations and details of underlayment, shingle, gutter, downspout, and flashing installation.

B. Product Data: Submit manufacturer's Product Data for each material and accessory proposed for installation.

1. Material Samples: Submit color Samples of shingles.

D. Installation Instructions: Submit manufacturer’s instructions and recommendations for installation.

E. Certificates: Submit manufacturer's certification that installer is certified by manufacturer to install the products of this section.

F. Closeout Submittals: Submit manual including manufacturer’s recommendations for roof maintenance and repairs. Clearly indicate maintenance required as conditions of warranties.

**1.04 QUALITY ASSURANCE**

A. Qualifications of Installer: Minimum 5 years experience in successfully installing the same or similar roofing materials.

B. Pre-Installation Conference and Inspection: After review of submittals but before starting installation of the Work of this section, conduct a meeting at the Project site attended by the Architect, PI, OAR, Contractor and FUSD, roofing applicator, and a technical representative of the roofing material manufacturer. The roofing applicator and material manufacturer's technical representative shall inspect the substrates to receive Work of this section and report defective conditions to the IOR, OAR, Architect and Contractor.

**1.05 DELIVERY, STORAGE AND HANDLING**

A. Deliver materials in original containers, with seals unbroken, and with manufacturer's name and product identification clearly legible. Material shall have standard warranty and limitations of liability merchantability statement displayed on packaging label.

B. Store all materials on raised platforms, and cover with tarpaulins. Do not allow plastic sheeting to contact ends of the roofing rolls. Do not leave materials uncovered overnight. Materials shall be dry before and during installation. Wet materials shall be removed from the roof and the Project site.

C. Limit weights of materials stored on roof to the safe loading for decking, installed materials, and structural framing.

**1.06 PROJECT CONDITIONS**

A. Do not expose materials vulnerable to water or sun damage in quantities greater than can be weatherproofed during same day.

**1.07 WARRANTY**

A. Installer shall provide a 5year labor warranty.

B. Manufacturer shall provide a 20 year, non-prorated material warranty.

**PART 2 - PRODUCTS**

**2.01 MANUFACTURERS**

A. Provide roofing materials from one of the following manufacturers: Celotex, GAF, or Certainteed.

**2.02 MATERIALS**

A. Shingles: ASTM D 3018, Class A UL listed, Type I, with wind resistance label, glass fiber mat base, mineral granule surface type; 25-year dimensional, self sealing type; color as selected.

B. Roofing Felt: Fiberglass coated glass fiber mat, ASTM D 226 type I, minimum weight 30 pounds per square foot.

C. Nails: Standard round wire shingle type, galvanized or non-rusting 3/8 inch to 7/16 inch minimum diameter head, 11 to 12 gage barbed shank roofing nails.

D. Plastic Cement: Modified elastomeric roof cement, complying with ASTM D 4586; plastic fiberglass type with asbestos-free mineral fiber components, free of toxic solvents; type approved by roofing manufacturer.

E. Hip and Ridge: High profile ridge cap.

F. Flashing: Valley lining: Install ASTM B 209; 24 gage, non-corroding, non-staining metal, 18 inches wide. Composition flashing materials: Manufactured by the roofing manufacturer or of types acceptable to the roofing manufacturer.

G. Drip Edge: 2 by 2 inch corrosion resistant metal, 24 gage, 1/2 inch hem, interlocking.

**PART 3 - EXECUTION**

**3.01 EXAMINATION**

A. Verify deck is dry, sound, clean and smooth, free of depressions, waves, or projections.

B. Examine substrate to receive roofing system and associated Work and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected.

**3.02 PROTECTION**

A. Protect building surfaces against damage from roofing Work during and after installation.

1. Protect surfaces where additional Work must continue over finished roof.
2. Protect the Work of this section until Substantial Completion.

**3.03 APPLICATION ON WOOD DECKS**

A. Install sheathing supported at the edges and properly nailed.

B. Furnished cant strips shall be nailed to the deck with proper length mechanical fasteners at a minimum of 12 inches on center.

**3.04 FLASHING INSTALLATION**

A. Metal Flashing, Vents, and Flanges: Install sheet metal flashing according to the manufacturer's recommendations.

B. Roofing Work shall be examined by the manufacturer for compliance with the manufacturer's general requirements.

**3.05 INSTALLATION OF SHINGLES**

A. Install in accordance with NRCA requirements as specified in NRCA Roofing and Waterproofing Manual – Fifth Edition, Volume II; Steep Slope Membrane Roofing Sections and the manufacturers’ written installation instructions.

B. Install underlayment roofing felts in shingle fashion, parallel to the eaves, lapping 2 inches over the underlying course and 6 inches on the ends. Stagger each end lap 6 feet from adjacent end laps. Lap underlayment 6 inches from both sides over all hips and ridges. Extend underlayment to outer edge of sheathing with a 2 inch downturn at eave and rake. Ridge and hip shall be furnished with one additional 18 inch width layer of underlayment centered on hip or ridge.

1. Where shingle roof abuts vertical surface, extend underlayment 4 inches above the horizontal surface.

C. Install drip edge at eave and rakes and all T-vents, other vents, and pipe flashing.

1. Install drip edge under the underlayment at eaves and over the underlayment at the rakes. Fasten 8 inches to 10 inches on-center.

2. Install vent and pipe flashing on underlayment and over lower course of shingles in layer of asphalt mastic. Install shingles that overlap metal flange in a layer of asphalt mastic. Do not nail through metal flange.

D. Install shingle starter strip overhanging the eave and rake 3/8 inch. Remove tab portion of shingle and install starter strip with adhesive strip face up along edge of eave. Trim 1/3 from end of first starter shingle. Fasten with 6 nails per shingle on a line 3 inches above eave.

E. Install shingle with exposure as specified by shingle manufacturer, staggering the joints. Nail each shingle with 6 nails on a line 5/8 inch above the cutouts and below the seal strip. Install one nail one inch in from each end and one nail above cutout along the fastening line. Nails shall be driven straight, flush with shingle and shall not break shingle surface. Nail from inside out, or from one end to another, but do not allow shingles to buckle during installation. Stapling of shingles is not permitted.

F. Ridge and hip shingles shall be installed with an 8 inch exposure and fastened on each side 9-1/2 inches back from exposed end and one inch up from edge. All nails to be covered by the succeeding shingle at least one inch. Exposed nails on hip and ridge are not permitted.

1. Install step flashing at vertical wall with shingle installation. Install step flashing over each shingle course. Install with end of flashing short of end of shingle exposing end of shingle.

H. Hot Stack Vents: Install sheet metal storm collar of size and shape to fit tightly around hot stack vents.

**3.06 CLEANUP**

A. Remove rubbish, debris, and waste materials and legally dispose of off the Project site.

**3.07 PROTECTION**

A. Protect the Work of this section until Substantial Completion.

**END OF SECTION**