

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

Note: This is a guide for Designers only. Contents shall not be used in lieu of specifications as part of the Designer’s Contract Documents.

SECTION 07 1000 – WATERPROOFING

PART 1 - GENERAL

1.1 QUALITY ASSURANCE

Applicators: Submit a letter from the manufacturer of waterproofing materials stating that the applicator is approved by the manufacturer for application of the waterproofing system specified. Applicator shall have a minimum of five years experience in satisfactory application of the type(s) of system(s) specified.

1.2 WARRANTY

Guarantee: Guarantee membrane waterproofing for two years with the Contractor or waterproofing sub-contractor agreeing to repair or replace work which leaks or otherwise fails to perform as required due to failures of materials or workmanship. This shall include the removal and replacement of any work which conceals the membrane work.

PART 2 - PRODUCTS

2.1 LOCATION

- A. Provide membrane waterproofing at the following locations:
 - 1. All exterior walls below-grade that enclose rooms and spaces.
 - 2. Walls of below grade elevator pits.
 - 3. Toilet rooms, housekeeping closets and all floors containing floor drains, except where located on slab on grade (slab on grade damp proofing is standard (6) mil reinforced polyethylene with all punctures/penetrations sealed).
 - 4. Floors (including penetrations) of all mechanical rooms above other areas.

PART 3 - EXECUTION

3.1 APPLICATION

Before applying waterproofing, surfaces shall be completely free of dirt and loose materials, concrete fins shall be chipped back, form ties removed and honey-combs, cracks, and other voids filled. Prime surfaces and otherwise prepare as recommended by the material manufacturer. Provide a layer of a suitable membrane protection material. Take care to avoid puncturing the membrane when backfilling against waterproofed foundation wall.

SECTION 07 2100 – BUILDING INSULATION

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PART 1 - GENERAL

PART 2 - PERFORMANCE REQUIREMENTS

- A. In addition to compliance with the State Energy Code, construction assemblies must have the following minimum R-values:
 - 1. Walls: 19
 - 2. Built Up Roofing: 25
 - 3. Attic Ceiling: 38

2.2 SUSTAINABILITY

- A. Batt insulation must be formaldehyde free
- B. Recycled Content: Provide glass-fiber insulation with recycled content so post-consumer recycled content plus one-half of pre-consumer recycled content is not less than 30%.

SECTION 07 3113 – ASPHALT SHINGLES

PART 1 - GENERAL

PART 2 - MATERIALS

- A. Where possible, provide roofing products that meet the following standards:
 - 1. Solar Reflectivity/Emissivity: ENERGY STAR Certified Solar Reflectance Index (SRI):
 - Solar Reflectance Index (SRI):
 - a. Low sloped roof (less than or equal to 2:12): SRI of 82 or greater.
 - b. Steep sloped roof (greater than 2:12): SRI of 39 or greater.

PART 3 - PRODUCTS

3.1 ASPHALT SHINGLES

Federal Specifications SS-S-001534 Class A, Type 1 Self Sealing Fiberglass. Shingles shall meet the requirements of Underwriters Laboratories, Inc. for Class A, I-90, wind-resistant shingles, by equaling or exceeding the requirements of UL 55B, UL 790 and UL 997. Shingle bundle wrapping shall bear the label of Underwriters Laboratories, Inc. Shingles shall be square-butt strips of uniform thickness or of thick-butt style, with internal fiberglass matting, asphalt coating and ceramic surface granules. Size of shingles shall be approximately 12" x 36", 3-tab design; weight 205 lbs. per square.

3.2 UNDERLAYMENT

Roofing Felt: ASTM D 226, asphalt saturated, organic, non-perforated, 30 lb, Type II.

3.3 ACCESSORIES

- A. Roofing Nails
 - 1. Material Galvanized Steel
 - 2. Head Diameter 3/8"
 - 3. Length sufficient to penetrate roof sheathing
 - 4. Shank 11 or 12 gauge
- B. STAPLES ARE NOT ACCEPTABLE

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- C. Bituminous Plastic Cement FS-SS-C-153, Asphaltic Base, Type I.

SECTION 07 4113 – METAL ROOF PANELS

PART 1 - GENERAL

1.1 MATERIALS

- A. Where possible, provide roofing products that meet the following standards:
1. Solar Reflectivity/Emissivity: ENERGY STAR Certified Solar Reflectance Index (SRI):
Solar Reflectance Index (SRI):
 - a. Low sloped roof (less than or equal to 2:12): SRI of 82 or greater.
 - b. Steep sloped roof (greater than 2:12): SRI of 39 or greater.

PART 2 - PRODUCTS

2.1 PANEL MATERIALS

Sheet Metal shall be Base and Counter Flashing SMACNA Plate as applicable or required, 26-gauge, Galvanized Metal.

2.2 ACCESSORIES

- A. Concealed Flashing: Concealed flashing shall be "Fiberweb 310" thru-wall flashing as manufactured by Fiberweb International Corp., "Cop-A-Bond" 202 weight as manufactured by AFCO, Duplex "Cop-R-Flash" as manufactured by Phoenix, "Cop-R-TEX Duplex" as manufactured by York Manufacturing or an approved equal.
- B. Gutters and Downspouts: Gutters and downspouts shall be 24 gauge; pre-finished aluminum in color as shown on the drawings. Provide all fasteners, elbows, screens, splashblocks and other accessories required for a complete installation of gutters and downspouts.
- C. Fasteners: All nails, screws, bolts, rivets and other fastenings for sheet metal, unless otherwise noted, shall be type 304 or 305 stainless steel of size and type suitable for intended use. Nails shall be minimum 12 gauge, flat head annular-thread type, and of sufficient length to penetrate backing at least 3/4". Galvanized steel is not acceptable.
- D. Solder: Solder shall conform to ASTM Designation B 32T, 60-40 or 80-20 percent block tin and pig lead.
- E. Flux: For tinning galvanized steel surfaces, use acid type flux designed especially for use in soldering galvanized steel. For re-tinted surfaces, use regular rosin type flux.

2.3 FINISHES

- A. When located in the academic core, they will be standing seam. The color will be gray to match the roof of the Barnhardt Student Activities Center. If located in the vicinity of the athletic fields, metal roofs will be dark green to match the Irwin Belk Track and Field Center.

SECTION 07 4213 – METAL WALL PANELS

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PART 1 - GENERAL

1.1 SUSTAINABILITY

Recycled Content of Steel Products: Provide products with an average recycled content of steel products so post-consumer recycled content plus one-half of pre-consumer recycled content is not less than 60 percent.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL PANELS

- A. Refer to drawing C-017.10 for selection of architectural panels, size, seam location, and configuration.
- B. Acceptable architectural panel materials are:
 - 1. Manufacturer: Citadel
 - a. Type: glazeguard 1000
 - b. Size: 5'x12'x1" sheets with batten moldings to cap seams
 - c. Color: clear stock anodized
 - 2. Manufacturer: Greensteel
 - a. Type: typical 5-ply insulating panel
 - b. Size: 5'x12'x1" sheets with batten moldings to cap seams
 - c. Color: clear stock anodized
 - 3. Manufacturer: Laminators Incorporated
 - a. Type: System II
 - b. Size: 5'x12'x1" sheets with batten moldings to cap seams
 - c. Color: clear stock anodized.

SECTION 07 5000 – ROOFING SYSTEMS

PART 1 - GENERAL

1.1 PERFORMANCE REQUIREMENTS

- A. Design: Roof designs shall comply with the latest version of the State Construction Office's "Roofing Design Criteria."
- B. Re-roofing:
 - 1. The Designer shall have a core sample taken of each existing roof system to determine the materials contained in each existing system. The Designer shall not rely on previous construction documents or record documents for this information.
 - 2. Guarantee: Insert the following into the Supplementary General Conditions involving roofing of existing structures: "The Contractor shall be responsible for all repairs of water damage to the building, including furnishings, occurring during the construction phase of the project. The Designer shall survey, in the presence of the owner and contractor, existing water damage prior to construction and prepare a written and photographic record of this survey with copies distributed to both the owner and contractor. The contractor shall be responsible for all damage not so documented."
- C. The Designer shall have a roofing analysis report made of the existing roof materials to determine the presence of asbestos. The Construction Documents shall include the complete report and interpretation.

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1.2 SUSTAINABILITY

- A. Where possible, provide roofing products that meet the following reflectivity standards:
- B. Solar Reflectivity/Emissivity: Energy Star.
 - 1. Solar Reflectance Index (SRI):
 - a. Low sloped roof (less than or equal to 2:12): SRI of 78 or greater
 - b. Steep sloped roof (greater than 2:12): SRI of 29 or greater
- C. Preference should be given to roofing systems that are able to be recycled.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

- A. For low-sloped roofs, the top surface color shall be white: this may be achieved with a white roofing membrane or white smoothly rounded (river washed) stone ballast.
- B. Drainage: Extra slope to roof drains should be provided two feet around the drain. Prior to final inspection, the contractor shall conduct a flood test of the roof in the presence of the Designer and the Owner to verify drainage.
- C. Flat membrane roofs - will be white roofing materials only.

SECTION 07 6200 – SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 QUALITY ASSURANCE

Specifications for products included in this Section and accessories shall meet the ANSI, SMACNA and ASTM criteria for each material. Use flashing recommended by manufacturer as part of roofing system where applicable.

1.2 SUSTAINABILITY

Recycled Content of Steel Products: Provide products with an average recycled content of steel products so post-consumer recycled content plus one-half of pre-consumer recycled content is not less than 60 percent.

PART 2 - PRODUCTS

2.1 MATERIAL

Flashing to be either Stainless steel or copper, unless otherwise approved by UNC Charlotte

SECTION 07 7000 – ROOF ACCESSORIES

PART 2 - PRODUCTS

2.1 ROOF SCUTTLE

- A. Scuttle shall be Type 'S' by The Bilco Company, RSL-3036 by Naturalite Company, RD-1 by Milcor Limited Partnership or approved equal.

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1. Clear opening (inside of curb) shall be 2'-6" x 3'0".
2. Cover shall be 11 gauge aluminum with 3" neatly welded beaded flange, insulated with 1" fiberglass, fully covered and protected with an 18 gauge aluminum liner.
3. The roof curb shall be 12" in height and be constructed of 11 gauge aluminum. The curb shall be formed with an integral predrilled 3½" flange for securing to the roof deck.
4. The curb shall be equipped with an integral 11 gauge aluminum cap flashing, fully welded at the corners for weather tightness. All clips, rope packing, etc. required for a proper fit and installation as described by the scuttle manufacturer shall be provided and installed by the Contractor.
5. Insulate the side walls of the curb with 1" thick rigid fiber board insulation (provided attached to the curb by the Manufacturer).
6. Scuttle shall be completely assembled with heavy duty hinges, spring operators to assist opening, a positive snap latch with turn handles and padlock hasps inside, and thermoplastic rubber gasket.
7. The cover shall be equipped with an automatic hold-open arm with vinyl grip handle for easy release and one hand control of cover to its closed and latched position.

SECTION 07 9200 – JOINT SEALANTS

PART 1 - GENERAL

1.1 SUSTAINABILITY

Provide sealants that have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

Joint Sealers Indicate that caulk selection by the designer shall **not** be limited to the manufacturer's standard list of colors.

SECTION 07 9500 – EXPANSION CONTROL

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

Building Expansion joint covers on interior floors shall be of color and texture that matches adjacent carpet or floor covering. Aluminum covered joints shall be avoided.