Cold-Applied Built-Up Asphalt Roofing | 07 51 13.13

The following information shall be included in specifications prepared for use on all University of Cincinnati construction and renovation projects. This information is supplemental and not intended to be a complete specification.

GENERAL STANDARDS

General Criteria

General Description - New construction roof systems shall be designed to provide a 1/4" per foot slope as required by the Ohio Building Code. Slope shall be accomplished by sloping the roof deck whenever possible. If the deck cannot be sloped, tapered insulation will be required throughout the roof. Additional tapered insulation shall be used at strategic locations to create saddles, crickets, and additional taper around equipment, perimeter areas, curbs, valleys, and other potential problem areas. Provide secondary drainage systems as required by code.

Re-roofed Systems - On re-roofing projects, drainage shall be assessed and provisions shall be added to create positive drainage if the existing roof systems do not drain well.

Performance Requirements

Windstorm Design - Roof systems that have been successfully tested by a qualified testing and inspecting agency to resist field, perimeter and corner uplift pressure calculated according to ASCE 7 or Factory Mutual wind uplift calculations.

Fire Rating - Roof systems shall conform to "Class A" roof coverings as listed in Building Materials Directory of Underwriters Laboratories (UL). Factory Mutual (FM): Materials and workmanship shall conform to FM testing and engineering criteria, including, but not limited to, 1-7, 1-28, 1-29 and 1-49.

Installation Responsibility - Obtain all roofing system components from a single proposed roofing system manufacturer. All components shall be supplied and warranted by the proposed roof system manufacturer.

Installer Qualifications - Installer shall be a firm with not less than five years of successful experience in the installation of roofing systems similar to those required for this project and which is acceptable to, or licensed by, the roofing system manufacturer.

Roof System Warranty - Roof warranty shall cover all components of the entire roofing system including, but not limited to, the insulation substrate, wood nailers, field membrane, membrane surfacing, base flashing, embedded sheet metal, attachment clips and closures, miscellaneous sheet metal flashing and counterflashing, detail penetrations, and drainage flashing systems. Manufacturer shall repair or replace components of roofing system that fail in materials or workmanship within specified warranty period. Manufacturer shall inspect the roof twice annually for the life of the warranty, remove all accumulated debris that could affect the performance of the roof, and correct any roof system or flashing system deficiencies. The manufacturer shall provide inspection reports after each visit that
shall be available for review by the Owner through an online database. The above will be provided for the life of the manufacturer’s warranty at no additional cost to the owner. Manufacturer’s warranty period shall be 20 years. Installing contractor's warranty shall be for two years. Roof leaks shall be considered a failure of the roofing system and shall be fully covered by manufacturer’s warranty.

**Product Coordination**

**Roof System Documents** - Associates shall produce a detailed set of drawings and specifications for the roof assembly. Drawings shall show the location of all roof drains, gutters, scuppers, rooftop equipment, penthouses, walkway pads, expansion joints, area separators, drainage patterns, tapered insulation, and other items which affect the roof assembly.

**Roof Details** - Drawings shall include details of curbs and supports, flashings, drains, gutters, scuppers, expansion joints, area dividers, and all other membrane penetrations and terminations, along with details of unique situations. Details shall be consistent with the industry standards established by the National Roofing Contractors Association (NRCA) and the roof system manufacturer. Rooftop piping, conduits, and equipment shall be mounted on supports specifically manufactured for roofing. Wood blocking against the membrane surface is generally not an acceptable means of support.

**Sustainability Requirements**

**LEED Requirements** - Roof systems shall with comply with the current LEED rating system standards adopted by the University of Cincinnati to the greatest extent possible. All roof materials shall be sourced to meet the Regionally Manufactured Materials requirement. Solar reflectance index requirements for all roofing systems shall be ≥ 78 for roof systems ≤ 2:12 slope, and ≥ 29 for roof systems above 2:12 slope. Recycled content materials should be specified in roof insulations, recovery boards, ply sheets, adhesives, and sheet metal components to the greatest extent possible.

**LEED Materials** - Base flashings, related sheet metal flashing & wall cladding shall also meet the same LEED SRI requirements whenever possible. Low VOC roofing adhesives are the minimum standard; however, many projects will require the use of solvent free and water based adhesives.

**PRODUCT STANDARDS**

**Sustainability Requirements**

**Basis of Design** – The Basis of Design and Installation of roofing systems at the University shall be Tremco Roofing Systems. Other systems may be considered for compliance with these Standards.

**Product Requirements**

**Cold-Applied BUR System** - The University low slope roof system standard is a white marble chip aggregate-surfaced, cold-applied built-up roofing system. The roofing membrane can be installed in a 3- or 4-ply configuration and shall have a minimum system ASTM D 2523 tensile strength rating of 400 lbs. Aggregate surfacing systems with SRI ≥ 78 should be utilized unless the design requires a different surfacing option.

**Roof Insulation** - ASTM C 1289, minimum 20 psi polyisocyanurate is the preferred roof insulation material. The insulation shall be fastened to steel decks and adhered to concrete decks. Insulation thickness should not exceed 2.5” per layer. Both the short and long joints shall be staggered a minimum of 6 inches in each direction. ASTM C 1177 gypsum sheathing recovery boards should be installed over all Polyisocyanurate insulation installations. All fastened insulation layers shall receive an additional adhered recovery board layer. Foam roof insulation shall have R-values or Long-Term Thermal...
Resistance (LTTR) values to meet current minimum energy code requirements with an emphasis toward exceeding minimum energy standards.

**Product Accessories**

**Edge Material** - Pre-manufactured perimeter edge coping and fascia systems shall be used unless conditions require the use of special custom edge details.

**Walkway Pads** - Provide roofing membrane manufacturer approved walkway pads around rooftop equipment and in areas subject to traffic. Provide roof protection provisions for window washing equipment and any other high traffic roof areas.

**Vapor Retarders** - Fully adhered vapor retarders shall be installed on all concrete deck roof applications.

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