

## **DIVISION 7 - THERMAL AND MOISTURE PROTECTION**

### **Section 07500 - Membrane Roofing**

#### **Introduction**

Systems described under this Section are not intended to receive regular foot traffic. Occasional traffic for maintenance of equipment is acceptable.

Where horizontal surfaces enclosing habited spaces are intended to be regularly occupied or otherwise used for the building occupants' activities, refer to the requirements of Section 07590 Horizontal Traffic Surfacing.

Specify a complete roofing system, making the materials manufacturer responsible for the roofing and flashing system. Require the materials manufacturer to make periodic inspections of the work in progress to ensure that the completed work will qualify for the required warranties.

The University uses a built-up SBS-modified bitumen roofing system, applied either hot mopped, self adhered or cold emulsion, in virtually all conditions. Use of other roofing systems must receive specific permission from the Project Manager.

Gravel surface roofs shall NOT be specified.

Torch-applied materials of any kind shall NOT be specified.

Single-ply roofs shall NOT be specified.

Asbestos-containing materials shall NOT be specified.

This is a section where the consultant should use a "performance specification". Do not specify proprietary manufacturer's names or materials, and do not restrict vendors to a limited list.

Membrane roof repairs and modifications which are part of a renovation project (e.g. installation of a new exhaust fan) should follow these standards as much as possible. Existing roof warranties must not be compromised. The consultant must prepare a complete specification and details for the required repair work. Generic "flashing as required" notes (which often appear on engineering details for new exhaust fans) are not acceptable.

Be sure to coordinate specification requirements with roofing, flashing, and parapet wall details.

#### **Part 1 - General**

- Require that materials manufacturer(s) and installer(s) demonstrate 5 years of successful installations of similar systems.
- Require submittal of manufacturer's literature describing the system, and samples of proposed membrane materials.
- Require a pre-installation conference, scheduled after the substrates are complete, and including the Contractor, Architect, Owner, materials manufacturer, and installing subcontractor(s).
- Membrane roofing is a finish material, not a staging platform for further construction work. Include the following provisions:
  - Require the Contractor to install a "temporary roof" if he desires to "dry-in" the building to allow interior construction to begin or to provide a platform for further exterior construction.
  - Describe this requirement as a "Contractor's Option", that is, if he wants to dry-in, he must do so only with a temporary roof.
  - Reference the National Roofing Contractor's Association (NRCA) requirements for temporary roofs, including "sacrificial" insulation on metal decks.
  - Specifically prohibit "phased roofing".
  - Specifically prohibit patches in the finished roof.
  - Require that finished roofs be protected with plywood sheets for any and all construction traffic, and that all equipment moving be accomplished with rollers.

- Specify expanded warranties as follows:
  - 5 year warranty from the installer covering defects in installation.
  - 20 year warranty from the materials manufacturer including defects in materials and installation, and guaranteeing to maintain the system in a waterproof condition for the life of the warranty.
  - Full replacement value without proration.
  - Include all components of the roof assembly, from the deck up.
  - Include sealing of all perimeters, joints, and penetrations.
  - Both warranties shall be furnished on the University's special warranty form. Any reference to maximum wind speed on the warranty shall not supersede the requirement to provide a UL Class 90 uplift rating.
- Calculate insulation thickness to allow for 8" minimum clearance for all roof penetrations, doors, curbs, windows, etc.

## **Part 2 - Products**

- Require that all primary and secondary materials be supplied by a single manufacturer, or approved by the primary materials manufacturer, to ensure single-point responsibility for the installation and warranty.
- Specify a manufacturer's standard built-up roofing system as follows:
  - UL Class A fire rating.
  - UL Class 90 uplift rating.
  - Rigid overlayment or cover board on top of insulation to increase roof durability and hail resistance.
  - 2-ply SBS-modified bitumen system. (Base sheet + mineral surface cap sheet)
  - Reflective roof coating to meet project Solar Reflectance Index. Apply after all work is complete and roof is accepted.
  - Applied with either hot asphalt mop, self-adhered or cold emulsion.
- Care should be taken in the selection of tapered rooftop insulation and rigid overlayment board to insure a durable roof surface that will hold up to maintenance activities for the life of the roof and will not compress over time under various loads. Lightweight insulating concrete can also be considered if project conditions and budget dictate.

## **Part 3 - Execution**

- Specifically require the roof to be installed in accordance with the manufacturer's recommendations.
- Refer to and describe the appropriate SMCNA details for each edge and penetration condition. Require the roofing installer to receive, accept, and install, all sheet metal flashings.
- Specifically prohibit:
  - Pitch pans.
  - Guy wires fastened directly to the deck.
- Specify (or detail) 3/4" plywood nailers at all parapet walls.
- Require a spray test after completion of the roofing system, to be witnessed by the Contractor, Architect, Owner, materials manufacturer, and installing contractor(s). Do not require a flood test.

## **End of Section 07500**