1. This information provides guidelines for Thermoplastic Polyolefin (TPO) membrane roofing, auxiliary materials for flexible sheet roofing and vapor retarders. Temporary facilities and controls are covered in other parts of these standards or are available from the Facilities Management (FM) project representative.

2. FM project representative, Public Safety Office, and Environmental Health and Safety Office shall approve selection of materials, means, and methods. Unless otherwise approved, design intent requires means and methods that provide minimal disruption to adjacent building activities and operations.

3. Require emergency phone numbers of contractor’s personnel capable of responding to a roof-related emergency at all hours including non-working hours and non-working days. Answering service phone numbers are not acceptable for this purpose. Submit numbers to FM Project Representative.

4. Installer shall be certified by manufacturer of TPO membrane roofing system as qualified to install manufacturer’s roofing materials.

5. Provide primary products from a single manufacturer. Provide secondary products as recommended by manufacturer of primary products for application with roofing system specified.

6. The University requires designer to produce a bid package specifying at least two products, not from the same manufacturer, that are pre-determined to be comparable and acceptable. For any product requiring manufacturer’s certification of installer (to ensure warranty), installers may be required to submit certification prior to bid acceptance.

7. TPO sheet membrane is also the standard at the University as a roofing system under walking decks (typically pedestal-mounted paver blocks).

8. Installer to maintain full-time supervisor/foreman on the project, experienced in installation of roofing systems similar in type and scope to the project.

9. Warranties:
   a. Workmanship: three years minimum.
   b. Material: Provide manufacturer’s 20-year total system warranty in accordance with general conditions.
      i. Manufacturer’s total system warranty shall include coverage of all labor and material costs (including removal of ponding water) resulting from failure to resist penetration of moisture or failure in materials. Warranty shall cover all roofing components above the roof deck upon acceptance of completed work.
      ii. The contractor, upon notice by the University, shall make emergency, temporary repairs within twelve (12) hours of notification. Contractor shall then complete permanent repairs within fifteen (15) days at no additional cost to the University.

10. Fully adhered TPO flexible sheet roofing membrane formed into uniform, flexible sheets:
    a. Thickness: 60 mils, nominal.
    b. Exposed face color: Gray, manufacturer’s standard. Coordinate surface reflectivity requirements with LEED rating goal.
    c. Acceptable manufacturers:
        i. Carlisle Syntech Systems
ii. Firestone Building Products
iii. J. P. Stevens Building Products

11. Auxiliary materials for flexible sheet roofing:
   a. Gypsum sheathing base at metal decks:
      i. ASTM C 36, Type X, 5/8" thick, water resistant gypsum sheathing.
   b. Sheet seaming system:
      i. Manufacturer’s standard materials for sealing lapped joints, including edge sealer to cover exposed spliced edges as recommended by manufacturer of flexible sheet roofing system.
   c. Cant strips, tapered edge strips and flashing accessories:
      i. Types recommended by manufacturer of flexible sheet roofing material, including adhesive tapes, flashing cements and sealants
   d. Flashing material:
      i. Manufacturer’s standard system compatible with flexible sheet membrane.
   e. Membrane protection:
      i. For maintenance traffic and service areas require non-skid membrane pads installed per manufacturer’s recommendations.
      ii. At high traffic public access areas, prefer pedestal mounted precast pavers on engineered pedestals so water drainage occurs below walking surface. Install pedestals and protect membrane per manufacturer’s recommendations.
   f. Slip sheet:
      i. Type recommended by manufacturer of roofing material for protection of membrane from incompatible substrates.
   g. Mechanical fasteners:
      i. Metal plates, caps, battens accessory components, fastening devices and adhesives to suit substrate and as recommended by flexible sheet roofing membrane manufacturer.

12. TPO with insulation
   a. Polyisocyanurate insulation with fiberglass top layer with mechanically attached to meet wind requirements.
   b. Prefer grey TPO in replacement of white TPO for exposed face color.
   c. Cut edges of TPO membrane, where scrim reinforcement is exposed, must be sealed with Cut-Edge sealant.

13. Vapor retarders under insulation
   a. Per manufacturer’s recommendations


15. Configure substrate so that roof surface slopes to drains. Provide crickets between drains as required to minimize ponding.

16. Provide WISHA approved fall protection systems. See specific guidelines for these systems in “Division 11 Equipment Section” of the University Campus Standards and Guidelines.

17. All drains to be checked before and after each project to assure proper flow and that the drains are clean/clear of all debris.

18. Provide robust drain line sizes, minimum 3" exterior downspout and for larger roofs use greater than 3", no 90 degree elbows, no penetration of screw fasteners to hang up debris.
19. Outside leading edge use TPO coated metal.

20. Prefabricated boots for pipe penetrations, inside and outside of corners.

21. Field verify anchoring fall protection systems for soundness before using.

End