

DIVISION 7 – THERMAL & MOISTURE PROTECTION

07 00 00 THERMAL & MOISTURE PROTECTION

07 13 00 – SHEET WATERPROOFING

- A. For Interior concrete slabs on grade with wood floor finish install reinforced puncture and abrasion resistant membrane similar to Moistop by Fortifiber below slab. All other building, slabs on grade, shall have minimum 8 mil vapor barrier. Extend edges to surface of slab. Seal all joints and around all penetrations.
- B. Provide water stop as needed.
- C. Provide waterstop equivalent to Grace 3000 or 3500 waterstop or equal for foundation walls.
- D. Provide waterproof membrane below showers and other unusually wet areas.

07 21 00 – THERMAL INSULATION

- A. Provide insulation as required to meet current energy codes.

07 26 00 – VAPOR AND AIR RETARDERS

- A. General exterior walls should have a 6 mil vapor barrier applied to warm side of wall.

07 50 00 – MEMBRANE ROOFING (for low slope roofs)

- A. Preferable roof system is 45 MIL KEE (Ketone Ethylene Ester) fleece back (gray color) ~~60 MIL EPDM~~ adhered systems using ~~3" seam tape joints~~ with roof insulation being rigid ISO board type with mechanically fastened Dens-Deck below the membrane. Consideration will also be given to EPDM, ~~ballasted system or approved~~ PVC systems, TPO and TPA ~~adhered and ballasted~~ roofing systems. Green roofs are discouraged.
 - 1. For ballasted roofs, specify reinforced EPDM membrane.
 - 2. Approved manufacturers of EPDM membranes are: Carlisle, Firestone and Versico.
 - 3. Consult with Owner's Representative regarding the purchase of materials through the State of Iowa approved E&I contract. Current vendor is Tremco.
- B. A positive tapered roof slope shall be maintained over the entire roof. Flat areas are not acceptable. A minimum slope of 1/4" per foot is preferred. Sump areas to be used at all roof drains.
- C. A minimum distance of eight inches should be maintained between the horizontal membrane surface and the top of any counterflashing. A minimum overlap of 3" for counter flashing over base flashing.
- D. Roof drain elevations, roof slope and the elevation of the roof edges shall be shown on the contract drawings.
- E. Overflow scuppers shall be provided through the parapet at regular intervals. Usage of a secondary roof drain and drain line is also acceptable.

- F. Specifications shall call for a 10-year manufacturer's roof system warranty and a 2-year contractor's warranty covering the roof system on all newly installed roofs and replacement roofs. An alternate for a 20-year manufacturer's roof system warranty may be included on the Form of Bid for special projects.
- G. All roof drains shall have either cast iron or aluminum grates (no plastic grates).
- H. Walkway pads shall be ~~yellow, welded to membrane or yellow spaghetti glued to roof membrane. In areas visible to public, consider using gray walkway pads. 90-mil-EPDM membrane cut to size and spaced 6" apart using seam tape around perimeter and in the center area as well.~~
- I. Concrete walkway pavers used with ballasted roofing system only shall be either 18" x 24" x 2" or 24" x 24" x 2" made with 4,000# P.S.I. concrete mixture. Pavers shall be spaced a minimum of 6" apart for drainage and include a slip sheet under them.
- J. Provide cages, guardrails, tie off points, roof markings, etc. as required around equipment for maintenance activities per OSHA. Confer with Owner for standard manufacturers.
- K. **Roof Safety Measures: provide roof walkway pads (access pathway) between all roof access hatch and all equipment and roof drains that require maintenance. If walkway is within 6' of the roof edge, provide guardrail if parapet does not meet OSHA height requirements. If walkway is within 15' of the roof edge, provide warning line. A weighted anchor system or other systems may also be considered, coordinate with Owner's Representative. The Kee Safety weighted guardrail is preferred.**
- L. **Green Roofs are not allowed on campus.**
- M. **Owner may be interested in a fluid applied roofing system under certain conditions, consult with Owner's Representative.**

07 60 00 – FLASHING AND SHEETMETAL

- A. Follow SMACNA and NRCA guidelines for details.
- B. Parapet caps and counter flashing should be pre-finished sheet metal, Kynar or approved equal. Provide for expansion every 10 feet of run. Cover joints with ~~drive cleats cap~~ of same material ~~and interlock with parapet cap. Caulk both ends of the joint caps in the bottom side.~~ Substitutions will only be permitted under special conditions approved in advance by the Owner's Representative.
- C. Valley flashings shall be aluminum or copper.
- D. The tops of all walls exposed to the weather shall have through-wall flashing under the cap.
- E. Drip flashings shall be provided above all windows and doors to prevent water sheeting.

07 72 00 – HATCHES

- A. Bilco hatches are preferred choice. Type "S"- for standard size (2'-6" x 3'-0"). Preference is for aluminum, model S-50.

B. Provide hatches on all roof levels or provide ladder access between roofs with a hatch and roofs without. If ladder access is from ground level, a lockable security cage shall be included with the ladder.

~~C. Provide ladder safety posts, similar to Bilco "LadderUP", at all roof hatches. Provide a handrail mounted to the hatch where requested by Owner.~~

D. Provide cages, guardrails, tie off points, roof markings, etc. as required around hatches to meet OSHA requirements. Confer with Owner for standard manufacturers.

07 72 36 – AUTOMATIC SMOKE/FIRE VENTS

A. Bilco hatches are preferred choice, type "ACDSH" with insulated curb and covers.

07 80 00 – FIRESTOPPING AND SMOKESTOPPING

A. Provide schedule of firestopping assemblies, which lists each type of penetration. All assemblies shall be detailed.

07 90 00 – JOINT PROTECTION

A. One or two part polyurethane should be specified according to usage.

B. Specification should require a 5-year sealant warranty to be signed by the Sealant Contractor and manufacturer. Installer to be factory trained and certified.

C. Sealant should be specified in the following exterior joints:

1. Joints between dissimilar materials.
2. Construction or control joints in concrete slabs.
3. Intersecting masonry partitions
4. Parapet coping stone joints.
5. Counter flashing reglets.
6. To seal holes and cracks in copings and other stone materials at perimeter of roofs.