# Polyvinyl-Chloride Roofing (PVC) – (07 54 19)

1. All applicable parts of the General Roofing Specification (section 07 30 00) shall be included in this section.
2. Assessment of PVC roofs
   - 2.1. A PVC roofing system shall be determined as a failed roof when any of the following conditions exist:
     - 2.1.1. When the existing structure is overstressed.
     - 2.1.2. When there is existing moisture within the system.
     - 2.1.3. When there is damage to the existing roof deck – rust, rot, spalling, etc.
     - 2.1.4. If there is significant loss of material over reinforcing scrim.
3. Roof Slope Use as defined in Part 7, General Roofing Specification (07 30 00)
   - 3.1. A PVC roof can be used on the following roof slopes:
     - 3.1.1. Low Slope
     - 3.1.2. Transitional Slope
     - 3.1.3. High Slope, in accordance with the manufacturer's limitations and testing data.
   - 3.2. All roof cricket slopes shall be twice that of the main roof slope, if possible.
   - 3.3. Special conditions for slope of system
     - 3.3.1. The minimum slope for new building construction is ¼ unit vertical in 12 units horizontal.
     - 3.3.2. The recommended minimum slope for new roofing on existing buildings is ¼ unit vertical in 12 units horizontal, when possible.
     - 3.3.3. The absolute minimum slope for new roofing on existing buildings is "positive roof drainage". Ponding is not acceptable.
4. Repair or replacement of roof, not to contradict Part 6, General Roofing Specification (07 30 00)
   - 4.1. If a roof does not meet condition(s) for repair / restore / then roof replacement is the only required and allowed action.
   - 4.2. If the PVC system must be replaced, the existing PVC roofing shall be removed before any new roofing system is installed.
   - 4.3. Additional information regarding what constitutes a failed PVC roofing system can be found in Part 2 of this section.

5. Demolition requirements
    5.1. All items as found in Part 10, General Roofing Specification (07 30 00).
    5.2. No special demolition requirements for PVC roofing systems.
6. Back of parapet treatment
    6.1. The PVC system shall be adhesively applied to the back of parapets as required.
        6.1.1. Height of the PVC membrane system applied to the back of parapets shall not exceed manufacturer’s specified requirements.
    6.2. At locations where the membrane does not extend for the full height of the parapet, the surface shall be waterproofed with materials suitable to the substrate.
7. High wall treatment
    7.1. The PVC system shall be adhesively applied to high walls as required.
    7.2. Height of the PVC membrane system on high walls shall not exceed manufacturer’s specified requirements.
    7.3. The PVC membrane on high walls shall not be roofed to a height where the roof can be seen from the ground.
    7.4. At locations where the membrane does not extend for the full height of the high wall, the surface shall be waterproofed with materials suitable to the substrate.
8. Components of a PVC membrane roofing system
    8.1. Rigid board insulation
        8.1.1. Acceptable types are polyisocyanurate foam board, polystyrene board insulation and composite board insulation, thickness as determined by the Designer.
    8.2. Coverboard
        8.2.1. A coverboard shall be used in all PVC membrane roof assemblies.
        8.2.2. Coverboards are required to provide the following functions:
            8.2.2.1. To separate incompatible material.
            8.2.2.2. To minimize thermal drift.

8.2.2.3. To protect rigid board insulation and provide rigid support for the roof membrane.

8.2.3. Acceptable types of coverboards will be:

8.2.3.1. Glass mat faced gypsum boards.

8.2.3.2. High density wood fiber.

8.2.3.3. High density polyisocyanurate board.

8.2.3.4. Paper faced gypsum board shall not be used as a cover board.

8.2.4. The PVC roofing system is acceptable as an overlay over an existing roofing system, as determined by the Designer.

8.3. Polyvinyl-Chloride Roofing (PVC)

8.3.1. The PVC system shall meet ASTM Standard Specification D4434, 60 mil minimum thickness.

8.3.2. The PVC design, specification and installation shall provide a 20-year minimum life.

8.3.3. A fully adhered membrane is recommended, but attachment is to be determined on a project basis as determined by the Designer.

8.3.3.1. Fastener length for mechanically attached systems shall not exceed 10”.

8.3.4. The PVC roofing system shall have a twenty (20) year, no dollar limit (NDL) Material and labor warranty to be provided by the manufacturer.

8.3.5. A two year minimum material and labor warranty shall be provided by the Contractor.

8.3.6. All components of the roofing system shall be supplied by the roofing manufacturer in order to maintain the warranty and fire classification of the system.

8.3.7. All adhesives used shall be low VOC and free of any hazardous materials.

8.3.7.1. Low rise adhesive is recommended.

8.3.8. All penetrations, curb flashings and corner flashings to be factory-fabricated. No field fabricated components permitted.

8.4. Roof mounted equipment / accessories

8.4.1. All materials to be compatible with the PVC roofing material.

9. Closeout Documents

9.1. All items as found in Part 16, General Roofing Specification (07 30 00).

10. Preventative Maintenance Criteria

10.1. All items as found in Part 17, General Roofing Specification (07 30 00).

11. Budgeting cost ranges

11.1. This part shall apply only to SFB budgeting and economic projections and analysis. Not to be used for anything else

11.2. Budget costing for the PVC roofing system is as follows:

11.2.1. Low-range: $7.50 - $10.50 per square foot.

11.2.2. Mid-range: $10.00 – $13.00 per square foot.

11.2.3. High-range: $13.00 - $25.00 per square foot.

11.3. Life cycle costing estimate for a PVC roof is $2.00 per square foot per year.

12. Expected End of Life (EOL) for the specified PVC roofing system should be no less than 20-years if properly maintained and inspected regularly.

Note: This Roofing System is not a great value for money as it loses its integrity after extended exposure to UV and heat which is quite prominent in Arizona. It only gives great chemical resistance property against oil and grease and thus, it is efficient at restaurants where there are grease traps on the roof. Better solution for our Schools will be to go for TPO membranes. It can be a matter of discussion between the SFB Staff and the Designer to put it exclusively over the Cafeteria/Kitchen Roofs due to this very reason.