

**DESIGN STANDARDS**

1. **GENERAL:** The intent of this section is to provide general guidelines for the selection and installation of joint sealants.
2. **Joint Sealants:**
  - 2.1 Detail and specify the appropriate joint sealer and backing for the following interior or exterior joint conditions. Refer to the latest manufacturer's sealant guide:
    - Vertical and horizontal surfaces.
    - Vertical Expansion and Control Joints.
    - Sealants exposed to physical abuse.
    - Glass, ceramics, steel, aluminum and plastic applications.
    - Precast panels and curtain walls.
    - Structural and non-structural glazing.
    - Tub and shower enclosures, sinks, and counter tops.
  - 2.2 In exterior joints in building façade, use only silicone sealants for their bond, durability, and superior resistance to UV light.
  - 2.3 In traffic areas, use traffic grade sealants.
  - 2.4 Consider the joint dimension to specify the proper sealant. Good architectural practice calls for joint design four times the anticipated movement due to construction tolerances and material variations.
  - 2.5 **Compatibility:** Provide joint sealers, joint fillers, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on controlled testing and field testing on actual materials.
  - 2.6 Specify fire resistive sealers at penetrations through fire rated assemblies as required by applicable codes. Sealants shall provide effective protection against fire, smoke, and toxic fumes.
  - 2.7 Use mildew resistant products wherever humid conditions and high temperature exist.
  - 2.8 Ask for recommendations from the manufacturer if the product requires the application of primers to promote adhesion to the building substrate. Verify adhesion integrity through field testing.
3. **Caulking Compound:**
  - 3.1 Use caulking for interior non-moving joints on and between field painted surfaces Acrylic Latex Type.

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4. Joint Backing:

4.1 Provide backer rod joint filler in horizontal joints subject to foot and vehicular traffic, at a distance beneath slab surface of ½ the joint width. Follow manufacturer's recommendations.

4.2 Whatever the joint size or substrate, provide backer rod or bond breaker tape as necessary at back of sealant to prevent bonding. Exceptions: Sawed concrete joints; items bedded in sealant such as thresholds.

4.3 Backer Rod: Closed cell foam rope of polyethylene, butyl neoprene or other material that will not bond to sealant, 25 to 50 percent larger in diameter than joint width, unless otherwise recommended by sealant manufacturer.

5. Bond Breaker Tape:

5.1 Polyethylene type of widths to suit joints. Provide over joint fillers other than polyethylene type, unless otherwise recommended by sealant manufacturer.

6. Primers:

6.1 Prime surfaces as recommended by sealant manufacturer. Primer type to be as recommended by sealant manufacturer.

7. Joints requiring sealants include, but are not limited to:

7.1 Joints around windows, doors, louvers, or other material penetrations of the exterior building finishes.

7.2 Exterior door thresholds – seal front and rear edges and ends.

7.3 Exterior and interior wall and floor expansion and movement joints except where custom joint covers are used.

7.4 Various lap joints at roof flashings, cap flashings, gutters, and similar conditions.

7.5 Pipe and conduit penetrations of rated and non rated walls, floors, and ceilings.

7.6 Joints between plumbing fixtures and wall and floors.

7.7 Joints at tops and bottoms of acoustical walls to floor and structure as well as all wall penetrations by conduits, pipes, etc.

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8.0 Colors:

8.1 Most sealant colors shall be as selected from sealant manufacturer's standard colors.

8.2 If the Architect perceives a clear benefit for the use of a non-standard sealant color, the use of a custom color may be presented to the University's Project Manager. If approved the Architect may require the contractor to provide a custom color sealant (assumes custom colors are available for selected products).

9.0 Quality Assurance:

9.1 Consider using manufacturer's technical services to assist in selecting the proper sealant, for proper joint design and product specification.

9.2 Require contractor to conduct field pull tests for all exterior sealant applications.

10.0 Special Installer's Warranty: Request a written warranty, signed by installer agreeing to repair or replace elastomeric joint sealants that fail or do not meet performance requirements for a warranty period of two (2) years from substantial completion.

11.0 Special Manufacturer's Warranty: Request a written warranty, signed by the elastomeric sealant manufacturer agreeing to furnish elastomeric sealant to repair or replace those that do not meet performance requirements for a warranty period of 20 years from substantial completion for all sealant/exterior material combinations.

**PRODUCT STANDARDS**

1. Acceptable Product Manufacturers:

1.1 Silicone Sealant – One part non-acid curing - Types, Grade NS Class 100/50 and Uses NT, M, G & A and as applicable to joint substrate indicated, O.

- Dow Corning 790 and 795 Silicone Building Sealant
- General Electric Silicones – Silpruf
- Uses all exterior locations on building, including interior sealant joints on interior side of exterior envelope construction subject to thermal movement

1.2 Two-part Pourable Urethane Sealant – Type M, Grade P Class 25 and Uses T, M, A and as applicable to joint substrates indicated, O.

- Pecora Corp “NR-200 Urexpam”
- Treco, Inc. “THC-900”
- Others that meet requirements

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- Locations: Exterior location subject to vehicular or pedestrian traffic or crack repair associated with fluid applied waterproofing.

1.3 Acrylic-Emulsion Sealant: Manufacturer’s standard one-part, non-sag, mildew resistant, paintable, acrylic-emulsion sealant.

- Precora Corp “AC-20 + Silicone”
- Bostik “Chem-Calk 600”
- Others that meet requirements
- Locations: All exposed and concealed interior locations

1.4 Acoustical Sealant: Manufacturer’s standard non-sag, paintable, latex sealant recommended for sealing interior joints to reduce transmission of airborne sound.

- Precora Corp. “AC-FTR Acoustical Sealant”
- USG – “Sheetrock Acoustical Sealant”
- Locations – Perimeter exposed and concealed joints of gypsum dry wall partitions.

1.5 Mildew-resistant Silicon Rubber Sealant: Silicone rubber based, one-part, non-sag elastomeric mildew resistant sealant:

- Don 786 Mildew Resistant Silicone Sealant
- General Electric, Sanitary 1700
- Locations: Seal joint between plumbing fixtures and walls and floors

**PERFORMANCE STANDARDS**

1. Joint Preparation:

1.1 Require sealant installer to inspect the joint configuration, installation tolerances, and other conditions affecting the performance of the joint sealants and submit a written report of such detrimental conditions to contractor for repair.

1.2 Require sealant installer to follow the manufacturer’s procedures for joint cleaning and preparation including the use of primers, protection of adjacent materials and use of bond breakers where appropriate.

1.3 Use pre-installation test installation to verify sealant will not “stain” adjacent finishes such as granites or marbles.