

SECTION 07951
SEALANTS AND CAULKING

07951.01 GENERAL

A. Description

Sealants and caulking shall include, but not necessarily be limited to, furnishing and installing caulking, sealants, and related accessories in accordance with the Contract Documents.

B. Related Work Included Elsewhere

1. Cast-in-place concrete; Section 03300.
2. Unit masonry; Section 04200.

C. Quality Assurance

1. Inspection

The Engineer will inspect all materials before and/or after installation to ensure compliance with the Contract Documents.

2. Containers

All sealants and caulking shall be furnished and stored in the manufacturer's original containers with labels intact along with specification number, type, and class as applicable.

D. Submittals

1. Shop Drawings

Shop drawing shall be submitted as specified in the "General Provisions" for all sealants and caulking materials. The shop drawings shall include general product information, storage, handling and installation procedures, and technical data.

2. Certificates of Compliance

Certificates of compliance shall be submitted in accordance with the "General Provisions" for all sealants, caulking, and related accessories stating that the materials furnished meet the requirements specified in Section 07951.02.

07951.02 MATERIALS**A. Materials Furnished by the County**

The County will not furnish any materials for sealing and caulking.

B. Contractor's Options

None.

C. Detailed Material Requirements

1. Backup Materials

Provide backup materials, fillers, and joint packing in accordance with the following:

- a. Use closed cell bead, or rope shaped expanded polyethylene, or polyurethane foam for general applications.
- b. Use glass fiber or untreated jute for non-working joints.
- c. Use semirigid vinyl or polyethylene foam, solid neoprene rod, or similar approved backing for joints subject to horizontal traffic or puncture.
- d. Do not use bituminous or oil product as a backup material.
- e. The width or diameter of backup material shall be 1 1/3 to 1 1/2 times the width of the joint.

2. Primers

Primers where applicable shall be in accordance with the manufacturer's recommendations.

3. Sealants

- a. Acrylic sealant single component water based latex and single component solvent release type with limited amount of fillers and plasticizers shall conform to ASTM C834.
- b. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
 - 1) Color: As selected by the Architect.

- c. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
 - d. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
4. Self-leveling Sealants
- a. Self-Leveling Silicone Sealant: ASTM C920, Grade P, Uses M and A; single or multicomponent, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
 - 1) Movement Capability: Plus 100 percent, minus 50 percent, minimum.
 - b. Flexible Polyurethane Foam: Single-component, gun grade, and low-expanding.
 - c. Semi-Rigid Self-Leveling Epoxy Joint Filler: Epoxy or epoxy/polyurethane copolymer; intended for filling cracks and control joints not subject to significant movement; rigid enough to support concrete edges under traffic.
 - 1) Composition: Multi-component, 100 percent solids by weight.
 - 2) Durometer Hardness: Minimum of 85 for Type A or 35 for Type D, after seven days when tested in accordance with ASTM D2240.
 - 3) Joint Width, Minimum: 1/8 inch (3 mm).
 - d. Masking Tape and Bond Breaker: As recommended by the sealant manufacturer.

07951.03 EXECUTION

A. Environmental Conditions

- 1. Schedule caulking and sealant operations so that joints are normal size.
- 2. Do not apply caulking and sealants if temperature is below 40°F or above 85°F or when there is ice, frost, or dampness visible on the surfaces to be sealed or caulked.

B. Mixing

Mix in accordance with manufacturer's recommendations.

C. Preparation

1. Inspect all surfaces before starting work. Thoroughly clean all joints of contaminants, oil, grease, bituminous material, bond breakers, water repellent, and release agents.
2. Verify surfaces are dry and meet manufacturer's requirements.
3. Clean and remove foreign matters such as dirt, dust, moisture, frost, rust, paint, mill scale, and lacquer.
4. Unless indicated otherwise by manufacturer of sealants use backup material to control caulking depth as indicated on the Plans.

D. Application

1. Install material in strict adherence to manufacturer's instructions using appropriate approved equipment.
2. When required, apply masking tape to the perimeter of the joint to be sealed in a manner which will prevent the tape's adhesive from contacting the surface to receive the sealant. Remove tape after the sealant or caulking has been applied, but before it has set-up.
3. Apply primer to those joint surfaces against which the sealant or caulking is to be applied and allow to become tack free before the masking tape is applied.
4. Install back-up filler where indicated, and in accordance with the manufacturer's installation instructions, with visible face of placed back-up filler not further from the face of the joint than one-half the width of the joint.
5. Place sealant or caulking in a manner which will fill the joint and form a smooth surface. For exposed surfaces of gun and knife grade sealant which cannot be made smooth during initial sealing, make smooth with a tool moistened with either water or sealant solvent.
 - a. Apply gun grade sealant or caulking only when it is capable of being discharged in a continuous, uninterrupted flow.
 - b. Apply knife grade sealant or caulking only when it is capable of being applied as a smooth, plastic, homogeneous mixture free from livering, lumps, and impurities.
 - c. Place pouring grade sealant only when it is capable of being placed as a free flowing liquid mixture free from livering, lumps, and free liquids.
 - d. Do not add dilutants to sealants or caulking.

- e. Prepare sealant or caulking mixtures only in those quantities which can be applied within the time period recommended by the manufacturer.
- 6. Tool all joints to remove excess sealant or caulking and to leave the surface smooth and free of wrinkles and sags.

E. Cleaning

Remove smears and misplaced materials and mixtures resulting from sealing and caulking operations. Use cleansers of the type recommended by the manufacturer.

07951.04 METHOD OF MEASUREMENT

Sealants and caulking will not be measured.

07951.05 BASIS OF PAYMENT

Sealants and caulking will not be paid for as separate items but are considered incidental to other items of work required in the construction of specific structures that will be paid for under various items indicated in the Proposal. Payment will constitute full compensation for all labor, equipment, tools, and incidentals necessary to complete the required work.

END OF SECTION