SECTION 07 92 00

JOINT SEALANTS
06/07

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN ARCHITECTURAL MANUFACTURER'S ASSOCIATION (AAMA)

AAMA 804.1	(1992) Voluntary Specifications and Test Methods for Sealants

ASTM INTERNATIONAL (ASTM)

ASTM C 509	(2000) Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C 570	(2000) Oil- and Resin-Base Caulking Compound for Building Construction
ASTM C 920	(2002) Standard Specification for Elastomeric Joint Sealants
ASTM D 1056	(2000) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber
ASTM D 1667	(1997) Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Closed-Cell Foam)

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FS TT-S-001657	(1970) Sealing Compound - Single Component, Butyl Rubber Based, Solvent Release Type

1.2 SUBMITTALS

Government approval is required for submittals with a "G" designation; submittals not having a "G" designation are for Contractor Quality Control approval. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-07 Certificates

Sealant

Certificates of compliance stating that the materials conform to the specified requirements.

1.3 ENVIRONMENTAL CONDITIONS AND REQUIREMENTS

The ambient temperature shall be within the limits of 40 and 90 degrees F when sealant is applied.

1.4 DELIVERY AND STORAGE

Deliver materials to the job site in unopened manufacturers' external shipping containers, with brand names, date of manufacture, color and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Carefully handle and store materials to prevent inclusion of foreign materials or subjection to sustained temperatures exceeding 90 degrees F or less than 0 degrees F.

1.5 QUALITY ASSURANCE

1.5.1 Compatibility with Substrate

Verify that each of the sealants are compatible for use with joint substrates.

1.5.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

PART 2 PRODUCTS

2.1 SEALANTS

Provide sealant that has been tested and found suitable for the substrates to which it will be applied. Comply with applicable regulations regarding toxic and hazardous materials, and as specified. Sealants containing asbestos, aromatic solvents, fibrous talc, formaldehyde, halogenated solvents, mercury, lead, cadmium, chromium and their compounds, are not permitted. Sealants, primers, and cleaners required for sealant installation must also comply with all local regulations controlling VOC content.

2.1.1 Interior Sealant

One-part, mildew-resistant silicone rubber conforming to ASTM C 920, Type S, Grade NS, Class 25, Use NT. Color shall mtch surrounding material unless indicated otherwise. Location(s) and color(s) of sealant for the following:

LOCATION

a. Small voids between walls or partitions and adjacent lockers, casework, shelving,

door frames, built-in or surface-mounted equipment and fixtures, and similar items.

b. Perimeter of frames at doors, windows, and access panels which adjoin exposed interior concrete and masonry surfaces.

c. Joints of interior masonry walls and partitions which adjoin columns, pilasters, concrete walls, and exterior walls unless otherwise detailed.

d. Joints between edge members for acoustical tile and adjoining vertical surfaces.

e. Interior locations, not otherwise indicated or specified, where small voids exist between materials specified to be painted.

f. Joints between bathtubs and ceramic tile; joints between shower receptors and ceramic tile; joints formed where nonplaner tile surfaces meet.

g. Joints formed between tile floors and tile base cove; joints between tile and dissimilar materials; joints occuring where substrates change.

h. Behind escutcheon plates at valve pipe penetrations and showerheads in showers.

2.1.2 Exterior Sealant

For joints in vertical surfaces, provide single-component polyurethane conforming to ASTM C 920, Type S, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C 920, Type M, Grade P, Class 25, Use T. For exterior concealed joints and under thresholds, provide one-part butyl rubber caulk conforming to FS TT-S-001657, Type I. For exterior concealed joints between two assembled rigid surfaces in compression, provide polyisobutylene sealant tape conforming to AAMA 804.1. Color shall match surrounding material unless indicated otherwise. Provide location(s) of sealant as follows:

LOCATION

a. Joints and recesses formed where frames and subsills of windows, doors, louvers, and vents adjoin masonry, concrete, or metal frames. Use sealant at both exterior and interior surfaces of exterior wall penetrations.

b. Joints between new and existing exterior masonry walls.

LOCATION

c. Masonry joints where shelf angles occur.

d. Joints in wash surfaces of stonework.

e. Expansion and control joints.

f. Interior face of expansion joints in exterior concrete or masonry walls where metal expansion joint covers are not required.

g. Voids where items pass through exterior walls.

h. Metal reglets, where flashing is inserted into masonry joints, and where flashing is penetrated by coping dowels.

i. Metal-to-metal joints where sealant is indicated or specified.

j. Joints between ends of gravel stops, fascias, copings, and adjacent walls.

2.1.3 Floor Joint Sealant

Two-part polyurethane conforming to ASTM C 920, Type M, Grade P, Class 25, Use T, self-leveling. Color shall match surrounding material unless indicated otherwise. Provide location(s) and color(s) of sealant as follows:

LOCATION

a. Seats of metal thresholds for exterior doors.

b. Control and expansion joints in floors, slabs, ceramic tile, and walkways.

2.2 PRIMERS

Provide a nonstaining, quick-drying type and consistency recommended by the sealant manufacturer for the particular application.

2.3 BOND BREAKERS

Provide the type and consistency recommended by the sealant manufacturer to prevent adhesion of the sealant to backing or to bottom of the joint.

2.4 BACKSTOPS

Provide neoprene, butyl-rubber, polyethylene-jacketed polyurethane, or compressible rod-stock polyethylene foam, or other flexible, permanent, durable, nonabsorptive material free from oil or other staining elements as recommended by sealant manufacturer. Provide 25 to 33 percent oversized backing for closed cell and 40 to 50 percent oversized backing for open cell material, unless otherwise indicated. Make backstop material compatible with sealant. Do not use oakum and other types of absorptive materials as backstops.

2.4.1 Rubber

Conform to ASTM D 1056, Type 2, closed cell, Class A or B for oil or fuel resistance. Cross section as required for the application.

2.4.2 PVC

Conform to ASTM D 1667, Grade VO 12, open-cell foam, cross section as required for the application.

2.4.3 Synthetic Rubber

Conform to ASTM C 509, Option I, Type I preformed rods or tubes.

2.4.4 Neoprene

Conform to ASTM D 1056, or closed cell expanded neoprene cord Type 2, Class C, Grade 2C2 or open cell neoprene sponge Type 1, Class C, Grade 1C3.

2.5 CAULKING

Conform to ASTM C 570, Type for Oil- and resin-based caulking.

2.6 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer except for aluminum and bronze surfaces that will be in contact with sealant.

PART 3 EXECUTION

3.1 SURFACE PREPARATION

Clean surfaces from dirt frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would tend to destroy or impair adhesion. Remove oil and grease with solvent. Surfaces must be wiped dry with clean cloths. When resealing an existing joint, remove existing calk or sealant prior to applying new sealant. For surface types not listed below, contact sealant manufacturer for specific recommendations.

3.1.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finish work, scraping and wire brushing. Remove protective

coatings by sandblasting or using a residue-free solvent.

3.1.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive just prior to sealant application. For removing protective coatings and final cleaning, use nonstaining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

3.1.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Laitance, remove efflorescence and loose mortar from the joint cavity.

3.1.4 Wood Surfaces

Keep wood surfaces to be in contact with sealants free of splinters and sawdust or other loose particles.

3.2 SEALANT PREPARATION

Do not add liquids, solvents, or powders to the sealant. Mix multicomponent elastomeric sealants in accordance with manufacturer's instructions.

3.3 APPLICATION

3.3.1 Joint Width-To-Depth Ratios

a. Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum) over 1/4 inch	1/4 inch 1/2 of width	1/4 inch Equal to width
For wood, concrete, masonry, or stone:		
1/4 inch (minimum) Over 1/4 inch to 1/2 inch	1/4 inch 1/4 inch	1/4 inch Equal to width
Over 1/2 inch to 2 inch Over 2 inch.	1/2 inch (As recommended by sealant manufacturer)	5/8 inch

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum

b. Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is not required on metal surfaces.

3.3.2 Masking Tape

Place masking tape on the finish surface on one or both sides of a joint cavity to protect adjacent finish surfaces from primer or sealant smears. Remove masking tape within 10 minutes after joint has been filled and tooled.

3.3.3 Backstops

Install backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide a joint of the depth specified. Install backstops in the following locations:

a. Where indicated.

b. Where backstop is not indicated but joint cavities exceed the acceptable maximum depths specified in paragraph entitled, "Joint Width-to-Depth Ratios."

3.3.4 Primer

Immediately prior to application of the sealant, clean out loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's instructions. Do not apply primer to exposed finish surfaces.

3.3.5 Bond Breaker

Provide bond breakers to the back or bottom of joint cavities, as recommended by the sealant manufacturer for each type of joint and sealant used, to prevent sealant from adhering to these surfaces. Carefully apply the bond breaker to avoid contamination of adjoining surfaces or breaking bond with surfaces other than those covered by the bond breaker.

3.3.6 Sealants

Provide a sealant compatible with the material(s) to which it is applied. Do not use a sealant that has exceeded shelf life or has jelled and can not be discharged in a continuous flow from the gun. Apply the sealant in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Force sealant into joints to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Make sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled

joints, apply sealant, and tool smooth as specified. Apply sealer over the sealant when and as specified by the sealant manufacturer.

3.4 PROTECTION AND CLEANING

3.4.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled.

3.4.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

a. Masonry and Other Porous Surfaces: Immediately scrape off fresh sealant that has been smeared on masonry and rub clean with a solvent as recommended by the sealant manufacturer. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding.

b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent-moistened cloth.

-- End of Section --