UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
****

SECTION TABLE OF CONTENTS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

SECTION 07 92 00

JOINT SEALANTS

08/23

PART 1 GENERAL

1.1 REFERENCES
1.2 SUBMITTALS
1.3 PRODUCT DATA
1.4 CERTIFICATIONS
1.4.1 Indoor Air Quality Certifications
1.4.1.1 Adhesives and Sealants
1.5 ENVIRONMENTAL CONDITIONS
1.6 DELIVERY AND STORAGE
1.7 QUALITY ASSURANCE
1.7.1 Compatibility with Substrate
1.7.2 Joint Tolerance
1.7.3 Mock-Up
1.7.4 Adhesion

PART 2 PRODUCTS

2.1 SEALANTS
2.1.1 Interior Sealants
2.1.2 Exterior Sealants
2.1.3 Floor Joint Sealants
2.1.4 Acoustical Sealants
2.1.5 Preformed Sealants
2.1.5.1 Tape
2.1.5.2 Bead
2.1.5.3 Foam Strip
2.2 PRIMERS
2.3 BOND BREAKERS
2.4 BACKSTOPS
2.4.1 Rubber
2.4.2 PVC
2.4.3 Synthetic Rubber
2.4.4 Neoprene

2.4.5 Butyl Rubber Based
2.4.6 Silicone Rubber Base
2.5 CAULKING
2.6 CLEANING SOLVENTS

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL
3.2 SURFACE PREPARATION
3.2.1 Steel Surfaces
3.2.2 Aluminum or Bronze Surfaces
3.2.3 Concrete and Masonry Surfaces
3.2.4 Wood Surfaces
3.2.5 Removing Existing Hazardous Sealants
3.3 SEALANT PREPARATION
3.4 APPLICATION
3.4.1 Joint Width-To-Depth Ratios
3.4.2 Unacceptable Sealant Use
3.4.3 Masking Tape
3.4.4 Backstops
3.4.5 Primer
3.4.6 Bond Breaker
3.4.7 Sealants
3.5 PROTECTION AND CLEANING
3.5.1 Protection
3.5.2 Final Cleaning

-- End of Section Table of Contents --

UNIFIED FACILITIES GUIDE SPECIFICATIONS

References are in agreement with UMRL dated July 2023
****

SECTION 07 92 00

JOINT SEALANTS
08/23

****
NOTE: This guide specification covers the requirements for sealants for normal building construction.

Adhere to UFC 1-300-02 Unified Facilities Guide Specifications (UFGS) Format Standard when editing this guide specification or preparing new project specification sections. Edit this guide specification for project specific requirements by adding, deleting, or revising text. For bracketed items, choose applicable item(s) or insert appropriate information.

Remove information and requirements not required in respective project, whether or not brackets are present.

Comments, suggestions and recommended changes for this guide specification are welcome and should be submitted as a Criteria Change Request (CCR).
****

****
NOTE: This guide specification must be carefully modified if resealing or sealing of an addition to an existing building is required or if conditions require use of special sealing materials and designs such as high-rise curtain wall systems.
****

****
NOTE: On the drawings, show:

1. Joints in which each type of sealant will be used.

2. Typical scale or full-size details of sealant joints, indicating joint symbol or designation.
****

PART 1 GENERAL

1.1 REFERENCES

****

NOTE: This paragraph is used to list the publications cited in the text of the guide specification. The publications are referred to in the text by basic designation only and listed in this paragraph by organization, designation, date, and title.

Use the Reference Wizard's Check Reference feature when you add a Reference Identifier (RID) outside of the Section's Reference Article to automatically place the reference in the Reference Article. Also use the Reference Wizard's Check Reference feature to update the issue dates.

References not used in the text will automatically be deleted from this section of the project specification when you choose to reconcile references in the publish print process.

****

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.

ASTM INTERNATIONAL (ASTM)

ASTM C509	(2006; R 2021) Standard Specification for Elastomeric Cellular Preformed Gasket and Sealing Material
ASTM C734	(2015; R 2019) Standard Test Method for Low-Temperature Flexibility of Latex Sealants After Artificial Weathering
ASTM C834	(2017; R 2023) Standard Specification for Latex Sealants
ASTM C919	(2022) Standard Practice for Use of Sealants in Acoustical Applications
ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM C1193	(2016) Standard Guide for Use of Joint Sealants
ASTM C1311	(2022) Standard Specification for Solvent Release Sealants
ASTM C1521	(2019; R 2020) Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints

ASTM D217	(2021a) Standard Test Methods for Cone Penetration of Lubricating Grease
ASTM D1056	(2020) Standard Specification for Flexible Cellular Materials - Sponge or Expanded Rubber
ASTM D1667	(2022) Standard Specification for Flexible Cellular Materials - Poly (Vinyl Chloride) Foam (Closed-Cell)
ASTM D2452	(2015; R 2019) Standard Test Method for Extrudability of Oil- and Resin-Base Caulking Compounds
ASTM D2453	(2015; R 2020; E 2020) Standard Test Method for Shrinkage and Tenacity of Oil- and Resin-Base Caulking Compounds
ASTM E84	(2023) Standard Test Method for Surface Burning Characteristics of Building Materials

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

CDPH SECTION 01350	(2017; Version 1.2) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS	SCS Global Services (SCS) Indoor Advantage

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

SCAQMD Rule 1168	(2017) Adhesive and Sealant Applications

UNDERWRITERS LABORATORIES (UL)

UL 2818	(2022) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

****

NOTE: Review Submittal Description (SD) definitions in Section 01 33 00 SUBMITTAL PROCEDURES and edit the following list, and corresponding submittal items in the text, to reflect only the submittals required for the project. The Guide Specification technical editors have classified those items that require Government approval, due to their complexity or criticality, with a "G." Generally, other submittal items can be reviewed by the Contractor's Quality Control System. Only add a "G" to an item if the submittal is sufficiently important or complex in context of the project.

For Army projects, fill in the empty brackets following the "G" classification, with a code of up to three characters to indicate the approving authority. Codes for Army projects using the Resident Management System (RMS) are: "AE" for Architect-Engineer; "DO" for District Office (Engineering Division or other organization in the District Office); "AO" for Area Office; "RO" for Resident Office; and "PO" for Project Office. Codes following the "G" typically are not used for Navy, Air Force, and NASA projects.

The "S" classification indicates submittals required as proof of compliance for sustainability Guiding Principles Validation or Third Party Certification and as described in Section 01 33 00 SUBMITTAL PROCEDURES.

Choose the first bracketed item for Navy, Air Force, and NASA projects, or choose the second bracketed item for Army projects.

****

Government approval is required for submittals with a "G" or "S" classification. Submittals not having a "G" or "S" classification are [for Contractor Quality Control approval.][for information only. When used, a code following the "G" classification identifies the office that will review the submittal for the Government.] Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Sealants; G[, [_____]]

Primers; G[, [_____]]

Bond Breakers; G[, [_____]]

Backstops; G[, [_____]]

Caulking; G[, [_____]]

Cleaning Solvents; G[, [_____]]

SD-06 Test Reports

Field Adhesion; G[, [_____]]

SD-07 Certificates

Indoor Air Quality For Interior Sealants; S

Indoor Air Quality For Interior Floor Joint Sealants; S

Indoor Air Quality For Interior Acoustical Sealants; S

Indoor Air Quality For Interior Caulking; S

1.3 PRODUCT DATA

Include storage requirements, shelf life, curing time, instructions for mixing and application, and accessories. Provide manufacturer's Safety Data Sheets (SDS) for each solvent, primer and sealant material proposed.

[1.4 CERTIFICATIONS

****
NOTE: Include the following section where these products are used on the interior of the building (defined as inside of the weatherproofing system).
****

1.4.1 Indoor Air Quality Certifications

Submit required indoor air quality certifications in one submittal package.

1.4.1.1 Adhesives and Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party program that products meet the requirements of this Section. Provide current product certification documentation from certification body. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

]1.5 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 4 and 32 degrees C 40 and 90 degrees F.

1.6 DELIVERY AND STORAGE

Deliver materials to the jobsite in unopened manufacturers' sealed shipping containers, with brand name, date of manufacture,[color,] and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Handle and store materials in accordance with manufacturer's printed instructions. Prevent exposure to foreign materials or subjection to sustained temperatures exceeding 32 degrees C 90 degrees F or lower than 4 degrees C 0 degrees F. Keep materials and containers closed and separated from absorptive materials such as wood and insulation.

1.7 QUALITY ASSURANCE

1.7.1 Compatibility with Substrate

Verify that each sealant is compatible for use with each joint substrate in accordance with sealant manufacturer's printed recommendations for each application.

1.7.2 Joint Tolerance

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

1.7.3 Mock-Up

Provide a mock-up of each type of sealant using materials, colors, and techniques approved for use on the project. Approved mock-ups may be incorporated into the Work.

1.7.4 Adhesion

Provide in accordance with ASTM C1193 or ASTM C1521.

PART 2 PRODUCTS

2.1 SEALANTS

****

NOTE: Use Latex Sealant (ASTM C834) for temporary, low budget construction but verify toxicity of products prior to specifying; interior sealing of joints in wood or masonry, or in short joints between masonry, wood, or metal surfaces where maximum movement is anticipated not to exceed 15 percent of joint width.

Use elastomeric Sealants (ASTM C920) for interior and exterior applications where maximum joint movement is anticipated to be between 25 and 50 percent of joint width.

Chemically curing sealants should not be used adjacent to or above membrane surfaces of asphaltic or bituminous materials; a sealant based on asphalt or bituminous materials similar to those in the membrane should be used.

Since all sealants meeting this specification are not suitable for all applications and substrates, specify applicable type, grade, class, and use(s) for each intended purpose:

Type S: Single component

Type M: Multi-component

Grade P: Pourable or self-leveling sealant for horizontal applications

Grade NS: Nonsag for vertical applications

Class 25: Withstands increase and decrease of at least 25 percent of joint width

Class 12.5: Withstands increase and decrease of at least 12.5 percent of joint width

Use T: Pedestrian and vehicular traffic areas such as walkways, plazas, decks, and parking garages

Use NT: Non-traffic areas, horizontal and vertical surfaces

Use M: Meets this specification when tested on mortar

Use G: Meets this specification when tested on glass

Use A: Meets this specification when tested on aluminum

Use O: Meets this specification when tested on substrates other than above. Specify substrate types in project specification.

****

****

NOTE: In project locations with ambient temperatures that exceed 43.33 degrees C 110 degrees F; insert bracketed paragraph below.

****

Provide sealant products that have been tested, found suitable, and documented as such by the manufacturer for the particular substrates to which they will be applied.

[In areas with ambient temperatures that exceed 43.33 degrees C 110 degrees F, do not use polybutene, bituminous, acrylic-latex, polyvinyl acetate latex sealants, polychloroprene (neoprene), polyvinyl chloride (PVC), and polyurethane foams, and neoprene, PVC, and styrene butadiene rubber extruded seals and closure strips due to these materials having maximum recommended surface temperature ranges from 54.44 degrees C to 82.22 degrees C 130 to 180 degrees F.

]2.1.1 Interior Sealants

Provide[ASTM C834][ASTM C920, Type S or M, Grade NS, Class 12.5, Use NT]. Provide sealant products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide certification or validation of indoor air quality for interior sealants. Location(s) and color(s) of sealant for the following (Note, color "as selected" refers to manufacturer's full range of color options):

LOCATION	COLOR
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.	[As selected] [Gray] [White] [_____]
b. Perimeter of frames at doors, windows, and access panels which adjoin exposed interior concrete and masonry surfaces.	[_____]

LOCATION	COLOR
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 non-planar tile surfaces meet.	[_____]
g. Joints formed between tile floors and tile base cove; joints between tile and dissimilar materials; joints occurring where substrates change.	[_____]
h. Behind escutcheon plates at valve pipe penetrations and showerheads in showers.	[_____]
i. [_____]	[_____]

2.1.2 Exterior Sealants

****

NOTE: Include bracketed hybrid sealant option when thermal movement may be an issue (such as tropical environments), for joints connecting dissimilar substrates, and for applications that require both paintability and adhesion to non-porous substrates.

****

For joints in vertical surfaces, provide ASTM C920, Type S or M, Grade NS, Class 25, Use NT. For joints in horizontal surfaces, provide ASTM C920, Type S or M, Grade P, Class 25, Use T.[Hybrid sealant meeting ASTM C920, Type S, Grade NS, Class 50, use NT, M, A, G, or O.] Provide location(s) and color(s) of sealant as follows (Note, color "as selected" refers to manufacturer's full range of color options):

LOCATION	COLOR
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.	[Match adjacent surface color] [As selected] [Gray] [White] [_____]
b. Joints between new and existing exterior masonry walls.	[_____]

LOCATION	COLOR
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, fascia, copings, and adjacent walls.	[_____]
k. [_____]	[_____]

2.1.3 Floor Joint Sealants

ASTM C920, Type S or M, Grade P, Class 25, Use T. Provide sealant products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide certification or validation of indoor air quality for interior floor joint sealants. Provide location(s) and color(s) of sealant as follows (Note, color "as selected" refers to manufacturer's full range of color options):

LOCATION	COLOR
a. Seats of metal thresholds for exterior doors.	[As selected] [Gray] [White] [_____]
b. Control and expansion joints in floors, slabs, ceramic tile, and walkways.	[_____]

2.1.4 Acoustical Sealants

****

NOTE: See ASTM C919 for use of acoustical sealant.

The acoustical sealant described here is to be used only in non-moving joints protected from abuse. Other specified sealants may be used in acoustical applications when appropriate.
****

[_____] Rubber or polymer based acoustical sealant in accordance with ASTM C919 to have a flame spread of 25 or less and a smoke developed rating of 50 or less when tested in accordance with ASTM E84. Provide non-staining acoustical sealant with a consistency of 250 to 310 when tested in accordance with ASTM D217. Acoustical sealant must remain flexible and adhesive after 500 hours of accelerated weathering as specified in ASTM C734. Provide sealant products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide certification or validation of indoor air quality for interior acoustical sealants.

2.1.5 Preformed Sealants

Provide preformed sealants of polybutylene or isoprene-butylene based pressure sensitive weather resistant tape or bead sealants capable of sealing out moisture, air and dust when installed as recommended by the manufacturer. At temperatures from minus 34 to plus 71 degrees C 30 to plus 160 degrees F, sealants must be non-bleeding and have no loss of adhesion.

2.1.5.1 Tape

[_____] Tape sealant: Provide cross section dimensions of [_____].

2.1.5.2 Bead

[_____] Bead sealant: Provide cross section dimensions of [_____].

2.1.5.3 Foam Strip

****
NOTE: Untreated polyurethane foam can be used where exposed to view or where staining of adjacent surfaces is not acceptable.
****

Provide [_____] foam strip of polyurethane foam with cross section dimensions of [_____]. Provide foam strip capable of sealing out moisture, air, and dust when installed and compressed in accordance with manufacturer's printed instructions. Service temperature must be minus 40 to plus 135 degrees C minus 40 to plus 275 degrees F. Install untreated strips with adhesive to hold them in place. Do not allow adhesive to stain or bleed onto adjacent finishes. Saturate treated strips with butylene waterproofing or impregnate with asphalt.

2.2 PRIMERS

Non-staining, quick drying type and consistency as recommended by the sealant manufacturer for the particular application. Provide primers for interior applications that meet the indoor air quality requirements of the paragraph INTERIOR SEALANTS above.

2.3 BOND BREAKERS

Type and consistency as recommended by the sealant manufacturer to prevent adhesion of the sealant to the backing or to the bottom of the joint. Provide bond breakers for interior applications that meet the indoor air quality requirements of the paragraph INTERIOR SEALANTS above.

2.4 BACKSTOPS

Provide glass fiber roving, neoprene, butyl, polyurethane, or polyethylene foams 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. Provide backstop material that is compatible with sealant. Do not use oakum[, [_____]] or other types of absorptive materials as backstops.

2.4.1 Rubber

****

NOTE: Class A is adequate for most applications. Select Class B for petroleum oil or fuel resistance. Select Class D for temperatures of minus 75 to 175 degrees C minus 103 to 347 degrees F with no oil exposure.

Specify Type 2 closed cell when moisture may migrate to the backing.

****

Provide in accordance with ASTM D1056,[Type 1, open cell,][or][Type 2, closed cell,] Class [A][B][D], Grade [_____],[round] [_____] cross section for [_____] cellular rubber sponge backing.

2.4.2 PVC

****

NOTE: Do not use open cell vinyl foam in moist areas, below grade, or humid environments. Humid locations are those in ASHRAE climate zones 0A, 1A, 2A, 3A, 3C, 4C, and 5C (as identified in ASHRAE 90.1).

****

Provide in accordance with ASTM D1667, Grade [VO 12][_____], open-cell foam, [round][_____] cross section for [_____] polyvinyl chloride (PVC) backing.

2.4.3 Synthetic Rubber

****

NOTE: Use Option I and Type I for most applications. Select Option II only if flame resistance is NOT required. Type II provides the highest ozone resistance.

****

Provide in accordance with ASTM C509, Option [I][II], Type [I][II]

preformed[rods][or][tubes] for [_____] synthetic rubber backing.

2.4.4 Neoprene

Provide in accordance with ASTM D1056,[closed cell expanded neoprene cord Type 2, Class C, Grade [2C2][_____]][open cell neoprene sponge Type 1, Class C, Grade [1C3][_____]] for [_____] neoprene backing.

2.4.5 Butyl Rubber Based

Provide in accordance with ASTM C1311, from a single component, with solvent release. color[as selected from manufacturer's full range of color choices] [_____].

2.4.6 Silicone Rubber Base

Provide in accordance with ASTM C920, from a single component, with solvent release, Non-sag, Type [_____], Grade [_____], Class [25][_____]. Color[as selected from manufacturer's full range of color choices] [_____].

2.5 CAULKING

****
NOTE: The term "caulking" is limited herein to oil- and resin-based caulking which should be used only indoors and where there is little or no anticipated joint movement. Use a sealant where joints may move.
****

For interior use and only where there is little or no anticipated joint movement. Provide in accordance with ASTM D2452 and ASTM D2453, Type [_____], for [_____] oil and resin-based caulking. Provide products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide certification or validation of indoor air quality for interior caulking.

2.6 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer and in accordance with environmental requirements herein.[Protect adjacent aluminum and bronze surfaces from solvents]. Provide solvents for interior applications that meet the indoor air quality requirements of the paragraph INTERIOR SEALANTS above.

PART 3 EXECUTION

3.1 FIELD QUALITY CONTROL

Perform a field adhesion test in accordance with manufacturer's instructions and ASTM C1193, Method A or ASTM C1521, Method A, Tail Procedure. Remove sealants that fail adhesion testing; clean substrates, reapply sealants, and re-test. Test sealants adjacent to failed sealants. Submit field adhesion test report indicating tests, locations, dates, results, and remedial actions taken.

3.2 SURFACE PREPARATION

Prepare surfaces according to manufacturer's printed installation instructions. Clean surfaces from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would destroy or impair adhesion. Remove oil and grease with solvent; thoroughly remove solvents prior to sealant installation. Wipe surfaces dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, provide in accordance with sealant manufacturer's printed instructions for each specific surface.

3.2.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finished work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue free solvent. Remove resulting debris and solvent residue prior to sealant installation.

3.2.2 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 residual adhesive prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

3.2.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity. Remove resulting debris prior to sealant installation.

3.2.4 Wood Surfaces

Ensure wood surfaces that will be in contact with sealants are free of splinters, sawdust and other loose particles.

[3.2.5 Removing Existing Hazardous Sealants

For sealants applied prior to 1979, or that have been tested and found to contain polychlorinated biphenyls (PCBs), remove and dispose of these sealants in accordance with Section 02 84 33 REMOVAL AND DISPOSAL OF POLYCHLORINATED BIPHENYLS (PCBs).

]3.3 SEALANT PREPARATION

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

3.4 APPLICATION

3.4.1 Joint Width-To-Depth Ratios

Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
6 mm (minimum)	6 mm	6 mm
over 6 mm	1/2 of width	Equal to width
For wood, concrete, masonry, stone, or [_____]:		
6 mm (minimum)	6 mm	6 mm
over 6 mm to 13 mm	6 mm	Equal to width
over 13 mm to 25 mm	50 mm	16 mm
Over 25 mm	prohibited	

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, masonry, stone, or [_____]:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
over 1/2 inch to 1 inch	1/2 inch	5/8 inch
Over 1 inch	prohibited	

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 prohibited at metal surfaces.

3.4.2 Unacceptable Sealant Use

Do not install sealants in lieu of other required building enclosure weatherproofing components such as flashing, drainage components, and joint closure accessories, or to close gaps between walls, floors, roofs, windows, and doors, that exceed acceptable installation tolerances. Remove sealants that have been used in an unacceptable manner and correct building enclosure deficiencies to comply with contract documents requirements.

3.4.3 Masking Tape

Place masking tape on the finished surface on one or both sides of joint cavities to protect adjacent finished surfaces from primer or sealant smears. Remove masking tape within 10 minutes of joint filling and tooling.

3.4.4 Backstops

Provide backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide joints in specified depths. Provide backstops where indicated and where backstops are not indicated but joint cavities exceed the acceptable maximum depths specified in JOINT WIDTH-TO-DEPTH RATIOS Table.

3.4.5 Primer

Clean out loose particles from joints immediately prior to application of. Apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's printed instructions. Do not apply primer to exposed finished surfaces.

3.4.6 Bond Breaker

Provide bond breakers to surfaces not intended to bond in accordance with, sealant manufacturer's printed instructions for each type of surface and sealant combination specified.

3.4.7 Sealants

Provide sealants compatible with the material(s) to which they are applied. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the sealant gun. Apply sealants in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Work sealant into joints so as to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Apply sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply additional sealant, and tool smooth as specified. Apply sealer over sealants in accordance with the sealant manufacturer's printed instructions.

3.5 PROTECTION AND CLEANING

3.5.1 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 and no residual tape marks remain.

3.5.2 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 remove fresh sealant that has been smeared on adjacent masonry, rub clean with a solvent, and remove solvent residue, in accordance with sealant manufacturer's

printed instructions. Allow excess sealant to cure for 24 hours then remove by wire brushing or sanding. Remove resulting debris.

b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent moistened cloth. Remove solvent residue in accordance with solvent manufacturer's printed instructions.

-- End of Section --