DOWSIL™ Joint Sealants
Guide Specification (Short Form Version)

To support the growing demand for innovative, high-performance and sustainable structures, Dow is continuously strengthening its suite of construction solutions and services for building professionals. Silicon-based sealants, coatings, water repellents and concrete admixtures by Dow are designed to protect, strengthen, and preserve building materials in new construction and renovation projects. For example, silicone construction sealants have a life expectancy that is typically several times longer than organic sealants used in the same applications. They waterproof, remain flexible, and resist the effects of ultraviolet (UV) light and common temperature extremes.

Dow provides industry professionals with product information, technical expertise, design tools and other resources to create total building system solutions, based on decades of construction industry expertise, technical service, support resources, and customized construction services. Dow offers:

- Information regarding using silicone to achieve LEED® credits
- Downloadable product selection guides and data sheets
- Application and technology development education
- Evaluations to ensure proposed applications meet Dow standards for warrantable performance
- AIA Continuing Education programs

Working with leading architects and contractors, Dow has contributed to innovative designs such as the Solano County Government Center in Fairfield, CA. Solano County's first LEED-certified building. The building incorporates significant sustainable design/build elements, including extensive use of solar electricity and an award-winning co-generation plant. Silicone sealants by Dow complement its energy-efficient technologies with contributions to its weatherproofing and life-cycle.

Dow provides performance-enhancing solutions to serve the diverse needs of more than 25,000 customers worldwide. A global leader in silicones, silicon-based technology and innovation, Dow offers more than 7,000 products and services via the company's DOWSIL™ and XIAMETER™ (xiameter.com) brands. More than half of Dow Consumer Solutions' annual sales are outside the United States.

A full-length version of this section is available for larger scale commercial and institutional projects.

We recommend you consult with your Dow construction technical representative, who can be contacted through:
The Dow Chemical Company, Midland MI; (877) SEALANT ((877) 732-5268); email: construction@dow.com;
dow.com/construction.

Products from Dow appear in the following CSI Master Format specifications sections:

- Section 07 01 91 Joint Sealant Rehabilitation and Replacement
- Section 07 92 00 Joint Sealants
- Section 08 85 00 Glazing Sealants
- Section 09 96 53 Silicone Elastomeric Coatings
- Section 32 13 73 Concrete Paving Joint Sealants

A full-length version of this specification is also available.

SECTION 07 92 00 – JOINT SEALANTS Short Form Version

PART 1 – GENERAL

1.1 SUMMARY

A. Section includes exterior elastomeric weatherproofing sealants and interior joint sealants.

1.2 SUBMITTALS

A. Product Data: For each type of joint sealant product specified.

B. Samples for Color Selection: For each joint sealant type.

C. Samples for Verification: For each exterior joint sealant product, for each color selected.

D. Qualification Data: For qualified applicator.

E. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.

F. Preconstruction field-adhesion test reports.

G. Warranty: Sample of unexecuted manufacturer and installer special warranties.

1.3 QUALITY ASSURANCE

A. Installer Qualifications: Experienced Installer equipped and trained for application of joint sealants required for this Project with record of successful completion of projects of similar scope.

B. Single Source Responsibility: Provide exterior joint sealants by a single manufacturer.

C. Preconstruction Field-Adhesion Testing: Prior to installing joint sealants, field test adhesion to joint substrates using ASTM C 1193 Method A or method recommended by manufacturer. Verify adhesion is adequate. Modify joint preparation recommendations for failed joints and re-test. Submit written report to Architect.

1.4 WARRANTY

Specifier: Coordinate Installer's warranty provisions with requirements for Contractor's period for correction of work, which is frequently extended from one year to two or more years for components of the exterior weather envelope.

A. Special Installer’s Warranty: Original statement on Installer’s letterhead in which Installer agrees to repair or replace joint sealants that demonstrate deterioration or failure within warranty period specified. of projects of similar scope.

1. Warranty Period: [Two] years from date of Substantial Completion.

Specifier: Verify warranty provisions for specified products. Dow typically offers warranty periods of up to 20 years for exterior silicone sealants materials.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint sealant manufacturer agrees to furnish joint sealants to repair or replace those that demonstrate deterioration or failure under normal use within warranty period specified.

1. Warranty Period for Silicone Sealants: [20] years following date of Substantial Completion.

C. Warranty Conditions: Special warranties exclude deterioration or failure of joint sealants in normal use due to structural movement resulting in stresses on joint sealants exceeding sealant manufacturer's written specifications, joint substrate deterioration, mechanical damage, or normal accumulation of dirt or other contaminants.

PART 2 – PRODUCTS

2.1 MANUFACTURER

Specifier: Retain option for substitutions below when required for Project.

A. Basis-of-Design Product: Provide elastomeric coatings manufactured by The Dow Chemical Company., Midland MI; (877) SEALANT, (877) 732-5268; email: construction@dow.com; website: dow.com/construction

2.2 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants and accessory materials that are compatible with one another, with joint substrates, and with materials in close proximity under use conditions, as demonstrated by sealant manufacturer by testing and related experience.

B. Joint Sealant Standard: Comply with ASTM C 920 and other specified requirements for each liquid-applied joint sealant.

C. Stain Test Characteristics: Where sealants are required to be nonstaining, provide sealants tested per ASTM C 1248 as non-staining on porous joint substrates indicated for Project.

D. Food Contact Suitability: Where sealants are required to be suitable for contact with food provide sealants complying with 21 CFR 177.2600.

Specifier: ASTM C 920 Joint Sealant Use Types, Grades, Classes, and Uses that are used in reference specifications below are as follows:

Type S: Single component
Type M: Multi-components
Grade P: Pourable
Grade NS: Non-sag
Class XX: Movement capability, percent
Class XX/YY: Movement capability, percent, expansion/contraction
Exposure Use T: Traffic
Exposure Use NT: Non-traffic
Substrate Use G: Glass
Substrate Use M: Mortars
Substrate Use A: Aluminum
Substrate Use O: Other

Specifier: Joint sealants listed in the WEATHERPROOFING LIQUID SILICONE JOINT SEALANTS article are non-sag silicone joint sealants with varying chemistry for use in non-traffic-bearing applications. Dow's product data sheets provide detailed guidance on the recommended applications for these joint sealants.

2.3 WEATHERPROOFING LIQUID SILICONE JOINT SEALANTS

DOWSIL™ 790 Silicone Building Sealant is a one-component, ultra-low modulus, neutral-cure silicone rubber sealant for above-grade high movement expansion and control joints of most building materials and for both new and remedial construction. Product is also used in certain traffic bearing applications. Product complies with GSA Commercial Item Descriptions CID A A 272A and CID A A 1556. Product is acceptable for use in certain UL fire-resistance-rated designs; refer to www.ul.com for list and description of approved designs.

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#**__: ASTM C 920, Type S, Grade NS, Class 100/50, for Use T, NT; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 790 Silicone Building Sealant**.
2. Color: [As scheduled] [As selected by Architect from manufacturers full line of not less than 10 colors] [Match Architect's custom color].

Specifier: **DOWSIL™ 756 SM Building Sealant** is a one-component, medium-modulus, neutral cure elastomeric silicone sealant suitable for weatherproofing porous stone, metal panels, curtain wall framing, and other above-grade expansion and control joints for both new and remedial construction.

B. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#**__: ASTM C 920, Type S, Grade NS, Class 50, for Use NT; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 756 SM Building Sealant**.
2. Color: [As scheduled] [As selected by Architect from manufacturers full line of not less than 8] [Match Architect's

Specifier: **DOWSIL™ 791 Silicone Weatherproofing Sealant** is a one-component, medium-modulus, neutral-cure silicone sealant for general glazing and above-grade weathersealing in curtainwalls and building facades for both new and remedial construction. Product complies with GSA Commercial Item Descriptions CID A-A-272A and CID A-A-1556.

C. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#**__: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, G, M, and A; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 791 Silicone Weatherproofing Sealant**.
2. Color: [As selected by Architect from manufacturer's full line of not less than 6 colors].

Specifier: **DOWSIL™ 795 Silicone Building Sealant** is a one-component, medium modulus, neutral-cure, RTV (room temperature vulcanizing) silicone rubber sealant for structural and non-structural glazing, structural attachment for panel systems, as well as above-grade weathersealing joints with most common constructions materials for both new and remedial construction. Product complies with GSA Commercial Item Descriptions CID A-A-272A and CID A-A-1556.

D. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#**__: ASTM C 920, Type S, Grade NS, Class 50, for Use NT, G, A, and O; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 795 Silicone Building Sealant**.
2. Color: [As scheduled] [As selected by Architect from manufacturers full line of not less than 10] [Match Architect's custom color].

Specifier: **DOWSIL™ 995 Silicone Structural Sealant** is designed for excellent adhesion in structural applications, including factory or field glazing. It adheres to glass, reflective glass, anodized aluminum, granite and most paints, including fluoropolymer-based paints. It exhibits a medium modulus, which offers an extremely high tensile adhesion strength. Ideal for use as a glazing sealant in high-

performance protective window systems that increase personal safety from flying glass. Tolerates the differential thermal and windload movements found in structural glazing applications and the severe stresses required of an impact-resistant glazing product. Volatile Organic Compound (VOC) Content: 34 g/L maximum.

E. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#**__: ASTM C 920, Type S, Grade NS, Class 50, for Use NT; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 995 Silicone Building Sealant**.
2. Color: [As scheduled] [As selected by Architect from manufacturers full line].

Specifier: **DOWSIL™ 758 Silicone Weather Barrier Sealant** is a one-component, medium modulus, neutral-cure, silicone rubber sealant for above-grade weathersealing joints with compatibility and strong adhesion to a wide array of common construction materials, including peel-and-stick window flashings, building wraps, polyolefins, and PVCs for both new and remedial construction.

F. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#**__: ASTM C 920, Type S, Grade NS, Class 25, for Use NT; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 758 Silicone Weather Barrier Sealant**.
2. Color: White.

Specifier: **DOWSIL™ 999A Silicone Building & Glazing Sealant** is a one part, weather-resistant silicone sealant formulated for a wide range of building construction applications. It is particularly effective for glazing butt and lap shear joints and sealing curtainwall and other glasss, plastic, and metal assemblies. It can also be factory applied as a primary seal to glass, plastic and metal assemblies. 999-A is not suitable for structural glazing. It is coms, plasticizers, or solvents. Proper cure requires presence of moisture.

G. Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant **JS#__**: ASTM C 920, Type S, Grade NS, Class 25, for Use NT, G, and A.

1. Basis of Design Product: **DOWSIL™ 999A Silicone Building & Glazing Sealant**.
2. Color: [As scheduled] [As selected by Architect from manufacturers full line of not less than 6] [Match Architect's custom color].

Specifier: Joint sealants listed in the INTERIOR LIQUID SILICONE JOINT SEALANTS article are non-traffic-bearing and non-sag, silicone joint sealants with varying chemistry. Dow's product data sheets provide detailed guidance on the recommended applications for these joint sealants.

2.4 INTERIOR LIQUID JOINT SEALANTS

Specifier: **DOWSIL™ 786 Silicone Sealant** is a one-component, silicone rubber sealant that is mildew resistant when cured and is suitable for sealing tubs, showers, sinks, porcelain, cultured marble, glass, painted areas, and other nonporous surfaces and plumbing fixtures for both new and remedial construction. DOWSIL™ 786 Silicone Sealant is available in clear, white, translucent white, gray, and almond. Not for use on brass or copper.

Mildew resistance is established by Dow based upon several test methods; contact your Dow representative for more information.

A. Mildew-Resistant, Single-Component, Nonsag, Acid-Curing Silicone Joint Sealant **JS#__**: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Basis of Design Product: **DOWSIL™ 786 Silicone Sealant**.
2. NSF Standard 51 and FDA Regulation No. 21 CFR 177.2600 compliant.
3. Color: As selected by Architect from manufacturer's standard colors.

DOWSIL™ 790 Silicone Building Sealant is a one-component, ultra-low modulus, neutral-cure silicone rubber sealant for above-grade expansion and control joints of most building materials and for both new and remedial construction. Product complies with GSA Commercial Item Descriptions CID A-A-272A and CID A-A-1556. Product is acceptable for use in certain UL fire-resistance-rated designs. Refer to www.ul.com for list and description of approved designs.

B. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant **JS#__**: ASTM C 920, Type S, Grade NS, Class 100/50, for Use T, NT; SWRI validation.

1. Basis of Design Product: **DOWSIL™ 790 Silicone Building Sealant**.
2. Color: [As scheduled] [As selected by Architect from manufacturers full line of not less than 10] [Match Architect's custom color].

Specifier: Latex Joint Sealants and Butyl-Rubber Based Joint Sealant are not products from Dow but are available from a variety of other manufacturers; they are included in this guide specification for your project specifying convenience. Latex joint sealant is frequently specified for interior, non-moving, paintable joints. Butyl rubber joint sealant is frequently specified for interior and exterior concealed joints within metal assemblies.

C. Latex Joint Sealant: Siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

D. Butyl-Rubber-Based Joint Sealant: ASTM C 1311.

2.5 PRE-FORMED JOINT SEALANTS

Specifier: **DOWSIL™ 123 Silicone Seal** is an extruded sheet product used for flashing and transitions in new construction and as a joint overlay in joint sealant rehabilitation work. It is available in widths of 1 – 12 inches (25 - 305 mm). Indicate required widths on drawing details. It is available in 6 standard colors and custom colors.

A. Preformed Silicone Elastomer Extrusion: Highly flexible low-modulus flashing and transition material for bonding to substrates with silicone sealant. SWRI validation.

1. Basis of Design Product: **DOWSIL™ 123 Silicone Seal**.
2. Surface: [Smooth matte] [Textured] [Grooved to facilitate bending].
3. Bonding Sealant: Manufacturer's recommended neutral-curing silicone.
4. Color: As selected by Architect from manufacturer's full line.

Specifier: **DOWSIL™ 123 Silicone Seal Custom Designs H.C**. is preformed, custom-designed and fabricated, two- and three-dimensional, shaped silicone elastomer extrusion for repair of failed sealant joints or use in new construction splices, mitered joints (boots), and molded corners.

B. Preformed Silicone Elastomer Custom Two- and Three- Dimension Extrusion: Highly flexible flashing and transition material for bonding to substrates with silicone sealant.

1. Basis of Design Product: **DOWSIL™ 123 Silicone Seal Custom Designs H.C.**
2. Formulation: [General Purpose] [High Tear].
3. Shape: Multi-dimensional as indicated on drawings and approved shop drawings and as required to fit and functionally seal specific application and prevent air and water penetration
4. Bonding Sealant: Manufacturer's recommended neutral-curing silicone.
5. Color: As selected by Architect from manufacturer's full line.

2.6 WEATHER BARRIER TRANSITIONS

Specifier: **DOWSIL™ Silicone Transition Strip (STS)** is a silicone sealant-compatible flexible membrane interface between a variety of air/vapor barrier materials and window, storefront, and curtainwall opening frames. It permanently accommodates the differential thermal movement between wall systems and metal frames, maintaining airtight- and watertight-connections necessary in high performance buildings. Coordinate with Division 07 air barrier section and Division 08 opening sections. Recommended silicone sealants for installing DOWSIL™ STS is **DOWSIL™ 758 Silicone Weather Barrier Sealant**, **DOWSIL™ 791 Silicone Weatherproofing Sealant**, and **DOWSIL™ 795 Silicone Building Sealant**.

A. Silicone Elastomer Weather Barrier Transitions: Highly flexible clear flashing and transition sheet and pre-molded corners for bonding with silicone sealant to weather barrier substrates and to adjacent curtain wall, storefront, and window frames and other transition substrates.

1. Basis of Design Product: **DOWSIL™ Silicone Transition Strip (STS)**.
2. Bonding Sealant: Manufacturer's recommended neutral-curing silicone.

2.7 ACCESSORIES

A. Joint Substrate Primers: Substrate primer recommended by sealant manufacturer for application.

B. Cylindrical Sealant Backing: ASTM C 1330, Type B non-absorbent, bi-cellular material with surface skin, or Type O open-cell polyurethane, as recommended by sealant manufacturer for application.

C. Bond Breaker Tape: Polymer tape compatible with joint sealant materials and recommended by sealant manufacturer.

PART 3 – EXECUTION

3.1 EXAMINATION

A. Examine joint profiles and surfaces to determine if work is ready to receive joint sealants. Verify joint dimensions are adequate for development of sealant movement capability. Proceed with joint sealant work once conditions meet sealant manufacturer's recommendations.

3.2 PREPARATION

A. Joint Surface Cleaning: Clean joints prior to installing joint sealants using materials and methods recommended by sealant manufacturer.

3.3 APPLICATION

A. Masking: Mask adjacent surfaces to prevent staining or damage by contact with sealant or primer.

B. Joint Priming: Prime joint substrates when recommended by sealant manufacturer or when indicated by preconstruction testing or experience. Apply recommended primer using sealant manufacturer's recommended application techniques.

C. Joint Backing: Select joint backing materials recommended by sealant manufacturer to be compatible with sealant material. Install backing material at depth required to produce profile of joint sealant allowing optimal sealant movement.

D. Sealant Application: Install sealants using methods recommended by sealant manufacturer, in depths recommended for application. Apply in continuous operation from bottom to top of joint vertically and horizontally in a single direction. Apply using adequate pressure to fill and seal joint width.

E. Cleaning: Remove excess sealant using materials and methods approved by sealant manufacturer that will not damage joint substrate materials.

END OF SECTION

Additional Specifiers Notes

Substitution Reviews: When reviewing substitution requests for other products for compliance with this specification, Dow recommends particular attention to the following issues:

Primer Requirements: Dow's experience often results in requiring priming of joint sealant substrates when other manufacturers waive priming requirements as a cost-saving provision that may benefit the contractor but not the owner. Make certain that field testing of joint sealants is carried out to ensure long term adhesion.

SWRI Certification: This respected industry certification is an additional layer of Dow's quality assurance provided by an independent agency.

Laboratory Testing: Dow provides laboratory testing of joint sealants on proposed substrates when requested for a project – another quality assurance process that helps protect the long-term integrity of your building.

Silicone vs. Urethane Substitutions: Organic-based urethane sealants are not a substitute for silicone technology. The limited warranty periods available for urethane sealants indicate that their expected life is significantly less than that of silicone sealants.

Coordination: Make sure you coordinate the following:

- Profile of typical joints to accept joint sealant. Special attention to perimeter joints at wall openings.
- Compatibility of joint sealant chemistry with substrates in contact. Special attention to air barrier membranes and accessories.
- Extent of each type of joint sealant applications through drawing identification or editing of the joint sealant schedules.
- Cross-reference to applicable specification sections for joint sealant requirements written under other sections.
- Submittal requirements for color-matching to samples of products specified in other sections.

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