

The accompanying guide specification has been prepared by May National Associates, Inc. according to principles established in the *Manual of Practice* published by The Construction Specifications Institute. It is provided to assist design professionals, building owners and others in the preparation of a specification section covering elastomeric joint sealants and related items. It may be used in conjunction with most commercially available master specification sections with minor editing as the basis for developing a project specification or an office master specification.

This specification guide is provided for:

Section 07920 (file 07920spc.): A guide specification that may be used as is or modified as you wish.

Please contact your nearest Bondaflex representative or May National Associates, Inc. at 1-800-641-0234 for additional copies, information on available electronic formats or design assistance.

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes: Provide elastomeric joint sealants, joint backer materials and accessories needed to ensure a complete and durable weather tight seal at all locations indicated.
- B. Related work:
 - 1. Documents affecting work of this Section include, but are not necessarily limited to, General Conditions, Supplementary Conditions, and Sections in Division 1 of these Specifications.

1.2 SUBMITTALS

- A. Comply with pertinent provisions of Section 01330.
- B. Product data:
 - 1. Materials list of items proposed to be provided under this Section.
 - 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements.
 - 3. Shop Drawings or catalog illustrations in sufficient detail to show installation and interface of the work of this Section with the work of adjacent trades.
 - 4. Manufacturer's current recommended installation procedures which, when reviewed by Architect, will become the basis for accepting or rejecting actual installation procedures used on the Work.
 - 5. Written documentation of applicator's qualifications, including reference projects of similar scope and complexity, with current phone contacts of architects and owners for verification.
 - 6. Certifications from sealant manufacturer that their products are suitable for the use indicated and comply with specification requirements, including S.W.R.I. validation.
 - 7. Report from sealant applicator summarizing results of pre-construction field adhesion testing.

1.3 QUALITY ASSURANCE

- A. Use adequate numbers of skilled workmen thoroughly trained and experienced in the necessary crafts and completely familiar with the specified requirements and methods needed for proper performance of the work of this Section.
- B. Applicator qualifications:
 - 1. Applicator shall have at least three years experience in installing materials of types specified and shall have successfully completed at least three projects of similar scope and complexity.
 - 2. Applicator shall designate a single individual as project foreman who shall be on site at all times during installation.
- C. Single source responsibility for joint sealants:
 - 1. Where possible obtain joint sealants and primers from single manufacturer for each different product required ensuring compatibility.
 - 2. Respective manufacturers shall instruct applicator in procedures for intersecting sealants whenever different supplier must be used.
- D. Perform work in accord with ASTM C-1193 guidelines except where more stringent requirements are indicated or specified.
- E. Pre-construction compatibility and adhesion testing:
 - 1. Submit to joint sealant manufacturer samples of actual production materials that will contact or affect their joint sealants in the Work for compatibility as per ASTM C-1087 and adhesion testing per ASTM C-794.
 - 2. This testing will not be required where sealant manufacturer is able to furnish data acceptable to Architect based on previous testing for adhesion and compatibility to materials matching those of the Work.
- F. Pre-construction field adhesion testing:
 - 1. In jobsite field samples prior to general installation, conduct field-tests for adhesion of joint sealants to actual joint substrates using proposed joint preparation methods recommended by manufacturer.
 - 2. Conduct tests for each type of sealant and substrate.
 - 3. Locate field-test joints where inconspicuous or as approved by Architect.
 - a. Include areas typical of those requiring removal of existing sealants and utilize methods proposed for sealant removal that have been pre-approved by Architect.
 - 4. Test method: Use manufacturer's standard field adhesion test methods and methods proposed for joint preparation to verify proper priming and joint preparation techniques required to obtain optimum adhesion of joint sealants to joint substrate.
 - 5. Evaluate and report results of field adhesion testing.
 - 6. Do not use joint preparation methods or sealants that produce less than satisfactory adhesion to joint substrates during testing.
- G. Standard of acceptance:
 - 1. Joints installed during pre-construction field adhesion testing that are accepted by Architect shall be retained as standard of acceptability and incorporated into Work of that area during general installation.
 - 2. At least one such standard of minimum 5 feet in length shall be established for each type of sealant and substrate.

- H. Schedule applications of waterproofing water repellents and preservative finishes after sealant installation unless sealant manufacturer approves otherwise in writing. Ensure that installed sealant is allowed to cure sufficiently prior to subsequent applications.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Deliver the materials to the job site in the manufacturer's unopened containers with all labels intact and legible at time of use.
- B. Store materials in accord with manufacturer's recommendations with proper precautions to ensure fitness of material when installed.
- C. Comply with pertinent provisions of Section 01660.

1.5 SUBSTRATE CONDITIONS

- A. General:
 - 1. Provide joints properly dimensioned to receive the approved sealant system.
 - 2. Provide joint surfaces that are clean, dry, sound and free of voids, deformations, protrusions and contaminants that may inhibit application or performance of the joint sealant.
 - 3. Where expansion joints having preformed joint fillers are scheduled to be sealed, provide a reservoir to accept the sealant such as by a molded breakaway joint cap or a removable block out.

1.6 WARRANTY

- A. Deliver to the Architect signed copies of the following written warranties against adhesive and cohesive failure of the sealant and against infiltration of water and air through the sealed joint for a period of 3 years from date of completion.
 - 1. Manufacturer's standard warranty covering sealant materials;
 - 2. Applicator's standard warranty covering workmanship.

PART 2 PRODUCTS

2.1 GENERAL

- A. Acceptable manufacturer: Bondaflex/May National Associates Inc. (800) 641-0234.
- B. Compatibility:
 - 1. Provide joint sealants, joint fillers and accessory joint materials that are compatible with one another and with joint substrates under project conditions.
 - 2. Install joint sealants, joint fillers and related joint materials that are non-staining to visible joint surfaces and surrounding substrate surfaces.
- C. Provide colors selected by Architect from manufacturer's standard color range.

2.2 ELASTOMERIC SEALANTS

- A. Sealant Type A:
 - 1. For exterior joints in vertical surfaces and non-traffic horizontal surfaces such as, but not limited to:
 - a. Control and expansion joints in cast-in-place concrete.

- b. Joints between architectural pre-cast concrete units.
 - c. Control and expansion joints in unit masonry.
 - d. Butt joints between metal panels.
 - e. Joints between marble and/or granite.
 - f. Joints between different materials listed above.
 - g. Perimeter joints between materials listed above and frames of doors, windows, storefronts, louvers and similar openings.
 - h. Control and expansion joints in ceiling and overhead surfaces.
2. Provide single-component or multi-component, low-modulus, non-sag sealant; comply with ASTM C920, Type S or M, Grade NS, Class 25, Class +50/-50, Class +100/-50
 3. Acceptable sealants:
 - a. Polyurethanes and Hybrids
 1. Single Component
 - i. Bondaflex Technologies PUR 25
 - ii. Bondaflex Technologies PUR 25 TEX
 - iii. Bondaflex Technologies PUR 35 SL
 - iv. Bondaflex Technologies PUR 40 FC
 - v. Bondaflex Technologies STP 25
 - b. Silicones
 1. Single Component
 - i. Bondaflex Technologies Sil 200 GPN
 - ii. Bondaflex Technologies Sil 200 SL
 - iii. Bondaflex Technologies Sil 290
 - iv. Bondaflex Technologies Sil 295
 - v. Bondaflex Technologies Silbridge 300
 - vi. Bondaflex Technologies Sil 728 NS
 - vii. Bondaflex Technologies Sil 728 SL
 - viii. Bondaflex Technologies Sil 728 SG

B. Sealant Type B:

1. For interior joints in vertical surfaces and non-traffic horizontal surfaces such as, but not limited to:
 - a. Control and expansion joints on exposed interior surfaces of exterior walls.
 - b. Perimeter joints on exposed interior surfaces of exterior openings.
 - c. Joints on pre-cast beams and planks.
 - d. Perimeter joints between interior wall surfaces and frames of interior doors, windows, storefronts, louvers, elevator entrances and similar openings.
 - e. Trim or finish joints subject to movement.
2. Acceptable sealants
 - a. Polyurethanes and Hybrids
 1. Single Component
 - i. Bondaflex Technologies PUR 25
 - ii. Bondaflex Technologies PUR 25 TEX
 - iii. Bondaflex Technologies PUR 35 SL
 - iv. Bondaflex Technologies PUR 40 FC
 - v. Bondaflex Technologies STP 25

- b. Silicones
 - 1. Single Component
 - i. Bondaflex Technologies Sil 200 GPN
 - ii. Bondaflex Technologies Sil 200 SL
 - iii. Bondaflex Technologies Sil 290
 - iv. Bondaflex Technologies Sil 295
 - v. Bondaflex Technologies Silbridge 300
 - vi. Bondaflex Technologies Sil-A 700
 - vii. Bondaflex Technologies 600 AC

C. Sealant Type C:

- 1. For exterior and interior joints in horizontal and sloped traffic surfaces such as, but not limited to:
 - a. Control expansion and isolation joints in cast-in-place concrete.
 - b. Control expansion and isolation joints in structural pre-cast concrete units.
 - c. Joints between architectural pre-cast concrete paving units.
 - d. Tile control and expansion joints.
 - e. Joints between different materials listed above.
- 2. Provide single-component or multi-component polyurethane complying with ASTM C920, Type S or M, Grade P, Class 25 or silicone sealant complying with ASTM C920, Type S or M, Grade P or NS, Class 100/50.
- 3. Acceptable sealants:
 - a. Polyurethane
 - 1. Single Component
 - i. Bondaflex Technologies PUR 35 SL
 - b. Silicone
 - 1. Single Component
 - i. Bondaflex Technologies Sil 200 SL
 - ii. Bondaflex Technologies Sil 728 NS
 - iii. Bondaflex Technologies Sil 728 SL
 - iv. Bondaflex Technologies Sil 728 SG
 - 2. Multi-Component
 - i. Bondaflex Technologies Sil 728 RCS

D. Sealant Type E:

- 1. For exterior and interior joints in vertical and horizontal surfaces of potable water storage areas.
- 2. Provide single-component or multi-component polyurethane sealant certified by National Sanitation Foundation as conforming to the requirements of NSF Standard 61-Drinking Water System Components-Health Effects; comply with ASTM C920, Type S or M, Grade P or NS, Class 25; select color from the NSF listing.
- 3. Acceptable sealants:
 - a. Silicone
 - 1. Single Component
 - i. Bondaflex Technologies Sil 100 GP
 - ii. Bondaflex Technologies SIL 100 WF

- E. Sealant Type F:
 - 1. For interior joints in vertical and horizontal surfaces where incidental food contact may occur.
 - 2. Provide single component or multi-component sealant complying United States Department of Agriculture (USDA) guidelines for incidental food contact with the cured sealant; comply with ASTM C920, Type S or M, Grade P or NS, Class 25; select color from listing of those approved.
 - 3. Acceptable Sealants:
 - a. Silicone
 - 1. Single Component
 - i. Bondaflex Technologies Sil 100 GP
 - ii. Bondaflex Technologies Sil 100 HT Red
 - iii. Bondaflex Technologies Sil 100 WF

- F. Sealant Type I:
 - 1. For interior or exterior joints in vertical surfaces between laps in fabrications of sheet metal.
 - 2. Acceptable products:
 - a. Polyurethanes and Hybrids
 - 1. Single Component
 - i. Bondaflex Technologies PUR 40 FC
 - ii. Bondaflex Technologies PUR 50 FC
 - iii. Bondaflex Technologies PUR 60 FC
 - iv. Bondaflex Technologies STP 35

- G. Sealant Type J:
 - 1. For exterior vertical joints under metal thresholds and saddles or as bedding sealant for sheet metal flashing and frames of metal or wood.
 - 2. Acceptable products:
 - a. Polyurethanes
 - 1. Single Component
 - i. Bondaflex Technologies PUR 25
 - ii. Bondaflex Technologies PUR 25 TEX
 - iii. Bondaflex Technologies PUR 40 FC
 - b. Silicone
 - 1. Single Component
 - i. Bondaflex Technologies SIL 290
 - ii. Bondaflex Technologies SIL 295

2.3 ACCESSORIES

- A. Joint cleaner: Cleaner as recommended by sealant manufacturer for substrates indicated.
- B. Joint primer: As recommended by sealant manufacturer for substrates, conditions and exposures indicated.

- C. Bond breaker: Polyethylene tape or other adhesive faced tape as recommended by sealant manufacturer to prevent sealant contact where it would be detrimental to sealant performance.
- D. Joint backer: Closed cell, polyethylene open cell polyurethane or non-gassing polyolefin foam rod or other compatible non-waxing, non-extruding, non-staining resilient material in dimension 25 percent to 40 percent wider than joint width as recommended by sealant manufacturer for conditions and exposures indicated.
- E. Masking tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces that is suitable for masking.

2.4 OTHER MATERIALS

- A. Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor and approved by the sealant manufacturer as compatible, subject to review of the Architect.

PART 3 EXECUTION

3.1 SURFACE CONDITIONS

- A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.
- B. Applicator shall examine the areas and conditions under which work of this Section will be performed.
 - 1. Verify conformance with manufacturer's requirements;
 - 2. Report unsatisfactory conditions in writing to the Architect;
 - 3. Do not proceed until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Prepare surfaces to receive sealants in accordance with sealant manufacturer's instructions and recommendations except where more stringent requirements are indicated.
- B. Thoroughly clean joint surfaces using cleaners approved by sealant manufacturer whether primers are required or not.
 - 1. Remove all traces of previous sealant and joint backer by mechanical methods, such as by cutting, grinding and wire brushing, in manner not damaging to surrounding surfaces.
 - 2. Remove paints from joint surfaces except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer.
 - 3. Remove wax, oil, grease, dirt film residues, temporary protective coatings and other residues by wiping with cleaner recommended for that purpose. Use clean, white, lint-free cloths and change cloths frequently.
 - 4. Remove dust by blowing clean with oil-free, compressed air.
- C. Prime joint substrates where required.
- D. Provide bond-breaker where indicated or recommended by sealant manufacturer, adhering strictly to the manufacturers installation requirements.
- E. Provide joint backer material uniformly to depth required by sealant manufacturer for proper joint design using a blunt instrument.
 - 1. Fit securely by compressing backer material 25 percent to 40 percent so no displacement occurs during tooling.
 - 2. Avoid stretching or twisting joint backer.

1. Use and apply primer according to sealant manufacturers recommendations.
 2. Confine primers to sealant bond surfaces; do not allow spillage or migration onto adjoining surfaces.
- F. Taping:
1. Use masking tape where required to prevent sealant or primer contact with adjoining surfaces that would be permanently stained or otherwise damaged by such contact or the cleaning methods required for removal.
 2. Apply tape so as not to shift readily and remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION

- A. Provide the approved sealant system where shown on the Drawings, and in strict accord with the manufacturer's recommendations as approved by the Architect.
- B. Install sealants immediately after joint preparation. Joint must be reprep'd if sealant not installed during a typical 8 hour work shift.
- C. Mix and apply multi-component sealants in accord with manufacturer's printed instructions.
- D. Install sealants to fill joints completely from the back, without voids or entrapped air, using proven techniques, proper nozzles and sufficient force that result in sealants directly contacting and fully wetting joint surfaces.
- E. Install sealants to uniform cross-sectional shapes with depths relative to joint widths that allow optimum sealant movement capability as recommended by sealant manufacturer.
- F. Tool sealants in manner that forces sealant against back of joint, ensures firm, full contact at joint interfaces and leaves a finish that is smooth, uniform and free of ridges, wrinkles, sags, air pockets and embedded impurities.
 1. Dry tool.
 2. Provide concave tooled joints unless otherwise indicated to provide flush tooling or recessed tooling.
 3. Provide recessed tooled joints where the outer face of substrate is irregular.
- G. Remove sealant from adjacent surfaces in accord with sealant and substrate manufacturer recommendations as work progresses.
- H. Protect joint sealants from contact with contaminating substances and from damages. Cut out, remove and replace contaminated or damaged sealants, immediately, so that they are without contamination or damage at time of substantial completion.

END OF SECTION