

## SECTION 07 92 00 - JOINT SEALANTS

### PART 1 - GENERAL

#### 1.1 SUMMARY

##### A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Butyl joint sealants.
4. Latex joint sealants, except for sound or fire-rated assemblies.
5. Sanding joints.

##### B. Requirements of this Section applies to all sealants used in the Project and specified in other Sections.

##### C. Reference: For joint Sealants Installed Under Other Sections:

1. Air Barrier: See Section 07 27 00.
2. In Roofing: See Section 07 54 23.
3. Flashings and Trim: Within and concealed, See Section 07 62 00.
  - a. Exposed sealants are installed under requirements of this Section.
4. Entrances and Storefronts: See Section 08 41 13.
5. Curtainwall: See Section 08 44 13.
6. Glazing: See Section 08 80 00.
7. Acoustical: See Section 09 29 00~~07 92 19~~.
8. Tile: See Section 09 30 00.

##### D. Related Requirements:

1. Section 06 16 00 "Sheathing" for requirements for joint sealant at plywood, for sealant installed under this Section.
- ~~1.2.~~ Section 07 19 00 "Water Repellents" for sequencing sealant installation prior to repellents.
- ~~2.3.~~ Section 07 27 00 "Air Barriers" for sealants associated with air barriers.
- ~~3.4.~~ Section 09 29 00 "Gypsum Board" for acoustical joint sealant for sealing joints in sound-rated construction and fire-rated assemblies.
- ~~4.5.~~ Division 08 Openings for weathersealing joints in glazing systems and louvers.
- ~~5.6.~~ Division 32 for sealing joints in paved roads, parking lots, walkways, and curbing.

#### 1.2 PREINSTALLATION MEETINGS

##### A. Preinstallation Conference: Conduct conference at Project site.

1. Review sole source of sealants.

#### 1.3 SUBMITTALS, GENERAL

##### A. Sealants specified and installed under this Section are submitted under this Section cover.

- B. Sealants specified and installed under other Sections, with or without references to this Section, shall be submitted under cover of other Sections where they are specified.
  - 1. Submittal requirements of this Section apply to those sealants submitted under separate cover in other Sections.

#### 1.4 ACTION SUBMITTALS

- A. Submittals, General: Sealants installed and specified in other Sections are submitted under cover of the Section they occur.
- B. Product Data: For each joint-sealant product.
- C. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.
- D. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch-wide joints formed between two 6-inch-long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.
- E. Joint-Sealant Schedule: Include the following information:
  - 1. Joint-sealant application, joint location, and designation.
  - 2. Joint-sealant manufacturer and product name.
  - 3. Joint-sealant formulation.
  - 4. Joint-sealant color.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For qualified testing agency.
- B. Product Test Reports: For each kind of joint sealant, for tests performed by manufacturer and witnessed by a qualified testing agency and/or a qualified testing agency.
- C. Laboratory Test Reports: For sealants, indicating compliance with requirements for low- emitting materials.
- D. Preconstruction Laboratory Test Schedule: Include the following information for each joint sealant and substrate material to be tested:
  - 1. Joint-sealant location and designation.
  - 2. Manufacturer and product name.
  - 3. Type of substrate material.
  - 4. Proposed test.
  - 5. Number of samples required.
- E. Preconstruction Laboratory Test Reports: From sealant manufacturer, indicating the following:
  - 1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
  - 2. Interpretation of test results and written recommendations for primers and substrate preparation are needed for adhesion.

- F. Preconstruction Field-Adhesion-Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.
- G. Field-Adhesion-Test Reports: For each sealant application tested.
- H. Sample Warranties: For special warranties.

## 1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized representative who is trained and approved by manufacturer and with experience performing work of this Section with a minimum five years' documented experience.
- B. Product Testing: Test joint sealants using a qualified testing agency.
  - 1. Testing Agency Qualifications: Qualified according to ASTM C1021 to conduct the testing indicated.
- C. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

## 1.7 PRECONSTRUCTION TESTING

- A. Preconstruction Laboratory Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
  - 1. Adhesion Testing: Use ASTM C794 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
  - 2. Compatibility Testing for Structural Glazing: Use ASTM C1087 to determine sealant compatibility when in contact with glazing and gasket materials.
  - 3. Submit manufacturer's recommended number of pieces of each type of material, including joint substrates, joint-sealant backings, and miscellaneous materials.
  - 4. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
  - 5. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures, including use of specially formulated primers.
  - 6. Testing will not be required if joint-sealant manufacturers submit data that are based on previous testing, not older than 24 months, of sealant products for adhesion to and compatibility with joint substrates and other materials matching those submitted.
- B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
  - 1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
  - 2. Conduct field tests for each kind of sealant and joint substrate.
  - 3. Notify Architect seven days in advance of dates and times when test joints will be erected.
  - 4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
    - a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1.1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.

- 1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
  - a. Log substrates, date, time and conditions during testing, location on project, movement capability, testing procedures and results.
6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

#### 1.8 FIELD CONDITIONS

- A. Do not proceed with installation of joint sealants under the following conditions:
  1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.
  2. When joint substrates are wet.
  3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
  4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

#### 1.9 WARRANTY

- A. Special Installer's Warranty: Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Period: Two years from date of Substantial Completion.
    - a. Five years for exterior silicone joints.
- B. Special Manufacturer's Warranty: Manufacturer agrees to furnish joint sealants to repair or replace those joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
  1. Warranty Period: Five years from date of Substantial Completion for urethanes and Twenty years from date of Substantial Completion for silicones.
- C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
  1. Movement of the structure caused by stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
  2. Disintegration of joint substrates from causes exceeding design specifications.
  3. Mechanical damage caused by individuals, tools, or other outside agents.
  4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PART 2 - PRODUCTS

2.1 JOINT SEALANTS, GENERAL

- A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.
- B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.
- C. Nonstaining Joint Sealants: No staining of substrates when tested according to ASTM C1248.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
  - 1. BASF.
  - 2. Bostik.
  - 3. Dow.
  - 4. GE Construction Sealants.
  - 5. Sika Corporation.
  - 6. Tremco Incorporated.

2.3 SOURCE LIMITATIONS

- A. Source Limitations:
  - 1. Provide single source and single manufacturer for each type of sealant used and for each sealant in contact with another.
  - 2. For all joint sealants used at exterior weather envelope of building and exposed to view, obtain products from single manufacturer.
  - 3. For all interior joints, provide joint sealants from single manufacturer for each type required.

2.4 SILICONE JOINT SEALANTS

- A. Silicone, S, NS, 100/50, NT: Single-component, nonsag, plus 100 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 100/50, Use NT.
  - 1. Products:
    - a. Dowsil 790.
    - b. Tremco Spectrem 1.
  - 2. Joint-Sealant Application: Exterior joints in vertical surfaces subject to significant movement.
    - a. Joints between pre-finished metal cladding.
    - b. Beauty joints at aluminum curtainwall.
    - c. Other joints as indicated on Drawings.
  - 3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- B. Silicone, S, NS, 50, NT: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
1. Products:
    - a. Dowsil 795 or 791.
    - b. Tremco Spectrem 2.
  2. Joint-Sealant Application: Glazing sealant and exterior joints in vertical surfaces subject to moderate movement.
    - a. Interior side of exterior glazing except for weathersealing.
    - b. Exterior non-porous surfaces, metal and pre-finished materials considered beauty joints.
    - c. Other joints as indicated on Drawings.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- C. Interior Mildew Resistant: Silicone, Acid Curing, S, NS, 25, NT: Single-component, nonsag, plus 25 percent and minus 25 percent movement capability, nontraffic-use, acid-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 25, Use NT.
1. Products:
    - a. Tremsil 200.
    - b. Dowsil 786.
    - c. Pecora 898 NST.
    - d. GE Sanitary 1700.
  2. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal nontraffic surfaces.
    - a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    - b. Tile control and expansion joints at wet locations such as bathrooms, shower rooms, restrooms, kitchens, etc. where not provided under Section 09 30 00.
    - c. All other joints between glass, metal, porcelain, ceramic and most painted surfaces where sealing for sanitary conditions is required.
    - d. Other joints as indicated on Drawings.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- D. Silicone, Nonstaining, S, NS, 50, NT: Nonstaining, single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, neutral-curing silicone joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
1. Products:
    - a. Tremco Spectrem 3.
    - b. Dowsil 790.
  2. Joint-Sealant Application: Non-staining exterior joints in vertical surfaces and horizontal nontraffic surfaces.
    - a. Joints at porous materials such as masonry and concrete that are susceptible to surface staining and metal.
      - 1) Beauty-joints at perimeter joints between materials listed above and frames of doors, windows and louvers.
    - b. Joints between different materials listed above.
    - c. Other joints as indicated on Drawings.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

- a. At sanded joints, select color matching sanded finish and acceptable to Architect.
- E. Sanding Joints, Masonry and Concrete: Broadcast sand sealant in joint faces to match appearance of adjacent surfaces and finishes.
  1. Provide where indicated and as follows:
    - a. Masonry expansion joints.
    - b. Masonry-to-sheet metal joints.
    - c. Concrete-to-sheet metal, besides openings. Sand to match concrete, unless otherwise indicated.

## 2.5 URETHANE JOINT SEALANTS

- A. Urethane, S, NS or P, 100/50, T, NT: Single-component, nonsag or pourable, plus 100 percent and minus 50 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type S, Grade NS or P, Class 100/50, Uses T and NT.
  1. Product: Tremco Dymonic 100.
  2. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces subject to significant movement.
    - a. Control and expansion joints in traffic surfaces such as concrete, brick, stone, etc.
    - b. Isolation and contraction joints in cast-in-place concrete slabs.
    - c. Other joints as indicated on Drawings.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.
- B. Urethane, M, P, 25, T, NT: Multicomponent, pourable, plus 25 percent and minus 25 percent movement capability, traffic- and nontraffic-use, urethane joint sealant; ASTM C920, Type M, Grade P, Class 25, Uses T and NT.
  1. Product: Tremco THC 901.
  2. Joint-Sealant Application: Exterior joints in horizontal traffic surfaces subject to minimal movement.
    - a. Control and expansion joints in traffic surfaces such as concrete, brick, stone, etc.
    - b. Isolation and contraction joints in cast-in-place concrete slabs.
    - c. Joints where a large color selection is required.
    - d. Other joints as indicated on Drawings.
  3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

## 2.6 BUTYL JOINT SEALANTS

- A. Butyl-Rubber-Based Joint Sealants: ASTM C1311.
  1. Types:
    - a. Curing or Butyl Mastic: Tremco Butyl Sealant.
    - b. Non-Skinning: Tremco Trempro JS-773.
  2. Joint-Sealant Application: Concealed mastics.
    - a. Aluminum thresholds.
    - b. Sill plates.
    - c. Other joints as indicated on Drawings.
  3. Use non-skinning in sill plates.

4. Joint-Sealant Color: Black, unless noted otherwise on the Drawings.

## 2.7 LATEX JOINT SEALANTS

- A. Acrylic Latex: Acrylic latex or siliconized acrylic latex, ASTM C834, Type OP, Grade NF.
  1. Products:
    - a. Tremco Tremflex 834.
    - b. USG Sheetrock Brand Acoustical Sealant.
      - 1) Not permitted for use at exterior wall openings.
- B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces not subject to significant movement.
  1. Joint Locations:
    - a. Control joints on exposed interior surfaces of exterior walls.
    - b. Perimeter joints between interior wall surfaces and frames of interior doors and windows.
    - c. Joints between trim and walls at painted locations. Commonly called "Painter's Caulk."
    - d. Other joints as indicated on Drawings.
    - e. Joints at interior side of vestibule framing.
    - f. Joints between interior finishes and interior aluminum glazing framing.
  2. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

## 2.8 JOINT-SEALANT BACKING

- A. Sealant Backing Material, General: Nonstaining; compatible with joint substrates, sealants, primers, and other joint fillers; and approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.
- B. Cylindrical Sealant Backings: ASTM C1330, type recommended by sealant manufacturer, for conditions and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.
- C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

## 2.9 MISCELLANEOUS MATERIALS

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant- substrate tests and field tests.
- B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.



- C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.
- D. Sand, Ground-Mortar Aggregate: For sanded sealant joints at masonry and concrete, and where indicated.
  - 1. Sand of color and size to match adjacent mortar or finish as indicated; water washed, dust free, free from organic and deleterious materials and kiln dried.
  - 2. Custom crush and grind pointing mortar sand. Grind to a particle size that matches the adjacent mortar aggregate or concrete color.
  - 3. Remove all fines passing the No. 100 sieve.

## PART 3 - PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting performance of the Work.
  - 1. Verify the following:
  - 2. Joints are ready to receive Work.
  - 3. Backing materials and substrates are compatible.
  - 4. Backer rods are correctly sized.
  - 5. Preinstallation adhesion testing is complete for the substrates.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:
  - 1. Prepare according to ASTM C1193.
  - 2. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
  - 3. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
    - a. Concrete.
    - b. Masonry.
    - c. Unglazed surfaces of ceramic tile.
    - d. Exterior insulation and finish systems.
    - e. Stone.
  - 4. Remove laitance and form-release agents from concrete.
  - 5. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

- a. Metal.
  - b. Glass.
  - c. Porcelain enamel.
  - d. Glazed surfaces of ceramic tile.
  - e. Pre-painted surfaces.
  - f. Plastics.
- B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.
- C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

### 3.3 INSTALLATION OF JOINT SEALANTS

- A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
- B. Sealant Installation Standard: Comply with recommendations in ASTM C1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.
- C. Color: Color of sealant shall match that of adjacent material unless otherwise directed by the Architect. Where joint occurs between two different colored surfaces, consult Architect for direction on color selection.
- D. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
  1. Do not leave gaps between ends of sealant backings.
  2. Do not stretch, twist, puncture, or tear sealant backings.
  3. Remove absorbent sealant backings that have become wet before sealant application, and replace them with dry materials.
- E. Install bond-breaker tape behind sealants:
  - E-1. Where sealant backings are not used between sealants and backs of joints.
  2. Where a secondary sealant joint exists and installed under a different Section.
  3. Where indicated.
- F. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
  1. Place sealants so they directly contact and fully wet joint substrates.
  2. Completely fill recesses in each joint configuration.
  3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
- G. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
  2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
  3. Provide concave joint profile per Figure 8A in ASTM C1193 unless otherwise indicated.
  4. Provide flush joint profile at locations indicated on Drawings according to Figure 8B in ASTM C1193.
  5. Provide recessed joint configuration of recess depth and at locations indicated on Drawings according to Figure 8C in ASTM C1193.
    - a. Use masking tape to protect surfaces adjacent to recessed tooled joints.
- H. Provide joint surfaces smooth and free of wrinkles and surface imperfections, including surface contaminates other than those unavoidable.
- I. Sanded Sealant Joint: Apply sand before skinning. Dust apply sand. Use base sealant of same or similar color. Immediately after first tooling, apply aggregate to sealant, gently pushing into sealant surface. Lightly retool to form smooth uniform concave surfaces.
1. Remove excess sealant and aggregate from adjacent surfaces.

### 3.4 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
1. Extent of Testing: Test completed and cured sealant joints as follows:
    - a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
    - b. Perform one test for each 1000 feet of joint length thereafter or one test per each floor per elevation.
  2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C1193 or Method A, Tail Procedure, in ASTM C1521.
    - a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
  3. Inspect tested joints and report on the following:
    - a. Whether sealants filled joint cavities and are free of voids.
    - b. Whether sealant dimensions and configurations comply with specified requirements.
    - c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion complies with sealant manufacturer's field-adhesion hand-pull test criteria.
  4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant material, sealant configuration, and sealant dimensions.
  5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.
- B. Evaluation of Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

- A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out, remove, and repair damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

END OF SECTION