SECTION 079200 – JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Latex joint sealants.

1.2 PRECONSTRUCTION TESTING

A. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates. Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

1.3 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples: For each kind and color of joint sealant required.

C. 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.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Preconstruction compatibility and adhesion test reports.

C. Preconstruction field-adhesion test reports.

D. Field-adhesion test reports.

E. Warranties.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to ASTM C 1021 to conduct the testing indicated.

B. Preinstallation Conference: Conduct conference at Project site.

C. Manufacturer: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.

D. Applicator Qualifications: Company specializing in performing work of this section with minimum three years documented experience, minimum three successfully completed projects of similar scope and complexity, and approved by manufacturer.

1.6 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which 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. Provide signed copies.

1. Warranty Period: 3 years from date of Substantial Completion.

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 do not comply with performance and other requirements specified in this Section within specified warranty period. Provide signed copies.

1. Warranty Period: 5 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Silicone sealants shall be provided for joints exposed to UV Light or joints subject to movement or joints intended to provide a weatherproof seal. Urethane sealants are not permitted to be used for these applications.

B. All joints in new construction requiring sealant shall be provided with a non-adhesive backer rod.

C. All sealed joints shall be coordinated with other materials as required by the design to be compatible with the applicable construction.

D. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. **Tremco Sealant/Weatherproofing Division of RPM International, Inc.**
b. Approved equal prior to bid.

2. Type: Single component (S) or multicomponent (M).

3. Grade: Pourable (P) or nonsag (NS).

4. Class: 100/50.

5. Uses Related to Exposure: Nontraffic (NT).

2.2 LATEX JOINT SEALANTS

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Tremco Incorporated.
b. Approved equal prior to bid.

2.3 JOINT SEALANT BACKING

A. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer.

2.4 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.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

2.5 URETHANE SEALANTS

A. Multi-Component Urethane: ASTM C920, Type M, Grade NS, Class 50; Uses T, NT, M, A, and O; two component, chemical curing, nonstaining, nonbleeding, color as selected.
   1. Dymeric 240FC

B. Single Component Urethane: ASTM C 920, Type S, Grade NS, Class 100/50, Uses NT, M, A, O; single component, moisture curing, nonstaining, non-bleeding, color as selected.
   1. Dymonic FC
   2. Dymonic.
   3. Vulkem 116.
   4. Vulkem 45.or Vulkem 45 SSL

C. Multi-Component Self-Leveling Urethane: ASTM C920, Type M, Grade P, Class 25, Uses T; self leveling, multi-component, chemical curing, nonstaining, nonbleeding, color as selected.
   1. THC 900.
   2. THC 901.
   3. Vulkem 45 SSL + Catalyst (water = catalyst)

D. Single Component Self-Leveling Urethane: ASTM C920, Type S, Grade P, Class 100/50; self leveling, single component, moisture curing, nonstaining, nonbleeding, color as selected, green concrete acceptable.
   1. Vulkem 45 SSL.

2.6 SILICONE SEALANTS

A. Multi-Component Silicone: ASTM C920, Type M, Grade NS, Class 50; Uses NT, M, G, A and O: multi-component, neutral curing, nonstaining, nonbleeding, color as selected
   1. Spectrem 4-TS.

B. Single Component Silicone: ASTM C920, Type S, Grade NS, Class 50; Uses NT, M, G, A and O: single component, neutral curing, nonstaining, nonbleeding, color as selected.
   1. Spectrem 1.
   2. Spectrem 2.
   3. Spectrem 3.

C. Single Component Silicone: ASTM C920, Type S, Grade NS, Class 25; Uses NT, G, A and O: single component, neutral, nonstaining, nonbleeding, color as selected.
   1. Proglaze.
   2. Tremsil 200.
   3. Tremsil 600.

D. Single Component Traffic Silicone: Low modulus, high performance, single component, self leveling sealant.
   1. Spectrem 800.
   2. Specterm 900SL.

2.7. OTHER SEALANTS

A. Latex Sealant: ASTM C 834; single component, solvent curing, nonstaining, nonbleeding, nonsagging; color as selected.
1. Tremflex 834.

B. Synthetic Rubber Sealant:
1. Acoustical Sealant.

C. Butyl Sealant: ASTM C 1311, butyl or polyisobutylene, single component, nondrying, non-skinning, non-curing.
1. Butyl Sealant.

2.8 ACCESSORIES

A. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.

B. Primer: Non-staining type, recommended by sealant manufacturer to suit application.

C. Joint Backing: Round foam rod compatible with sealant; oversized 25 to 50 percent larger than joint width; recommended by sealant manufacturer to suit application

D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

E. Masking Tape: Non-staining, non-absorbent tape product compatible with joint sealants and adjacent joint surfaces.

2.9. SCHEDULE – SEALANT JOINTS

A. Exterior Sealant Joint [Type A]:
1. **Applications:**
   a) **Control and expansion joints in cast-in-place concrete.**
   b) **Joints between architectural precast concrete units.**
   c) **Control and expansion joints in unit masonry.**
   d) **Joints between different materials listed above.**
   e) **Perimeter joints between materials listed above and frames of doors, windows, storefronts, louvers and similar openings.**
   f) **Control and expansion joints in soffits and overhead surfaces.**
   g) **Other exterior joints in vertical surfaces and non-traffic horizontal surfaces for which no other sealant is specified.**
2. **Multi-Component Urethane Sealants:**
   a) **Dymeric 240FC.**
3. **Single Component Urethane Sealants:**
   a) **Dymonic FC.**
   b) **Dymonic.**
   c) **Vulkem 116.**
4. **Multi-Component Silicone Sealants:**

a) **Spectrem 4-TS.**

5. **Single Component Silicone Sealants:**
   a) **Spectrem 1.**
   b) **Spectrem 2.**
   c) **Spectrem 3.**

B. **Interior Sealant Joint [Type B]:**
   1. **Applications:**
      a) **Control and expansion joints on exposed interior surfaces of exterior walls.**
      b) **Perimeter joints on exposed interior surfaces of exterior openings.**
      c) **Perimeter joints between interior wall surfaces and frames of interior doors, windows, storefronts, louvers, elevator entrances and similar openings.**
      d) **Other interior joints in vertical surfaces and non-traffic horizontal surfaces subject to movement for which no other sealant is specified.**
   2. **Multi Component Urethane Sealants:**
      a) **Dymeric 240/240FC.**
   3. **Single Component Urethane Sealants:**
      b) **Dymonic FC.**
   4. **Single Component Silicone Sealants:**
      a) **Spectrem 1.**
      b) **Spectrem 2.**
      c) **Spectrem 3.**
   5. **Other Sealants:**
      a) **Tremflex 834.**

C. **Traffic Sealant Joint [Type C]:**
   1. **Applications:**
      a) **Control, expansion and isolation joints in cast-in-place concrete.**
      b) **Tile control and expansion joints.**
      c) **Joints between different materials listed above.**
      d) **Other interior and exterior traffic bearing joints in horizontal and sloped traffic surfaces**
   2. **Multi Component Urethane Sealants:**
      a) **THC-900/901, self leveling.**
      b) **Vulkem 116 plus catalyst.(Vulkem 227)**
      c) **Vulkem 45 SSL plus catalyst**
   3. **Single Component Urethane Sealants:**
      a) **Vulkem 45, self leveling.**
      b) **Vulkem 45 SSL, semi self leveling.**
   4. **Single Component Silicone Sealants:**
      a) **Spectrem 800.**
      b) **Spectrem 900SL.**

D. **Interior Sanitary Sealant Joint [Type D]:**
   1. **Applications:**
      a) **Joints in toilet room and bathroom counter tops.**
      b) **Joints between plumbing fixtures and adjacent materials.**
      c) **Other interior joints in wet areas where needed to limit mold and mildew growth.**

2. Single Component Silicone Sealants:
a) Tremsil 200.

E. Concealed Metal Lap Sealant Joint [Type E]:
1. Applications:
a) Concealed lap and hook joints in sheet metal flashing and trim.
2. Single Component Non-Curing Sealants:
a) Tremco Butyl Sealant.
b) Tremco Acoustical Sealant.

F. Concealed Bedding Sealant Joint [Type F]:
1. Applications:
a) Bedding joints under metal thresholds and saddles.
b) Bedding joints between sheet metal flashing and other materials.
2. Single Component Urethane Sealants:
a) Dymonic FC.
b) Dymonic.
c) Vulkem 116.
3. Single Component Silicone Sealants:
a) Proglaze.
b) Spectrem 2.
c) Spectrem 3.
4. Single Component Non-Curing Sealants:
a) Tremco Butyl Sealant.
b) Tremco Acoustical Sealant.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions.

1. Remove laitance and form-release agents from concrete.
2. 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.

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.

3.2 INSTALLATION

A. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

B. 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.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. 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.

E. 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 C 1193, unless otherwise indicated.

F. Acoustical Sealant Installation: Comply with ASTM C 919 and with manufacturer's written recommendations.

G. 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.

3.3 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 (300 m) of joint length for each kind of sealant and joint substrate.
2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

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.

3.4 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal surfaces.

1. Joint Locations:
    a. Control and expansion joints in unit masonry.
    b. Joints between metal panels.
    c. Perimeter joints between materials listed above and frames of doors, windows and louvers.
    d. Control and expansion joints in ceilings and other overhead surfaces.
    e. Other joints as indicated.
2. Joint Sealant: Silicone.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Interior joints in horizontal traffic surfaces.

1. Joint Locations:
    a. Perimeter joints between materials listed above and frames of doors, windows and louvers.
    b. Control and expansion joints in ceilings and other overhead surfaces.
    c. Other joints as indicated.
2. Joint Sealant: Silicone.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal surfaces.

1. Joint Locations:
    a. Control and expansion joints on exposed interior surfaces of exterior walls.
    b. Perimeter joints of exterior openings where indicated.
    c. Tile control and expansion joints.
    d. Vertical joints on exposed surfaces of partitions.
    e. Perimeter joints between interior wall surfaces and frames of interior doors windows and elevator entrances.
    f. Other joints as indicated.
2. Joint Sealant: Latex.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

D. Joint-Sealant Application: Mildew-resistant interior joints in vertical surfaces and horizontal surfaces.

1. Joint Sealant Location:
    a. Joints between plumbing fixtures and adjoining walls, floors, and counters.
    b. Tile control and expansion joints where indicated.
    c. Other joints as indicated.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200