SECTION  – joint sealants

1. General
   1. SUMMARY
      1. Read other Sections of the Specification for extent of sealant specified in those Sections. Do all other sealing indicated, specified, or required.
      2. Provide all items, articles, materials, operations, or methods listed, mentioned, or scheduled on drawings and/or herein, including all labour, materials, equipment, and incidentals necessary and required for the completion of the sealant.
   2. REFERENCE Standards
      1. American Society for Testing and Materials (ASTM):
         1. ASTM C509-06(2011), Standard Specifications for Elastomeric Cellular Performed Gasket and Sealing Material.
         2. ASTM C920-11, Standard Specification for Elastomeric Joint Sealants.
         3. ASTM C-1382-11, Standard Test Method for Determining Tensile Adhesion Properties of Sealants when Used in Exterior Insulation and Finish Systems (EIFS) Joints.
         4. ASTM D2240-05(2010), Standard Test Method for Rubber Property - Durometer Hardness.
      2. Canadian General Standards Board (CGSB):
         1. CAN/CGSB‑19.13‑M87, Sealing Compound, One-Component, Elastomeric, Chemical Curing.
   3. SUBMITTALS
      1. Provide submittals in accordance with Section 01 33 00 – Submittal Procedures.
      2. Action Submittals: Provide the following submittals before starting any work of this Section:
         1. Manufacturer's Data: Submit manufacturer's literature describing each material to be used in the work of this Section. Literature shall contain a statement that the material complies with the specified standard.
         2. Samples: Submit for approval and colour selection sample of each type of compound, recommended primers and joint filler or fillers proposed to be used.
         3. Mock-Up:
            1. If requested by the Consultant, construct mock-ups where directed to show location, size, shape, colour, and depth of joints complete with back-up material, primer, and sealant. Mock-up may be part of finished work.
            2. Allow 24-hours for inspection of work before proceeding with work.
         4. Safety Data Sheets: Submit WHMIS safety data sheets for inclusion with project record documents. Keep one copy of WHMIS safety data sheets on Site for reference by workers.
   4. QUALITY ASSURANCE
      1. Adhere to Manufacturer's recommendations for mixing or preparation of materials listed in this Section.
      2. Pot life or installation times shall not be exceeded.
      3. Integral materials which compose a joint detail shall be compatible.
      4. Component parts, where possible, shall have the same manufacturer.
      5. A representative of sealant material manufacturer shall visit the site during application to ensure that all Work is carried out according to the manufacturer's printed instructions.
   5. SITE CONDITIONS
      1. Apply sealants only to completely dry surfaces, and at air, substrate, and material temperatures above minimum established by manufacturer's written specifications.
   6. DELIVERY, STORAGE HANDLING AND PROTECTION
      1. Deliver all materials to the jobsite in their original, unopened containers, with all labels intact.
      2. Receive and store materials as recommended by materials manufacturer.
      3. Maintain containers and labels in undamaged condition.
   7. WARRANTY
      1. Provide a written warranty endorsed and issued in the name of the Owner stating that all sealant work of this Section is warranted against leakage, cracking, crumbling, melting, running, deterioration, shrinkage, loss of cohesion, loss of adhesion, staining of adjoining or adjacent work or surfaces, or failure to provide intended seal for a period of five (5) years from the Date of Substantial Performance of the Work, and that any defects will be made good including, related materials and installation at no additional cost to the Owner.
2. Products
   1. MATERIALS
      1. Joint Cleaner:
         1. Non-corrosive solvents as recommended by sealant manufacturer for applicable substrate material(s).
      2. Primer:
         1. Non-staining type as recommended by sealant manufacturer, for use on substrate conditions outlined, and compatible with specified sealant being applied.
      3. Joint Back-Up – Backer Rod:
         1. Round, open cell, reticulated foam, 50% compression, compatible with sealant and primer, non-adhering to sealant.
      4. Bond Breaker:
         1. Pressure sensitive plastic tape, not bondable to sealant as recommended by sealant manufacturer.
      5. Sealant Type "A" – Joints around Interior Door Frames, Windows and Under Exterior Thresholds:
         1. One-part, low, or medium modulus, neutral curing 100% silicone joint sealant, conforming to ASTM C920-11, Type S, Grade NS, Class 35.
            1. DC CWS by Dow Corning.
            2. SWS by GE.
            3. SikaSil WS-305CN by Sika

OR

* + - 1. One component, low modulus, moisture curing, polyurethane joint sealant, conforming to ASTM C920-11, Type S, Grade NS, Class 25.
         1. Dymonic FC by Tremco Ltd., division of RPM Company.
         2. Sikaflex 1A by Sika Canada Inc.
         3. Sonolastic NP1 by BASF.
         4. Pourthane NS by W.R MEADOWS.
    1. Sealant Type "B" – Expansion / Control Joints:
       1. One-part, ultra low modulus, non-staining neutral curing 100% silicone joint sealant, conforming to ASTM C920-11, Type S, Grade NS, Class 50.
          1. DC 790 by Dow Corning.
          2. Spectrem 1 by Tremco.
          3. SCS2700 SilPruf LM by GE.
          4. SikaSil WS-290 by Sika.
    2. Sealant Type "C" – Floor Control Joints:
       1. Multi-component, chemical curing, self-levelling, polyurethane joint sealant, conforming to ASTM C920-11, Type M, Grade P, Class 25.
          1. THC-900 by Tremco (Canada) Ltd., division of RPM Company.
          2. Sonolastic SL2 by Sonneborn Building Products, division of BASF Building Systems.
          3. Sikaflex 2c SL by Sika Canada Inc.
    3. Sealant Type "E" – Mould and Mildew Resistant:
       1. Mould and mildew resistant, Shore A Hardness 15‑25, conforming to ASTM C920-11, Type S, Grade NS, Class25, use NT, G, and A:
          1. SCS1700 by GE.
          2. DC 786 by Dow Corning.
          3. Tremsil 200 by Tremco.
          4. Omni Plus by Sonneborn.
          5. SikaSil –GP by Sika.
    4. Sealant Type "F" – Glazing Joints:
       1. Silicone Sealant: Butt glazing, one part, moisture curing, shore A hardness 15‑25, conforming to CAN/CGSB‑19.13‑M, Classification C‑1‑40‑B‑N and C‑1‑25‑B‑N and ASTM C920-11, Type S, Grade NS, Class 25, use NT, G, A, O; Colour: clear (translucent):
          1. DC 795 by Dow Corning.
          2. SCS2000 by GE.
          3. Multiseal by Chemtron.
          4. Spectrum 2 by Tremco.
          5. SikaSil WS-295 by Sika.
    5. Sealant Type "G" – Exterior Wall Joints:
       1. Air‑seal sealant: One part, silicone, shore A hardness 15-25, conforming to CGSB 19‑GP‑13M, classification C‑1‑40‑B‑N and C‑1‑25‑B‑N and ASTM C920-11, Type S, Grade NS, Class 25. Use NT, M, G, A and O:
          1. DC 791 by Dow Corning.
          2. UltraPruf II SCS 2902 by GE.
          3. Spectrum 3 by Tremco.
          4. SikaSil N-Plus by Sika.
    6. Sealant Type "H" – Saw Cut Sealant:
       1. Multi‑component, self‑levelling, conforming to ASTM D2240-05(2010):
          1. Tremco Control Joint Sealant.
          2. BASF Masterfill 300.
          3. Sika Loadflex.
          4. Rezi-Weld Flex by W.R Meadows.
    7. Sealant Type “I” – HVAC Sealant:
       1. One-part, RTV, acetoxy-cure silicone sealant for heating, ventilation, air conditioning and refrigeration applications:
          1. Dow Corning HVAC Silicone Sealant.
    8. Sealant Type “J” – Electrical Sealant:
       1. One-part, white, non-flowing moisture cure adhesive for electrical applications:
          1. Dow Corning 738 Electrical Sealant.
    9. Sealant Type “K” - Interior Acoustical Sealant:
       1. Non‑skinning, non‑hardening, single component synthetic rubber sealant, conforming to CAN/CGSB‑19.21‑M:
          1. Tremco Acoustic Sealant.
          2. Chemtron Metaseal.

OR

* + - 1. Pre-compressed, self-expanding, open-cell polyurethane flexible foam acoustical joint filler.
         1. Willseal 150 by Tremco Ltd., division of RPM Company.
    1. Sealant Type “L” – Smoke Sealant:
       1. Self-leveling, single-component silicone fire-rated sealant for sealing around wall joints and penetrations in zero hour rated wall assemblies and gaps between curtain wall and concrete.
          1. Dow Chemical DOWSIL Smoke Seal 800SL.
       2. Accessories:
          1. Mineral wool insulation backer, with a minimum density of 96 kg/m3 and having a minimum compression of 33%.
    2. Preformed Compression Seal:
       1. Compartmental open cell neoprene extrusion type conforming to ASTM C509-06(2011), complete with liquid lubricant adhesive recommended by manufacturer.

1. Execution
   1. INSPECTION
      1. Verify at site that joints and surfaces conditions provided will not adversely affect execution, performance, or quality of completed work.
      2. Ensure masonry and concrete have cured 28 days minimum.
      3. Ascertain that sealers and coatings applied to substrates are compatible with sealant used and that full bond of the sealant and substrate is attained. Request samples of the sealed or coated substrate from their fabricators for testing of compatibility and adhesion, if necessary.
      4. Verify that specified recommended environmental conditions are present before commending work.
      5. Defective work resulting from application to unsatisfactory joint conditions will be considered the responsibility of those performing the work of this section.
      6. Do not start work of this Section until conditions are satisfactory.
   2. PREPARATION
      1. Clean joint surfaces using joint cleaner as necessary, to remove dust, paint, loose mortar, and other foreign matter and dry joint surfaces.
      2. Remove dust, silt, scale, and coatings from ferrous metals by wire brush, grinding or sandblasting.
      3. Remove oil, grease, and other coatings from non-ferrous metals with approved cleaning solvent.
      4. Ensure surfaces are free of frost, rust, lacquers, laitance, release agents, moisture or other matter which might adversely affect adhesion of sealant.
      5. Examine joint sizes and correct as required to allow for anticipated movement and to achieve proper width/depth ratio per manufacturer's written recommendations for specified sealant.
      6. Support joint filler on horizontal traffic surfaces against vertical movement which might result from traffic loads or foot traffic.
      7. Prepare surfaces as recommended by sealant manufacturer.
      8. Fully remove existing sealant scheduled to be removed and replaced with new sealant, in areas indicated on the Drawings.
         1. Follow manufacturers procedures for removal of existing sealant and test areas for adhesion of new sealant. Provide the Consultant with field report identifying results of adhesion testing.
      9. Install joint backing material or apply bond breaker tape to achieve correct joint depth and prevent three-sided adhesion.
      10. Install mineral wool insulation in smoke seal applications, as bond breaker joint backing material.
          1. To protect adjacent surfaces, mask adjacent surfaces with tape prior to priming and/or sealing.
      11. Prime sides of joints using two cloth method in accordance with manufacturer's directions immediately prior to sealing.
      12. Before any sealing is commended, a test of the material shall be made for indications of staining, poor adhesion, or other undesirable effects.
      13. Seal joints in surfaces to be painted before painting. Where surfaces to be sealed are prime painted in shop before sealing, check to make sure prime paint is compatible with primer and sealant. If incompatible inform Consultant, consult the manufacturer, and change primer and sealant to approved compatible types.
      14. Check form release agent used on concrete for compatibility with primer and sealant. If incompatible inform Consultant and change primer and sealant to approved compatible types or clean concrete to Consultant's approval.
   3. APPLICATION
      1. Apply sealant in accordance with manufacturer's directions, using a gun with proper nozzle size, ensuring to fill voids and joints completely, to leave a weathertight, airtight installation. Superficial pointing with skin bead is not acceptable.
      2. Neatly tool surface to a slight concave profile. Surface of sealant shall be smooth, free from ridges, wrinkles, sags, air pockets and embedded impurities.
      3. Clean adjacent surfaces immediately and leave Work neat and clean. Remove excess sealant and droppings, using recommended cleaners as Work progresses. Remove masking tape after tooling of joints.
   4. CLEANING AND PROTECTION
      1. Remove all waste materials from site. Sealant shall be cleaned of all foreign material as recommended by the sealant manufacturer. Leave work in a condition satisfactory to the Consultant.

END OF SECTION