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Informational Guide Specification OSI® QUAD® Max Sealant

Specifier Note: The purpose of this guide specification is to assist the specifier in correctly specifying sealant products and execution. The specifier needs to edit the guide specifications to fit the needs of specific projects. Contact a Henkel OSI® Specialist to assist in appropriate product selections.

This guide provides for a high performing and exceptional quality silan-modified polymer sealant for various interior and exterior building construction applications. This sealant is formulated for maximum application performance requiring +/- 50% movement capabilities. This sealant also offers excellent weather sealing protection for most common construction materials including, but not limited to, the following: fiber-cement board, wood, vinyl siding, soffit assembly, crown molding, and PVC or wood-based trim, stucco, EIFS, precast, concrete, masonry, (brick or CMU) and metal.

SECTION 07 9200

JOINT SEALANTS

PART 1- GENERAL

1.01 SUMMARY

- A. Provide sealant for exterior perimeter, control joints as indicated, including substrate preparation, sealant installation and cleanup of related installations
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.02 REFERENCES

- A. ASTM International (ASTM)
 - 1. C920 - Standard Specification for Elastomeric Joint Sealants.
 - 2. C1193 - Standard Guide for Use of Joint Sealants.
 - 3. C1330 - Standard Specification for Cylindrical Sealant Backing.

4. C1382 - Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems
 5. D2202 – Standard Test Method for Slump of Sealants.
 6. D2203 – Standard Test Method for Staining from Sealants
- B. Federal Specification
1. TT-S-00230C, Type S, Class
- C. American Architectural Manufacturers Association (AAMA)
1. AAMA 800-10 Voluntary Specifications and Test Methods for Sealants
 2. AAMA 713 – 08 Chemical Compatibility of Sealants and Self-Adhered Flexible Flashings
- D. Underwriters Laboratories, Inc. (UL) 723 - Test for Surface Burning Characteristics of Building Materials.
- E. GreenGuard® Certified

1.03 SUBMITTALS

- A. Submittals for Review:
1. Product Data: Indicate sealants, primers, backup materials, bond breakers, and accessories proposed for use.
 2. Samples:
 - a. [1/2 x 1/2 x 3] [__ x __ x __] inch long joint sealant samples [showing available colors.] [in specified colors.]
 - b. [6] [__] inch long joint backup material samples.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Installer to comply with quality assurance articles referenced in ASTM C-1193 for installation of residential sealants
- B. Pre-Construction Mock-Up: Install mock-up prior to installation using acceptable residential joint sealants including surface preparation per sealant manufacturer's instructions. Obtain Architect/Engineer/Consultant or Owner's approval of joint treatments to establish adhesion, appearance and workmanship standard.

(Specifier Note: Edit below mock-up description, size, etc. to suit each project.)

1. Mock-Up Size: Five (5) feet by Five (5) feet or ____ LF of joint sealant
2. Mock-Up Substrate: _____ vertical surfaces as agreed to prior to Mock-up installation.
3. Maintain mock-up during construction for workmanship standard.
4. Mock-up to be incorporated into final construction upon Architect/Engineer/Consultant/Owner's written approval.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver, store, handle, and protect all products in accordance with Section 01600, Product Requirements.

- B. Comply with manufacturer's ordering instructions and lead-time(s) required to avoid construction delays.
- C. Deliver residential sealant materials in manufacturer's original, unopened, undamaged containers with identification labels clearly intact.
- D. Store and protect sealant material containers from harmful weather conditions as recommended by sealant manufacturer. Protect from damage during construction and while stored onsite. Store joint sealant materials at temperatures recommended by sealant manufacturer.

1.06 PROJECT CONDITIONS

- A. Environmental Requirements: Verify substrates and ambient air temperature at project site before, during and after application to assure compliance with manufacturer's recommendations. Surfaces shall be frost-free, clean and completely dry at time of installation.
 - 1. Weather Conditions: In accordance with manufacturer's instructions, do not apply sealants in snow, rain, fog, or mist, or when such conditions are expected. Allow joint surfaces to attain dry conditions as recommended by manufacturer before sealant application.
 - 2. Compliance: Follow manufacturer's specific safety, health and environmental recommendations per most recent Material Safety Data Sheets, technical bulletins and instructions. Handle all solvents in compliance with applicable EPA, OSHA, and VOC requirements regarding health/safety standards.

1.07 WARRANTY

(Specifier Note: Specific project workmanship warranties must be provided by the installer or through a performance bond. Coordinate with Section 01700 – Contract Closeout, Warranties and Bonds.)

- A. Manufacturer's Warranty: Submit manufacturer's standard product warranty at completion.
 - 1. Warranty Areas:

_____.

(Specifier Note: Use warranty areas for description of work protected and areas of work excluded as required by project conditions.)

PART 2 - PRODUCTS

(Specifier Note: Product Information is proprietary to Henkel / OSI® QUAD® Max If additional products are required for competitive procurement, contact the Henkel Corporation for assistance.)

2.01 MANUFACTURERS

- A. Product Options: Selection of joint sealant material is based upon a proprietary elastomeric polymer and synthetic resin technology by Henkel / OSI. Any request for substitution must be submitted a minimum of 10 days prior to Bid for written approval by Architect/Engineer/or Consultant. Request received after this date will not be accepted. Coordinate with Section 01630 Product Substitution Procedures.
- B. Approved Manufacturer: Henkel Corporation 26235 First Avenue Westlake, OH1-866-591-2178 www.osipro.com

2.02 MATERIALS

- A. General: Provide sealant and backing materials that are compatible under conditions of service and applications based on mock-up and field-adhesion test results.
- B. Residential and Light Commercial Grade Joint Sealant: Provide construction materials and substrates compatible, silan-modified polymer residential sealant for continuous weather sealing installation as indicated. Comply with ASTM C-920 classifications for type, grade, class, and related use exposure and joint substrate conditions as follows:
 - 1. Permanently flexible, non-sag, medium-modulus, U-V resistant, residential grade joint sealant:
OSI® QUAD Max® Sealant: Type S (single-component), grade, NS (Non-sag), Class 50 (+/-50% movement capability per ASTM C-719), uses, NT, M, A.
- C. Performance Requirements: OSI® QUAD® Max Sealant:
 - 1. Hardness, ASTM D-661, Shore A = 32
 - 2. Tensile Strength, ASTM D-2370 > 200 PSI
 - 3. Elongation, ASTM D-2370 – >549 percent
 - 4. Cyclic Movement, ASTM C-719; 50% (+/-50 percent movement)
 - 5. Peel Strength, ASTM C-794 > 51 lbf Painted Aluminum Flashing
 - >47 lbf Fiber Cement
 - >54 lbf Vinyl Siding
 - > 42 lbf Mortar
 - 6. Application Temperature: Between = 0° F (-18° C) and 120° F (70° C)
 - 7. Skin Formation Time = 20 to 30 min. (72°F and 70% relative humidity).
 - 8. Cure Time: = 24 – 72 hours (cure time dependent on temperature, humidity and depth of sealant applied)
 - 9. VOC Content = 2.48% by weight – CARB
 - 36 g/l - SCAQMD rule 1168
 - 10. Conforms with ASTM E 2112

2.03 SEALANT ACCESSORIES:

- A. General: Provide joint backings, fillers, or primers as recommended by joint sealant manufacturer.
- B. Cylindrical Sealant Backings: Provide joint backings that meet ASTM C-1330, Type O (open or closed-cell polyurethane) or Type B (non-absorbent bi-cellular backing materials with surface skin) sized 25% or greater than joint opening with proper density to control sealant depth and profile. Follow joint sealant manufacturer's recommendations with backing selections for optimum joint sealant performance.
- C. Bond-breaker tape: Polyethylene tape or other approved plastic tape as recommended by joint sealant manufacturer to prevent 3-sided joint adhesion to rigid, in-flexible joint fillers or fillet joint surfaces at back of joint where such adhesion would restrict proper sealant movement or result in sealant failure.
- D. Masking tape: Non-staining, non-absorbent and compatible with joint sealants and adjacent surfaces.
- E. Primers: Use primers only as recommended by sealant manufacturer where required for adhesion of sealant to joint substrates indicated and as determined for use from pre-construction mock-up testing.

PART 3 - EXECUTION

3.01 MANUFACTURER'S INSTRUCTIONS

- A. Comply with manufacturer's most recently published product data, including installation instructions, substrate field mock-up testing, and surface preparation for joint sealant installation.

3.02 EXAMINATION

- A. Site Verification of Conditions: Examine joints indicated to receive residential sealant and verify joint substrate conditions are acceptable for installation in accordance with sealant manufacturer's instructions. Avoid installation until unsatisfactory conditions have been corrected.
 - 1. General: All joint surfaces must be cleaned and totally dry, frost free, and dust free before joint sealant application begins for optimum performance. Remove all foreign matter and contaminants including dirt, dust, oil grease, mildew, loose paint, rust, scale or old caulk.

2. Surface Defects and Repairs: New substrates or newly repaired joint surfaces must be allowed to cure to full-capacity per manufacturer's recommendations. Joint surfaces must be visibly clean and dry before installation of sealants or backing materials.

3.03 PREPARATION

- A. General: Clean and prepare joint surfaces immediately before installing sealant. Protect adjacent work areas and finished surfaces from damage during sealant installation.
- B. Clean porous surfaces by using heavy duty brushing, light abrasive, mechanical abrading or combination of these methods to produce a clean sound surface for optimum sealant bonding per joint sealant manufacturer's recommendations. Provide a dry, dust-free and cleaned substrates for optimum results.
- C. Rust or scale must be removed. Prepare substrates using abrasive cleaning methods as recommended by sealant manufacturer prior to sealant installation.
- D. Coordinate cleaning and installation to avoid contamination of wet, freshly coated or adjacent finished surfaces.

3.04 INSTALLATION

- A. General: Comply with sealant manufacturer's installation instructions for applications indicated unless more stringent project specific instructions or requirements apply. Only apply when joint sealant, surface and air temperature will remain above freezing.
- B. Install joint sealant backings of type and size required. For EIFS substrates, use only joint sealant backings that are non-porous, (ASTM C-1330, Type B or C) and sized a minimum of 25% larger than joint opening. For non-EIFS joinery, install open or closed-cell backer-rod (ASTM C-1330, Type O) as recommended by joint sealant manufacturer sized a minimum of 25% larger than joint opening.
 1. Avoid gaps, twisting, stretching, or puncturing joint sealant backing materials. Place backing materials into joint opening to provide the uniform sealant depth allowing optimum sealant profile.
 2. Install bond-breaker tape behind sealant joints where backer-rod is not feasible. Use to avoid 3-sided adhesion at backside of sealant joint.
 3. Use masking tape as required to protect adjacent finished surfaces prior to joint sealant installation.
- C. Apply sealant for continuous weatherproof protection. Comply with installation recommendations in ASTM C-1193 for use of residential joint weather sealing installations. Comply with all sealant manufacturers installation instructions during installation of residential sealant.

- D. Install sealants in proper sequence with installation of backings.
 - 1. Using proper joint sealant dispensing equipment. Place sealants by pushing bead into joint opening to fully wet-out joint substrates. Fill sealant joint opening to full and proper hourglass configuration.
 - 2. Install providing uniform cross-sectional shapes and depths in relation to joint width for optimum sealant movement capability per joint sealant manufacturer's instructions.
- E. Allow joint sealant to cure for a minimum of 7-10 days before adhesion testing is performed as recommended by joint sealant manufacturer.
- F. Match approved sealant mock-up for uniform finish, and overall aesthetics. Remove, refinish, or re-install work not in compliance with the Contract Documents.

3.05 FIELD QUALITY CONTROL

- A. Field-Adhesion Testing: Installer to keep log of sealant installation, recording self-preformed field-adhesion test as needed for the project. Coordinate with Section 01450 – Field Quality Control.
 - 1. Field-Tests: Field test joint sealants in accordance with Method A, Field-Applied Sealant joint Hand Pull Tab, in Appendix X-1 in ASTM C-1193.
 - 2. Evaluation: For joint sealants that fail to adhere to the substrate, clean, re-install, and then re-test until optimum results are obtained.

3.06 CLEANING AND PROTECTION

- A. Clean excess sealant or sealant residue adjacent to sealant joint installations as the Work progresses. Avoid damage to adjacent surfaces from harmful removal techniques. Protect finished surfaces beyond those that have been masked. Remove and replace damaged joint sealants during construction.
- B. Remove temporary coverings and masking protection from adjacent work areas upon completion. Remove construction debris from the project site on a planned and regular basis.

END OF SECTION

DISCLAIMER:

This Henkel Corporation Guide Specifications have been written as an aid to the professionally qualified specifier and design professional. The use of this guideline specification requires the sole professional judgment and expertise of the qualified specifier and design professional to adapt the information to the specific needs for the building owner and the project, to coordinate with their construction document process, and to meet all the applicable building codes, regulations and laws. HENKEL EXPRESSLY DISCLAIMS ANY WARRANTY, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE OF THIS PRODUCT FOR THE PROJECT.