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Specifier editing notes and additional information is hidden by default. To view hidden text, see methods below.

1. Method 1: Activate “Show/Hide ¶” to reveal formatting symbols. The default shortcut for this setting is ctrl+* (ctrl+shift+8).
2. File > Options > Display, Check “Hidden Text.”

Specifier Note: This guide specification has been prepared using the *CSI*® (Construction Specification Instute) *MASTERFORMAT*® 2018 Edition.

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. Editable text fields are highlighted in orange for visibility. Contact a Henkel LEPAGE® Specialist to assist in appropriate product selections.

This guide provides for a high performing and exceptional quality silane-modified polymer (SMP) 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.

DISCLAIMER: This Henkel Corporation Guide Specifications has 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.

SECTION 07 92 13 – Elastomeric Joint Sealant

PART 1 GENERAL

1.01 SUMMARY (Specifier Note: edit the following [A. This section includes the following] to meet project specific project applications and conditions.)

A. This section includes the following:
   1. Application of elastomeric joint sealant for exterior perimeter, control joints as indicated, including substrate preparation, sealant installation and cleanup of related installations

B. RELATED SECTIONS: (Specifier Note: edit the following [B. RELATED SECTIONS] to meet project specific applications and conditions. Specify section numbers in accordance with CSI MASTER FORMAT and section titles referenced. Remove any of the following that do not apply.)
   1. 01 00 00 General Requirement
   2. 04 20 00 Unit Masonry
   3. 06 10 00 Rough Carpentry
   4. 07 10 00 Dampproofing and Waterproofing
   5. 07 21 00 Thermal Insulation
   6. 07 26 00 Vapor Retarders
   7. 07 27 00 Air Barriers

8. 07 62 00 Sheet Metal Flashing and Trim
9. 07 65 00 Flexible Flashing
10. 07 90 00 Joint Protection
11. 07 92 00 Joint Sealants
12. 08 00 00 Openings

C. Recommended Applications:
    1. Interior & Exterior use for sealing around windows, doors, and siding.
    2. Surfaces suitable for bonding:
        a. Fiber Cement
        b. Cedar
        c. Brick
        d. Stone
        e. XPS/EPS
        f. Coated Aluminum
        g. Steel
        h. Fiberglass
        i. Vinyl
        j. PVC
        k. Stucco
        l. EIFS
        m. Wood
        n. Glass
        o. Concrete
        p. Masonry
        q. Flashing tapes
        r. Most Architectural Coatings/finishes
    3. When using LEPAGE® QUAD MAX®, review compatibility with substrate manufacturer prior to application.
    4. For detailed application recommendations, refer to LEPAGE® QUAD MAX® Technical Data Sheet (TDS) available at https://www.lepage.ca/

D. Limitations:
    1. LEPAGE® QUAD MAX® Window, Door, & Siding sealant product application limitations:
        a. DO NOT TOOL or smear/feather on prefinished coloured claddings (i.e. siding, trim, etc.) as this will reduce any sealants ability to withstand UV exposure and joint movement, causing premature joint failure and colour fading.
        b. DO NOT use as a nail hole filler or in touch-up applications on prefinished exterior building materials. Follow prefinished cladding manufacturer's instructions for nail hole filling.
        c. Not recommended for field joint/butt joint applications on pre-finished exterior claddings and trim materials.
        d. DO NOT use on joints immersed in water or applications requiring continuous water immersion.
        e. DO NOT use on roof applications including, but not limited to, metal roof panels or on log homes.
        f. DO NOT use as a traffic bearing sealant or on log homes
        g. Closed Cell Backing material (Backer Rod) is required for joints deeper than 9.5mm (3/8")

2. For detailed application limitations of LEPAGE® QUAD MAX® refer to Technical Data Sheet (TDS) available at https://www.lepage.ca/

1.02 REFERENCES

A. ASTM International (ASTM)
   1. ASTM D412 – Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension
   2. ASTM C639 – Standard Test Method for Rheological (Flow) Properties of Elastomeric Sealants
   3. ASTM C661 – Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer
   4. ASTM C719 – Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle)
   5. ASTM C794 – Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants
   6. ASTM C920 – Standard Specification for Elastomeric Joint Sealants
   7. ASTM C1183 – Standard Test Method for Extrusion Rate of Elastomeric Sealants
   8. C1193 – Standard Guide for Use of Joint Sealants
   9. C1382 – Determining Tensile Adhesion Properties of Sealants When Used in Exterior Insulation and Finish Systems

B. American Architectural Manufacturers Association (AAMA)
   1. AAMA 802.3 (Type II) – Ductile Back Bedding Compound
   2. AAMA 805.2 (Group C) – Bonding Back Bedding Compound
   3. AAMA 808.3 (Type I) – Exterior Perimeter Sealing Compound
   4. AAMA 713 – 08 Chemical Compatibility of Sealants and Self-Adhered Flexible Flashings

C. Federal Specification
   1. TT-S-00230C – SEALING COMPOUND, ELASTOMERIC TYPE, SINGLE COMPONENT (FOR CALKING, SEALING, AND GLAZING IN BUILDINGS AND OTHER STRUCTURES) (S/S BY A-A-1556) (SUPERSEDING TT-S-00230B)

D. Underwriter Laboratories, Inc. (UL)
   1. UL 723 – Test for Surface Burning Characteristics of Building Materials.
   2. UL *GREENGUARD*® certified – UL 2818 - 2013 Gold Standard for Chemical Emissions for Building Materials, Finishes and Furnishings

E. California Air Resources Board (CARB)

F. South Coast Air Quality Management District (SCAQMD)

1.03 SUBMITTALS

A. Refer to section 01 33 00 – Submittal Procedures (Specifier Note: Delete all that do not apply or have not been submitted.)
   1. 01 33 13 – Certificates
   2. 01 33 16 – Design Data
   3. 01 33 19 – Field Test Reporting

4. 01 33 23 – Shop Drawings, Product Data, and Samples
5. 01 33 26 – Source Quality Control Reporting
6. 01 33 29 – Sustainable Design Reporting

B. Product Technical Data: Submit most current manufacturer technical literature for each type of product used including the following, but not limited to:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation methods.

C. Samples: All products specified. Verify performance criteria and installation procedure.

D. Quality Assurance Submittals
   1. Manufacturer Instructions: Provide manufacturer's written installation instructions.

1.04 QUALITY ASSURANCE

A. Installer Qualifications:
   1. Installer to comply with quality assurance articles referenced in ASTM C1193 for installation of elastomeric joint sealant.
   2. Installer shall have documented LEPAGE® QUAD® Certified Installer Training Certification with the installation of LEPAGE® QUAD MAX®.
   3. Installation shall be in accordance with manufacturer's installation guidelines and recommendations.
   4. Installer shall have documented history of successful project execution and installation of said product.

B. Pre-Construction Mock-Up: (Specifier Note: Mock-ups are recommended for all projects using the OSI® QUAD MAX®. Mock-up requirement will likely be included in the specification section for the wall cladding and/or windows. Include OSI® QUAD MAX® as part of the required mock-up.)
   1. Construct mock-up prior to installation using LEPAGE® QUAD MAX® Window, Door, & Siding Sealant including surface preparation per elastomeric joint sealant manufacturer's instructions. Obtain Architect/Engineer/Consultant or Owner's approval of joint treatments to establish adhesion, appearance, and workmanship standard.
      a. Mock-Up Size: insert mock up dimensions
      b. Mock-Up Substrate: insert substrate vertical surfaces as agreed to prior to Mock-up installation.
      c. Maintain mock-up during construction for workmanship standard.
      d. 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 01 60 00, Product Requirements. (Specifier Note: Review the following. Delete all that do not apply.)
   1. 01 61 00 – Common Product Requirements
   2. 01 64 00 – Owner-Furnished Products.

3. 01 65 00 – Product Delivery Requirements
4. 01 66 00 – Product Storage and Handling Requirements
    a. 01 66 13 – Product Storage and Handling Requirements for Hazardous Materials
    b. 01 66 16 – Product Storage and Handling Requirements for Toxic Materials

B. Deliver all LEPAGE® QUAD MAX® materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Store LEPAGE® QUAD MAX® materials as recommended by manufacturer. Refer to manufacturer Technical Data Sheet (TDS) available at https://www.lepage.ca/
    1. Not damaged by freezing.
    2. Store away from heat, flame and spark in a cool, dry, well-ventilated area.
        a. Storing product in too hot or too cold of conditions will considerably reduce Shelf Life of unopened containers.

D. Use an approved hazardous waste facility for disposal.

E. Comply with manufacturer's ordering instructions and lead-time(s) required to avoid construction delays.

1.06 PROJECT CONDITIONS

A. Environmental Requirements:
    1. Verify substrates and ambient air temperature at project site before, during, and after application to assure compliance with manufacturer's recommendations.
        a. Weather Conditions:
            i) Can be applied between -18°C (0°F) and 60°C (140°F)
            ii) For best performance, store cartridge at room temperature at least 24 hours before use.
            iii) Apply in accordance with manufacturer's instructions. Refer to product Technical Data Sheets (TDS) available at https://www.lepage.ca/
            iv) Compliance: Follow manufacturer's specific safety, health and environmental recommendations per most recent 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

A. LEPAGE® Limited Warranty:
    1. This product is warranted to be free from defects in materials when used as directed. Henkel's sole obligation shall be, at its option, to replace or refund the purchase price of product proven to be defective. Henkel makes no other warranty, express or implied, including warranties of MERCHANTABILITY and FITNESS FOR A PARTICULAR PURPOSE and will not be liable for consequential or incidental damages. This limited warranty gives you specific legal rights, which vary from state to state.

a. For warranty assistance, contact Henkel at 1.800.624.7767 M-F 9:00 AM to 4:00 PM ET.

PART 2 PRODUCTS (Specifier Note: Product Information is proprietary to the OSI® QUAD MAX®. If additional products are required for competitive procurement, contact the Henkel Corporation for assistance – 1-800-624-7767, Mon. – Fri. 9:00AM – 4:00PM ET)

2.01 MANUFACTURERS

A. Approved Manufacturer:
   1. Henkel Corporation:
      a. Address: 26235 First Street, Westlake, OH 44145
      b. Phone: 1-866-591-2178
      c. Web Address: http://www.ositough.com.

2.02 MATERIALS (Specifier Note: Sealant product listed has been tested for compatibility and intermittent contact with OSI® QUAD® Butyl Flash and OSI® QUAD® Flash. Edit for specific project as appropriate when sealants are specified within this section.)

A. Uncured Physical Properties

1.	Colour:	specify specific project color(s)
2.	Appearance:	non-slumping paste.
3.	Base:	Silane Modified Polymer
4.	Odor:	Alcohol
5.	Specific Gravity:	1.4 – 1.5
6.	Flashpoint:	107°C (224.6°F)
7.	VOC Content:	
a.	CARB	2.46% by weight
b.	SCAQMD Rule 1168	36g/L
8.	Shelf Life:	24 months from date of manufacture (unopened)
9.	Lot Code:	YYDDD
a.	YY:	Last two digits of year of manufacture
b.	DDD:	Day of manufacture (365/yr)
c.	Example:	21061 = 61st day of 2021 = March 2, 2021

B. Application Properties:

1.	Application Temperature:	-18°C (0°F) and 60°C (140°F)
a.	For easier extrusion of sealant at lower temperatures, store cartridge at room temperature at least 24 hours prior to use	
2.	Skin Formation Time:	17-20 minutes (At 22°C (72°F) and 70% RH)
a.	Cure time is dependent on temperature, humidity and depth of sealant applied.	
3.	Tack-free Time:	15 hours (At 22°C (72°F) and 70% RH)
4.	Cure Time:	24-72 hours
a.	Cure time is dependent on temperature, humidity and depth of sealant applied	
b.	Extrusion Rate:	42 ml/min (ASTM C1183 [Procedure A])
5.	Vertical Sag:	0 inches (ASTM C639)

C. Cured Performance Properties:

1. Service Temperature: -25°C (-14°F) to 70°C (158°F)
2. 180° Peel Adhesion (ASTM C794):
    a. PVC Trim 47.6 lb./in
    b. Fiber Cement 47.0 lb./in
    c. Aluminum Flashing 51.1 lb./in Coated (Painted)
    d. Vinyl Siding 54.7 lb./in
    e. Mortar 42.0 lb./in
3. Hardness (ASTM C661): 32
4. Joint Movement (ASTM C719): 50% (+/-50 percent movement)
5. Tensile Strength (ASTM D412): 234 PSI
6. Elongation (ASTM D412): 577%

2.03 ACCESSORIES:

A. General:
    1. Verify compatibility of any product that makes physical contact with or is used in combination with LEPAGE® QUAD MAX®. (Specifiers Note: Remove sections below that do not apply to project specific conditions. Include additional sections that aren't explicitly outlined below but are part of project scope and conditions.)
B. Required Safety Equipment & Procedures:
    1. Eye Protection
    2. Impermeable Gloves
    3. Wash hands after use
    4. Use in well ventilated area
C. Product Specific Application Equipment & Tools
    1. 10oz Caulk Gun or Sausage Gun
    2. Utility Knife

D. Adhesive Primers: Use primers only as recommended by elastomeric joint sealant manufacturer where required for adhesion of sealant to joint substrates indicated and as determined for use from pre-construction mock-up testing. (Specifier Note: Edit the following. Installer shall use manufacturer approved adhesive primer and verify compatibility. Specify manufacturer approved primer below. Delete this section if primer is not specified.)
    1. Specify manufacturer approved adhesive primer.

E. Bond-breaker tape: Polyethylene tape or other approved plastic tape as recommended by elastomeric joint sealant manufacturer to prevent 3-sided joint adhesion to rigid, in-flexible joint fillers or filet joint surfaces at back of joint where such adhesion would restrict proper sealant movement or result in sealant failure.(Specifier Note: Edit the following. Installer shall use manufacturer approved bond-breaker tape and verify compatibility. Specify manufacturer approved bond-breaker tape below. Delete this section if bond-breaker tape is not specified.)
    1. Specify manufacturer approved bond breaker tape

F. Masking tape: Non-staining, non-absorbent and compatible with elastomeric joint sealants and adjacent surfaces. (Specifier Note: Edit the following. Installer shall use manufacturer approved masking tape and verify compatibility. Specify manufacturer approved masking tape below. Delete this section if masking tape is not specified.)(Specifier Note: Edit the following. Installer shall use manufacturer approved

masking tape and verify compatibility. Specify manufacturer approved masking tape below. Delete this section if masking tape is not specified.)

1. Specify masking tape.

G. Cylindrical Sealant Backer Rod: Provide joint backings that meet ASTM C-1330, Type C (closed cell) sized 1/8" larger than the width of the joint or Type B (soft cell, non-absorbent bi-cellular backing materials with surface skin) sized 1/8" larger than the joint width up to 5/8" width, then 1/4" larger than the joint width for 3/4" width and larger with proper density to control sealant depth and profile. Follow elastomeric joint sealant manufacturer's recommendations with backer rod selections for optimum elastomeric joint sealant performance.
   1. **Note:** Installer shall not use "open cell" backer rod material in combination with the use of LEPAGE® QUAD MAX® Joint Sealant or LEPAGE® QUAD® Foam. Contact designated manufacturer representative for questions or concerns. (Specifier Note: Edit the following. Installer shall use manufacturer approved backer rod and verify compatibility. Specify manufacturer approved backer rod below. Delete this section if backer rod is not specified.)
   2. Specify manufacturer approved backer rod

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify substrate and surface conditions are in accordance with LOCTITE® PL® PREMIUM MAX Construction Adhesive manufacturer recommended tolerances prior to installation
   1. Refer to section **1.01, C & D** to review suitable substrates and product limitations.
      a. Refer to product Technical Data Sheets (TDS) available at https://www.loctiteproducts.com/.
      b. Contact manufacturer with any additional questions or concerns regarding suitable substrates and product limitations.

B. Review requirements for sequencing the installation of elastomeric joint sealant assembly with installation of windows, doors, louvers, and wall penetrations to provide a weather-tight flashing assembly.

C. **REVIEW ALL SAFETY PRECAUTIONS BEFORE HANDLING THIS PRODUCT:**
   1. Refer to LEPAGE® QUAD MAX® Window, Door, & Siding sealant Technical Data Sheet (TDS). Refer to Safety Data Sheet (SDS) for additional information. Both are available at https://www.lepage.ca/.
   2. **CAUTION. IRRITANT.**
      a. Use in well-ventilated area.
         i) Methanol is released during application and cure, which may affect the nervous system causing dizziness, headache or nausea.
      b. Avoid eye and skin contact.
         i) Prolonged or repeated skin contact with uncured sealant may cause irritation.
         ii) Wear gloves and safety glasses when applying product.
         iii) Remove contact lenses before using sealant.

iv) Wash hands after using.

3. **FIRST AID:**
   a. For skin contact: wash thoroughly with soap and water.
   b. In case of eye contact: flush with water for 15 minutes.
   c. If affected by inhalation: remove to fresh air.
   d. If swallowed: do not induce vomiting Call a physician if symptoms develop and persists.
4. **KEEP OUT OF THE REACH OF CHILDREN.**
5. Refer to the Safety Data Sheet (SDS) for further information available at https://www.lepage.ca/.

3.02 PREPARATION

A. General:
   1. Installer shall refer to manufacturer approved installation instructions and individual product Technical Data Sheets (TDS) for required environmental installation conditions and surface/substrate preparation available at https://www.lepage.ca/.

B. Surface Preparation:
   1. All surfaces should be clean, dry, and free of all contaminates, such as, old caulking, grease, dust, and any other material that can interfere with adhesion.
   2. Remove any ice, snow, or frost that may be present on substrates. For more information refer to cladding manufacturer's instructions for approved cleaning methods.
   3. Ensure proper drain plane design to avoid trapped water and or moisture. The combination of trapped moisture and other variables will tend to create back pressure and cause sealant bubbling regardless of technology.
   4. While QUAD MAX® is generally considered a non-priming sealant, special circumstances or substrates may require a primer.
      a. It is the user's responsibility to test substrate compatibility and the adhesion of the cured sealant on a test joint before applying to the entire project.
      b. It is also the end user's responsibility to verify acceptable colour match to all substrates prior to the start of job and during the application.
   5. For additional surface preparation instruction, refer to LEPAGE® QUAD MAX® Technical Data Sheet (TDS) available at https://www.lepage.ca/.

C. General Preparation:
   1. The temperature of the product, the surfaces and the working area should be between -18°C (0°F) and 60°C (140°F).
      a. For best performance, store cartridge at room temperature at least 24 hours before use.
   2. Use nozzle to fully puncture seal and cut the tip at a 30° to 45° angle with a sharp blade.
   3. Screw on plastic nozzle, insert cartridge into a high-quality caulking gun, and dispense a 9.5 mm (3/8") bead of sealant for optimal joint protection.
   4. For more information, refer to ASTM C1193 – Standard Guide for Use of Joint Sealants.
   5. For additional product preparation instruction, refer to LEPAGE® QUAD MAX® Technical Data Sheet (TDS) available at https://www.lepage.ca/.

3.03 INSTALLATION

A. General:
   1. For comprehensive installation instruction, refer to ***OSI® INSTALLATION GUIDE***.
      a. Follow this link to download the OSI® Installation Guide
         i) Contact Henkel Sales Representative for any additional assistance with the *OSI® Installation Guide*, training, and installation scenarios not explicitly outlined within *OSI® Installation Guide*.
         ii) For additional information refer to product Technical Data Sheets (TDS) available at www.ositough.com.

B. Application Instructions:
   1. Using a caulking gun, the sealant can be pushed or pulled when applying but positive pressure should be maintained throughout extrusion.
   2. Use steady pressure to force sealant into joint ensuring an adequate and even bond of sealant to substrate and to maintain consistency avoiding irregular bead shapes, such as, too small or too large.
   3. If the depth of the joint exceeds 9.5 mm (3/8") the use of a backer rod is recommended. Always apply sealant in a bead form.
   4. A fillet joint is formed when two surfaces come together to form a right angle (see Fig. 1). The sealant used to join these two surfaces is triangular in shape. Masking tape can be used to ensure a clean application.
   5. DO NOT TOOL or smear/feather on prefinished coloured claddings (i.e. siding, trim) as this will reduce any sealants ability to withstand UV exposure and joint movement, causing premature joint failure and colour fading.
   6. If masking tape is used along the sides of the joint to prevent surface smearing, ensure the tape is removed immediately by pulling the tape away.
   7. Full cure may take 24-72 hours or longer depending on ambient conditions and volume of sealant used. Sealant is paintable in 1 hour*. High quality latex paint is recommended. If using oil based/alkyd paint, a latex primer should be used first. (See LEPAGE BEST PRACTICE GUIDE FOR PROPER INSTALLATION).
   8. For complete product application instruction, refer to LEPAGE® QUAD MAX® Technical Data Sheet (TDS) available at https://www.lepage.ca/.

3.04 FIELD QUALITY CONTROL

A. Notify manufacturer's designated representative to obtain periodic observations of elastomeric joint sealant installation.

B. Field Adhesion testing is recommended for unverified or unapproved substrates. Contact designated manufacturer representative for consultation.

3.05 CLEANING AND PROTECTION

A. CLEAN UP:
   1. Clean tools and uncured sealant residue immediately with mineral spirits or paint thinner following solvent manufacturers precautions.
   2. Cured sealant must be carefully cut away with a sharp-edged tool.

a. NOTE: Use of solvents may damage prefinished siding and trim materials. Always test a small area before proceeding. Painting affected areas may be only remedy.

B. For additional information refer to product Technical Data Sheets (TDS) available at https://www.lepage.ca/.

END OF SECTION