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 LAPAGE® Specialist to assist in appropriate product selections.

This guide provides for a high performing LAPAGE® QUAD® Foam, single component, minimal expansion and low pressure polyurethane foam packaged in a pressurized metal container. It is specifically designed for use with the LAPAGE® QUAD® Window and Door System. It is dispensed in bead form for sealing gaps and cracks, holes and voids around windows and doors, in most types of construction projects. The product exhibits slight to moderate expansion during application and cures upon reaction with moisture to form a flexible, urethane foam. The closed cell structure of this material provides an R factor of 5 per inch of cured foam making it an efficient method for stopping air and moisture infiltration and expensive warm and cold air loss between windows and rough frame. LAPAGE® QUAD® Foam will not warp or deform windows and doors. LAPAGE® QUAD® Foam adheres to all types of building materials including wood, concrete, and drywall and is compatible with asphalt and butyl flexible flashing. LAPAGE® QUAD® Foam complies with all Federal and State VOC regulations.

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

SECTION 07 27 36 – Sprayed Foam Air Barrier

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. LAPAGE® QUAD® Foam : Application of sprayed foam air barrier for use in window and door flashing applications.

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

C. Recommended Applications:
   1. LAPAGE® QUAD® Foam is recommended for the following applications:
      a. insulate and seal around windows & door frames
         i) jambs, sills, header joints,
      b. corner joints
      c. top plate penetrations
      d. electrical and plumbing
      e. wall penetrations
      f. other areas where air infiltration or heat loss may occur.
   2. Bonds most building materials including:
      a. Vinyl
      b. Aluminum
      c. Fiberglass
      d. Wood
      e. OSB
      f. PVC
      g. Concrete
      h. Metal.
   3. When using LEPAGE® QUAD® Foam, review compatibility with substrate manufacturer prior to application.
   4. For detailed application recommendations, refer to LEPAGE® QUAD® Foam Technical Data Sheet (TDS) available at https://www.lepage.ca/

D. Limitations:
   1. LAPAGE® QUAD® Foam is not a fire stopping material and SHOULD NOT be used in areas that require fireproof or fire stopping materials
   2. Urethane foams are adversely affected by sunlight (UV light).
      a. Exposed foam must be coated with a protective covering or coating
   3. Do not store product on its side
   4. Does not bond to the following substrates:
      a. Polyethylene
      b. polytetrafluoroethylene (PTFE)/Teflon®
      c. siliconized surfaces
   5. For cold weather applications, product should be stored above 5°C (41°F) at least 12 hours before application.
   6. Refer to LAPAGE® QUAD® Foam Technical Data Sheets (TDS) available at http://www.lepage.ca/ for additional information.
      a. Contact manufacturer for any additional questions or concerns regarding substrate and environmental limitations.

1.02 REFERENCES

A. ASTM International (ASTM)
   1. ASTM E2112 – Standard Practice for Installation of Exterior Windows, Doors and Skylights.
   2. ASTM C 518 – Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.

3. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
4. ASTM E 96 – Standard Test Methods for Water Vapor Transmission of Materials.
5. ASTM E 283 – Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
6. ASTM E 285 – Standard Test Method for Assemblies, Properties, and Materials in response to heat and flame under controlled laboratory conditions.
7. ASTM E 2178 – Standard Test Method for Air Permeance of Building Materials.
8. ASTM D 1622 – Standard Test Method for Apparent Density of Rigid Cellular Plastics.

B. American Architectural Manufacturers Association (AAMA)
   1. AAMA 504 – Voluntary Laboratory Test Method to Qualify Fenestration Installation Procedures
   2. AAMA 800-08 Voluntary Specifications and Test Methods for Sealants
   3. AAMA 812 04 Voluntary Specifications of Single Component Aerosol Expanding Polyurethane Foams for Sealing Rough Openings of Fenestration Openings.

C. Underwriters Laboratories, Inc.
   1. (UL) 723 - Test for Surface Burning Characteristics of Building Materials.

D. California Air Resources Board (CARB)

E. 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 E2112 for installation of air barrier foam sealants.
   2. Installer shall have documented LAPAGE® QUAD® Window and Door System Certification with the installation of LAPAGE® QUAD® Window and Door System.
   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 LAPAGE® QUAD® Foam. Mock-up requirement will likely be included in the specification section for the wall cladding and/or windows. Include LAPAGE® QUAD® as part of the required mock-up.)
   1. Install mock-up prior to installation using LAPAGE® QUAD® Foam sprayed foam air barrier including surface preparation per sprayed foam air barrier 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 measurement
      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
   5. 01 66 13 – Product Storage and Handling Requirements for Hazardous Materials
   6. 01 66 16 – Product Storage and Handling Requirements for Toxic Materials

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

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

D. Store, handle, and dispose of LAPAGE® QUAD® Foam materials as recommended by manufacturer. Refer to manufacturer Technical Data Sheet (TDS) available at http://www.lepage.ca/.
   1. Product must be stored vertically, not horizontally on its side.

a. Note: When storing foam dispensing applicators with foam cans attached, be sure to store the tool with the can valve pointing downwards.
b. Storing the can upright may cause propellant to leak and the foam applicator to become inoperative.

2. Store in a cool, dry place. For maximum performance and shelf life, store between 5°C (41°F) and 25°C (77°F).
3. The product can be stored for a maximum of 1 week at -20°C (-4°F).
4. Do not store below -20°C (-4°F),
   a. below this temperature product valve may spontaneously open resulting in leakage.
5. Containers are under pressure. Do not expose to open flame or temperatures above 49°C (120°F). Do not store under direct sunlight.
   a. Excessive heat can cause bursting and premature aging of components resulting in shorter shelf life.
6. When containers are empty, vent off any excess pressure.
   a. DO NOT discard empty can in garbage compactor.
   b. DO NOT incinerate.
   c. DO NOT puncture, cut or weld container.
7. Recommended method of disposal for unused product:
   a. Vent off excess pressure and dispose of in an appropriate waste receptacle.
   b. Dispose of according to provincial and federal governmental regulations

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) Apply in accordance with manufacturer's instructions. Refer to product Technical Data Sheets (TDS) available at http://www.lepage.ca/.
         ii) 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. LAPAGE® Limited Warranty:
   1. LAPAGE® products are warranted by Henkel Corporation 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.
   2. Submit manufacturer's limited warranty at completion for projects that meet criteria to receive Manufacturers Limited Warranty.

a. Limited Warranty Areas: insert limited warranty areas per specifier note here (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 OSI products. 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.lepage.ca/.

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

A. Uncured Physical Properties:
   1. Colour: Tan
   2. Appearance: Minimal expansion foam
   3. Base: Single Component Polyurethane
   4. Specific Gravity: 1.107
   5. Flash Point: <-18°C (0°F)
   6. % Solids by Weight: 70%
   7. VOC Content (CARB): 16% by weight
      a. SCAQMD rule 1168 177 g/L
   8. Shelf Life: 18 months from date of manufacture (unopened)

B. Application Properties:
   1. Application Temperature: between -10°C (14°F) and 30°C (86°F)
      a. Work environment and substrates
   2. Product storage: 5°C (41°F) and 25°C (77°F)
      a. (at least) 12 hours prior to application
      b. For best results, store at room temperature.
   3. Tack-free Time: Approx. 8 to 10 minutes (At 73°F and 70% relative humidity)
      a. Cure time is dependent on temperature, humidity, and depth of sealant applied
   4. Cut Time Gun: Approx. 25-35 minutes
      a. Cure time is dependent on temperature, humidity, and depth of sealant applied
   5. Cure Time: Approx. 1 to 6 hours
      a. Cure time is dependent on temperature, humidity, and depth of sealant applied

C. Cured Performance Properties:
   1. Colour: Tan
   2. Service Temperature: -40°C (-40°F) to 90°C (194°F)
   3. Surface Burning Characteristics (ASTM E84):

a. Flame Spread: 10
b. Smoke Development: 25

4. Pressure Build Up: 0.2471 psi (AAMA 812)
   a. Deflection: 0.0050 in.

2.03 ACCESSORIES:

A. General:
   1. Verify compatibility of any product that makes physical contact with or is used in combination with LAPAGE® QUAD® Foam.

B. Required Safety Equipment & Procedures:
   1. Eye Protection
   2. Impermeable Gloves
   3. Proper work attire
   4. Wash hands after use
      a. Cured foam is difficult to remove from skin, clothing, and other substrates.
      b. May discolour skin.

C. Product Specific Application Equipment & Tools: (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.)
   1. LAPAGE® QUAD® Foam Applicator Gun
   2. LAPAGE® Foam Clean – Foam and Applicator Cleaner

D. Adhesive Primers: Use primers only as recommended by sprayed foam air barrier 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 primers.

E. Bond-breaker tape: Polyethylene tape or other approved plastic tape as recommended by sprayed foam air barrier manufacturer to prevent 3-sided joint adhesion to rigid, in-flexible joint fillers or filet joint surfaces at back of joint where such (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. Cylindrical Sealant Backer Rod: Provide joint backings that meet ASTM C1330, Type C (closed) or Type B (soft cell, 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 foam manufacturer's recommendations with backer rod selections for optimum joint sealant performance.
   1. **Note:** Installer shall not use "open cell" backer rod material in combination with the use of LAPAGE® QUAD MAX® Joint Sealant or LAPAGE® 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 LAPAGE® QUAD® Foam 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 of installation of LAPAGE® QUAD® Foam 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. **EXTREME DANGER. VERY FLAMMABLE. POISON. CONTENTS UNDER PRESSURE.CONTENTS MAY BE HARMFUL. CONTENTS MAY CATCH FIRE. MAY CAUSE ALLERGIC RESPIRATORY AND SKIN REACTION. CONTAINER MAY EXPLODE IF HEATED.**
      a. Do not smoke.
      b. Do not puncture.
      c. Do not burn.
      d. Do not get in eyes or on skin or clothing.
      e. Do not breathe fumes.
      f. Do not swallow.
      g. Use only in a well ventilated area.
         i) Keep away from flames, such as a pilot light, and any object that sparks, such as an electric motor. Store away from heat.
         ii) Do not use if you have chronic lung or breathing problems or if you have ever had a reaction to isocyanates. Wear appropriate respiratory protection for prolonged use.
         iii) If you have breathing problems during use, leave the area for fresh air. If problems develop or linger, call a physician.
   3. **KEEP OUT OF REACH OF CHILDREN**.
   4. **FIRST AID TREATMENT**:
      a. Contains:
         i) modified polymeric MDI
         ii) Diphenylmethandiisocyanate
         iii) tris(2-chloroisopropyl) phosphate
         iv) dimethylether
         v) hydrocarbon propellant
      b. If swallowed, call Poison Control Center or doctor immediately.
      c. Do not induce vomiting.

d. If breathed in, move person into fresh air.
e. If in eyes or on skin, rinse well with water.

5. Refer to the Safety Data Sheet (SDS) for further information.

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. Read all operating instructions packaged with the dispensing unit before using.
2. All surfaces must be free of dust, dirt, oil and other foreign materials.
3. Cover surfaces not intended to be foamed as cured foam is difficult to remove.
4. For complete surface preparation instruction, refer to LEPAGE® QUAD® Foam Technical Data Sheet (TDS) available at https://www.lepage.ca/.

C. General Preparation
1. The temperature of the product must be kept at 5°C (41°F) and for best results between 20°C and 25°C (68°F and 77°F) for at least 12 hours before application (see storage below).
a. Under these conditions, the product can be applied when the surfaces and working area are between -10°C to 30°C (14°F and 86°F).
2. Screw applicator onto coupling unit until it will go no further.
3. Do not over tighten.
4. Shake can well before use (minimum of 15 times).
5. For complete surface preparation instruction, refer to LEPAGE® QUAD® Foam 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 *LAPAGE® Installation Guide*, training, and installation scenarios not explicitly outlined within *LAPAGE® Installation Guide*.
ii) For additional information refer to product Technical Data Sheets (TDS) available at www.ositough.com.

B. Application Instruction:
1. Using the foam gun, perimeter seal around window, doors, and rough openings.
2. Fill the gap to approximately 30%.
3. Foam is tack-free in 8 - 10 minutes* and fully cured in approximately 1 to 6 hours*.
4. If necessary, any excess cured foam can be trimmed with a sharp knife in approximately 10 minutes* or sanded after approximately 1 hour*.
5. Cured foam exposed to prolonged sunlight must be covered with exterior grade paint, stain or sealant.
6. Notes:

a. Insufficient air, humidity and/or substrate moisture during application may cause delayed curing or improper cell formation of the foam material.
b. Lightly spraying the cavities with a water atomizer in dry or low humidity climates will allow the foam to cure and develop proper cell structure.
c. If possible, avoid direct sunshine to the joint during application. Direct sunshine and high temperatures may cause the foam to sag and flow out of the joint during application and before curing. Cooling the can down prior to application may help to prevent this issue.

7. For complete product application instruction, refer to LEPAGE® QUAD® FoamTechnical 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 sprayed foam 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 product residue immediately with LEPAGE® Foam Cleaner.
a. Cured foam is not affected by solvents and is extremely difficult to remove.
2. For additional information refer to product Technical Data Sheets (TDS) available at https://www.lepage.ca/.

END OF SECTION