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Informational Guide Specification OSI® QUAD® Foam

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 OSI® 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 OSI® 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. OSI® QUAD® Foam will not warp or deform windows and doors. OSI® QUAD® Foam adheres to all types of building materials including wood, concrete, and drywall and is compatible with asphalt and butyl flexible flashing. OSI® QUAD® Foam complies with all Federal and State VOC regulations.

SECTION 07 2727

FLUID-APPLIED MEMBRANE, AIR BARRIER, VAPOR RETARDING

PART 1– GENERAL

1.01 SUMMARY

- A. Provide sealant for exterior perimeter of window and door to control air, water and moisture entry between fenestration jamb and framed rough opening. This low expansion foam will also provide thermal insulation protection in this application. Applications as indicated, including substrate preparation, sealant installation and cleanup of related installations

- B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
 2. Section 04800 - Unit Masonry assemblies: Cavity wall assemblies
 3. Section 06100 - Rough Carpentry: Wood framing
 4. Section 07210 - Fiberglass Building Insulation: Supplemental blanket, batt and roll insulation
 5. Section 07260 - Vapor Retarders: Vapor retarder materials.
 6. Section 07270 - Air Barriers: Air seal materials to adjacent insulation.
 7. Section 07620 - Sheet Metal Flashing and Trim: Requirements for flashings.
 8. Section 07900 - Joint Sealant: Rod and sealant at control and expansion joints

1.02 REFERENCES

- A. ASTM International (ASTM)
1. ASTM C 518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 2. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 3. ASTM E 96 - Standard Test Methods for Water Vapor Transmission of Materials.
 4. 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.
 5. ASTM E 285 – Standard Test Method for Assemblies, Properties, and Materials in response to heat and flame under controlled laboratory conditions.
 6. ASTM E 2178 – Standard Test Method for Air Permeance of Building Materials.
 7. ASTM D 1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics.
- B. American Architectural Manufacturers Association (AAMA)
1. AAMA 800-08 Voluntary Specifications and Test Methods for Sealants
 2. AAMA 812 04 Voluntary Specifications of Single Component Aerosol Expanding Polyurethane Foams for Sealing Rough Openings of Fenestration Openings.
- C. Underwriters Laboratories, Inc. (UL) 723 - Test for Surface Burning Characteristics of Building Materials.

1.03 SUBMITTALS

- A. Submittals for Review:
1. Product Data: Manufacturer's data sheets on each product to be used, including:
 - a. Preparation instructions and recommendations.
 - b. Storage and handling requirements and recommendations.
 - c. Installation methods.

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 low expanding foam including surface preparation per foam 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 foam 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 foam in snow, rain, fog, or mist, or when such conditions are expected. Allow joint surfaces to attain dry conditions as recommended by manufacturer before foam 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® Foam. If additional products are required for competitive procurement, contact the Henkel Corporation for assistance.)

2.01 MANUFACTURERS

- A. Product Options: Selection of single component foam material is based upon a proprietary closed cell low expansion foam 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: Closed Cell Spray Foam Insulation: OSI® QUAD® Foam single component, closed cell polyurethane foam with a nominal density of 1.9 pcf, as manufactured by the Henkel Corporation. OSI® QUAD® Foam shall have the following minimum physical properties when cured:

- B. Performance Requirements: OSI® QUAD® Foam:
 - 1. Color : Tan
 - 2. Flash Point : < 0 ° F (-17.78 ° C)
 - 3. Application Temperature : 32° F (0° C) to 86° F (30° C)
 - 4. Surface Burning : ASTM E 84 :
 - a. Flame Spread : 15
 - b. Smoke Development : 25
 - 5. AAMA 812 :
 - a. Pressure Build Up : 0.0247 psi
 - b. Deflection: 0.0050 in.
 - 6. Tested in Accordance with AAMA 504
 - 7. Conforms with ASTM E 2112

2.03 SEALANT ACCESSORIES:

- A. General: Provide joint backings, fillers, or primers as recommended by foam manufacturer.
- B. OSI® QUAD® Foam Gun™
- C. OSI® QUAD® Foam Cleaner

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 and gaps indicated to receive low expansion foam and verify joint substrate conditions are acceptable for installation in accordance with foam manufacturer's instructions. Avoid installation until unsatisfactory conditions have been corrected.
 - 1. General: All joint and gap surfaces must be cleaned and totally dry, frost free, and dust free before foam application begins for optimum performance. Remove all foreign matter and contaminants including dirt, dust, oil grease, mildew, loose paint, rust or scale.
 - 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 foam 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 foam 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 foam 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 foam manufacturer's installation instructions for applications indicated unless more stringent project specific instructions or requirements apply. Only apply when foam, surface and air temperature will remain above freezing.
- B. Fill gap with foam to approximately 70-80%. Foam is tack free in 10 minutes and fully cured in 24 hours. Cured foam exposed to prolonged sunlight must be covered with paint, stain or sealant.
- C. Insufficient air, humidity and/or substrate moisture during application may cause delayed curing or improper cell formation of the foam material. 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.
- D. If possible, avoid direct sunlight to the joint during application. Direct sunlight 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.
- E. Match approved foam mock-up for uniform finish, and overall aesthetics. Remove, refinish, or re-install work not in compliance with the Contract Documents.

3.05 CLEANING AND PROTECTION

- D. Clean tools and uncured product residue immediately with OSI® QUAD® Foam Cleaner
- A. . Cured foam is not affected by solvents and is extremely difficult to remove.

- 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.