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Guide Specification for the OSI® QUAD® Window and Door Flashing System

Specifier Note: The purpose of this guide specification is to assist the specifier in correctly specifying sealant, foam and flashing products and execution. The specifier needs to edit the guide specifications to fit the needs of specific projects. Throughout the guide specification, there are Specifier Notes to assist in the editing of the file.

This guide is for residential and commercial flashing applications in conjunction with weather resistant barrier assemblies. This flashing system will offer protection for the building envelope by providing a water-resistant barrier around penetrations and rough openings.

This residential/commercial flashing system is specifically designed for above grade, vertical wall surface openings or penetrations where the wall assembly may consist of any of the following: exterior-grade gypsum sheathing, exterior plywood sheathing, oriented strand board (OSB) sheathing and masonry wall construction.

SECTION 07 65 00

Flexible Flashing System

OSI® QUAD® Window and Door Flashing Systems

PART 1 – GENERAL

1.01 SECTION INCLUDES

- A. Self-adhering flashing (OSI® Butyl Flash)
- B. Joint Sealant (OSI® QUAD® MAX Window, Door and Siding Sealant)
- C. Foam in Place Air Barrier (OSI® QUAD® Window and Door Foam)

1.02 REFERENCES

- A. ASTM International
 - 1. ASTM C920; Standard Specification for Elastomeric Joint Sealants
 - 2. ASTM C1193; Standard Guide for Use of Joint Sealants
 - 3. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
 - 4. ASTM E2357; Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

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5. ASTM E283; Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
6. ASTM E1677; Specification for Air Retarder (AR) Material or System for Low-Rise Framed Building Walls
7. ASTM E331; Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference
8. ASTM E96; Test Method for Water Vapor Transmission of Materials
9. ASTM E2112; Standard Practice for Installation of Exterior Windows, Doors and Skylights

1.03 SUBMITTALS

- A. Refer to Section [01 33 00 Submittal Procedures] [insert section number and title].
- B. Product Data: Submit manufacturer current technical literature for each type of product.
- C. Samples: Each type of product specified. [4 inches by 4 inches] [Insert size].
- D. Quality Assurance Submittals

(Specifier Note: DELETE Design Data, Test Report submittal requirements when proprietary specification is used and can be held. MAINTAIN Design Data, Test Report and submittal requirement when other products may be submitted as substitutions.)

1. Design Data, Test Reports: Provide manufacturer test reports indicating product compliance with indicated requirements.
2. Manufacturer Instructions: Provide manufacturer's written installation instructions.

1.04 QUALITY ASSURANCE

- A. Qualifications
 1. Installer shall have documented OSI® QUAD® Window and Door System Certification with the installation of OSI® QUAD® Window and Door System.
 2. Installation shall be in accordance with manufacturer's installation guidelines and recommendations.

(Specifier Note: Mock-ups are recommended for all projects using the OSI® QUAD® Window and Door System. Mock-up requirement will likely be included in the specification section for the wall cladding and/or windows. Include flashing system as part of the required mock-up.)

1.05 MOCK-UP

- A. Construct mock-up in accordance with Section 01 43 39 – Mock-ups.
- B. Provide mock-up of flashing materials under provisions of Section 01 33 23 - Shop Drawings, Product Data and Samples.
- C. Where directed by [engineer] [architect] [consultant], construct typical exterior wall panel, 6 foot long by 6 foot wide, incorporating substrate, window frame, attachment of insulation and showing air barrier membrane application details.
- D. Allow 48 hours for inspection of mock-up by [engineer] [architect] [consultant] before proceeding with flashing procedure. Mock-up may remain as part of the work.

- E. Test mock-up for air and water infiltration to conform with Section 01400 - Quality Control, in accordance with ASTM E1105.

1.06 PRE-INSTALLATION CONFERENCE

- A. Contractor shall convene [one] week prior to commencing Work of this section, under provisions of Section 01 31 19 – Project Meetings.
- B. Ensure all contractors responsible for creating a continuous plane of air tightness are present.

1.07 DELIVERY, STORAGE AND HANDLING

- A. Refer to Section [01 60 00 Product Requirements] [insert section number and title].
- B. Deliver all OSI® flashing system materials and components in manufacturer's original, unopened, undamaged containers with identification labels intact.
- C. Store OSI® flashing system materials as recommended by manufacturer. Keep away from open flame or sources of ignition.

1.08 PROJECT CONDITIONS

- A. Refer to Section [01 60 00 Product Requirements] [insert section number and title].
- B. Do not apply OSI sealant, foam or flashing membranes on wet or damp surfaces.
- C. Apply to surfaces free of dirt, oils, lubricants and other debris.
- D. Install:
- OSI® Butyl Flash at temperatures between 30°F and 180°F degrees. At temperatures below 30°F, apply primer in accordance with flashing manufacturer recommendations, prior to installation of flashing.
 - OSI® QUAD® MAX at temperatures between 0°F and 140°F degrees
 - OSI® QUAD® Foam at temperatures between 14°F and 140°F degrees

PART 2 - PRODUCTS

(Specifier Note: Product Information is proprietary to the OSI® QUAD® Window and Door Flashing System. 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 MANUFACTURER

- A. Henkel Corporation: 26235 First Street, Westlake, OH 44145 – 1-866-591-2178;
<http://www.ositough.com>

2.02 MATERIALS

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A. Self-Adhering Flashing Tape:

1. Basis of Design: Self-adhering straight flashing membrane tape OSI® Butyl Flash

2. Description:

- a. Face Material: Foil
- b. Face color: Silver
- c. Adhesive composition: Butyl adhesive
- d. Thickness: 20 mil.
- e. Release Liner: 1 piece siliconized paper
- f. Dimensions:
 - 4in. X 75ft.
 - 6in. X 75ft.
 - 9in. X 75ft.

3. Performance Properties

- a. Tensile Strength, ASTM D1000 – 800 psi
- b. Peel Strength, ASTM D903
 - Plywood - 6 lb/in
 - OSB – 4.75 lb/in
 - PVC – 12.5 lb/in
 - Housewrap – 14.5 lb/in

Meets all requirements of AAMA 711-13

(Specifier Note: Sealant products listed below have been tested for compatibility and intermittent contact with OSI® Butyl Flash. EDIT for specific project as appropriate when sealants are specified within this section.)

AND

B. Commercial, Light Commercial and Residential Sealant

1. Basis of Design: Gun Grade Window Door and Siding Sealant - OSI® QUAD® MAX

2. Description:

- a. ASTM C 920: Type S, Grade NS, Class 50
- b. Appearance: Viscose paste.
- c. Color: 4600 Color Matches
- d. Sealant composition: Silane Modified Polymer
- e. Flashing system applications: Bedding, Control and Fillet joints

3. Performance Properties:

- a. Hardness, ASTM D-661, Shore A = 32
- b. Tensile Strength, ASTM D-2370 > 200 PSI
- c. Elongation, ASTM D-2370 – >549 percent
- d. Cyclic Movement, ASTM C-719; 50% (+/-50 percent movement)

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- e. Peel Strength, ASTM C-794 –
 - >51 lbf Painted Aluminum Flashing
 - >47 lbf Fiber Cement
 - >54 lbf Vinyl Siding
 - > 42 lbf Mortar
- f. Application Temperature: Between = 0° F (-18° C) and 120° F (70° C)
- g. Shrinkage, ASTM D 2453 – 14.1%
- h. Skin Formation Time = 20 to 30 min. (72°F and 70% relative humidity).
- i. Cure Time: = 24 – 72 hours (cure time dependent on temperature, humidity and depth of sealant applied)
- j. VOC Content = 2.48% by weight – CARB
36 g/l - SCAQMD rule 1168

Conforms with ASTM E 2112

AND

C. Window and Door Spray Polyurethane Foam

1. Basis of Design: Low Expansion, Low Compression Spray Polyurethane Foam – OSI® QUAD® Foam
2. Description:
 - a. Color: Tan
 - b. Sealant Composition: Single Component Polyurethane Spray Foam
 - c. Flashing System Applications: Perimeter Seal for Window and Door Openings
3. Performance Properties
 - a. Flash Point : < 0 ° F (-17.78 ° C)
 - b. Application Temperature : 32° F (0° C) to 86° F (30° C)
 - c. Surface Burning : ASTM E 84 :
 - a. Flame Spread : 15
 - b. Smoke Development : 25
 - d. AAMA 812 :
 - a. Pressure Build Up : 0.0247 psi
 - b. Deflection: 0.0050 in.
 - e. Tested in Accordance with AAMA 504
 - f. Conforms with ASTM E 2112

2.03 ACCESSORIES

A. Adhesive Primers

1. OSI Adhesive Primer
2. DuPont Adhesive Primer

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

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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. OSI® QUAD® Foam Gun™
- E. OSI® Foam Clean

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify substrate and surface conditions are in accordance with OSI flashing system manufacturer recommended tolerances prior to installation.
- B. Review requirements for sequencing of installation of OSI flashing system assembly with installation of windows, doors, louvers and wall penetrations to provide a weather-tight flashing assembly.

(Specifier Note: Flashing manufacturer recommends weather barrier be installed before the installation of the windows. UTILIZE these opening preparation and flashing articles for flashing for flanged and non-flanged windows when they will be installed after the installation of a weather barrier.)

3.02 OPENING PREPARATION (for use with flanged windows installed after weather barrier)

- A. Cut weather barrier membrane at rough opening.
 - 1. Cut weather barrier flush with rough opening head, jamb and sill opening.
- B. Cut a head flap at 45-degree angle in the weather barrier membrane at window head to expose 6 inches of sheathing. Temporarily secure weather barrier membrane flap away from sheathing with tape.

3.03 FLASHING (for use with flanged windows installed after weather barrier)

(Specifier Note: OSI® recommends the use of the 6-inch wide OSI® Butyl Flash with conventional 6” framed walls.)

- A. Cut a 6” by 6” piece of OSI® Butyl Flash into “butterfly shape” to use as sill flashing corner guards.
- B. Place and compress corner guards in joints at rough sill and trimmer stud
- C. Cut [6-inch] wide OSI® Butyl Flash a minimum of 12 inches longer than width of sill rough opening.
- D. Cover horizontal sill by aligning OSI® QUAD® Butyl Flash edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6” inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- E. Compress OSI® QUAD® Butyl Flash at bottom corners onto face of wall. Firmly press in place.
- F. On exterior, apply continuous bead of OSI® QUAD® MAX sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.

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- G. Install window according to manufacturer's instructions.
- H. Apply 6-inch wide strips of OSI® QUAD® Butyl Flash at jambs overlapping entire mounting flange. Extend jamb flashing 5-inches above top of rough opening and below bottom edge of sill flashing.
- I. Apply 6-inch wide strip of OSI® QUAD® Butyl Flash as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
- J. Position weather barrier head flap over head flashing. Adhere using weather barrier tape over the 45-degree seams.
- K. Tape head flap in accordance with manufacturer recommendations
- L. On interior, apply OSI® QUAD® Foam around entire window and rough opening frame to create water and moisture seal.

(Specifier Note: When project conditions dictate that weather barrier will be installed after the windows and doors have been installed, UTILIZE the following Flashing Article

3.04 FLASHING (for use with flanged windows installed before weather barrier)

- A. Cut a 6" by 6" piece of OSI® Butyl Flash into "butterfly shape" to use as sill flashing corner guards.
- B. Place and compress corner guards in joints at rough sill and trimmer stud
- C. Attach weather barrier membrane apron under sill. Extend apron a minimum of 10 inches beyond sides of rough opening, and below the rough opening to overlap the sill plate or the weather barrier below. Securely attach sides of apron to wall, leaving bottom free to overlap later weather barrier installation.
- D. Cut [6-inch] wide OSI® QUAD® Butyl Flash a minimum of 12 inches longer than width of sill rough opening.
- E. Cover horizontal sill by aligning OSI® QUAD® Butyl Flash edge with inside edge of sill. Adhere to rough opening across sill and up jambs a minimum of 6 inches. Secure flashing tightly into corners by working in along the sill before adhering up the jambs.
- F. Compress OSI® QUAD® Butyl Flash at bottom corners onto face of wall. Firmly press in place.
- G. On exterior, apply continuous bead of OSI® QUAD® MAX sealant to wall or backside of window mounting flange across jambs and head. Do not apply sealant across sill.
- H. Install window according to manufacturer's instructions.
- I. Complete flashing after installation of window/door
- J. Apply 6-inch wide strips of OSI® QUAD® Butyl Flash at jambs overlapping entire mounting flange. Extend jamb flashing 5-inches above top of rough opening and below bottom edge of sill flashing.
- K. Apply 6-inch wide strip of OSI® QUAD® Butyl Flash as head flashing overlapping the mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
- L. Apply weather resistive barrier to wall, around window frame and over flashing tape
- M. On interior, apply OSI® QUAD® Foam around entire window and rough opening frame to create air and moisture seal.

3.7 FIELD QUALITY CONTROL

(Specifier Note: Field observation by a manufacturer designated representative is recommended for all projects using the OSI® QUAD® Window and Door System)

- A. Notify manufacturer's designated representative to obtain periodic observations of window or door flashing assembly installation.

3.8 PROTECTION

- A. Protect installed flashing system from damage during construction.

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.