



ICC-ES Evaluation Report ESR-1474

Reissued October 2022

Revised April 2024

This report is subject to renewal October 2024.

DIVISION: 06 00 00—WOOD, PLASTICS AND COMPOSITES

Section: 06 16 00—Sheathing

DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION

Section: 07 25 00—Water-resistive Barriers/Weather Barriers

Section: 07 27 00—Air Barriers

REPORT HOLDER:

HUBER ENGINEERED WOODS, LLC

EVALUATION SUBJECT:

ZIP SYSTEM® WALL SHEATHING

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2024, 2021, 2018 and 2015 *International Building Code*® (IBC)
- 2024, 2021, 2018 and 2015 *International Residential Code*® (IRC)
- 2024, 2021, 2018 and 2015 *International Energy Conservation Code*® (IECC)

For evaluation of compliance with codes adopted by the Los Angeles Department of Building and Safety (LADBS), see [ESR-1474 LABC and LARC Supplement](#).

Properties evaluated:

- Weather resistance
- Air leakage

2.0 USES

ZIP System® Wall Sheathing panels are used as combination wall sheathing, air barrier, and water-resistive barrier. This ZIP System® Sheathing, when installed with ZIP System™ flexible flashing seam tape, ZIP System™ VP flashing tape or ZIP System™ liquid flash, has been evaluated for use in walls of Type V construction (IBC) and dwellings under the IRC, and as an alternate to the water-resistive barrier required in Chapter 14 of the IBC and Chapter 7 of the IRC, and to the air barrier required by Sections R402.5 and C402.6.1 of the 2024 IECC (Sections R402.4 and C402.5.1 of the 2021, 2018 and 2015 IECC).

3.0 DESCRIPTION

3.1 Sheathing Panel:

The ZIP System® Wall Sheathing panel is a wood structural panel having a laminated exterior facer. The Exposure 1 wood structural panel complies with US DOC PS 2 for oriented strand board (OSB) wood structural panels. The exterior facer is a medium-density, phenolic-impregnated, polymer-modified sheet material with equivalent water resistance to an ASTM E2556 Type II or 60-minute Grade D water-resistive barrier (required by Section 2510.6 of the IBC and Section R703.7.3 of the IRC). The panels are nominally 4 feet wide by 8, 9, 10, 11 or 12 feet long and have a square-finished-edge or machined-edge profile.

When tested in accordance with ASTM E96 (water method), the polymer-modified sheet overlay has a minimum vapor permeance of 12 perms [68.6 X 10⁻¹¹ kg/(Pa-s-m²)]. Equivalent Water Vapor Transmission rate (WVT) of the polymer-modified sheet overlay is 83.4 g/(24h-m²) when tested at 73.4°F (23°C).

When tested in accordance with ASTM E2273, the laminated panel with the polymer-modified sheet overlay has a minimum drainage efficiency of 90 percent and may be installed as described in Section 4.2.4 for applications in accordance with 2024 and 2021 IBC Section 2510.6.2 Item 2 or 2024 and 2021 IRC Section R703.7.3.2 Item 2, as applicable.

The water-resistive barrier and air barrier properties of the ZIP System® Wall Sheathing Panels are not affected when the panels are manufactured to comply as facing materials for SIPs in accordance with Section R610.3 of the 2024, 2021 and 2018 IRC (Section R610.3.2 and Table R610.3.2 of the 2015 IRC).

3.2 Seam Tapes:

3.2.1 ZIP System™ flexible flashing seam tape: The ZIP System™ flexible flashing seam tape is a pressure sensitive self-adhering membrane tape consisting of acrylic adhesive laminated to a polyolefin backing and is the subject of [ESR-2227](#). The tape is 0.012 inch (0.30 mm) thick with a minimum width of 3³/₄ inches (95.2 mm) and come in rolls of various lengths.

3.2.2 ZIP System™ VP flashing tape: The ZIP System™ VP flashing tape is a pressure sensitive self-adhering membrane tape consisting of an elastomeric non-woven, reinforced film with an acrylic adhesive and is the subject of [ESR-2227](#). The tape is 0.016 inch (0.41 mm) thick and is produced in 3³/₄ inch (95.2 mm) wide rolls of various lengths.

3.3 Liquid Applied Seam Sealant:

ZIP System™ liquid flash is a single-component, ready-mixed, flexible, polymer-based, gun-grade material which complies with AAMA 714 and is the subject of [ESR-4597](#).

4.0 INSTALLATION

4.1 General:

Installation of ZIP System® Wall Sheathing panels must comply with the applicable code, this report and the manufacturer's published installation instructions. The manufacturer's published installation instructions must be available at the jobsite during installation.

4.2 Application:

4.2.1 General: The ZIP System® Wall Sheathing panels must be attached to wall framing in accordance with the applicable code for wood structural panels, and in compliance with their panel span rating. The panels must be installed with the polymer-modified sheet overlay facing the exterior. In accordance with the manufacturer's published installation instructions, it is recommended that the square edges of the panels be installed with a gap between adjacent panels and between panels and dissimilar materials. All ZIP System® Wall Sheathing panel seams must be sufficiently sealed with either ZIP System™ Flexible flashing seam tape, ZIP System™ VP flashing tape or ZIP System™ liquid flash. All overlay surfaces must be dry and free of sawdust and dirt prior to application of the ZIP System™ flexible flashing seam tape, ZIP System™ VP flashing tape or ZIP System™ liquid flash. The ZIP System™ flexible flashing seam tape, ZIP System™ VP flashing tape or ZIP System™ liquid flash must extend a minimum of 1 inch (25.4 mm) past the panel edge T-joint intersections and must be centered within 1/2 inch (12.7 mm) over the middle of panel seams. If the ZIP System™ flexible flashing seam tape or ZIP System™ VP flashing tape are used, the tape must be pressed firmly to adhere to the surfaces and seal the seams. Wrinkles in the ZIP System™ flexible flashing seam tape or ZIP System™ VP flashing tape are acceptable unless they create a leak path to the panel seam. If the ZIP System™ liquid flash is used to seal panel joints, the panel joints must be completely filled with the liquid flash, and a continuous bead is applied to either side of the joint. The beads of ZIP System™ liquid flash must be troweled to provide a continuous application a minimum of 1-inch to either side of the joint at a minimum thickness of 12 mils (see Figure 8).

4.2.2 Flashing: Flashing complying with the applicable code must be installed at the perimeter of door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies, and similar projections, and at built-in gutters and similar locations where moisture could enter the wall. An adhesive-backed flashing tape that is the subject of a current ICC-ES evaluation report, or ZIP System™ liquid flash in accordance with the installation procedures outlined in [ESR-4597](#), must be installed to seal all ZIP System® Wall Sheathing flashing joints. Penetration items must be sealed to the panels. The adhesive-backed flashing tape must comply with the ICC-ES Acceptance Criteria for Flexible Flashing Materials (AC148) and must be installed in accordance with the manufacturer's published installation instructions. See Figures 1 through 7 of this report for typical flashing, water-resistive barrier and air barrier assembly installation details.

4.2.3 Air Barrier Assembly: ZIP System® Wall Sheathing fastened to maximum 24-inch-on-center (610 mm) wood wall framing, using minimum 6d nails spaced at 6 inches

(152 mm) around panel edges and at 12 inches (305 mm) in the field, leaving a 1/8-inch (3.18 mm) gap between panels, forms an air barrier assembly when the gaps between panels and the perimeter of penetrations are sealed with ZIP System™ flexible flashing seam tape, ZIP System™ VP flashing tape or ZIP System™ liquid flash as required by Section 4.2.1. The assembly has demonstrated a maximum air leakage of 0.008 cfm/ft² [0.039 L/(s·m²)] infiltration and 0.005 cfm/ft² [0.023 L/(s·m²)] exfiltration at a pressure differential of 1.57 psf (75 Pa) when tested in accordance with ASTM E2357.

4.2.4 Cement Plaster (Stucco) or Adhered Masonry Veneer Applications:

When installations are in accordance with the 2018 or 2015 IBC, the installation must comply with IBC Section 2510.6 or the exception to IBC Section 2510.6, as applicable. For installations in accordance with the 2018 or 2015 IRC, the installation must comply with IRC Section R703.7.3 or the Exception to Section R703.7.3, as applicable.

When installations are in dry climate zones (B) accordance with the 2024 and 2021 IBC, the installation must comply with 2024 and 2021 IBC Section 2510.6.1 Item 1 or 2 and 2024 and 2021 IRC Section R703.7.3.1 Item 1 or 2, as applicable.

When installations are in moist climate zones (A) or marine climate zones (C) in accordance with the 2024 and 2021 IBC or IRC, the installation must comply with 2024 and 2021 IBC Section 2510.6.2 Item 1 or 2 or 2024 and 2021 IRC Section R703.7.3.2 Item 1 or 2, as applicable. When installed in accordance with 2024 and 2021 IBC Section 2510.6.2 Item 2 or 2024 and 2021 IRC Section R703.7.3.2 Item 2, the foam plastic insulating sheathing or other water resistive barrier layer must be mechanically attached to the ZIP System® Wall Sheathing panels; adhesive attachment of the foam plastic insulating sheathing or other water resistive barrier layer is outside of the scope of this report.

5.0 CONDITIONS OF USE

The ZIP System® Wall Sheathing panels and seam sealing systems described in this report comply with, or are a suitable alternative to what is specified in, those codes listed in Section 1.0 of this report, subject to the following conditions:

- 5.1** This evaluation report and the manufacturer's published installation instructions, when required by the code official, must be submitted at the time of permit application.
- 5.2** The ZIP System® Wall Sheathing panels must be manufactured, identified and installed in accordance with this report and the manufacturer's published installation instructions. In the event of a conflict between the instructions and this report, this report must govern.
- 5.3** The ZIP System® Wall Sheathing panels must be covered with a code-complying exterior wall covering, or one that is in the subject of a current ICC-ES evaluation report.
- 5.4** The OSB sheathing must comply with US DOC PS-2, as applicable.
- 5.5** For jurisdictions that have adopted the 2024 or 2021 IECC, Building Envelope Performance Verification shall be performed in accordance with Section C402.6.2.3 of the 2024 IECC (Section C402.5.1.5 of the 2021 IECC).
- 5.6** Fire-resistance-rated construction is outside the scope of this report.

5.7 The Zip System® Wall Sheathing panels are manufactured by Huber Engineered Woods, LLC, in Crystal Hill, Virginia; Easton, Maine; Commerce, Georgia; Broken Bow, Oklahoma; Spring City, Tennessee; and Shawinigan, Quebec Canada, under a quality-control program with inspections by ICC-ES.

6.0 EVIDENCE SUBMITTED

- 6.1 Data in accordance with the ICC-ES Acceptance Criteria for Water-resistant Membranes Factory-bonded to Wood-based Structural Sheathing, Used as Water-resistant Barriers (AC310), dated January 2024.
- 6.2 Air leakage data in accordance with ASTM E2357.
- 6.3 Drainage testing data in accordance with ASTM E2273.

7.0 IDENTIFICATION

7.1 Each ZIP System® Wall Sheathing panel described in this report must bear a label that includes the manufacturer’s name (Huber Engineered Woods LLC), the product name, nominal panel thickness, the evaluation report number (ESR-1474), and the words “Mill 229, Crystal Hill, Virginia”; “Mill 228, Easton, Maine”; “Mill 227, Commerce, Georgia”; “Mill 290, Broken Bow, Oklahoma”, “Mill 230, Spring City, Tennessee”, or “Mill 390, Shawinigan, Quebec Canada.” The sheathing must also bear a label from an approved inspection agency demonstrating

compliance with US DOC PS 2. The ZIP System™ flexible flashing seam tape roll or packaging must be labeled with the ZIP System™ logo and the evaluation report number ESR-1474. The ZIP System™ VP flashing tape packaging must be labeled with the ZIP System™ logo and the evaluation report number ESR-1474.

7.2 The report holder’s contact information is the following:

HUBER ENGINEERED WOODS, LLC
ONE RESOURCE SQUARE
10925 DAVID TAYLOR DRIVE, SUITE 300
CHARLOTTE, NORTH CAROLINA 28262
(800) 933-9220
www.huberwood.com

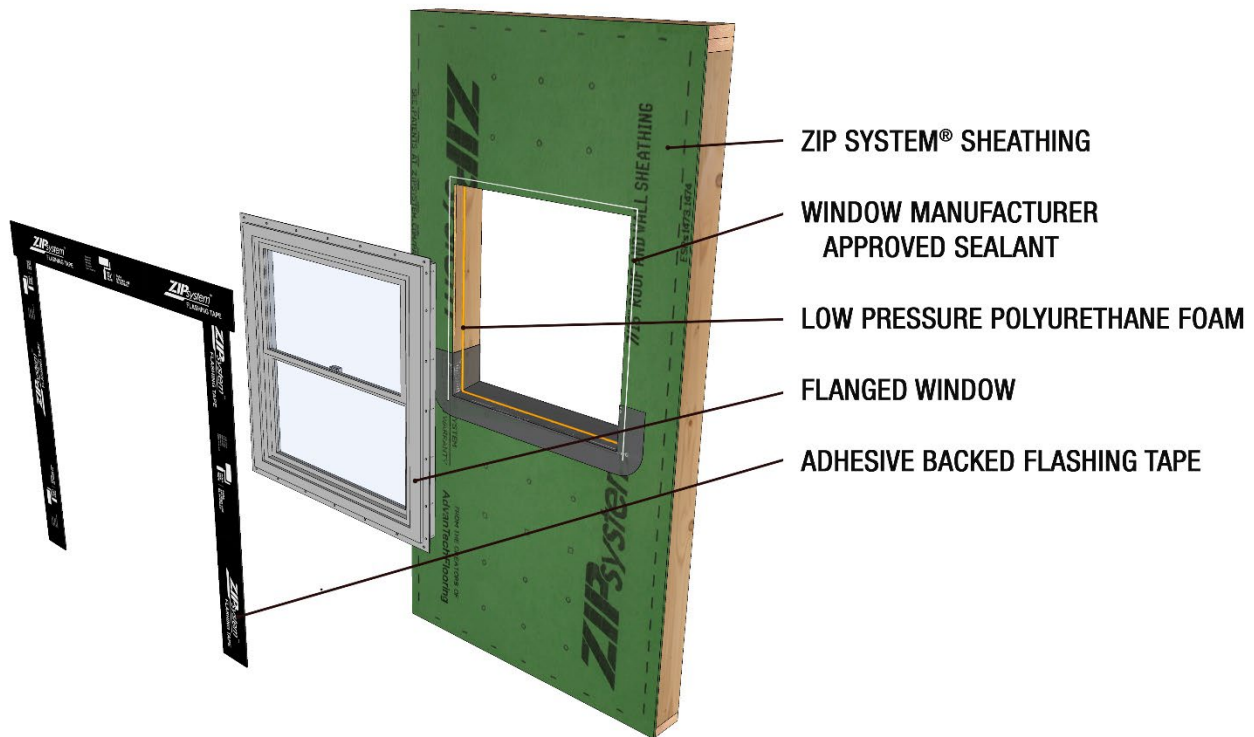


FIGURE 1—TYPICAL DETAIL OF FLANGED WINDOW INSTALLATION

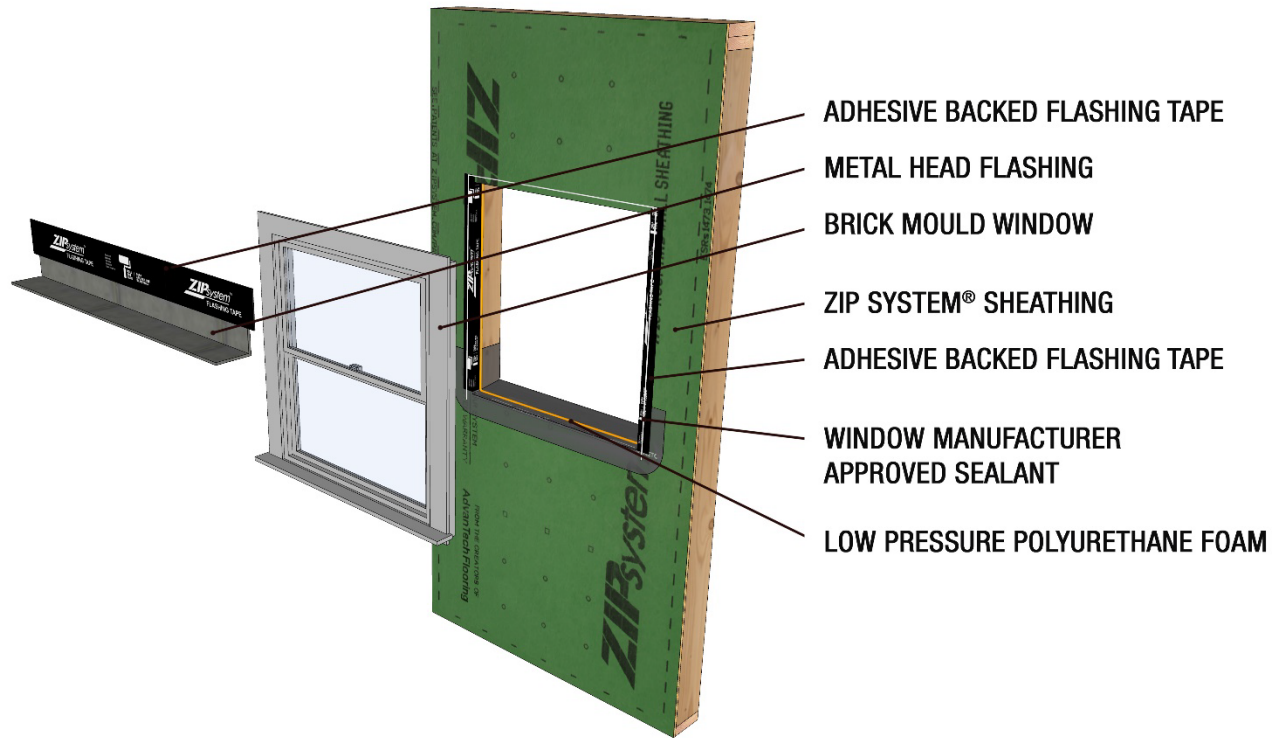


FIGURE 2—TYPICAL DETAIL OF BRICK Mould WINDOW INSTALLATION

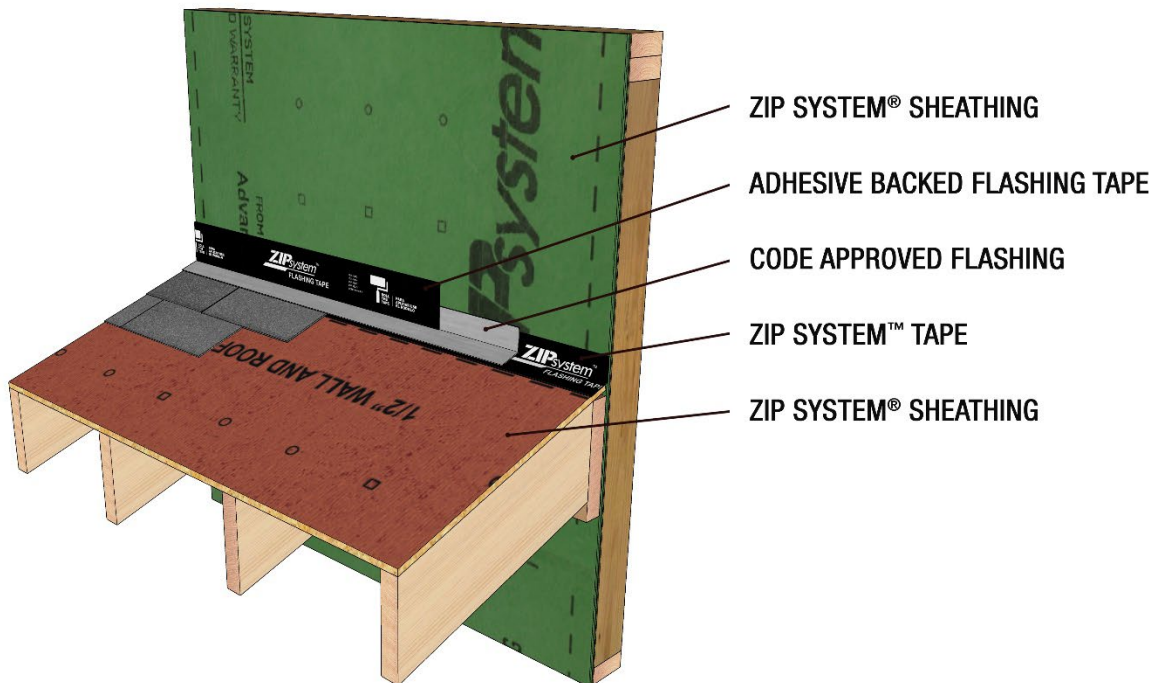


FIGURE 3—ROOF TO WALL DETAIL WITH ZIP SYSTEM® ROOF SHEATHING

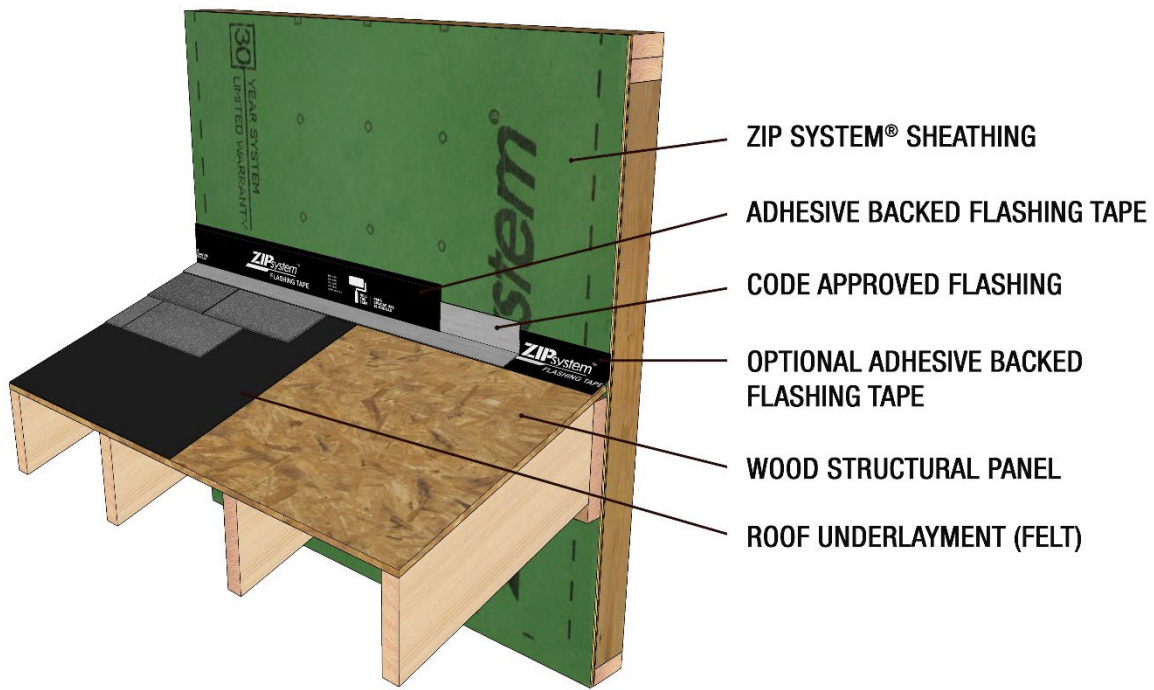


FIGURE 4—ROOF TO WALL DETAIL WITH WOOD STRUCTURAL PANEL ROOF SHEATHING

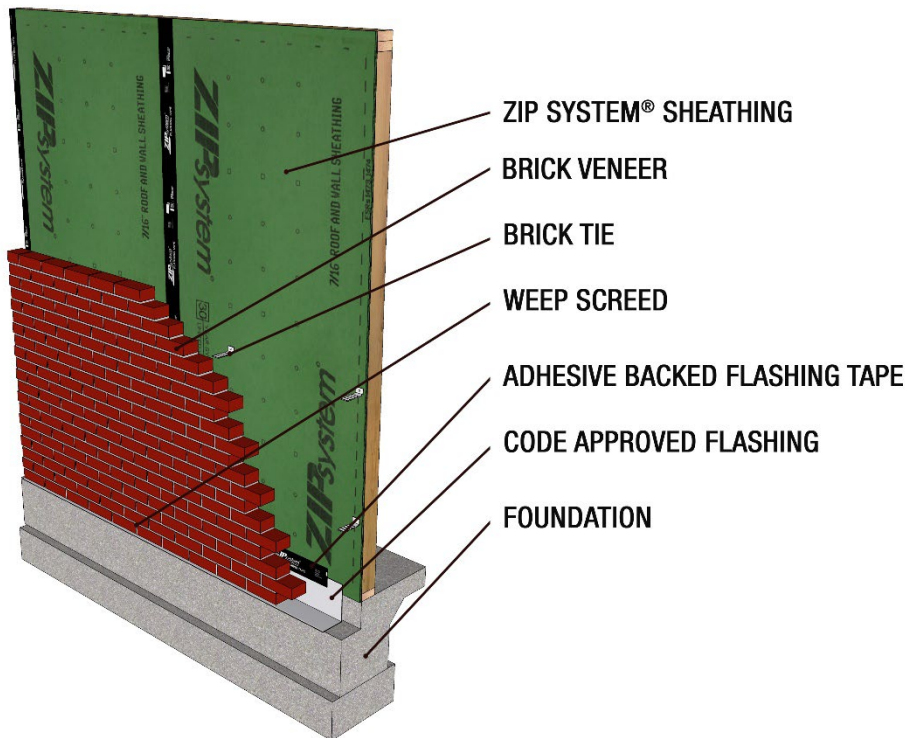


FIGURE 5—TYPICAL WALL-SILL INTERSECTION AND FLASHING DETAIL FOR BRICK SIDING

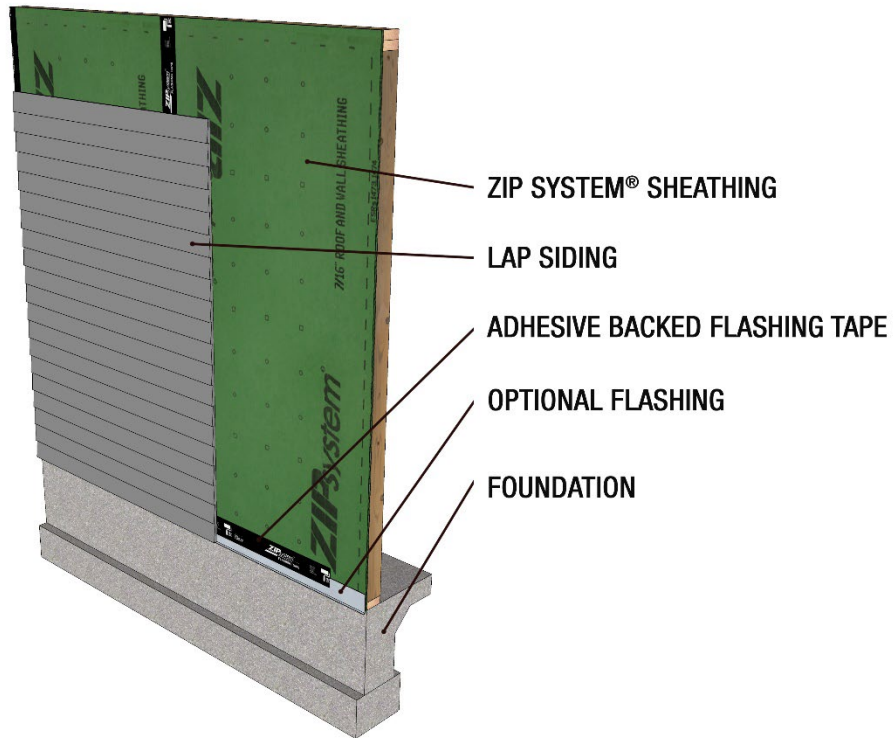


FIGURE 6—TYPICAL WALL-SILL INTERSECTION AND FLASHING DETAIL FOR LAPPED SIDING

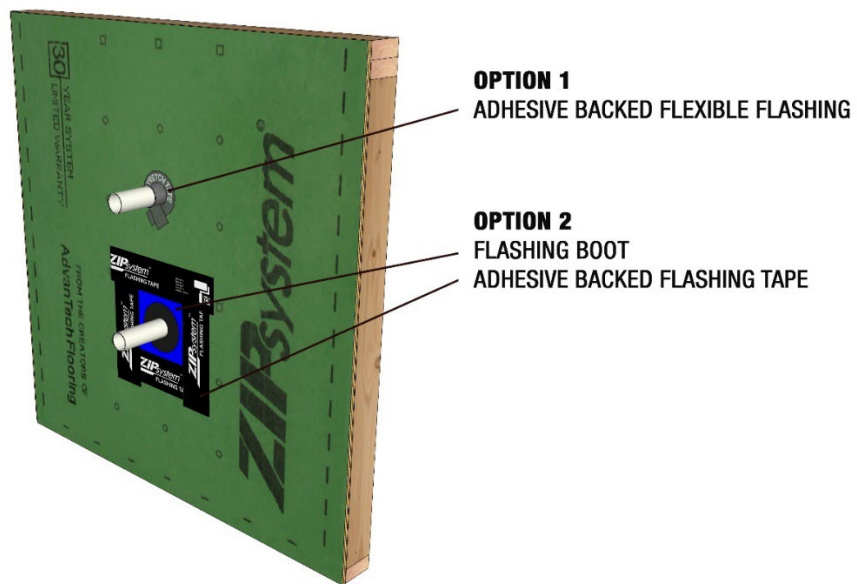


FIGURE 7—INSTALLATION AT PENETRATION OPENING (NON-FIRE-RESISTANCE RATED)

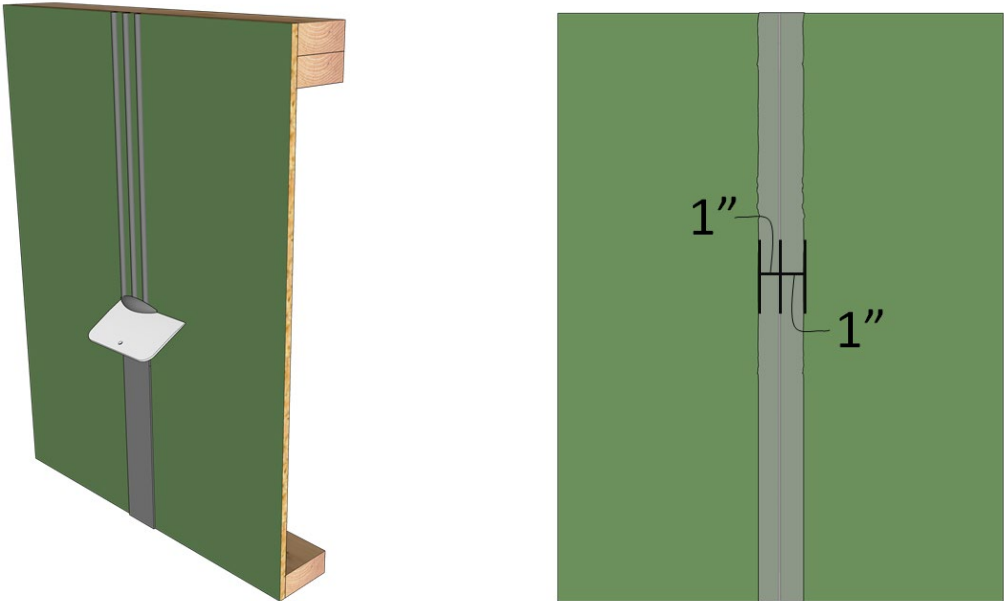


FIGURE 8—TYPICAL INSTALLATION OF ZIP SYSTEM™ LIQUID FLASH

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Section: 07 27 00—Air Barriers

REPORT HOLDER:

HUBER ENGINEERED WOODS, LLC

EVALUATION SUBJECT:

ZIP SYSTEM® WALL SHEATHING

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that the ZIP System® Wall Sheathing, described in ICC-ES evaluation report [ESR-1474](#), has also been evaluated for compliance with the codes noted below as adopted by the Los Angeles Department of Building and Safety (LADBS).

Applicable code editions:

- 2023 *City of Los Angeles Building Code* (LABC)
- 2023 *City of Los Angeles Residential Code* (LARC)

2.0 CONCLUSIONS

The ZIP System® Wall Sheathing, described in Sections 2.0 through 7.0 of the evaluation report [ESR-1474](#), complies with LABC Chapter 14, and LARC Section R703, and is subject to the conditions of use described in this supplement.

3.0 CONDITIONS OF USE

The ZIP System® Wall Sheathing, described in this evaluation report must comply with all of the following conditions:

- All applicable sections in the evaluation report [ESR-1474](#).
- The design, installation, conditions of use and identification are in accordance with the 2021 *International Building Code*® (IBC) and 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report [ESR-1474](#).
- The design, installation and inspection are in accordance with additional requirements of LABC Chapters 16 and 17, as applicable.

This supplement expires concurrently with the evaluation report, reissued October 2022 and revised April 2024.

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ZIP SYSTEM® WALL SHEATHING

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that ZIP System® Wall Sheathing, described in ICC-ES evaluation report ESR-1474, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2022 *California Building Code* (CBC)

For evaluation of applicable chapters adopted by the California Office of Statewide Health Planning and Development (OSHPD) AKA: California Department of Health Care Access and Information (HCAI) and the Division of State Architect (DSA), see Sections 2.1.1 and 2.1.2 below.

- 2022 *California Residential Code* (CRC)

2.0 CONCLUSIONS**2.1 CBC**

The ZIP System® Wall Sheathing, described in Sections 2.0 through 7.0 of the evaluation report ESR-1474, complies with CBC Chapters 14 and 23, provided the design and installation are in accordance with the 2021 *International Building Code*® (IBC) provisions noted in the evaluation report and the additional requirements of the CBC Chapters 16 and 17, as applicable.

2.1.1 OSHPD:

The applicable OSHPD Sections and Chapters of the CBC are beyond the scope of this supplement.

2.1.2 DSA:

The applicable DSA Sections and Chapters of the CBC are beyond the scope of this supplement.

2.2 CRC

The ZIP System® Wall Sheathing, as described in Sections 2.0 through 7.0 of the evaluation report ESR-1474, complies with the CRC, provided the design and installation are in accordance with the 2021 *International Residential Code*® (IRC) provisions noted in the evaluation report.

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HUBER ENGINEERED WOODS, LLC

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ZIP SYSTEM® WALL SHEATHING

1.0 REPORT PURPOSE AND SCOPE**Purpose:**

The purpose of this evaluation report supplement is to indicate that ZIP System® Wall Sheathing panels, described in ICC-ES evaluation report ESR-1474, have also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2023 Florida Building Code—Building
- 2023 Florida Building Code—Residential

2.0 CONCLUSIONS

The ZIP System® Wall Sheathing panels, described in Sections 2.0 through 7.0 of the evaluation report ESR-1474, comply with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable. The design requirements must be determined in accordance with the *Florida Building Code—Building* or the *Florida Building Code—Residential*, as applicable. The installation requirements noted in ICC-ES evaluation report ESR-1474 for the 2021 *International Building Code*® and 2021 *International Residential Code*® meet the requirements of the *Florida Building Code—Building* and the *Florida Building Code—Residential*, as applicable, with the following conditions:

1. For Cement Plaster (Stucco) or Adhered Masonry Veneer applications in accordance with the 2023 *Florida Building Code—Residential*, must be in accordance with 2023 *Florida Building Code—Residential* Section R703.7.3 or the exception to Section R703.7.3, as applicable.

Use of the ZIP System® Wall Sheathing panels for compliance with the High-Velocity Hurricane Zone provisions of the *Florida Building Code—Building* and the *Florida Building Code—Residential* has not been evaluated, and is outside the scope of this supplemental report.

For products falling under Florida Rule 61G20-3, verification that the report holder's quality assurance program is audited by a quality assurance entity approved by the Florida Building Commission for the type of inspections being conducted is the responsibility of an approved validation entity (or the code official, when the report holder does not possess an approval by the Commission).

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