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Legacy report on the Legacy report on the 2000 *International Building Code*[®], 2000 *International Residential Code*[®] and the 2002 *Accumulative Supplement to the International Codes*[™], **BOCA**[®] *National Building Code/1999*, the 1999 *Standard Building Code*[®] and the 1997 *Uniform Building Code*[™]

DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07240—Exterior Insulation and Finish Systems

EVALUATION SUBJECT:

T-WALL SOFT COAT PB EIFS;
T-WALL HARD COAT PM EIFS;
T- WALL MOISTURE DRAINAGE MD EIFS;
T-WALL T-2000 PANEL EIFS;
T-WALL DIRECT APPLIED DA EIFS

MANUFACTURER:

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1.0 SUBJECT

- 1.1 T-WALL Soft Coat PB EIFS
- 1.2 T-WALL Hard Coat PM EIFS
- 1.3 T-WALL Moisture Drainage MD EIFS
- 1.4 T-WALL T-2000 Panel EIFS
- 1.5 T-WALL Direct Applied DA EIFS

2.0 PROPERTY FOR WHICH EVALUATION IS SOUGHT

- 2.1 Weather protection
- 2.2 Wind load resistance
- 2.3 Use on noncombustible construction

3.0 DESCRIPTION

3.1 T-WALL SOFT COAT PB EIFS

T-WALL Soft Coat PB Exterior Insulation and Finish System (EIFS) is a nonload bearing, multi-component exterior wall finish system, consisting of a foam plastic board, board adhesive, glass-fiber fabric reinforcing mesh, modified cementitious base coat, and an acrylic polymer finish. Figure 1 at the end of this report illustrates the basic system components.

T-WALL Soft Coat PB EIFS Components

3.1.1 Foam plastic board: A rigid expanded polystyrene (EPS) foam plastic with a nominal density of 1.0 lb/ft³ (16 kg/m³), produced in 24 x 48 in. (610 x 1219 mm) sheets, thicknesses of 3/4 to 4 in. (19.1 to 102 mm) and having a flame spread index of 25 or less and a smoke-developed

index of 450 or less. Foam plastic board recognized in a current evaluation report issued by ICC-ES is permitted to be used, provided the board meets these physical characteristics and the labeling requirements of Section 5.0 of this report.

3.1.2 Foam plastic board adhesives: There are two products used as an adhesive with this system.

3.1.2.1 Foam N' Base: An acrylic polymer, that is combined with Portland cement (ASTM C150, Type I or II), in a 1 to 1 ratio by weight. This material is also used as a base coat for the system.

3.1.2.2 T-Wall Blue Mastic: A ready-mixed, acrylic-based material.

3.1.3 Reinforcing mesh: An open-weave, glass-fiber fabric, white in color, and treated for alkali resistance. The mesh is manufactured in various weights and sizes as indicated in Table 1 at the end of this report.

3.1.4 Base coat: Foam N' Base, as described in Section 3.1.2.1.

3.1.5 Finish: T-Wall Acrylic Finish, a ready-mixed elastomeric, 100-percent acrylic polymer coating containing an integral color and quartz sand aggregate.

3.1.6 Trim: Starter strips, corner beads, expansion joints, drip edges, screeds, and trim accessories used with the system shall be manufactured of exterior-grade polyvinyl chloride (PVC) complying with ASTM D1748.

3.1.7 Sealants: DOW 791, single-component silicone. Backer rods used in conjunction with sealants shall be DOW Ethafoam closed-cell type, sized 33 percent larger than the joint opening.

3.2 T-WALL HARD COAT PM EIFS

T-WALL Hard Coat PM EIFS is a nonload bearing, multi-component exterior wall veneer system, consisting of a foam plastic board, mechanical fasteners, glass-fiber fabric reinforcing mesh, modified cementitious base coat, and an acrylic polymer finish. **Figure 2** at the end of this report illustrates the basic system components.

T-WALL Hard Coat PM EIFS Components

3.2.1 Foam plastic board: A rigid extruded polystyrene (XPS) foam plastic with a nominal density of 2.0 lb/ft³ (32 kg/m³), produced in 24 x 48 in. (610 x 1219 mm) sheets, and thicknesses of 1 to 3 in. (25 to 76 mm). The board is identified as STYROFOAM[®] produced by Dow Chemical Company.

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3.2.2 Mechanical fasteners: Type S, self-drilling, bugle head, corrosion-resistant screws, with 1 3/4 in. (44 mm) diameter polypropylene plates; ULP Series manufactured by Wind-lock Corporation.

3.2.3 Reinforcing mesh: An open-weave, polymer-coated glass-fiber fabric, white in color, with a nominal weight of 4.3 oz/yd² (146 g/m²), complying with ASTM D4029.

3.2.4 Base coat: Two-Coat Hard Coat Base, consists of Total Wall Liquid Acrylic Additive, that is combined in the field with chopped glass-fiber strands, sand (ASTM C144) and Portland cement (ASTM C150 (Type I, II or I-II)).

3.2.5 Finish: As described in Section 3.1.5.

3.2.6 Trim: Starter strips, corner beads, expansion joints, drip edges, screeds, and trim accessories used with the system shall be manufactured of solid zinc or galvanized steel.

3.2.7 Sealants: As described in Section 3.1.7.

3.3 T-WALL MOISTURE DRAINAGE MD EIFS

T-WALL Moisture Drainage MD EIFS is a nonload bearing, multi-component exterior wall finish system, consisting of a water-resistive barrier, foam plastic board, mechanical fasteners, glass-fiber fabric reinforcing mesh, modified cementitious base coat, and an acrylic polymer finish. The system also incorporates flashings, weeps and grooved EPS board, spacing lath or Tyvek StuccoWrap as a means of directing water that may penetrate the system to the exterior. Figure 3 at the end of this report illustrates the basic system components.

T-WALL Moisture Drainage MD System Components

3.3.1 Water-resistive (moisture) barrier: Two products are permitted for use as a water-resistive/moisture barrier behind the foam plastic. Where grooved EPS board or flat EPS board with PVC spacer lath is used with the system, a minimum of one layer of a water-resistive (moisture) barrier, complying with the requirements of the applicable code, shall be installed over the entire surface of the building substrate. Where flat EPS board without PVC spacer lath is used with the system, a water-resistive barrier consisting of a minimum of one layer of Tyvek StuccoWrap manufactured by E.I DuPont shall be installed over the building substrate.

3.3.2 Foam plastic board: A rigid EPS foam plastic with a minimum nominal density of 1 lb/ft³ (16 kg/m³), produced in 24 × 48 in. (610 × 1219 mm) sheets, and having a flame spread index of 25 or less and a smoke-developed index of 450 or less. Foam plastic board recognized in a current evaluation report issued by ICC-ES is permitted to be used, provided these board meets the physical characteristics and the labeling requirements of Section 5.0 of this report. There are two configurations of EPS used with this system:

3.3.2.1 Grooved board: Minimum thicknesses of 1 1/2 in. (38 mm) to a maximum thickness of 4 in. (102 mm), with 1/4 in (6.4 mm) deep continuous beveled grooves in the back side of the board as shown in Figure 4. The grooves are intended to provide a means for directing the flow of moisture from behind this system. This is used as an alternative to installation of the flat EPS board and plastic spacer lath described in Sections 3.3.2.2 and 3.3.3, or flat EPS board with Tyvek StuccoWrap described in Section 3.3.1.

3.3.2.2 Flat board: Minimum thicknesses of 1 in. (25 mm) and a maximum thickness of 4 in. (102 mm). The flat board is used in conjunction with the PVC spacer lath described in Section 3.3.3 or Tyvek StuccoWrap described

in Section 3.3.1, to provide a means of directing the flow of moisture from behind the system. This is an alternative to the grooved board described in Section 3.3.2.1.

3.3.3 PVC spacer lath: A 1/8 in. (3.2 mm) thick PVC spacer lath, produced in 48 × 96 in. (1219 × 2438 mm) sheets. The PVC spacer lath is intended for use in creating a drainage cavity behind the flat EPS board described in Section 3.3.2.2. The lath is not required when the flat EPS board is installed over Tyvek StuccoWrap described in Section 3.3.1.

3.3.4 Mechanical fasteners: Type W bugle head, corrosion-resistant screws, with 1 3/4 in. (44 mm) diameter polypropylene plates; ULP Series manufactured by Wind-lock™ Corporation. Size and spacing as indicated in Table 2, with length as required to achieve a minimum penetration of 1/2 in. (12.7 mm) beyond sheathing.

3.3.5 Reinforcing mesh: As described in Section 3.1.3.

3.3.6 Base coat: As described in Section 3.1.4.

3.3.7 Finish coat: As described in Section 3.1.5.

3.3.8 Trim: As described in Section 3.1.6.

3.3.9 Rigid flashing: Corrosion-resistant material, sloped toward the exterior, with an upturned leg on the interior side and at the ends. Flashings shall extend beyond the surface of the exterior wall finish.

3.3.10 Sealants: As described in Section 3.1.7.

3.4 T-WALL T-2000 PANEL EIFS

T-WALL T-2000 Panel EIFS is a factory panelized system of either T-WALL Soft Coat PB EIFS, described in Section 3.1, or T-WALL Hard Coat PM EIFS, described in Section 3.2, that functions as a nonload bearing, multi-component exterior wall veneer system.

3.5 T-WALL DIRECT APPLIED DA SYSTEM

The T-WALL Direct Applied DA System consists of glass-fiber fabric reinforcing mesh, modified cementitious base coat, and an acrylic polymer finish, applied directly to a substrate of exterior cement board. Figure 5 at the end of this report illustrates the basic system components.

T-WALL Direct Applied DA System Components

3.5.1 Water-resistive (moisture) barrier: As described in Section 3.3.1.

3.5.2 Reinforcing mesh: As described in Section 3.1.3.

3.5.3 Base coat: As described in Section 3.1.4.

3.5.4 Finish: As described in Section 3.1.5.

4.0 INSTALLATION

The system shall be installed by contractors listed by Total Wall, Inc. All exposed edges of the foam plastic board shall be wrapped with reinforcing fabric or trim components and embedded in the base coat. The building substrates shall be structurally sound, clean, dry, and free of dust or deleterious materials. There shall be no planar irregularities exceeding 1/4 inch (6.4 mm) within an 4 foot (1219 mm) radius.

Installation of the T-WALL Moisture Drainage System shall be in accordance with the manufacturer's installation instructions, Division 7, Section 07241, Exterior Insulation and Finish Systems (EIFS) Guide Specification (with Metric Analogs) for Class MD (Moisture Drainage) Total Wall's T-Wall Moisture Drainage System dated October 2001, subject to the limitations of this report.

Installation of the T-WALL Soft Coat PB EIFS; T-WALL-H Two Coat Hard Coat PM System; and T-WALL Panel EIFS shall be in accordance with the T-WALL Soft Coat PB EIFS, T-WALL Hard Coat PM EIFS and T-WALL T-2000 Panel EIFS, manufacturer's system specifications, subject to the limitations of this report.

The installation instructions shall be available on the job site at all times during application.

Control and expansion joints shall be installed as indicated on the drawings or, when not indicated, at a maximum spacing of 50 ft (15.2 m) on center horizontally and vertically. Sealants shall not be installed until all EIFS materials have fully cured for a minimum period of 72 hours. Application of sealants and backer rods shall be in accordance with the sealant manufacturer's installation instructions.

Construction documents submitted with an application for permit shall indicate, at a minimum, the following:

- Type of water-resistive (moisture) barrier (where applicable);
- Method of attachment of foam plastic board to substrate;
- Fastener size, type and spacing (mechanically fastened systems);
- Details of installation at wall openings, corners and panel terminations, including mesh reinforcement;
- Locations and details of all control and expansion joints;
- Details of all penetrations through the system, including methods to prevent water penetration into the assembly;
- Detail section indicating all system components; and
- Manufacturer's installation instructions for the exterior wall envelope.

For installations of the T-WALL Soft Coat PB EIFS; T-WALL-H Two-Coat Hard Coat PM System; and T-WALL Panel EIFS, in jurisdictions adopting the 2000 *International Building Code* or *BOCA National Building Code/1999*, the following shall also be submitted:

- Manufacturer's installation instructions, including material and installation requirements and the criteria for special inspections, including designation and qualifications of the special inspector to provide these services.
- Details of the penetrations and terminations intended for use with the systems, that were tested for wind-driven rain resistance in accordance with Section 1403.2 of the 2000 *International Building Code* (Section 1404.3 of *BOCA National Building Code/1999*). See Condition of Use 7.3.1.

4.1 T-WALL SOFT COAT PB EIFS

T-WALL Soft Coat PB Exterior Insulation and Finish System (EIFS) is adhesively applied directly to the exterior face of exterior walls of buildings of combustible and noncombustible construction.

The adhesive shall be applied to the rear surface of the expanded polystyrene board. The boards shall be adhered to the exterior wall substrate in a running bond pattern with tightly butted joints. The base coat shall be trowel applied over the foam plastic board surface to a minimum thickness equal to 1.5 times the mesh thickness or 1/16 in. (1.6 mm), whichever is greater. The reinforcing mesh shall be com-

pletely embedded within the base coat with no mesh color visible. The finish coat shall be installed over the cured base coat to a nominal thickness of 1/16 in. (1.6 mm).

The evaluation of this system, with penetrations (i.e., doors, windows, utility penetrations), for compliance with the exception to Section 1403.2 of the 2000 *International Building Code* and Section 1404.3 of the *BOCA National Building Code/1999* is limited to use with the penetrations shown in Figures 6 through 9 at the end of this report or when this system is installed over concrete or masonry substrates. In jurisdictions adopting the 2000 *International Residential Code*, this system is limited to use over concrete or masonry substrates only. See Conditions of Use 7.3 of this report for more information. Additionally, special inspections of all installations of this system are required, as stated in Section 4.6 of this report, except where installed over concrete or masonry substrates.

4.2 T-WALL HARD COAT PM EIFS

T-WALL Hard Coat PM EIFS is mechanically attached to exterior face of exterior walls of buildings of combustible and noncombustible construction.

The polystyrene boards shall be mechanically attached to the exterior wall substrate in a running bond pattern with tightly butted joints. The mesh shall be mechanically attached to the foam plastic board with fasteners described in this report. The edges of the mesh shall be overlapped a minimum of 2 1/2 in. (64 mm) at all joints. The base coat shall be trowel applied over the foam plastic board to a minimum total thickness equal to 1/4 in. (6.4 mm). The finish coat shall be installed over the cured base coat to a nominal thickness of 1/16 in. (1.6 mm).

The evaluation of this system, with penetrations (i.e., doors, windows, utility penetrations), for compliance with the exception to Section 1403.2 of the 2000 *International Building Code* and Section 1404.3 of the *BOCA National Building Code/1999* is limited to use with the penetrations shown in Figures 10 through 14 at the end of this report or when this system is installed over concrete or masonry substrates. jurisdictions adopting the *International Residential Code*, this system is limited to use over concrete or masonry substrates only. See Conditions of Use 7.3 of this report for more information. Additionally, special inspections of all installations of this system are required, as stated in Section 4.6 of this report, except where installed over concrete or masonry substrates.

4.3 T-WALL MOISTURE DRAINAGE MD EIFS

The Moisture Drainage MD EIFS is mechanically attached over a water-resistive (moisture) barrier installed over exterior face of exterior walls in buildings of combustible construction.

A minimum of one layer of a water-resistive (moisture) barrier as described in Section 3.3.1 shall be installed over the entire surface of the building substrate. Flashing shall be installed at all penetrations and terminations of the system. The polystyrene boards shall be mechanically attached to the exterior face of the wall substrate in a running bond pattern with tightly butted joints. When grooved polystyrene boards are used, they shall be applied directly over the water-resistive (moisture) barrier and mechanically attached. When flat EPS boards are used, the PVC spacer lath shall be mechanically attached over the water-resistive (moisture) barrier and the flat EPS boards shall be mechanically attached over the spacer

lath. An alternative is the application of flat EPS board without PVC spacer lath directly over Tyvek StuccoWrap and the boards then being mechanically attached. The base coat shall be trowel applied over the foam plastic board surface to a minimum thickness equal to 1.5 times the mesh thickness or 1/16 in. (1.6 mm), whichever is greater. The reinforcing mesh shall be completely embedded within the base coat. The finish coating shall be installed over the cured base coat to a nominal thickness of 1/16 in. (1.6 mm).

4.4 T-WALL T-2000 PANEL EIFS

T-WALL T-2000 Panel EIFS is a factory-fabricated panelized system using either the Soft Coat PB EIFS or T-WALL Hard Coat PM EIFS. The prefabricated panels are mechanically attached to the building frame in the field.

The evaluation of this system, with penetrations (i.e., doors, windows, utility penetrations), for compliance with the exception to Section 1403.2 of the 2000 International Building Code and Section 1404.3 of the BOCA National Building Code/1999 is limited to use with the penetrations shown in Figures 6 through 14 at the end of this report or when this system is installed over concrete or masonry substrates. In jurisdictions adopting the 2000 International Residential Code, the use of this system shall be limited to use over masonry or concrete substrates only. See Conditions of Use 7.3 of this report for more information. Additionally, special inspections of all installations of this system are required, as stated in this report, except where installed over concrete or masonry substrates.

4.5 T-WALL DIRECT APPLIED DA SYSTEM

The T-WALL Direct Applied DA System shall be applied directly to a substrate consisting of exterior cement board complying with ASTM C1186. The substrate shall be mechanically attached to the building framing members that are completely covered with a minimum of one layer of a water-resistive (moisture) barrier. Dens-Glass Gold Gypsum Sheathing, manufactured by G-P Gypsum Corporation, is permitted to be used as a substrate where the system is protected from direct weather exposure.

4.6 SPECIAL INSPECTIONS (T-WALL Soft Coat PB EIFS; T-WALL-H Two-Coat Hard Coat PM System; and T-WALL T-2000 Panel EIFS)

To comply with the requirements of the 2000 *International Building Code* and *BOCA National Building Code/1999*, special inspections shall be performed for all installations of the T-WALL Soft Coat PB EIFS; T-WALL Hard Coat PM System; and T-WALL T-2000 Panel EIFS. The special inspector shall furnish inspection reports to the code official, and to the registered design professional in charge, in accordance with Section 1704.1.2 of the 2000 *International Building Code* or Section 1705.1.2 of the *BOCA National Building Code/1999*. The criteria for the special inspections shall be based upon the items contained in the manufacturer's document T-WALL *Special Inspections*, Technical Bulletin Issue #1035, dated May 1, 2001.

5.0 IDENTIFICATION

Each of the components of T-WALL EIFS described in this report shall be identified by a label bearing the manufacturer's name, product type and this National Evaluation Service evaluation report number.

Foam plastic insulation shall be identified in accordance with their respective evaluation reports, except for the DOW STYROFOAM® board, which bears the DOW Chemical name and quality control agency name, Underwriters Laboratories Inc. (NER-QA403). Additionally, the board label shall specify the flame spread and smoke-developed indices and nominal density of the foam plastic.

6.0 EVIDENCE SUBMITTED

6.1 T-WALL Moisture Drainage System, manufacturer's installation specifications, *Division 7, Section 07241, Exterior Insulation and Finish Systems (EIFS) Guide Specification (with Metric Analogs) for Class MD (Moisture Drainage) Total Wall's T-Wall Moisture Drainage System* dated October 2001.

6.2 T-WALL Soft Coat PB EIFS, T-WALL Hard Coat PM EIFS and T-WALL 2000 Panel EIFS, manufacturer's system specifications, and T-WALL *Special Inspections*, Technical Bulletin Issue #1035, dated May 1, 2001, containing the requirements for the special inspection of the installation of the system.

6.3 Reports of tests prepared by ITS Intertek Testing Services:

6.3.1 Report No. J99006046-231, dated May 6, 1999, revised May 21, 1999, containing results of wind-driven rain infiltration testing of the soft and hard coat systems, performed in accordance with the exception to Section 1403.2 of the 2000 *International Building Code* (Section 1404.3 of the *BOCA National Building Code/1999*) to allow for the omission of flashings. The results indicate that the penetrations listed in Table 3 and the termination and joint details shown in Figures 6 through 14 of this report showed no moisture infiltration.

6.3.2 Report No. J97020802-231-01, dated November 25, 1997, revised December 18, 1997, revised July 13, 1998, containing results of lateral load testing of the Moisture Drainage EIFS. The test results determined the allowable design wind loads of the wall assemblies tested, as summarized in Table 2 of this report.

6.3.3 Report No. J97020802-231-02, dated November 26, 1997, revised December 18, 1997, containing results of wind-driven rain resistance testing of the Moisture Drainage EIFS.

6.4 Reports of tests prepared by Inchcape Testing Services/Warnock Hersey:

6.4.1 Report No. 551161, dated September 13, 1995 and Addendum, dated March 8, 1996, containing results of physical testing of the soft and hard coat systems.

6.4.2 Project No. 284-0687-1, LTO #12273-764, dated May 18, 1995, containing results of compression testing of the hard coat system performed in accordance with ASTM C109.

6.4.3 Report No. 12273-764-01, dated February 24, 1995, revised January 26, 1996, containing results of lateral load testing of the soft and hard coat systems. The test results determined the allowable design wind loads of the various wall assemblies tested, as summarized in Table 2 of this report.

6.4.4 Report No. 12273-764-2, dated February 27, 1995, containing results of wind-driven rain resistance testing of the soft and hard coat systems.

6.4.5 Report No. 12273-764-3, dated March 2, 1995, containing results of tensile strength testing of the hard coat system performed in accordance with ASTM C209.

6.4.6 Report No. 12273-764-4, dated March 8, 1995, containing results of flexural testing of the hard coat system performed in accordance with ASTM C203.

6.4.7 Report No. 12273-764-5, dated March 29, 1995, containing results of impact resistance testing of the soft and hard coat systems performed in accordance with ASTM D2794.

6.4.8 Report No. 12273-764-06, dated August 30, 1995, containing results of impact loading testing of the soft and hard coat systems performed in accordance with ASTM E695.

6.4.9 Report No. 548679R-1, LTO No. 12273-764, dated February 21, 1995, revised January 26, 1996, containing results of surface-burning testing of the hard coat system performed in accordance with ASTM E84.

6.4.10 Report No. 552312, LTO No. 12273-764, dated June 8, 1995, containing results of surface-burning testing of the soft coat system performed in accordance with ASTM E84.

6.4.11 Report No. 01-6743-014, LTO No. 12273-764, dated June 1995, containing results of full-scale testing performed by Southwest Research Institute of the hard coat system performed in accordance with ASTM E108 (modified).

6.5 Reports of tests prepared by Southwest Research Institute:

6.5.1 Report No. 01-2308-021a, dated April 1999, containing results of radiant heat exposure testing of the soft coat system, performed in accordance with Section 1407.2.1 of the *BOCA National Building Code/1999* and NFPA 268.

6.5.2 Report No. 01-2308-021b, dated April 1999, containing results of radiant heat exposure testing of the hard coat system, performed in accordance with Section 1407.2.1 of the *BOCA National Building Code/1999* and NFPA 268.

6.5.3 Opinion letter containing a fire risk analysis of the SwRI Report No. 01-6743-014, dated August 18, 1999.

6.5.4 Report No. 01.03940.01.001, dated October 2000, containing results of intermediate-scale fire testing of the soft coat system.

6.5.5 Report No. 01.03940.01.002, dated January 2001, containing results of tensile bond strength testing of the T-WALL Soft Coat EIFS, performed in accordance with ASTM C297.

6.5.6 Report No. 01.03940.01.003, dated January 2001, containing results of water drainage performance testing of the T-WALL Soft Coat EIFS.

6.6 SGS U.S. Testing Company, Inc., Report No. 160050, dated September 21, 2001, containing results of tensile adhesion testing of the soft coat system, performed in accordance with ASTM C297.

6.7 Underwriters Laboratories Inc. Report R5817/01NK-29686, dated September 21, 2001, containing results of potential heat testing of foam plastic board performed in accordance with NFPA 259.

7.0 CONDITIONS OF USE

The ICC-ES Subcommittee for the National Evaluation Service Committee finds that the Total Wall Inc. Exterior Insulation and Finish Systems as described in this report comply with or are suitable alternates to that specified in the 2000 *International Building Code*®, 2000 *International Residential Code*® and the 2002 *Accumulative Supplement to the International Codes*™, BOCA® *National Building Code/1999*, the 1999 *Standard Building Code*® and the 1997 *Uniform Building Code*™, subject to the following conditions:

7.1 GENERAL:

7.1.1 Installation shall be limited to areas where the design wind pressure, as calculated in accordance with the requirements of the applicable code for components and cladding, does not exceed the values indicated in Table 2 of this report for the respective assembly types listed.

7.1.2 Cement, sand, aggregate, retarders, accelerators, fillers, anti-freeze agents or any other additives shall not be added to any Total Wall EIFS products, except as specifically referenced in this report.

7.1.3 Use of the T-WALL systems described in this report as a component of fire-resistance-rated assemblies is outside the scope of this report.

7.1.4 The systems shall not be installed over surfaces that are wet, frozen, contain frost or loose material, or when the ambient temperature is below 40°F (4°C) before, during and 24 hours after application.

7.1.5 The systems shall be limited to application on vertical exterior wall surfaces and sloped sill surfaces that are not subject to live loading and that have a minimum vertical slope of 6:12 and a maximum length of 12 in. (305 mm).

7.1.6 The maximum thickness of EPS foam plastic shall be limited to 4 in. (102 mm). The minimum thickness shall not be less than that stated in the description for each system type. The maximum potential heat for the EPS board shall not exceed 6000 BTU/ft².

7.1.7 The maximum thickness of XPS foam plastic shall be limited to 3 in. (76 mm). The minimum thickness shall not be less than 1 in. (25 mm).

7.1.8 The foam plastic shall be separated from the building interior by a layer of 1/2 in. (12.7 mm) gypsum wallboard or an equivalent approved thermal barrier material in accordance with requirements of the applicable code.

7.1.9 Foam plastic boards used with these products shall be labeled on units or packaging as stated in Section 5.0 of this report.

7.1.10 In jurisdictions adopting the *International Residential Code*, 1999 *Standard Building Code* or the 1998 *IOTFDC*, termite protection shall be provided in accordance with Section R324.4 of the *International Residential Code*, Section 2603.3 of the *Standard Building Code*, or Section 323.4 of the *IOTFDC*.

7.2 T-WALL MOISTURE DRAINAGE SYSTEM, CLASS

PB: Flashings shall be installed at all penetrations and terminations of the system, in accordance with the requirements of the applicable code, the manufacturer's installation instructions, and the limitations of this report. See Figures 15 through 18 at the end of this report for typical flashing details.

7.3 T-WALL SOFT COAT PB EIFS; T-WALL-H TWO COAT HARD COAT PM SYSTEM; AND T-WALL PANEL EIFS:

7.3.1 In jurisdictions adopting the 2000 *International Building Code* and the *BOCA National Building Code* 1999, these systems shall be limited to use with the specific penetrating items and termination details of the systems that have been tested for wind-driven rain resistance in accordance with the exception to Section 1403.2 of the 2000 *International Building Code* (Section 1404.3 of the *BOCA National Building Code*/1999) and which are listed in Table 3 and shown in Figures 6 through 14, except where installed over concrete or masonry substrates. Details of the specific penetrations representative of those intended for use shall be submitted to the code official for approval with the application for permit. The evaluation of these systems with penetrations (i.e., doors, windows, utility penetrations), other than those shown, for compliance with the exception to Section 1403.2 of the 2000 *International Building Code* (Section 1404.3 of the *BOCA National Building Code*/1999) is outside the scope of this report.

7.3.2 In jurisdictions adopting the *International Residential Code*, these systems shall be limited to use over wall substrates of concrete or masonry only.

7.3.3 All installations of these systems, except for where installed over concrete or masonry substrates, shall be subject to special inspections, as described in Section 4.6 of this report, in accordance with Section 1704.12 of the 2000 *International Building Code* (Section 1406.8 and 1705.13 of the *BOCA National Building Code*/1999).

7.4 This report is subject to periodic re-examination. For information on the current status of this report, contact the ICC-ES.

This report is subject to re-examination in two years.

TABLE 1— REINFORCING MESH TYPES

Mesh Type	Nominal Weight	Roll Size
T-Wall Standard Mesh ¹	4.3 oz/yd ² (146 g/m ²)	38, 48, 76 and 114 in. x 150 ft (965, 1220, 1930 and 2896 mm x 45.7 m)
T-Wall Enhanced Mesh ²	6.0 oz/yd ² (203 g/m ²)	38 in. x 150 ft (965 mm x 45.7 m)
T-Wall Intermediate Mesh ²	11.0 oz/yd ² (373 g/m ²)	38 in. x 75 ft (965 mm x 22.9 m)
T-Wall High Impact Mesh ²	15.0 oz/yd ² (509 g/m ²)	38 in. x 75 ft (965 mm x 22.9 m)
T-Wall Ultra High Impact Mesh ²	20.0 oz/yd ² (679 g/m ²)	38 in. x 150 ft (965 mm x 45.7 m)
T-Wall Detail Mesh ³	4.3 oz/yd ² (146 g/m ²)	6, 7, 9.5 and 38 in. x 150 ft (152, 178, 241 and 965 mm x 45.7 m)

Notes to Table 1:

1. Minimum type used to provide base coat reinforcement for the T-WALL Soft Coat PB EIFS.
2. Mesh types intended for use when additional resistance to impact is desired.
3. Mesh type used to provide reinforcement at all wall penetrations.

TABLE 2—WIND LOAD RESISTANCE

Wall Assembly Description	Maximum Allowable Design Wind Loads	
	IBC/IRC/BNBC/ UBC/IOTFDC	SBC
Soft Coat		
Framing: Nom. 2 × 4 in. (51 × 102 mm) wood studs (SG= 0.42) spaced 16 in. (406 mm) o.c. Sheathing: 1/2 in. (12.7 mm) gypsum sheathing ¹ fastened with 1-1/2 in. (38 mm) Type S drywall screws at 8 in. (203 mm) o.c. Insulation: 1 in. (25 mm) thick EPS, adhesively applied with Foam N' Base Adhesive	41 lbf/ft ² (2.0 kPa)	51 lbf/ft ² (2.4 kPa)
Hard Coat		
Framing: Nom. 2 × 4 in. (51 × 102 mm) wood studs (SG= 0.42) spaced 16 in. (406 mm) o.c. Sheathing: 1/2 in. (12.7 mm) gypsum sheathing ¹ fastened with 1-1/2 in. (38 mm) Type S drywall screws at 8 in. (203 mm) o.c. Insulation: 1 in. (25 mm) thick Dow Styrofoam XPS, fastened with 2-5/8 in. (67 mm) Type S fasteners and 1-3/4 in. (44 mm) dia. polypropylene plates at 12 in. (305 mm) o.c.	47 lbf/ft ² (2.3 kPa)	59 lbf/ft ² (2.8 kPa)
Moisture Drainage		
Framing: Nom. 2 × 4 in. (51 × 102 mm) wood studs (SG=0.42) spaced 16 in. (406 mm) o.c. Sheathing: Interior face: 1/2 in. (12.7 mm) gypsum board ¹ fastened w/ 1-1/4 in. (32 mm) drywall screws at 8 in. (203 mm) o.c.; Exterior face: 1/2 in. (12.7 mm) exterior grade plywood sheathing ¹ fastened w/ 1-1/4 in. (32 mm) galvanized screws fasteners at 8 in. (203 mm) o.c., covered with one layer of water-resistive barrier. Insulation: 2 in. (51 mm) thick grooved EPS, fastened with 3 in. (76 mm) Type W screws and 1-3/4 in. (44 mm) dia. polypropylene plates ^{2,3} .	64 lbf/ft ² (3.1 kPa)	53 lbf/ft ² (2.5 kPa)
Framing: Nom. 2 × 4 in. (51 × 102 mm) wood studs (SG=0.42) spaced 16 in. (406 mm) o.c. Sheathing: Interior face: 1/2 in. (12.7 mm) gypsum board ¹ fastened w/ 1-1/4 in. (32 mm) drywall screws at 8 in. (203 mm) o.c.; Exterior face: 1/2 in. (12.7 mm) exterior grade plywood sheathing ¹ fastened w/ 1-1/4 in. (32 mm) galvanized screws fasteners at 8 in. (203 mm) o.c., covered with one layer of water-resistive barrier. Insulation: 2 in. (51 mm) thick flat EPS, fastened over pvc spacer lath with 3 in. (76 mm) Type W screws and 1-3/4 in. (44 mm) dia. polypropylene plates ^{2,3} .	64 lbf/ft ² (3.1 kPa)	53 lbf/ft ² (2.5 kPa)

Notes to Table 2:

- 1 Solid substrates shall comply with the requirements of the applicable code.
2. See Figure 19 for fastener number and pattern.
3. See Figure 20 for fastener number and pattern.

TABLE 3
PENETRATION AND SEALANT TESTED IN ACCORDANCE WITH EXCEPTION TO
Section 1403.2 of 2000 International Building Code
(Section 1404.3 of BOCA National Building Code/1999)

Penetration and Sealant Tested	Specific Model/Type
Door	Midwest Manufacturing Commander CP-1 Pre-hung Flush Steel Door
Sealant	DOW 791 Silicone and DOW Ethafoam backer rod

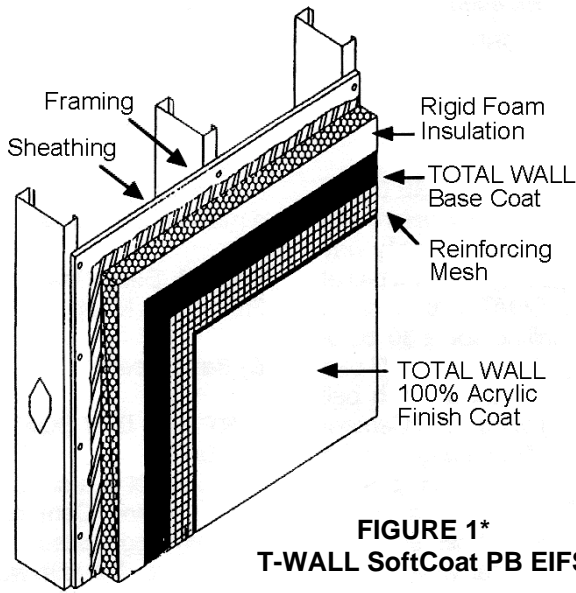
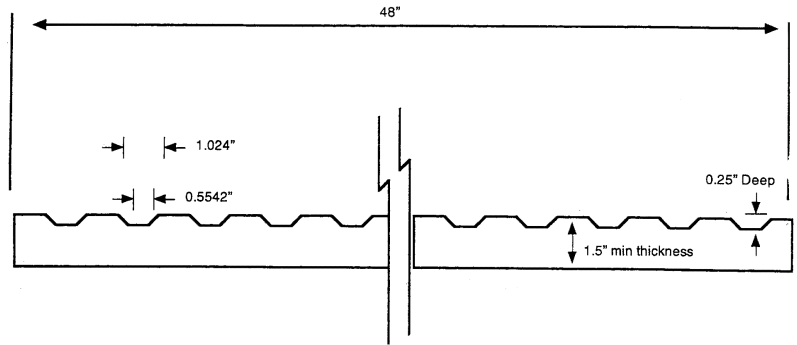


FIGURE 1*
T-WALL SoftCoat PB EIFS



Grade I EPS Foam for Moisture Drainage PB EIFS.
Boards are 2' x 4' with 33.5 vents or grooves per board.

FIGURE 4*
T-WALL SoftCoat PB EIFS T-WALL
Moisture Drainage MD EIFS Grooved Board Profile

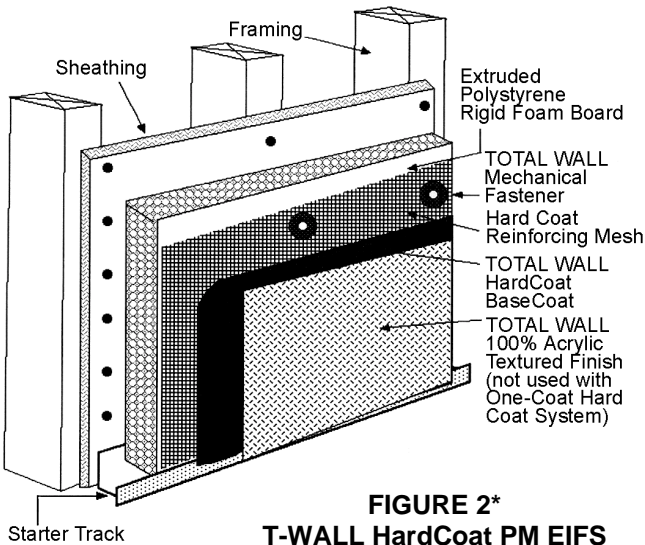


FIGURE 2*
T-WALL HardCoat PM EIFS

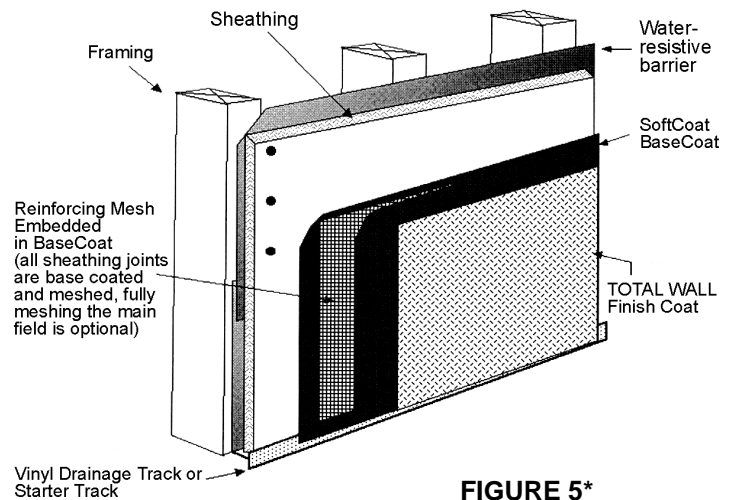


FIGURE 5*
T-WALL Direct Applied DA System

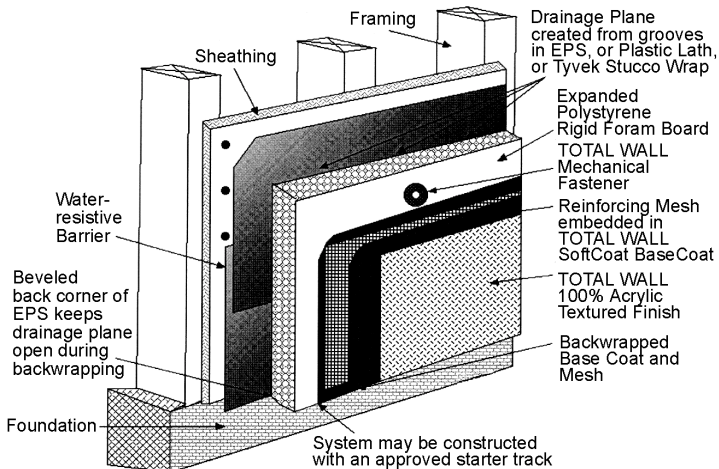


FIGURE 3*
T-WALL Moisture Drainage MD EIFS

DOOR ¹	Commander CP-1 Prehung Steel Door
SEALANT ¹	DOW 791, Single component silicone
BACKER ROD ¹	DOW Ethafoam, closed cell

1. Use of Components other than those listed above are outside the scope of this report and renders this report null and void.

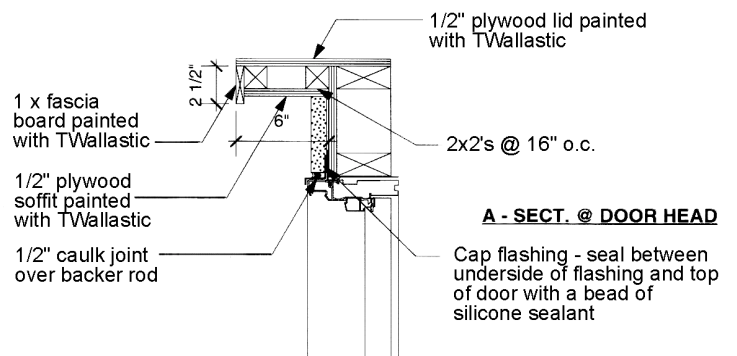
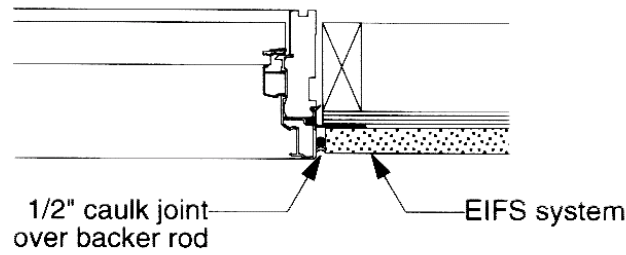


FIGURE 6*



C - SECT. @ DOOR JAMB

FIGURE 7*

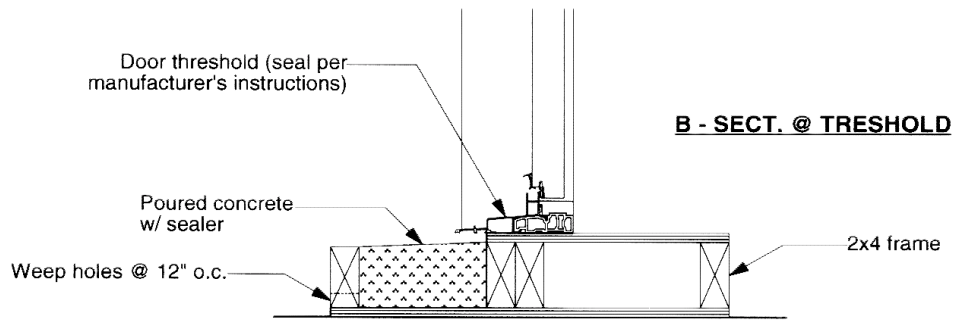
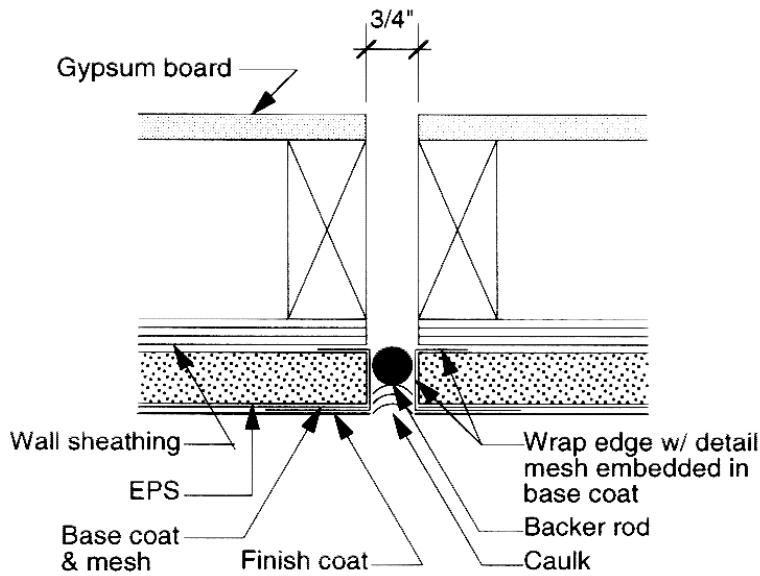


FIGURE 8*



C/T7 - EXPANSION JOINT

No Scale

FIGURE 9*

SEALANT: SPECIFICATIONS

Sealant: Ultra low modulus single component silicone DOW 791.

Backer Rod: closed cell DOW Ethafoam.

DOOR ¹	Commander CP-1 Prehung Steel Door
SEALANT ¹	DOW 791, Single component silicone
BACKER ROD ¹	DOW Ethafoam, closed cell

1. Use of Components other than those listed above are outside the scope of this report and renders this report null and void.

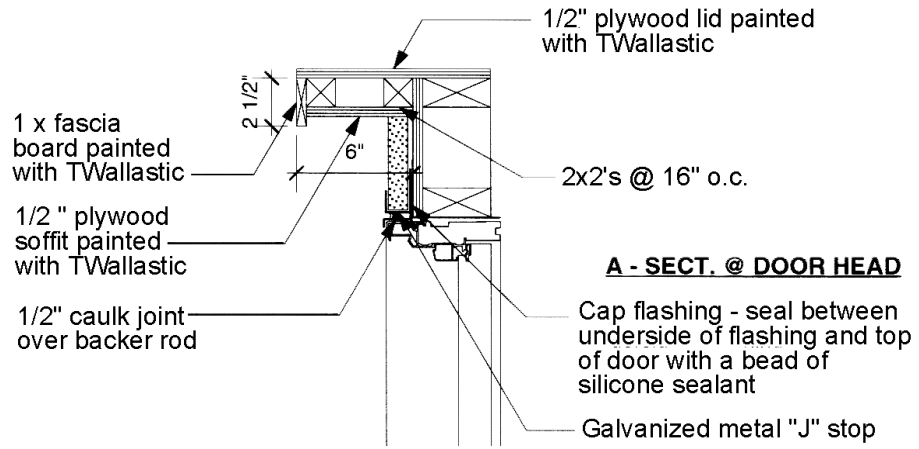
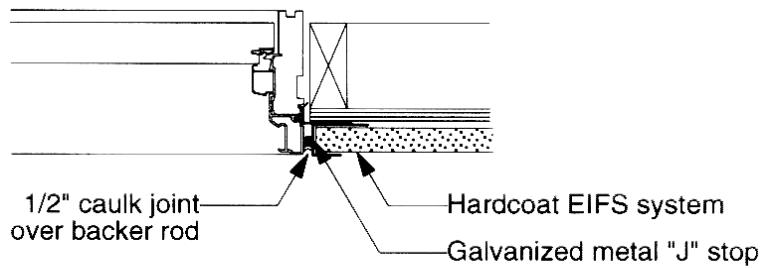


FIGURE 10*



C - SECT. @ DOOR JAMB

FIGURE 11*

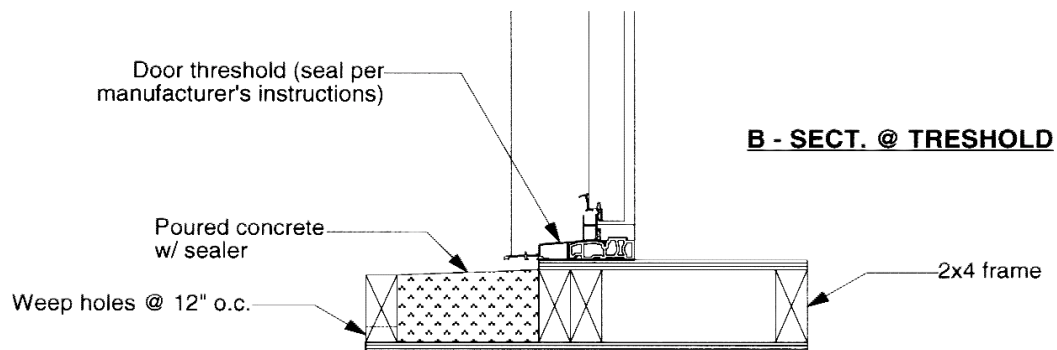
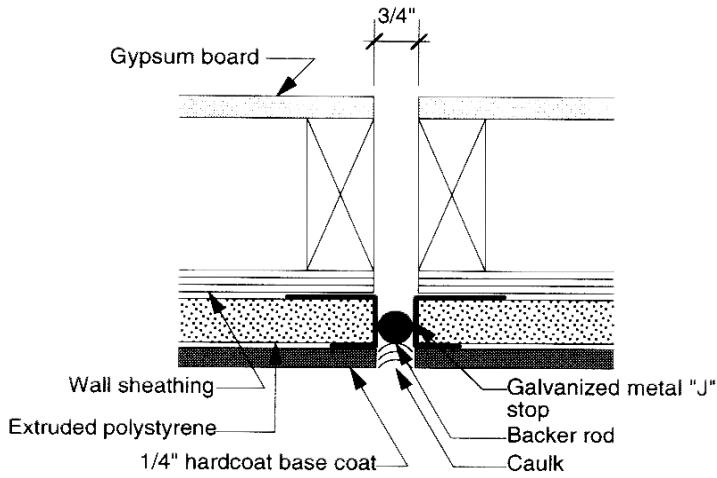


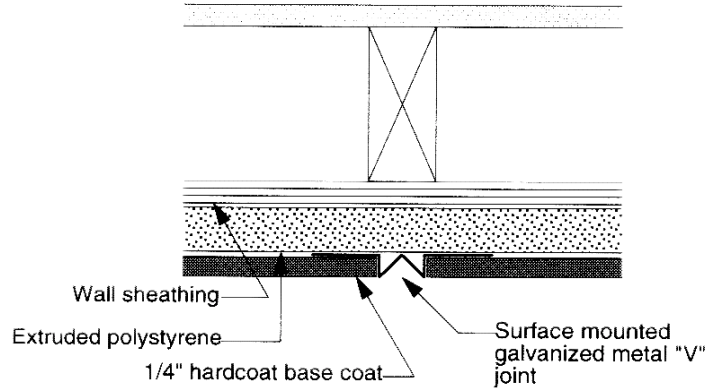
FIGURE 12*



C/T10 - EXPANSION JOINT

No Scale

FIGURE 13*



D/T10 - CONTROL JOINT

No Scale

FIGURE 14*

SEALANT: SPECIFICATIONS

Sealant: Ultra low modulus single component silicone DOW 791.

Backer Rod: closed cell DOW Ethafoam.

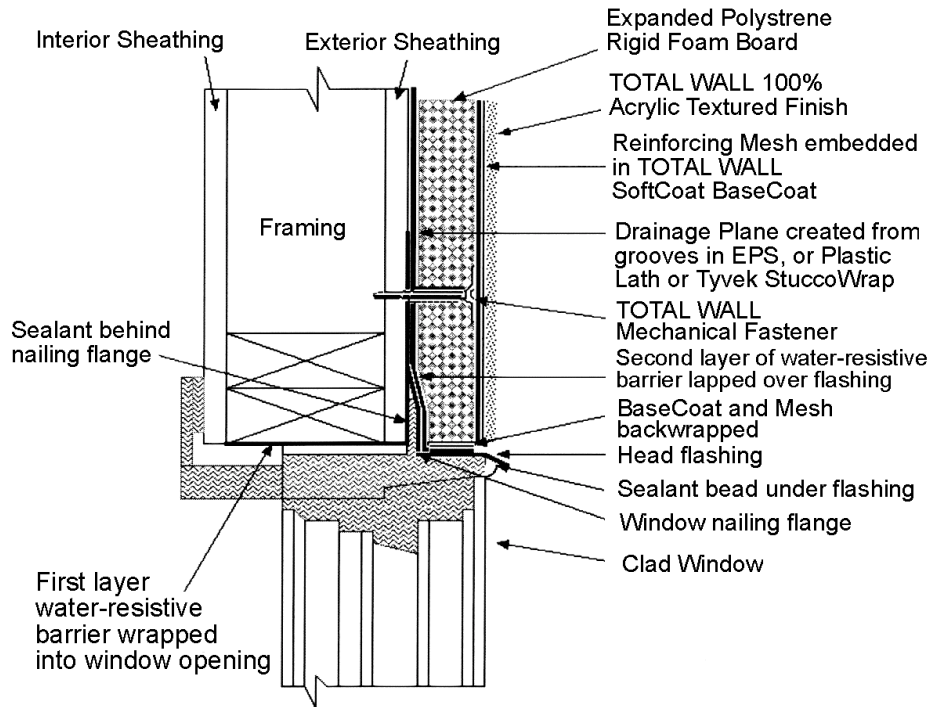


FIGURE 15*

TOTAL WALL Typical Moisture Drainage System - Window Head Detail

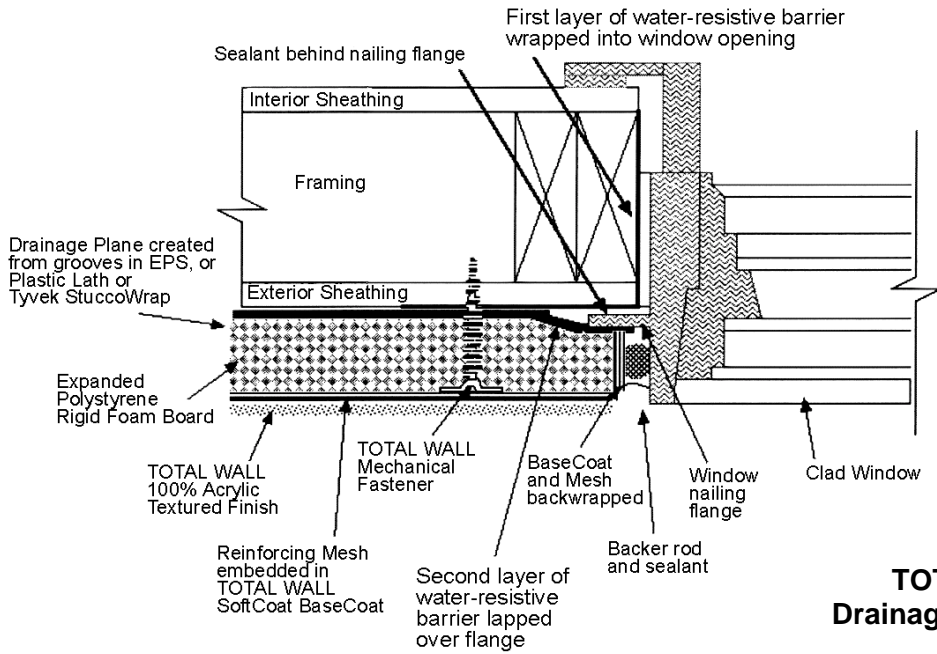


FIGURE 16*
**TOTAL WALL Typical Moisture
Drainage System - Window Jamb Detail**

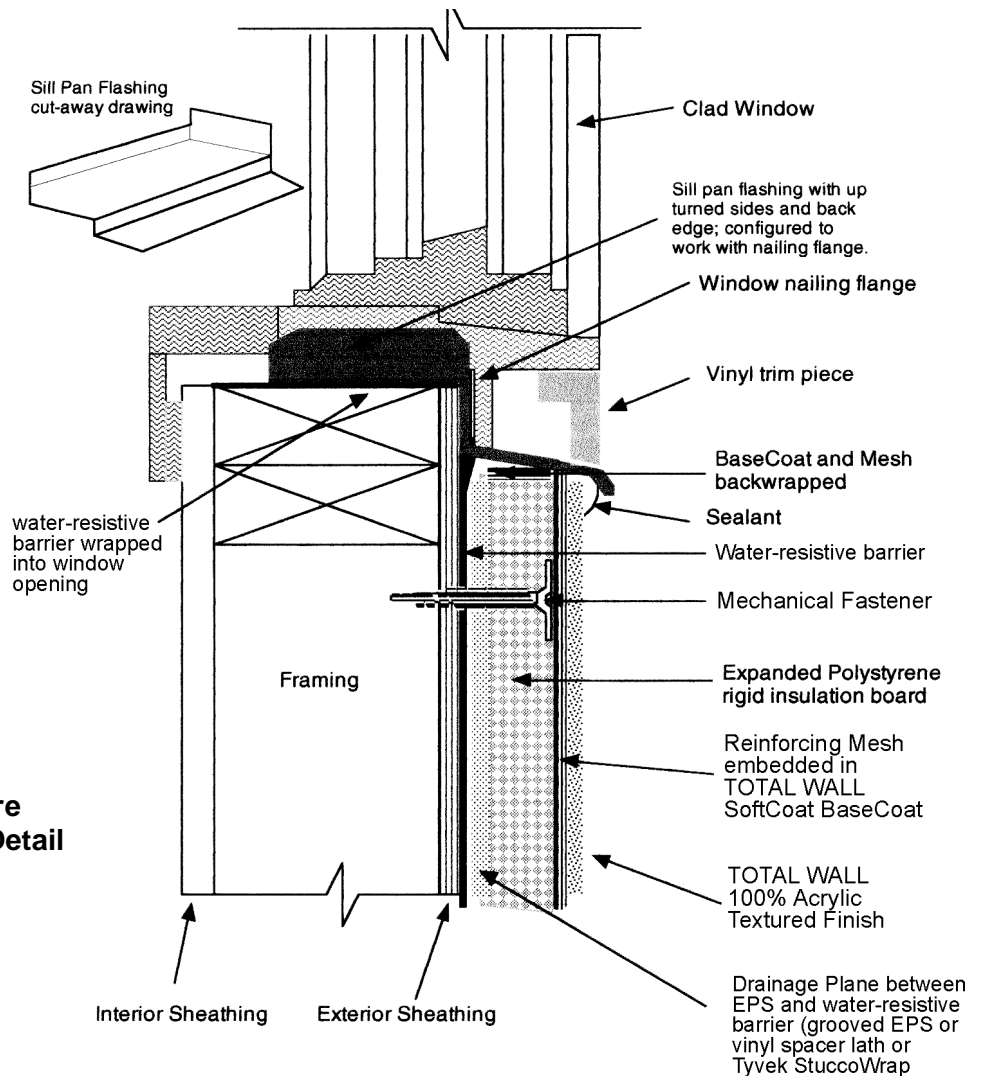


FIGURE 17*
**TOTAL WALL Typical Moisture
Drainage System - Window Sill Detail**

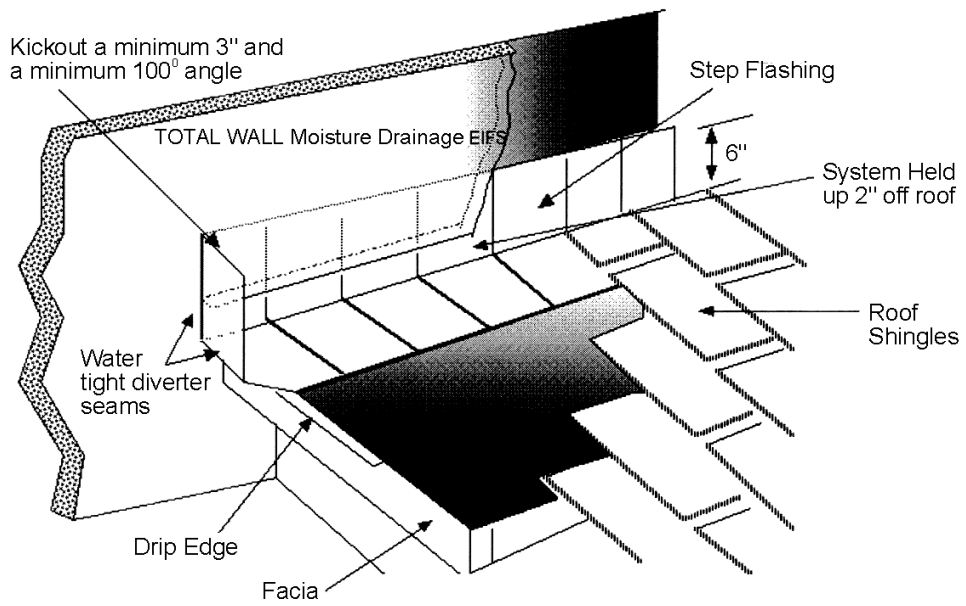


FIGURE 18*
TOTAL WALL Typical Roof Flashing with Kickout Diverter

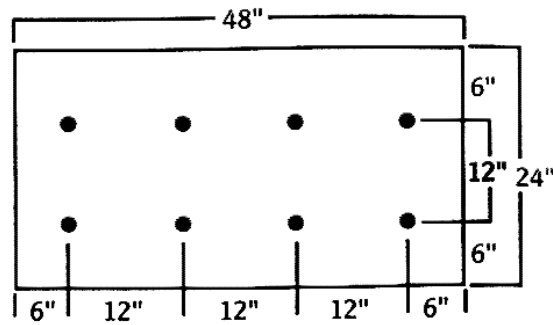


FIGURE 19*

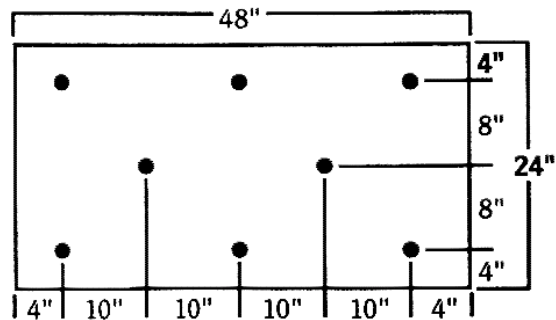


FIGURE 20*

*THESE DRAWINGS ARE FOR ILLUSTRATION PURPOSES ONLY. THEY ARE NOT INTENDED FOR USE AS CONSTRUCTION DOCUMENTS FOR THE PURPOSE OF DESIGN, FABRICATION OR ERECTION.