

ICC-ES Evaluation Report

ESR-2305

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This report is subject to re-examination in one year.

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A Subsidiary of the International Code Council®

DIVISION: 07—THERMAL AND MOISTURE PROTECTION
Section: 07240—Exterior Insulation and Finish System
Section: 07280—Water-resistive Barriers

REPORT HOLDER:

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EVALUATION SUBJECT:

**AKROFLEX WATER MANAGED AND WATER MANAGED
 PLUS EXTERIOR INSULATION AND FINISH SYSTEM**

1.0 EVALUATION SCOPE

Compliance with the following codes:

- 2006 *International Building Code*® (IBC)
- 2006 *International Residential Code*® (IRC)
- Other Codes (see Section 8.0)

Properties evaluated:

- Noncombustible construction
- Surface-burning characteristics
- Wind load resistance
- Weather resistance

2.0 USES

The AkroFlex Water Managed (WM) and Water Managed Plus (WM+) exterior insulation and finish systems (EIFS) are exterior wall coverings as required by Chapter 14 of the IBC and Chapter 7 of the IRC. The EIFS systems with drainage may be used on buildings classified as Type I, II, III or IV construction under the IBC; on framed walls of Type V construction in Group R1, R2, R3 or R4 Occupancy Groups under the IBC; and construction under Section R703.9 of the IRC.

3.0 DESCRIPTION

3.1 General:

3.1.1 AkroFlex WM: The AkroFlex WM system is mechanically attached to wood- or steel-framed walls with gypsum sheathing, glass mat-faced gypsum sheathing, cement board sheathing or wood structural panel sheathing. The system consists of a water-resistive barrier mechanical fasteners, expanded polystyrene (EPS) insulation board, base coat, reinforcing mesh, an optional

primer, finish coat and accessory components. The system can use either a sheet water-resistive barrier or the AkroGuard water-resistive barrier coating. See Figure 1 for details.

3.1.2 AkroFlex WM+: The AkroFlex WM+ is adhesively attached to concrete walls or concrete masonry walls; or wood- or steel-framed walls with gypsum sheathing, glass mat-faced gypsum sheathing, cement board sheathing or wood structural panel sheathing. The system consists of the AkroGuard water-resistive barrier coating, an adhesive, expanded polystyrene (EPS) insulation board, base coat, reinforcing mesh, a weep screed starter track, a finish coat and accessory components. See Figure 2 for details.

3.2 Materials:

3.2.1 Substrates:

3.2.1.1 Concrete and Concrete Masonry: Concrete and concrete masonry must comply with the applicable sections of the applicable code.

3.2.1.2 Gypsum Board: Water-resistant core gypsum complying with ASTM C 1396 or ASTM C 79.

3.2.1.3 Glass Mat-faced Gypsum Sheathing: Minimum 1/2-inch-thick (12.7 mm), glass mat-faced gypsum sheathing complying with ASTM C 1177.

3.2.1.4 Cement Board Sheathing: Minimum 1/2-inch-thick (12.7 mm), cement board sheathing complying with ASTM C 1325.

3.2.1.5 Wood Structural Panel Sheathing: Exterior or Exposure 1 plywood complying with U.S. DOC PS-1, with a minimum thickness of 7/16 inch (11.1 mm); or Exposure 1 oriented strand board (OSB) complying with U.S. DOC PS-2, with a minimum thickness of 7/16 inch (11.1 mm).

3.2.2 Water-resistive Barrier:

3.2.2.1 Sheet Water-resistive Barrier: A water-resistive barrier in accordance with IBC Sections 1404.2 and 2510.6 or IRC Section R703.6.3 must be placed behind the insulation board and over the substrate. When applied over wood-based sheathing the water-resistive barrier must be a minimum of two layers of Grade D building paper (IBC) or one layer of 60-minute Grade D building paper (IRC) or equivalent as recognized in a current ICC-ES evaluation report, and one layer of EPS.

3.2.2.2 Water-resistive Barrier Coating: AkroGuard is a water-resistive barrier coating, applied over any of the substrates described in Section 3.2.1. The coating is acrylic-based and comprised of two parts, AkroGuard and AkroFill, each packaged in 5-gallon (18.9 L) containers.

The products have a shelf life of two years when stored in unopened containers at temperatures between 40°F and 90°F (4°C and 32°C). The coating is considered a vapor-permeable membrane, having a permeance rating of 7.64 perms at a 12-mil thickness.

3.2.3 Weep Screed Starter Track: The weep screed starter track is a rigid, exterior-grade, polyvinyl chloride J-channel with weep holes for drainage, and must be approved by the manufacturer.

3.2.4 Insulation Board: Insulation board must be a flat-faced, square-edge, rigid EPS insulation board having a minimum density of 0.90 pcf (14.4 kg/m³), a flame-spread index of 25 or less, and a smoke-developed index of 450 or less. The board must comply with ASTM C 578, Type I.

For the AkroFlex WM, the board must have a nominal thickness of 1½ inches (38 mm) and have 3⁄8-inch-deep (9.5 mm) corrugations spaced 1.0 inch (25.4 mm) on center on the back side of the board, as shown in Figure 3.

For the AkroFlex WM+, the board thickness range is 1 to 4 inches (25.4 to 102 mm) without corrugations.

Acceptable EPS insulation boards are:

- AFM Corporation Type WSG (see [ESR-1006](#)).
- Falcon Foam, A Division of Atlas Roofing, Type EWG-90 (see [ESR-1962](#)).
- Premier Industries, Inc. /dba INSULFOAM, Type IEG (see [ESR-1788](#)).
- Star R Foam Manufacturing, Inc., Type SWG (see [ESR-1566](#)).

3.2.5 Base Coats and Adhesives:

3.2.5.1 StyroGlue: StyroGlue is an acrylic-based liquid base coat or adhesive to which any portland cement, complying with ASTM C 150, is added at the jobsite, in the ratio of one part StyroGlue to one part cement, by volume. The product is supplied in 5-gallon (18.9 L) containers and has a two-year shelf life when stored in unopened containers at temperatures between 40°F and 90°F (4°C and 32°C).

3.2.5.2 StyroGlue Dry Bond: StyroGlue Dry Bond, a base coat or adhesive, is a prepackaged dry mixture of cement, sand and powdered acrylic admixture. Approximately 1.75 gallons (6.6 L) of water are added to each bag to achieve the desired consistency. The mix is supplied in 50-pound (22.7 kg) bags and has a one-year shelf life when stored unopened at temperatures between 40°F and 90° (4°C and 32°C).

3.2.5.3 StyroGlue TF: StyroGlue TF is an acrylic, noncementitious, liquid base coat that is supplied in ready-to-use 5-gallon (18.9 L) containers. The base coat has a shelf life of two years when stored in unopened containers at temperatures between 40°F and 90°F (4°C and 32°C).

3.2.6 Reinforcing Mesh: AkroFlex Mesh is an open-weave glass fiber of twisted multi-end strands placed approximately 3⁄16 inch (4.8 mm) on center each way and weighing approximately 4.5 ounces per square yard (153 g/m²). The fibers are treated for alkali resistance.

3.2.7 Primer (Optional): AkroFlex Primer is an acrylic-based primer that may be used over the base coat prior to the application of the finish coat. The primer is supplied in 5-gallon (18.9 L) containers and has a shelf life of two years when stored in unopened containers at temperatures between 40°F and 90°F (4°C and 32°C).

3.2.8 Finish Coat: AkroFlex Finishes are proprietary, premixed, acrylic-based, textured wall coatings with graded aggregates. The coatings are supplied in 5-gallon (18.9 L) containers and have a shelf life of two years when stored in unopened containers at temperatures between 40°F and 90°F (4°C and 32°C).

3.2.9 Sealant: The sealant must be compatible with the EIFS components and be approved by Omega Products International, Inc. Evidence must be submitted to the code official showing that the Omega Products International-recommended sealant is a Type S or M, minimum Grade NS, minimum Class 25, and Use O sealant complying with ASTM C 920. Under the Use O classification, the sealant must be qualified for each material to which the sealant will be applied. The details for sealant installation, including the width and thickness of the sealant, must be specified by the registered design professional, designer, or builder, in that order, to the satisfaction of the code official.

3.2.10 Mechanical Fasteners:

- a. Wind-Devil fasteners, manufactured by Wind-Lock, are polypropylene, 1¾-inch-diameter-by-¾-inch-deep (45 mm by 19.1 mm) plates with corrosion-resistant buglehead screws. Screws must be designated “S Series” for steel framing, and “W Series” for wood framing and wood-based sheathing.
- b. Wind-Devil 2 fasteners, manufactured by Wind-Lock, are polypropylene, 2-inch-diameter-by-¾-inch-deep (51 mm by 19.1 mm) plates with corrosion-resistant buglehead screws. Screws must be designated “S Series” for steel framing, and “W Series” for wood framing and wood-based sheathing.
- c. Plasti-Grip III and PlasticGrip IV fasteners, manufactured by Rodenhouse, are polypropylene plastic. 1¼-inch-diameter (32 mm) plates with corrosion-resistant buglehead screws. Screws must be designated “S Series” for steel framing, and “W Series” for wood framing and wood-based sheathing.

4.0 INSTALLATION

4.1 General:

Installation of the AkroFlex WM and AkroFlex WM+ systems must comply with the manufacturer’s published installation instructions, this report and the applicable code. The manufacturer’s published installation instructions must be available on the jobsite at all times during installation. Applicators must be approved and listed by Omega Products International.

The application must occur on clean, dry surfaces, with surface temperatures between 40°F and 120°F (4.4°C and 49°C). Supplementary heat and moisture protection may be provided as needed. Where sheathing exceeds ½ inch (12.7 mm), the fastener length must be increased by the additional sheathing thickness. The substrate must be flat to ¼ inch (6.4 mm) within any 4-foot (1219 mm) radius. All exposed edges of the insulation board must be encapsulated with the reinforcing mesh and embedded in the base coat or covered with a manufacturer-approved plastic trim accessory.

Protection against condensation in the exterior wall assembly must be provided in accordance with the 2006 *International Energy Conservation Code*®. Flashing must be installed in accordance with IBC Section 1405.3. For installations regulated under the IRC, flashing must be installed in accordance with IRC Section R703.9.2, and a vapor retarder must be installed in accordance with IRC Section R322.

4.2 Water-resistive Barrier:

A water-resistive barrier described in Section 3.2.2 in accordance with the systems described in Section 3.0 must be applied over the substrates described in Section 3.2.1, prior to the attachment of the EPS insulation board. The barrier must be integrated with the flashing and trim to insure a continuous barrier designed to allow moisture to escape to the exterior of the wall assembly. The barrier must be applied in accordance with the manufacturers published guidelines and the applicable code.

For AkroGuard applications the AkroFill is applied with a trowel over the gaps and openings along the sheathing joints as well as in all inside and outside corners. The total thickness of this coat should be approximately $\frac{1}{16}$ inch (1.6 mm). AkroFlex Mesh is embedded in wet AkroFill and troweled smooth, ensuring that no mesh is visible. Sheathing joints require 4.5-ounce (1.25 N), minimum 4-inch-wide (102 mm) AkroFlex Mesh. Rough openings require 4.5-ounce (1.25 N), minimum 9.5-inch-wide (241 mm) AkroFlex Mesh. The mesh must be lapped a minimum of 2.5 inches (64 mm) at intersections. AkroFill may also be used to fill holes or surface imperfections of less than $\frac{1}{16}$ inch (1.6 mm).

AkroFill is allowed to dry prior to the application of AkroGuard. AkroGuard may be applied with a $\frac{3}{4}$ -inch (19 mm) nap roller or sprayed to form a continuous barrier across the substrate approximately 10 to 20 mils [0.01 to 0.02 inch (0.25 to 0.51 mm)] thick when wet. Roller application is recommended for all rough surfaces in order to ensure a uniform application. The application should be free of voids, pins, or discontinuities. OSB requires two separate coats approximately 10 mils [0.01 inch (0.25 mm)] thick when wet. AkroGuard is allowed to dry prior to application of a second coat or installation of insulation board.

4.3 Insulation Board:

4.3.1 AkroFlex WM: Insulation boards must be mechanically fastened in a running bond pattern, with the long edge horizontal and fasteners spaced as shown in Figure 4. All joints are tightly butted and vertical joints staggered. Any gap $\frac{1}{16}$ inch wide (1.6 mm) or wider must be filled with EPS insulation board. At wall corners, the edges of the insulation boards must be interlocked. Any irregularities on the exterior surface of the insulation board greater than $\frac{1}{16}$ inch (1.6 mm) must be eliminated. Final EPS insulation board thickness must be a minimum of $1\frac{1}{8}$ inches (29 mm).

4.3.2 AkroFlex WM+: StyroGlue or StyroGlue Drybond adhesives, as described in Section 3.2.5, should be mixed and applied per this report and the manufacturer's published instructions. Substrates must be properly prepared, as described in Section 4.1. The adhesive is applied to the entire back surface of the EPS insulation board with a $\frac{3}{8}$ -by- $\frac{3}{8}$ -by- $1\frac{1}{2}$ -inch (9.5 by 9.5 by 38 mm) notched trowel. Notches must be parallel to the short edge of the insulation board so that vertical channels are created when the board is applied to the substrate, permitting the drainage of incidental moisture from behind the EIFS. The insulation board, applied in running bond, is applied to the sheathing, and pressure is applied over the entire surface to ensure uniform contact while preserving the vertical channels. All joints are tightly butted and vertical joints staggered. Any gaps $\frac{1}{16}$ inch (1.6 mm) wide or wider must be filled with EPS insulation board. At wall corners, the edges of the insulation boards must be interlocked. Adhesive between EPS insulation board joints is not permitted.

The adhesive must cure at least 24 hours before application of the base coat. After the adhesive has dried, any irregularities on the exterior surface of the insulation board greater than $\frac{1}{16}$ inch (1.6 mm) must be eliminated. Final EPS insulation board thickness must be a minimum of $\frac{3}{4}$ inch (19 mm).

4.4 Base Coat:

The base coat is applied to the entire surface of the EPS insulation board and is troweled to a uniform thickness of approximately $\frac{1}{16}$ inch (1.6 mm), and the reinforcing mesh is completely embedded into the wet base coat. The mesh is troweled from the center to the edges, and must be continuous at all corners and lapped at least 2.5 inches (63 mm) at mesh edges.

4.5 Finish Coat:

The base coat must have dried for a minimum of 24 hours prior to primer or finish application. When the base coat is dry, optional AkroFlex Primer is sprayed or rolled over the entire surface of the dry base coat and allowed to dry between 30 and 60 minutes after application. The AkroFlex Finish is applied directly to the dry primer or base coat. Nominal thickness of the finish coat is approximately $\frac{1}{16}$ inch (1.6 mm) depending on aggregate size and finish appearance.

4.6 Joints:

Expansion joints are required at locations where the substrate changes, at floor lines in wood-framed construction where lumber shrinkage is likely to occur, where the EIFS abuts another material, and where structural movement is anticipated. Joints must be installed as specified by the architect, designer, or builder, in that order.

4.7 Sealant:

An approved sealant described in Section 3.2.9 must be applied at system terminations, exposed joints, floor lines of wood-framed construction, changes in building shape or roof line, substrate changes, expansion joints and wall penetrations.

4.8 Penetrations:

Penetrations must be prepared in a manner consistent with Figure 1 and with the AkroFlex published installation instructions.

4.9 Wind Design:

4.9.1 General: Wall framing members must be designed to resist all positive and negative transverse loads and must comply with and be designed in accordance with the applicable code, with a deflection limitation of $\frac{1}{240}$ of the span. Corrosion-resistant fasteners must be used.

4.9.2 AkroFlex WM: Allowable transverse wind pressures based on systems installed in accordance with this report, are set forth in Table 1. Wood framing must comply with the applicable code and must be a minimum of nominally 2-by-4 wood studs, having a minimum specific gravity of 0.50. Steel framing must be a minimum of No. 20 gage [0.0359 inch (0.91 mm)] base-metal thickness steel studs spaced at a maximum of 16 inches (406 mm) on center. Wood-based sheathing must be fastened to wood framing members with fasteners approved to resist minimum loading conditions in accordance with the applicable code. Wood-based sheathing must be fastened to steel framing with corrosion-resistant, No. 8 by 1-inch (25.4 mm) self-drilling screws, with 0.292-inch-diameter (7.4 mm) heads, spaced 6 inches (152 mm) on center at

board edges and 12 inches (305 mm) on center at intermediate studs. Gypsum and cement board sheathing is attached to framing with No. 6 by 1-inch-long (25.4 mm), self-drilling, corrosion-resistant screws used to attach gypsum and cement board sheathing to studs at all board edges and intermediate studs at a maximum spacing of 7 inches (178 mm) on center. The minimum fastener length is 1 inch (25.4 mm). Vertical edges of the sheathing must butt over studs.

4.9.3 AkroFlex WM+:

4.9.3.1 Assembly 1: The maximum allowable positive and negative wind load is 36 psf (1724 Pa) for this assembly. Minimum $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum, glass mat-faced gypsum, cement board or wood structural panel sheathing is installed in accordance with the applicable code to minimum No. 20 gage [0.0359 inch (0.91 mm)] base-metal thickness steel studs spaced at a maximum of 16 inches (406 mm) on center. No. 8 flat, wafer, pancake or modified truss head screws must be used to attach the sheathing to studs at all board edges and intermediate studs at a maximum of 8 inches (203 mm) on center, except that when glass mat-faced gypsum sheathing is used, the fastener spacing is a maximum of 6 inches (152 mm) on center. The minimum fastener length is $1\frac{1}{4}$ inches (32 mm), and the fastener must penetrate the studs at least $\frac{3}{8}$ inch (9.5 mm). Vertical edges of the sheathing must butt over studs.

4.9.3.2 Assembly 2: The maximum allowable positive and negative wind load is 31 psf (1484 Pa) for this assembly. Minimum $\frac{5}{8}$ -inch-thick (15.9 mm) gypsum, glass mat-faced gypsum or wood structural panel sheathing is installed in accordance with the applicable code to minimum No. 20 gage [0.0359 inch (0.91 mm)] base-metal thickness steel studs spaced at a maximum of 24 inches (406 mm) on center. No. 8 flat, wafer, pancake or modified truss head screws must be used to attach the sheathing to studs at all board edges and intermediate studs at a maximum of 6 inches (203 mm) on center. The minimum fastener length is $1\frac{1}{4}$ inches (32 mm), and the fastener must penetrate the studs at least $\frac{3}{8}$ inch (9.5 mm). Vertical edges of the sheathing must butt over studs.

4.9.3.3 Assembly 3: The maximum allowable positive and negative wind load is 36 psf (1724 Pa) for this assembly. Minimum $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum, glass mat-faced gypsum, cement board or wood structural panel sheathing is installed in accordance with the applicable code to minimum No. 18 gage [0.0486 inch (1.2 mm)] base-metal thickness steel studs spaced at a maximum of 16 inches (406 mm) on center. No. 6, buglehead, Type S, self-drilling screws with a minimum head diameter of 0.31 inch (7.9 mm) must be used to attach the sheathing to studs at all board edges and intermediate studs at a maximum of 8 inches (203 mm) on center, except that when glass mat-faced gypsum sheathing is used, the fastener spacing is a maximum of 6 inches (152 mm) on center. The minimum fastener length is $1\frac{1}{4}$ inches (32 mm), and the fastener must penetrate the studs at least $\frac{3}{8}$ inch (9.5 mm). Vertical edges of the sheathing must butt over studs.

4.9.3.4 Assembly 4: The maximum allowable positive and negative wind load is 31 psf (1484 Pa) for this assembly. Minimum $\frac{5}{8}$ -inch-thick (15.9 mm) gypsum, glass mat-faced gypsum or wood structural panel sheathing is installed in accordance with the applicable code to minimum No. 18 gage [0.0486 inch (1.2 mm)] base-metal thickness steel studs spaced at a maximum of 24 inches (406 mm) on center. No. 6, buglehead, Type S, self-drilling

screws with a minimum head diameter of 0.31 inch (7.9 mm) must be used to attach the sheathing to studs at all board edges and intermediate studs at a maximum of 6 inches (203 mm) on center. The minimum fastener length is $1\frac{1}{4}$ inches (32 mm), and the fastener must penetrate the studs at least $\frac{3}{8}$ inch (9.5 mm). Vertical edges of the sheathing must butt over studs.

4.9.3.5 Assembly 5: The maximum allowable positive and negative wind load for this assemble is 36 psf (1724 Pa) when the gypsum, glass mat-faced gypsum, cement board or wood structural panel sheathing is screw-fastened, and 26 psf (1245 Pa) when nails are used. Gypsum, glass mat-faced gypsum, cement board or wood structural panel sheathing is applied to minimum nominally 2-by-4 wood studs with a specific gravity of 0.42 or greater, spaced a maximum of 16 inches (406 mm) on center and mechanically fastened using 6d common nails or No. 6 buglehead Type W screws, $1\frac{1}{2}$ inches (38 mm) long for $\frac{1}{2}$ -inch-thick (12.7 mm) sheathing and $1\frac{5}{8}$ inches (41 mm) long for $\frac{5}{8}$ -inch-thick (15.9 mm) sheathing. The maximum screw fastener spacing is 8 inches (203 mm), except that when glass mat-faced gypsum sheathing is used, the fastener spacing is a maximum of 6 inches (152 mm) on center. Vertical board edges must butt over studs.

4.9.3.6 Assembly 6: The maximum allowable wind pressure is 32 psf (1532 Pa) when the system is applied over concrete or masonry substrates.

4.9.3.7 Assembly 7: When applied over GlasRoc[®] glass mat-faced gypsum sheathing, the system can resist transverse wind loads listed in Table 2 and Table 3 of [ESR-2460](#), using the sheathing, fasteners, and framing installed as described in those tables.

4.10 Type I, II, III, or IV (Noncombustible) Construction:

This section applies to Types I, II, III, and IV construction under the IBC. Noncombustible exterior walls may be constructed with AkroFlex EIFS, provided the walls are constructed in accordance with Section 4.10.1 or Section 4.10.2.

4.10.1 System 1: The wall framing must be minimum $3\frac{5}{8}$ -inch-deep (92 mm), minimum No. 18 gage [0.0486 inch (1.2 mm)] base-metal thickness steel studs at a maximum of 24 inches (610 mm) on center with No. 20 gage [0.033 inch (0.84 mm)] tracks. Wall openings are framed with steel having a base-metal thickness of 0.0486 inch (1.2 mm). One layer of $\frac{5}{8}$ -inch-thick (15.9 mm), Type X gypsum or Type X glass mat-faced gypsum sheathing is applied horizontally to interior stud flanges with vertical joints staggered. The sheathing is fastened to studs, using No. 6, Type S-12, buglehead screws, $1\frac{3}{8}$ inches (35 mm) long, penetrating the stud a minimum of $\frac{3}{8}$ inch (9.5 mm) and with fastener spacings as specified in the applicable code for installation of gypsum sheathing. The $\frac{5}{8}$ -inch-thick (15.9 mm) Type X gypsum or Type X glass mat-faced gypsum sheathing is similarly installed to exterior stud flanges. The sheathing on the exterior side is fastened with No. 6, Type S-12, buglehead screws, $1\frac{3}{8}$ inches (35 mm) long, spaced at all board edges and intermediate studs at a maximum of 6 inches (203 mm) on center. Maximum 4-inch-thick (102 mm), 1 pcf (16 kg/m³) density, EPS board insulation, described in Section 3.2.4, is adhered as described in Section 4.3. USG Thermafiber safing insulation, 4 pcf (64 kg/m³), having a minimum thickness of 4 inches (102 mm) and recognized in evaluation report ER-2331, is used to firestop the stud cavities at floor lines. The balance of the construction is as described for the AkroFlex WM+ in Section 4.3.

4.10.2 System 2: The wall framing must be minimum $3\frac{5}{8}$ -inch-deep (92 mm), minimum No. 20 gage [0.0359-inch (0.912 mm)] base-metal thickness steel studs spaced at a maximum of 16 inches on center. Wall openings must be framed with steel framing with a minimum base-metal thickness of 0.0359 inch (0.912 mm). One layer of minimum $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum sheathing must be applied vertically to interior flanges of studs and attached to the wall framing with $1\frac{1}{4}$ -inch-long (31.7 mm), No. 6, Type S buglehead screws spaced at a maximum of 8 inches (203 mm) on center at wallboard joints and 12 inches (305 mm) on center at intermediate locations. One layer of minimum $\frac{1}{2}$ -inch-thick (12.7 mm) gypsum sheathing must be applied horizontally to exterior flanges of studs and attached to the wall framing with minimum $1\frac{1}{4}$ -inch-long (31.7 mm), No. 6, Type S buglehead screws spaced at a maximum of 8 inches (203 mm) on center with a $\frac{3}{8}$ -inch (9.5 mm) penetration. The wallboard joints must be staggered from the gypsum sheathing joints. USG Thermafiber 4 pcf (64 kg/m³) safing insulation having a minimum thickness of 4 inches (102 mm), and recognized in evaluation report ER-2331, must be used to firestop the stud cavities at floor lines. Maximum 4-inch thick (102 mm), 1 pcf (16 kg/m³) density EPS insulation board, described in Section 3.2.4, is adhered to the gypsum sheathing with StyroGlue or StyroGlue Dry Bond in accordance with Section 4.3. Foam plastic insulation at wall openings must be covered with the coating system. The rest of the construction is as described in Sections 4.1 through 4.4. The balance of the construction is as described for the AkroFlex WM+ in Section 4.3.

4.11 Special Inspection:

Special inspection in accordance with IBC Section 1704.1 is required except when installation is on concrete and masonry substrates. Duties of the special inspector include verifying field preparation of materials, expiration dates and installation of the components of the water-resistive coating, and the flashing used with the coating system.

5.0 CONDITIONS OF USE

The ArkoFlex WM and AkroFlex WM+ EIFS described in this report comply with, or is 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** Materials and methods of installation must comply with this report and the manufacturer's published installation instructions. In the event of a conflict between the manufacturer's published installation instructions and this report, this report governs. The manufacturer's published installation instructions must be available at the jobsite at all times during installation.
- 5.2** Foam plastic insulation board must be separated from the building interior by a 15-minute thermal barrier complying with IBC Section 2603.4 or IRC Section R314.1, as applicable. The insulation boards must be identified as described in Section 7.0.
- 5.3** The design transverse wind load pressure must not exceed the allowable design wind pressures indicated in Section 4.9.
- 5.4** Installation must be by an applicator recognized by Omega Products International, Inc.
- 5.5** Installation cards, such as those shown in Figures 2 and 3, must be completed by the EIFS applicator and the sealant installer, and presented to the code official at completion of each project.

- 5.6** Termination of the EIFS system must not be less than 6 inches (152 mm) above finished grade, when required by IBC Section 2603.8 or IRC Section R320.5, respectively.

6.0 EVIDENCE SUBMITTED

- 6.1** Data in accordance with the ICC-ES Acceptance Criteria for EIFS Clad Drainage Wall Assemblies (AC235), dated October 2004 (editorially revised December 2007 and April 2008).
- 6.2** Data in accordance with the ICC-ES Acceptance Criteria for Water-resistive Coatings Used as Water-resistive Barriers over Exterior Sheathing (AC212), dated February 2005 (editorially revised October 2008).

7.0 IDENTIFICATION

- 7.1** Material containers are identified by the manufacturer's name (Omega Products International, Inc.) and address, the product name, the shelf life, the manufacturing code and date of manufacture, and the evaluation report number (ESR-2305).
- 7.2** EPS foam plastic insulation boards must be identified in accordance with the applicable evaluation report:
 - AFM Corporation Type I WSG is identified as described in ICC-ES [ESR-1006](#).
 - Falcon Foam, A Division of Atlas Roofing, Type I EWG is identified as described in ICC-ES [ESR-1962](#).
 - Premier Industries, Inc./dba Insulfoam, Insulfoam EIFS Grade (IEG) is identified as described in ICC-ES [ESR-1788](#).
 - Star R Foam Manufacturing EIFS Grade (SWG) are identified as described in ICC-ES [ESR-1566](#).
- 7.3** Foam used in noncombustible construction must be labeled in accordance with IBC Section 2603.5.6

8.0 OTHER CODES

8.1 Evaluation Scope:

The product in this report was also evaluated for the compliance with the requirements of the 1997 *Uniform Building Code*TM (UBC)

8.2 Uses:

AkroFlex WM and AkroFlex WM+ EIFSs are permitted to be installed in accordance with Section 8.5.2. The systems are permitted on walls required to be of noncombustible construction when installed in accordance with Section 4.10.

8.3 Description:

See Section 3.0 for all the components, except that wood-based sheathing must be exterior grade or Exposure 1 grade plywood complying with UBC Standard 23-2 or UBC Standard 23-3. The sheathings must have minimum thickness of $\frac{7}{16}$ inch (11.1 mm), unless noted otherwise.

8.4 Installation:

See Section 4.0 for all the installation details, except that for installations over minimum $\frac{5}{16}$ -inch-thick (7.9 mm) exterior grade plywood or Exposure 1 grade OSB complying with the UBC, the plywood and OSB must be attached to wood studs spaced a maximum of 16 inches (406 mm) on center in accordance with Chapter 23 of the UBC.

8.5 Conditions of Use:

See Section 5.0 for the Conditions of Use, except as follows:

- 8.5.1** Foam plastic insulation board must be separated from the building interior by a thermal barrier complying with UBC Section 2602, such as minimum 1/2-inch (12.7 mm) gypsum wallboard mechanically attached in accordance with the UBC, or a minimum 1-inch (25 mm) thickness of concrete or masonry.
- 8.5.2** The system may be installed on walls required to be of noncombustible construction in accordance with the UBC, provided installation complies with Section 4.10.

8.5.3 The AkroFlex system may be installed over the surface of exterior, fire-resistance-rated, combustible wall assemblies as described in UBC Table 7-B without changing the assigned hourly rating of the assembly. Systems using AkroGuard are not included.

8.6 Evidence Submitted:

See Section 6.0.

8.7 Identification:

See Section 7.0.

TABLE 1

FASTENING SYSTEM	SHEATHING	STUD	WASHER	EPS FOAM THICKNESS (inches)	WIND DESIGN (psf)
Pattern A (fasten to wood based sheathing)	Wood	Wood or 20 ga min steel	Wind Devil, Plasti-Grip III or Plasti-Grip IV	1	21
				1 1/2	31
				2	31
Pattern B (fasten to wood based sheathing)	Wood	Wood or 20 ga min steel	Wind Devil II	1	40
				1 1/2	43
				2	43
Pattern C (fasten to studs)	Wood, gypsum, glass mat faced gypsum or cement board	Wood or 20 ga min steel	Wind Devil II	1 1/2	29
				2	38

For SI: 1 inch = 25.4 mm.

Note: Use appropriate fastener type for sheathing and/or stud type. Fastener length must be sufficient to penetrate a minimum of 1/2 inch into wood studs, 1/4 inch through metal studs and 1/4 inch into wood sheathing. Refer to fastener manufacturer for additional requirements.

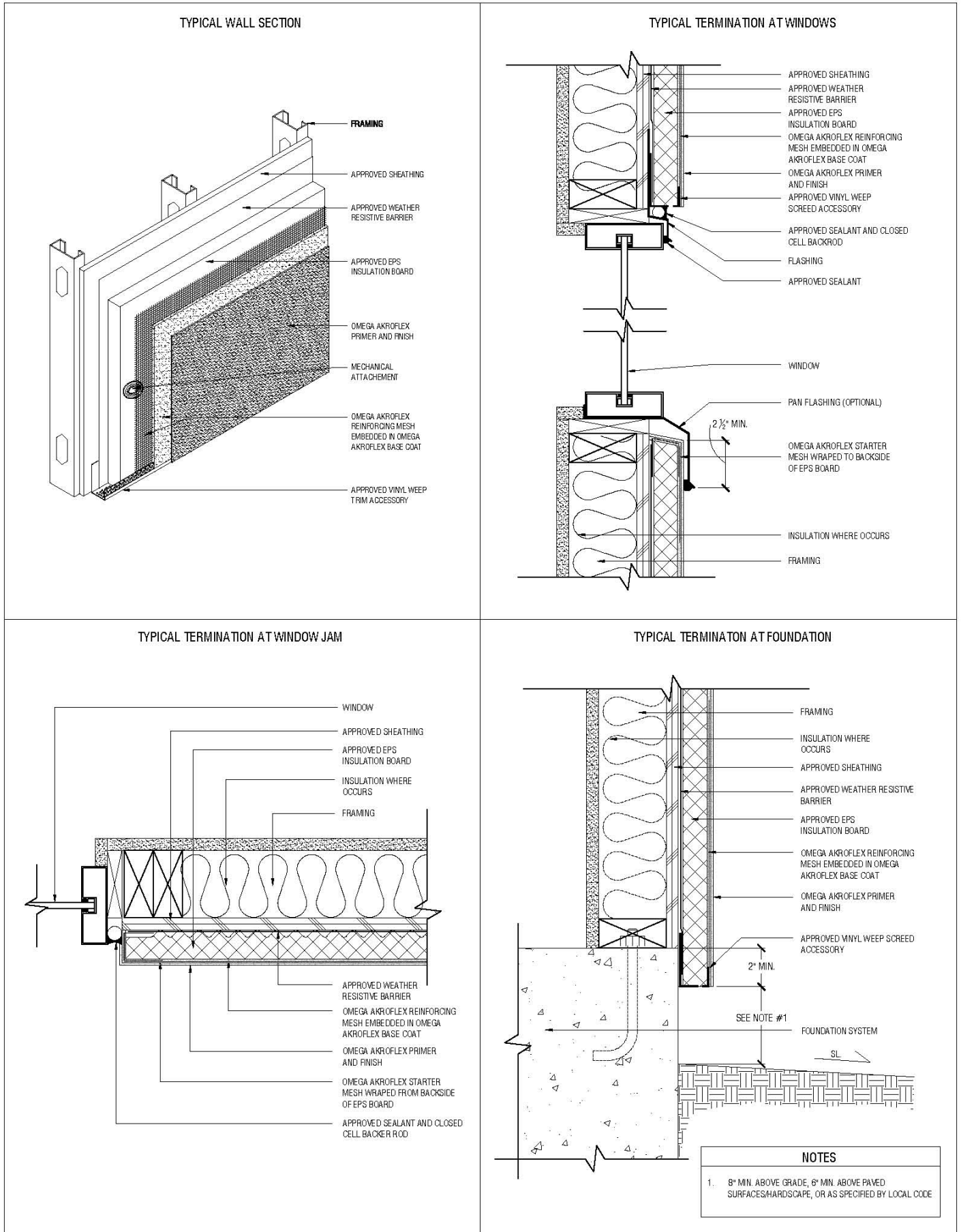


FIGURE 1—TYPICAL INSTALLATION DETAILS FOR THE AKROFLEX WM SYSTEM

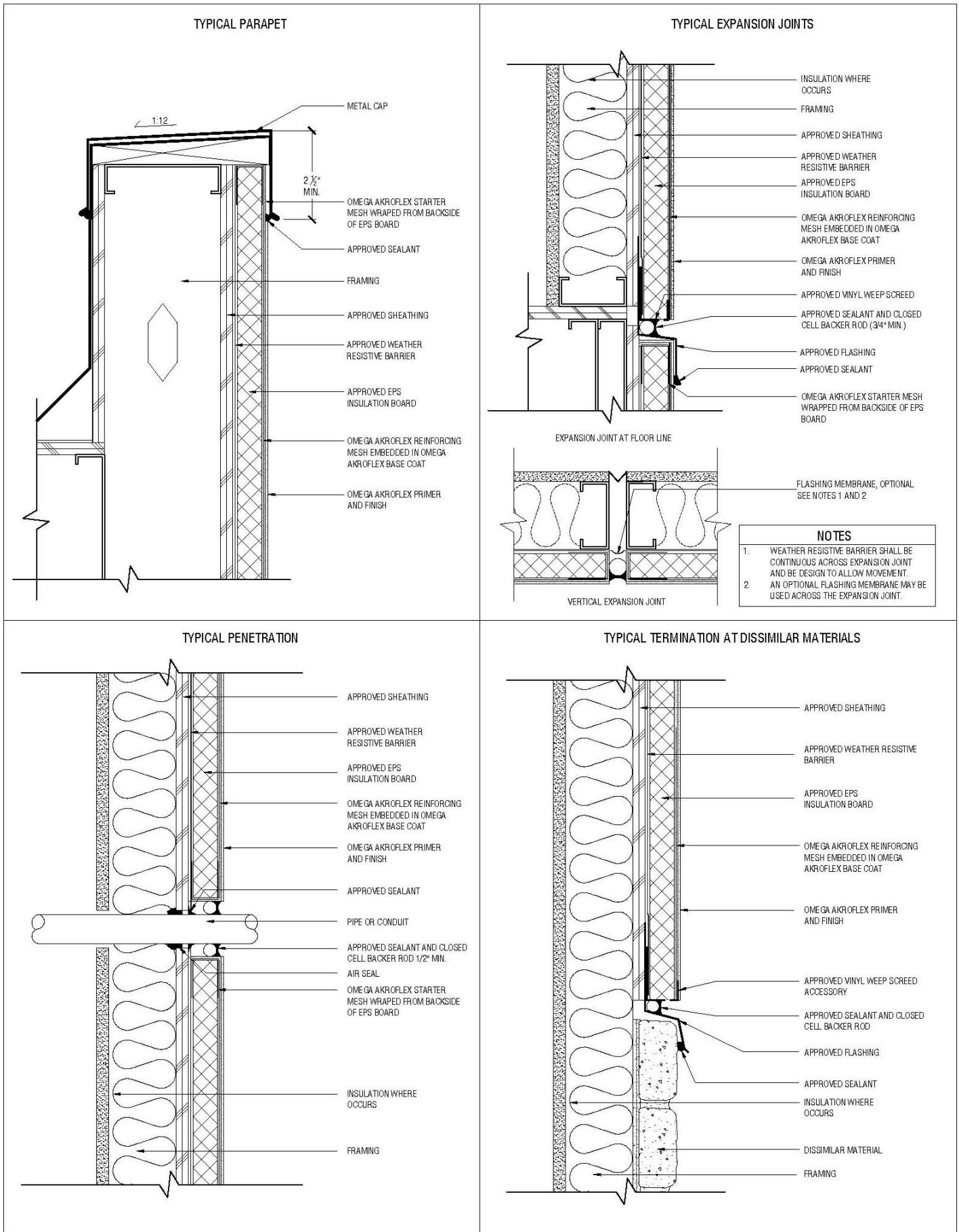


FIGURE 1—TYPICAL INSTALLATION DETAILS FOR THE AKROFLEX WM SYSTEM (Continued)

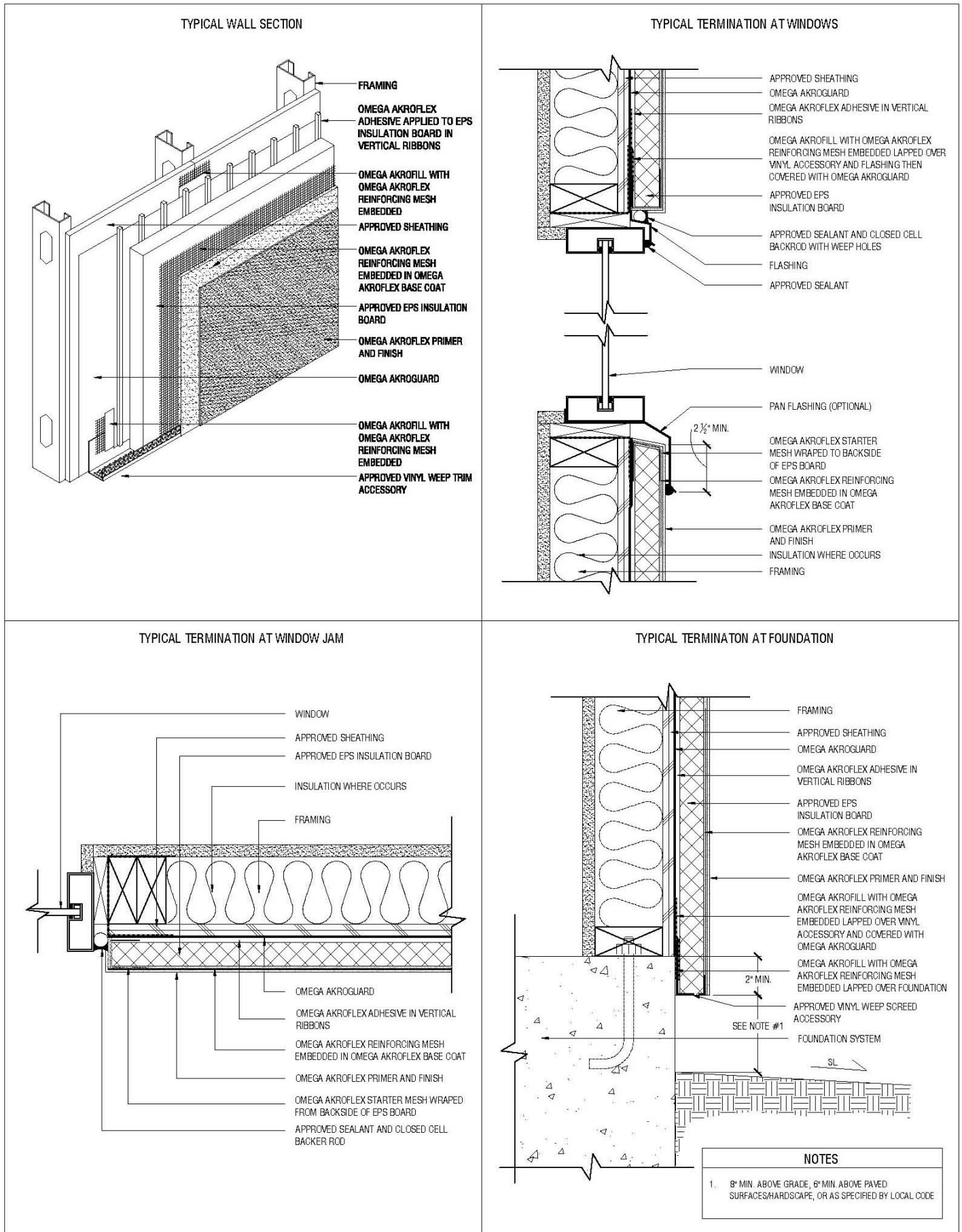


FIGURE 2—TYPICAL INSTALLATION DETAILS FOR THE AKROFLEX WM+ SYSTEM

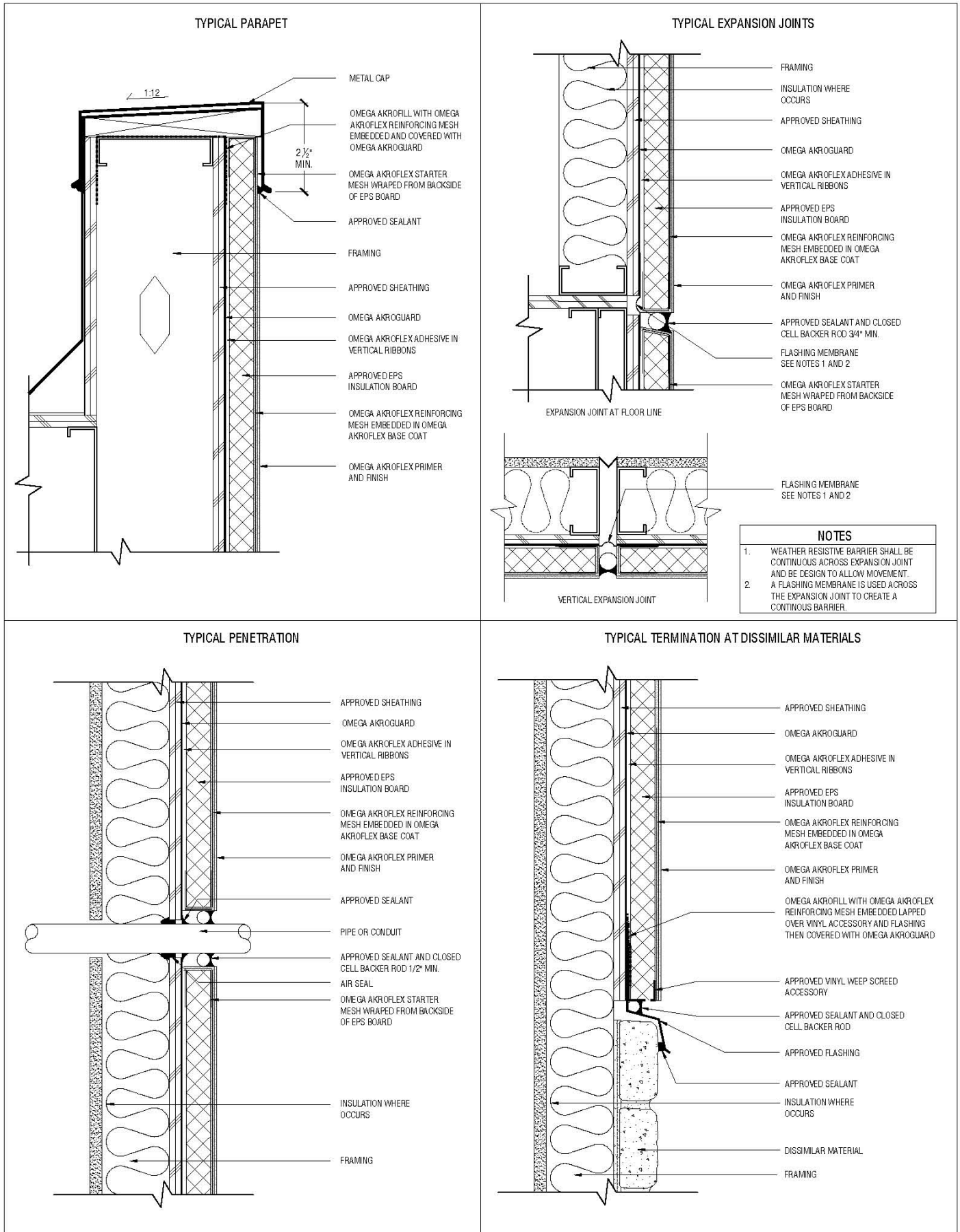


FIGURE 2—TYPICAL INSTALLATION DETAILS FOR THE AKROFLEX WM+ SYSTEM (Continued)

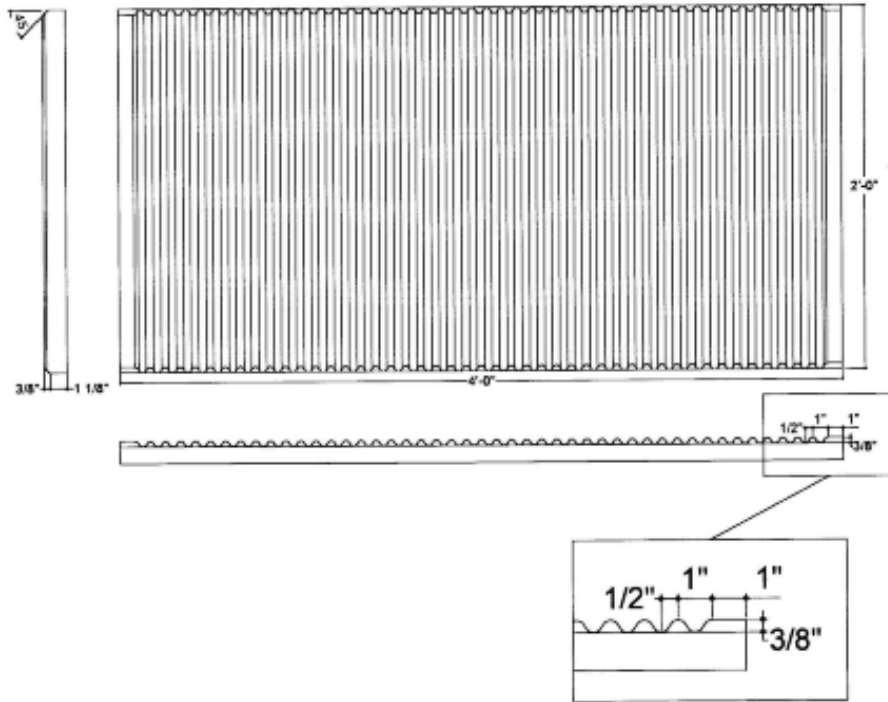


FIGURE 3—CORRUGATED EPS

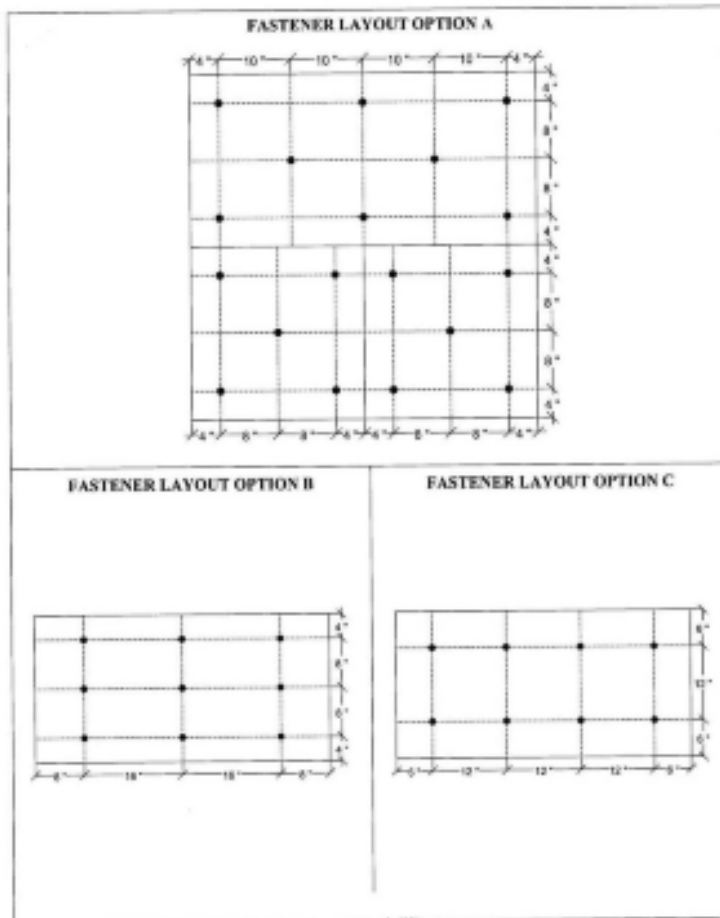


FIGURE 4—INSULATION BOARD FASTENER PATTERNS

[SEALANT INSTALLER NAME]

Completion Date: _____

THE SEALANT INSTALLED IN CONJUNCTION WITH AN EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW:

CONFORMS _____

TO OMEGA PRODUCTS INTERNATIONAL, INC., AND [SEALANT MANUFACTURER'S NAME] RECOMMENDED INSTALLATION PRACTICES AND SECTION(S) 4.0 OF ICC-ES, INC., EVALUATION REPORT ESR-xxxx.

Address of Structure:

Product Component Names:

Primer(s) _____
Sealers _____
Bond Breakers _____
Sealant Materials _____

INSTALLATION

CONFORMS

- A. Designer's requirements, details and instructions _____
- B. Sealant manufacturer's details and requirements _____
- C. Exterior insulation manufacturer's requirements _____

D. The information entered above is offered in testimony that the Sealant installation conforms with the sealant manufacturer's installation methods and procedures, and the EIFS manufacturer's evaluation report.

Sealant Installer Company Name and Address:

Signature of Responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

cc: Original: Building Department (Must be submitted with EIFS
Copies: EIFS Manufacturer contractor declaration.)
EIFS Contractor
Sealant Manufacturer

FIGURE 5—SEALANT INSTALLER CARD

[EIFS CONTRACTOR NAME]

Completion Date: _____

THE EXTERIOR INSULATION AND FINISH SYSTEM (EIFS) INSTALLED ON THE STRUCTURE LOCATED AT THE ADDRESS INDICATED BELOW:

_____ CONFORMS TO OMEGA PRODUCTS INTERNATIONAL, INC., RECOMMENDED INSTALLATION PRACTICES AND SECTION (S) 4.0 OF ICC-ES, INC., EVALUATION REPORT ESR-xxxx.

Address of Structure:

Product Component Names:

Adhesive(s) _____
Fasteners (mech) _____
Base Coat _____
Reinforcing Mesh _____
Finish Coat(s) _____

INSTALLATION

- A. Substrate Type and Tolerance
- B. Weather-resistive Barrier
- C. EIFS
 - 1. Adhesive and/or Fasteners
 - 2. Insulation
 - 3. Reinforcing Mesh
 - 4. Base Coat
 - 5. Finish

CONFORMS

D. The information entered above is offered in testimony that the EIFS installation conforms with the EIFS manufacturer's installation methods and procedures, and the EIFS manufacturer's ES report.

NOTE: An installation card must be received from the Sealant Installer indicating that the sealant installation conforms with the EIFS evaluation report and sealant manufacturer's installation methods and procedures must accompany this declaration.

EIFS

Contractor Company Name and Address:

Signature of Responsible Officer: _____

Typed Name and Title of Officer: _____

Telephone Number: (____) _____

- cc: Original: Building Department (Must be submitted with sealant
- Copy: EIFS Manufacturer installer declaration.)

FIGURE 6—EIFS INSTALLER CARD