ICC-ES Evaluation Report

ESR-3428

Reissued July 2019

This report is subject to renewal July 2021.

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DIVISION: 07 00 00—THERMAL AND MOISTURE PROTECTION
Section: 07 24 00—Exterior Insulation and Finish Systems
Section: 07 24 19—Water-Drainage Exterior Insulation and Finish Systems
Section: 07 25 00—Water-Resistive Barriers/Weather Barriers
Section: 07 27 00—Air Barriers

REPORT HOLDER:

GREENMAKER INDUSTRIES, LLC

EVALUATION SUBJECT:

DECOPLAST DDARS—NOTCHED

1.0 EVALUATION SCOPE

1.1 Compliance with the following codes:

- 2015, 2012 and 2009 *International Building Code®* (IBC)
- 2015, 2012 and 2009 *International Residential Code®* (IRC)
- 2015, 2012 and 2009 *International Energy Conservation Code®* (IECC)

Properties evaluated:

PROPERTY	IBC CHAPTER	IRC CHAPTER	IECC CHAPTER
Exterior insulation and finish systems (EIFS)	14	R7	NA
Weather resistance	14	R7	NA
Structural – transverse wind load resistance	16	R6	NA
Special inspections	17	NA	NA
Air barrier	NA	N11	4&5

1.2 Compliance with the following green code(s) and/or standards:

- 2016 California Green Building Standards Code (CALGreen), Title 24, Part 11
- 2015 and 2012 *International Green Construction Code®* (IgCC)
- 2014 and 2011 ANSI/ASHRAE/USGBC/IES Standard 189.1–Standard for the Design of High-Performance Green Buildings, Except Low-Rise Residential Buildings
- 2015, 2012 and 2008 ICC 700 *National Green Building Standard™* (ICC 700-2015, ICC 700-2012 and ICC 700-2008)

Attributes verified:

See Section 3.1

2.0 USES

Decoplast DDARS—Notched is an adhesively attached drainage exterior insulation and finish system (EIFS) complying with IBC Section 1408 and IRC Section R703.9. The system complies as EIFS with drainage requirements in accordance with IBC Section 1408.4.1 and IRC Section R703.9.2.

The system is for use in Type V-B construction (IBC) and construction permitted by the IRC.

The Decoplast Liquid Weather Resistive Barrier coating system may be used to provide an air barrier material in accordance with IRC Section N1102.4.1, 2015 IECC Section C402.5.1.2.1 (2012 IECC Section C402.4.1.2.1) and 2009 IECC Sections 402.4.2 and 502.4.3, in any construction type.

3.0 DESCRIPTION

3.1 General:

The system consists of a liquid water-resistive barrier coating, liquid base coat, primer coat, adhesive applied expanded polystyrene (EPS) insulation board, base coat, reinforcing mesh and finish coat. The system complies with ASTM E2568 (see Table 1). Decoplast Liquid Weather Resistive Barrier has an air leakage rate not exceeding 0.004 cfm/ft^2 at 0.3 in w.g. (1.57 psf) [0.02 L/s-m^2 at 75 Pa].

The attributes of the Decoplast Liquid Weather Resistive Barrier have been verified as conforming to the provisions of (i) CALGreen Section 5.407.1 for water-resistive barriers and Section A4.407.5 for air barriers; (ii) 2015 and 2012 IgCC Section 605.1.2.1 for air barriers; (iii) 2014 ASHRAE 189.1 Section 7.3.1.1 and 2011 ASHRAE 189.1 Section 7.4.2.9 for air barriers; (iv) ICC 700-2015 Section 602.1.8, 11.602.1.8 and 12.6.602.1.8; (v) ICC 700-2012 Section 602.1.8, 11.602.1.8 and 12.5.602.1.8; and (vi) ICC 700-2008 Section 602.9 for water-resistive barriers. Note that decisions on compliance for those areas rest with the user of this report. The user is advised of the project-specific provisions that may be contingent upon meeting specific conditions, and the verification of those conditions is outside the scope of this report. These codes or standards often provide supplemental information as guidance.

3.2 Materials:

3.2.1 Substrate: The substrate must be glass mat gypsum sheathing board complying with ASTM C1177.

3.2.2 Standard Joint Mesh Tape: Decoplast fiberglass joint standard reinforcing mesh tape has a weight of 4.5 oz./yd^2.

3.2.3 Starter Track: A universal starter track functions as a weep screed and consists of a rigid, exterior-grade polyvinyl chloride (PVC) material conforming to ASTM D1784 and ASTM C1036.

3.2.4 Water-resistive Barrier: Decoplast Liquid Weather Resistive Barrier is a ready-mixed, flexible, non-cementitious, polymer-based liquid coating packaged in 5-gallon (19 L) pails. The product has a one-year shelf life when stored at temperatures between 38ºF and 90ºF (3.3ºC and 32.2ºC).

3.2.5 Adhesive: Decoplast Adhesive is 100 percent acrylic, polymer-based liquid that is field-mixed at a ratio of one-to-one by weight, with Type I or II Portland cement complying with ASTM C150. The polymer liquid is packaged in 5-gallon (19 L) pails and has a one-year shelf life when stored at temperatures between 38ºF and 90ºF (3.3ºC and 32.2ºC).

3.2.6 Insulation Boards: Insulation boards must be one of the following:

a. EPS insulation board complying with ASTM C578, Type I, and ASTM E2430, produced by a molder with a current ICC-ES evaluation report. The board must be labeled in accordance with the applicable ICC-ES report.

b. EPS insulation board complying with ASTM C578, Type I, and ASTM E2430, produced by a molder who participates in an approved third-party quality assurance program. The board must be labeled in accordance with the applicable code.

The EPS Foam Boards are supplied flat on both faces, and must have a flame-spread index of 25 or less and a smoke developed index of 450 or less when tested in accordance with ASTM E84 or UL 723.

3.2.7 Base Coat: Decoplast Base Coat is identical to the Decoplast Adhesive described in Section 3.1.2.4.

3.2.8 Base Coat Reinforcing Mesh: Decoplast standard fiberglass reinforcing mesh with a weight of 4.5 oz./yd^2. Decoplast high-impact fiberglass reinforcing mesh with a weight of 20 oz./yd^2

3.2.9 Primer: Decoplast Primer is an acrylic latex liquid primer supplied in 5-gallon (19L) pails. The primer has a one-year shelf life when stored at temperatures between 38ºF and 90ºF (3.3ºC and 32.2ºC).

3.2.10 Finish Coat: Decoplast colored finishes are 100 percent acrylic polymer textured coatings.

3.2.11 Sealants: Evidence must be submitted to the code official demonstrating the manufacturer-recommended sealant complies with ASTM C920, Type S or M, minimum Grade NS, minimum Class 25 and Use O. The sealant must be qualified for each material to which it is applied.

4.0 INSTALLATION

4.1 General:

Installation of the Decoplast DDARS—Notched adhesively attached drainage exterior EIFS must comply with this report and the manufacturer's published installation instructions. In the event of conflict between the manufacturer's instructions and this report, this report governs. The manufacturer's installation instructions must be available on the jobsite at all times during construction.

The substrate described in Section 3.2.1 is installed over the wall framing in accordance with the applicable code. All substrate surfaces must be structurally sound, clean, dry and smooth, with no dust or other deleterious material, prior to any adhesive application. Surface irregularities are limited to a maximum of ¼ inch (6.4 mm) for every 10 feet (3.05 m) of surface. Seams and cracks are limited to a maximum width of $^1/_{16}$ inch (1.6 mm).

Decoplast fiberglass joint reinforcing mesh is applied to all sheathing joints and inside and outside corners such that the mesh covers a minimum of 2 inches (50.8 mm) on either side of the joint or corner.

A starter track, as described in Section 3.2.3, is applied continuously to the bottom edge of the wall. See Figure 2.

Decoplast fiberglass joint reinforcing mesh is then applied over the starter track and overlapped onto the substrate a minimum of 2 inches (51 mm).

Decoplast Liquid Weather Resistive Barrier is mixed with a drill and mixing paddle until a uniform consistency is achieved, and then is applied over the entire substrate surface with a flat steel trowel or $^3/_8$-inch (9.5 mm) nap roller to a wet-film thickness of 30 mils (0.8 mm). Application of the Decoplast Liquid Weather Resistive Barrier must be when ambient air and substrate surface temperatures are 45ºF (7.2º C) or higher, and the temperature must remain at this level for a 24-hour period thereafter. Protection of the coating from moisture is also required for at least 24 hours after application.

Decoplast Adhesive is field-mixed at a ratio of one-to-one by weight, with Type I or II Portland cement complying with ASTM C150. The mixture is left to stand for five minutes and then remixed. Using a stainless steel U-notched trowel having $^3/_8$-inch-by-$^3/_8$-inch-by-1$^1/_2$-inch (9.5 mm by 9.5 mm by 25.4 mm) notches, the Decoplast Adhesive is applied in vertical ribbons to the entire back face of flat-surface insulation boards as described in Section 4.2. The insulation board is installed over the substrate beginning at the base of the wall. Uniform pressure is applied over the insulation board to ensure that all adhesive ribbons are in contact with the substrate. The insulation boards are installed in horizontal rows and in a running bond pattern. All joints are to be tightly butted and vertical joints staggered. Any corner beads, casing beads and/or expansion joints are installed and completely embedded in the wet adhesive. Surface temperatures during installation must be at 40ºF (4.4º C) or higher, and must remain at this level for a 24-hour period thereafter.

After the adhesive has dried (typically eight to ten hours), any irregularities on the exterior surface of the EPS insulation board greater than $^1/_{16}$ inch (1.6 mm) must be eliminated.

The base coat is trowel-applied to the entire outer surface of the insulation board to a uniform thickness of $^1/_{16}$ inch (1.6 mm). The reinforcing mesh is immediately troweled into the wet base coat, proceeding from the center toward the edges until the mesh is completely embedded in the coating. The mesh is to be continuous around corners and lapped at least 2$^1/_2$ inches (64 mm) at all mesh edges.

After a minimum of eight hours drying time, the finish coat is applied after being mixed to a uniform consistency using a drill and paddle. The finish is applied over the reinforced base coat with a stainless steel trowel, with the

placement and leveling done concurrently. The finish thickness must not be less than the diameter of the largest aggregate of the finish coat, approximately 1/16 inch (1.6 mm). This application yields a total combined base coat and finish coating thickness of approximately 1/8 inch (3.2 mm).

Only Greenmaker Industries–recommended joint sealant materials are permitted to be used in sealant or expansion joints. Expansion joints are required at system terminations, building expansion joints, floor lines of wood-framed construction, changes in building shape or roof line, and substrate changes. Expansion and sealant joints are installed as specified by the architect, designer, builder or Greenmaker Industries, in that order. Typical details are shown in Figures 1 through 9.

4.2 Drainage:

Drainage in the Decoplast DDARS—Notched is provided through the use of vertical ribbons of adhesive applied to the back face of flat-surface insulation boards using a 3/8-inch-by-3/8-inch-by-1 1/2-inch (9.5 mm by 9.5 mm by 25.4 mm) U-notched trowel. The insulation boards are installed over the Decoplast Liquid Weather Resistive Barrier (see Table 1).

4.3 Wind Design:

Table 2 describes specific assemblies for which test data has been submitted. Other assemblies may be considered for approval by local code officials based on testing and/or the calculations of a qualified design professional.

4.4 Weather Protection:

The Decoplast DDARS—Notched system complies with IBC Section 1403.2 and IRC Section R703.1.1.

4.5 Special Inspection:

When use is under the IBC, special inspection of the Decoplast Liquid Weather Resistive Barrier coating system must be conducted in accordance with 2015 and 2012 IBC Section 1704.2 and 2015 IBC Section 1705.16 (2012 IBC Section 1705.15) (2009 IBC Sections 1704.1 and 1704.14) (see Figures 10 and 11).

5.0 CONDITIONS OF USE

The Decoplast DDARS—Notched system described in this report complies 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 Installation must comply with this report, the manufacturer's published installation instructions, installation details and the applicable code. In the event of a conflict between the manufacturer's published instructions and this report, this report governs.

5.2 Installation must be by applicators listed by Greenmaker Industries. An installation card, as shown in Figure 11, must be completed at the end of each project and filed with the code official. In addition, a sealant application card, as shown in Figure 10, must be filed with the code official after sealant application.

5.3 The design wind load pressures are based on the information in Section 4.3 and must not exceed the capacities indicated in Table 2.

5.4 The finish system must not be used to brace exterior wall framing. Wall bracing must be provided in accordance with 2015 IBC Section 2308.6 (2012 and 2009 IBC Section 2308.9.3) and IRC Section R602.10.

5.5 Termination of the systems must not be less than 6 inches (152 mm) above finished grade, in accordance with 2015 and 2009 IBC Section 2603,8 (2012 IBC Section 2603.9) and Section R318.4 of the IRC.

5.6 Special inspections are required in accordance with Section 4.5 of this report.

5.7 The Decoplast DDARS—Notched system is produced in Mabelton, Georgia and West Hartford, Connecticut, 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 EIFS Clad Drainage Wall Assemblies (AC235), dated January 2015.

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 2015.

6.3 Data in accordance with ASTM E2568 and ASTM E2273.

7.0 IDENTIFICATION

7.1 Each container or package of the coating and reinforcing mesh used as part of the Decoplast DDARS—Notched system must be labeled with the Greenmaker Industries name and address; the product name; lot or batch number; quantity of material; storage instructions; pot life; expiration date; and the evaluation report number (ESR-3428).

EPS insulation boards must be labeled in accordance with the current ICC-ES evaluation reports in which they are recognized, or in accordance with IBC Section 2603.2 or IRC Section R316.2, as applicable.

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

GREENMAKER INDUSTRIES, LLC
697 OAKWOOD AVENUE
WEST HARTFORD, CONNECTICUT 06110
(860) 761-2830
www.greenmakerind.com

TABLE 1—DECOPLAST DDARS—NOTCHED SYSTEM COMPONENTS[1]

SYSTEM	WATER-RESISTIVE BARRIER	STANDARD JOINT MESH TAPE	ADHESIVE	INSULATION BOARD[1] (1.0 inches thick, minimum; 4 inches thick, maximum)	BASE COAT	REINFORCING MESH[2]	PRIMER	FINISH
Decoplast DDARS Notched	Decoplast Liquid Weather Resistive Barrier	Standard joint reinforcing mesh tape 4.5 oz./yd^2	Decoplast Adhesive	Flat	Decoplast Liquid Base Coat	Standard fiberglass reinforcing mesh 4.5 oz./yd^2 High-impact fiberglass reinforcing mesh 20 oz./yd^2	Decoplast Primer	Decoplast Acrylic Finish Coat

For **SI**: 1 inch = 25.4 mm.

[1]See Section 3.2 for insulation board details.
[2]Higher weight meshes are permitted.

TABLE 2—WIND LOAD DESIGN

FRAMING MEMBERS		SUBSTRATE			ALLOWABLE WIND LOAD (psf)[1]	
Type, Minimum Size (inches)	Max. Spacing (inches)	Type	Fastener Type	Max. Fastener Spacing (inches)	Negative	Positive
3$^5/_8$-inch-deep by No. 18 gage steel	16	Glass-mat gypsum sheathing board, minimum $^5/_8$ inch thick	No. 6 x 1¼-inch long bugle-head screws	Vertically – 8 Horizontally – 16 Edge - 8	40	60

For **SI**: 1 inch = 25.4 mm; 1 psf = 0.0479 kPa.

[1]Framing members must be designed to resist all positive and negative transverse design loads with a maximum allowable deflection of $^1/_{240}$ of the span.
[2]Allowable positive and negative wind load resistance shall not exceed the least of the structural capacity of the sheathing, the structural capacity of the framing, and the structural capacity of the fasteners attaching sheathing to the framing.

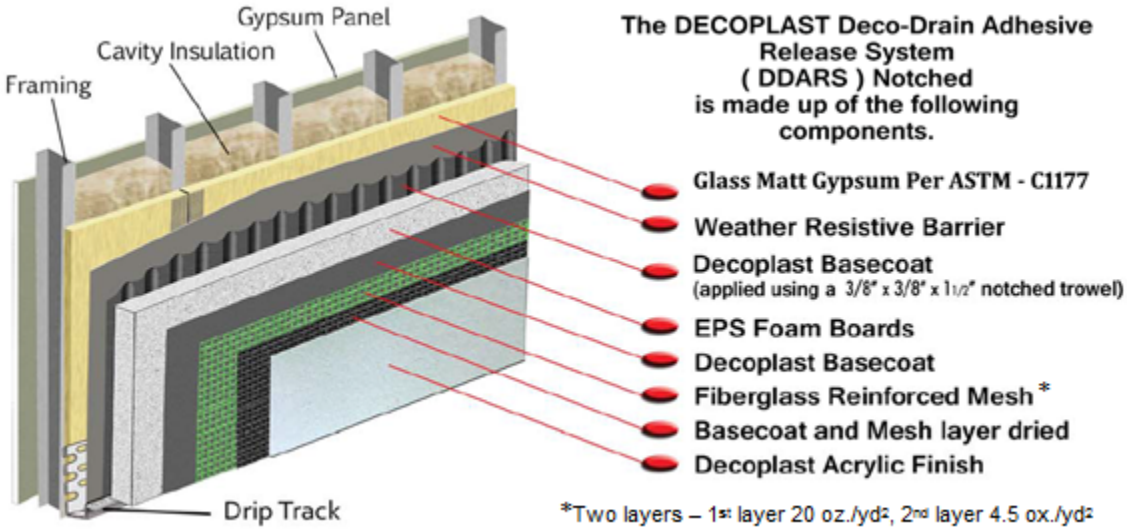
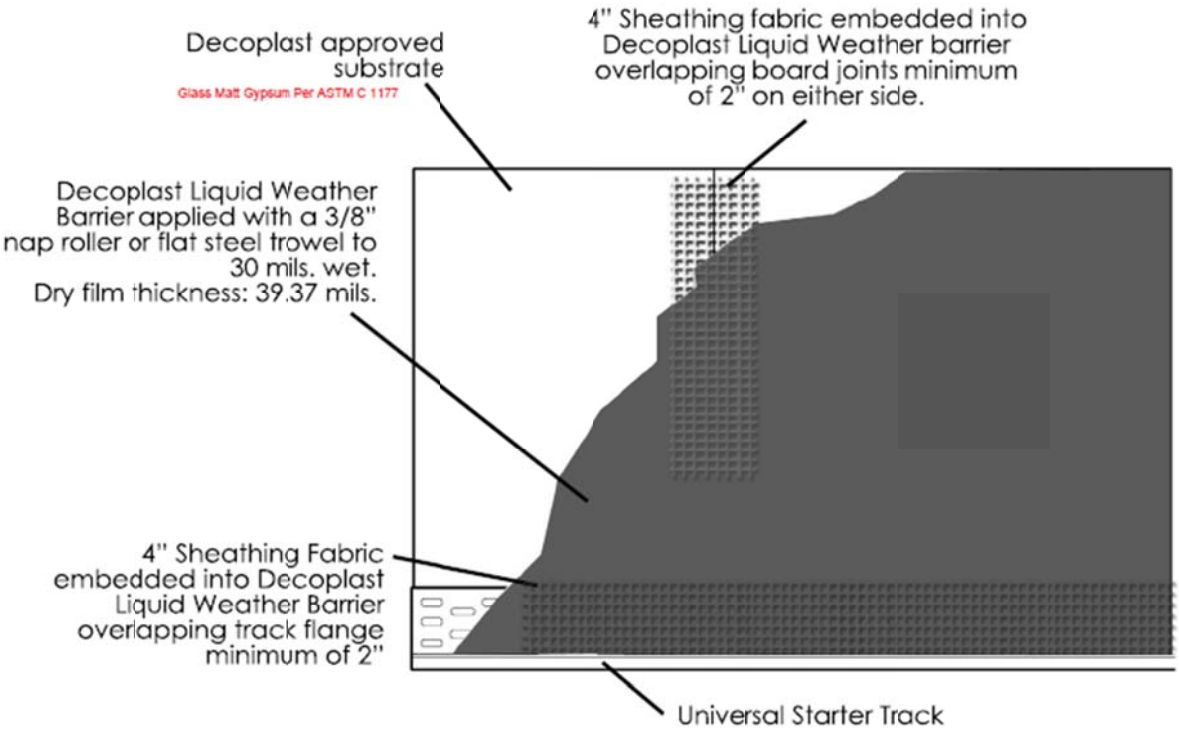


FIGURE 1



Decoplast Liquid Weather Resistive Barrier

FIGURE 2

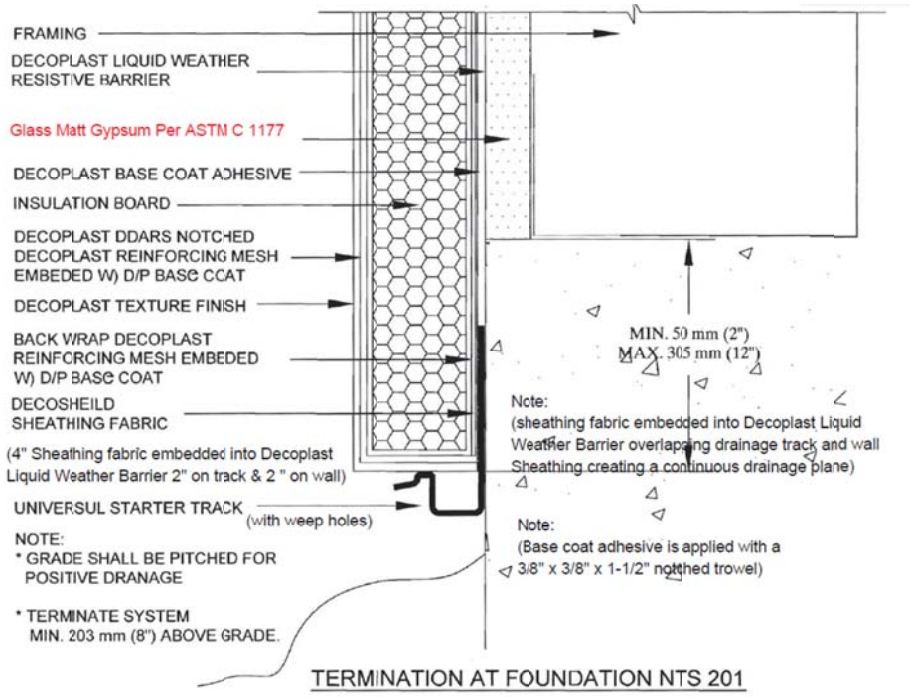


FIGURE 3

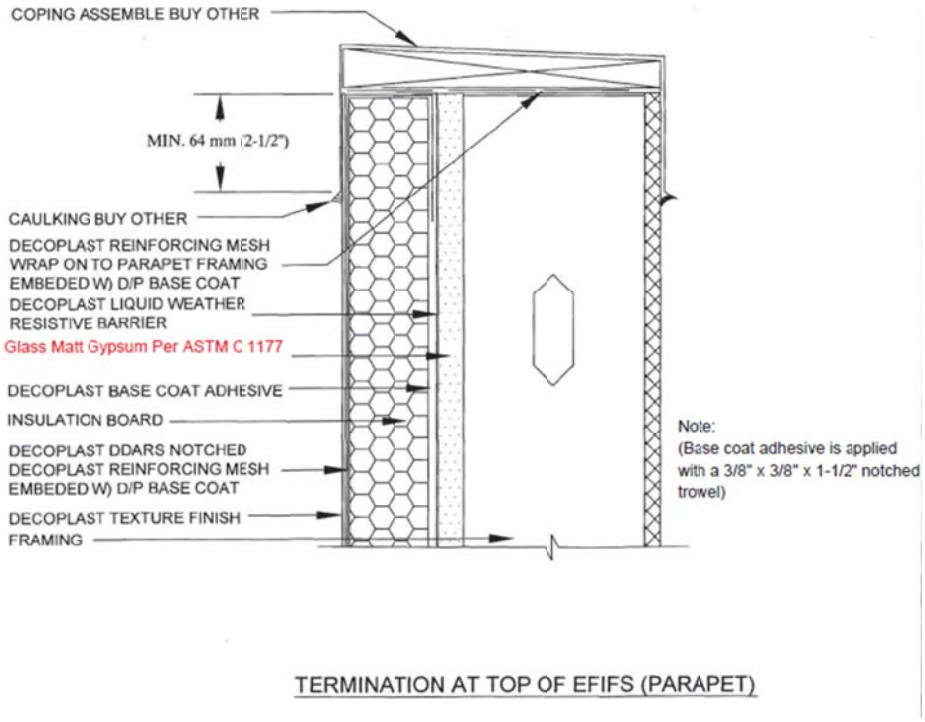


FIGURE 4

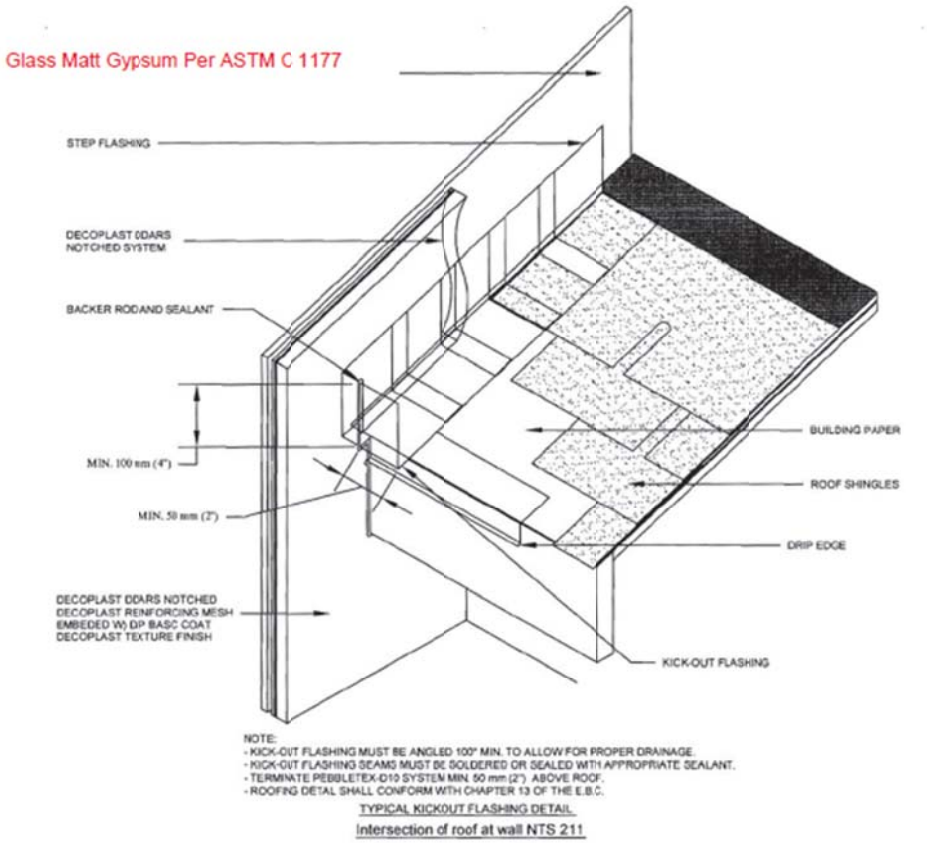
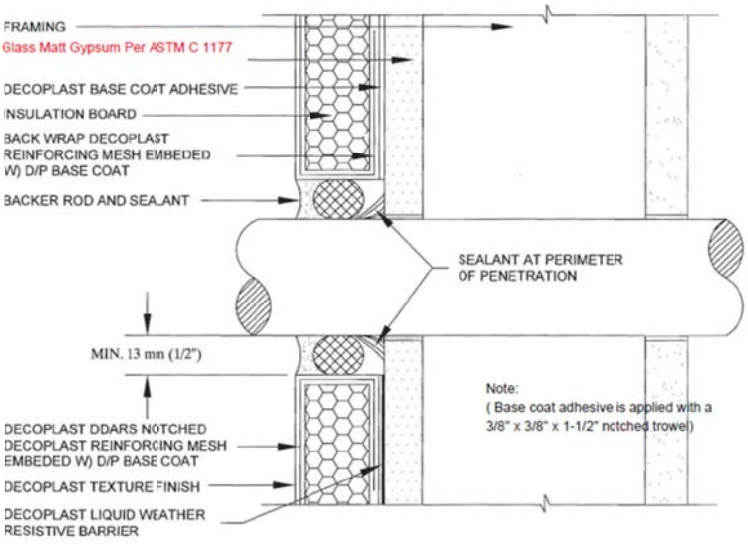
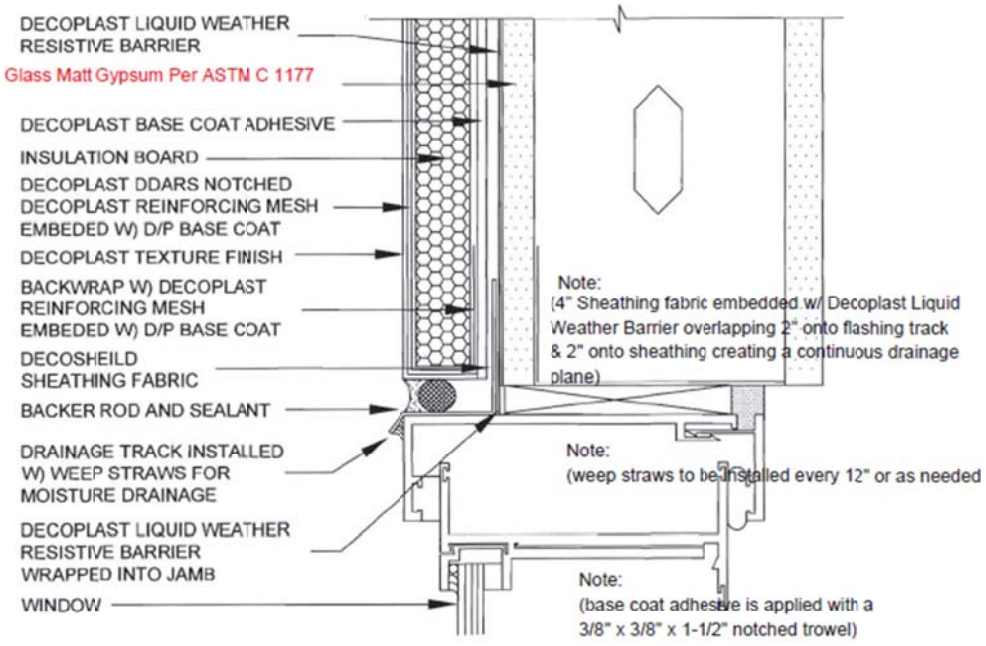


FIGURE 5



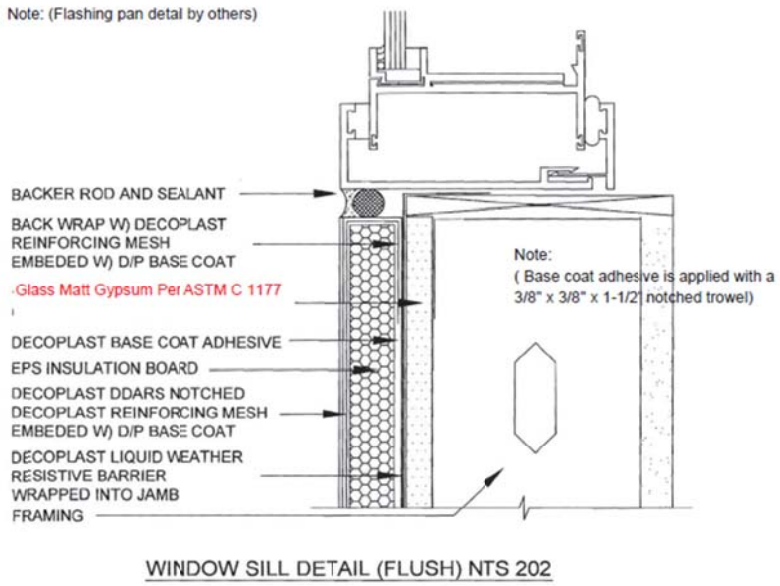
PIPE PENETRATION NTS 208

FIGURE 6



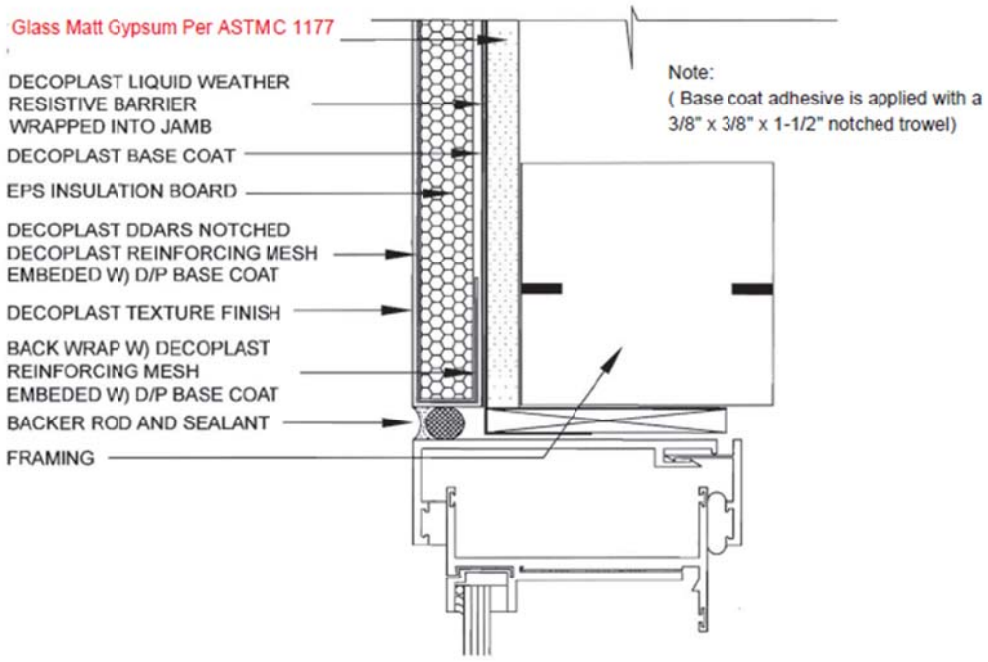
WINDOW HEAD (FLUSH) NTS 206

FIGURE 7



WINDOW SILL DETAIL (FLUSH) NTS 202

FIGURE 8



WINDOW JAMB DETAIL (FLUSH) NTS 212

FIGURE 9

EXHIBIT A

[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 [EIFS MANUFACTURER NAME] AND [SEALANT MANUFACTURER'S NAME] RECOMMENDED INSTALLATION PRACTICES AND SECTION(S) OF ICC-ES, INC., EVALUATION REPORT ESR-_____

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 contractor declaration.)
Copies: EIFS Manufacturer EIFS Contractor Sealant Manufacturer

FIGURE 10

EXHIBIT B

[EIFS CONTRACTOR NAME]

Completion Date:_____

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

_____CONFORMS

TO [EIFS MANUFACTURER NAME] RECOMMENDED INSTALLATION PRACTICES AND SECTION (S) _____
OF ICC-ES, INC., EVALUATION REPORT ESR-_____

Address of Structure:

_____
_____
_____
_____

Product Component Names:

Adhesive(s)_____
Base Coat_____
Reinforcing Mesh_____
Finish Coat(s)_____

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

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 mett1ods 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: Copy:

Building Department EIFS

(Must be submitted with sealant Manufacturer installer declaration.)

FIGURE 11

ICC-ES Evaluation Report

ESR-3428 FBC Supplement

Reissued July 2019

This report is subject to renewal on July 2021.

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Section: 07 27 00—Air Barriers

REPORT HOLDER:

GREENMAKER INDUSTRIES, LLC

EVALUATION SUBJECT:

DECOPLAST DDARS—NOTCHED

1.0 REPORT PURPOSE AND SCOPE

Purpose:

The purpose of this evaluation report supplement is to indicate that the Decoplast DDARS—Notched; adhesively attached drainage exterior insulation and finish system (EIFS), recognized in ICC-ES master report ESR-3428, has also been evaluated for compliance with the codes noted below.

Applicable code editions:

- 2017 *Florida Building Code—Building*
- 2017 *Florida Building Code—Residential*

2.0 CONCLUSIONS

The Decoplast DDARS—Notched adhesively attached drainage EIFS, described in Sections 2.0 through 7.0 of the master evaluation report ESR-3428, complies with the *Florida Building Code—Building* and the *Florida Building Code—Residential*, provided the design and installation are in accordance with the 2015 *International Building Code®* provisions noted in the master report and the following condition applies:

Installation must meet the requirements of Section 1403.8 of the *Florida Building Code—Building* and Section R318.7 of the *Florida Building Code—Residential*, as applicable.

Use of the Decoplast DDARS—Notched 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 evaluation report.

For products falling under Florida Rule 9N-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).

This supplement expires concurrently with the master report, reissued July 2019.