

Pei Evaluation Service is an accredited ISO Standard 17065 Product Certifier, accredited by the IAS. This **Product Evaluation Report** represents a product that **Pei ES** has Evaluated and has a Follow-up Service / Inspection Agreement. This **Product Evaluation Report** in no way implies warranty for this product or relieves **United States Gypsum Company** of their liabilities for this product. This **PER** is an official document if it is within one year of the initial or re-approval date.

Initial Approval
February, 2015

Re-Approved

See all **Pei ES** Listings at: www.p-e-i.com

Report Owner

United States Gypsum Company

700 North Highway 45
Libertyville, IL 60048

Approved Manufacturing Locations

USG Corporation Plant No. 225

6825 Evergreen Ave.
Jacksonville, FL 32208

Product

Securock® ExoAir® 430 Panel

Evaluation Report Information

usg4you@usg.com

USG Support: 800.USG4YOU

General Details

Securock® ExoAir® 430 Panel is manufactured at the plant location listed above. This plant location has an approved Q.C. Manual to manufacture this product and is audited quarterly by *Progressive Engineering Inc.*

Product Description

Securock® ExoAir® 430 Panel is a glass mat-faced, moisture and mold-resistant gypsum panel with a noncombustible core integrated with a factory-applied synthetic air/water barrier membrane. The in-plant application provides a uniform membrane resulting in predictable air and water barrier performance and adhesion to base panel. The panel is a component of the Securock® ExoAir® 430 Air Barrier System, to be installed using Tremco® sealants and transition to membranes to achieve air barrier continuity. The panel is designed for use under a variety of exterior claddings where traditionally a separate gypsum sheathing panel and air barrier would have been used. Panels are 5/8" thick by 48 inches wide by 8 ft. long with square edges.

Compliance

Securock® ExoAir® 430 Panels

- Meets or exceeds the requirements of gypsum sheathing in accordance with the 2015 International Residential Code® and the 2015 International Building Code®.
- Meets or exceeds the requirements for Water Resistive Barriers in accordance with the 2015 International Residential Code® and the 2015 International Building Code®.
- *Meets or exceeds the requirements for an Air Barrier Material in accordance with the 2015 International Energy Conservation Code®.*
- *Meets or exceeds the requirements of ASTM C 1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing.*
- *Meets or exceeds the physical property requirements of ASTM C 1396, Section 9 Standard Specification for Gypsum Sheathing Board.*
- *Non-combustible core when tested in accordance with ASTM E 136, and defined in 2015 International Building Code® Section 703.5.2.*
- *Substrate meets Type X definition in accordance with ASTM C 1396 and ASTM C 1177 when tested in accordance with ASTM E 119.*
- *Surface Burning Characteristics - Flames Spread 20 / Smoke Development 15 when tested in accordance with ASTM E84 (UL 723).*
- *Fire propagation characteristics - Tested in accordance with and meets the requirements of NFPA 285. See UL Building Materials Directory for approved listings under category FWFO - Exterior Wall Systems.*
- *Classified by Underwriter's Laboratories, Inc. as to Fire Resistance (substrate), Surface Burning Characteristics and Non-combustibility. See the UL Fire Resistive Design Listings, under UL Category CKNX, Gypsum Board, UL File No. R1319, Type USGX.*
- *Meets or exceeds the requirements of the ABAA Process for Approval of Air Barrier Materials, Accessories and Assemblies Section 5.2 Factory-Bonded Membranes to Sheathing.*
- *Meets or exceeds the requirements of ICC-ES AC212 Acceptance Criteria for Water-Resistive Coatings Used as Water-Resistive Barriers Over Exterior Sheathing.*
- *Approved by State of Florida Product Approval FL17763 as to compliance with the 2014 Florida Building Code for use outside High Velocity Hurricane Zones (HVHZ).*
- *Meets or exceeds the requirements of ICC-ES AC38 Acceptance Criteria for Water-Resistive Barriers Over Exterior Sheathing per Table 1 Grades C & D.*
- *Exceeds 15 psi flatwise tensile bond capacity required for acrylic and cementitious adhesives used to attach EIFS when tested in accordance with ASTM C 297.*

General Product Usage and Limitations

1. This product shall be installed in accordance with ASTM C 1280 *Standard Specification for Application of Gypsum Sheathing, GA-253 Application of Gypsum Sheathing*, and the requirements of **USG** Product Literature.
2. **Securock® ExoAir® 430 Panel** can be installed on wood or steel framing. The maximum spacing for framing members is 24-in. o.c. The framing strength, fastener holding capacities of framing and fastener length is outside the scope of this **Product Evaluation Report**.
3. This product may be applied with long dimensions parallel or perpendicular to framing members, orange side to exterior except where limited by specific requirements
4. Fasteners shall be driven flush with the panel surface without countersinking or being deep enough to break the glass mat. All fastener heads shall apply a minimum 1/16" thickness and 1" minimum diameter quantity of approved Tremco light orange sealant.
5. This product shall remain in its original unopened packaging at the site and stored in an enclosed shelter providing protection from physical damage and exposure to the elements until used. Prevent these products from exposure to cascading water.
6. The use of pneumatic or gas-power-driven pin fasteners to attach **Securock® ExoAir® 430 Panel** to cold-formed steel framing, provided the pin manufacturer has evaluated **Securock® ExoAir® 430 Panel** with the pin fastener in accordance with ICC-ES AC259 Acceptance Criteria, and where permitted by local codes.
7. This product shall not be used as a nail base. Mechanical attachment of exterior claddings must be made directly to the framing.
8. Sheathing orientation and fastener spacing may be governed by local code, or by the requirements of shear, wind or fire-resistance-rated construction. Consult local codes and site-specific construction documents to ensure such requirements are met for every assembly prior to construction.
7. This product shall be installed per USG installation instructions where joint materials and coating specifications are as stated.

Tested to

- AATCC 127 - 08** - Water Resistance: Hydrostatic Pressure Test for 5 h.
- ASTM C 1177/C 1177M-06** - Standard Specification for Glass-Mat Gypsum Substrate for Use as Sheathing.
- ASTM C 297-04** - Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions.
- ASTM C473-06a** - Test Methods for Physical Testing of Gypsum Panel Products.
- ASTM C 518-04** - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
- ASTM D3330 / D3330M-04 Method F** - Standard Test Method for Peel Adhesion of Pressure-Sensitive Tape.
- ASTM E72-05** - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; Section 14 Racking Load - Evaluation of Sheathing Materials on a Standard Wood Frame.
- ASTM E72-05** - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction; Section 15 Racking Load - Evaluation of Sheathing Materials (Wet) on a Standard Wood Frame.
- ASTM E84-08** - Test Methods for Surface Burning Characteristics of Building Materials.
- ASTM E96/E96M-13** - Standard Test Methods for Water Vapor Transmission of Materials.
- ASTM E119-03** - Standard Test Methods for Fire Tests of Building Construction and Materials. (substrate)
- ASTM E136-04** - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750° C. (SUBSTRATE)
- ASTM E330-02** - Standard Test Methods for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference
- ASTM E331-00 (2009)** - Standard Test Method for Water Penetration of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference.
- ASTM E2178-03** - Standard Test Method for Air Permeance of Building Materials
- ASTM E2357-11** - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
- ASTM E2570-07** - Standard Test Method of Evaluating Water-Resistive Barrier (WRB) Coatings Used under Exterior Insulation and Finish Systems (EIFS) or EIFS with Drainage.
- NFPA 285** - Standard Method of Test for the Evaluation of Flammability Characteristics of Exterior Nonload-bearing Wall Assemblies Containing Combustible Components.

Product Labeling

Each **Securock® ExoAir® 430 Panel** that is covered by this **PER**, must be marked with the following information:

1. **USG** Name
2. Product Name
3. Plant Identifier & Date Code
4. This **PER** Number & **Pei ES** Name or Logo
5. UL Backstamp Information for Fire Resistance

Acceptable Evaluation Marks



Product Performance

Design Shear Loads for Securock® ExoAir® 430 Panel Attached to Wood Framing

Sheathing	Framing	Maximum Height to Width Aspect Ratio	Fastener	Fastener Spacing (inches o.c. around Perimeter, in Field)	Design Shear
SecurockExoAir® 430 Panel Parallel to Framing	24" o.c.	1:1	#6 Buglehead Screw	4 and 8	138.1 plf

Notes:

1. #6 Screws must have a minimum head dia. of .327"
2. The perimeter of the sheathing must be supported by framing members.
3. The screws must have a minimum edge distance of 3/8".
4. Allowable shear values are for short term wind loads.
5. Shear wall anchorage is outside of the scope of this report.

Physical Properties per ASTM C1177

Flexural Strength (ASTM C473-06a)	Securock® ExoAir® 430 Panel
Minimum Breaking Load	
Edge Perpendicular	147 lbf
Edge Parallel	100 lbf
Minimum	
Hardness Core Test	15 lbf
Hardness End Test	15 lbf
Hardness Edge Test	15 lbf
Nail Pull Resistance	90 lbf
Water Absorption (% by weight)	10% max
Humidified Deflection	1/8" max

Additional Performance Properties

ASTM E96 Water Vapor Transmission (Perms)			
		Wet	Dry
Base Panel		--	26.45
Coating		6.26	1.74
Base Panel + Coating		7.86	1.62
ASTM C518 Thermal Resistance Values			
Thickness (in.)	Thickness (mm)	R (K·M2/W)	R (°F·ft2·h/BTU)
5/8"	16.3	0.088	0.50
ASTM E2178 Air Permeance			
Result		Pass	
Requirement		≤0.004 CFM/ft² @ 1.57 psf	
ASTM E2357 Air Leakage for Air Barriers			
Result		Pass	
Requirement		≤0.004 CFM/ft² @ 1.57 psf	
ASTM E331 Water Penetration			
Result		Pass	
Requirement		AC212 Sec 4.5.1	
ASTM E84 (UL 723) Surface Burning Characteristics			
Smoke Development		20	
Flame Spread Index		15	
ASTM E119 (UL 263) Fire Resistance			
See UL Fire Resistance Directory For Design Coverage (UL Type USGX)			
NFPA 285 - Fire Propagation Characteristics			
See UL Fire Resistance Directory, Category FWFO - Exterior Wall Systems			

Windload Design Pressure - Securock® ExoAir® 430 Panel

Frame Spacing	12" o.c.			16" o.c.			24" o.c.		
Fastener Spacing	4"	6"	8"	4"	6"	8"	4"	6"	8"
Allowable Pressure	107	67	50	75	50	38	34	27	25

Notes:

1. The panel can be installed perpendicular or parallel to the framing.
2. #6 Buglehead screws with an average head dia. of .327"
3. The screws must have a minimum edge distance of 3/8".
4. Allowable values are for short term wind loads.
5. The values in this table are based on testing per ASTM E330 and represent the ultimate capacity of the panel to resist fastener pull-through and/or flexural failure using a 3.0 Safety Factor. The withdrawal resistance of fasteners from framing is different on several factors including but not limited to fastener type, fastener length and framing properties. The specification of fasteners is the responsibility of the designer of record.
6. Framing and bracing are beyond the scope of this evaluation report.

Product Documentation

MSDS 54000004008 - Dated 7/3/2014

MSDS DEV430 275 - Dated 2/10/2014

MSDS DEV1863 805 - Dated 2/10/2014

MSDS 965806 323 - Dated 10/1/2012

MSDS 946988 385 - Dated 9/15/2014

A Follow-up Evaluation Service Agreement between **Pei Evaluation Service** and **USG Corporation**

An Inspection Agreement between **Progressive Engineering Inc.** and **USG Corporation**

A Quality Control Manual Dated for **USG Securock® ExoAir® 430 Panel** - Dated: February 2015

USG Securock ExoAir Panel Installation Instructions (BE102/6-14)

USG Securock ExoAir Panel Installation Instructions (BE101/01-15)

Test Report No. 08CA05754 - Standard Test Methods for Fire Tests of Building Construction and Materials - Dated 8-31-2009

Test Report No. 08CA05819 - Standard Test Methods for the Behavior of Materials in a Vertical Tube Furnace at 750 C - Dated 12-12-2008

A **Pei** test report No. 2008-0430 (A) - Evaluation of the 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing - Dated: 4/22/2008 - Stamped by a professional engineer.

A **Pei** test report No. 2008-0430 (B) -ASTM E96 Water Vapor Transmission Test on 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing - Dated: 4/03/2008.

A **Pei** test report No. 2008-1853 (C) - ASTM E72 Evaluation of Sheathing Materials - Single Side Racking Load using Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Mechanically Fastened to Wood Framing Using Screws - Dated: 12/23/2008 - Stamped by a professional engineer.

A **Pei** test report No. 2008-1853 (E) - ASTM E330 Negative Windload Test on Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Vertical on 16" o.c. Lumber Framing Using Screws - Dated: 12/16/2008 - Stamped by a professional engineer.

A **Pei** test report No. 2008-1853 (F) - ASTM E330 Negative Windload Test on Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Horizontal on 24" o.c. Lumber Framing Using Screws - Dated: 12/18/2008 - Stamped by a professional engineer.

A **Pei** test report No. 2008-1853 (G) - ASTM E330 Negative Windload Test on Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Vertical on 24" o.c. Lumber Framing Using Screws - Dated: 12/19/2008 - Stamped by a professional engineer.

A **Pei** test report No. 2009-0863 (A) - ASTM E330 Negative Windload Test on Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Vertical on 24" o.c. Lumber Framing Using Screws 4" o.c. - Dated: 7/17/2009 - Stamped by a professional engineer.

A **Pei** test report No. 2009-0863 (B) - ASTM E330 Negative Windload Test on Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Vertical on 12" o.c. Lumber Framing Using Screws 4" o.c. - Dated: 7/23/2009 - Stamped by a professional engineer.

A **Pei** test report No. 2009-0863 (C) - ASTM E330 Negative Windload Test on Dry 5/8" **USG Securock®** Firecode X Glass-Mat Sheathing Vertical on 24" o.c. Lumber Framing Using Screws 6" o.c. - Dated: 7/23/2009 - Stamped by a professional engineer.

Test Report No. 3152720SAT-001 - ASTM C518 Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of The Heat Flow Meter Apparatus - Dated: 5/29/2008.

A **Pei** test report No. 2014-0868 (B) - ASTM E2570 / ICC-ES AC212 Flatwise Tensile Strength Tests on 5/8" **USG Securock® ExoAir®** 430 Panel Using 2" x 2" and 6" x 6" Samples and Various Coatings - Dated: 8/28/2014.

A **Pei** test report No. 2014-0868 (D) - ASTM E2570 / ICC-ES AC212 Water Resistance Testing on 5/8" **USG Securock® ExoAir®** 430 Panel Using Dymonic® 100 and Spectrum 1® Sealants - Dated: 7/28/2014.

A **Pei** test report No. 2014-0868 (G) - ASTM E2570 / ICC-ES AC212 Water Vapor Transmission Test on 5/8" **USG Securock® ExoAir®** 430 Panel with Dymonic 100 & Spectrum 1 Joint Treatments Tested to Procedure B - Water Method - Dated: 7/24/2014.

Product Documentation Continued

A *Pei* test report No. 2014-0868 (J) - ASTM E2570 / ICC-ES AC212 Weathering Tests on 5/8" **Securock**® ExoAir® 430 Panels Using Dymonic 100 & Spectrum 1 Sealants - Dated: 9/15/2014.

A *Pei* test report No. 2014-1788 (A) - ASTM E2570 / ICC-ES AC212 Flatwise Tensile Strength Tests on **USG** 5/8" **Securock**® ExoAir® 430 Panel with a Cement Base Coat and an Acrylic Base Coat with ExoAir® 230 Joint Treatment - Dated: 1/22/2015.

A *Pei* test report No. 2014-1788 (B) - ASTM E2570 / ICC-ES AC212 Water Vapor Transmission Test on **USG** 5/8" **Securock**® ExoAir® 430 Panel Tested to Procedure A - Dessicant Method - Dated: 2/3/2015.

A *Pei* test report No. 2014-1788 (C) - ASTM E2570 / ICC-ES AC212 Water Vapor Transmission Test on **USG** 5/8" **Securock**® ExoAir® 430 Panel Tested to Procedure B - Water Method - Dated: 2/3/2015.

A *Pei* test report No. 2014-1788 (F) - ASTM D4541 Pull Adhesion Test (Method B) on **USG** 5/8" **Securock**® ExoAir® 430 Panel - Dated: 1/21/2015.

A *Pei* test report No. 2014-1788 (G) - ASTM D3330 Peel Adhesion Tests (Method F) with Various Joint Treatments and Flashing Tape on 5/8" **Securock**® ExoAir® 430 Panel - Dated: 1/26/2015.

A *Pei* test report No. 2014-1788 (H1) - ASTM E2570 / ICC-ES AC 212 Large Scale Durability on 5/8" **Securock**® ExoAir® 430 Panel Using Dymonic® 100 - Dated: 2/9/2015.

A *Pei* test report No. 2014-1788 (H2) - ASTM E2570 / ICC-ES AC 212 Large Scale Durability on 5/8" **Securock**® ExoAir® 430 Panel Using Spectrum® 1 - Dated: 2/10/2015.

A *Pei* test report No. 2014-1788 (I) - ASTM 2570 / ICC-ES AC212 Water Ingression Testing on 5/8" **Securock**® ExoAir® 430 Panel For Use as a Water-Resistive Barrier - Dated: 2/10/2015.

A *Pei* test report No. 2014-1788 (M) - ASTM E2570 / ICC-ES AC212 Freeze-Thaw Tests on 5/8" **Securock**® ExoAir® 430 Panels Using Dymonic® 100 and Spectrum® 1 Sealants - Dated: 2/11/2015.

A *Pei* test report No. 2014-1788 (O) - ASTM E2570 / ICC-ES AC212 Water Vapor Transmission Tests on ExoAir® 430 Film Tested to Procedure A - Dessicant Method - Dated: 3/10/2015.

A *Pei* test report No. 2014-1788 (P) - ASTM E2570 / ICC-ES AC212 Water Vapor Transmission Tests on ExoAir® 430 Film Tested to Procedure A - Water Method - Dated: 3/10/2015.

Test Report for ASTM D1970-14 Standard Specification for Self Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; Section 7.9 Self Sealability (Head of Water Test) - Dated: 8/29/2014.

Test Report No. T41 for ASTM E283 and ASTM E2357 - Dated: 7/21/2014.

Test Report No. T42 for ASTM E283 and ASTM E2357 - Dated: 7/22/2014.

Test Report No. T43 for ASTM E283 and ASTM E2357 - Dated: 7/23/2014.

Test Report No. T44 for ASTM E283 and ASTM E2357 - Dated: 7/24/2014.

Test Report No. R27656 - ASTM E331-00 (R2009), Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference and ASTM E2357-11, Standard Test Method for Determining Air Leakage of Air Barrier Assemblies- Dated: 7/16/2014.

Test Report No. TRE-126-02-01 - ASTM E2178 Air Permeability for USG Securock ExoAir 430 Panel- Dated: 4/20/2014.

Test Report No.01.19577.01.0604 - Fire Performance Evaluation of a Wall Assembly Tested in Accordance with NFPA 285, 2012 Edition, Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior NonLoad-Bearing Wall Assemblies Containing Combustible Components - Dated: 2/24/2014.

Test Report No. 1851308 - UL 723 Test for Surface Burning Characteristics of Building Materials - Dated: 7/10/2014

Test Report No. STL-R-12-29-2014a - ASTM E1252 - Standard Practice for General Techniques for Obtaining Infrared Spectra for Qualitative Analysis - Dated: 12/29/2014