Georgia-Pacific

DensElement™ Barrier System

Technical Service Hotline 1.800.225.6119 or
www.gpgypsum.com

Manufacturer

Georgia-Pacific Gypsum
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Georgia-Pacific Canada
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Technical Service Hotline: 1-800-225-6119

Description

The **DensElement™ Barrier System** consists of (a) DensElement Sheathing made with a treated, water-resistant core, surfaced with fiberglass mats and a GOLD colored coating, and (b) an approved third party fluid applied flashing. DensElement Barrier System serves as a water resistant barrier and air barrier when the sheathing joints, fasteners, penetrations, openings and transitions are properly sealed with an approved third party fluid applied flashing.

DensElement Sheathing is mold resistant, and has scored a 10, the highest level of performance for mold resistance under ASTM D3273 test method.

DensElement Sheathing exhibits dimensional stability providing for a flat and rigid substrate that is noncombustible as defined and tested in accordance with ASTM E136 or CAN/ULC S114. DensElement Sheathing is generally the same strength in both directions, and it may be installed either parallel or perpendicular to wall framing members (always follow specific wall assembly installation instructions as described in the DensElement Barrier System Technical Brochure).

Primary Uses

The DensElement Barrier System is specified to be used as the exterior wall sheathing, the water resistive barrier, and the air barrier as required by building code when the panel joints, fasteners, penetrations, openings and transitions are properly sealed by an approved third party fluid applied flashing per the manufacturer's recommendations. The DensElement Barrier System can be used under a wide range of adhered, attached and rainscreen cladding systems. These include EIFS, cavity brick and claddings such as wood, vinyl, composite sidings and rainscreen claddings such as insulated metal panels.

The DensElement Barrier System eliminates the need for attached flexible membranes, fluid applied membranes or self-adhered membranes over the field of the sheathing that have typically served as the water resistive barrier and air barrier for building code compliance.

The DensElement Barrier System Sheathing is attached directly to wood or steel framing with recommended fasteners.

Limitations

The DensElement Barrier System is not intended for immersion in water or below grade use. Cascading roof/floor water should be directed away from the exterior of the building.

Avoid conditions that will create condensation on the backside or face of DensElement Sheathing. The use of temporary forced air heaters inside an unfinished building may create volumes of water vapor which, when improperly ventilated, can condense on building materials. The use of such heaters and any resulting damage is not the responsibility of Georgia-Pacific Gypsum.

Fasteners used to attach DensElement Sheathing to framing should be flush to the panel, not countersunk.

When the DensElement Barrier System is used in slanted wall applications, do not allow water to pond or settle on it.

Georgia-Pacific Gypsum does not warrant the cladding or exterior finish system attached or adhered to the DensElement Barrier System.

Do not laminate masonry products directly to the sheathing surface of the DensElement Barrier System.

Do not use the DensElement Barrier System in roof board applications. For roof board applications, consult the DensDeck® Roof Board Technical Guide.

The DensElement Barrier System is not intended for interior or exterior ceramic tile applications. For interior tile applications in shower and bath wet areas, consult the DensShield® Tile Backer Technical Guide.

DensElement Sheathing should not be used in lieu of structural wood panels where required or used as a nailing base for mechanical fastening of cladding or other attachments.

Design details for joints, fasteners, openings, penetrations and transitions shall be installed per DensElement Barrier Systems installation instructions.

Technical Data

The DensElement Barrier System is a gypsum sheathing, water resistive barrier, and air barrier system when the joints, fasteners, penetrations, openings, and transitions are properly sealed with an approved third party fluid-applied flashing.

5/8″ (15.9mm) DensElement Sheathing gypsum panel is UL designation **Type DGG**.

DensElement Sheathing is noncombustible as described and tested in accordance with ASTM E136, UL 723, or CAN/ULC S114.

DensElement Sheathing has a flame spread and smoke develop rating of 0/0 when tested in accordance with ASTM E84 or CAN/ULC S102.

DensElement Sheathing is manufactured to meet ASTM C1177.

DensElement Sheathing exceeds ASTM C1396 sheathing standards for humidified deflection by a factor of 10 in tests over the standard for regular gypsum sheathing.

DensElement Sheathing has a vapor permeance of >30 for 5/8″ (15.9mm) tested in accordance with ASTM E96 (wet cup method).

The DensElement Barrier System was tested in accordance with applicable sections of ICC-ES Acceptance Criteria (AC) 212, Acceptance Criteria for Water-Resistive Coatings used as Water-Resistive Barriers over Exterior Sheathing, and applicable sections of AC 310, Acceptance Criteria For Water Resistive Membranes Factory Bonded To Wood Based Structural Sheathing.

The DensElement Barrier System was tested in accordance with ASTM E2178, Standard Test Method for Air Permeance of Building Materials, and ASTM E2357, Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.

continued

Submittal Approvals

Job Name _____

Contractor _____

Date _____

Stamps/Signatures

Handling and Use–WARNING

DensElement™ Sheathing contains fiberglass facings which may cause skin irritations. Dust and fibers produced during the handling and installation of the product may cause skin, eye and respiratory irritation. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, long pants and eye protection. Always maintain adequate ventilation. Use dusk mask or NIOSH/MSHA approved respirator as appropriate in dusty or poorly ventilated areas.

Product Data

See physical properties chart below. The DensElement Barrier System holds an ICC-ES Evaluation Report for use as both a water resistive barrier and air barrier. For a copy of the Evaluation Report see www.icc-es.org.

The following is a currently approved fluid applied flashing for the DensElement Barrier System:

PROSOCO® R-Guard® FastFlash® www.prosoco.com/Content/Documents/Product/RG_FastFlash_PDS_120911_C.pdf

Physical Properties for DensElement Sheathing

Properties	5/8″ (15.9 mm) DensElement™ Sheathing
Width, nominal	4′ (1219 mm) + 0 – 1/8″ (3 mm)
Length, standard	8′ (2438 mm), 9′ (2743 mm), 10′ (3048 mm), ± 1/4″ (6 mm)
Weight, nominal, lbs./sq. ft. (Kg/m^2)	2.5 (12)
Edges	Square
Bending radius [5]	8′ (2438 mm)
Racking strength[6], lbs./ft. (dry) (N/m), Ultimate–not design value	>654 (9544)
Flexural strength[1,4], parallel, lbf. per Method B	≥100 (445)
Compressive strength	min. 500 psi (3445 kPa)
Humidified deflection[1, 4]	<1/8″ (3 mm)
Permeance[2], Perms (ng/Pa•s•m^2)	>30 (1696)
R Value[3], ft^2•°F•hr/BTU (m^2•K/W)	.67 (0.118)
Combustibility[7]	Noncombustible
Linear expansion with moisture change, in/in %RH (mm/mm %RH)[8]	6.25 x 10^{-6}
Surface burning characteristics per ASTM E84 or CAN/ULC S102: flame spread/smoke developed	0/0
Coefficient of thermal expansion, in/in/°F (mm/mm/°C)[9]	8.5 x 10^{-6} (15.3 x 10^{-6})

[1] Tested in accordance with ASTM C473
[2] Tested in accordance with ASTM E96 (wet cup method)
[3] Tested in accordance with ASTM C518 (heat flow meter)
[4] Specified values per ASTM C1177
[5] Double fasteners on ends as needed
[6] Tested in accordance with ASTM E72
[7] As defined and tested in accordance with ASTM E136, UL 723, or CAN/ULC S114
[8] As stated by Gypsum Association GA-235
[9] Tested in accordance with ASTM E228-85

Georgia-Pacific Gypsum

U.S.A. Georgia-Pacific Gypsum LLC
Georgia-Pacific Gypsum II LLC
Canada Georgia-Pacific Canada LP

SALES INFORMATION AND ORDER PLACEMENT

U.S.A. West: **1-800-824-7503**
Midwest: **1-800-876-4746**
South Central: **1-800-231-6060**
Southeast: **1-800-327-2344**
Northeast: **1-800-947-4497**

CANADA Canada Toll Free: **1-800-387-6823**
Quebec Toll Free: **1-800-361-0486**

TECHNICAL INFORMATION
U.S.A. and Canada: **1-800-225-6119,** www.gpgypsum.com