Georgia-Pacific

DensGlass® Sheathing

UK PRODUCT GUIDE

EXEMPLARY TRACK RECORD THAT SPANS MORE THAN 30 YEARS

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 21/5958

Who is Georgia-Pacific?

Georgia-Pacific is part of Koch Industries with a diverse set of businesses and industries across the world. Koch Industries, based in Wichita, Kansas, is the second largest private company in America, employing 130,000 people in 70+ countries.

From the time we were founded in 1927, Georgia-Pacific has never stopped growing. We started in a single building in Augusta, Georgia, and now have more than 300 Georgia-Pacific locations around the world. Through all the ups and downs of the past century, we have kept one eye on tomorrow, watching for opportunities to grow with customers and expand into new industries and markets.

Georgia-Pacific manufactures products with divisions such as:

- Consumer Products – Tissue, Towel, Napkin, Professional Cleansers etc.;
- Packaging – Linerboard, Packaging, Cellulose, Kraft Paper etc.;
- Building Products – Gypsum, Wood, Chemicals etc.

Gypsum Construction Products

Georgia-Pacific is a leading manufacturer of innovative solutions which have long been recognized for contributing to the sustainability of commercial and residential buildings. Our pioneering and state-of-the-art fiberglass mat technology has inspired the construction industry to build with products that help manage moisture damage during and after construction.

With a history of innovation dating back 30+ years with the introduction of DensGlass® Sheathing, the first Dens® Solutions product that set the foundation for innovation in fiberglass mat gypsum products for decades to come. It was the first fiberglass mat gypsum sheathing in the industry, and it remains the number one architecturally specified sheathing, in the US, today.[1]

Available worldwide, Dens® Solutions are industry trusted, high-performing fiberglass mat gypsum panels. DensGlass® Sheathing, DensElement® Barrier System, DensShield® Tile Backer, DensGlass® Shaftliner and DensArmor Plus® Interior Panels carry the mark of the valued heritage in our Gold colour, as a visible standard-bearer of Georgia-Pacific's position as the first manufacturer to create a fiberglass mat board and as a relentless innovator of strength and moisture resistant products for over 30 years.

DensDeck® Roof Boards

Including a high-performance roof board in your roofing system is essential to the protection of the building and the valuable contents inside. With its combination of fire resistance, strength and dimensional stability, industry professionals count on DensDeck® Roof Boards to enhance the performance of their roofing systems. And in keeping with the tradition of market-driven innovation DensDeck® Prime Roof Board now includes EONIC™ Technology, an enhancement that has doubled its resistance to moisture, making it the only roof board with manufacturing specifications that include 5% total water absorption resistance by weight and 1 gram surface water absorption performance on both sides of the board.[2]

DensArmor Plus® Interior Panels

DensArmor Plus® Interior Panels, which feature fiberglass mats instead of the paper facings used on the surface of traditional gypsum board products, resist mould growth. They're ideal for areas prone to high humidity such as basements and residential bathrooms, and are ideal for commercial installations. They are designed for direct attachment with screws or nails to wood and metal framing or existing surfaces. They may be used as a covering material for flat or curved structures.

DensGlass® Shaftliner

DensGlass® Shaftliner fibreglass mat gypsum liner panels are ideal for use in vertical and horizontal shaft wall assemblies, stairwell applications and area separation walls in commercial and multi-family construction. DensGlass® Shaftliner panels help maintain flexibility with construction schedules despite bad weather and allow mechanical work such as HVAC system installation to start before the building is fully wind and weather-tight.

DensGlass® Sheathing

Widely recognized by the Gold colour, DensGlass® fiberglass mat gypsum sheathing has an exemplary track record that spans more than 30 years. It is a preferred substrate under brick, stone, stucco, siding and ETICS/EIFS due to its ability to protect a structure against incidental moisture during and after construction. DensGlass® Sheathing adds performance and durability to a wide range of fire-rated and non-fire-rated building assemblies.

[1] Based upon survey of CMD Group project specifications from 01/01/17 – 12/31/17.

[2] Based on published manufacturing specifications as of December 1, 2017.

YOUR EXTERIOR WALLS AND SOFFITS DESERVE THE GOLD STANDARD

Don't leave the integrity of your exterior walls or soffits to chance. Rely on Georgia-Pacific Gypsum's industry-trusted line of high-performance exterior gypsum panels, including DensGlass® Sheathing – the #1 architecturally specified fibreglass-mat gypsum sheathing in the United States that has been used on projects the world over.

Widely recognized by its striking Gold colour, DensGlass® Sheathing has an exemplary track record that spans more than 30 years. Thanks to its ability to protect the building envelope against incidental moisture damage during and after construction, DensGlass® Sheathing is a preferred substrate under a wide variety of cladding, including brick, stone, stucco, siding and ETICS/EIFS.

Outstanding Warranty

DensGlass® Sheathing is covered by a 12-month limited warranty against delamination and deterioration for exposure to normal weather conditions, a five-year limited warranty against manufacturing defects and a 12-year limited warranty against manufacturing defects when used as a substrate for architecturally specified EIFS. For a copy of the limited warranty, visit our website at www.buildgp.com/warranties.

Superior Weather Protection

DensGlass® Sheathing integrates a water-resistant, treated core with a fibreglass mat face and back to provide superb protection from the elements.

A water-resistive barrier is not required over DensGlass® Sheathing to provide the protection of the gypsum sheathing during installation. DensGlass® Sheathing is the ideal substrate for a wide variety of air and water-resistive barriers including building wraps, fluid applied coatings, self-adhering membranes and spray foam applications.

Mould Resistance

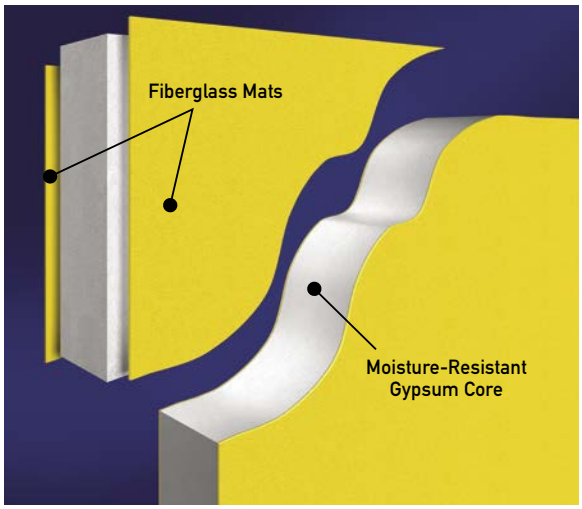
In independent testing, DensGlass® Sheathing, with its fibreglass mat design, has achieved a score of 10, the highest level of performance for mould resistance under ASTM D3273*. For additional information concerning mould resistance, go to www.buildgp.com/safetyinfo.

Easy to Handle

DensGlass® Sheathing is lightweight and easy to handle. It can be cut and fastened with standard drywall tools and fasteners.

The product is much easier to work with than cement board, fibre cement sheathing or magnesium oxide sheathing which tend to be heavier and brittle.

* ASTM D3273 measures mould growth in a 4-week controlled laboratory test. The mould resistance of any building product when used in actual job site conditions may not produce the same results as were achieved in the controlled, laboratory setting. No material can be considered mould proof.



DensGlass® Sheathing. ©2021 Georgia-Pacific Gypsum LLC.

Strength

Fibreglass mats penetrate into the panel to make an integrated unit that offers superb strength, outstanding resistance to delamination, deterioration, warping and job site damage; and an excellent bonding surface for ETICS/EIFS and air barrier systems. The flexural strength of DensGlass® Sheathing is approximately the same in both directions. This means DensGlass® Sheathing can be installed either vertically or horizontally without sacrificing wall strength between studs. DensGlass® Sheathing panels also protect and help stabilize structural framing.

Rush University Medical Center, Chicago, Illinois.

Fire Resistance

DensGlass® Sheathing has a reaction to fire classification of A1 in accordance with EN 13501-1:2007 and is non-combustible as described and tested in accordance with ASTM E136 or CAN/ULC S114.

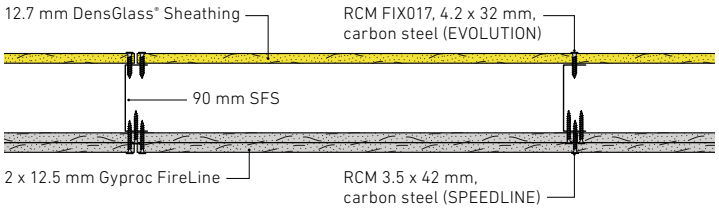
Fire Resistance

Fire Performance

The example tests shown below were carried out by Efectis UK/Ireland Limited. Efectis is a global independent third party who have been assessing the fire performance of products, systems or constructions for over 70 years.

The following design assemblies are for illustrative purposes only. Consult the appropriate test report for complete assembly information.

Non-load-bearing - EN 1364-1:2015 (fire inside to out)

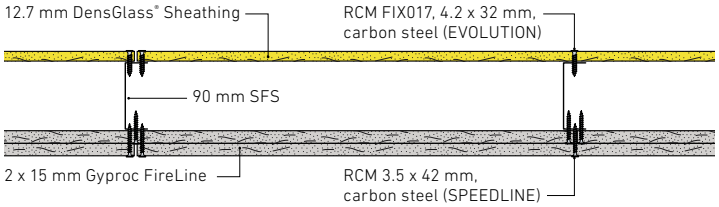


Classification in accordance with clause 7 of EN 13501-2:2016.

Fire Resistance Classification	EI90 E90

Test: EUI-19-000124-A-Rev-2

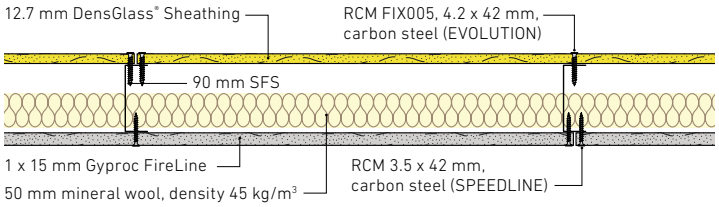
Load-bearing - EN 1365-1:2012 (fire inside to out)



Fire Resistance Classification	REI90 RE90

Test: EUI-19-000148-A-Rev-2

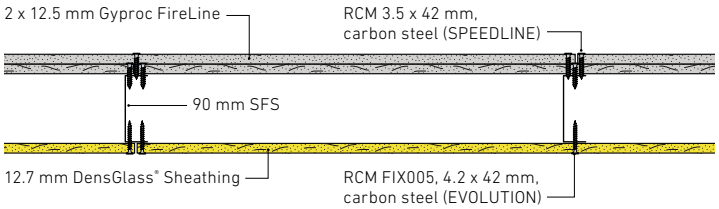
Non-load-bearing - EN 1364-1:2015 (fire inside to out)



Fire Resistance Classification	EI60 E60

Test: 19-000121-A-Rev 2

Non-load-bearing - EN 1364-1:2015 (fire outside to in)



Fire Resistance Classification	EI60 E60

Test: EUI-19-000148-B-Rev-2

For full details please email DensInternational@GAPAC.com or speak with RCM Roofing and Cladding Materials Ltd at technical@rcmltd.biz

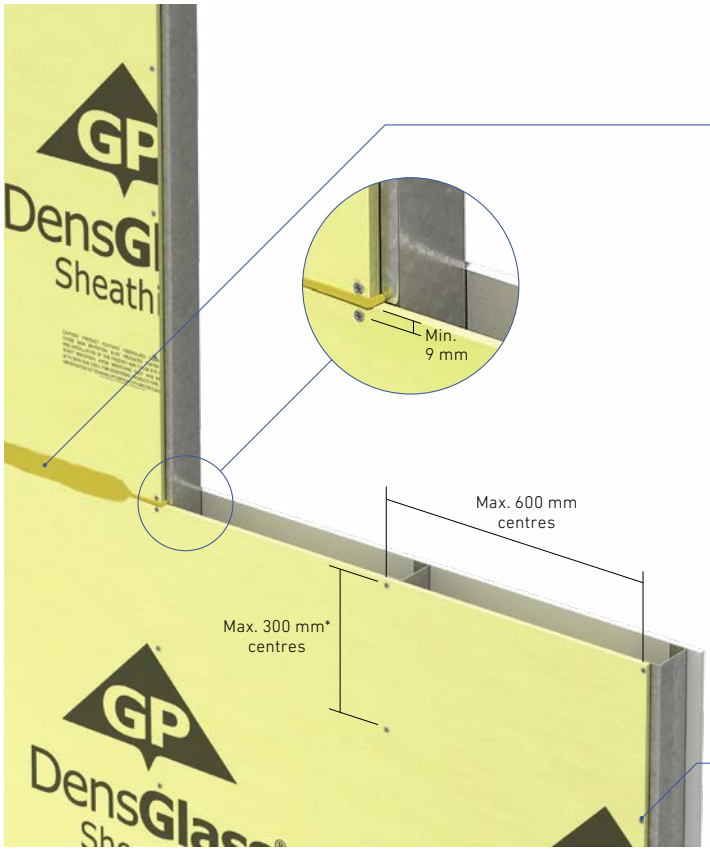
Because actual fires vary both from laboratory conditions and from fire to fire based on a wide variety of factors - such as the amount, nature and distribution of available fuel and ventilation, as well as the size, configuration, and other characteristics of the compartment in which the fire occurs - fire tests are not representative of actual fire conditions. Fire test results should be regarded as only one among a variety of factors used to assess the potential of an assembly to perform for the designated time in case of a fire. An assembly having a "one-hour" fire rating, for example, will not necessarily withstand the effects of an actual fire for one hour.

Visit www.buildgp.com/safetyinfo for latest information.

Installation

The flexural strength of DensGlass® Sheathing is approximately the same in both directions. This means DensGlass® Sheathing can be installed to timber or steel framing either vertically or horizontally without sacrificing wall strength between studs.

Use appropriate board orientation for specific fire assemblies as required by the design. The framing width shall not be less than 38 mm for timber framing and 32 mm for steel framing. Framing members should not vary more than 3 mm from the plane of the faces of adjacent framing.



DensGlass® Sheathing panels butted with all joints treated by either:

1 Applying a minimum 12.7 mm bead of sealant e.g. FP PRO Sealant, to horizontal and vertical joints and trowel to provide a layer approximately 50 mm wide by 2 mm thick spanning the joint. or

2 Applying a UV stabilised solvent free acrylic dispersion tape e.g. RCM Tape, to all joints, overlapping at intersections by the width of the tape.

Follow sealant or tape manufacturer's installation recommendations for use with DensGlass® Sheathing, and designer's specifications.

Fasteners should be driven into the framing system so that the heads are at or slightly below the surface of the DensGlass® Sheathing without breaking the glass mat or fracturing the core. Locate fasteners at least 9 mm from the ends and edges of the sheathing.

* Fastener fixing patterns and spacings will vary according to fire performance, wind loading, shear and racking strength requirements. Advice should be taken from a suitably qualified expert.

Property	DensGlass® Sheathing			
	Imperial	Metric	Imperial	Metric
Thickness	1/2 in	12.7 mm	5/8 in	15.9 mm
Width, nominal[1]	4 ft ± 3/32 in	1200 ± 2.4 mm	4 ft ± 3/32 in	1200 ± 2.4 mm
Length, standard[1]	8 ft, 9 ft 10 ft ± 1/4 in	2400, 2700, 3000 ± 6 mm	8 ft, 9 ft 10 ft ± 1/4 in	2400, 2700, 3000 ± 6 mm
Weight, nominal[2]	1.9 lbs/ft^2	9 kg/m^2	2.5 lbs/ft^2	12 kg/m^2
Bending radius (lengthwise)[3]	6 ft	1829 mm	8 ft	2400 mm
Racking strength[4] Dry (ultimate – not design value)	> 540 lbs/ft	> 7808 N/m	> 654 lbs/ft	> 9544 N/m
Flexural strength, parallel[5] (4 ft / 1200/1219 mm – weak direction)	≥ 80 lbf[1]	≥ 356 N[1]	≥ 100 lbf	≥ 445 N
Compressive strength	min. 500 psi	min. 3445 kPa	min. 500 psi	min. 3445 kPa
Humidified deflection[5, 1]	< 1/4 in	< 6 mm	< 1/8 in	< 3 mm
Permeance[6]	> 23 perms	> 1300 ng/Pa·s·m^2	> 17 perms	> 970 ng/Pa·s·m^2
Water absorption[7]	GM-H1			
Mould Resistance[8]	10 (the highest level of performance for mould resistance under ASTM D3273)			
Thermal Conductivity[9]	0.93 Btu·in/hr·°F·ft^2	0.13 W/m·K	1.10 Btu·in/hr·°F·ft^2	0.16 W/m·K
R-Value[9]	0.50 ft^2·°F·hr/Btu	0.089 m^2·K/W	0.55 ft^2·°F·hr/Btu	0.097 m^2·K/W
Combustibility[10, 11]	Non-combustible. A1 in accordance with BS EN 13501-1:2018 + A1:2009			
Linear expansion with change moisture[12]	6.25 x 10^{-6} in/in/%RH	11.7 x 10^{-6} mm/mm/%RH	6.25 x 10^{-6} in/in/%RH	11.7 x 10^{-6} mm/mm/%RH
Surface burning characteristics (per ASTM E84 or CAN/ULC-S102): flame spread/smoke developed	0/0			
Coefficient of thermal expansion[13]	8.5 x 10^{-6} in/in/°F	15.3 x 10^{-6} mm/mm/°C	8.5 x 10^{-6} in/in/°F	15.3 x 10^{-6} mm/mm/°C

Notes:

1 Specified values per ASTM C1177.

2 Approximate weight for design and shipping purposes. Actual weight may vary based on manufacturing location and other factors.

3 Double fasteners on ends as needed.

4 Tested in accordance with ASTM E72.

5 Tested in accordance with ASTM C473.

6 Tested in accordance with ASTM E96 (dry cup method).

7 Tested in accordance with EN 15283-1:2008 + A2:2009.

8 Tested in accordance with ASTM D3273.

9 Tested in accordance with BS EN 12664:2001.

10 As defined and tested in accordance with ASTM E136 or CAN/ULC S114.

11 As defined and tested in accordance with BS EN 13501-1:2008 + A1:2009.

12 As stated by Gypsum Association GA-235.

13 Tested in accordance with ASTM E228-85.

Quality Assurance

Georgia-Pacific's Dens® products have been approved by various certification programs including British Board of Agrément (BBA), FM Approvals, Intertek and Underwriter's Laboratories (UL). They meet the requirements of Harmonized Technical Specifications EN 13501, EN 15283, ASTM C1177 and C1658 Standard Specification for Glass Mat Gypsum panels as tested to ASTM C473. They are manufactured under a unique Quality Management System (QMS) meeting several third-party certification and product listing program requirements, such as ICC-ES, FM Approvals, Intertek, UL/ULC as well as the British Board of Agrément. Our products are subject to their follow-up surveillance programs.

The Quality Management System is continually reviewed and improved as needed from both internal and external requirements mandate. The QMS exceeds the general structure and guidelines of an ISO management system. It includes a rigorous Management of Change (MOC) process thereby ensuring a consistent product.

BBA Certification

DensGlass® Sheathing from Georgia-Pacific is certified by the British Board of Agrément (BBA), Certificate number: 21/5958, for use on the external face of inner leaf walls of steel or timber frame constructions as non-load-bearing external sheathing boards.

BBA APPROVAL INSPECTION TESTING CERTIFICATION
CERTIFICATE 21/5958

NHBC Standards 2021

In the opinion of the BBA, DensGlass® Sheathing Boards, if installed, used and maintained in accordance with Certificate Number 21/5958, can satisfy or contribute to satisfying the relevant requirements in relation to NHBC Standards, Part 6 Superstructure (excluding roofs), Chapter 6.2 External timber framed walls and Chapter 6.10 Light steel framed walls and floors.

Recommendations and limitations for use

The following recommendations and limitations are important to ensure the proper use and benefits of DensGlass® Sheathing. Failure to strictly adhere to such recommendations and limitations may void the limited warranty provided by Georgia-Pacific Gypsum for such product.

For additional warranty details, please go to www.buildgp.com/warranties.

- DensGlass® Sheathing is resistant to normal weather conditions, but it is not intended for immersion in water. Cascading roof / floor water should be directed away from the sheathing until appropriate drainage is installed.
- Avoid any condition that will create moisture in the air and condensation on the exterior walls during periods when the exterior temperature is lower than the interior. The use of forced air heaters creates volumes of water vapour which, when not properly vented, can condense on building materials. The use of these heaters and any resulting damage is not the responsibility of Georgia-Pacific Gypsum. Consult heater manufacturer for proper use and ventilation.
- When DensGlass® Sheathing panels are used in slanted wall applications, that portion of the wall must be temporarily protected from the elements by the use of a water-resistant barrier prior to application of the cladding. Do not allow water to pond or settle on sheathing. Also, exposed wall ends such as those that may be found in parapets must be covered to prevent water from infiltrating the cavity.
- Georgia-Pacific Gypsum does not warrant and is not responsible or liable for the performance of any cladding, coating, finishes, coverings or other materials or exterior systems applied over DensGlass® Sheathing. The suitability and compatibility of any system is the responsibility of the system manufacturer or design authority.
- Brackets to support heavy cladding such as tile and marble should not be installed over DensGlass® Sheathing.
- Do not laminate DensGlass® Sheathing to masonry surfaces; use furring strips or framing.
- DensGlass® Sheathing is not intended for roof applications. For roof applications, consult our DensDeck® Roof Board brochure.
- DensGlass® Sheathing is not intended for interior or exterior tile applications. For interior tile applications, consult our DensShield® Tile Backer brochure.
- DensGlass® Sheathing should not be used in lieu of plywood where required.
- Do not apply DensGlass® Sheathing below ground.
- For all installations, design details such as fasteners, sealants and control joints per system specifications must be properly installed. All horizontal and vertical joints between boards as well as openings and penetrations must be properly flashed and sealed (see p5). Failure to do so will void the warranty. Consideration should also be given, depending on exposure, risk etc. to sealing fasteners.
- Do not use DensGlass® Sheathing as a base for nailing or mechanical fastening. Fasteners should be flush to the face of the board, not countersunk.
- When DensGlass® Sheathing is used in panelised construction, install panels so panel joints are tightly butted together on both horizontal and vertical joints.
- Georgia-Pacific recommends as a best practice that cut sheathing edges in panelised construction should be sealed. DensDefy™ Liquid Flashing has been determined to be a product that is effective in sealing cut sheathing edges and has been tested internally for adhesion to Georgia-Pacific sheathing products.

Delivery, Handling and Storage

All materials shall be delivered in original bundles bearing the brand name, if any; applicable standard designation; and name of the manufacturer or supplier for whom the product is manufactured. Any plastic packaging used to wrap gypsum panel products for shipment is intended to provide temporary protection from moisture exposure during transit only and is not intended to provide protection during storage after delivery. Such plastic packaging shall be removed immediately upon receipt of the shipment.

WARNING: Failure to remove protective plastic shipping covers can result in condensation which can lead to damage, including mould.

- All materials should be kept dry.
- Gypsum panel products shall be neatly stacked flat with care taken to prevent sagging or damage to edges, ends and surfaces.
- Gypsum panel products and accessories shall be properly supported on risers on a level platform, and fully protected from weather, direct sunlight exposure, and condensation.
- Gypsum panel products shall be stacked flat rather than on edge or end.

WARNING: Gypsum panel products stacked on edge or end can be unstable and present a serious hazard in the workplace should they accidentally topple.

Refer to Handling Gypsum Panel Products, GA-801, for proper storage and handling requirements. Reference: Application and Finishing of Gypsum Panel Products, GA-216, Gypsum Association.

CE Marking

Georgia Pacific has taken the responsibility of CE marking DensGlass ® Sheathing in accordance with harmonised European Standard BS EN 15283-1 : 2008.

CE

DensGlass® Sheathing is distributed in the UK by:

RCM Roofing and Cladding Materials Ltd

Unit 25-26 Rosevale Rd, Parkhouse Industrial Estate West, Newcastle-under-Lyme, Staffordshire ST5 7EF

TELEPHONE: 0800 612 4662 **EMAIL:** info@rcmltd.biz **TECHNICAL ENQUIRIES:** technical@rcmltd.biz

https://www.buildingboards.co.uk/

GP Gypsum LLC
133 Peachtree Street, N.E. | Atlanta, Georgia 30303

WARRANTIES, REMEDIES AND TERMS OF SALE

For current warranty information, please go to www.buildgp.com/warranties and select the applicable product. All sales by Georgia-Pacific are subject to our Terms of Sale available at www.buildgp.com/tc.

UPDATES AND CURRENT INFORMATION

The information in this document may change without notice. Visit our website at https://buildgp.com/gypsum/ for updates and current information.

CAUTION: For product fire, safety and use information, go to buildgp.com/safetyinfo or email: DensInternational@GAPAC.com

HANDLING AND USE

CAUTION: This product contains fibreglass facings which may cause skin irritation. Dust and fibres produced during the handling and installation of the product may cause skin, eye and respiratory tract irritation. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts, trousers and eye protection. Use only in well-ventilated areas. Wear eye / face protection. Face masks to EN 149 FFP2. Wear eye / face protection. Eye protection to BS EN 166.

FIRE SAFETY

CAUTION: Passing a fire test in a controlled laboratory setting and/or certifying or labelling a product as having a one-hour, two-hour, or any other fire resistance or protection rating and, therefore, as acceptable for use in certain fire rated assemblies/systems, does not mean that either a particular assembly/system incorporating the product, or any given piece of the product itself, will necessarily provide one-hour fire resistance, two-hour fire resistance, or any other specified fire resistance or protection in an actual fire. In the event of an actual fire, you should immediately take any and all actions necessary for your safety and the safety of others without regard for any fire rating of any product or assembly/system.