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**Title:**

CLASSIFICATION  
OF REACTION  
TO FIRE  
PERFORMANCE  
IN ACCORDANCE WITH  
EN 13501-1: 2007

**Notified Body No:**

0833

**Product Name:**

DensDeck, DensArmor Plus,  
DensGlass, Shaftliner,  
DensElement

**Report No:**

185630

**Issue No:**

1

**Prepared for:**

Georgia-Pacific Gypsum LLC  
2861 Miller Road  
Decatur, GA 30035  
United States of America

**Date:**

5th February 2010

1. Introduction

This classification report defines the classification assigned to “the following families of coated glass fibre faced and backed gypsum lining boards, DensDeck, DensArmor, DensGlass, DensGlass Shaftliner and DensElement in accordance with the procedures given in EN 13501-1:2007

2. Details of classified product

2.1 General

The following families of coated glass fibre faced and backed gypsum lining boards, DensDeck, DensArmor, DensGlass, DensGlass Shaftliner and DensElement are deemed as being suitable for construction applications, excluding flooring and linear pipe thermal insulation.

2.2 Product description

The following families of coated glass fibre faced and backed gypsum lining boards, DensDeck, DensArmor, DensGlass, DensGlass Shaftliner and DensElement are fully described below and in the test reports provided in support of classification listed in Clause 3.1.

General description		A coated glass fibre faced gypsum lining board product	
Product references		DensDeck, DensArmor Plus, DensGlass, Shaftliner, DensElement	
Manufacturer of composite		Georgia Pacific Gypsum, Savannah plant	
Overall Thickness of composite		8mm -25mm (1/4 inch to 1 inch)	
Weight per unit area of composite		5.8 — 19.0 kg/m <sup>2</sup> (1200-3875 lb/msf)	
Product configuration		<ul style="list-style-type: none"> <li>• White Carbonate acrylic liquid coating (front face) (not used on DensDeck)</li> <li>• Fibreglass facer (Front)</li> <li>• Gypsum Core</li> <li>• Fibreglass facer (Back)</li> <li>• Yellow Carbonate acrylic liquid coating (reverse face) (not used on DensDeck)</li> </ul>	
Complete panel product	Carbonate acrylic liquid coating (White)	Product reference	“Face mat coating”
		Generic type	Carbonate acrylic
		Colour	White
		Number of coats	One
		Application rate per coat	
		Application method	See Note 1
		Curing process (duration and temperature)	See Note 1
		Flame retardant details	See Note 2
		BFief description of manufacturing process	See Note 1
	Fibreglass facer (Front)	General description	Fiberglass face mat
Generic type		Tissue mat comprising fiberglass and acrylic resin	

	Trade name / product reference	
	Weightier unit area	0.0879 — 0.5371kg/m*(18 -110 lb/msf)
	Colour	White
	Generic type of resin	Acrylic
	Trade name / product reference of resin	See Note 4
	Amount of resin	25%
	Flame retardant details	See Note 2
	Brief description of manufacturing process	Wet laid process
Gypsum Core	Product reference	"Gypsum core"
	Generic type	Gypsum
	Detailed description / composition details	Gypsum and proprietary additives
	Name of manufacturer	Georgia Pacific Gypsum
	Weight per unit area	5.8 — 18.9 kg/m* (1200 - 3875 lb/msf)
	Flame retardant details	See Note 2
	Brief description of manufacturing process	See Note 3
Fibreglass facer (Back)	General description	Fiberglass back mat
	Generic type	Tissue mat comprising fiberglass and acrylic resin
	Trade name / product reference	
	Thickness	(0.84 mm) 0.33 inch
	Weightier unit area	0.0976 — 0.537kg/m* 20 -110 lb/msf)
	Colour	White
	Generic type of resin	Acrylic
	Trade name / product reference of resin	See Note 1
	Amount of resin	
	Flame retardant details	See Note 2
	Brief description of manufacturing process	Wet laid process
Carbonate acrylic liquid coating (Yellow)	Product reference	"Back mat coating"
	Generic type	Carbonate acrylic
	Colour	Yellow
	Number of coats	One
	Application rate per coat	
	Application method	See Note 1
	Curing process (duration and temperatures)	see Note 1
	Flame retardant details	See Note 2
	Brief Description of manufacturing process	See Note 1
Brief description of manufacturing process of the composite product		Gypsum core is blended and formed between the coated facer mats on both the front and reverse of the panel

Note 1: The sponsor was unable to provide this information.

Note 2: The sponsor of the test has confirmed that no flame retardant additives were utilised in the production of the product / component.

Note 3: The sponsor was unwilling to provide this information

3. Test reports/extended application reports & test results in support of classification

3.1 Test reports/ extended application reports

Name of Laboratory	Name of sponsor	Test reports/extended application report Nos.	Test method / extended application rules
Exova warringtonfire	Georgia-Pacific Gypsum LLC	WF 184828	EN ISO 1182
Exova warringtonfire	Georgia-Pacific Gypsum LLC	WF 184289, 186309, 186310, 186613, 186700, 189544	EN ISO 1716
Exova warringtonfire	Georgia-Pacific Gypsum LLC	WF 188065	EN 13823
Exova warringtonfire	Georgia-Pacific Gypsum LLC	WF 185631	EN TS 15117

3.2 Test results

Test method & test number	Parameter	No. tests	Results	
			Continuous parameter - mean (m)	Compliance parameters
EN ISO 1182	AT	5	2.0	Compliant
	Am		19.33	Compliant
	tf		Nil	Compliant

EN ISO 1716	PCS 2.0 MJ/kg (1)	3	0.091—0.222 M3/kg	Y			
	PCS s 2.0 MJ/ kg (2)						
	PCS < 1.4 MJ/m2 (3)						
	PCS 2.0 MJ/kg (4)						
	Total						
	Face Coating				3	0 — 1.01MJ/m <sup>2</sup>	Y
	Glass Mat Face				3	0.55-0.81 MJ/m <sup>2</sup>	Y
Core	3	0 M3/kg	Y				
Glass Mat Back	3	0.382-	Y				
Back Coating	3	0.632MJ/m <sup>d</sup>	Y				
		3	0 -0.912 M3/m <sup>2</sup>	Y			
EN 13823	FIGRA 0.2MJ	3	0	Compliant			
	THR 600S				0.44	Compliant	
	LSF				No	Compliant	
	SMOGRA				0	Compliant	
	TSP 600S				27.0	Compliant	

#### 4. Classification and field of application

##### 4.1 Reference of classification

This classification has been carried out in accordance with clause 8 of EN 13501-1:2007

##### 4.2 Classification

The following families of coated glass fibre faced and backed gypsum lining boards, DensDeck, DensArmor, DensGlass, DensGlass Shaftliner and DensElement in relation to their reaction to fire behavior are classified:

**Reaction to fire classification: A1**

#### 4.3 Field of application

This classification is valid for the following end use applications:

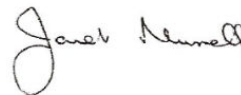
- i) Wall or Ceiling Applications used over an air gap not less than 40mm and over a substrate with a density equal to or greater than  $475\text{Kg/m}^3$  a thickness of more than 10mm and having a fire performance of D-s2,d0 or better.

This classification is also valid for the following product parameters:

Product thickness	8 -25mm (1/4 to 1 inch)
Product weight per unit area	5.8 — 19.0 kg/m <sup>2</sup> (1200-3875 lb/msf)
Product Coatings	No variation
Product construction	Any combination of core fiberglass and coating.

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APPROVED



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Certification Engineer  
Technical Department

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**Janet Murrell**  
Technical Manager  
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