



## Glasroc H Storm™-Sheathing Board

### NEPD NO: 227E

Approved according to ISO14025, 8.1.4: 07.11.2012  
Valid until: :11.11.2016

*Svein Fossdal*

### Verification of data:

Independent verification of data and other environmental information has been carried out by Senior Research Scientist Anne Rønning in accordance with ISO14025, 8.1.3

### Declaration compiled by:

Vikki Holme, Rosie Ryan and Jon Gjerlow

*Anne Rønning*

### PCR:

NPCR010 Building boards

### About EPD:

EPDs from program operators other than the Norwegian EPD Foundation may not be comparable. A critical review has been carried out by Michaël Medard (Saint-Gobain) in accordance with ISO 14044 clause 6



### Manufacturer:

Gyproc AS  
Habornveien 59, 1630 Gamle Fredrikstad, Norway  
Organisation no. NO 951699403  
ISO 14001: NS-EN-ISO 14001:2004 Certificate 008  
EMAS: EMAS Registered  
Place of manufacture: Fredrikstad, Norway  
Market area: Denmark, Norway, Sweden, Finland.

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### Product information:

Scope:	Cradle to grave
Year of study:	2012
Expected service life of building:	60 years
Service life of product:	60 years
Thickness:	9.5 mm
Functional unit (FU):	m <sup>2</sup> installed board with expected service life of 60 years

### Product description:

Glasroc H Storm sheathing board is a gypsum-based composite board with a water-resistant core and glass fibre mats fully embedded beneath a thin layer of gypsum. It has a water repellent and UV-protective acrylic coating on the exterior face.

Glasroc H Storm is a safe solution for sheathing during construction as well as during the building's lifetime. The board can be exposed to the weather for 12 months which allows greater flexibility in the construction process before the permanent cladding. It has best moisture resistance class, H1, according to standard EN 15283-1:2008, with a water absorption less than 5%. It shows good dimensional stability and demonstrated good mould resistance. During the period of use it is airtight, diffusion open, provides fire protection and good sound insulation. Glasroc H Storm is not designed for indoor use and should not be surface treated.

### Product specification:

Material	Part %	Quantity (kg(FU))
Gypsum	90	6.83
Additives	10	0.77
SUM	100	7.6kg

### Environmental Indicators:

Climate Change – Global Warming	2.84	Kg CO2 equivalent
Energy use	68.9	MJ
Recycled materials	40	%
Water absorption (Classification according to EN 15283-1:2008)	H1	

## **Introduction**

The information is provided by Gyproc AS

## **1 Characterisation of construction product**

### **1.1 Definition of functional unit (FU)**

By considering the functions of this product, the functional unit can be described as follows:

***1m<sup>2</sup> of installed building board with a specified function and an expected average service life of 60 years (packaging included).***

Note: The LCA includes the use of screws to install building board; these are therefore included in the assessment.

### **1.2 Data type and quantity for the calculation of the functional unit (FU)**

**Quantity of the construction product, packaging and accessories contained in the functional unit is based on the Typical Life Time (TLT) of 60 years.**

Construction product: The product in question is Glasroc H Storm whose main function is as an exterior wall lining system.

- Quantity of board for 1 m<sup>2</sup> of product: 7.6 kg
- Thickness of board: 9.5 mm
- Surfacing: Glass fibre mat embedded in the surface, covered with acrylic water based coating

Packaging for the distribution and transportation:

- Wooden pallets
- Polyethylene plastic stretch hood

Product used for the implementation (nature and quantity):

- Screws (8 screws/m<sup>2</sup> each 1.25g)

Consumption of chemicals on the Norwegian observation list: None

Scrap rate during the implementation and maintenance: (including replacement part if any): 5%

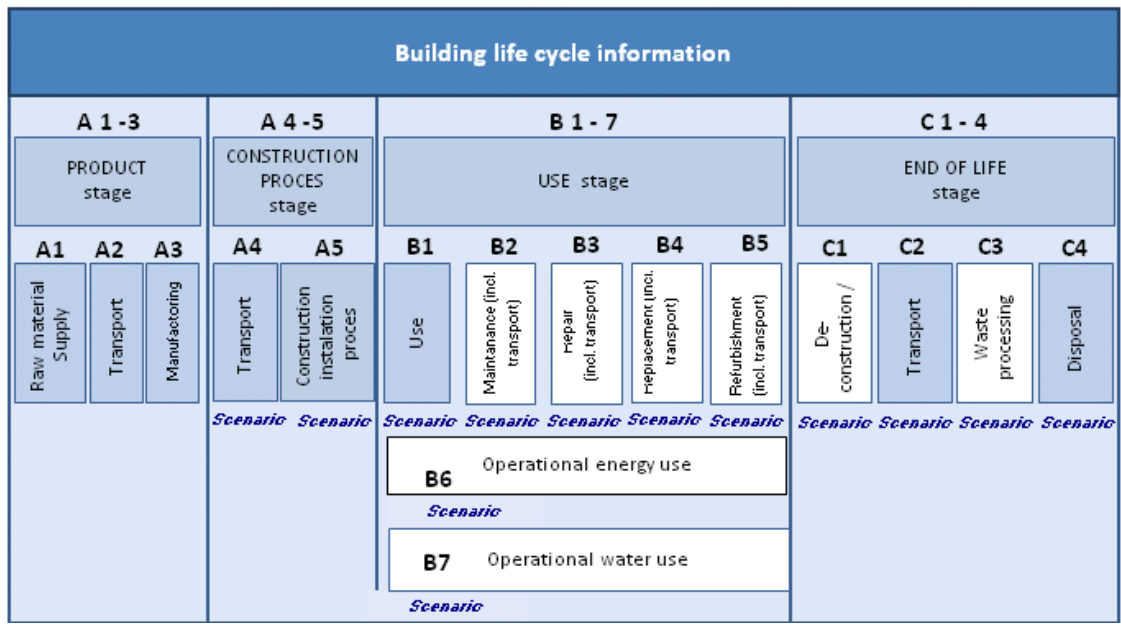
Justification of the information provided:

- The data contained within this EPD has been provided by the production site.

### **1.3 Technical characteristics & useful information not included in the functional unit**

Glasroc H Storm contains 90% gypsum in a blend of Flue Gas Desulphurised Gypsum (DSG), scrap material and natural gypsum. Recycled gypsum (DSG + scrap) makes up 40% of the gypsum blend.

# 1.4 System boundary



Included

Excluded

## 2 Representative environmental impacts of board Glasroc H Storm in relation with NPCR 010

All these impacts are reported or calculated in accordance with NPCR 010 §8.2 and § 9.4 of the Saint-Gobain PCR and the data below are derived from the process of life cycle analysis. The units of reference are defined by NPCR 010 §5.1 and the totals per functional unit (FU) are related to the Typical Life Time (TLT) of the product i.e. 60 years.

N°	Flow	Units	Production	Transport	Implementation	Utilisation	End of life	Total per FU
1	Consumption of energy resources:							
	Total primary energy	MJ	66.35	2.29	0.24	0.00	0.0063	68.9
	Renewable energy	MJ	3.30	0.0060	0.0179	0.00	0.0000	3.33
	Non-renewable energy	MJ	63.04	2.28	0.22	0.00	0.0063	65.5
2	Resource depletion (ADP)	kg antimony equivalent (Sb)	0.0254	0.0011	0.0001	0.00	0.0000	0.0265
3	Water consumption	Litre	17.00	0.2046	0.3651	0.00	0.0006	17.6
	<u>Solid waste:</u>							
	Recovered waste (total)	kg	1.3260	5.860E-07	0.0012	0.00	1.710E-09	1.33
	<u>Eliminated waste:</u>							
4	Dangerous waste	kg	0.0050	5.166E-05	0.0000	0.00	1.504E-07	0.0050
	Non dangerous waste	kg	0.0496	3.791E-05	0.4010	0.00	7.60	8.1
	Inert waste	kg	0.7004	8.745E-05	0.0000	0.00	2.554E-07	0.701
	Radioactive waste	kg	1.197E-04	3.466E-05	1.566E-07	0.00	1.010E-07	0.000155
5	Climate change	kg CO <sub>2</sub> equivalent	2.64	0.18	0.02	0.00	0.00	2.84
6	Atmospheric acidification	kg SO <sub>2</sub> equivalent	0.0188	0.0016	0.0001	0.00	0.0000	0.0204
7	Air pollution	m <sup>3</sup>	231.76	18.44	2.21	0.00	0.05	252
8	Water pollution	m <sup>3</sup>	6.19	0.2167	0.0306	0.00	0.5500	6.98
9	Destruction of stratospheric ozone layer	N/A	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>	N/A <sup>1</sup>
10	Formation of photochemical ozone	kg ethylene equivalent	0.0012	0.0002	1.207E-06	0.00	6.594E-07	0.00140
Another indicator (non-standard NF P01-010)								
11	Eutrophication	g PO <sub>4</sub> <sup>3-</sup> equivalent	0.97	0.0026	0.0266	0.00	0.4958	1.49415

Electricity model: Production of electricity in Norway (2004), predefined in TEAM (CO<sub>2</sub> factor: 1.03954 g/MJ).

See "Guide to Reading" Note 1

### **3 For more information.....**

#### **3.1 Traceability**

The manufacturer which has participated in this study is: Gyproc AS

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Contact for the primary data (headquarters): Vikki Holme ([vicki.holme@saint-gobain.com](mailto:vicki.holme@saint-gobain.com))

Life Cycle Inventories were made in 2012 and aggregation/calculation of data is done by TEAM™ software version 4.0.

#### **READING GUIDE**

Reading example:  $-9.0 \text{ E } -03 = -9.0 \times 10^{-3}$