

SINTEF confirms that

## Glasroc H Storm

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

### 1. Holder of the approval

Saint-Gobain Byggevarer AS  
 Sandstuveien 68  
 0680 Oslo  
[www.gyproc.no](http://www.gyproc.no)

### 2. Product description

Glasroc H Storm is a plaster board intended for use as a wind barrier. The board forms part of a wind barrier system which also includes Glasroc Sealing Tape, Gyproc T60/9 profile and Gyproc QSTW or QSBW screws.

The boards have glass fiber material incorporated in the surfaces and a core of impregnated and glass-fibre-reinforced plaster. The front of the board has been treated with acrylate paint. The board has straight edges with glass-fibre matting folded around the long sides.

The boards are 9.5 mm thick and are delivered in standard widths of 900 and 1200 mm and standard lengths of 2700 and 3000 mm. Other lengths can also be supplied. The dimension tolerances are  $\pm 0.4$  mm in thickness,  $\pm 0.3$  mm in width and  $\pm 0/-4$  mm in length. The grammage is 7.6 kg/m<sup>2</sup>. Fig. 1 shows a principle diagram of the wind barrier system. The tape consists of reinforced polyethylene foil.

### 3. Fields of application

The wind barriers system Glasroc H Storm with Glasroc Sealing Tape, Gyproc T60/9 profile and Gyproc QSTW (or QSBW) screws can be used as a wind barrier on walls with frames of timber or steel with external ventilated cladding.

Glasroc H Storm can also be used in a conventional performance with timber laths on vertical board joints with external ventilated cladding.

### 4. Properties

Product properties for Glasroc H Storm and the wind barrier system are given in Table 1.

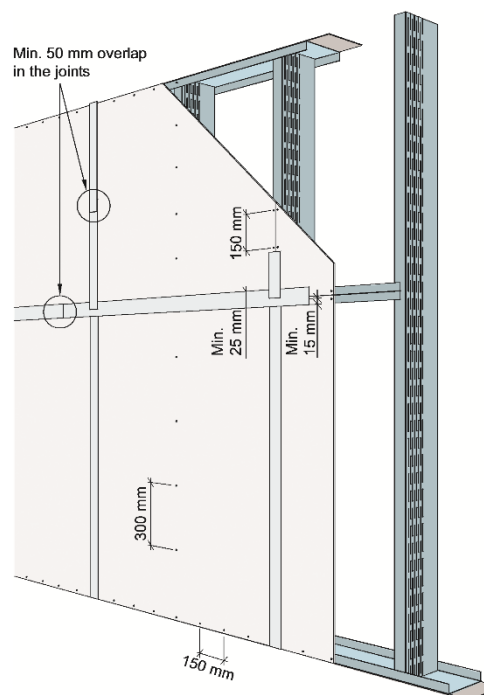


Fig. 1  
 Glasroc H Storm mounted on studs of steel sections and with horizontal Gyproc T60/9, joint profile

#### Load-carrying capacity

When wall height boards with a width of 1,2 m is fixed to a wall of timber framework along all four edges, as indicated in section 6, the boards can be regarded to provide satisfactory wind bracing for small houses of up to two stories. For houses with short bracing walls, the wind bracing capacity should be checked. For a two-story house, the wind bracing capacity should be checked in cases where the length of the latitudinal walls in the ground floor, subtracted openings, are less than 2.5 times the façade width.

#### Sound insulation

The plasterboards may be used for acoustical lining applications in lightweight, external walls for sound insulation purposes. See SINTEF Building Design Guide No. 523.422 *Lydisolerende egenskaper for yttervegger* for further information

Table 1 Product properties for Glasroc H Storm

Property	Method EN	DoP <sup>1)</sup>	Control limit <sup>2)</sup>	Unit
Water vapour resistance $s_d$ -value	ISO 12572	0,1	$\leq 0,1$	m
Air tightness material	12114	-	0,05	m <sup>3</sup> /m <sup>2</sup> h50Pa
Air tightness construction <sup>6)</sup> - Tape on all joints - Only laths <sup>4)</sup> - Without laths <sup>5)</sup>	12114	-	0,15 <sup>3)</sup> 0,7 <sup>3)</sup> 1,35 <sup>3)</sup>	m <sup>3</sup> /m <sup>2</sup> h50Pa
Rain tightness construction - Tape on all joints - Only laths <sup>4)</sup>	1027	-	Tight at 450 <sup>3)</sup> Tight at 100 <sup>3)</sup>	Pa
Flexural strength Longitudinal Transversal	520	Pass	$\geq 409$ $\geq 160$	N
Water absorption	520	-	H1	-
Shear strength	520	240	$\geq 240$	N
Water tightness material	12467	-	20 mm water column in 24 hours <sup>3)</sup>	-

<sup>1)</sup> Declaration of performance

<sup>2)</sup> Control limit for production control

<sup>3)</sup> Result from type testing

<sup>4)</sup> Vertical joints with laths and without tape. Horizontal joints with T60/9 profile and strip of wind barrier, see Fig. 5 og Fig. 7.

<sup>5)</sup> Vertical joints with out laths and without tape. Horizontal joints with T60/9 profile and strip of wind barrier, see Fig. 5 og Fig. 7.

<sup>6)</sup> Tested with timber stud with dimension 48 mm

#### Properties related to fire

Glasroc H Storm satisfies fire resistance class A2-s1, d0 in accordance with EN 13501-1 when mounted on an underlay of wooden material with a minimum density of 350 kg/m<sup>3</sup> or on underlays with at least fire resistance class A1 or A2-s1,d0.

#### Thermal insulation

The thermal resistance for the boards are 0.036 m<sup>2</sup>K/W according to EN ISO 10456:2007 +NA:2010. This value can be used when calculating the heat transmission coefficient (U value) of structures.

#### Durability

The durability for the wind barrier system is considered to be satisfactory based on laboratory testing after accelerated artificial climate ageing. The wind barrier system has been exposed for accelerated artificial ageing in 4 weeks in climate simulator according to NT Build 495. The durability for the tape Glasroc Sealing Tape's adhesion properties to the wind barrier board Glasroc H Storm is determined based on accelerated artificial ageing 4 weeks in climate simulator followed by 24 weeks of heat ageing according to EN 1296.

Local conditions on the site affect the actual climate stress, which in turn depends on the amount of driving rain. Experience shows that heavy rain showers, and gusts of wind, pose a great danger of water intrusion and damage to the wind barrier system. Therefore, it is generally recommended to install exterior cladding as soon as possible after the wind barrier has been installed.

In places with a low driving rain load (less than 200 mm of driving rain per year), it is considered that the wind barrier system can be uncovered for up to one year before external cladding is installed. It is up to the contractor to assess the driving rain load, and local conditions, in each individual construction project, see also Byggforskserien (SINTEF Building Research Design Guides) 451,031 *Klimadata for dimensjonering av regnpåkjennning* (Climate data for dimensioning of rain stress).

## 5. Environmental aspects

#### Substances hazardous to health and environment

The product contains no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT or vPvB substances.

#### Effect on indoor environment

The product is not regarded as emitting any particles, gases or radiation that have a perceptible impact on the indoor climate, or to have any significant impact on health.

#### Waste treatment/recycling

The product shall be sorted as plaster-based waste. The product shall be delivered to an authorized waste treatment plant for material recovery.

#### Environmental declaration

An environmental declaration (EPD) has been worked out according to EN 15804 for Glasroc H Storm. For complete documentation see EPD no. NEPD-1262-406-EN, <http://epd-norge.no>.

## 6. Special conditions for use and installation

### *Design considerations*

The boards are attached to a timber frame or sheet metal profiles.

When the boards are used for wind bracing as described in clause 4, board edges must be supported of timber frame with studs in dimension minimum 45 mm.

It is in general recommended to cover the wind barrier with an external cladding as soon as possible. However, it is considered that the wind barrier system can remain uncovered, as indicated in clause 4, provided that the building is not subjected to large amounts of driving rain. It is also a prerequisite that all joints are protected with tape and that all board edges (for instance along the bottom, sides and top of the wall, and around wall penetrations) is protected against rain.

### *Installation*

Gyproc H Storm is mounted on studs spacing maximum 600 mm apart. The boards are mounted on a frame with screws of type Gyproc QSTW or QSBW at intervals of 150 mm in all board joints. In the centre panels of the boards, the screws are 300 mm apart. The screw heads must be flush with the surface of the board. The distance from the screws to the edge of the boards should be at least 15 mm on the short edges and at least 10 mm on the long edges. For contact with base, windows/doors and roof, and for bushings, see the relevant instructions in SINTEF Building Design Guides.

To fix Glasroc H Storm to steel sections with a thickness greater than 1.0 mm, QSBW screws should be used.

When using Glasroc Sealing Tape, the surface of the boards must be dust-free and dry; see also separate assembly instructions for Glasroc Sealing Tape.

### *Vertical joints with tape*

Glasroc Sealing Tape with a width of 60 mm is applied centred over the joint; see Fig. 2.

### *Vertical joints with laths*

Timber laths with dimensions 23 x 48 mm fixed with screws 250 mm apart; see Fig. 3.

### *Horizontal joints supported by a frame*

Glasroc Sealing Tape with a width of 100 mm is applied in a centred position over the joint; see Fig. 4. As an alternative to the tape, a 150 mm wide wind barrier fabric can be installed centred over the joint behind the overlying board and outside the underlying board. Protruding wind barrier fabric below the board can be fastened with tape or laths. See Fig. 5.

### *Horizontal joints without support of frame*

Gyproc T60/9 Profile is used under board joints for horizontal joints without support from frame. The edges of the boards are screwed onto the profile with Gyproc QSTW alt. QSBW screws at intervals of 150 mm. Glasroc Sealing

Tape with a width of 100 mm is applied centred over the joint; see Fig. 6. As an alternative to the tape, 150 mm wide wind barrier fabric can be installed centred over the joint behind the overlying board and outside the underlying board. Protruding wind barrier fabric below the joint can be fastened with tape or laths. See Fig. 7.

### *Transport and storage*

The boards must be covered during transportation. The boards must be stored dry and on a flat surface

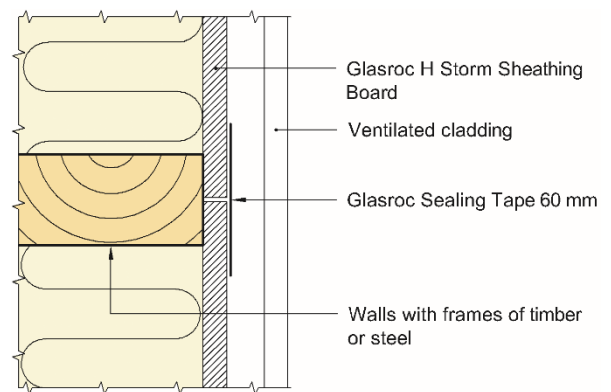


Fig. 2  
Vertical joints with 60 mm Glasroc Sealing Tape applied centred over the joint

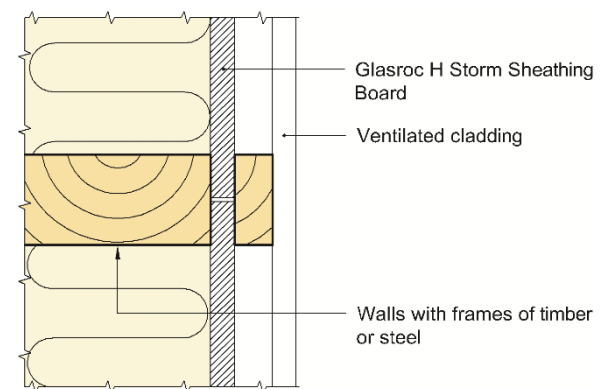


Fig. 3  
Vertical joints with lath for Glasroc H Storm. Lath is fastened with screws c/c 250 mm

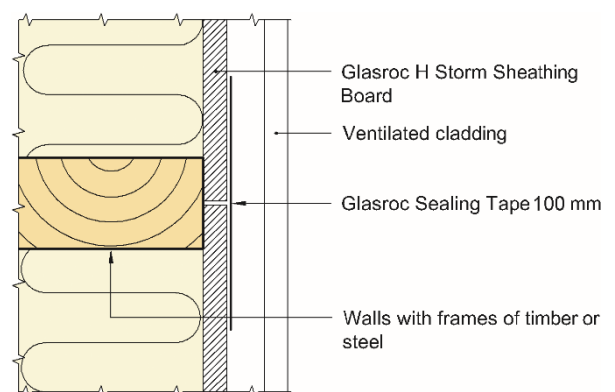


Fig. 4  
Horizontal joints with support with 100 mm Glasroc Sealing Tape applied centred over the joint

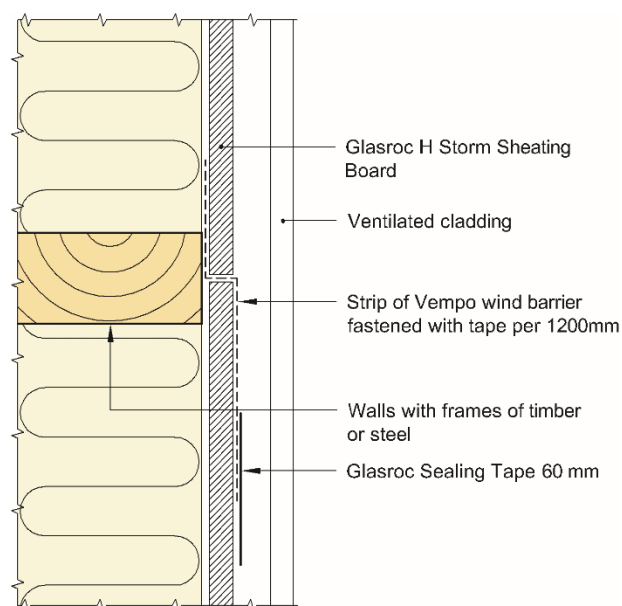


Fig. 5  
Horizontal joint with support where a wind barrier fabric has been mounted behind an overlying board

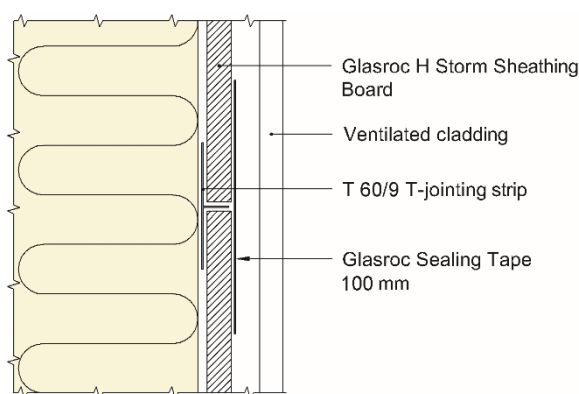


Fig. 6  
Horizontal joints without support with 100 mm Glasroc Sealing Tape applied centred over the joint

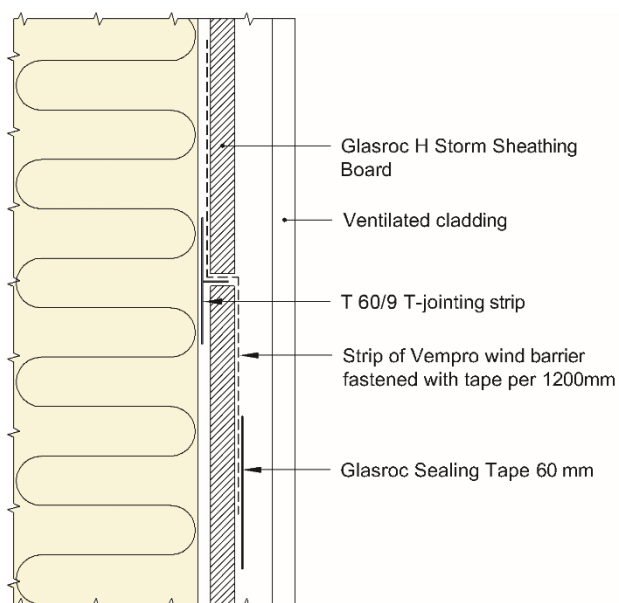


Fig. 7  
Horizontal joint without support where a wind barrier fabric has been mounted behind the overlying board

## 7. Factory production control

The product is produced by Saint-Gobain Byggevarer AS, Sandstuveien 68, 0680 Oslo, Norge

The holder of the approval is responsible for the factory production control in order to ensure that the product is produced in accordance with the preconditions applying to this approval.

The manufacturing of the product is subject to continuous surveillance of the factory production control in accordance with the contract regarding SINTEF Technical Approval.

Saint-Gobain Byggevarer AS, Gyproc\_has a quality management system that is certified pursuant to EN ISO 9001:2008.

## 8. Basis for the approval

- SINTEF Building and Infrastructure Report 3D1189 dated 28.04.2011. (Luftgjennomgang [Air leakage])
- SP Technical Research Institute of Sweden Report PX 13971-2 dated 08.07.2011. (Brann [Fire])
- SP Technical Research Institute of Sweden Report FX 112602 dated 01.08.2011. (Vanndampmotstand [Water vapour resistance])
- Danish Technological Institute. Report 443857 dated 25/08/2011 (Skjærstyrke [Shear strength])
- SINTEF Building and Infrastructure Report 3D126002 dated 27.09.2011. (Luftgjennomgang og slagregnstetthet [Air leakage and impermeability to heavy rain])
- SINTEF Building and Infrastructure Report 3D1260 dated 08.06.2012 (Bestandighet Gyproc H Storm [Durability Gyproc H Storm])
- SINTEF Building and Infrastructure. Report 3D1260 dated 28.06.2012 (Vannabsorpsjon [Water absorption])
- SINTEF Building and Infrastructure Report 3D132901 dated 31.08.2012. (Vanntetthet [Water impermeability])
- SINTEF Building and Infrastructure Report 3D132901 dated 31.08.2012 (Luftgjennomgang materiale [Air transmission material])
- SINTEF Building and Infrastructure. Report 3D126001 dated 05.11.2012 (Bestandighet teip [Durability tape])
- SINTEF Building and Infrastructure Report 3D130501 dated 22.12.2012. (Luftgjennomgang og slagregnstetthet [Air leakage and impermeability to heavy rain]).

## 9. Marking

The product must be labelled with the manufacturer's name, product name and manufacturing date. The labelling can be directly on the boards or on the packaging. The boards can also be marked with the approval mark for SINTEF Technical Approval No. 20251.

The product is CE marked in accordance with EN 15283-1.

The approval mark for SINTEF Technical Approval No. 20251 may also be used.



Approval mark

**10. Liability**

The holder/manufacturer has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402

for SINTEF Building and Infrastructure

Hans Boye Skogstad  
Approval Manager