

SINTEF Building and Infrastructure confirms that

Aquaboard-Scan Air-Tec

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

Etex Nordic A/S
Kometvej 36
DK-6230 Røddekro
www.siniat.nu

2. Product description

Aquaboard-Scan Air-Tec is a battened, ventilated facade system for seamless, rendered facades. The system consists of the gypsum based board Aquaboard, fixed to a lath system of wood or steel, see Fig. 1. The render is applied to the Aquaboard boards in two layers, one ground layer (usually called base coat) reinforced with a fibre mesh reinforcement and one final layer (finishing coat).

Detailed performance of the system is described in *Standard konstruksjonsdetaljer for Aquaboard-Scan Air-Tec tilhørende SINTEF Teknisk Godkjenning 20456* (structural details collection). The version of the structural details collection is archived at SINTEF, and is a formal part of the Approval.

The approval does not cover the wall construction behind the ventilated cladding (laths, wind barrier, insulation etc.). The approval comprises the following products:

- Aquaboard facade boards
- Strikotherm Fibre Mesh, reinforcement of glassfibre
- Strikotherm GW-Flex Base Coat, ground layer (thickness 4-5mm)
- Strikotherm Silicone Plaster, finishing coat/final layer (thickness 1.5-3mm)
- Strikotherm GW Plus, bonding and foundation mortar joint compound

Aquaboard are 12,5 mm thick boards based of calcium sulphate dihydrate with nonwoven glass fibers and water repellent additive encased within a synthetic facer. The boards have a width and length of 1200 x 2400 mm. Nominal weight is 10.8 kg/m². The render has to be applied to the front side of the board.

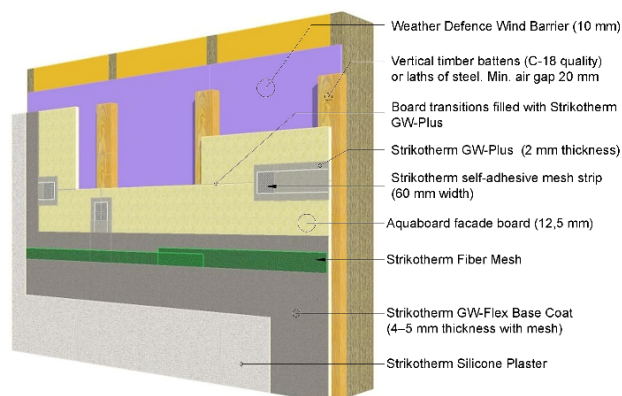


Fig. 1
Aquaboard-Scan Air-Tec

Strikotherm Fibre Mesh is used to reinforce the base coat render. The net is made of alkali fiberglass with a mesh width of 5 mm and a minimum weight of 155 g/m². The fibre mesh is delivered on rolls of 1 m width (50 m²).

GW-Flex Base Coat ground layer is a polymeric render delivered in 25 kg buckets. The base coat render has to be applied in one single layer of 4 -5 mm thickness with a spatula according to the manufacturer instructions. Consumption for these resin based plasters is 4,0 kg/m², depending on thickness (4-5 mm).

Strikotherm Silicone Plaster finishing coat is applied as final layers and is based on silicone resin and acryl dispersion. Consumption approximately 2,5 kg/m².

Strikotherm GW Plus is a cement based bonding and foundation mortar for use in the joints to achieve extra security. Especially recommended when the temperature is low during the building period.

The finishing coat is delivered in 25 kg buckets which are blended, but have to be stirred before use. The finishing coat has to be applied in minimum thickness of 1,5 mm, but the thickness of the final layer depends on the grain size in the finishing coat.

The following accessories can be delivered:

- *Strikolith Renderpro PAR-20 Start Profile PSA 0 & 23 & 30 and PEA 0 & 16*
- *Strikolith Corner Profile Renderpro EP-0 with 200 mm mesh on each side*

All profiles are made of virgin material PVC.

3. Fields of application

Aquaboard-Scan Air-Tec can be used on buildings in fire class 1, 2 and 3 as specified in the Norwegian regulation on technical requirements for building works (TEK), both for new buildings and rehabilitation and insulation of existing walls.

4. Properties

The rendering system has satisfactory strength and rigidity in relation to all relevant wind loads when the capacity is controlled and the boards are installed as specified in section 6.

Mean measured pull through resistance for SINIAT WAB 41 screws in Aquaboard facade boards is 0,9 kN/screw. Characteristic pull through resistance is 0,75 kN. Design pull out capacity, when using a safety factor of 2,5 is 0,30 kN/screw.

Strength and rigidity for Aquaboards are given in Table 1.

Table 1

Product properties for Aquaboards facade board (mean values)

Properties	Value
MD Bending strength in dry condition, EN 15 283-1	750 N
E-modulus, EN 15 283-1	3900 N/mm ²
Change in length, EN 318 20°C / 30 - 100 % RH	0.22 mm/m
Thermal expansion coefficient	0,01 mm/m C° *

*Generic data

Reaction to fire

Aquaboard facade boards with thickness min. 12,5 mm has class A2-s1,d0, in accordance with EN 13501-1. The outer surface of the Aquaboard-Scan Air-Tec has reaction to fire classification B-s1,d0, in accordance with EN 13501-1. The classification is valid on a substrate with reaction to fire classification A2 or better.

Durability

The durability against climate exposure for the system is evaluated based on artificial ageing in 28 days (large scale test specimen) and 10/12/18/48 weeks (small scale specimens) in climate carousel according to NT Build 495:2000. The durability for the system is considered to be satisfactory.

5. Environmental aspects

Substances hazardous to health and environment

The products contain 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 soil, surface water and ground water

The leaching properties of the products are evaluated to have no negative effects on soil or ground water.

Waste treatment/recycling

The product shall be sorted as wood, gypsum, residual waste or other appropriate waste fractions on the building/demolition site. The product shall be delivered to an authorized waste treatment plant for material recovery, energy recovery or disposal.

Environmental declaration

No environmental declaration (EPD) has been worked out for the products.

6. Special conditions for use and installation

Design considerations

The facade system has to be installed on vertical battens in a stretcher bond pattern ensuring aeration and drainage. Lath spacing should generally be max. c/c 600 mm. The air gap should be minimum 20 mm wide, but is depending of the height of the building. Timber battens should be of wood quality minimum C18. Thermal insulation inside the facade system must be protected by a wind barrier.

Aquaboards have to be installed butt jointed in a stretcher bond pattern. The gap between the boards shall be 3 mm maximum. The boards are fixed to the battens with SINIAT WAB 41 screws with a distance between the screws of 250 mm. Distance from center screw head to the board edge should be at least 15 mm. WAB 25 og 41 mm screws shall be used for fixing in steel laths.

Number of fastening points should be verified and dimensioned in relation to the actual wind load, the screw capacity, capacity of the substrate and pull through resistance for the Aquaboards.

The board joints shall be sealed with Strikotherm self-adhesive mesh.

For an extra security for the board joints, Strikotherm self-adhesive mesh can be embedded in 2 mm GW Plus plaster. GW Plus has to be cured for a minimum of 24 hours before plastering.

The reinforcement mesh (Strikotherm Fibre Mesh) has to be embedded in the base coat layer in such way that the mesh is positioned approximately in the middle of the base coat (Strikotherm GW-Flex) layer.

The total thickness of the render (Strikotherm GW-Flex Base Coat + Strikotherm Silicone Plaster) shall be minimum 5,5 mm.

Special construction details

Aquaboard-Scan Air-Tec shall be performed according to construction details developed by Strikolith and which is adapted to the individual building project. For details of window insertion, see Building Research Design Sheets 523.701 *Mounting of windows in walls of wooden framework*.

7. Factory production control

Aquaboard is produced by Siniat Ottmarsheim, Zone Industrielle, F-68490 Ottmarsheim, France.

Strikotherm renders, and accessories for the rendering system, are produced by Strikolith B.V. Lissenveld 9-13, 4941 VK, Postbus 52, 4940 AB Raamsdonksveer, The Netherlands.

The holder of the approval is responsible for the factory production control in order to ensure that the products are 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.

8. Basis for the approval

The approval is based on the following documentation:

- SINTEF report 102009082-4, dated 14.07.2016, Artificial climate aging of Aquaboard-Scan Air-Tec ventilated cladding with Aquaboard as substrate – final report (artificial ageing)
- Siniat TDC report 20140717-WSR-IH-0495-WAB Render-synt-v2, dated 06-10-2014 (material properties for Aquaboard/pull through resistance)
- SP report 4P04617, dated 26.06.2014 (resistance to water penetration for Aquaboard)
- MPA BAU report 080246.1 – Re, dated 18.04.2008 (fire classification Aquaboard)

- Efectis Nederland BV, classification report 2016-Efectis-R000445, dated May 2016 (reaction to fire, facade system)
- Efectis Nederland BV, test report 2016-Efectis-R000444, dated May 2016 (reaction to fire, facade system)
- Efectis Nederland BV, test report 2016-Efectis-R000443, dated May 2016 (reaction to fire, facade system)
- SINTEF report 102009082-4 2017 00274 Report Aquaboard-Scan Air-Tec ventilated cladding with GW Plus in the joints, dated 11.08.2017 (artificial ageing)

9. Marking

The pallets, and the different buckets of plasters are marked with the name of manufacturer, product name and manufacturing date. Aquaboard facade boards is CE marked in accordance with EN 15 283-1 and is marked with product name and manufacturing date.

The ventilated cladding system can also be marked with the approval mark for SINTEF Technical Approval No. 20456.



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