SINTEF Technical Approval

TG 2002

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Valid until 01.03.2031
Provided listed on
www.sintefcertification.no

SINTEF confirms that

Hunton Vindtett / Hunton Bitroc

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

Hunton Fiber AS
Postboks 633
2810 Gjøvik
www.hunton.no

2. Product description

Hunton Vindtett is a bitumen impregnated porous fibreboard intended for use as a wind barrier sheathing for houses. The product is available in different thicknesses and have a bitumen-impregnated coating on one side that makes the boards airtight. The boards are sold in the Norwegian market under the product name Hunton Vindtett. In some export markets, the boards are sold under the name Hunton Bitroc.

The standard dimensions are shown in Table 1. Other formats can be provided on request.

Table 1
Standard dimensions for Hunton Vindtett

Property	Test method EN	Value	Unit	Tolerance
Thickness	324-1	12 / 19	mm	± 1,2 mm
		25		± 1.8 mm
Width	324-1	1200 1220	mm	± 2 mm/m max. ± 5 mm
Length	324-1	2440 / 2650 / 2680 / 2740 / 3000	mm	± 2 mm/m max. ± 5 mm

3. Fields of application

Hunton Vindtett is intended for use as wind barrier sheathing in thermally insulated timber frame constructions (see fig. 1 and 2).

Hunton Vindtett can be used as wind barrier on walls in hazard class 1-6 with fire class 1 in buildings up to three floors if each dwelling unit has direct access to the ground level (not via stairs or staircases). For other use, the fire safety must be documented through a fire technical analysis.

4. Product performance

Material- and construction properties

Hunton Vindtett satisfies the requirements for softboards type SB.HL according to EN 622-4. Material and construction properties are shown in table 2.

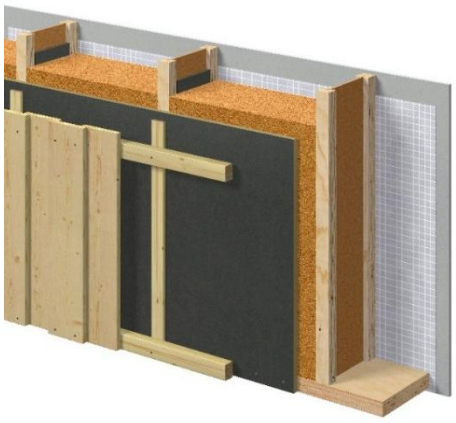

Fig. 1
Illustration for a typical wall setup with Hunton Vindtett
Figure: Hunton Fiber AS

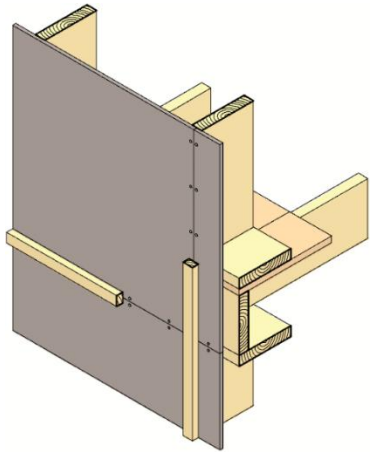

Fig. 2
Detail for Hunton Vindtett used as wind barrier sheathing

Table 2
Material- and construction properties for Hunton Vindtett

Property	Test method EN	Hunton Vindtett 12 mm		Hunton Vindtett 19 mm		Hunton Vindtett 25 mm		Unit
		DoP [1]	Control limit [2]	DoP [1]	Control limit [2]	DoP [1]	Control limit[2]	
Air permeability material	12114	0.5	≤ 0.5	0.5	≤ 0.5	0.5	≤ 0.5	m^3/m^2h50Pa
Air permeability construction	12114	-	≤ 0.7 [3]	-	≤ 0.7 [3]	-	≤ 0.7 [3]	m^3/m^2h50Pa
Water vapour resist. s_d-value 50/93% RH 23 °C	ISO 12572	-	≤ 0.25 [3]	-	≤ 0.35 [3]	-	≤ 0.45 [3]	m
Thermal conductivity λ_d	12667	0.049	≤ 0.049 [3]	0.050	≤ 0.050 [3]	0.050	≤ 0.05	W/mK
Absorption of condensation	NT Build 304	-	1.3 [3]	-	1.3 [3]	-	1.3 [3]	kg/m^2
Water tightness 20 mm water column for 24 hours	12467	-	Passed	-	Passed	-	Passed	-
Bending strength (vertical to main surface)	310	1.4	≥ 1.4	1.3	≥ 1.3	1.1	≥ 1.1	N/mm^2
E-module (vertical to main surface)	310	140	≥ 140	140	≥ 140	120	≥ 120	N/mm^2
Bracing parallel to wall axis (F_{max} in main surface)	594	-	4.68 [4]	-	7.35 [4]	-	7.35 [4]	kN
Bracing parallel to wall axis (R in main surface)	594	-	243 [4]	-	228 [4]	-	228 [4]	N/mm
Bracing parallel to wall axis 2.4 m high wall with - straight edges - rebated edges	NT Build 362	 - -	 3.3 [5] 2.0 [5]	 - -	 [5] [5]	 - -	 [5] [5]	kN/m
Moisture movement	318 (30-90 % RH)	-	≤ 0.3 [3]	-	≤ 0.3 [3]	-	≤ 0.3 [3]	%
Thickness swelling	317	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6	≤ 6	%

[1] Manufacturers Declaration of Performance, DoP
[2] Control limit specify values that the product must satisfy during internal factory production control and audit testing
[3] Result from initial type testing
[4] Characteristic values shown according EN 14358
[5] Recommended design capacity for ultimate limited state in case of wind. Same value can be used for all thicknesses.

Load-bearing capacity
The values given for side bracing in Table 2 can be used to design the required number of whole slabs, in minimum width 1200 mm, with straight edges, and fixed along all four sides and the middle as specified in Clause 6, "Conditions of Use", for use as wind bracing.

Properties related to fire
Hunton Vindtett has a reaction to fire class E according to EN 13501-1

Airtightness construction
Hunton Vindtett is sufficiently airtight to protect the insulation for cooling from wind, but it is not so tight that it makes it possible to meet all current requirements for leakage figures, n_{50}, given in TEK, and in the Norwegian passive house standards, without the help of the vapour barrier layer.

Durability
Hunton Vindtett has been assessed to have satisfactory resistance on the basis of testing before and after accelerated artificial climate ageing in the laboratory. Hunton Windproof must be protected against the direct influence of UV radiation in the finished construction. Hunton Windproof shall, without undue delay, be covered as soon as possible after installation on the roof and walls.

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.

Waste treatment/recycling
The product shall be sorted as residual waste on the demolition site. The product shall be delivered to an authorized waste treatment plant for energy recovery.

Environmental declaration
An environmental declaration (EPD) has been worked out according to EN 15804 for Hunton Undertak. For complete documentation see EPD no. NEPD-4037-3072, www.epd-global.com

6. Conditions of use

Design considerations
For structural use and to achieve sufficient wind tightness the distance between studs, rafters, beams etc must not exceed c/c 600 mm. All panel edges shall be supported. In case of transversal joints or penetrations without support from main construction, additional support must be implemented.

Satisfying wind tightness in joints, on studs with width less than 48 mm, can only be achieved with the use of rebated edges as shown in fig. 3.

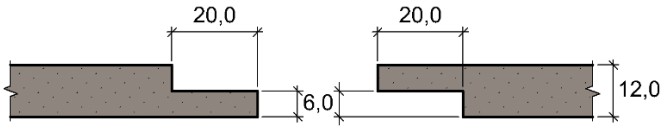

Fig. 3
Rebated edge at long sides of Hunton Vindtett (12mm)

The panels shall only be applied behind a rain screen such as a cladding in the finished construction. All joints should be clamped by battens as shown in fig. 2 to ensure long term wind tightness.

Installation
Hunton Vindtett need to be installed with the bitumen treated, dark brown, wind tight layer facing outwards.

Panels need to be fastened with slate nails, using c/c 100 mm maximum nail spacing along the edges and c/c 250 mm at intermediate supports. Recommended lengths are shown in table 3. Alternatively, corrosion-protected and coated staples may be used, provided the staples have a minimum wire-diameter of 1.8 mm, a 20 mm long back, and a length of 2.5 times thickness of the board. Staples back shall be positioned parallel to board-edges. Nails and staples must be fixed with the head placed plane with the board surface, without penetrating the wind tight layer.

Table 3
Recommended nail lengths for different thicknesses of Hunton Vindtett

Thickness mm	Slate nail dimensions [1] mm
12	2.8 x 45
19	2.8 x 45
25	2.8 x 45

[1] Head diameter for nails minimum 8 mm

The panel joints must be positioned centrically on the support to obtain adequate wind tightness, and to ensure that the nails achieve the necessary distance from the edges.

The wind barrier shall be installed in accordance with the product's installation instructions, and otherwise used in accordance with the principles shown in SINTEF Building Research Design Guides 523.255 *Yttervegger av bindingsverk, Varmeisolering og tetting*, 520.308 *Brannmotstand for tak og yttervegger i lave bygninger* and 520.322 *Brannmotstand for vegger av tre, mur og betong*.

Transport and storage
The boards must be stored dry and be dry when assembled.

7. Product and factory production control

Hunton Vindtett is produced by Hunton Fiber AS, NO-2810 Gjøvik, Norway

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

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

Hunton Fiber AS, Gjøvik has a quality management system certified by "Det Norske Veritas" according to EN ISO 9001, certificate nr. 18372-2008-AQ-NOR-NA.

8. Basis for the approval

The product's characteristics are documented in reports issued by independent bodies. The technical documentation serves as the basis for SINTEF's product assessment with respect to the product standard EN 13986 and EN 622-4, the guidelines for SINTEF Technical Approval, and recommendations as outlined in SINTEF Building Research Design Guides.

9. Marking

Each panel needs to be marked with the batch number. The wrapping needs to be marked according to EN 13986 and EN 622-4 with producer's name, product name/quality and time of production.

Hunton Vindtett is CE-marked accordance with EN 13986 and EN 622-4.

The approval mark for SINTEF Technical Approval TG 2002 may also be used.

10. Liability

The holder/manufacturer has sole product liability according to **current** law. Claims can only be made against SINTEF under general law or other special grounds.

for SINTEF

Ola Asphaug
Approval Manager