

SINTEF Technical Approval

TG 2002

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 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
 P.O.Box 633
 NO-2810 Gjøvik
www.hunton.no

2. Product description

Hunton Vindtett is a porous fibreboard impregnated with bitumen intended for use as wind barrier sheathing for houses. The product is available in several different thicknesses. A special bituminous layer on the outer surface makes the boards airtight. In Norway the product is sold with the product name Hunton Vindtett. In some export markets the product is sold with the product name Hunton Bitroc.

Standard measures are given in table 1. Other measures can be delivered on request.

Table 1
 Standard measures for Hunton Vindtett

Property	Test method EN	Value	Unit	Tolerance
Thickness	324-1	12 / 19	mm	± 1,2 mm
		25		± 1,8 mm
Width ¹⁾	324-1	1200 1220 incl. rebate	mm	± 2 mm/m max. ± 5 mm
Length	324-1	2440 / 2650 2680 / 2740 / 3000	mm	± 2 mm/m max. ± 5 mm

¹⁾ Shown measure = Total measure including rebate

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 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, a fire safety analysis must be performed.

4. Properties

Material- and construction properties

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

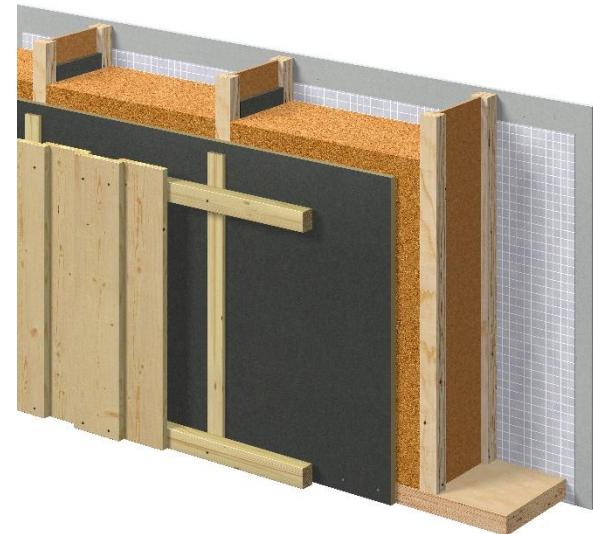


Fig. 1
 Illustration for a typical wall setup with Hunton Vindtett
 Figur: Hunton Fiber AS

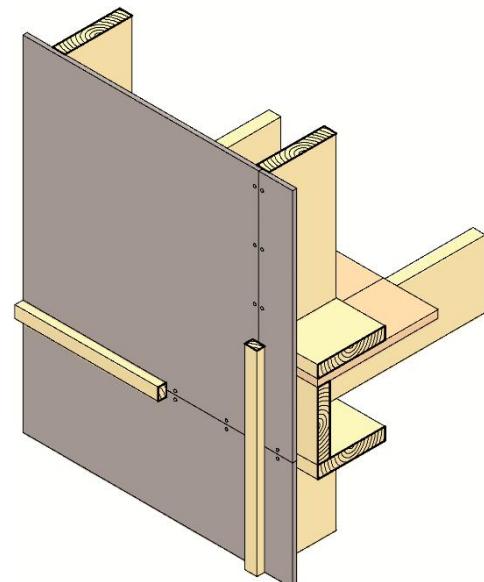


Fig. 2
 Detail for Hunton Vindtett used as wind barrier sheathing

SINTEF is the Norwegian member of European Organisation for Technical Assessment, EOTA, and European Union of Agrément, UEAtc

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Entreprise register: NO 919 303 808 MVA

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		Enhett
		DoP ¹⁾	Control- limit ²⁾	DoP ¹⁾	Control- limit ²⁾	DoP ¹⁾	Control- limit ²⁾	
Air permeability material	12144	0,5	0,5	0,5	0,5	0,5	0,5	$\text{m}^3/\text{m}^2\text{h50Pa}$
Air permeability construction	12144	-	0,7 ³⁾	-	0,7 ³⁾	-	0,7 ³⁾	$\text{m}^3/\text{m}^2\text{h50Pa}$
Water vapour resist. s_d Equivalent air layer thickness	ISO 12572 (50/93% RH 23°C)	-	0,25	-	0,35	-	0,45	m
Thermal conductivity λ_d	12667	0,049	0,049 ³⁾	0,05	0,05 ³⁾	0,05	0,05	W/mK
Absorption of condensation	NT Build 304	-	1,3	-	1,3	-	1,3	kg/m ²
Water tightness	12467	-	tight	-	tight	-	tight	-
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 Annex A (test area 2,4x2,4m)	-	4,68 ⁴⁾	-	7,35 ⁴⁾	-	7,35 ⁴⁾	kN
Bracing parallel to wall axis (R in main surface)	594 Annex A (test area 2,4x2,4m)	-	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	-	3,35 ⁵⁾ 2,05 ⁵⁾	-	5) 5)	-	5) 5)	kN/m
Moisture movement	318 (30-90 % RH)	-	$\leq 0,3^{3)}$	-	$\leq 0,3^{3)}$	-	$\leq 0,3^{3)}$	%
Thickness swelling	317	$\leq 0,6$	$\leq 0,6$	$\leq 0,6$	$\leq 0,6$	$\leq 0,6$	$\leq 0,6$	%

¹⁾ Manufacturers Declaration of Performance, DoP

²⁾ Control limit shows values, product has to 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

Design capacity given in table 2, determined based on testing according to NT Build 362, is recommended used for dimensioning against wind loads. Given capacity can be used for complete boards fixed at all four sides as described in chapter 6 "Special conditions for use and installation".

Properties related to fire

Hunton Vindtett has a reaction to fire class F according to EN 13501-1. See clause 6 for special conditions for use and installation.

Thermal insulation

Thermal conductivity for Hunton Vindtett, shown in table 2, can give a benefit to thermal insulation of the wall. The values should be used for calculation for the thermal transmission, U-value.

Airtightness construction

Hunton Vindtett is sufficiently airtight to protect the insulation for cooling from wind, but not to fulfil the requirements regarding airtightness (n_{50}) given in the building regulations, and in the Norwegian passive house standards, without installing the vapour barrier.

Durability

Hunton Vindtett has been used since ca. 1969. Experiences have shown that Hunton Vindtett has adequate durability as sheathing wind barrier material in ordinary timber frame buildings. Furthermore, is Hunton Vindtett considered to have satisfactory durability based on laboratory testing before and after accelerated artificial climate ageing. The product must be protected against direct exposure to UV radiation in the complete construction. The product must be covered as soon as possible after installation at roofs and walls, without unnecessary delay.

5. Environmental aspects

Substances hazardous to health and environment

Hunton Vindtett 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 Vindtett. For complete documentation see EPD no. NEPD-1248-400-NO, www.epd-norge.no

6. Special conditions for use and installation

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 need to be supported. In case of transversal joints or penetrations without support from main construction, additional support needs to 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.

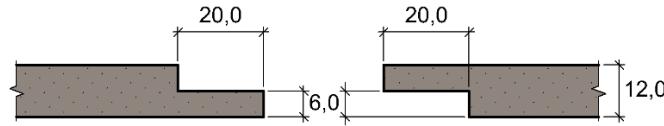


Fig. 3

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

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

Safety in case of fire

If Hunton Vindtett is used behind cladding with gaps or openings has wind barrier to achieve the same fire classification as the cladding itself. If Hunton Vindtett is used behind building integrated solar panels the use needs to be evaluated especially.

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 2. Alternatively, may corrosion-protected staples be used, provided the staples have a min. 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 55
25	2,8 x 65

¹⁾ Head diameter for nails in minimum 8 mm

The panel joints must be positioned centrally on the support to obtain adequate wind tightness, and to ensure that the nails achieve the necessary distance from the edges according to EN 1995-1-1 (Eurocode 5).

Generally, installation of Hunton Vindtett shall be performed according to SINTEF Building Research Design Guides No.:

- 523.255 Bindingsverk av tre. Varmeisolering og tetting
- 525.101 Isolerte skrå tretak med lufting mellom vindsperr og undertak
- 520.308 Yttervegger og tak i trehus med 30 minutters brannmotstand
- 520.310 Brannspredning via fasader
- 520.322 Brannmotstand for veggger

Transport and storage

The panels must be stored under dry conditions and be dry at the time of installation.

7. Factory production control

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

The holder of the approval is responsible for 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 NS-EN 9001:2008, certificate nr. 18372-2008-AQ-NOR-NA

8. Basis for the approval

The evaluation of Hunton Vindtett is based on reports owned by the holder of the approval.

The evaluation of design and technical solutions are based on recommendations given 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 in accordance with EN 13986.

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

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

A handwritten signature in blue ink that reads "Hans Boye Skogstad".

Hans Boye Skogstad
Approval Manager