SINTEF Technical Approval

TG 2190

Issued first time: 10.02.1999
Revised: 17.08.2026
Amended: 28.08.2026
Valid until 01.03.2031
Provided listed on
www.sintefcertification.no

SINTEF confirms that

Hunton Undertak / Hunton Sarket

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 Undertak is bitumen impregnated soft fibreboards intended for use as a combined roofing underlay and wind barrier under discontinuous roofing, see fig. 1. The boards are delivered in different thicknesses and have a bitumen impregnated layer on the top surface to avoid water penetration which also makes the boards wind tight. The product is sold in the Norwegian market with the product name Hunton Undertak. The product is sold in some export markets with the product name Hunton Sarket.

Standard dimensions are shown in table 1. The boards have tongue and groove at all four edges. Geometry of mounting principle is shown in fig.2.

Table 1 Standard dimensions of Hunton Undertak

Property	Test method EN	Value	Unit	Tolerance
Thickness	324-1	18 25	mm	± 1.2 mm ± 1.8 mm
Width [1)]	324-1	595	mm	± 2 mm/m max ± 5 mm
Length [1)]	324-1	2420	mm	± 2 mm/m max ± 5 mm
Density	323	260	kg/m³	-

[1)] Shown measure = total measure including tongue and groove.

3. Fields of application

Hunton Undertak can be used as combined roofing underlay and wind barrier in thermal insulated, pitched timber roofs, where the roofing is placed on battens and counter battens for ventilation and an external drainage.

Hunton Undertak is particularly applicable for pitched roofs with continuous thermal insulation from the eaves to the ridge, and for roofs with cold attics where insulation in the plane of the roof is to be installed at a later stage.

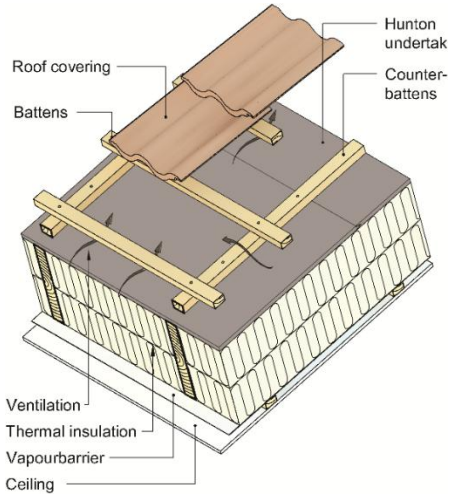

Fig. 1
Principle design of a roof with Hunton Undertak used as combined roofing underlay and breather membrane. The thermal insulation may be placed directly against the boards. Ventilation of the roof plane is provided between the boards and the roofing.

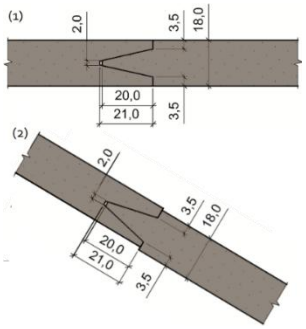

Fig. 2
Hunton Undertak. Tongue and groove profiles.
(1) Assembling of the short edges
(2) Assembling of the long edges with height difference to get better water drainage of the roof underlay

Hunton Undertak can be used as combined roofing underlay and wind barrier on roofs in buildings in risk classes 1-6 in fire classes 1 and 2. If the product is to be used in fire class 3, the fire safety must be documented through a fire technical analysis.

SINTEF Certification
www.sintefcertification.no
e-mail:
mailto:info@sintefcertification.no
Contact, SINTEF: Jan Ove Busklein
Author: Jan Vidar Moen
SINTEF AS
www.sintef.no
Entreprise register: NO 919 303 808 MVA

Table 2
Material- and construction properties for Hunton Undertak

Property	Test method EN	Hunton Undertak 18 mm		Hunton Undertak 25 mm		Enhet
		DoP [1]	Control limit [2]	DoP [1]	Control limit [2]	
Properties related to combined roofing underlay and wind barrier function						
Water tightness 1 kPa for 24 hours	1928	-	Passed	-	Passed	-
Rain tightness construction roof slope ≥ 18°	NT Build 421	-	550 [3]	-	550 [3]	Pa
Air permeability material	12114	0.5	0.5	0.5	0.5	m^3/m^2h50Pa
Air permeability construction	12114	-	0.7 [3]	-	0.7 [3]	m^3/m^2h50Pa
Water vapour resistance s_d-value 50/93% RH 23 °C	ISO 12572	-	0.35 [3]	-	0.45 [3]	m
Thermal conductivity λ_d	12667	0.050	0.050[3]	0.045	0.045 [3]	W/mK
Absorption of condensation	NT Build 304	-	1.3 [3]	-	1.3 [3]	kg/m^2
Properties related to structural functions						
Bending strength (vert. to main surface)	310	≥ 1.4	≥ 1.4	≥ 1.1	≥ 1.1	N/mm^2
E-modulus bending (vert. to main surface)	310	≥ 140	≥ 140	≥ 120	≥ 120	N/mm^2
Shear capacity - nail connections against timber	NBI-method	-	≥ 108 [4]	-	≥ 108 [4]	N
Properties related to the wood fibre material						
Moisture movement 30-90 % RF	318	-	≤ 0.3 [3]	-	≤ 0.3 [3]	%
Thickness swelling	317	≤ 6	≤ 6	≤ 6	≤ 6	%

[1] The manufacturer's Declaration of performance, DoP
[2] Control limit shows values product must satisfy during internal factory production control and audit testing.
[3] Result from type testing
[4] Design capacity calculated with k_{mod} = 0.45 (load duration: short term, climate class 2) and γ_m = 1,3

4. Properties

Product properties
Product and construction characteristics are shown in Table 2

Load-bearing capacity
Hunton Undertak can be used for wind bracing of buildings at the roof level. Shear capacity in nail connection in Table 2 shall be used to design the number of nail connections in each rafter to ensure that the washer action of the roof structure ensures an even distribution of wind loads on the structure.

Properties related to fire
Hunton Undertak has fire classification class E according to EN 13501-1.

Tread through strength
Resistance against tread through is not evaluated for Hunton Undertak.

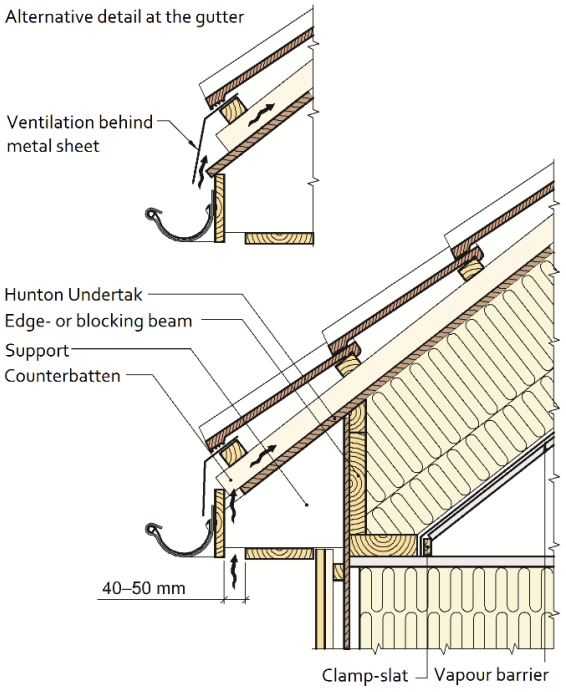

Fig. 3
Example of connection between roof and exterior wall. The joint between the boards and the edge beam or blocking must be airtight, and the boards should be fastened here with max. 100 mm nail spacing.

Durability
Hunton Undertak as combined roofing underlay and wind barrier is assessed to have satisfactory durability on the basis of testing before and after accelerated artificial climate ageing in the laboratory.

The product must be protected against the direct influence of UV radiation in the finished construction. The product must be covered without undue delay as soon as possible after installation.

Water on the suspended ceiling will penetrate into the sheet joints and cause a certain swelling that contributes to the tightness of the joints during the construction phase. However, for the sake of durability, it is assumed that the panels are used in such a way that they do not stand continuously saturated with water in the finished roof.

Airtightness
Hunton Undertak 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.

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-4038-3072, www.epd-gobal.com

6. Conditions of use

Design
Hunton Undertak has limited resistance against exposure of free water for long periods of time and shall not be used in places which are particularly exposed to driving rain and snow drift underneath the roof covering.

Roofing must be installed as soon as possible after Hunton Undertak has been installed, so that the product is not left freely exposed for a long time. Thermal insulation, vapour barrier and interior cladding must not be installed until it has been checked that the suspended ceiling is satisfactorily installed and the roof covering has been laid.

The moisture content of the rafters and counter battens must be less than 20 percent by weight when the product is installed so that the shrinkage in the wood does not weaken the clamping of the joints too much.

Hunton suspended ceilings shall also be used in accordance with the principles shown in the Building Research Series 525.102 *Isolerte skrå tretak med kombinert undertak og vinsperre*, 525.106 *Skrå tretak med kaldt loft,* 525.866 *Undertak and* 520.308 *Brannmotstand for tak og yttervegger i lave bygninger*

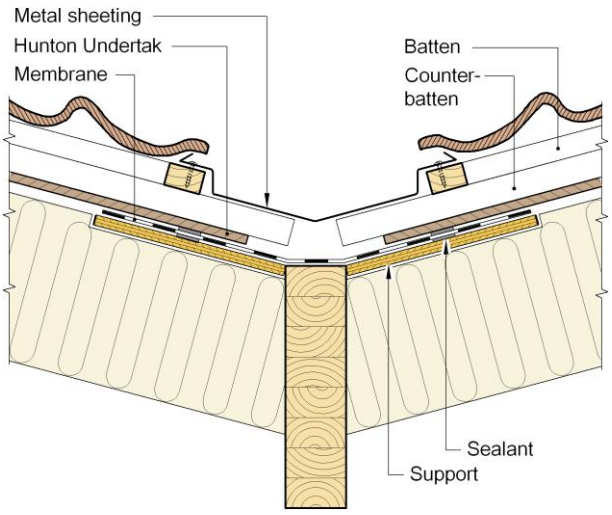

Fig. 4
A strong watertight membrane is placed on top of valley rafters before Hunton Undertak is installed.

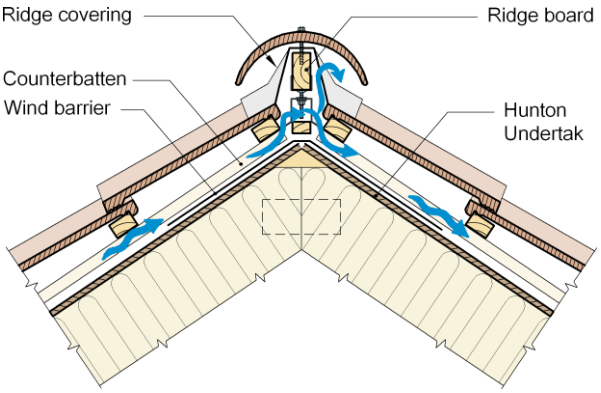

Fig. 5
Example detail at ridge. The connection between the two roof planes must be airtight. Pads are used under the ridge board in order to provide continuous ventilation across the ridge.

Maximum span for the 18 mm Hunton Undertak is c/c 600 mm.
Maximum span for 25 mm Hunton Undertak is c/c 900 mm.

Hunton Undertak used as a combined roofing underlay and wind barrier can be used for roof drops down to and including 15°.

Installation
Hunton Undertak shall be installed so that the panels form both an airtight and a water-repellent layer. The use must follow the principles shown in the Building Research series 525.102 *Isolert skrå tretak med kombinert undertak og vindsperre*

The boards are installed with the long side perpendicular to the rafters, and the end joints parallel to the roof slope shall normally be placed over a support like a truss or a rafter. The dark brown, tight bitumen impregnated layer shall be mounted to outwards.

The boards have 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 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. Nails and staples must be fixed with the head placed levelled with the board surface, not penetrating the wind tight layer.

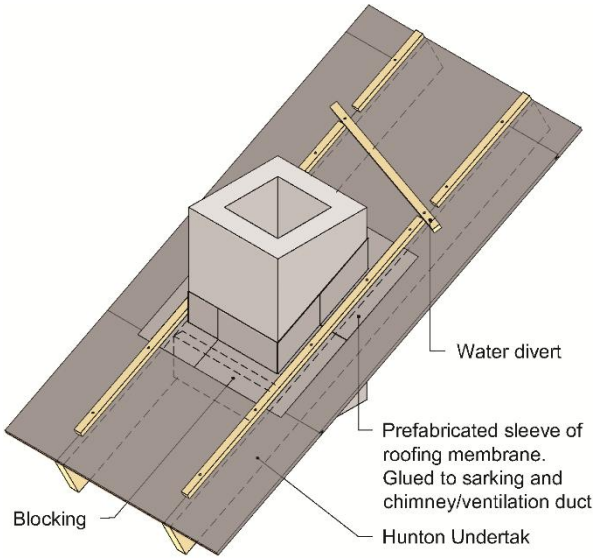

Fig. 6
Joints at openings in the roof are made tight using prefabricated sleeves which are glued to Hunton Undertak with bituminous glue. Blockings should be used around the opening to provide support for the connection details

Table 3
Recommended nail lengths for different thicknesses

Thickness mm	Slate nail dimension[1)] mm
18	2.8 x 45
25	2.8 x 55

[1)] Head-diameter of nails is minimum 8 mm

Connections and roof penetrations
Hunton Undertak must be installed with airtight transitions to the outer walls' wind barrier layer, and with airtight overlaps over ridges, eaves, and angle gutters. In addition, transitions against roof penetrations (chimneys, roof windows, ducts, etc.) must be air- and rain-tight, see SINTEF Building Research Design Guide no. 525.101 *Skrå, luftede tretak med isolerte takflater* and 525.866 *Undertak*. Penetrations must be sealed with prefabricated cuffs with butyl adhesives or with butyl-based tape or sealant. See fig. 3 – 6 for examples.

See the installation manual for examples on transitions from the purlin to the outer wall.

Roof with attic trusses
Roofs with combined roofing underlay and wind barrier are ideally suited for roofs where the vapor barrier can continuously follow the roof plane on the inside. Hunton Undertak is also applicable to roofs with attic trusses and living areas in parts of the attic. See SINTEF Building Research Design Guide no. 525.106 *Skrå tretak med kaldt loft*, 525.107 *Skrå tretak med oppholdsrom på deler av loftet*. Hunton Undertak can also be used in cold, unventilated attics, see SINTEF Building Research Design Guide no. 525.106 *Skrå tretak med kaldt loft.*

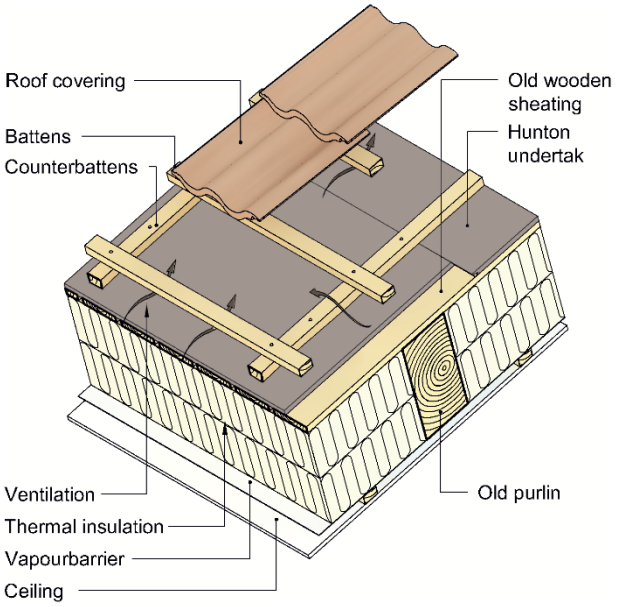

Fig. 7
Construction principle for use of Hunton Undertak in old roofs where new thermal insulation is installed. The top boards should be removed if the old timber sheathing is board on board. The old sheathing must be made airtight around the perimeter to prevent wind from blowing in between the thermal insulation and the new underlay.

Combination with wooden board sheathing
Hunton Undertak can be used as a vapor-permeable roofing underlay over a wooden board roof sheathing, for example when an older roof is being rebuilt and insulated in the roof plane, provided that the total water vapor resistance of all the layers does not exceed s_d = 0.5 m. If plywood or OSB boards are used as

sheathing, the boards must have documented water vapor resistance. When renovating old roofs, roofing made of asphalt felt must be removed.

Repair of damages
Small damages of the edge profiles may be repaired with bituminous glue to prepare the joints water- and wind tight. Broken boards or boards with major edge damages must be replaced.

Transportation and storage
The boards must be dry when they are installed to obtain tight joints. Hence the boards must be kept covered from rain, water and direct sunlight during transportation and storage until the time of installation.

7. Product and factory production control
Hunton Undertak is produced by Hunton Fiber AS, 2810 Gjøvik, Norway.

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

The manufacturing of Hunton Undertak 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 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, the guidelines for SINTEF Technical Approval, and recommendations as outlined in SINTEF Building Research Design Guides.

9. Marking

The boards have at least to be marked with their batch number. Wrapping of pallets shall be marked according to EN 13986 and EN 622-4 with name of producer, product name/quality and time of production.

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

The approval mark for SINTEF Technical Approval TG 2190 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