

SINTEF Technical Approval

TG 20648

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 Provided listed on
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SINTEF confirms that

Corotop CLASSIC, RED STRONG and tapes

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

COROTOP S.A.
 Ul. Ozimska 2a
 46-053 Chrzęstowice
 Poland
corotop.com.pl

2. Product description

Corotop CLASSIC and Corotop RED STRONG combined roofing underlay and wind barrier consist of two layers non-woven polypropylene fabric which are thermally bonded to a kernel of a vapour open microporous film. Measures and tolerances are given in Table 1.

Corotop CLASSIC combined roofing underlay and wind barrier is dark grey and labelled with its name and information regarding mounting in black letters on the upper side.

Corotop RED STRONG combined roofing underlay and wind barrier is red and labelled with its name and information regarding mounting in black letters on the upper side.

Additional products are the tapes Corotop Band and Corotop Mix.

Corotop Band is a single sided PP spun bonded tape with an acrylic dispersion as adhesive. It is delivered on rolls of 50 mm, 75 mm or 100 mm width, and 25 m length.

Corotop Mix is a double-sided acrylic dispersion tape with a reinforcement of polyester fibres but no further backing. It is delivered on rolls of 20 mm or 40 mm width, and 25 m length.

Table 1

Measures and tolerances for Corotop CLASSIC and Corotop RED STRONG according to EN 1848-2 and EN 1849-2

Property	Corotop CLASSIC	Corotop RED STRONG	Unit	Tolerance
Area weight	130	180	g/m ²	± 10%
Width	1.5 / 2.8 / 3.0		m	+1.5/-0.5%
Roll length	50		m	+5/-0%

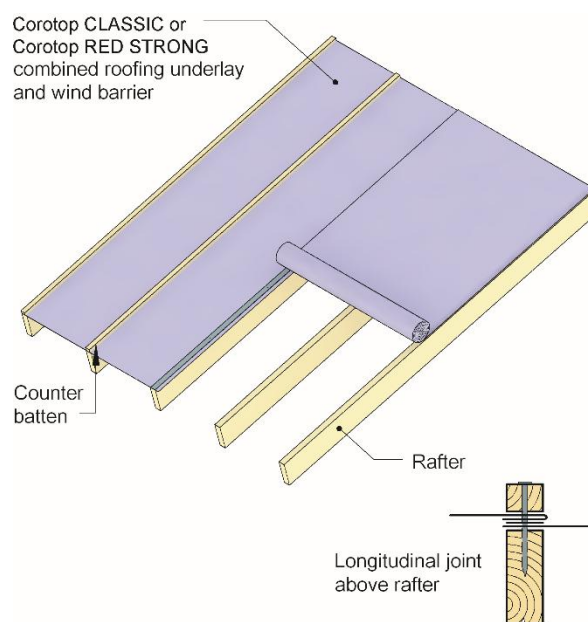


Fig. 1

Corotop CLASSIC or RED STRONG combined roof underlay and wind barriers mounted along the rafters

3. Fields of application

Corotop CLASSIC and Corotop RED STRONG can be used either as wind barriers in thermal insulated walls or as a combined roofing underlays and wind barriers in thermal insulated pitched wooden roofs with ventilated, discontinuous roofing with external drainage, see figure 1 and 2.

Corotop CLASSIC and Corotop RED STRONG used as combined roofing underlay and wind barrier are particularly suitable for roofs with continuous thermal insulation from eaves to ridge. The membranes may also be used over cold, unventilated attics, with the insulation in the ceiling.

Corotop CLASSIC and Corotop RED STRONG combined roof underlay and wind barrier may also be used on roofs with wooden board sheeting that shall be insulated between the rafters.

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

SINTEF Certification
www.sintefcertification.no
 e-mail: certification@sintef.no

Contact, SINTEF: Jan Ove Busklein
 Author: Jan Ove Busklein

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www.sintef.no
 Enterprise register: NO 919 303 808 MVA

Table 2

Material- and construction properties for Corotop CLASSIC and Corotop RED STRONG combined roofing underlay and wind barrier

Property	Method	Corotop CLASSIC		Corotop RED STRONG		Unit
		DoP ¹⁾	Control limit ²⁾	DoP ¹⁾	Control limit ²⁾	
Dimensional stability, -Longitudinal -Transversal	EN 1107-2:2001	- -	< 2 < 2	- -	< 2 < 2	%
Water tightness	EN 1928:2000	W1	W1	W1	W1	-
Air tightness material	EN 12114:2000	-	< 0.1 ³⁾	-	< 0.1 ³⁾	m ³ /(m ² h50Pa)
Air tightness construction	EN 12114:2000	-	2.45 ³⁾	-	2.45 ³⁾	m ³ /(m ² h50Pa)
Rain tightness of construction	NT Build 421	-	500 ³⁾	-	500 ³⁾	Pa
Tear resistance (nail shank) -Longitudinal -Transversal	EN 12310-1:1999	170 ±20 % 240 ±20 %	≥ 136 ≥ 192	250 ±20 % 350 ±20 %	≥ 200 ≥ 280	N
Tensile strength -Longitudinal -Transversal	EN 12311-1:1999 EN 13859-2:2014	310 ±30 % 200 ±30 %	≥ 217 ≥ 140	450 ±30 % 300 ±30 %	≥ 315 ≥ 210	N / 50 mm
Elongation at max. load -Longitudinal -Transversal	EN 12311-1:1999 EN 13859-2:2014	60 ±30 % 100 ±30 %	≥ 42 ≥ 70	65 ±30 % 130 ±30 %	≥ 45 ≥ 91	%
Water vapour resistance S _d -value	EN 12572:2016	0.02 -0.01/+0.03	≤ 0.05	0.02 -0.01/+0.04	≤ 0.06	m

¹⁾ Declared value given in the manufacturers DoP (Declaration of performance)²⁾ Control limit shows values the product should satisfy during internal factory production control and audit testing³⁾ Result from type testing

Corotop CLASSIC and Corotop RED STRONG combined roof underlay and wind barrier can be used on roofs in buildings in hazard class 1-6, fire class 1, 2 and 3, except from on roofs in fire class 3 where pre accepted performance state that all components must satisfy minimum class A2-s1,d0.

Corotop Band is used for reparation of ruptures, holes, or cuts in Corotop CLASSIC and Corotop RED STRONG.

Corotop Mix is used for sealing overlapped joints of Corotop CLASSIC or Corotop RED STRONG.

4. Properties

Material properties

Material characteristics for fresh material of Corotop CLASSIC and Corotop RED STRONG are shown in Table 2.

Properties related to fire

Corotop CLASSIC and Corotop RED STRONG have according to EN 13501-1 reaction to fire class E when installed on wood based substrate with a density of at least 338 kg/m³, and on all substrates with class A1 or A2-s1,d0.

Durability

Corotop CLASSIC and Corotop RED STRONG are considered to have satisfactory durability based on laboratory testing before and after accelerated artificial climate ageing. The products must be protected against direct exposure to UV radiation in the complete construction. The products must be covered as soon as possible after installation on roofs and walls, without unnecessary delay.

Corotop Band and Corotop Mix have been tested before and after artificial climate ageing. The tapes are considered to have satisfying adhesion against Corotop CLASSIC and Corotop RED STRONG.

Air tightness

Corotop CLASSIC and Corotop RED STRONG are sufficiently airtight to protect the insulation to avoid cooling from wind but not to fulfil the requirements regarding airtightness (n₅₀) given in the building regulations and the Norwegian passive house standards without installing the vapour barrier.

Resistance against tread through

Resistance against tread through is not evaluated for Corotop CLASSIC and Corotop RED STRONG.

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.

Waste treatment/recycling

The products shall be sorted as plastic-based material. The products shall be delivered to an authorized waste treatment plant for material and energy recycling.

Environmental declaration

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

6. Special conditions for use and installation

Design considerations

Corotop CLASSIC og Corotop RED STRONG combined roofing underlay and wind barrier should not be used at especially exposed places where experience shows that drifting snow often may be packed between the roofing and the roofing underlay, e.g., valleys and saddle areas.

The roofing should be laid as soon as possible after the product is installed, to prevent the roofing underlay from being exposed for a longer period of time. Thermal insulation, vapour barrier and ceiling should not be installed before the roofing has been laid and the roofing underlay is checked to be properly mounted.

To minimize the pressure at the overlaps due to shrinkage of the rafters the moisture content of the rafters should be less than 20 % when mounting the roofing underlay.

The product is recommended for roofs with a pitch not less than 10°.

Installation

Corotop CLASSIC and Corotop RED STRONG combined roofing underlay and wind barrier shall be mounted along the rafters from roof ridge to eaves with no horizontal joints, see figure 1. Joints along the rafters shall overlap and be continuously clamped by battens.

The product must be installed in a way that makes the product form a waterproof and windproof layer. The use shall follow the vendor's installation manual and the principles described in Building Research Design Guide no. 525.101 *Skrå, luftede tretak med isolerte takflater*, 520.308 *Yttervegger og tak i trehus med 30 minutters brannmotstand*, 525.107 *Skrå tretak med oppholdsrom på deler av loftet* and 525.866 *Undertak*.

Joints shall have minimum 50 mm overlap and all the joints, edges and connections to other components shall be clamped against sills, rafters etc. with battens. During installation, the products should be installed tightly fixed on rafters and walls to avoid folds in the membranes. All joints shall be sealed with Corotop Mix.

Connections to other components and structures

Corotop CLASSIC and Corotop RED STRONG shall be installed with airtight connections to the wind barrier of exterior walls and with airtight joints at the ridge and valleys. In addition, it is important that penetrations through the roof (chimney, roof windows, pipes etc.) are watertight and airtight. See Building Research Design Guide no. 525.101 *Skrå, luftede tretak med isolerte takflater* and 525.866 *Undertak*.

At eaves with protruding rafters the roofing underlay shall be installed around the rafters to get clamped to the top-sill of the wall together with the wind barrier of the wall. At eaves without protruding rafters, the roofing underlay can be nailed beneath the fold and then sealed to the wind barrier on top of the nogging. See also figure 3.

Battens and air ventilation

The roof shall be ventilated above the combined wind barrier and roofing underlay. The recommended batten height depends on the average air speed at the locality, insulation thickness and the length of the ventilated space, see se Byggforskserien 525.101 *Skrå, luftede tretak med isolerte takflater*.

The battens shall be mounted so they obtain good clamping effect on the overlaps of Corotop CLASSIC and Corotop RED STRONG. If different dimensions are used for the battens to obtain sufficient height the bottom batten should not be thicker than 36 mm.

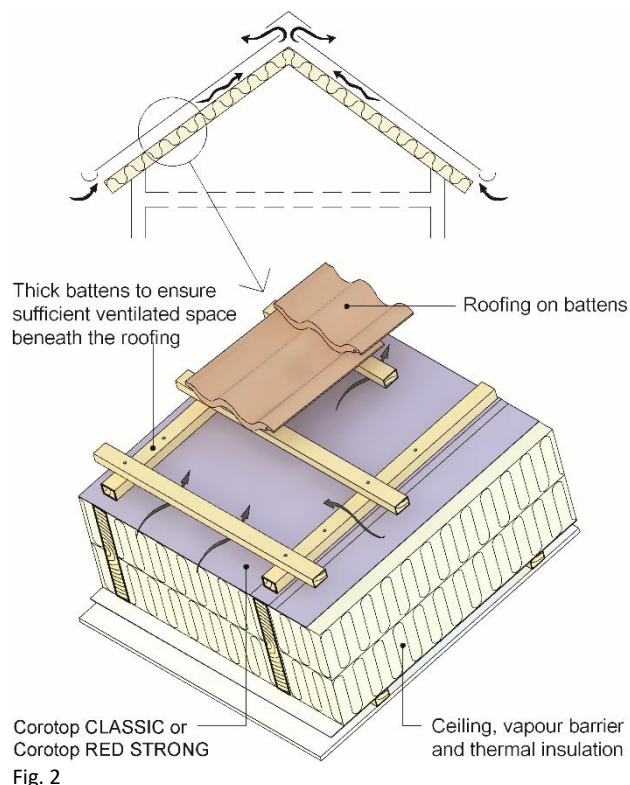


Fig. 2
Principal build-up of Corotop CLASSIC or RED STRONG as combined roofing underlay and wind barrier on sloping, ventilated wooden roof with insulated roof surface.

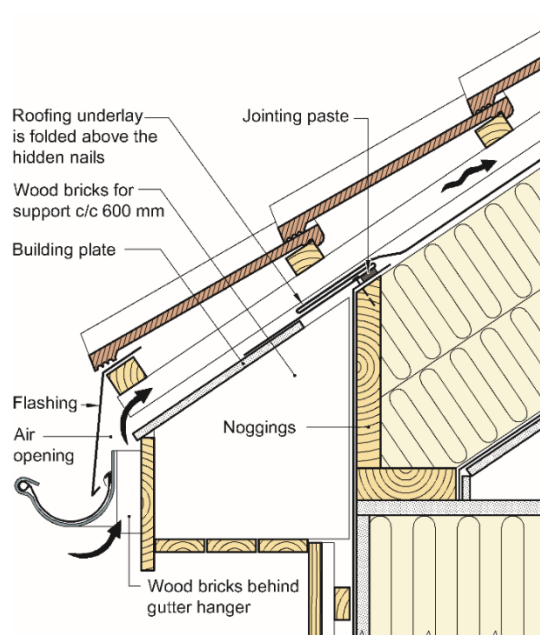


Fig. 3
Example of connection between combined roofing underlay and wind barrier in the roof in a construction without thorough rafters. The connection between combined roof underlay and wind barrier should here be sealed at the top of the nogging beam.

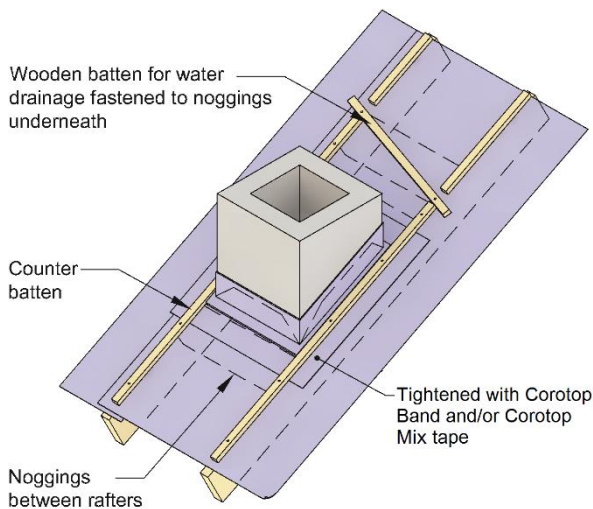


Fig. 4

Example of assembling a chimney bushing by using the combined roofing underlay and wind barrier and additional tapes.

Counter battens shall be fixed with screws in maximum distance c/c 300 mm. It is recommended to use screws which have no threads in the length of the counter battens height.

Roof with attic roof truffs

Although roofs with a combined roofing underlay and wind barrier are best suited for roofs where the vapor barrier can follow the roof plane continuously on the inside, Corotop CLASSIC and Corotop RED STRONG can also be used on roofs with attic trusses and living spaces in parts of the attic, see Building Research Design Guide no. 525.106 *Skrå tretak med kaldt loft* and 525.107 *Skrå tretak med oppholdsrom på deler av loftet*. The products can also be used in cold, unventilated attics, see Building Research Design Guide no. 525.106 *Skrå tretak med kaldt loft*.

Combination with wooden board sheeting

Corotop CLASSIC and Corotop RED STRONG may be applied as roofing underlay on wooden board sheeting. The heat insulation can be placed in contact with the wooden board sheeting provided that the total water vapour resistance is less than 0.5 m (s_d -value). When reconstructing old roofs, old roofing of bitumen must be removed before the new, vapour open underlay, counter battens, and new roofing are installed.

If using wooden sheeting made of plywood or OSB-boards, the water vapour resistance for the boards must be documented.

A batten under the counter batten is used to obtain a tight joint and to reduce the possibility for leakage along a screw or nail. This batten is important when the sarking boards are not levelled, and the joints are across the sarking boards.

Transport and storage

The products should be stored in a dry location, on a levelled, clean surface in its packaging and protected from sunlight.

7. Factory production control

Corotop CLASSIC and Corotop RED STRONG are produced by COROTOP S.A., Ul. Ozimska 2a, 46-053 Chrzastowice, Poland.

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 products and the manufacturer's system for factory production control (FPC) is subject to continuous surveillance in accordance with the contract regarding SINTEF Technical Approval.

COROTOP S.A. has a quality management system certified according to EN ISO 9001.

8. Basis for the approval

The evaluation of the products 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 roll of Corotop CLASSIC and Corotop RED STRONG are marked with product name, name of the manufacturer and date of manufacturing.

Corotop Mix and Corotop Band are marked with product name and batch number.

Corotop CLASSIC and Corotop RED STRONG are CE-marked in accordance with EN 13859-1.

Corotop CLASSIC and Corotop RED STRONG can also be marked with the approval mark for SINTEF Technical Approval TG 20648.

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

Susanne Skjervø

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Approval Manager