SINTEF Technical Approval

TG 2253

Issued first time: 25.01.2000
Revised: 25.09.2026
Amended:
Valid until 01.10.2031
Provided listed on
www.sintefcertification.no

SINTEF confirms that

Isola Roofing Shingle and Isola Roofing Shingle Premium

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

Isola as
NO-3945 Porsgrunn
Norway
www.isola.com

2. Product description

Isola Roofing Shingle and Isola Roofing Shingle Premium are flat pieces of reinforced bitumen material installed with overlap for roof waterproofing. Isola Roofing Shingle and Isola Roofing Shingle Premium have a reinforcement of non-woven glass felt coated with special bitumen on both sides. The lower part of the underside is covered with fine sand, while the upper part is coated with a plastic film. This film assures easy removal from the packaging without damaging the shingles and prevents the shingles from sticking to the wooden sheathing. Measures and tolerances are stated in table 1.

Table 1
Measures and tolerances for
Isola Roofing Shingle and Isola Roofing Shingle Premium

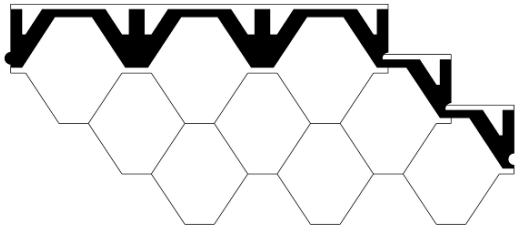
Property	Measure	Unit	Tolerance
Thickness [1]	3.0 [4] / 3.2 [5]	mm	-
Area weight [1]	4.1 [4] / 4.5 [5]	kg/m²	± 0.3
Height [2] [3]	317 / 333 /275	mm	± 3.0
Width [2]l	1000	mm	± 3.0
Weight of reinforcement	110-135	g/m²	-

[1] according to EN 1849-1
[2] according to EN 544
[3] height for the different types of shingles given in the following order: Skrå / Kuttet, Rett, Swing, Dråpe / Karat
[4] Isola Roofing Shingle
[5] Isola Roofing Shingle Premium

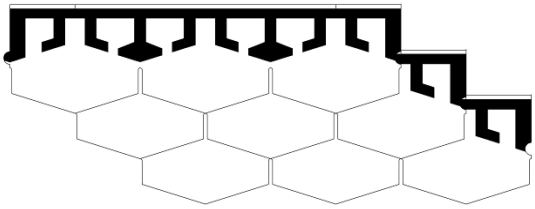
Isola Roofing Shingle Premium

The upper side is covered with mineral granules in colour crystal black. The roofing shingle has a slightly stronger fiberglass reinforcement than the traditional Isola Roofing Shingle. Isola Roofing Shingle Premium is delivered in type "Skrå","Karat", "Rett" and "Swing" as shown in fig 1a.

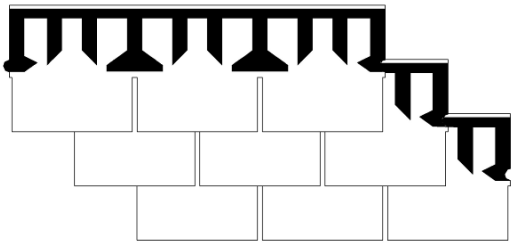
Skrå



Karat



Rett



Swing

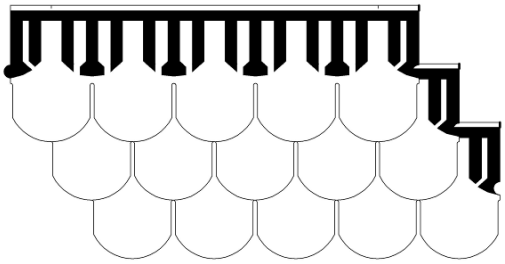


Fig. 1
Isola Roofing Shingle Premium types Skrå, Karat, Rett and Swing. Swing is not produced for the norwegian marked.

Table 2
Product characteristics for fresh material of Isola Roofing Shingle and Isola Roofing Shingle Premium according to test methods described in EN 544

Property	Test method EN	Roofing Shingle		Roofing Shingle Premium		SINTEFs recommended minimum performance [3]	Unit
		DoP [1]	Control limit [2]	DoP [1]	Control limit [2]		
Mass of bitumen	544	≥ 1300	≥ 1300	≥ 1300	≥ 1300	1300	g/m²
Flow resistance, at +90 °C	1110 / 544	≤ 2	≤ 2	≤ 2	≤ 2	≤ 2	mm
Adhesion of granules	12039 / 544	≤ 1.2	≤ 1.2	≤ 1.5	≤ 1.5	≤ 2.5	g
Resistance to tearing (nail shank) - Transversal direction [9]	12310-1 / 544	120 ± 20	≥ 100	130 ± 20	≥ 110	100	N
Tensile strength - Longitudinal direction [10] - Transversal direction [9]	12311-1 / 544	890 ± 200 690 ± 200	≥ 690 ≥ 490	1000 ± 200 690 ± 200	≥ 800 ≥ 490	600 400	N/50 mm
Water absorption	544	≤ 1	≤ 1	≤ 1	≤ 1 [8]	≤ 2	%
Resistance to UV radiation	1297 /544	Passed	No cracks [8]	Passed	No cracks [8]	No cracks	-
Tightness against driving rain	NT Build 421 [4]	-	350 [6] [8]	-	250 [7] [8]	150 [5]	Pa

[1] The manufacturers Declaration of performance, DoP.
[2] Control limits show values that the product has to satisfy during internal factory production control and audit testing.
[3] SINTEF's recommended minimum performance in SINTEF Technical Approval for roofing shingle
[4] Nordtest Method NT Build 421 Roofs; Watertightness Under Pulsating Air Pressure
[5] Tight against driving rain at wind pressure differences up to 150 Pa
[6] Tested at roof pitch 15 °
[7] Tested at roof pitch 17,5 °
[8] Result from typetesting
[9] Transversal direction = Direction of the shingle's height
[10] Longituinal direction = Direction of the shingle's width

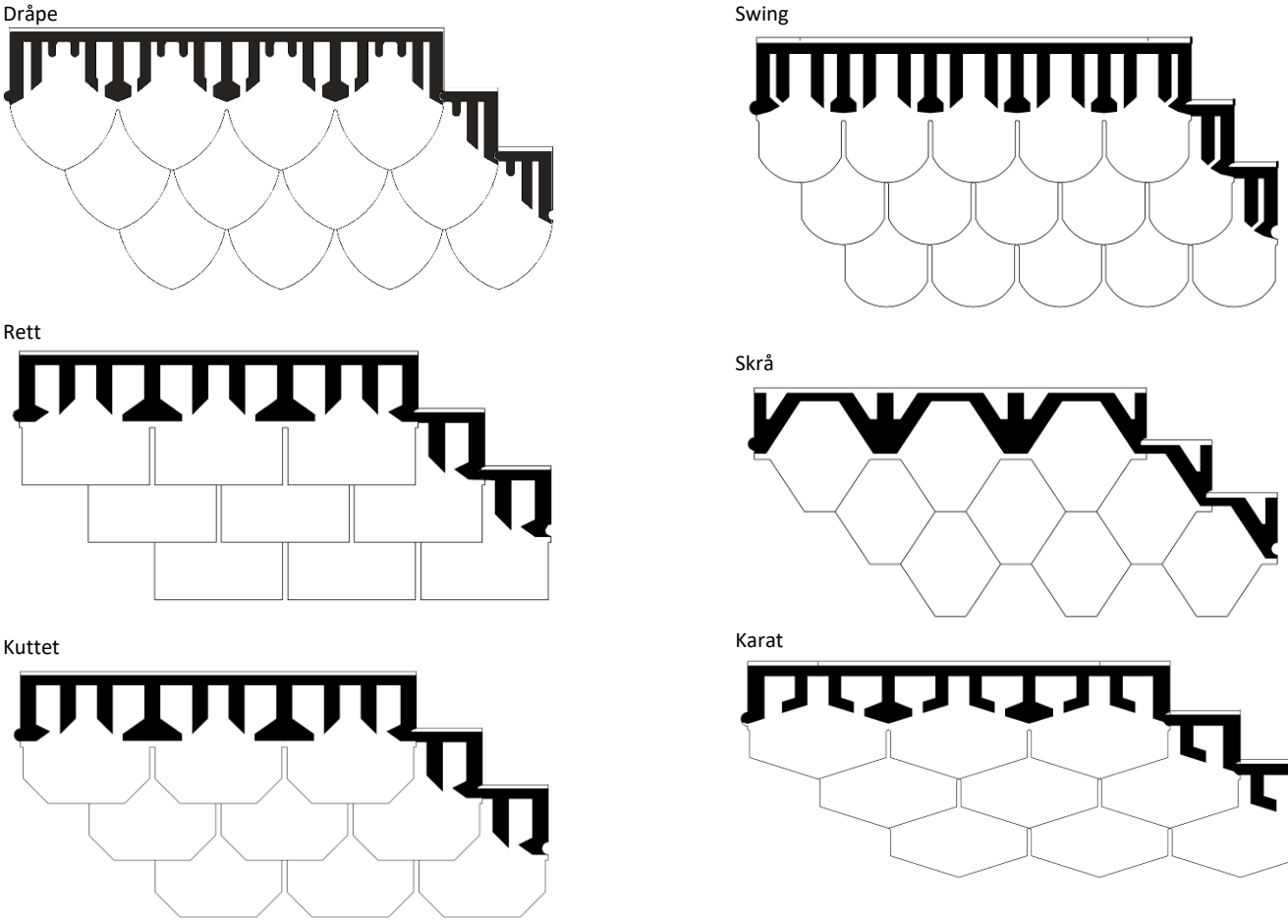


Fig. 2 Isola Roofing Shingle type Dråpe, Rett, Kuttet, Swing, Skrå and Karat.

Isola Roofing Shingle
The upper side is covered with slate granules and has areas with bitumen adhesive for bonding and sealing of overlapping tabs, see fig. 3. Isola Roofing Shingles are available in six different types as shown in fig. 2, with slate granules of various colours.

Accessories
Eaves and ridge plates are available in the same material as the shingle.

3. Fields of application

Isola Roofing Shingle and Isola Roofing Shingle Premium is used as roof covering on pitched roofs with a minimum slope of 15°, see clause 6 for special conditions for use and installation. Isola Roofing Shingle and Isola Roofing Shingle Premium can be installed on load bearing roof sheathing of timber boards, OSB or plywood boards. The roof sheathing must always be ventilated underneath.

4. Product performance

Product properties
Product characteristics for fresh material are shown in table 2.

Properties related to fire
Isola Roof Shingles and Isola Roof Shingles Premium satisfies fire safety class BROOF (t2) according to EN 135015 on substrates of wood-based slab with a density ≥ 510 kg/m3, as well as on old asphalt roof covering on wood-based slab with a density ≥ 510 kg/m3. The test has been carried out in accordance with CEN/TS 1187, test 2.

In addition, for use in countries other than Norway, Isola Roof Shingles satisfy fire safety class BROOF (t1) and (t3) according to EN 13501-5, on all continuous wood-based substrates and on non-combustible substrates, with cracks less than 5 mm.

The test was carried out in accordance with CEN/TS 1187, tests 1,2 and 3.

For more information about the requirements for fire properties for the roof roof, see TPF informs no. 6 *Fire technical solutions for compact roofs and terraces* published by the Roof Manufacturers' Research Group (TPF), see www.tpf-info.org.

Rain tightness
Isola Roof Shingles and Roof Shingles Premium, without asphalt suspended ceiling coating, have been tested for waterproofness against driving rain according to method NT Build 421 *Watertightness under pulsating air pressure*.

The testing of Isola Roof Shingles, at a roof angle of 15 °, showed that the roof is rainproof at wind pressure difference up to 350 Pa when installed according to the installation instructions.

The testing of Isola Roof Shingles Premium, at a roof angle of 17.5 °, showed that the roofing is rainproof at wind pressure differences of up to 250 Pa when installed in accordance with the installation instructions.

Durability
The product has shown satisfactory properties in resistance testing in connection with type testing and annual inspections carried out by SINTEF.

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.

Effect on soil, surface water and ground water
The leaching properties of the product are evaluated to have no negative effects on soil or water.

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

Environmental declaration
An environmental declaration (EPD) has been worked out according to EN 15804 for Isola Takshingel skrå, Rett, Swing, kuttet and karat and Isola Takshingel Premium Skrå and Rett. For complete documentation see EPD no. NEPD-7992-7655, NEPD-8275-7944, NEPD-8335-8004, NEPD-8390-8054,NEPD-8155-7814, https://www.epd-global.com/.

6. Conditions of use

Roof structure
The roofing shingles must only be installed on ventilated, cold roofs, with a minimum pitch of 15°. The ventilation of the roof surface and the thermal insulation of the roof construction must be sufficient to prevent snow melting and water pounding. Pitched roofs with thermal insulation along the plane of the roof must have ventilation openings at the ridge. Large roofs and roofs with valleys, dormers etc. must have cross ventilation.

The load bearing roof sheathing shall be in accordance with SINTEF Building Research Design Guide no. 525.861 *Taktro av tre*.

The roof structure shall generally be in accordance with the principles shown in SINTEF Building Research Design Guide no. 525.101 *Skrå, luftede tretak med isolerte takflater*, 525.106 *Skrå tretak med kaldt loft* and 525.107 *Skrå tretak med oppholdsrom på deler av loftet*.

Installation
Before installation the surface must be clean, levelled and smooth.

Isola Roofing Shingle and Isola Roofing Shingle Premium shall be mechanically fastened to the roof sheathing with hot galvanized roofing nails with sufficient length to break through the wooden sheathing and as shown in Isola's installation instructions. The nail shall be driven with the head flush with the shingle surface, and not cutting into the shingle material. For positioning of nails, see fig. 2.

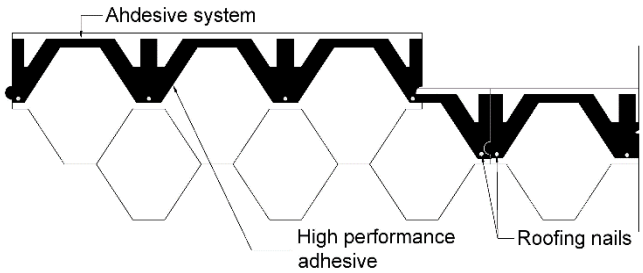


Fig. 3
Adhesive system and principle of installation for Isola Roofing Shingle and Isola Roofing Shingle Premium

Isola Roofing Shingle and Isola Roofing Shingle Premium shall not be fastened with cramps.

To achieve good adhesion between the shingle plates it is important that the adhesive areas are dry, and that the tabs are pressed down properly. At temperatures below +5°C the adhesive areas should be preheated before sticking the shingles together. When installing Isola Takfot (eave) and Møneplate (ridge plate), the foil on these must be torn off.

The roofing shingles shall in general be installed in accordance with Isola's installation instructions and the principles shown in SINTEF Building Research Design Guide no. 544.204 *Tekking med asfalttakbelegg eller takfolie. Detaljløsninger* and 544.105 *Tekking med asfalttakshingel*.

Installation on top of old roofing shingle
For installation of new shingle on top of old shingle longer roofing nails must be used. Installation of new shingle on top of old shingle can give reduced protection against leakages. To avoid pockets in the roofing this should only be done with a new shingle that matches the old shingle perfectly. Minimum roof pitch for installing new shingle on top of old shingle is 19 °.

Substrate
When a fire classification is required, the substrate must be in accordance with the provisions stated in clause 4 regarding *Properties related to fire*.

Use of vapour tight roofing underlay
Vapour tight, bituminous roofing underlay, with a reinforcement of glass felt or polyester and with antifriction layer and overlap edge, shall always be used beneath the shingle

- for roof pitches 15 ° to 18 °
- for shingle type Karat
- in places exposed to harsh climate, regardless of roof pitch
- in areas with large amounts of snow and an obvious risk for ice formation at eaves and valley gutters

Roofing underlay should also be used on heated homes in areas with large annual snowfall.

Roofing shingles installed without a roofing underlay has a higher risk of water leakages. Therefore, SINTEF generally recommends the use of roofing underlay beneath roofing shingles. However, experience has shown that roofs with a pitch greater than 18° in areas less exposed to wind, rain and snow can function satisfactorily without the use of a roofing underlay. However, roofing underlays should always be used on the lower part of the roof surface (0.5 - 2 m) where the risk of snow melt is at the greatest.

Traffic on the roof
Special precautionary measures should be taken to protect the roofing membrane if the roof is expected to have more traffic than necessary for inspection and maintenance purposes only.

Storage
The packages of shingle must be stored flat on a pallet, in a cool place, and not exposed to direct sunshine.

7. Product and factory production control

Isola Roofing Shingle and Isola Roofing Shingle Premium is produced by Isola as, 3945 Porsgrunn, Norway.

The holder of the approval is responsible for the factory production control in order to ensure that Isola Roofing Shingle and Isola Roofing Shingle Premium is produced in accordance with the preconditions applying to this approval.

The manufacturing of Isola Roofing Shingle and Isola Roofing Shingle Premium is subject to continuous surveillance of the factory production control in accordance with the contract regarding SINTEF Technical Approval.

Isola as has a quality management system certified according to EN ISO 9001.

8. Basis for the approval

The evaluation of Isola Roofing Shingle 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

All packages are marked with the manufacturer's name, product description and time of production.

Isola Roofing Shingle and Isola Roofing Shingle Premium is CE-marked in accordance with EN 544.

The approval mark for SINTEF Technical Approval; TG 2253, 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