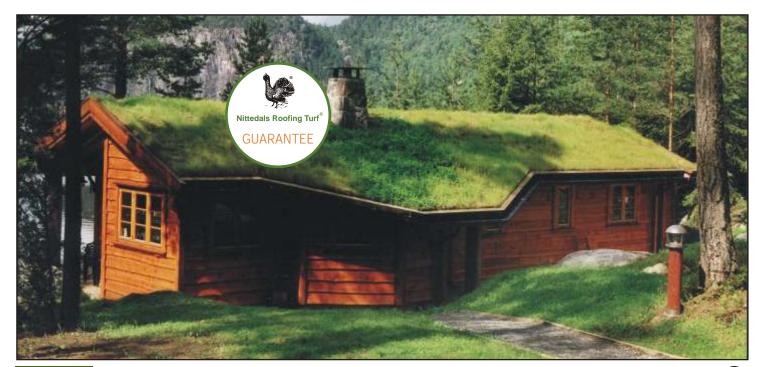


### Traditional roofing using modern methods







# Nittedals Roofing Turf®

### Traditional roofing using modern method

Natural turf roofing is a part of the old agricutural tradition in Norway, which is a tradition still followed in Norwegian cottage culture. Nittedal Torvindustri A.S has developed and patented a modern solution which makes it possible for everyone to lay a beautiful green roof. Nittedal Torvindustri A.S has delivered Nittedal Roofing Turf <sup>®</sup> since 1988.

### Nittedals Roofing Turf®

Nittedals Roofing Turf® is packed in mesh bags of approximately 70 cm x 45 cm. The depth is approximately 17 cm. Nittedals Roofing Turf® is delivered on pallets. The pallets can be lifted directly on the roof. Since the mesh bags only weigh around 17 kg, it's easy to get the bags upon the roof without lifting equipment.

### Nittedals Roofing Turf<sup>®</sup> has many advantages:

A water saturated turf weighs approximately 130 kg/m². Nittedals Roofing Turf® will not blow away and will not settle or subside, because the product is compressed in mesh bags. Relief frames are only necessary when the roof angle is more than 30 degrees.

Tests performed by Jordforsk, the Norwegian Centre for Soil and Environmental research, shows that Nittedals Roofing Turf® has highly effective water retention and air aeration, which is important for roots to develop and grow rapidly. Jordforsk concluded that if the roof is maintained as specified, it will not disintegrate or wash away. Research done by Byggforsk, the Norwegian Building Research Institute, shows that Nittedals Roofing Turf® has considerable heatingand sound insulation properties. Nittedals Roofing Turf<sup>®</sup> is easy to lay, is easily seeded, and lies stable. After sowing, the roof is covered with a 1-2 cm thick layer of turf. After watering, expect a beautiful roof to grow.

Nittedal Torvindustri A.S also delivers natural seed mixture.

Nittedals Roofing Turf <sup>®</sup> with seeds

Nittedals Roofing Turf® with seeds is a product which simplifies the laying process.

The seeded product is delivered In mesh bags the same size as Nittedals Roofing Turf.® After all the bags have been laid, the roof should be covered with a 1-2 cm thick layer of turf.



Nittedal Torvindustri A.S.
We guarantee our product, provided
all instructions on installation and
maintenance are followed.

Easy to lift up on the roof: Each bag is approximately 17 kg pr. mesh bag or approximately 400 kg pr. pallet.



The mesh bags should be laid across the roof top.



Lay the mesh bags close together.



Sow evenly with our seeds at a ratio of about 1 kg per 100 m<sup>2</sup>.

### Installation instructions

We recommend using 3.2 bags per square metre of roof. This includes enough turf for covering and evening out the bags with extra peat. Begin laying the roofing turf bags across the the roof top. This is done to ensure proper settlement of the turf. The roofing turf bags should be laid close together along the barge board from the turf beam up to the roof top, row by row.

**Nittedals Roofing Turf**<sup>®</sup> is now ready for sowing directly on the mesh bags. We recommend using our natural seed mix, at a ratio of around but not more than 1 kg/100 m<sup>2</sup>.

When the roof is covered with mesh bags (and seeded if necessary), use the rest of the peat for evening out the roof and covering the bags. If **Nittedals Roofing Turf**® bags with seeds are used within 4 weeks from production date, you won't have to add extra seeds. Be sure to thoroughly moisten it to ensure germination. Water for a period of 15-20 minutes with 30-40 minute intervals until the turf is thoroughly moistended. We recommend you use a sprinkler.



At the end the roof is evened with peat before watering.



The result is a beautiful turf roof.

# Maintenance plan for Rittedals Rooofing Turf

To keep the roof green and maintain good growth, cut the gras the first autumn and afterwards as needed. At delivery the roof contains adequate manure and calcium to last two years. In the beginning of the third year, and every other year, the roof will need to be fertilized with 3 kg NPK 14-3-15 manure per 100 m². On alternate years when NPK 14-3-15 is not used, the roof will need calcium fertilization for optimal helath and growth. When there is little precipitation in the growing season, water it to keep it green. Keep the roof clear of bushes and trees.

# Nittedals Roofing Turf® Product declaration

Type of product: Peat

Recommend use: Growing medium

**Recommended storage:** For Nittedals Roofing Turf<sup>®</sup> with seeds, see the instructions above. If stored over long time, the values may change.

Contents: 100 % Sphagnum turf H2-H5 added NPK manure

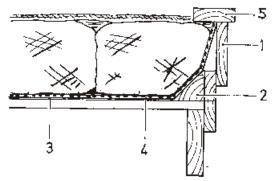
with micro nutrition and calcium dolomite.

Basis of allocation: Medium to fine Potassium: 317 mg/L

Density: 242 kg/m³ Volum of use: Ca. 70 liters Dry substance: 75 g/l Organic content: 51,3% TS

Acidity: pH ca. 5,5 Conductivity: 65 mS/m Phosphorus: 21 mg/L Potassium: 317 mg/L Calsium: 500 mg/L Magnesium: 109 mg/L Sodium: 19 mg/L Sulphur: 170 mg/L Iron: 96 mg/L Nitrate N: 110 mg/L Ammonium - N: 16 mg/L

- 1. Roof sheating
- 2. Gutter
- 3. Eaves flashing
- 4. Bitumen roofing felt
- 5. Turf beam bracket c/c 600 mm
- 6. Sealant
- 7. Studded membrane
- 8. Opening for drainage, 20 mm
- 9. Turf beam, impregnated 48 x 148 mm
- 10. Mesh bags
- Loose peat to even the surface and cover it



- 1. Barge board, total height Approx. 170 mm
- 2. Triangular batten
- 3. Bitumen roofing felt
- 4. Studded membrane
- 5. Barge board cover





## **NITTEDAL TORVINDUSTRI A.S**

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