

SINTEF Building and Infrastructure confirms that

Kami Plegel steel tiles

meets the provisions regarding product documentation given in Norwegian building regulations, with properties, fields of application and conditions as stated in this document

1. Holder of the approval

Kami AB
 Box 10130
 SE-952 27 Kalix, Sweden
 www.kami.se

2. Manufacturer

Kami AB, Kalix, Sweden.

3. Product description

Kami Plegel are steel tiles for roofing.

The tile sheets are Kami TerraPlegel or Kami PlusPlegel, manufactured according to EN 14782, with 1080 mm width and lengths up to 6500 mm.

The steel tiles are fixed with Kami self-drilling screws with gaskets and washers, dimension 4.8 mm x 35 mm for fastening to roof sheathing and 4.8 mm x 20 mm for lateral overlap.

4. Fields of application

Kami Plegel steel tiles installed directly on existing roofing may be done when existing pitched roof areas with bituminous shingles or bituminous roofing membrane roofing are renovated.

5. Properties

Water tightness

The roofing system with Kami Plegel steel tiles installed directly on existing roofing is assessed to provide satisfactory water tightness, given that the conditions specified in section 6 are fulfilled.

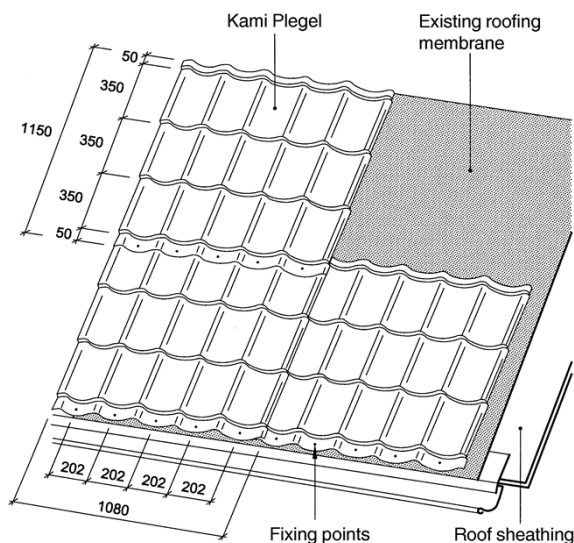


Fig. 1

Kami Plegel steel tiles installed directly on existing bituminous roofing. The screws are placed at the bottom of each tile profile along the lower sheet edge and for each third tile profile in the direction of the roof slope.

Reaction to fire

The resistance to surface spread of flames should be considered to be the same as before the steel tiles were installed.

6. 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 ground water.

Waste treatment/recycling

The product shall be sorted residual waste on the building/demolition site. The product shall be delivered to an authorized waste treatment plant for material recovery or disposal.

Environmental declaration

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

7. Special conditions for use and installation

Underlay

Kami Plegel steel tiles must only be installed directly on existing roofing when this roofing is composed of type A bituminous roofing material or other bituminous roofing with equivalent thickness, installed on a roof sheathing made of wood based boards or panels. The steel tiles are installed without any use of battens and counter battens.

In order to have a satisfactory watertight roof before installation of the steel tiles the existing roof must first be inspected, and repaired if required.

Roof slope

The roofing system should in general not be applied on roofs with a slope less than 10°.

Fixings

The tile sheets must be fixed with Kami screws as specified in section 3, using a fixation pattern as shown in Fig. 1. To prevent the screw holes from expanding due to temperature movements in the sheets it is important that the fixation pattern is followed, with no additional fixation points between the specified screw rows.

It must be ensured that the screws are firmly attached to the underlying roof sheathing, and that the rubber gasket under the screw head is pressed approximately 1 mm outside the brim of the metal washer. If a screw strikes the joint between two roof boards, the further placement of the screws must be adjusted. Screws with poor attachment must be kept left in their position.

Installation

Sufficient handling care has to be exercised in order not to damage the tile sheets during installation, even if the sheets can withstand ordinary walking traffic after being installed. The tile sheets are installed in the sequence shown in Fig. 2.

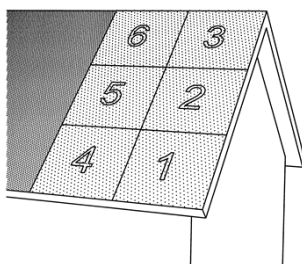


Fig. 2
Installation sequence.

Cutting of the steel tiles must be done with sheet metal shears or a special saw with hard metal blade. Angle grinders or high-speed saws which induce much heat at the cutting edge must be avoided. Cutting edges may be covered with a layer of corrosion protecting paint.

Lateral overlap is normally one wave, and 100 mm in the direction of the roof slope. The water tightness of the lateral overlaps may be improved with the application of Kami lateral overlap screws which are fixed somewhat inclined towards the underlay as shown in Fig. 3.

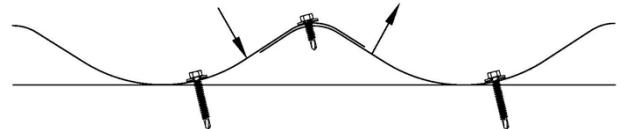


Fig. 3
Location of fixing points at lateral overlaps.

Snow fences

Snow fences installed on the roofing must be adapted to the Kami TerraPlegel and PlusPlegel profiles. Requirements for snow fences on roofs with TerraPlegel may be considered to be the same as for roofs with rude concrete tiles, and for PlusPlegel the same as for glazed clay tile roofing. See SINTEF Building Research Design Sheet 525.931.

General

It is assumed that the roofing system in other respects is installed according to the principles shown in Building Research Design Sheets 544.101 and 544.103, including openings in the roof and connections to other building parts.

8. Factory production control

The installation of the roofing system has to be inspected at building site as part of the ordinary on site works inspection. The roofing manufacturer's installation guide is subject to supervisory control according to contract between SINTEF Building and Infrastructure and Kami AB concerning Technical Approval.

9. Basis for the approval

The installation of the roofing system has to be inspected at building site as part of the ordinary on site works inspection. The roofing manufacturer's installation guide is subject to supervisory control according to contract between SINTEF Building and Infrastructure and Kami AB concerning Technical Approval.

10. Marking

The approval mark for SINTEF Building and Infrastructure Technical Approval No. 2400 may be applied as a reference to this approval of the roofing system.



Approval mark

11. 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

12. Technical management

Project manager for this approval is Holger Halstedt, SINTEF Building and Infrastructure, dep. Trondheim

for SINTEF Building and Infrastructure

Hans Boye Skogstad
Approval Manager