From clay. From concrete. From experience.

NELSKAMP

Concrete roofing tile program: S pantiles

DACHSTEINE DIN plus

The S pantiles.

The S pantile is characteristic of soft roof areas with its flowing "S"-shape. The design is perfectly enhanced by the rounded trimmed edge.

The S pantile in detail:
- Manufactured according to DIN/EN 490/491 with elevated longitudinal rabbet with far better quality requirements than required
- Overlapping side rabbet and triple base ribbing for optimum protection
- Waterproof, frostproof and resistant to deformation, dimensionally accurate with high compressive strength
- Overlap: approx. 7.5 - 10.6 cm
- Regular roof pitch 22°
- Requirement per m^2 approx. 10 pcs.

Trees clean the air. Now roof pantiles* do the same.

Learning from nature: Trees use the photosynthesis and provide for clean air. With their ClimaLife surface our roof pantiles clean our environment from conta-minants resulting from heating, traffic and the industry.

Up to 90 percent are neutralized in daylight, without sunlight up to 70 percent. This is due to the titanium oxide content in the micro concrete. It mainly converts nitrogen oxides (NO_X) into harmless substances like NO_3-. Again and again, because titanium oxide is a catalyst, which is never used up. The rain does the rest: It just flushes away the substances, which then are harmless.

ClimaLife – environmental protection under a clean roof.

- The first roofing tile that frees air from exhaust emissions
- Dirt particles and atmospheric particulate matter are rinsed off by rain
- Active pollutant decomposition through photocatalysis – over the roof's entire life
- Controlled quality: TXActive®*
- Individual character with a natural, matt surface
- Ideal for roofs in town

TXActive® is a registered trademark under licence. This Europe-wide valid trademark stands for the permanent, photocatalytic activity of building materials.

LONGLIFE

LONGLIFE stands for a new, leading technology in concrete roofing tile production. The smooth surface of micro-concrete and a newly developed, silk-gloss colour coating together guarantee clean roofs with long-lasting, intensive colours. Dirt is washed off by rain and gives moss or algae almost no base for growth.

SG=SELF-CLEANING

SG = SelfcleaninG concrete roofing tiles have a new colour coating on which moss and algae have almost no base for growth.

The Colours.


tile red [1), 2)]


dark brown [1), 2)]


black [1), 2)]


granite [1), 2)]


moss green [1)]


blue [1)]


břidlicově šedá [2)]


new red [2)]


autumn colours [2)]


red [4)]


brown [4)]


cement-grey [4)]


granite [4)]

[1)] **LONGLIFE,** [2)] **SELF-CLEANING (SG),** [4)] **CLIMALIFE**

Concrete roofing tile surfaces

	TOP 2000 S	SG = SELF-CLEANING	LONGLIFE
Self-cleaning With the same colour coating, LONGLIFE concrete roofing tiles have advantages over SG concrete roofing tiles due to the smooth, micro-concrete surface.			
Colour fastness SG and LONGLIFE coatings have the highest degradation reserves UV and weathering in terms of colour fastness.			
Abrasion resistance The coating on SG and LONGLIFE concrete roofing tiles is very hard-wearing. These advantages are further optimised by the micro-concrete surface.			
Resistance to growth The results of the self-cleaning have a positive effect on the resistance to the growth of moss and algae.			

Note: The comparative figures for our concrete roofing tile program are based on numerous laboratory tests and, in the meantime, many years of exposure to the elements.

Deviations are possible in the colours for reasons of printing methods.

Concrete roofing tile surfaces: Minor impairments to the surface are possible due to transport. This does not affect the quality of the pantiles.

The program.

Moulded bricks for various functions meet the demand for homogeneous, architecturally demanding roofs. They are also an important safety factor. Moulded bricks and accessories reduce the amount of laying work and facilitate calculations. You will find the complete program for every concrete roofing tile on our Internet website **www.nelskamp.de**.

Complete tile
Length: ~ 42.0 cm Covering length: ~ 31.4 - 34.5 cm*
Width: ~ 33.2 cm Covering width: ~ 30.0 cm
Weight: ~ 4.7 kg Requirement: ~ 10.0 pcs/m²

Half tile
Length: ~ 42.0 cm Covering length: ~ 31.4 - 34.5 cm*
Width: ~ 18.2 cm Covering width: ~ 15.0 cm
Weight: ~ 2.7 kg Requirement: ~ 3.0 pcs/m

Double flap
Length: ~ 42.0 cm Covering length: ~ 31.4 - 34.5 cm*
Width: ~ 33.2 cm Covering width: ~ 33.2 cm
Weight: ~ 4.8 kg Requirement: ~ 3.0 pcs/m

Left gable tile for 34 or 32 cm laths
Length: ~ 42.0 cm Covering width: ~ 30.2 cm
Fore-part no. 34 laths: ~ 9.0 cm, no. 32 laths:~ 11.0 cm
Weight: ~ 7.3 kg Requirement: ~ 3.0 pcs/m

Right gable tile for 34 or 32 cm laths
Length: ~ 42.0 cm Covering width: ~ 27.0 cm
Fore-part no. 34 laths: ~ 9.0 cm, no. 32 laths:~ 11.0 cm
Weight: ~ 7.3 kg Requirement: ~ 3.0 pcs/m

Ridge/crest tile ~ 2.5 pcs/m
Length: ~ 45.0 cm Covering length: ~ 40.0 cm
Covering width: ~ 18.5 cm
Weight: ~ 4.8 kg Requirement: 2.5 pcs/m

Start ridge
Length: ~ 45.0 cm Covering length: ~ 38.0 cm
Covering width: ~ 18.5 cm
Weight: ~ 6.6 kg Requirement: 1.0 pce/start ridge

End ridge
Length: ~ 45.0 cm Covering length: ~ 43.0 cm
Covering width: ~ 18.5 cm
Weight: ~ 6.6 kg Requirement: 1.0 pce/ridge end

Crest start tile
Length: ~ 45.0 cm Covering length: ~ 40.0 cm
Covering width: ~ 18.5 cm
Weight: ~ 4.7 kg Requirement: 1.0 pce/crest start

Hip cap
(also available with four outlets)
Weight: ~ 4.8 kg Requirement: 1.0 pce/hip

Concrete dormer ventilator (vent cross-section ~ 27 cm²)
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 5.0 kg

Shed roof tile for counter-laths
(left/right verge tiles also available)
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: 3.3 pcs/m

Eaves tile for counter-laths
(left/right verge tiles also available)
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: 3.3 pcs/m

Mansard tile (left/right verge tiles also available)
Length/weight: depending on design
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: 3.3 pcs/m

Pent roof tile (left/right verge tiles also available)
Length/weight: depending on design
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: 3.3 pcs/m

Step tile without support clip
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 8.8 kg

Step tile with support clip x 2 + walking grid
Width: ~ 34.0 cm
Length: 40.0; 80.0; 150.0 cm

Step tile with single step
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 10.0 kg

All sizes are approx. sizes. Tolerances according to DIN EN 1304.
Covering sizes are to be determined on site. Subject to technical changes.

Snow stop tile
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 4.8 kg

Metal-roof plate with round wood holder
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 5.8 kg

Metal roof plate with snow rib
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 5.8 kg

PVC solar through pantile
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 0.6 kg ø: 30/50/70 mm

PVC through pantile with thermal adapter
(exhaust gas cap) ø 100
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual

PVC thermal exhaust gas through pantile ø 125
(can be used up a max of 42° RP*)
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual

Klöber through pantile -Venduct- ø 100/125
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 1.7 kg

Light pantile „Acrylic glass“
Length: ~ 42.0 cm Covering width: ~ 30.0 cm
Width: ~ 33.2 cm Requirement: individual
Weight: ~ 0.5 kg

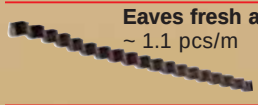
Plastic skylight, 4-pantiles, acrylic glazed
Length: ~ 76.0 cm Covering width: ~ 60.0 cm
Width: ~ 63.0 cm Requirement: individual
Weight: ~ 3.8 kg Hatch: 47.5 x 52.0 cm

Steel skylight, coated, 4-pantiles, acrylic glazed
Length: ~ 78.0 cm Covering width: ~ 60.0 cm
Width: ~ 62.5 cm Requirement: individual
Weight: ~ 9.2 kg Hatch: 45.0 x 55.0 cm

Steel skylight, coated, 6-pantiles, acrylic glazed
Length: ~ 108.0 cm Covering width: ~ 60.0 cm
Width: ~ 62.5 cm Requirement: individual
Weight: ~ 11.8 kg Hatch: 45.0 x 85.0 cm

Multitherm skylight
Length: ~ 85.0 cm Opening: upwards + to the side
Width: ~ 78.0 cm Hatch: 44.0 x 54.0 cm
Weight: ~ 15.0 kg Double glazing: ESG Kv 1.4

Living room skylight wra
Length: ~ 98.0 cm Opening: to the side
Width: ~ 54.0 cm Hatch: 46.0 x 90.0 cm
Double glazing: ESG Kv 1.1

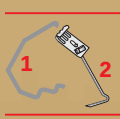


Eaves fresh air element
~ 1.1 pcs/m

Ridge/crest lath holder

Ridge or crest clip no. 470/77

Copper roll/Alu roll 2000
Length: ~ 5 m Width: ~ 29 cm, 33 cm, 36 cm
Ventilation cross-section: permanent acc. to DIN 4108, Part 3
Natural copper/anthracite, red



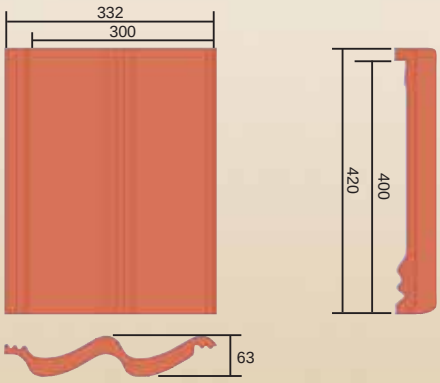
Storm clip 499/003 (1)
Storm clip Nordmark 5 ZIAL® (2)

*(depending on roof pitch)
* Over 42° RP = special design on request

Laying the S pantiles.

Technical data

Roofing tile	S pantile
Manufacturer	Nelskamp (D)
Overall length	~ 42.0 cm
Overlap	~ 7.5 - 10.6 cm (depending on roof pitch)
Overall width	~ 33.2 cm
Covering width	~ 30.0 cm
Covering length	~ 31.4 - 34.5 cm (depending on roof pitch)
Requirement per m²	~ 10.0 pieces
Weight per tile	~ 4.7 kg
Weight per m²	~ 47.0 kg
Regular roof pitch	22°



Material requirements for coverage

Laths	~ 3.3 m/m² (incl. 10% waste)
Counter-laths	~ 1.7 m/m² (incl. 10% waste)
Roofing tiles	~ 10.0 pieces/m²
Packing unit*	
Pantiles per stack	34 pieces (packed on pallets on request: 204 pieces per Europallet)
Half tile	as required, ~ 3.0 pcs/m
Double flap	~ 3.0 pieces/m for left side of roof only
Gable tiles for counter-laths	~ 3.0 pieces/m
Step tile with support clip	as required
Step tile with single step	as required
Ridge or crest tile	~ 2,5 pieces/m
Copper roll/Alu roll 2000 (5 m per roll)	as required
Ridge or crest clip 470/77	1.0 piece per ridge tile
Wood screws	1.0 piece per ridge tile d = 4.5 mm Screw depth 24 mm
Ridge or crest disc	1.0 piece per ridge or crest end
Ridge lath holder	1.0 piece per rafter
Crest lath holder	1.0 piece/ ~ 70 cm
Eaves fresh air element	~ 1.1 piece/m Fresh air ~ 200 cm²/m

* only applies for deliveries in Germany

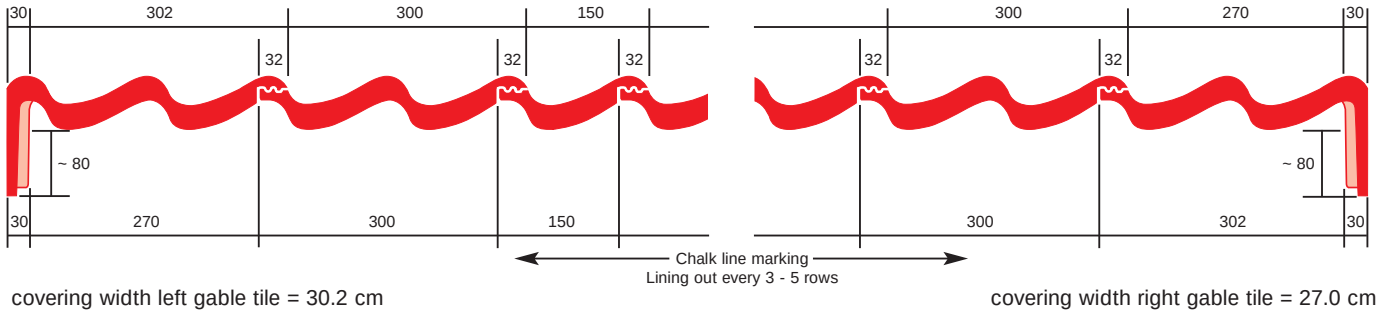
Laying!

The following applies for laying our concrete roofing tiles:

1. The NELSKAMP manufacturer's instructions take priority (laying instructions)
2. The specialist rules of the roofing trade (rules for coverings with concrete roofing tiles)
3. The Construction Contract Procedures VOB (concrete roofing tiles)

Covering widths

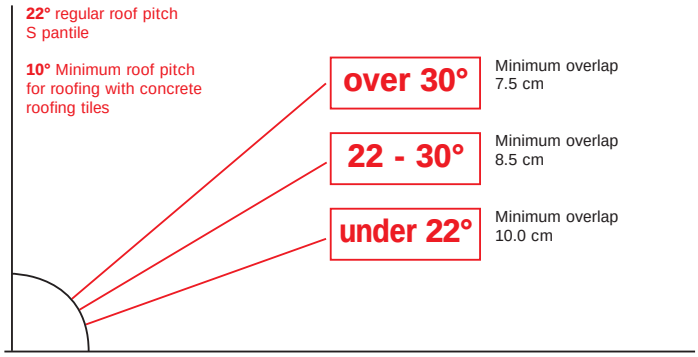
Gable tile for counter-laths



covering width left gable tile = 30.2 cm
covering width double flap tile = 33.2 cm

covering width right gable tile = 27.0 cm

Regular roof pitch for concrete roofing tiles/roof pitch limits



The design of the concrete roofing tiles permits a variable height overlap. The roof pitch is decisive for the overlap. The reference values alongside apply for the minimum height overlap of concrete roofing tiles with elevated longitudinal rabbet.

If the pitch is below the regular roof pitch the additional measures of the roofing trade rules must be carried out (cf. table).

With equivalent roof substructure alternatives:
pay attention to the manufacturer's and laying instructions.
Warranty must be assumed by the relevant manufacturer.

Classification of additional measures except for subordinate buildings [1] according to the technical rules of the German roofing trade, last revised January 2010

Roof pitch	Higher requirements [2]			
	Use - Design - Climatic conditions			
	no further increased requirement [2]	one further increased requirement [2]	two further increased requirement [2]	three further increased requirement [2]
≥ 22°	**Class 6** 3.3 Underlayment (USB- A) [4]	**Class 6** 3.3 Underlayment (USB- A) [4]	**Class 5** 2.4 Overlapping / interlocking undercover (UDB- A; UDB- B [5]; USB- A) [4]	**Class 4** 2.2 Welded / bonded undercover 2.3 Undercover covered with bitumen sheeting 3.2 Underlayment secured at seams (UDB- A; UDB- B [5]; USB- A) [4]
≥ 18°	**Class 4** 2.2 Welded / bonded undercover 2.3 Undercover covered with bitumen sheeting 3.2 Underlayment secured at seams (UDB- A; UDB- B [5]; USB- A) [4]	**Class 4** 2.2 Welded / bonded undercover 2.3 Undercover covered with bitumen sheeting 3.2 Underlayment secured at seams (UDB- A; UDB- B [5]; USB- A) [4]	**Class 3** 2.1 Undercover secured at seams and perforations 3.1 Underlayment secured at seams and perforations (UDB- A; UDB- B [5]; USB- A) [4]	**Class 3** 2.1 Undercover secured at seams and perforations 3.1 Underlayment secured at seams and perforations (UDB- A; UDB- B [5]; USB- A) [4]
≥ 14°	**Class 3** 2.1 Undercover secured at seams and perforations 3.1 Underlayment secured at seams and perforations (UDB- A; UDB- B [5]; USB- A) [4]	**Class 3** 2.1 Undercover secured at seams and perforations 3.1 Underlayment secured at seams and perforations (UDB- A; UDB- B [5]; USB- A) [4]	**Class 3** 2.1 Undercover secured at seams and perforations 3.1 Underlayment secured at seams and perforations (UDB- A; UDB- B [5]; USB- A) [4]	**Class 3** [3] 2.1 Undercover secured at seams and perforations 3.1 Underlayment secured at seams and perforations (UDB- A; UDB- B [5]; USB- A) [4]
≥ 10°	**Class 2** 1.2 Rainproof roof substructure	**Class 2** 1.2 Rainproof roof substructure	**Class 1** 1.1 Waterproof roof substructure	**Class 1** 1.1 Waterproof roof substructure
MRP	10°			

1) The additional measures named in the table are minimum measures taking into account table 1 of the "Leaflet for roof substructures, undercovers, underlays".
2) Higher requirements form categories in accordance with Section 1.1.3. Further higher requirements may result from the weighting within a category according to Section 1.1.3. For example, climatic conditions can lead to several higher requirements.
3) Only allowed if proof has been rendered of the functional reliability of the products used including accessories (sealing tapes, adhesive tapes, sealing compounds, ready-made seam protection, etc.) by the manufacturer during a driving rain test. The next highest class should otherwise be chosen.
4) Undercover plates are to be assigned according to the classification in the "Leaflet for roof substructures, undercovers and underlays".
5) If indices 2), 3), 4), 5) in the product data sheet are met:
   2) Resistance to driving rain, proven by the "Driving rain test underlay and undercover sheets - TU Berlin"
   3) Higher requirements on ageing are proven by increasing the temperature in the test method Appendix C 5.2 of DIN EN 13859- 1 to 80 °C.
   4) The manufacturer specifies the duration of the outdoor weathering period whist warranting the aforementioned properties.
   5) The manufacturer confirms the suitability as a provisional cover and specifies the duration of the outdoor weathering period whist warranting the aforementioned properties.

Roof lathing in conjunction with ridge flaps (dry ridge)

Supporting laths:

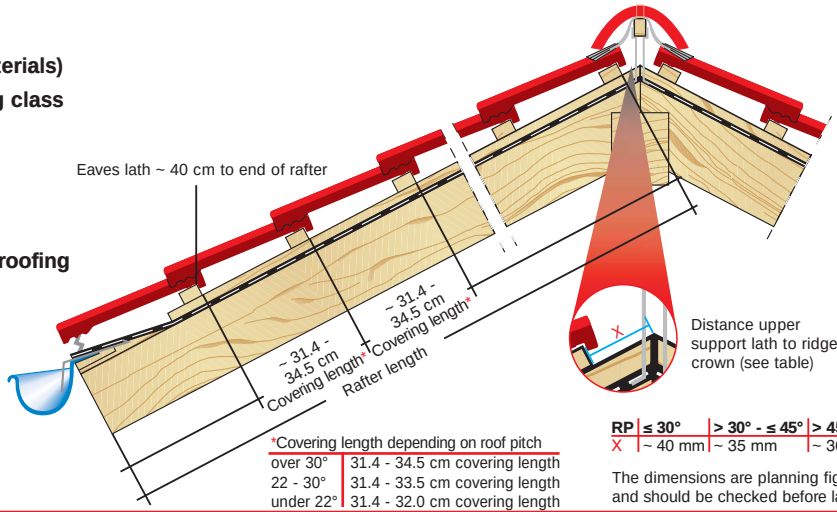
The following min. cross-sections must be used:
(rules for roofing, notes on wood and timber materials)

Nom. cross-sections of support laths	Rafter intervals (unit spacing)	Sizing class
30 x 50 mm	≤ 80 cm	S 10
40 x 60 mm	≤ 100 cm	S 10

Counter-laths:

Rec. thickness of counter-laths acc. to rules for roofing (notes on wood and timber materials):

Rafter length	Rec. thickness
up to 8 m	24 mm
up to 12 m	30 mm
over 12 m	40 mm



*Covering length depending on roof pitch

over 30°	31.4 - 34.5 cm covering length
22 - 30°	31.4 - 33.5 cm covering length
under 22°	31.4 - 32.0 cm covering length

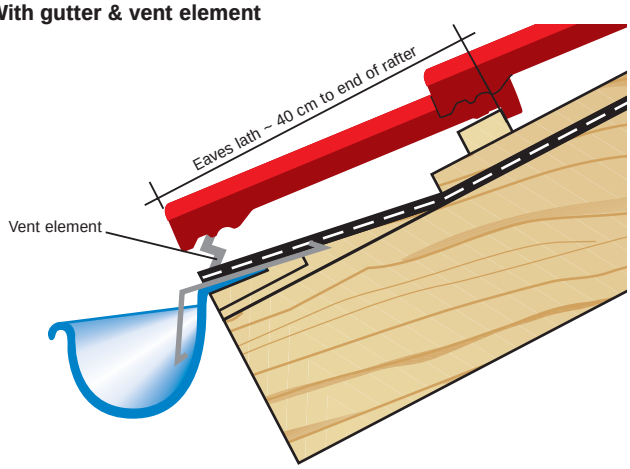
RP	≤ 30°	> 30° - ≤ 45°	> 45°
X	~ 40 mm	~ 35 mm	~ 30 mm

The dimensions are planning figures and should be checked before laying.

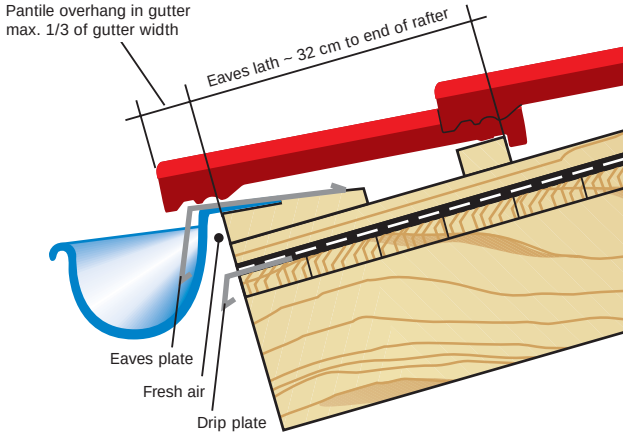
Details eaves design

The dimensions are planning figures and should be checked before laying depending on the design and local circumstances.

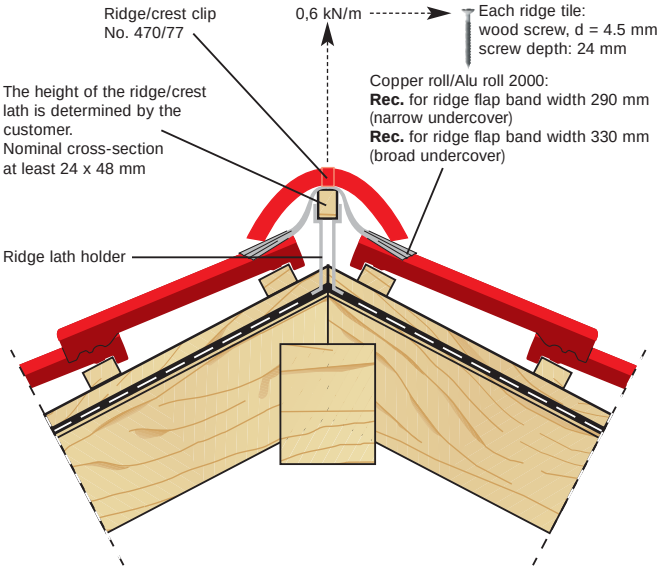
1 With gutter & vent element



2 High-level gutter (recommended for flat roof pitches < 22°)

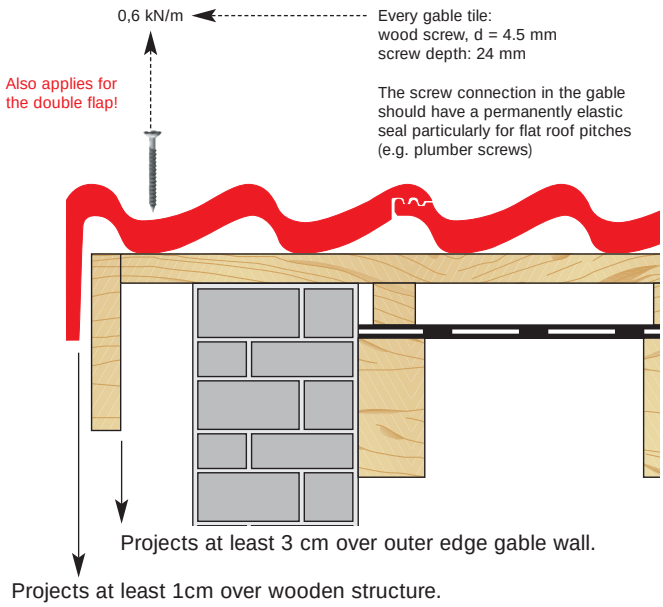


Ridge/crest details



Ridge tiles should be fastened to the furring.
Requirement: 1 wood screw and 1 clip

Gable tile details



Shed roof tile

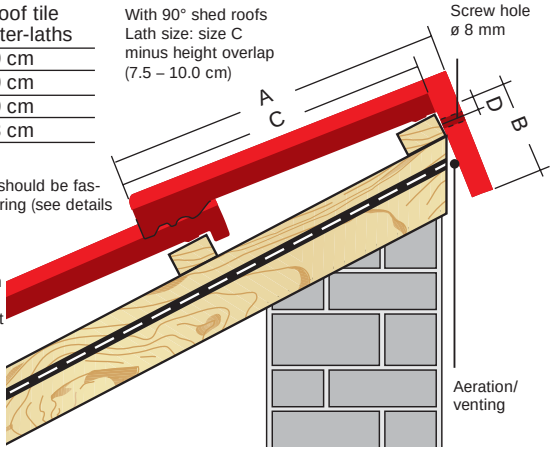
Shed roof tile for counter-laths	
A	42.0 cm
B	12.0 cm
C	37.0 cm
D	1.8 cm

With 90° shed roofs
Lath size: size C
minus height overlap
(7.5 – 10.0 cm)

Screw hole
ø 8 mm

Shed roof tiles should be fastened to the furring (see details of gable tile).

Size sheets can be downloaded from the Internet or on the data service CD

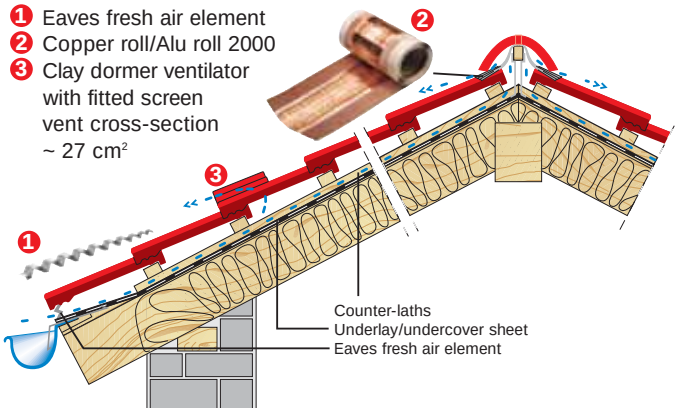


Fore-part gable tile

11 cm for covering length 31.4 - < 33.3 cm
9 cm for covering length ≥ 33.3 - 34.5 cm

Aeration and ventilation in steep roof

1. Eaves fresh air element
2. Copper roll/Alu roll 2000
3. Clay dormer ventilator with fitted screen vent cross-section ~ 27 cm²



1) The vent cross-section at the eaves should be at least 200 cm²/m of eaves.
2) The vent cross-section at the ridge or crest should be at least 0.5‰ of the total corresponding roof area, though at least 50 cm².

(according to DIN 4108-3)

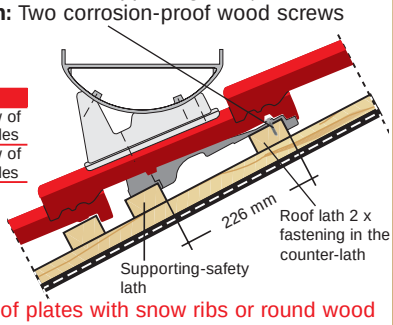
Installation instruction for step tiles with single step/walking grid/snow stop tile

Every step tile must be provided with an additional supporting-safety lath (same lath cross-section as for the supporting laths).
Fastening to supporting lath: Two corrosion-proof wood screws (4.5 x 45 mm per step tile)

Processing acc. to DIN 18160-5

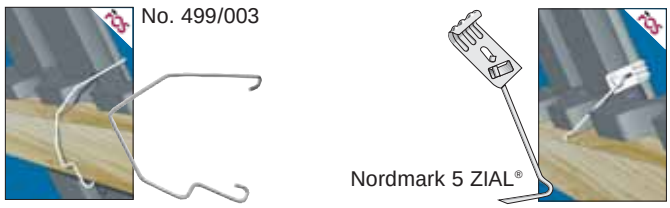
Article	≤ 45°	> 45°
Step tile walking grid	every 2nd row of roofing tiles	every row of roofing tiles
Step tile single step	every row of roofing tiles	every row of roofing tiles

tested to DIN EN 516



The same applies for metal roof plates with snow ribs or round wood holder, whereby the max. support spacing should not exceed 90 cm. For higher demands you should reduce the support spacing (60 cm).

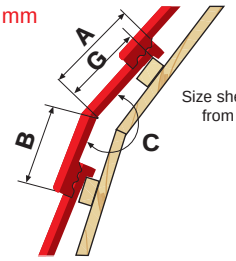
Storm clips



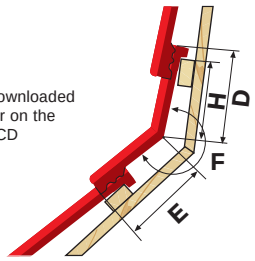
According to professional standards, we can supply storm clips for a simple and effective protection against wind suction. They can alternatively be clipped to the laths or knocked into the laths. Resistant to corrosion through stainless steel wire 1.4301 (A2) or ZIAL® coating (corrosion protection).

Mansard and pent roof tile

A + B max.
450 mm



Size sheets can be downloaded from the Internet or on the data service CD



On the NELSKAMP data service CD or as a download on the Internet from www.nelskamp.de

- **Product specifications**
- **Laying instructions**
- **CAD data**

Subject to technical changes. The dimensions are planning figures and should be checked before laying.

There are two sides to our success. Concrete roofing tiles and clay roof tiles.

Clay roof tiles from Nelskamp have a tradition that goes back for decades and a successful up-to-dateness.
There are several stimulations for creative and environment-friendly rooftop architecture.
Our program includes not just classical shapes and formats but also new and innovative large-scale developments.
The NIBRA® program was the trigger for large-scale, economic roof coverings and new fields of use.
For example, the excellent ceramic quality of the tile really comes into its own on hall roofs.

NELSKAMP 30 year warranty

Concrete roofing tiles and clay roof tiles from Nelskamp. The obvious solution.

Our strategically placed production facilities guarantee that our roof building materials are always well received. Six plants throughout Germany are the sound, logistical basis for co-operation and help spare the environment.

Administration and sales

Waldweg 6 · D-46514 Schermbeck
Postfach 11 20 · D-46510 Schermbeck
Phone: +49 28 53/91 30-0
Fax: +49 28 53/37 59
Email: vertrieb@nelskamp.de
Internet: www.nelskamp.de

Production of concrete roofing tiles

Gartrop Works
Gahlener Straße 158
D-46569 Hünxe-Gartrop
Phone: +49 28 53/91 30-31/32
Fax: +49 28 53/45 59

Dieburg Works
Lagerstraße 30
D-64807 Dieburg
Phone: +49 60 71/98 64-0
Fax: +49 60 71/16 73

Schönerlinde Works
Schönerlinder Bahnhofstraße 6
D-16348 Wandlitz
Phone: +49 30/94 03 91-0
Fax: +49 30/94 12 20 4

Production of clay roof tiles

Schermbeck Works
Waldweg 6
D-46514 Schermbeck
Phone: +49 28 53/91 30-23/17
Fax: +49 28 53/26 70

Unsleben Works
Wechterswinkler Straße 23
D-97618 Unsleben
Phone: +49 97 73/9 10 10
Fax: +49 97 73/7 49

Groß-Ammensleben Works
Magdeburger Straße 42
D-39326 Groß-Ammensleben
Phone: +49 3 92 02/88-6
Fax: +49 3 92 02/88 80 2

From clay. From concrete. From experience.

NELSKAMP

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