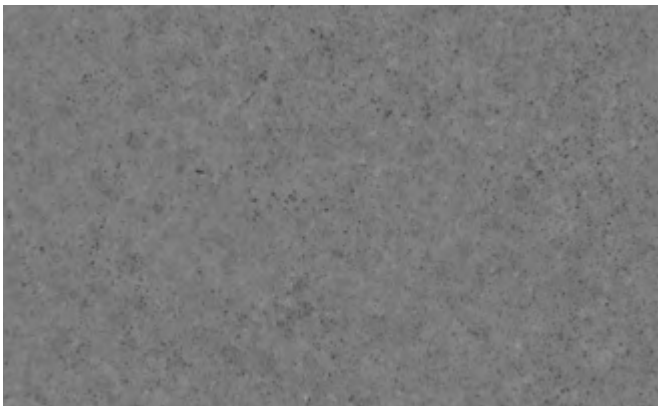
ROOFINOX®
Stainless like never before

Technical Information

Roofinox tin-plated 316L

The tin-plated stainless steel



Product description

Roofinox tin-plated is an austenitic stainless steel containing molybdenum with low carbon (316L) with an electroplated coating of tin on both sides. This tin coating is supplied in an unweathered state. The austenitic stainless steel owes its corrosion properties to the alloying elements chrome and molybdenum. The tin coating is in no way connected to the corrosion properties of the stainless steel.

Benefits

- When exposed to the weather, the tin coating develops its typical matt grey patina
- Stainless austenitic steel, used for the substrate, is the ideal (long-lasting) roofing material due to its corrosion properties
- The higher alloy makes it more corrosion resistant
- The tin coating makes Roofinox tin-plated easy to solder
- 100 % natural and 100 % recyclable
- Easy to work with, even at sub-zero temperatures

Instructions for use / recommendations

General Information:

- Roofinox tin-plated should be used in accordance with the latest technical standards, professional regulations and norms.
- No matter whether it is used for cold or warm roofs, Roofinox tin-plated is ideal for the roof itself and all associated flashings on the roof.
- When Roofinox tin-plated is used for standing seam roofs, all seams must be additionally sealed using seam sealant or similar waterproofing methods.
- Roofinox tin-plated is not recommended for vertical surfaces, wall-cladding and soffits because uniform patina and weathering cannot be guaranteed. Direct contact with aggregate concrete slabs, gravel, soil, humus etc. should be avoided. In both cases we recommend using Roofinox Classic or Plus 0.4 mm.
- **Transport and storage:** Roofinox tin-plated must be transported and stored in a dry, ventilated manner, otherwise the oxidation process will begin (see patination).
- **Processing:** Roofinox tin-plated is ideal for cold forming (folding, rounding, and roll-forming). For processing, suitable tools should be used (ideally made of stainless steel) and machines should be set for use with stainless steel. It should also be ensured that the sheets are handled with dry hands (dry gloves recommended), so no moisture gets onto the tin coating. Roofinox tin-plated can be processed at low temperatures.
- **Soldering:** Make sure that only orthophosphoric acid-based flux is used. It is also important to clean immediately with fresh water (or a cleaning agent recommended by the manufacturer) after soldering. The instructions on our information sheet on soldering should be followed.
- **Patination:** Patination is the process in which the metal reacts with the environmental influences. With Roofinox tin-plated it is the tin coating that reacts. One of the most important factors is the contact with water and moisture. The result is usually a uniform patina, but this cannot be guaranteed because the building specific environmental influences are not known. Roofinox tin-plated can therefore develop light yellow stains on delivery, which, however, will patinate further with regular water contact. The same counts for gray or black spots which are emerging before delivery or with the first patination. This is part of the point-shaped patination process of Roofinox tin-plated. When patination is complete, Roofinox tin-plated will have adjusted to a more uniform appearance in regards to the overall look, ensuring a homogenous, matt grey finish.
- **Cleaning:** The surface of Roofinox tin-plated should be cleaned with great care as mechanical cleaning can remove the tin coating, and the bare stainless steel might become visible. This bare, uncoated surface will not repatinate and remain exposed as well as shiny or silverish.

Specific Data Roofinox tin-plated 316L

Material no.	ASTM TYPE 316L according to ASTM A240M					
Code names	**D** (DIN/EN)	1.4404 / X 2 CrNiMo 17-12-2				
	USA (ASCM)	316L				
Chemical compositions (in % by weight)		C	Cr	Mo	Ni	Mn
	min.	-	16.5	2.0	10.0	-
	max.	0.03	18.5	2.5	13.0	2.0

Mechanical properties (traverse samples) at room temp. to EN 10 088-2	Dimensions Range	Rp (0,2 % yield strength) N/mm²	Rm (tensile strength) N/mm²	A80 (elongation) %
	Cold-rolled strip s ≤ 6 mm	≥ 240	530-680	≥ 40

Minimum properties at elevated temperatures	Temperature °C	100	150	200	250	300	350
	$Rp_{0,2}$ (0,2 %-yield strength) N/mm²	166	152	137	127	118	113

Physical properties	Density kg/dm³	Modulus of elasticity in kN/mm² at					Thermal expansion in $10^{-6} \cdot K^{-1}$ between 20°C and				
		20°C	100°C	200°C	300°C	400°C	100°C	200°C	300°C	400°C	500°C
	8.0	200	194	186	179	172	16	16,5	17	17,5	18

	Thermal conductivity at 20°C W/m · K	Specific heat at 20°C J/kg · K	Electrical Restistivity at 20°C Ω · mm²/m	Magnetisability
	15	500	0,75	not present[2)]

[2)] Roofinox 316L may be slightly magnetic in quenched condition. Magnetisability increases with increasing strain hardening.

Surface finish	electroplated coating of tin
Product forms	cold-rolled wide strip, slit strip, cut sheets. The marked side ist the A-side of the coil.
Edge finish	cut edges
Tolerances	Tolerances according to EN 10259; without or with lowest necessary edge waving, will not influence bending or profiling; low warping

Dimensions	500 mm		625 mm		1000 mm	
Substrate alloy	1.4510	1.4404	1.4510	1.4404	1.4510	1.4404
THICKNESS 0,5 mm	●	●	●	○	●	●

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● available on stock ● delivery time of 8 weeks ○ upon request (minimum quantity)

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