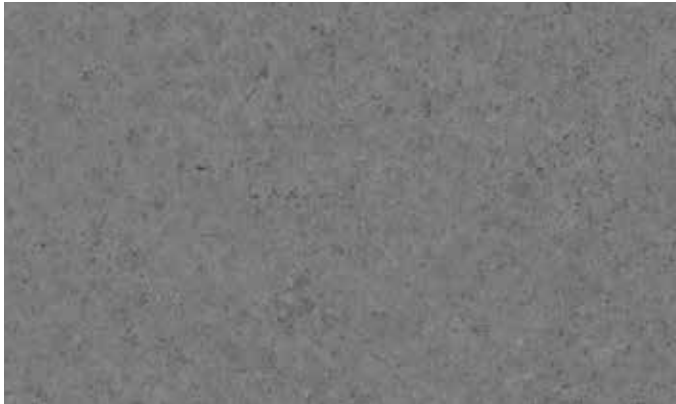


Technical Information

Roofinox tin-plated (Terne) 439

The tin-plated stainless steel



Product description

Roofinox tin-plated (Terne) is a stabilised ferritic stainless steel (439) with an electroplated coating of tin on both sides. This tin coating is supplied in an unweathered state. The ferritic stainless steel owes its corrosion properties to the alloying element chrome, and is magnetic. The tin coating is in no way connected to the corrosion properties of the stainless steel.

Instructions for use / recommendations

- 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 .015".
- **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.

Benefits

- When exposed to the weather, the tin coating develops its typical matt grey patina
- Stainless chromium steel, used for the substrate, is the ideal (long-lasting) roofing material due to its corrosion properties
- Prices are more stable than with nickel-alloy stainless steels
- The tin coating makes Roofinox tin-plated easy to solder
- 100 % natural and 100 % recyclable
- Easy to work with, even at temperatures below 50° F
- **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. 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 (Terne) 439

| | | | | | |
|------------------------------|--|------------------------|-------------------------|---------------------------------------|------------------------|
| Grade | ASTM TYPE 439 according to ASTM A240 | | | | |
| Abbreviations | USA (ASTM) | 439 / 430 | | | |
| | D (DIN / EN) | X3 CrTi17 / X6 CrTi17 | | | |
| Chemical composition | | Carbon | Chromium | Titanium | |
| | min. | - | 16.0 | 4 x (C+N) + 0.15 | |
| | max. | 0.05 | 18.0 | 0.8 | |
| Mechanical properties | cold rolled flat | UTS | 0.2% YS | Elongation | Hardness |
| | thickness 1 mm | ksi (MPa) | ksi (MPa) | % in 2" | Rockwell B |
| | | min. 60 (420 to 600) | min. 35 (≥240) | min. 23 | max. 80 |
| Physical properties | Density | Modulus of elasticity | | Mean coefficient of thermal expansion | |
| | lb/in ³ (g/cm ³) | ksi 68°F | ksi 212°F | in/in/°Fv 68°F | in/in/°Fv 212°F |
| | 0.278 (7.7) | 31.9 x 10 ⁶ | 31.6 x 10 ⁶ | 5.6 x 10 ⁻⁶ | 5.6 x 10 ⁻⁶ |
| | Thermal conductivity | Specific Heat | Electrical Resistivity | Magnetisability | |
| | BTU/hr/ft/°F 68°F | BTU/lb/°F 68°F | microhm-in 68°F | | |
| | 14.5 | 0.11 | 23.6 x 10 ⁻⁶ | yes | |
| Products | cold-rolled coils, slit-coils, sheets | | | | |
| Dimensions | | | | | |
| 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 | | | | |

5/2015

