

Top12-670

Reinforcing steel with increased corrosion resistance

PRODUCT DATA SHEET X2CrNi12 1.4003

STAINLESS STEEL ACCORDING TO DIN EN 10088

CHEMICAL COMPOSITION (IN % BY WEIGHT)

	C	Si	Mn	P	S	Cr	Ni	N
Ø	0.015	0.70	0.50	max. 0.025	max. 0.005	min. 12.00	0.50	0.02

APPLICATIONS

Top12-670 is used for the following temporary and permanent applications as soil and rock nails or as micropiles:

- » Building pit lining
- » Slope stabilization
- » Rock nails
- » Tunnel construction
- » Anchors for rockfall protection nets
- » Anchors for foundation slabs
- » Anchors for bridge foundations
- » Foundation refurbishment
- » Underpinning
- » Buoyancy prevention
- » Absorption of horizontal forces

LABELLING

Top12-670 reinforcing steel is labeled with the Swiss Steel mark ("country-code 2, no. 19") and the product name "Top12-670".

MECHANICAL PROPERTIES

Yield strength f_{sk}	Ratio $(f_t / f_s)_k$	Elongation at max. load ϵ_{uk}
[N/mm ²]	[-]	[%]
≥ 670	≥ 1.08	≥ 5.0

APPROVAL

Top12-670 reinforcing steel is listed in the "Register normkonformer Betonstähle" [Swiss Code for Structural Concrete] and thus meets the requirements of the SIA 262 standard. According to SIA data sheet 2029, Top12-670 is classified as corrosion resistance class 1. According to SIA267:2013, the use of corrosion-resistant steels is permitted to meet corrosion protection level 2. Top12-670 meets all requirements and according to SIA 267 may be used as protection level 2b.

PHYSICAL PROPERTIES

Density in kg/dm ³	7.7
Electrical resistivity at 20°C in (Ω mm ²)/m	0.6
Magnetizability	yes
Thermal conductivity at 20°C in W/(m K)	25
Specific heat capacity at 20°C in J/(kg K)	430
Young's modulus in GPa at » 20°C	175
Mean thermal expansion coefficient in 10 ⁻⁶ K ⁻¹ » 20°C - 100°C	10.4

SWISS STEEL



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IMPROVED CORROSION PROTECTION

As regards untensioned anchors pursuant to SIA 267:2013 corrosion protection generally takes the form of covering the steel with an alkaline cement mortar or hardened cement paste, depending on the corrosion risk of the soil. Stainless steels in corrosion class 1 are protected from corrosion despite imperfections in the embedding, even in the presence of normal, non-aggressive ground water. Compared to unalloyed reinforced steel, there is no danger of macro element corrosion which can occur due to a lack of cover at a point and/or electrical contact between the anchor and foundation reinforcement. Top12-670 may only be used near direct current systems as long as there is no present or expected critical danger of stray current.

WELDABILITY

Top12-670 is proven to be suitable for welding. It can be welded easily and safely with the usual methods. The characteristic mechanical properties are not changed when properly welded. Note: In the presence of high chloride concentrations, welded connections are more vulnerable to pitting along the welding seam than along unwelded steel sections.

HANDLING

Like conventional rebar, no special handling is required on construction sites. To guarantee the best possible quality in a concreted state, we recommend

- » Separate storage of conventional and stainless steel
- » Cover Top12-670 during storage and when not installed.

These measures are recommended to protect the material from damaging environmental influences such as e.g. contamination with rust / iron particles from conventional reinforced steel and from chlorides.

DELIVERY OPTIONS

Steel bar	Ø 28 / 36 / 43 mm
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MANUFACTURER

Swiss Steel AG
Emmenweidstrasse 90, 6020 Emmenbrücke, Switzerland
+41 41 209 51 51
bauprodukte@swiss-steel.com

SALES PARTNER

SpannStahl AG
Wässeristrasse 29, 8340 Hinwil, Switzerland
+41 44 938 97 97
info@spannstahl.ch

