

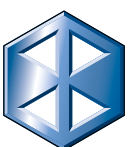
Top12-670

A New Development for Protection
Level 2b Anchors



SWISS STEEL

Providing special steel solutions





Achieve Protection Level 2 with stainless reinforcing steel

Top12-670 is a stainless reinforcing steel with properties that make it suitable for permanent and temporary securing elements.

The revision of SIA Standard 267:2013 introduced the use of corrosion resistant stainless steels as micropiles and passive anchors to achieve Corrosion Protection Level 2. Protection Level 2 may be achieved with conventional, ordinary anchors (Protection Level 2a = steel core + cement mortar + cladding tube + cement mortar) as well with stainless steels of Corrosion Resistance Class 1 (CRC1) and higher (Protection Level 2b = stainless steel core + cement mortar).

Significant properties of Top12-670

Top12-670 (Material No. 1.4003 - EN 10088) is included in SIA Information Sheet 2029 "Stainless Reinforcing Steel". This steel with PERN 12 is categorised as CRC1. According to SIA standard 267:2013, it meets the requirements for Protection Level 2b.

Top12-670 reinforcing steel is subject to internal controls as well as external controls by the EMPA.

Nominal Ø [mm]	f_{sk} [N/mm ²]	f_{tk} [N/mm ²]	ϵ_{Lk} or A_{gt} [%]	Ratio f_{tk}/f_{sk}	Coupling thread	Surface* [mm ²]	F_{sk}^* [kN]	F_{tk}^* [kN]
28	670	800	Min. 5%	Min. 1.08	M27	459	307.5	367.2
36	670	800	Min. 5%	Min. 1.08	M36	817	547.4	653.6
43	670	800	Min. 5%	Min. 1.08	M42	1121	751.1	896.8

*The surface of the metric thread in the coupling area should be applied to calculate bearing capacity and breaking load.

Safe corrosion protection

According to SIA Standard 267:2013, corrosion protection of passive anchors is based on the corrosion risk of the soil and can be ensured primarily by cladding the tension member with alkaline cement mortar or stone. Despite eventual imperfections of the embedding, stainless steels of Corrosion Resistance Class 1 remain permanently protected in the subsoil even if normal, non-aggressive ground water is present. In contrast to non-alloy reinforcing steel there is no risk of macro-element corrosion, which may be induced by electrical contact between the anchor and the foundation reinforcement and/or a localised lack of cladding. Top12-670 must only be used in the area of a DC power system if there is no existing or possible critical risk of stray currents.

Uses and advantages of Top12-670

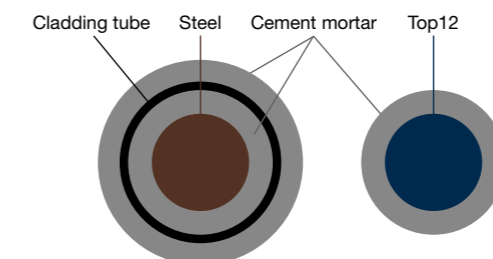
Protection Level 2 anchors can be used in numerous ways. Depending on the expected service life, the building class

and the corrosion risk, they are used as temporary or permanent securing elements (e.g. as grout anchors in pits, retaining structures, or to take up the tractive forces of noise barriers).

- » Use as Protection Level 2 anchor
- » Suitable for building sites
- » The alloy provides corrosion protection for the rod
- » The stainless materials provide corrosion protection for the coupling
- » Fast, easy coupling
- » Stainless accessory components provide corrosion protection for the system
- » No need for resistance measurements
- » Smaller borehole diameters

Where to buy Top12-670

Top12-670 reinforcing steel is processed by SpannStahl AG (Hinwil, Switzerland) and marketed exclusively under the brand name SpannTop. The entire system, including all necessary stainless steel accessories, e.g., anchor plates and sleeves, is available from SpannStahl.



Protection Level 2a Protection Level 2b

(schematic diagram of anchor, not to scale)





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