

FOR MAXIMUM CORROSION PROTECTION

Vossloh *protect*

Our premium zinc coating for all rail fastenings



Perfect protection under extreme conditions


Environmentally friendly corrosion protection

Heat, temperature fluctuations, high atmospheric humidity, salty sea air, and chemicals from industry – railway lines used for passenger and goods traffic worldwide need to function smoothly and last a long time, even under extreme environmental conditions. Corrosion protection therefore plays a key role for high-strength steel parts such as tension clamps.

The new premium zinc coating is “green” because it helps to protect the environment.

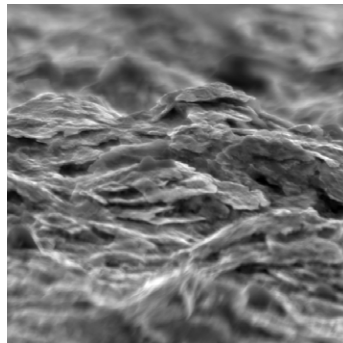
How **Vossloh protect** provides a boost to sustainability:

- › Coated steel parts last longer.
- › No environmentally harmful chemicals such as chromium compounds are used.
- › The thin layer thickness ensures resources are used efficiently.



Vossloh *protect*: Ensuring all resources are used efficiently

We have developed the new premium zinc coating Vossloh *protect* to withstand aggressive conditions for the long term. It offers long-term protection for all steel components in our rail fastening systems: from tension clamps to screw spikes and T-head bolts, including nuts and washers. The top coating provides barrier protection from chemicals, and cathodic corrosion protection keeps them rust-free even in the event of damage. Vossloh *protect* also substantially reduces the risk of material fatigue.



The **premium coating Vossloh *protect*** comes with the highest protection class (C5-L) in accordance with ISO 12944 and contains no heavy metals, making it suitable for safe use worldwide. Further benefits:

- › Resistant to chemicals, thus ensuring long-lasting corrosion protection even in industrial areas with high humidity levels and an aggressive atmosphere.
- › Can be used in all climates, even in high or fluctuating temperatures.
- › Hydrogen-free, with no danger of hydrogen embrittlement in high-strength steels.
- › Two-layer base and top coat provides an ideal friction coefficient for screws and lets you select your own shade.
- › Long service life; cathodic corrosion protection also offers protection against mechanical damage.



Minimum thickness, maximum protection

Special properties thanks to combined zinc and aluminium flakes

With a total layer thickness of 10 µm on average, the Vossloh premium zinc coating is finer than a human hair. Fine zinc and aluminium flakes play a central role in the high resistance of the components: Multiple flakes overlap, much like fish scales, and react dynamically when the tension clamps move.

➤ Pretreatment

Oil and grease residues are first removed in an alkaline solution. Then all components are cleansed of scale and other impurities by means of blast cleaning. This creates a suitable surface for optimum coating results.

➤ Coating

To ensure an even application, the coating is first applied by means of dip-spinning or spraying and then baked.

➤ Salt spray test passed

The new premium zinc coating passes the salt spray test with flying colours. No signs of corrosion are visible in the salt spray test, even after 1,440 hours of continuous exposure.



The undamaged tension clamp after 1,440 hours in the salt spray test in accordance with ISO 9227 NSS.



Tension clamp with intentional layer damage after 1,440 hours in the salt spray test in accordance with ISO 9227 NSS to demonstrate cathodic corrosion protection.



Ensuring all resources are used efficiently.

Technical benefits of **Vossloh protect** in direct comparison.



You can also use our Product Finder on our Web site:



	Premium zinc coating	Conventional corrosion protection systems
Suitable for	Tension clamps, screw spikes and T-head bolts	Either tension clamps or screws
Corrosivity category in accordance with ISO 12944	C5-H (1,440 h rust-free)	C5-K (480 h rust-free); more achievable only with tension clamps
Long-range cathodic effect	Yes	No
Reworking for metric thread	Not required	Required for screws to measure
Coefficient of friction for screws	Adjustable according to application, thus facilitating even tension in the track	Not adjustable or coating of screws not possible to begin with
Resistance to UV light	Corrosion protection not influenced by UV light.	With UV stabiliser, resistant for a limited time
Resistance to stone chips	Good	Average
Resistance to acids and alkalis	Good resistance	Non-resistant in some instances
Resistance to oils and greases	Yes	Yes
Resistance to fuels	Yes	Yes
Colour	Adjustable	Can only be adjusted with powder coating, otherwise black or grey

Note: Content, figures and specifications in this brochure reflect the performance of the fastening system under ideal conditions, but this will always depend on external factors and influences. Contact us so we can work with you to develop a solution tailored to your project and your requirements. The information in this document represents the state of technical development at the time of publication; the product may have been updated since as a result of ongoing research and development work at Vossloh.

Interested in more products in the Vossloh portfolio for your rail infrastructure?

Take a look at our Product Finder, where you'll quickly
find the solution that's right for you!

Click here to directly
access the Product Finder



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