



Zinoco by British Steel is a premium coated rail designed for use in aggressive rail conditions such as coastal track, wet tunnels, level crossings, salt pans and stray current environments.

Our award-winning Zinoco offers superior corrosion protection compared to all current rail coating technologies, due to its durability, sacrificial protection and damage tolerance.

#### Working in partnership to meet customer needs

British Steel works in partnership with customers to understand the needs of the rail sector and develop innovative and value-adding products to directly address those needs.

Working closely with Network Rail, we have produced and tested Zinoco, responding to our customers' requirement for a rail with a durable coating to withstand corrosive track environments. Results to date indicate that the performance of Zinoco will surpass that of our previous corrosion protection system Railcote®, which delivered a 3-30 times life extension.

#### Sacrificial protection

Sacrificial protection is an electro-chemical reaction which occurs when the anode sacrifices itself in favour of the cathode. The resulting flow of electrons prevents a corrosive chemical reaction. With Zinoco coated rail, the zinc-rich (anode) coating corrodes in preference to the steel (cathode), therefore preventing the iron from corroding. The zinc oxide creates a strong barrier to further corrosion - in this way the protection of the metal is guaranteed, even if the zinc layer is slightly damaged.

#### Rigorous testing for product performance

The effectiveness of Zinoco is assured by our comprehensive laboratory testing procedures which cover stringent criteria such as impact, wear resistance, adhesion, prohesion and stray current corrosion. In independent laboratory trials, Zinoco has been proven to outperform all alternative coated rails tested to date. Unlike most rail coatings, Zinoco is suitable for use in 3rd/4th rail areas and in areas where stray currents may exist.

Its performance so far has led to Zinoco being fully approved for use in track by Network Rail, London Underground, RATP and Irish Rail.

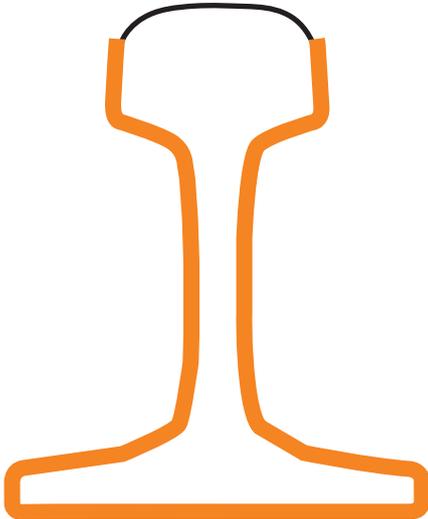
#### Technical support

British Steel has produced and supplied thousands of tonnes of coated rail products over the last two decades. Our coating team's deep understanding of corrosion protection and specific, associated welding requirements, coupled with research data and practical experience deliver coating solutions to meet your rail needs.

Our technical team is available to provide advice and support, helping you to optimise your rail selections. Rail products and grades can be matched precisely to track conditions, track types, environmental conditions and a host of other variables to enable every rail we deliver to provide optimum performance throughout its service life.

### Application process

Zinoco® is treated with a thermally sprayed zinc-rich alloy which can be applied to rails of any grade with lengths up to 216 metres available. The coating is applied to the web and around the foot of each rail. The ends of each rail are usually left uncoated to facilitate installation welding.



Corrosion protection of Zinoco rail is provided in the areas highlighted to resist pitting, gall and general loss of section due to corrosion to extend rail life. We suggest the use of corrosion resistant fastening systems to complement Zinoco in addressing track corrosion issues. Other coating configurations may be available upon request. Please contact us for more information.

### Welding

Zinoco rails are fully weldable by both flash butt and aluminothermic welding processes. The coating must be removed from the area to be welded by an abrasive disc or belt. New rails are supplied with uncoated ends to speed installation and are clearly identified with a Zinoco label which contains links to further product and usage information. Touch-up kits are also available to reinstate corrosion protection of the welded area at the installation site.

### Cutting and drilling

Zinoco may be cut and drilled using standard practices without removal of the coating.

### Performance against current competition

Coating	Barrier coat	Sacrificial protection	Stray current protection	Abrasion resistance	Impact resistance	Removal of coating (for welding)
Zinoco®	Excellent	Yes	Excellent	Excellent	Good	Moderate
Railcote®	Good	Yes	Excellent	Moderate	Moderate	Easy
Aluminium metal spray	Good	No	Poor	Very good	Good	Difficult/hazardous
Glass flake epoxy	Good	No	Poor once damaged	Very poor	Very poor	Difficult/hazardous
Glass flake polyester	Good	No	Poor once damaged	Poor	Poor	Difficult/hazardous

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