

Painting Gantrail clips

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Gantrail have always recommended that their range of crane rail clips should not be painted if they are to perform to their best. A competing company once introduced a paint priming system for clips and it is understood this was a complete failure. The clips work on the basis of friction between the two parts of the clip and between the clips and the rails supporting structure. Many paint systems reduce the coefficient of friction between the mating parts of the clips and between the clip and the steel surface supporting the rail. Thus they are able to reduce the ability of the clip to resist lateral forces from the rail. Whilst not painting is ideal, it is not always acceptable; hence this note is presented to give more information in choosing acceptable paint systems.

CORROSION PROTECTION SYSTEMS

There does not appear to be any sound published data on the frictional effects of complete paint systems when applied to connections relying on friction. The most authoritative guidance known to Gantrail is published in the British Constructional Steelwork Association book - Structural Fasteners and their application. The following table is reproduced from the publication. Slip factor can be taken as directly related to coefficient of friction but it is not necessarily the same.

Surface condition (General grade bolts)	Slip factor
Grit or shot blasted	0.5
Metal sprayed (aluminium) - after grit or shot blasting	0.5
Untreated, complying with BS 4604	0.45
Zinc silicate primer - applied after grit or shot blasting	0.4
Metal sprayed (zinc) - after grit or shot blasting	0.4
Galvanised, then scored by wire brushing or blasting	0.35
Etch primer - applied after grit or shot blasting	0.3
Zinc-epoxy primer	0.3
Vinyl treated	0.25
Ground or machine finish	0.15
Galvanised	0.15
Red lead paint	0.05

GANTRAIL'S APPROACH

The Gantrail type 3, 7, 8 and 9 clips all consist of two parts. The two parts of these, slide in relation to each other during installation. Once fixed, the two parts are effectively locked together due to the force in the bolt and friction between metal surfaces. Reduction of the level of friction could allow the parts to slip. Therefore, it is Gantrail's view that if painting must be completed before the clips are fitted, it should be limited to systems with a slip factor of 0.3 or above in the table. Full corrosion protection should be avoided if possible. Under no circumstances should red lead or alkyd paint system be used.

A world of crane rail expertise.

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