

NTN O18

On-site treatment of bolt heads and nuts

Nullifire
Smart Protection

Statement

When erecting steel structures nuts and bolts are the most common means of fixing the connections, once in place consideration should be given to the protection of these bolts. Typically bolts may be plain steel or could be treated in some way:

- Black Bolts- untreated steel bolts
- Galvansied Bolts- hot-sipped galvanised steel bolts
- Sheradised Bolts- zinc coated (via thermal deposition) bolts
- Greenkote Bolts- zinc/alumimum coated (via thermal deposition) bolts

Based on extensive experience Nullifire would offer the following advice for the treatment of bolts:

The preparation of a surface to be painted is critical; it is a long established and well documented fact that most premature coating failures are due to poor substrate preparation.

Almost without exception the best form of surface preparation is abrasive blast cleaning but it is recognised that to specify blast cleaning for bolts may be impractical and unrealistic.

Nullifire Technical therefore suggest the following alternative preparation for bolts.

Where corrosion protection is required:

Environment	Surface Preparation	Coating System
C1 & C2	Remove any contamination such as zinc salts then degrease with a good degreaser. Thoroughly dry the nuts and bolts.	Apply the same coating scheme to the bolts as used on the steelwork.
	As for C1 and C2, then; Black Bolts should be mechanically prepared to St3.	
C3, C4 and C5	Galvanised and Sheradised Bolts should be treated with a modant wash. Greenkote Bolts should be degreased with a good degreaser. Thoroughly dry the nuts and bolts.	One of the primers shown below should be used. This should be followed by the build coat and/or finish used on the steelwork.

In certain circumstances it may not be necessary to coat Galvansied, Sheradised or Greenkote bolts in C1 and C2 environments, contact Nullifire Technical for advice.

Environment	Black Bolts	Galvanised Bolts	Sheradised Bolts	Greenkote Bolts
Nullifire PM015	✓	✓	✓	✓
Nullifire PM018	✓	✓	✓	✓
Nullifire PM21	✓	✓	✓	✓
Nullifire 633	✓	✓	✓	✓

When Nullifire Intumescent Coatings is required:

Environment	Surface Preparation	Coating System
C1 to C4 (Black Bolts C1 only)	Remove any contamination such as zinc salts then degrease with good degreaser. Thoroughly dry the nuts and bolts.	For solvent based intumescent coatings no primer is needed, the Nullifire SC601/602 can be applied directly to the bolts. For water based intumescent coatings one of the primers shown above should be used.
Black Bolts C2 to C4	As above, then mechanically prepare to St3.	One of the primers above should be used prior to application of the Nullifire Intumescent.

Where the bolts connects elements with different intumescent thickness requirements the lower thickness may be applied to the bolts, e.g. column dft 600µ, beam dft 500µ, apply 500µ to the bolts.

Note: In certain environments the use of a Mordant Wash has been specified for Galvansied and Sheradised bolts where corrosion protection is required but now when only fire protection is required. This is due to the longer life to the first major maintenance periods expected for corrosion protection systems.

Technical Service

Nullifire has a team of experienced Technical Sales Representatives who provide assistance in the selection and specification of products. For more detailed information, service and advice, please call Technical Services on 01942 251 400.