

Galvafacts

Renovation of Damaged Areas

A galvanized coating may be damaged by operations such as cutting, welding or drilling after galvanizing. Also, although a galvanized coating is far more robust than other corrosion protection systems such as paint, small areas of damage may still occur during transport and erection on site (figure 1).

Small areas of damage such as scratches (typically up to about 5mm wide) may self-heal and have little effect on the life of the coating due to the sacrificial action of zinc. Nevertheless, it is often aesthetically desirable to renew the coating over small areas as well as larger areas in line with the requirements of BS EN ISO 1461: 1999 which highlights the following three repair techniques:

Zinc Rich Paints/Pastes

The area of damage should be thoroughly cleaned to remove any rust and surface contaminants. Sufficient coats of a suitable zinc rich paint/paste should then be applied in order to achieve the required renovated coating thickness. It is important that the paint/paste is allowed to dry before application of further coats to build-up the dry film thickness (figure 2).

Low Melting Point Zinc Sticks

The area of damage should be thoroughly cleaned to remove any rust and surface contaminants before being preheated with a blowtorch to about 300°C. The alloy stick when applied to the steel work will melt to form a coating on the area for renovation (figure 4).

Zinc Flame Spraying

The area of damage is masked-off and grit blasted to Sa3 with angular iron grit. Specialist equipment may then be used to spray a zinc coating on to the area for renovation. It is normally necessary to seal the spray coating after application.

Use of a zinc rich paint is the easiest and the most commonly used form of renovation. Where colour match is important, it may be over-coated with a zinc-aluminium paint. Whilst zinc sticks provide a good repair with a bright finish, problems may be encountered when trying to achieve the required coating thickness on vertical surfaces. Zinc flame spraying is the best means of repair but it is the hardest to conduct and requires specialist equipment. Again, where colour match is required a flame spray renovation may be over-coated with a zinc-aluminium paint.

It is important that when a galvanized coating is to be over-coated (e.g. painted or powder coated) the repair media used is suitable for over-coating.

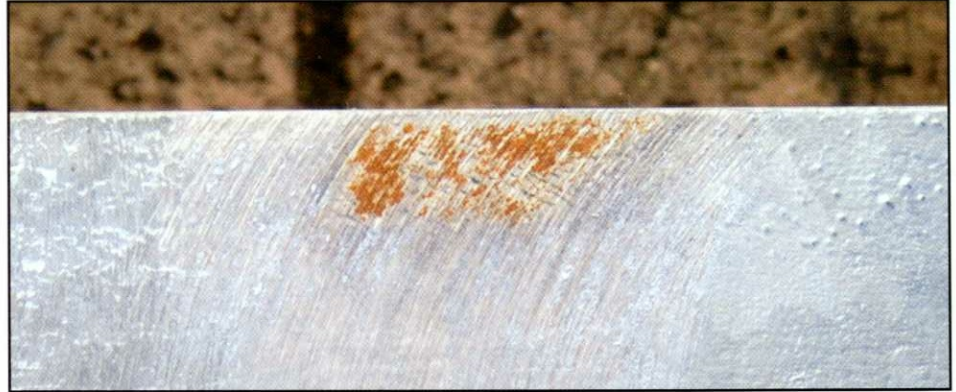


Figure 1: Damage to a galvanized coating caused by grinding.

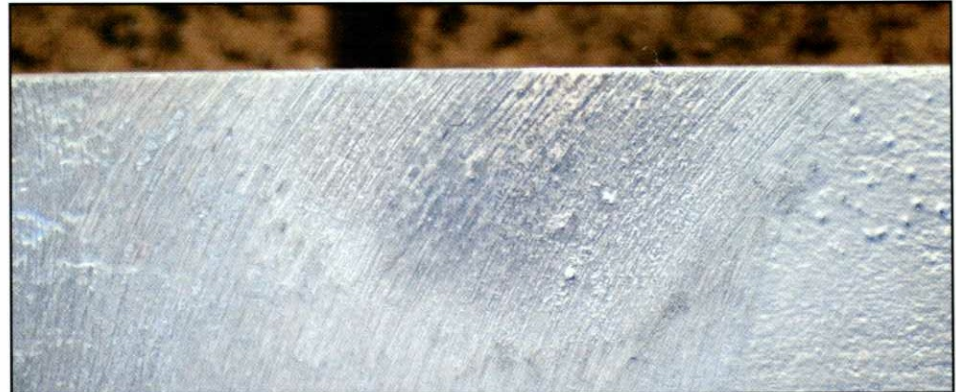


Figure 2: Damaged area after repair using a zinc rich paint.



Figure 3: A common cause of coating damage is welding.



Figure 4: Repair to a weld using a zinc alloy stick.