1:11 General surface preparation and application requirements

Welds
After welding, all surfaces to be painted must be thoroughly cleaned and free from flux, weld spatter and surface defects, including cracks and deep pots.

Weld spatter must be removed carefully by blasting or mechanical grinding. All rough welding must be ground smooth.

Weld flux must be removed by thorough washing with a detergent solution followed by copious washing with fresh water.

Oil and grease
Deposits of oil and grease must be removed prior to blasting by solvent cleaning.

Following abrasive blasting
All blasting dust, grit and foreign matter must be completely removed from the surface by blowing with compressed air or other suitable means. The compressed air must be clean air, free from water or oil. In the case of tank work all blasting dust and sand shall be removed by brush and vacuum cleaner. Surfaces must be dust and grit free prior to painting.

Mixing
Stir each component separately using an explosion-proof mixer. Add the total contents of the hardener container to the total contents of the base container. Power mix until uniformly blended and allow mixed product to stand for the recommended induction period before applying. It is important that both components of two component coatings are thoroughly mixed together before application. To accomplish the mixing power mixers should be used. Air powered mixers are safer than other types which could create a spark. Power mix each container separately. Avoid any contamination such as dirt or moisture during the mixing operation. If at all possible paint should be warmed to room temperature before mixing during cold weather. Solvent additions should be made if necessary after the two components are thoroughly mixed.

Painting following abrasive blasting
The first coat of the painting system must be applied before any deterioration of the blasted surface has occurred. A maximum time of 4 hours is allowed prior to application of the priming coat. If any sign of deterioration of the blasted surface is apparent, it shall be reblasted to the specified standard.

Application
The coating system shall be applied to a dry film thickness of not less than that specified for each coat.

Calibrated non-destructive magnetic pull-off or fixed probe instruments can be used to measure dry film thicknesses of non-conductive coatings applied to a ferrous metal base. Alternatively dry film thickness can be measured destructively using a Tooke gauge. This method requires subsequent repair and is not routinely used on coated steel surfaces.

The specified film thickness for each coat shall be achieved prior to the application of the subsequent coat. Areas showing low film build shall receive additional coats of the appropriate material to achieve specified film thickness. Total film thickness of the system shall be the minimum specified.

Workmanship shall be of a high standard to provide coats of reasonably uniform thickness, free of runs, pinholes, bubbles, dry spray or overspray and other film defects.

Contamination
Abrasive blasting and other operations such as welding, cutting etc should be organised so that contamination such as abrasive shall not be blown or fall onto freshly coated areas. All areas shall be blown or brushed free of dust or grit before coating is applied.

Drying
Each coat should be given adequate drying time according to specification and/or data sheet requirements.

Application conditions

Temperature
Two component coatings cure by chemical reaction. The cure rate of these products is a function of temperatures and time. Consult individual product data sheets for specific drying data. Pot life of two component coatings decreases as temperature increases.

Single component coatings, such as chlorinated rubber and vinyl products, dry by solvent evaporation. These products are not so readily affected by low temperature conditions, good drying can be expected down to 5°C and lower in some cases.

Humidity
It is not good practice to apply any coating during a condensing humidity condition or if this condition will occur shortly after the application of the coating. A safe rule of thumb is not to paint at or above 85% relative humidity especially during a period of anticipated temperature change. It is also recommended that the temperature of the steel should be 3°C above the "Dew Point" OR the temperature at which moisture will condense from the air, and on the surface (see Temperature/Humidity Graph). A practical guide to suitable painting conditions is set out in the Steel Structures and Painting Council Manual second edition and reads as follows:-

The "Dew Point" requirements can be presumed to be satisfied if a thin clearly defined film of water applied to the cleaned surface with a damp cloth, evaporates within 15 minutes.

"All surfaces must be dry and clean to paint"