



Cleaning Steel Surfaces via Shotblasting

The cleanliness condition of blasted steel is stipulated and measured by the Swedish standards SA 1, SA 2, SA 2.5 and SA 3, described as **brush off**, **commercial near white metal** and **white metal**.

When shotblasting steel the machine size/model selected, the speed of operation and the grade of steel abrasive (shot) all have a bearing on the finished result. In addition to cleaning, the shotblasting process results in a textured surface profile which enables adhesion of a finished protective coating.



The two main contaminants that are normally encountered on 'untreated' steel are Millscale and Rust. Millscale is a grey flakey oxide of iron that's present on hot rolled steel and rust is a brown oxide formed over a period of time, at a rate depending on the exposed conditions of the surface. Sometimes rust can be several millimetres thick. For most coating processes the millscale and rust must be removed, otherwise the coating only adheres to the oxide and not to the steel, resulting in a poor bond. Other contaminants that need to be eradicated include oil, grease, dirt, paint and old residual coatings.

Steel Surface finishing standards:

Brush Off (SA 1)

Oil, grease, dirt, rust scale, loose rust, loose mill scale, loose coatings and paint and foreign particles are removed. Any remaining mill scale, rust and paint should have been abraded, ensuring that they are 'fixed' to the surface and the whole area should show flecks of the metal beneath. The resulting profile needs to provide good adhesion to allow bonding of the new coating.



Achieved by quick, light blast cleaning.

Commercial (SA 2)

Oil, grease, dirt, adhering rust scale, paint and foreign particles are partially removed. Light shadows, spots or stripes caused by rust stain, mill scale oxides or paint that has settled in pitted surfaces are permitted, but two thirds of the finished surface should be free of all residues so that grey metal is visible. Any residual contamination should be firmly adhering.



Achieved by thorough blast cleaning (65% clean).



Near White Metal (SA 2.5)

Virtually all oil, grease, dirt, adhering rust scale, paint and foreign particles are removed. Any small traces of remaining contamination will be in the form of very light shadows, spots or stripes caused by rust stain or mill scale oxides. Any residual paint should be light and 'fixed'. The cleaned surface will show varying shades of the greymetal beneath.

Achieved by very thorough blast cleaning (95% clean).



White Metal (SA 3)

All traces of oil, grease, dirt, adhering rust scale, paint and foreign particles are completely removed. The resulting surface is a grey/white uniform metallic colour with a textured profile to form exceptional adhesion for the bonding of coatings.

Achieved by blast cleaning to pure metal.

