

Mild Steel – Bristle Blasting

1.1.10

What Is Bristle Blasting?

Bristle blasting is a highly portable method of surface preparation of mild steel that removes existing coatings and corrosion.

The bristle blasting process removes corrosion and generates an anchor profile by using a specially designed rotary bristle tool. This tool consists of hardened wire bristle tips that are bent forward and dynamically tuned to a hand-held power tool which operates at approximately 2,500 rpm. The mechanical principles upon which the bristle blasting tool is based are summarized as follows: Bristle tips are designed to strike the corroded surface with kinetic energy that is equivalent to standard processes that use grit blast media. Immediately after the bristle tips strike the corroded steel surface, they retract (i.e. “rebound”) from the surface, which results in both corrosion removal and a micro-indentation that exposes fresh surface. Consequently, surfaces that have been treated by the bristle blasting tool have a texture and visual cleanliness similar to those obtained by traditional abrasive blasting processes.



Why Bristle Blast?

Bristle blasting is more efficient than other methods of power tool cleaning (such as needle gun, grinders, flapper disks etc.), particularly on narrow sections such as window frames and balustrades. Bristle blasting can remove rust from within the pits on pit-rusted steel to an extent, and can also level out peaks somewhat. Unlike ultra high pressure water blasting (see Tech Note 1.1.8), it produces a measurable surface profile. The adjacent photo shows the effectiveness of bristle blasting. Very little waste is produced by this method.



Is new steel suitable?

Yes it can be used on new steel, but this is unlikely, as new steel is typically dry abrasive blasted (which is more time efficient) in the factory just prior to painting.

Bristle Blasting is best used on **existing surfaces** on site, particularly badly rusted handrails, balustrades and narrow sections generally. Bristle blasting is also suitable for non-ferrous metals such as stainless steel and aluminium.

As the method is used in dry conditions, it avoids **flash rust** problems associated with wet methods of blast cleaning, namely wet abrasive blast cleaning and ultra high pressure water blasting.

Results

The surface profile depends largely on the profile of the underlying substrate, although some levelling and roughening do occur. The improved surface profile **enhances adhesion** of primers and increases the surface area in **contact** with zinc metal present in zinc-rich primers.

For more information and sales enquiries, please contact your Dulux Protective Coatings Technical Consultant.

