

Hot Dip Galvanized Information Sheet No.9

Surface Preparation of Hot Dip Galvanized Steel to accept a Paint Coating System (referred to as Sweep Blast Cleaning)

The details used in this information sheet has been extracted from CODE OF PRACTICE FOR SURFACE PREPARATION AND APPLICATION OF ORGANIC COATINGS reference HDGASA 01:1990

Sweep Blast Cleaning

Tests have shown that abrasion of the surface of hot dip galvanized silicon killed steel is unnecessary, since the alloy growth imparts a sufficiently rough profile.

However, in cases of smooth, bright hot dip galvanized surfaces, usually aluminium killed steel, it is necessary to create a profile by mechanical means. In the case of small areas, this can be done by manual or mechanical abrasion with medium-fine abrasive paper using an orbital sander, but definitely **not** a high-speed disc sander.

On large surfaces, the process of sweep blast cleaning is best employed. It is similar in principle to normal blast cleaning of mild steel except different parameters are employed. Normal blast cleaning, as used on mild steel, will damage the hot dip galvanized layer and must not be used.

Parameters for sweep blast cleaning

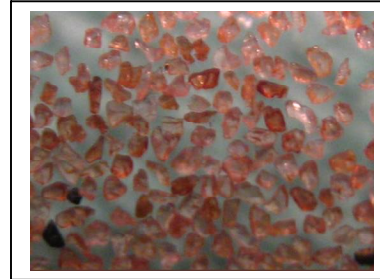
- (a) Equipment and air supply free of oil and moisture.
- (b) Nozzle pressure – not greater than 300kPa (3 Bar).



- (c) Nozzle angle to the surface being cleaned - 60°- 90 °.
 - (d) Sweeping distance 500 – 600mm.
 - (e) Abrasive - ultrafine non-metallic grit – not less than 0,2mm and not greater than 0,8mm.
 - (f) Grit should not be recycled.
 - (g) The blasted zinc surface must be free from all contaminants including oil and dust.
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Magnified Garnet

Similar results can be achieved with water blast cleaning using a water pressure not greater than 15MPa, an angle of blast of about 30 ° and with injection of ultrafine abrasive as described above.

The advantage of water blast cleaning is that detergent can be injected into the system as well as abrasive so that degreasing and creating of a profile can be carried out simultaneously.

Due to the high energy of the water, the amount of abrasive required is much less than in the case of air blast cleaning. The equipment must be sturdily designed to resist the reaction forces on the nozzle of the lance.

If water blast cleaning is used, the cleaned surface should be dried and painted as soon as possible after cleaning otherwise the reactive clean zinc surface will rapidly deteriorate.