Resene

Resene Paints Limited

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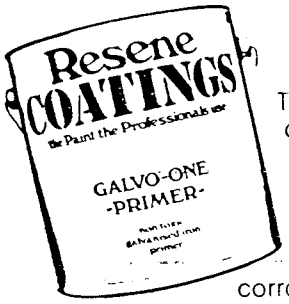
Corrosion Prevention of Galvanised Steel.



Traditionally the zinc coating of steel has been regarded as a protective coating in itself, being painted only for aesthetic reasons. Increased corrosion rates of zinc, particularly in industrial and marine environments, have lead to the realisation that not protecting the zinc from corrosion is wasteful of a decreasing resource. Standard primers for zinc however, do have a number of drawbacks such as:

(a) they are 2-component mixtures, e.g. zinc dust-zinc oxide, two pack etch primers;
(b) they have very critical recoat times, e.g. etch primers, calcium plumbate; and
(c) they contain toxic components, e.g. etch primers, calcium plumbate.

Standard acrylic paints adhere well to galvanised steel but do little to reduce the corrosion of the reactive zinc.

It was recognised that there existed a gap in the primer range which could be filled with a particular product conforming to the following parameters:

1) Would adhere in the short and long term to new and weathered galvanised steel;
2) Would passivate the reactive zinc surface to retard corrosion;
3) Would have a secondary effect as a ferrous metal primer;
4) Would be a one-pot material;
5) Would have a non-critical recoat time;
6) Would be suitable for roofs collecting potable water;
7) Would be able to be topcoated with a variety of topcoats (e.g. alkyd, acrylic, chlorinated rubber).

Although this does appear to be a tall order, these parameters have all been incorporated in Resene Galvo-One Primer. This product now has a technical history of nine years and a commercial history of six. It has been widely accepted by specifying authorities, and is also being manufactured overseas. The possibility of negotiating further overseas manufacturing rights is presently being investigated.

Galvo-One is suitable as a lap primer as well as on new, or weathered iron.

It can be applied by brush, roller, conventional or airless spray with complete safety to personnel. It stops zinc corrosion and effectively welds itself to galvanised iron while its white colour ensures good top-coat coverage of gutters and downpipes.

Galvo-One has a dry time of five hours at 18°C and can be recoated after twelve hours. It has a theoretical coverage of twelve square metres per litre with a dry film thickness of 35 microns. Usually one coat is sufficient, but where severe corrosion is present, an extra coat is recommended.

The choice of topcoat should be governed by the environment in which it is being used. Alkyds and acrylics are suitable for use in most environments giving adequate protection with excellent aesthetic appeal. The use of micaceous iron oxide in these vehicles, while reducing the colour range, increases their protective qualities. In industrial and severe marine environments, barrier type coatings such as the Resene Chlorinated Rubber system, are required to maximise protection.

For further information on this subject refer to the following data sheets in the Resene manual:

Galvo-One Primer	D41
Hi Glo Acrylic House & Roof Paint	D31, D91
Mica Bond Alkyd Roof Paint	R12
Chlorinated Rubber	R7, R8

In next month's Memo, we'll be discussing the development & origins of British Standard Colours

GOUGH STREET, LOWER HUTT, NEW ZEALAND. P.O. BOX 36-006.
TELEPHONE (04) 684-319.
TELEGRAMS "RESENE",
TELEX: WELLINGTON NZ 3353 SEEK (RPL).
FAX: (04) 686-987.
BRANCHES: WHANGAREI, AUCKLAND, HAMILTON, TAURANGA, ROTORUA, NAPIER, HASTINGS, NEW PLYMOUTH, PALMERSTON NORTH, LEVIN, PARAPARAUMU, NELSON, CHRISTCHURCH, TIMARU, DUNEDIN, QUEENSTOWN, INVERCARGILL, FIJI.