

The Swedish National Road Administration

Isotrol/Isoguard coating system

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We have been using the Isotrol coating system for corrosion protection for a period of approximately 10 years on different steel bridge constructions. Our main applications have been on surfaces where sand blasting would have been the normal procedure but where the required degree of cleaning has been difficult to achieve. On such surfaces the Isotrol system has been functioning very well, due to the ease of application and its good corrosion protection properties.

Referring to a special object we have used the Isotrol products on a steel bridge (a bow bridge, 132 meters of length) with heavily corroded surfaces.

The bridge was cleaned with high pressure water blasting and all loose paint and rust was removed by brushing. The inside of the bow was difficult to clean due to the intricate geometry of joints of hanging rods and frequent occurrence of reinforcement plates.

On non-corroded surfaces one layer of Isotrol primer was applied and on corroded parts two layers (thickness 30 µm). On top of that Isogard was applied and thereafter Isotrol Finish gray as a top layer.

After 10 years the coating is still intact with the exception of mechanical damages and some insignificant corrosion in some places, e.g. the lower part of the upper joint of the hanging rods.

The result of the maintenance of this bridge is excellent considering the method of pretreatment and the shape before painting.

L. Rosén

Note: The Swedish Corrosion Institute made an inspection in 2002 (after 14 years of treatment) which showed that the steel bows on the outside was totally unaffected of corrosion, and that in spite of the topcoat being rather low in film thickness. The inside surfaces of the bows, which were solely coated with primer and surface layer, were even they unaffected of corrosion. On the underside of the bridge edges, welded parts and plane surfaces were almost totally free of corrosion. No blistering, flaking or cracking could be found on any part of the bridge.

The adhesion between the Isotrol system and steel brushed surface was measured and found to be 6 MPa, which is an excellent result. The break occurred between the steel surface and the first coating layer. The adhesion between primer and the old red lead paint was found to be 5 MPa. The break occurred between the old red lead and the first coating layer.

As a whole the bridge is judged to be in good shape. The degree of corrosion of the total construction is estimated to be Ri1. The adhesion between the Isotrol system and the steel surface as well as the old paint system is judged to be excellent.

The examination and judgment of the performance of this bridge has been done by *The Swedish Institute of Corrosion*, and is presented in [KI Report 2002:4](#).