

Dynasylan® SIVO 140–

Eco-friendly corrosion protection




Dynasylan®

 **EVONIK**
Leading Beyond Chemistry



Corrosion causes significant damage and increases maintenance costs. Therefore, metal parts have to be protected against corrosion. Protective coatings are used to expand the lifetime of steel constructions. This is an important contribution to resource efficiency. Still, most protective coatings contain organic solvents which are directly released into the environment. Do you know how much organic solvent (VOC) is released when such a bridge is coated?

There are many applications where steel constructions and the environment can be protected.



Pylons treated with a zinc dust paint based on Dynasytan® SIVO 140

A typical substrate for zinc dust paints based on Dynasytan® SIVO 140: oil and gas pipes.



The rust, oil and dirt is removed via shot blasting followed by spray application of the corrosion protection paint.

Applications of Dynasytan® SIVO 140 based zinc dust paints are not limited to steel constructions. Exhaust pipes made of carbon steel can also be protected since zinc dust formulations based on Dynasytan® SIVO 140 are more heat resistant compared to zinc dust paints based on organic binders. Usually these exhaust pipes are overcoated with a topcoat.



Exhaust pipes made of carbon steel can also be treated with a corrosion protection paint based on Dynasytan® SIVO 140

The following tables show starting point formulations for water-borne corrosion protection coatings based on Dynasylan® SIVO 140.

Table 1 Shop primer formulation based on Dynasylan® SIVO 140

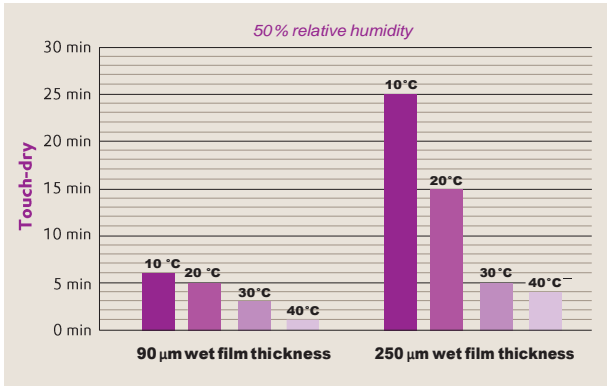
Formulation		
Component I	Parts by weight Supplier	
Dynasylan® SIVO 140 (binder)	23.0	Evonik Resource Efficiency, Germany
Add under stirring		
AEROSIL® 200	0.6	Evonik Resource Efficiency, Germany
.....		
Component II	Parts by weight Supplier	
Zinc dust (4P/16)	30.0	Umicore Zinc Chemicals, Belgium
Zinc oxide (Red Seal)	12.0	Umicore Zinc Chemicals, Belgium
MIOX micro 30	34.4	Kärntner Montanindustrie
Total	100.0	

Table 2 High zinc content corrosion protection coating based on Dynasylan® SIVO 140

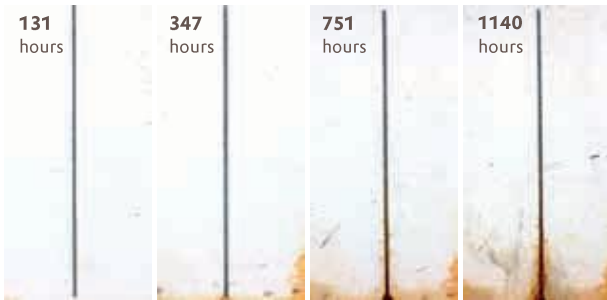
Formulation		
Component I	Parts by weight Supplier	
Dynasylan® SIVO 140 (binder)	15.0	Evonik Resource Efficiency, Germany
Deionised water	4.0	
Add under stirring		
AEROSIL® 200	0.6	Evonik Resource Efficiency, Germany
.....		
Component II (fillers)	Parts by weight Supplier	
Zinc dust (4P/16)	64.0	Umicore Zinc Chemicals, Belgium
Zinc oxide (Red Seal)	8.5	Umicore Zinc Chemicals, Belgium
Mica MKT	7.9	Imerys Ceramics, France
Total	100.0	

Do you have difficulties with the drying time of your water-borne paint?

Not a problem with paints based on Dynasytan® SIVO 140

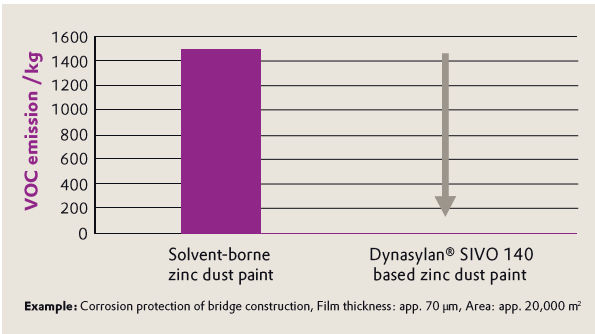


Water-borne does not mean less corrosion protection.



A high zinc content formulation (Table 2) based on Dynasytan® SIVO 140 was applied on shot blasted steel (surface roughness ELK 0.12–0.25 mm). Dry film thickness: ~ 70 µm. The zinc-dust paint was overcoated with a water-borne epoxy coating (70–80 µm dry film thickness) and placed in a chamber with neutral salt spray fog.

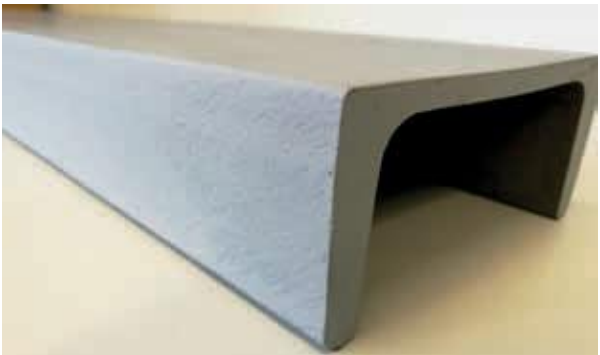
Comparison of VOC emissions of zinc dust primers



Zinc dust paints based on Dynasylan® SIVO 140 can reduce the VOC emission by more than 90 %, protecting the bridge and the environment.

THERE ARE VERSATILE APPLICATIONS.

Environmentally friendly zinc dust paints based on Dynasylan® SIVO 140 do not need special equipment for formulation and application.



Steel beam coated with a zinc dust formulation based on Dynasylan® SIVO 140. The coating was applied with a HVLP spray gun.

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RE-161-MAR17TMC