

ZINGA®

A FILM GALVANISING SYSTEM WITH CATHODIC PROTECTION

The market place is full of different ways to fight corrosion. **ZINGA®** combines the attributes of two principle techniques: the galvanic characteristics of hot-dip galvanising and the barrier protection of a paint.



Kobrin Oil Pumping Station - Belarus

Active galvanic protection
such as

hot-dip galvanising:

The zinc in **ZINGA®** (anode) sacrifices itself, protecting the steel beneath in a comparable and even better way than hot-dip galvanising.

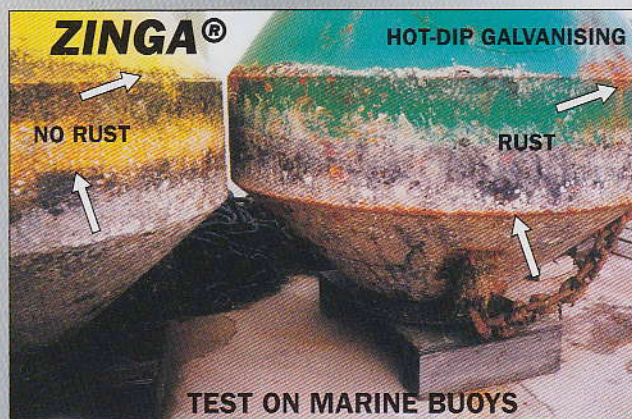
ZINGA®

Passive barrier protection
such as:

paints

formation of a barrier against moist and damp.

Because it has 96% of zinc in its dry film (pure to 99.995%), **ZINGA®** provides an excellent active, galvanic protection to steel.



Two sea buoys were moored in the Atlantic Ocean for 4 years (very corrosive environment). The mild steel buoy treated with **ZINGA®** (yellow buoy) was compared to a buoy that was galvanised by the traditional hot-dip process (green buoy). The two buoys received the same type of topcoats with the same layer thickness, with a supplementary adhesion coating for the hot-dipped buoy. Both buoys had to resist impacts.

Results: **ZINGA®** shows no trace of rust, not even in the impact zone. Hot-dip is severely corroded in several places.

Conclusion:

"Zingatisation is much more effective than the hot-dip process in this environment." The testimonial letter from "La Direction Départementale de l'Équipement, Service Maritime" (France), can be obtained upon request.

- As the **ZINGA®** oxidises, a layer of zinc salts slowly builds up on the **ZINGA®** surface, offering a complementary barrier protection.
- Next to this, a supplementary barrier protection is provided by the binder in **ZINGA®**. The binder reduces the disintegration of the zinc.

Even in an aggressive environment (marine), **ZINGA®** offers a long-lasting protection.



Burdekin River Bridge - Australia

ZINGANISATION®



www.zinga.eu

**CAN YOU GALVANISE THE EIFFEL TOWER WITHOUT DISMANTLING IT?
YES, YOU CAN WITH ZINGA® !**

ZINGA®	CHARACTERISTICS	HOT-DIP GALVANISATION	PAINT
YES	Active galvanic protection	YES	NO
YES	Easy application on site	NO	YES
YES	Reloadable	YES WITH ZINGA®	NO
YES	Overcoatable with itself	NO	YES
YES	Application under extreme circumstances (high & low temperatures and in humid environments)	-	NO
YES	Unlimited shelf life	-	NO
YES	Contact with potable water*	YES	NO
YES	Flexible layer, adjusts itself to the metal structure (resistant to temperature variations and mechanical shocks)	NO	NO
YES	Welding**	NO	NO
YES	The structure keeps its form	NO	YES

* Authorisation depends on local legislation.

** Please contact a Zingametall representative for more information.

With hot-dip galvanisation, deformation of the structure is definitely possible, and there is also potential for hydrogen embrittlement within the welds.



APPLICATIONS !

ZINGA® can be used on:

- ☐ New and existing structures that have not been galvanised
- ☐ Weathered or damaged hot-dipped galvanised structures.
- ☐ Structures that have previously been metallised/coated by thermal zinc spraying
- ☐ Zinganised structures to recharge the old zinc layers to renew the galvanic protection
- ☐ Areas damaged by welding, cutting, drilling, riveting, transporting, etc. as a touch up to the galvanised or zinganised layer.



Zephyros - Taiwan

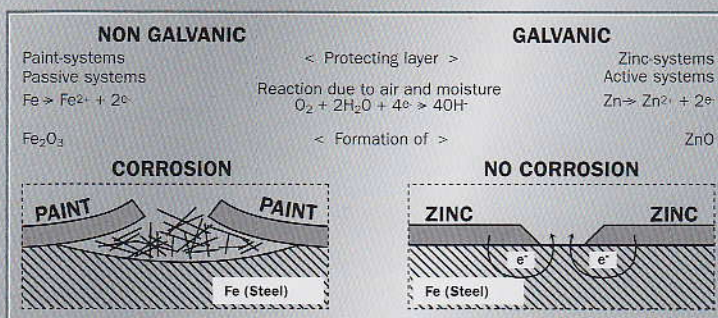


Doppelmayr - Romania



SE Industries - Belgium

APPEARANCE/ COMPOSITION



ZINGANISATION®



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PREPARATION OF THE SURFACE

New metal surfaces:

Blasting Sa 2.5 is necessary to take away mill scale and to obtain a roughness degree Rz 50 to 70 µm.

Old, previously galvanised and already rusty surfaces:

Clean by means of high pressure water (200 bar), with temperature of 80°C or steam to remove impurities, zinc salts and loose rust.

Painted surfaces:

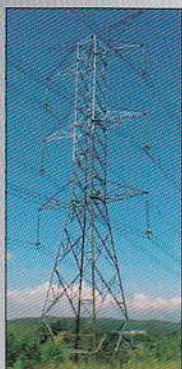
Remove paint by blasting to Sa 2.5 (grit blasting, UHP water jetting, slurry blasting, ...).
A roughness degree of Rz 50 to 70 µm must be obtained.

HOW TO APPLY ZINGA® ?

- ☐ by brush
- ☐ by roller
- ☐ by spray gun (thinned with Zingasolv if required)



Ouémé Bridge - Benin



Electricity pylons - Brazil

ZINGA® is a one component compound containing 96% of zinc (dust) in its dry film. **ZINGA®** is a metallic coating and not a paint. The purity of the zinc used is so high that **ZINGA®** does not contain any toxic elements. After application, **ZINGA®** cures to a dry layer containing a minimum of 96% zinc.

The dry **ZINGA®** film can be in contact with potable water as certified to BS6920 and is U.V.-resistant.



USES

ZINGA® is applied in two coats of 60 µm DFT when it is not going to be overcoated at all.

ZINGA® can be used as a primer in a duplex system and is then applied in one coat of 60 µm. It can subsequently be overcoated with a compatible paint.

In case a duplex system is required and for aesthetic reasons (hotdip aspect), we recommend **Alu ZM**, a quick drying one pack topcoat based on aluminium flakes, on top of **ZINGA®**.

Alu ZM is resistant to UV.



Shell - Morocco

DRYING TIME

ZINGA® is touch-dry and dust-free in about 10 minutes, depending on both temperature and ventilation. It is dry after approximately 48 hours.

ZINGA® continues to harden further when exposed to humidity and the environment.



Guangzhou TV Tower - China



Lafarge - South Africa

Some physical and chemical properties:

Relative density:	2,67 kg/Lt at 15°C
Dry extract:	80% in weight 58% in volume (ASTM D2697)
Temperature resistance:	from - 40°C to + 150°C
Colour:	grey (zinc)
Drying time at 20°C for 40 µm:	+/- 10 minutes dust-free in a ventilated area
Spreading rate:	+/- 3.62m²/kg for 60 microns
Flash point:	≥ 40°C and < 60°C
Re-coatable:	
- with ZINGA® :	- after 1 hour (brush, spray gun)
- with another compatible type of paint:	- after 6 to 24 hours depending on the drying conditions (the mist coat technique is highly recommended)
Shelf and pot life:	unlimited

ZINGA® RELOADS

• hot-dip galvanisation:

ZINGA® applied on a previously hot-dipped structure gives the steel sufficient zinc for a long-lasting active protection. (report available on request)

• ZINGA®:

The old ZINGA® layer will reliquidise and fuse together to form one single ZINGA® layer, maintaining the continuity of the galvanic couple.

INTEGRATION OF LAYERS

Each new coating of ZINGA® blends perfectly with the previous one. Additional layers will all blend into one single ZINGA® layer. Touching up can be done at any time and at a minimal cost. An old ZINGA® layer does not need to be removed before re-coating with ZINGA® but it does need to be cleaned of any contaminants (salts, grease etc.).



The total integration of several layers is shown on the following pictures:



Fig. 1

A thin film of gold dust was applied on top of a first dry coating of ZINGA®.



Fig. 2

Seven days later a second coating of ZINGA® was applied on top of the gold dust. The gold dust becomes fully integrated within the two coatings, proving that the homogenisation of the two ZINGA® layers has actually taken place.



Fig. 3

The same test has been done with a zinc rich epoxy paint. The layer of gold dust remains intact between the two paint layers. The gold film is clearly visible, demonstrating that the two layers remain separate layers.



Zuyevskaya Thermal Power Plant - Ukraine

TEST RESULTS

Independent laboratory tests on ZINGA® have been conducted at:

- The University of Ghent (Belgium)
- B.N.F. Fulmer Materials Technology Oxfordshire (UK) as part of the BBA program (British Board of Agrément)
- F.M.P.A. (Forschungs- und Materialprüfungsanstalt, Germany)
- P.S.B. (Productivity and Standards Board, Singapore)
- S.A.B.S. (South African Bureau of Standards, South Africa)
- State Research University of Oil and Gas (Gubkin, Russia)
- Jadavpur University (India)
- Scientific Material International (United States)
- KTA-TATOR, Inc. (United States)
- China National Construction Steel Quality Supervision and Test Centre (China)
- and many others ...



Mumbai Airport - India

CERTIFICATES

- ISO 9001
- ISO 12944
- NORSOK Standard M-501, Rev. 5 for System 7
- APAS (Australian Paint Approval Scheme) Level 1 Certification n° 180
- BBA (British Board of Agrément)
- WRAS (Water Regulations Advisory Scheme)

ZINGA METALL

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