



**APLICACE NA
NOVÉ KONSTRUKCE
A RENOVACE
STÁVAJÍCÍCH
KONSTRUKCÍ
VE SVĚTĚ**

www.dinoservis.cz

ZINGANISATION - FILM GALVANISATION – ZINGANISATION – FILM GALVANISATION – ZINGANISATION – FILM GALVANISATION – ZINGANISATION



a.



b.

1. Aplikacia

- a. Renovation training vessel
- b. New construction fishing boats (60 pieces)

2. Miesto a dátum

- a. Oostende, Belgium, 1985
- b. Zeebrugge, Belgium, since 1976

3. Zákazník

- a. City of Oostende
- b. Shipyards De Graeve

4. Galvanic protection / Anti corrosion protection / System

Duplex system :

- Otryskanie na SA 2.5
- ZINGA 1 x 80 μm (vysokotlakové striekaniebezvzducové AIRLESS)
- Sealer MIO 1 x 60 μm
- Topcoat Pu 1 x 60 μm





1. Application

New Bow-string bridge

2. Place and date

Melle, Belgium, 1990

3. Customer

Ministry of the Flemish Region

4. Galvanic protection / Anti corrosion protection / System

Bottom :

- Sand-blasting SA 2.5
- ZINGA 2 x 60 μm (high pressure spraygun)

Top :

- Sand-blasting SA 2.5
- ZINGA 1 x 60 μm (high pressure spraygun)
- Topcoat Vinyl MIO 1 x 80 μm





1. Application

Renovation galvanised harbour bridge
Kalvoya hang bridge

2. Place and date

Oslo, Norway, 1985

3. Customer

Baerum Kommune
Ministry of Roads

4. Galvanic protection / Anti corrosion protection / System

- Cleaning St 2 (with water under high pressure and manual elimination of rust)
- Structure : ZINGA 2 x 60 μm (roll and brush)
- Cables : ZINGA 1 x 100 μm (paint gloves)





1. Application
New steel structure
2. Place and date
Eke, Belgium, 1986
3. Customer
SE Industries (Sadel)
4. Galvanic protection / Anti corrosion protection / System
 - Sandblasting SA 2,5
 - ZINGA 2 x 40 μm (low pressure spraygun)





1. Application
New construction electricity plant
2. Place and date
Langerlo, Belgium, 1996
3. Customer
Electrabel
Engineering Tractebel
4. Galvanic protection / Anti corrosion protection / System
 - Sand-blasting SA 2.5
 - ZINGA 2 x 60 μm (high pressure spraygun, airless)





a.



b.

1. Application

- a. and b. New construction cement factories

2. Place and date

- a. Bernburg, Germany, 1990
- b. Port Elisabeth, South Africa, 1996

3. Customer

- a. Schwenk Zement
- b. Lafarge (Ready Mix Materials)

4. Galvanic protection / Anti corrosion protection / System

- a. and b. :
 - Sand-blasting SA 2.5
 - ZINGA 2 x 60 μm (low pressure spraygun)





a.



b.

1. Application

- a. Renovation 7 km coal conveyor
- b. New construction piperack

2. Place and date

- a. Ashdod, Israel, 1990
- b. Feluy, Belgium, 1988

3. Customer

- a. Ashdod Power Station
- b. Fina Chemicals

4. Galvanic protection / Anti corrosion protection / System

- a. - Cleaning (with water under high pressure)
- ZINGA 2 x 50 μm (brush and roll)
- b. - Sand-blasting SA 2.5
- ZINGA 2 x 60 μm (low pressure spraygun)





a.



b.

1. Application

- a. Renovation paper mill
- b. Renovation NATO pump installations (all over Belgium)

2. Place and date

- a. Bilbao, Spain, 1982
- b. Belgium, 1987

3. Customer

- a. Bilbao Paper Cellulose Mill
- b. NATO
NATO Stock Number 8030-13-113-7027 = ZINGA
Manufacturer's code B1483 = Zingametall

4. Galvanic protection / Anti corrosion protection / System

- a. - Sand-blasting SA 2.5
- ZINGA 2 x 50 μm (brush and roll)
- b. - Sand-blasting SA 2.5
- ZINGA 2 x 60 μm (brush and roll)





a.

b.

1. Application

- a. Renovation interior and exterior of fuel tanks
- b. Renovation tanks

2. Place and date

- a. Kobrin, Belarus, 2002
- b. Hemiksem, Belgium, 1984

3. Customer

- a. Kobrin Oil Pumping Station
- b. Wolf Oil

4. Galvanic protection / Anti corrosion protection / System

- a.
 - Cleaning (mixture of water and sand under high pressure)
 - Interior : Duplex system
 - ZINGA 1 x 60 μm (roll)
 - HB Epoxy topcoat 1 x 100 μm
 - Exterior : ZINGA 2 x 60 μm (roll)
- b.
 - Cleaning (mixture water and sand under high pressure)
 - Exterior only : ZINGA 2 x 60 μm (roll)





a.



b.

1. Application

- a. Renovation phosphate bulk loading jetty (2,5 km)
- b. New harbour cranes

2. Place and date

- a. Lomé, Togo, 1995-1996
- b. Antwerpen, Belgium, 1980

3. Customer

- a. Office Togolais des Phosphates
Engineering and execution of the works by Baudin
Chateauneuf, France
- b. Harbour Company of Antwerpen

4. Galvanic protection / Anti corrosion protection / System

- a. - Sand-blasting SA 2.5
- ZINGA 3 x 40 µm (roll and brush)
- b. - Sand-blasting SA 2.5
- ZINGA 2 x 60 µm (roll and brush)





1. Application
Schip fenders, new constructions
2. Place and date
Zelzate, Belgium, 1990
3. Customer
Ministry of Public Works, Department Bovenshelde
4. Galvanic protection / Anti corrosion protection / System
Duplex system
 - Sand-blasting SA 2.5
 - ZINGA 1 x 60 μm (low pressure spraygun)
 - 2c Epoxy MIO 2 x 80 μm





1. Application

New construction landing places for ferries (roll on roll off)
(5 pieces)

2. Place and date

Vancouver, Canada, 1988-1992

3. Customer

BC Ferry Corporation

4. Galvanic protection / Anti corrosion protection / System

- Sand-blasting SA 2.5
- ZINGA 2 x 60 μm (roll and brush)





a.

b.

1. Application

- a. Renovation crash barriers
- b. Renovation hand barriers and crash barriers

2. Place and date

- a. France, 1985
- b. Velky Beranov, Czech Republic, 1994

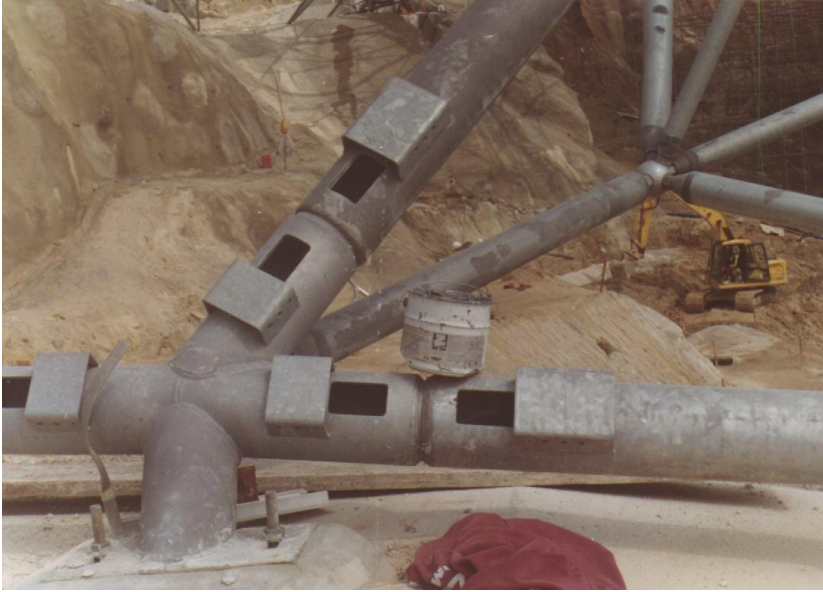
3. Customer

- a. SANEF
- b. Ministry of Transport

4. Galvanic protection / Anti corrosion protection / System

- a. and b. :
 - Cleaning (water under high pressure)
 - ZINGA 2 x 50 μm (roll and brush)





1. Application

New space structure of galvanised tubes with welding seams

Local repairs and increasing of the layer thickness with ZINGA

2. Place and date

Saint Austel, United Kingdom, 2000

3. Customer

Eden Greenhouse Dome

Botanical and Biological Theme Park

4. Galvanic protection / Anti corrosion protection / System

- Cleaning and roughening
- ZINGA 1 x 60 μm (brush)





a.



b.

1. Application

a. and b. Renovation hand barriers

2. Place and date

- a. Afsnee, Belgium, 1986
- b. Trutnov, Czech Republic, 1994

3. Customer

- a. Ministry of the Flemish Region
- b. Ministry of Transport

4. Galvanic protection / Anti corrosion protection / System

a. and b. :

- Sand-blasting SA 2.5
- ZINGA 2 x 50 μm (roll and brush)





a.



b.

1. Application

- a. Renovation train wagons bulk transport
- b. Renovation train wagons goods transport (1500 pieces)

2. Place and date

- a. Belgium, 1993
- b. Romania, 1998

3. Customer

- a. CITA
- b. Romanian Railways SNCFR

4. Galvanic protection / Anti corrosion protection / System

- a.
 - Sand-blasting SA 2.5
 - ZINGA 2 x 80 μm (low pressure spraygun)
- b.
 - Sand-blasting SA 2.5
 - ZINGA 1 x 60 μm (low pressure spraygun)
 - 2c Pu 1 x 40 μm





1. Application

Renovation army vehicles

2. Place and date

Hawai, 1995

3. Customer

US Army, Tank Automotive Command (TACOM)

ZINGA = US Military Specification Number MIL-P-210 35

4. Galvanic protection / Anti corrosion protection / System

Duplex system

- Sand-blasting SA 2.5
- ZINGA 1 x 50 μm (= 2 mills) (low pressure spraygun)
- Pu Camouflage Paint US Army 1 layer





a.



b.

1. Application

- a. Renovation fence
- b. Renovation fence

2. Place and date

- a. Setubal, Portugal, 1990
- b. Gent, Belgium, 1992

3. Customer

- a. Rede Electrica Nacional (Electricidade de Portugal)
- b. Unknown

4. Galvanic protection / Anti corrosion protection / System

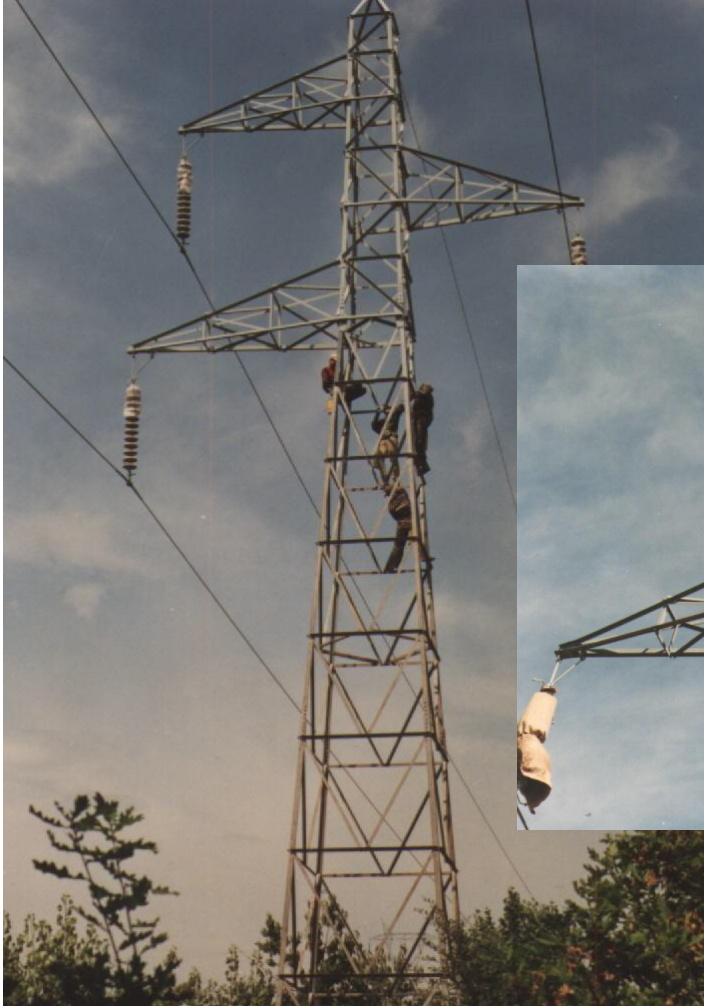
- a. and b. :
 - Sand-blasting SA 2.5
 - ZINGA 2 x 50 μm (roll and brush)





1. Application
Renovation lighthouses (6 pieces)
2. Place and date
South Africa, North West Coast, 1992
3. Customer
Harbour Authorities
4. Galvanic protection / Anti corrosion protection / System
Duplex system
 - Sand-blasting SA 2.5
 - ZINGA 1 x 60 μm (brush and roll)
 - 2c MIO Sealer 2 x 80 μm
 - Pu Topcoat 2 x 40 μm





1. Application

Renovation high tension pylons

2. Place and date

Caniçada, Portugal, 1989

3. Customer

Rede Electrica Nacional (Electricidade de Portugal)

4. Galvanic protection / Anti corrosion protection / System

- Manual cleaning St 2 (rinsing with brush and lower parts with water under pressure)
- ZINGA 2 x 60 μm (brush and roll)





1. Application
Renovation lighting poles
2. Place and date
Gent and Hasselt, Belgium, 1986
3. Customer
Electrabel
4. Galvanic protection / Anti corrosion protection / System
 - Manual rinsing St 2
 - ZINGA 2 x 50 μm (brush and roll)





1. Application

Test in situ on sea buoys (duration : 4 years)

2. Place and date

Vendée, France, 1994-1998

3. Customer

Direction Départementale de l'Équipement, Vendée,
Service Maritime, Subdivision des Phares et Balises

4. Galvanic protection / Anti corrosion protection / System

Yellow buoy : Duplex system ZINGA

Green buoy : Duplex system hot-dip galvanisation

Below the water line :

- Sand-blasting SA 2.5
- ZINGA 1 x 80 µm (brush and roll)
- Epoxy Brai Plastitar 1 layer

Below the water line :

- Sand-blasting SA 2.5
- Hot-dip galvanisation 80 µm
- Galvalu (pickling product)
- Epoxy Brai Plastitar 1 layer

Above the water line :

- Sand-blasting SA 2.5
- ZINGA 1 x 80 µm (brush and roll)
- 2c Pu Plastilaque 2 layers

Above the water line

- Sand-blasting SA 2.5
- Hot-dip galvanisation 80 µm
- Galvalu (pickling product)
- 2c Pu Plastilaque 2 layers

Result after 4 years :

- ZINGA : only some dirt, no corrosion
- Hot-dip galvanisation : strongly attacked by corrosion





1. Application

Renovation hangar with galvanised corrugated iron plates

2. Place and date

La Louvière, Belgium, 1980

3. Customer

Duferco (Boël)

4. Galvanic protection / Anti corrosion protection / System

- Manual cleaning St 2
- ZINGA 2 x 50 μm (brush and roll)





1. Application
Support rails for monorail
2. Place and date
Chongqing, China, 2000
3. Customer
Chongqing Intercity Monorail
4. Galvanic protection / Anti corrosion protection / System
 - Sand-blasting SA 2.5
 - ZINGA 2 x 50 μm (= 4 mills) (high pressure spraygun)





1. Application
Renovation bottom of bridge
2. Place and date
Biloxi Back Bay Bascule Bridge US I-110, USA, 2002
3. Customer
Mississippi Department of Transportation (MDOT)
4. Galvanic protection / Anti corrosion protection / System
 - Sand-blasting SA 2.5
 - ZINGA 2 x 75 μm (= 6 mills) (high pressure spraygun, airless)





1. Application

Renovation corroded hot-dip galvanised silos
Pictures taken 20 years after application

2. Place and date

Deinze, Belgium, 1980

3. Customer

Quartes (Versele-Laga)

4. Galvanic protection / Anti corrosion protection / System

- Cleaning St 2
- ZINGA 2 x 60 μm (brush and roll)





a.



b.



c.



1. Application

- a. Application on rebars for brick walls
- b. Application on rebars for concrete walls of containers
- c. Application on rebars for support beams of Monorail

2. Place and date

- a. Russia, 2002
- b. Assaluyeh, Iran, 2001
- c. Chongqing, China, 2002

3. Customer

- a. Unknown
- b. National Iranian Gas Company
- c. Chongqing Monorail

4. Galvanic protection / Anti corrosion protection / System

- a. and c. - Roughness profile from slight corrosion
- ZINGA 1 x 40 μm
- b. - Sand-blasting SA 2.5
- ZINGA 1 x 40 μm





a.



b.



c.



d.



1. Application

- a. Renovation of cast iron bridge, gate and fence
- b. Renovation of cast iron music chapel
- c. Renovation of 15th century cast iron cannon
- d. Renovation of cast iron ornament above theatre entrance

2. Place and date

- a. Gent, Belgium, 1985
- b. Gent, Belgium, 1998
- c. Gent, Belgium, 2000
- d. Rio de Janeiro, Brazil, 2000

3. Customer

- a. Private historical castle, Baron de Giey
- b. and c. City of Gent
- d. Theatro Municipal

4. Galvanic protection / Anti corrosion protection / System

- a. and d. - Sand-blasting SA 2.5
- ZINGA 2 x 60 µm
- b. and c. - Sand-blasting SA 2.5
- ZINGA 1 x 80 µm
- 2c Pu 1 x 50 µm





KRASIKOV TRANSFORMER STATION CZECH REPUBLIC



The pylons and other structures of the Krasikov Transformer Station were treated with ZINGA in the summer of '94. The application was done by brush and roll. ZINGA was used as primer on the grit-blasted surface in one layer of approx. 50 μm . The total amount of ZINGA used at this site was approx. 1.5 ton. ZINGA was topcoated with Jotun Conceal (without sealer) at a layer thickness of 80 μm applied in one coat, also by brush and roll.

System :

ZINGA

1 x 50 μm

Jotun Conceal

1 x 80 μm

These pictures were taken in 1994, just after the application.



These pictures were taken in January 2003, almost 10 years after the application, when an inspection was carried out by Mr. Stavar from the company Grane. The ZINGA and topcoat were still in perfect condition.



**SLAVETICE TRANSFORMER STATION – CZECH REPUBLIC**

ZINGA was used on the pylons of the Slavetice Transformer Station, to repair the Atmofix anti-corrosion protection. ZINGA was applied basically on the inner surfaces between 2 metal plates. The problem was that the corrosion between the metal plates caused such pressure that the bolts broke. In most cases they applied ZINGA also on the outer surface of the metal plate. All other surfaces, that look black, are still covered with the old protection layer Atmofix. The application of ZINGA started in 2000 and was continued until 2002. These pictures were taken during an inspection in January 2003.

System:

ZINGA 2 x 40 µm

HS-Elastcom
or Rezdico
(brown colour)ZINGA
on and under
the plate

Atmofix

On some joints ZINGA is covered by the Czech paints HS-Elastcom or Rezdico. These paints were not intended as a protection but were used to obtain a similar colour as Atmofix.





CHERNOBYL NUCLEAR POWER STATION UKRAINE

ZINGA is the one material that can meet the high and strict requirements of the Chernobyl Nuclear Power Station for anti-corrosion protection. In 2002 ZINGA was used for the repair of welds and transportation and assembly damages of various metal structures. Starting from October 2003, more anti-corrosion protection works are planned, namely on the platforms and grid walks of the nuclear waste tanks. The general contractor for the works is the French corporation Vinci.

**System:**ZINGA 2 x 50 μm 



KIEV ENERGO POWER PLANT - UKRAINE



In 2003 the ZINGA distributor in Ukraine, KVVV, Vector Technologies, has signed a contract with Kiev Energo Power Plant (thermal electric power & heat plant nr. 6) for the anti-corrosion treatment of high-voltage power transmission line towers and supports that had been hot-dip galvanised in the late '70-s. The total surface to be coated with ZINGA was amounting to 1350 m².

System :

ZINGA 2 x 50 µm

The fact that the supports were originally galvanised, made the surface preparation and the application of ZINGA much easier. The residual hot-dip galvanising film thickness was about 50 to 100 µm. Roughness was determined by sight or by touch and was found sufficient for application of ZINGA. The surface was prepared with the use of a manual cleaning mechanism (electric or pneumatic power grinders).





ROAD VEHICLES – UNITED KINGDOM

Several references of road vehicles treated with ZINGA in the United Kingdom.



1) The company Emtrade coated a salt-gritting truck with ZINGA + sealer + 2K PU.

2) The Lithgow's cattle truck treated with ZINGA + 2K PU (automotive).



3) Lotus sport cars: ZINGA on suspension components



Weighing and measuring components.



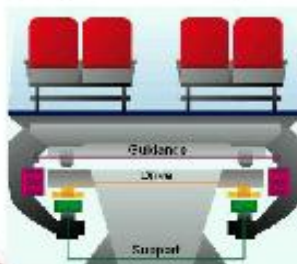
MAGLEV TRANSPRAPHIC RAILWAY - CHINA

The ZINGA was applied on several parts of the Maglev (magnetic levitation) Transrapid ultra high speed train that is connecting the city centre of Shanghai with the Pudong area. The Transrapid is the fastest land vehicle. For distances up to 800 km, the trip does not take longer than with fan aeroplane.

System:ZINGA 2 x 40 μm 

上海磁悬浮列车工程功能件涂装情况
施工单位：中铁五局股份有限公司

ZINGA was applied on joints and crucial steel components. The rest of the train was treated with a 3 layer paint system, as it was too late to replace the existing specifications by the zingatisation system.



上海磁悬浮列车工程功能件涂装情况
施工单位：中铁五局股份有限公司



施工单位：中铁五局股份有限公司



施工单位：中铁五局股份有限公司

The application started in October 2001. The construction parts were manufactured 100 km away from Shanghai. During transport, the pieces that were treated with ZINGA were exposed to an enormous degree of pollution. A piece that had not been coated with ZINGA had turned completely rusty during the transport. On the ZINGA itself, there was only strong formation of zinc salts, which created an additional barrier protection. This illustrates how corrosive the atmosphere is in and around Shanghai.



DANZAS - BELGIUM

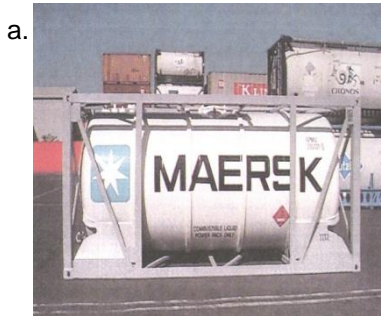
Pictures of the application of ZINGA (25 to 40 μm) and Sealer Washprimer on a truck of the brand Scania in January 2001. The proprietor of the truck is the company Danzas. The coating was applied by Saeys.

Rust formation on the chassis of the truck.



And on the back of the truck.





1. Application

- a. Application on container cage
- b. Application on container truck chassis
- c. and d. Application on truck chassis

2. Place and date

- a. Kaohsiung, Taiwan, 2000
- b. Bree, Belgium, 1986
- c. Aalst, Belgium, 2001
- d. Willebroek, Belgium, 2001

3. Customer

- a. Maersk Sealand, Constar Holdings
- b. LAG
- c. Danzas
- d. Lambregt

4. Galvanic protection / Anti corrosion protection / System

- a. - Sand-blasting SA 2.5
- ZINGA 1 x 60 μ m
- 2c Pu Primer Finish 1 x 80 μ m
- b. and c. - Sand-blasting SA 2.5
- ZINGA 1 x 60 μ m
- Washprimer 1 x 40 μ m
- Topcoat 1 x 40 μ m
- d. - Sand-blasting SA 2.5
- ZINGA 2 x 60 μ m

