



ZINGA®

RI

ROAD  
INFRASTRUCTURE

AUSTRALIA

REFERENCES

## ZINGA ON ROAD INFRASTRUCTURE

The development of modern transport infrastructure, transport systems and vehicles belongs to the fundamentals of competitiveness. The basis for choice and verification of materials and long-term surface corrosion treatments exposed to atmospheric environment is the degree of corrosivity.

For atmospheric corrosion, there are two dominant corrosion stimulators – industrial air pollution represented by  $SO_2$  and salinity.

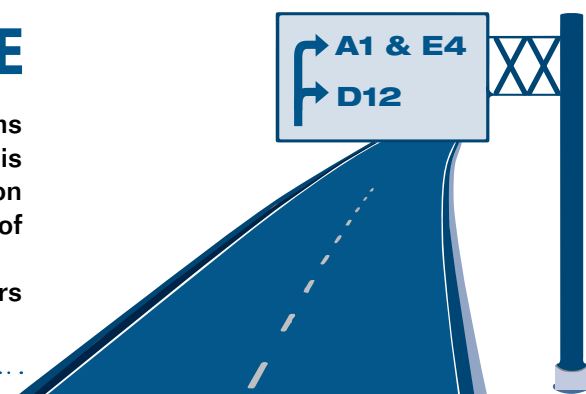
The proliferation of rusted road infrastructure in many northern countries identified road salt as a major cause of corrosion. Other contributors, however, include sea spray in coastal areas, dust-control chemicals (e.g. calcium chloride) in rural areas, and atmospheric pollutants from the burning of organic fuels.

These pollutants -nitrogen oxide ( $NO_x$ ) and sulfur dioxide ( $SO_x$ )- convert into acids (nitric and sulfuric acid) that cause acid rain, acid dew, and acid snow (i.e. acid deposition). Acid deposition increases the acidity (i.e. lowers the pH) of the environment, which hampers the formation of natural protective films on metal surfaces. When low-pH conditions are combined with chloride ions from road salt and sea spray, the corrosivity of the highway environment is significantly increased.

ZINGA offers a sustainable protection to road gantries, sign posts and crash barriers. A ZINGA unique system (180  $\mu m$ ) will offer a protection of more than 15 years in the hardest conditions (C5 I environment).

### REFERENCES

- AUSTRALIA - Signage Gantries Bribie Island
- GERMANY - Düsseldorf Highway Crash Barriers
- THAILAND - Don Muang Toll Way, Highway Department
- SINGAPORE - Land Transport Authority Crash Barriers
- URUGUAY - Katoennatie Light Pole
- ALGERIA - Ets Kechabia Lamp Posts
- UKRAINE - Kiev Road Administration Traffic Lights, Ukravtodor Crash Barriers
- UK - British Airway Authorities Crash Barriers



### LAND TRANSPORT AUTHORITY (SINGAPORE)

In April 1998 a test application with ZINGA was done on the guard rails on Ulu Pandan Road in Singapore. After 12 months of monitoring and observations, the LTA (Land Transport Authority) finally accepted ZINGA.

Since then LTA has embarked on a program of rehabilitating stretches of previously hot dipped galvanized guardrails using ZINGA.

The high quality protection against corrosion, the ease of application for maintenance, the non-toxicity of process and the reduction in road closures also provided substantial cost-saving benefits for the LTA.



ZINGAMETALL Bvba Sprl

Industriepark T. +32 9 385 68 81  
Rozenstraat 4 info@zinga.be  
9810 Eke (Belgium) www.zinga.eu

12/2015-V1



UKRAINE



AUSTRALIA



ALGERIA



UKRAINE



THAILAND



SINGAPORE



GERMANY



URUGUAY



UKRAINE