



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<sub>2</sub> and salinity.

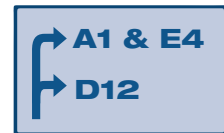
The proliferation of rusted road infrastructure in many northern countries identified road salt as a major cause of corrosion. Other contributors, however, include sea spray in coastal areas, dust-control chemicals (e.g. calcium chloride) in rural areas, and atmospheric pollutants from the burning of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

These pollutants -nitrogen oxide (NO<sub>x</sub>) and sulfur dioxide (SO<sub>x</sub>)- 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. ZINGA as a unique system (180 µm) will offer a protection of more than 15 years in the hardest conditions (C5 I environment).

### REFERENCES

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



### 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 the process and the reduction in road closures also provided substantial cost-saving benefits for the LTA.



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