

Two-Coat Corrosion Protection System



CSIR – CENTRAL ELECTROCHEMICAL RESEARCH INSTITUTE

KARAIKUDI-630003

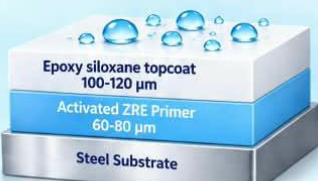
CORROSION & MATERIALS PROTECTION DIVISION



A HIGH-DURABILITY TWO-COAT PROTECTION SYSTEM FOR C4 AND C5 CORROSIVITY CATEGORIES

- ✓ 1440 h NSS (ISO 9227) & 720 h Condensation (ISO 6270-1) passed
- ✓ Modified Zn primer: SSPC Paint 20 (Level 1)
- ✓ Galvanic Protection: > 100 days (OCP > -850 mV Vs. Ag/AgCl in 3.5 wt.% NaCl)
- ✓ Pull-off Adhesion: > 5 MPa (ISO 4624)
- ✓ Hydrophobic Surface: WCA > 115°
- ✓ High Barrier Performance: $|Z|_{0.01\text{Hz}} \geq 10^9 \Omega \cdot \text{cm}^2$ (EIS) for 100 days in 3.5 wt.% NaCl
- ✓ Meets C4 VH (>25 years), C5 H (15-25 years), C5 VH (>25 years)
- ✓ 2688 h of Cyclic Ageing test (C5 VH) passed - ISO 12944-6

CECRI's Two Coat System



Bringing two layers together into a perfect system...
The combination of a water-repellent topcoat with activated zinc primer delivers a robust anti-corrosive system

Lower Labour Cost

Lower Material Consumption

Lower Maintenance Complexity

Shorter Curing Intervals

Sustainable & Durable

NSS (1440h)

Cyclic Ageing Test (2688h)

Creep Rate Assessment

Commercial ZRE

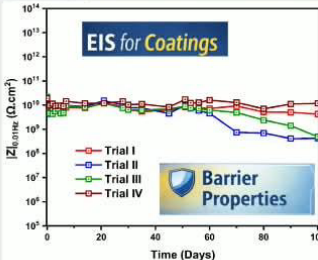
After 1440 h NSS

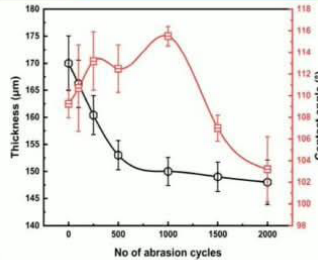
Activated ZRE

Liquid Paint Properties

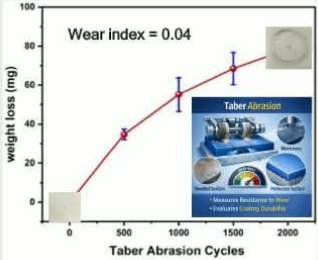
Properties	Primer	Topcoat
Colour	Grey	White
Volume solid (%)	60	80
Viscosity (cP)	395-400	340-350
Curing time (h)	3	1.5
Pot life (h)	7	8

EIS for Coatings





Wear index = 0.04



Target Sectors





PROTECTION & DURABILITY

Key Advantages



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