CATHODIC PROTECTION CO LTD

With: DE NORA electrochemistry at your service

# Elgard Mixed Metal Oxide Mesh

## APPLICATION

ELGARD™ anode ribbon mesh is composed of a precious metal oxide catalyst sintered to an expanded titanium mesh substrate. The anode ribbon mesh is used as a key component in the cathodic protection of reinforced concrete structures.

| MMO MESH TYPES | | | |
|---|---|---|---|
| Type | **150** | **210** | **300** |
| Current rating @ 110 mA/m$^2$ (10 mA/ft$^2$) | 18.8 mA/m2 (1.71 mA/ft2) | 24.4 mA/m (2.22 mA/ft) | 37.8 mA/m2 (3.44 mA/ft2) |
| Shipping weight per coil | 26 kg (56 lbs) | 33kg (73lbs) | 43 kg (95 lbs) |
| Anode ribbon mesh resistance lengthwise | 0.085 Ohm/m (0.026 Ohm/ft) | 0.046 Ohm/m (0.014 Ohm/ft) | 0.027 Ohm/m (0.008 Ohm/ft) |
| Actual anode surface per unit area of concrete | 0.17 m2/m2 (0.17 ft2/ft2) | 0.22 m$^2$/m (0.22 ft$^2$/ft) | 0.34 m2/m2 (0.34 ft2/ft2) |
| Expanded thickness | 1.415 mm (0.056") | 1.981mm (0.078") | 1.981 mm (0.078 ") |
| Diamond dimensions | 34 x 76 x 0.64 mm (1.33 " x 3.0 " x 0.025 ") | 34 x 76 x 0.89mm (1.330" x 0.18" x 0.025") | 25 x 51 x 0.89 mm (0.923 " x 2.0 " x 0.035 ") |

| MATERIAL SPECIFICATIONS | |
|---|---|
| Expected life (NACE Standard TM02944-94) | 75 years |
| Catalyst | Iridium based mixed metal oxide |
| **MAXIMUM ANODE CONCRETE INTERFACE CURRENT DENSITY** | |
| FHWA limit | 110 mA/m$^2$ (10 mA/ft$^2$) |
| Short-term limit | 220 mA/m$^2$ (20 mA/ft$^2$) |
| **NOMINAL DIMENSIONS** | |
| Width of roll | 1.22m (4ft) |
| Length of roll | 76m (250 ft) |
| Area per roll | 92.9 m$^2$ (1000ft$^2$) |

# Elgard Mixed Metal Oxide Ribbon Mesh

| MATERIAL SPECIFICATIONS (continued) | |
|---|---|
| **SUBSTRATE** | |
| Composition | Titanium, grade 1 per ASTM B265 |
| Coefficient of thermal expansion | 8.7 x $10^{-5}$ /℃ (0.0000048/in/in/℃) |
| Thermal conductivity @ 20℃ | 15.6W/ $m^2$ - ℃ (9.0BTU/hr/$ft^2$/℉/ft) |
| Electrical resistivity | 0.000056 Ohm-cm (0.000022 Ohm-in) |
| Modulus of elasticity | 105 GPa (14,900,000 PSI) minimum |
| Tensile strength | 245 MPa (35,000 PSI) minimum |
| Yield strength | 175 MPa (25,000 PSI) minimum |
| Elongation | 24% minimum |
| **ELECTRICAL PROPERTIES** | |
| Current distributor resistance lengthwise | 0.049 Ohm/m (0.015 Ohm/ft) |
| Resistance width wise c/w current distributor | 0.016 Ohm/m (0.005 Ohm/ft) |