



MIXED METAL OXIDE TAPE ANODE

“IMPRESSED CURRENT CATHODIC PROTECTION FOR CONCRETE”

Mixed Metal Oxide (MMO) Tape Anode

MMO Tape Anode is an innovative distributed impressed current Cathodic Protection (CP) system. The anode was developed utilising the most up to date metal processing technology and extensive experience and knowledge for concrete CP. Utilising a specially engineered adhesive, the inert MMO coated titanium tape anodes are simply applied onto sound concrete surfaces.

Easy anode installation using the MMO tape system significantly reduces the cost of CP systems for concrete making it a cost-effective solution for concrete structures to control the corrosion of reinforced steel.

Features and benefits:

- Surface mounted – provides even current distribution, reduces incidents of electrical shorts to rebar
- Easy installation – eliminates the need for expensive and time consuming saw cuts and grouting
- Economical – reduces total installation cost
- Durable – MMO coated titanium anodes have extremely long (>40 years) expected service life
- Independently tested to NACE TM 0294-2001

Nominal dimensions:

Width.....10-50mm
 Thickness.....0.05 or 0.08mm
 Coil length.....As required

Anode Performance

Tape Width (mm)	Anode Rating (mA/m) at 150mA/m ²		Anode Linear Resistance (ohm/m)	
	0.05mm Thick Tape	0.08mm Thick Tape	0.05mm Thick Tape	0.08mm Thick Tape
10	1.5	1.5	1.12	0.70
20	3.0	3.0	0.56	0.35
30	4.5	4.5	0.37	0.23
40	6.0	6.0	0.28	0.18
50	7.5	7.5	0.22	0.14

Application Method

1. Mark out concrete surface where the MMO tape is to be applied
2. Ensure any exposed rebar is covered in epoxy to ensure electrical isolation from the tape where they cross
3. Apply MMO tape directly to the surface where marked by removing the backing paper and pressing the tape on
4. Join the bands of tape together using the conductor tape at right angles to the MMO tape by either spot welding or by conductive adhesive
5. Coat both the MMO tape and conductor tape with a Waterborne Synthetic Rubber (WSR) and before it cures, push Glass Fibre Matting into the WSR
6. Once the WSR is dry, apply a second coat
7. Once the second layer has cured, connect an exposed section of rebar to the –ve Transformer Rectifier (TR) terminal and the conductor tape to the +ve terminal of the TR

Titanium Conductor Tape

Titanium Conductor Tape is designed to distribute Cathodic Protection current to the MMO tape anode. The conductor tape is highly resistant to corrosion in most environments.

Waterborne Synthetic Rubber (WSR)

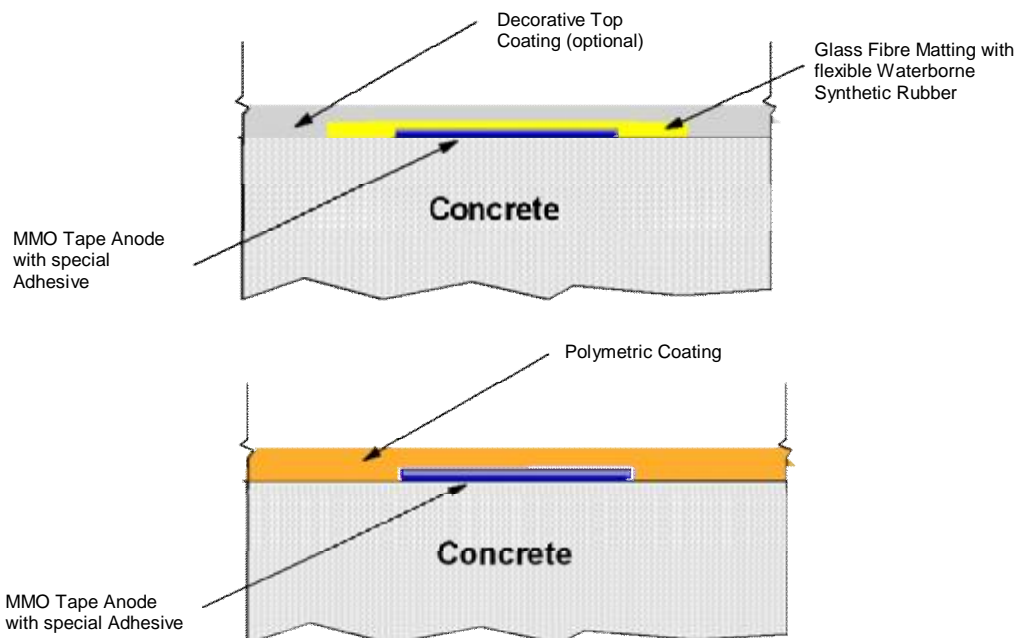
The WSR is used to ensure the conductor tape and MMO tape adheres completely to the concrete surface. It can be applied by brush, roller or airless spray equipment which cures to form a tough, matt, elastomeric membrane able to tolerate substrate movement and does not harden with age or prolonged exposure to Ultra Violet light. In addition it is vapour permeable and available in a wide range of colours.

Glass Fibre Matting

Glass Fibre Matting is pressed into the WSR during application to add strength to the tape coating ensuring protection from exposure and enhancing the adhesion to the concrete surface.

Substrate Specification

Composition.....	Titanium, Grade 1 per ASTM B265
Thermal Expansion.....	$8.7 \times 10^{-5} \text{ }^\circ \text{K}$
Electrical Resistivity.....	0.000056 ohm-cm
Tensile Strength.....	245 MPa minimum
Yield Strength.....	175 MPa Minimum



Cross-Section of MMO Tape Anode Installation on Concrete (Examples)

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