



MMO Wire Anode

MMO wire anodes consist of a high tensile strength pure titanium wire substrate (ASTM B348 Grade I/II) which is coated by an electrocatalytic film of noble metal oxide. ($\text{IrO}_2/\text{Ta}_2\text{O}_5$). The Mixed Metal Oxide (MMO) coating film activates the titanium allowing the combined product to act as a very effective impressed current cathodic protection (ICCP) anode in a variety of applications. MMO wire has excellent performance characteristics with very little wear and dissolution of the metal oxide coating.

The design life of the anode depends on the operating current in various applications from soil to seawater. The anodes are manufactured in three diameters: 1.0mm, 1.5 mm and 3.0mm. Due to the extremely low consumption rate of the coating (measured in terms of milligrams per year) at different current output, the projected life of the anodes varies from 15 to 50 years.

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APPLICATION

- ▶ Underground storage tanks
- ▶ Above ground storage tanks
- ▶ Ground beds
- ▶ Pipeline
- ▶ Electrical cable shielding
- ▶ Water treatment equipment
- ▶ Canister wire anode
- ▶ Linear sock anode



FEATURES

- ▶ High current density capacity
- ▶ Low consumption rate of the coating
- ▶ Constant electrical resistance
- ▶ Lightweight (Easy transportation and handling)
- ▶ Reliable & Dimensional stability
- ▶ High chemical stability, even in environments with low pH values
- ▶ Flexible, application-specific design

CHEMICAL COMPOSITION

Anode	MMO Coating / Titanium Tube
Substrate	ASTM B348 Grade I/II Solid Titanium wire with Φ 1mm, Φ 1.5mm, Φ 3mm
Coating	Ir-Ta Mixed Metal Oxide Catalyst Ir-Ru Mixed Metal Oxide Catalyst

Anode Model	Wire Diameter
YX-MMO-SuperWire1.0	1.0mm (0.039")
YX-MMO-SuperWire1.5	1.5mm (0.062")
YX-MMO-SuperWire3.0	3.0mm (0.125")

ELECTROCHEMICAL PROPERTIES

Anode Model	Environment	Current Ratings for 20yrs.	Current Ratings for 30yrs.	Current Ratings for 50yrs.
YX-MMO-SW1.0 (Dia. 1.0mm)	Soil	49mA/ft (160mA/m)	33mA/ft (107mA/m)	20mA/ft (64mA/m)
	Fresh water	97mA/ft (320mA/m)	65mA/ft (213mA/m)	39mA/ft (128mA/m)
	Calcined Coke Breeze	97mA/ft (320mA/m)	65mA/ft (213mA/m)	39mA/ft (128mA/m)
	Brackish Water	292mA/ft (960mA/m)	195mA/ft (640mA/m)	117mA/ft (384mA/m)
	Sea water	584mA/ft (1920mA/m)	389mA/ft (1280mA/m)	234mA/ft (768mA/m)
YX-MMO-SW1.5 (Dia. 1.5mm)	Soil	74mA/ft (240mA/m)	49mA/ft (160mA/m)	29mA/ft (96mA/m)
	Fresh water	146mA/ft (480mA/m)	97mA/ft (320mA/m)	58mA/ft (192mA/m)
	Calcined Coke Breeze	146mA/ft (480mA/m)	97mA/ft (320mA/m)	58mA/ft (192mA/m)
	Brackish Water	438mA/ft (1440mA/m)	292mA/ft (960mA/m)	175mA/ft (576mA/m)
	Sea water	876mA/ft (2880mA/m)	584mA/ft (1920mA/m)	350mA/ft (1152mA/m)
YX-MMO-SW3.0 (Dia. 3.0mm)	Soil	147mA/ft (480mA/m)	98mA/ft (320mA/m)	59mA/ft (192mA/m)
	Fresh water	291mA/ft (960mA/m)	194mA/ft (640mA/m)	116mA/ft (384mA/m)
	Calcined Coke Breeze	291mA/ft (960mA/m)	194mA/ft (640mA/m)	116mA/ft (384mA/m)
	Brackish Water	876mA/ft (2880mA/m)	584mA/ft (1920mA/m)	350mA/ft (1152mA/m)
	Sea water	1752mA/ft (5760mA/m)	1168mA/ft (3840mA/m)	701mA/ft (2304mA/m)