

MMO Wire Anode

MMO wire anode consists 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. 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 3.0 mm. 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.

Jennings Anodes manufacture Mixed Metal Oxide (MMO) wire anodes under stringent quality control procedures to ensure that our product meets & exceeds the highest of industry standards. We have been delivering a superior, reliable product to our clients for many years with a production capacity of 1,000,000 meters per year.

Chemical Composition

Solid titanium wire, conforming to ASTM B348 Grade I/II. The noble metal film of the anode used depends on the operating environment varying from soil and fresh water to seawater. In soil or fresh water where there is either no chloride ions or low chloride ions present, the type 1# MMO Coating is recommended and for brackish and seawater Type #2 coating is recommended. There are layers of different coatings that can be used for different environments.

Anode Type	MMO Wire Anode
Substrate	ASTM B348 Grade I/II
	Solid Titanium wire with Φ 1mm, Φ 1.5mm, Φ 3mm
Coating	Type 1# Ir-Ta Mixed Metal Oxide Catalyst
	Type 2# Ir-Ru Mixed Metal Oxide Catalyst

Applications

- Underground Storage Tanks
- Above Ground Storage Tanks
- Ground beds
- Pipeline
- Electrical Cable Shielding
- Water Treatment Equipment
- Jennings Anodes MMO wire can be supplied bare, packed as a Canister Wire Anode or assembled as a Linear Sock Anode.

Electrochemical Properties

MMO Wire Diameter	Application	Current Rating for 20 yrs.	Current Rating for 30 yrs.	Current Rating for 50 yrs.
JA - MMO - W1.0 (Dia. 1.0mm)	Soil	49mA/ft. (160mA/m)	33mA/ft. (107mA/m)	20mA/ft. (64mA/m)
	Freshwater	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)
	Seawater	584mA/ft. (1920mA/m)	389mA/ft. (1280mA/m)	234 mA/ft. (768mA/m)
JA - MMO - SW1.5 (Dia. 1.5mm)	Soil	74mA/ft. (240mA/m)	49mA/ft. (160mA/m)	29mA/ft. (96mA/m)
	Freshwater	146mA/ft. (480mA/m)	97mA/ft. (320mA/m)	58 mA/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)
	Seawater	876mA/ft. (2880mA/m)	584mA/ft. (1920mA/m)	350mA/ft. (1152mA/m)
JA - MMO - SW3.0 (Dia. 3.0mm)	Soil	147mA/ft. (480mA/m)	98mA/ft. (320mA/m)	59mA/ft. (192mA/m)
	Freshwater	291mA/ft. (960mA/m)	194mA/ft. (640mA/m)	116 mA/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)
	Seawater	1752mA/ft. (5760mA/m)	1168mA/ft. (3840mA/m)	701mA/ft. (2304mA/m)

Quality Assurance & Testing

Jennings Manufacturing and testing procedures adhere to our own stringent ISO 9001:2015 and to Industry Standards NACE TM0180, NACE TM0294 & ASTM D3359.

Specification

Anode Model	Wire Diameter
MMO - Super Wire1.0	1.0mm (0.039")
MMO - Super Wire1.5	1.5mm (0.062")
MMO - Super Wire3.0	3.0mm (0.125")

Packing

Anode Model	Packing Details				
	Unit of Measurement	Coil Length	Coil Dimension	Net Weight	Gross Weight
MMO - Super Wire - 1.0	Metre	500ft. (152m)	Ø21.0" × 2" (Ø530 × 50mm)	1.17lbs (0.35kg)	1.76lbs (0.80kg)
MMO - Super Wire - 1.5			Ø21.0" × 2.35" (Ø530 × 60mm)	2.75lbs (1.25kg)	3.40lbs (1.55kg)
MMO - Super Wire - 3.0			Ø21.0" × 3.15" (Ø530 × 80mm)	10.80lbs (4.90kg)	11.50lbs (5.20kg)