

**TITANIUM ELECTRODE PRODUCTS COMPANIES**  
**MANUFACTURERS OF MMO AND PLATINIZED TITANIUM ELECTRODES****TELPRO TUBULAR ANODES**  
**TELPRO MIXED METAL OXIDE COATING**

Titanium Electrode Products Companies "TELPRO" manufacture mixed metal oxide anodes for cathodic protection. All of our tubular anodes are manufactured using titanium which meets ASTM B338 Grade 1 or 2 Standards.

The mixed metal oxide coating applied to the titanium tube has been designed for use in all cathodic protection applications. TELPRO coating consists of  $\text{IrO}_2/\text{Ta}_2\text{O}_5$  and is suitable for use in soils, backfill, fresh and brackish water and seawater.

Based on accelerated life testing conducted by an independent laboratory, TELPRO coating has proven to be superior or equivalent to other mixed metal oxide coatings currently being used. A copy of this test report is available upon request.

Strict quality control procedures are followed throughout the coating process to insure proper coating adhesion and loading. Production of a quality product is fundamental in every step of the manufacturing process.

Mixed metal oxide anodes have an extremely low consumption rate. The titanium substrate remains constant throughout the design life of the anode.

The operating characters for TELPRO coating loading are shown below:

Environment	Maximum Current Density	Lifetime
Carbonaceous Backfill	50 $\text{A/m}^2$	20 years
Calcined Petroleum Backfill	100 $\text{A/m}^2$	20 years
Freshwater	100 $\text{A/m}^2$	20 years
Brackish Water	100 – 300 $\text{A/m}^2$	20 years
Seawater	600 $\text{A/m}^2$	20 years

Coating loading can be adjusted for any specific lifetime/current density requirement.

## ADVANTAGES OF TELPRO TUBULAR ANODES:

- ❖ Tubular anodes are resin filled and helium tested for an effective seal of the electrical connection
- ❖ Cable at the end of each anode is protected with a teflon sleeve
- ❖ Each anode center connection is tested for resistance and is less than .001 ohms
- ❖ Any type or size of cable can be used for assembly of your anode. Cable size is only limited by the ID of the anode
- ❖ Cable types and sizes in stock - No. 6 AWG (16mm<sup>2</sup>) and No. 8 AWG (10mm<sup>2</sup>) HMWPE, KYNAR/HMWPE and HALAR/HMWPE.

TELPRO Tubular Anodes are available in a variety of diameters and lengths. Some of the standards sizes are shown below. Maximum rated output is based on calcined petroleum backfill application.

Dimensions	Max. Rated Output in Amps	Lifetime
¾" x 4 ft	7 amps	20 year design
1" x 1.64 ft	4 amps	20 year design
1" x 3.28 ft	8 amps	20 year design
1 ¼" x 4 ft	12 amps	20 year design

Standard current output based on 100 A/m<sup>2</sup>

Anodes designed for use in carbonaceous backfill:

Dimensions	Max. Rated Output in Amps	Lifetime
1" x 45"	4 amps	20 year design
1" x 60"	5 amps	20 year design

Standard current output based on 50 A/m<sup>2</sup>

Please call for pricing and availability of any size or shape of MMO anode you may require. Copies of the TELPRO Five Year Product Warranty are available upon request.