

Optima™ Anodes

Tubular Anodes for Cathodic Protection

Product Description

Optima™ tubular anodes are ideally suited for cathodic protection applications. The mixed metal oxide catalytic coating is sintered to the titanium substrate, providing a lightweight, durable anode.

With the proprietary catalyst used, Optima™ IOA-HF electrodes, are suitable for use in the widest range of cathodic protection applications including soil, carbonaceous backfill, fresh water, brackish water, and seawater.

The consumption rate of the mixed metal oxide coating is measured in milligrams per ampere-year. This low mass consumption rate combined with the unmatched strength-to-weight ratio for the titanium substrate results in unique advantages for the Optima™ anodes.



Key Benefits

- Lightweight – typical tube weighs less than 1 pound
- Composite materials eliminate problems with breakage of brittle materials such as graphite and silicon iron
- Dimensional stability eliminates associated problems with connection seals
- Compatible with the widest range of cathodic protection media (water, coke, seawater, brackish water)
- Highest current capacity per anode
- Installed ground bed costs can be 20~50% less than with silicon iron and graphite

Optima™ Tubular Anode Technical Details

The mixed metal oxide anode is comprised of a commercially pure titanium tube with a mixed metal oxide catalyst sintered to the titanium substrate in a thermal decomposition process. The catalyst is a combination of iridium oxide (IrO_2) and tantalum oxide (Ta_2O_5). When the coating is cured in the oven to convert it to an oxide, some of the titanium from the substrate diffuses into the matrix forming an integral bond between coating and substrate. The process requires control of the temperature profile and the amount of catalyst gained. The catalyst is applied in multiple steps until the desired loading is achieved.

Optima™ Tubular Anode Ratings

Tube Dimensions

Diameter: 1" (25mm)
Wall thickness: 0.035" (0.9mm)
Length: 39.37" (1meter)

Amperage ratings in various media for 20 year life

Part Number	Coke	Water	Seawater
TIT2GC1-L	4	5	12
TIT2GC1-M	8	10	24
TIT2GC1-H	12	15	36

Tube Dimensions

Diameter: 1" (25mm)
Wall thickness: 0.035" (0.9mm)
Length: 45" (1.14meter)

Amperage ratings in various media for 20 year life

Part Number	Coke	Water	Seawater
TIT2GC2-L	5	6	14
TIT2GC2-M	9	11	27
TIT2GC2-H	14	17	41

Tube Dimensions

Diameter: 1" (25mm)
Wall thickness: 0.035" (0.9mm)
Length: 60" (1.52meter)

Amperage ratings in various media for 20 year life

Part Number	Coke	Water	Seawater
TIT2GC3-L	6	8	18
TIT2GC3-M	12	15	36
TIT2GC3-H	18	23	54

Quality Assurance:

- ASTM D3359 — Measuring adhesion by tape test
- ASTM B338 Titanium — material certificates available
- Coating loading measurement — XRF and weight gain

Material Availability

Siemens Water Technologies can meet your requirements by stocking material to your specifications and shipping it on an as needed basis.

Custom Orders

Please contact us if you have special requirements. Tube lengths, diameters, current requirements and even special catalytic coatings can be accommodated, including platinum.

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EC-ELTUB-DS-0309
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