

MMO Linear Anode (SL Series)

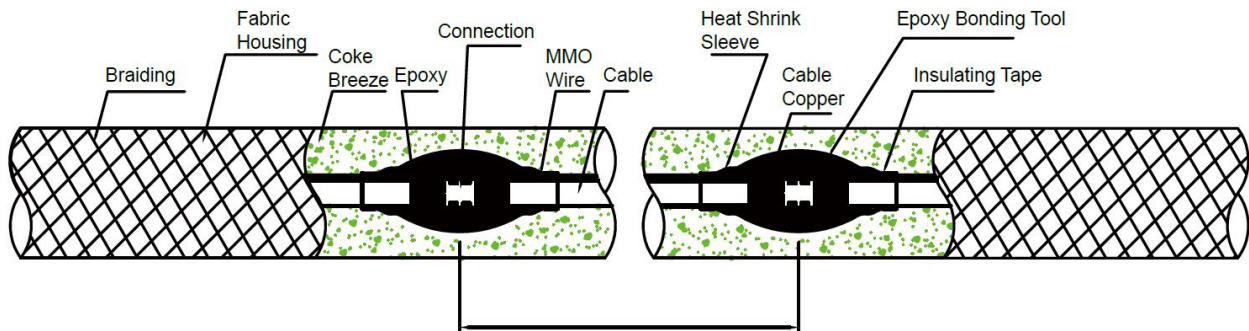
MMO Linear Anodes consist of a long MMO/Ti wire welded multiple spots with copper cable packaged in fabric jacket full filled with calcinated coke.

Jennings Anodes produces SL Series MMO Linear Anodes using a bespoke automated encapsulating and braiding machine to make accurate coke breeze filling whilst maintaining a production capacity up to 1,000,000 meters per year.

SL Series MMO Linear Anodes has excellent performance characteristics. It can work for 50 years at recommended current densities and with its flexible and perfect wear-resisting jacket, it can be easily installed in various landforms.

PRODUCT ADVANTAGES

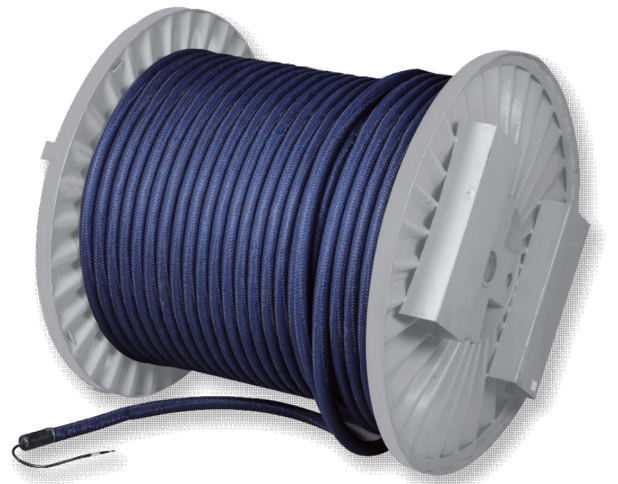
- Customized Anode Output
- Unique sintering coating technology leads to high Performance (>50 years anode life)
- Reel packing for easy transportation
- Cut to lengths or spliced to other structures
- Uniform and Compact backfill filling to ensure High conductivity and radiation of CP current
- Heavy-duty copper crimp ensuring low resistance
- Bespoke splicing kit to encapsulate the connection joint to reach 100% water proof



Cable Joint: every 16.4ft.(5M) or 32.8ft.(10M) or upon request

CHEMICAL COMPOSITION

| Anode | MMO Linear Anode (Sock Anode) |
|-----------------------|--|
| Substrate of MMO Wire | ASTM B348 Grade I/II Solid Titanium wire |
| Coating | Ir-Ta Mixed Metal Oxide Catalyst |
| Backfill | Calcium Petroleum Coke |
| Cable | Copper |
| Jacket | Porous non-woven fabric |



ELECTROCHEMICAL PROPERTIES

| Property | Testing Standards | Testing Results |
|----------------------------------|--|-----------------------------|
| 1. Cable Copper Conductor | | |
| Dimension | ASTM B - 263 | #6 AWG (Standard) |
| Connection Resistance | ASTM B - 193 | 3.08×10^{-3} Ohm.m |
| 2. MMO Wire | | |
| Dimension | ASTM B - 348 | 1.0mm/2.0mm/3.0mm |
| Volume Resistivity | ASTM B - 193 | 9 - 11 mΩ.cm |
| 3. Coke Breeze Backfill | | |
| Fixed Carbon | ASTM D - 172 | 98.5% Min. |
| Resistivity | G.L.C.-C-12A, 10 bar (145psi) @23°C (73°F) | 0.1 Ω.cm |
| 4. Cable Joint | | |
| Resistivity | ASTM B - 193 | 1.0 mΩ Max. |
| 5. Fabric Jacket | | |
| Weight | 80g/m ² Min. | 80g/m ² |
| Bursting Strength | ISO 3303 | 500N Min. |
| Abrasion Resistance | ASTM D - 4157 | 100 Cycles to Failure |
| Fluid Resistance | 6 months Immersion Test | PASS |
| Chlorine Resistance | 6 months Immersion Test | PASS |
| UV Resistance | STM G-53: 8 hours @60°C (140°F) 4 hours @50°C (122°F) | 55% Tear Strength Loss |

SPECIFICATION

| Anode Model | MMO Wire Diameter | Cable Specification | Current Output Rating | Life Expectancy |
|---------------------------|-------------------|---------------------|-----------------------|-----------------|
| JA - MMO - SuperLinear100 | 1.5mm | #6 PVDF/HMWPE | 100mA/ft (327mA/m) | ≥25 yrs. |
| JA - MMO - SuperLinear300 | 3.0mm | #6 PVDF/HMWPE | 300mA/ft (983mA/m) | ≥25 yrs. |

QUALITY ASSURANCE & TESTING

Jennings Anodes Manufacturing Quality Control Procedures are employed and strictly adhered to guarantee the ultimate performance and life of the anodes. Our internal testing standards, ASTM and NACE Standards are performed to guarantee the quality of the anodes. Every anode is stamped with a serial number for quality tracking and after-sale service.

| Testing | Chemical Composition | Anode Performance | Physical Appearance |
|--------------------------------|---|--|--|
| Standards & Methods | ISO 9001 Quality Management System and Foundry Internal Standards of MMO Anodes | | |
| | ASTM E120 | NACE TM0180; NACE TM0294; ASTM D3359 | Foundry ITP |
| Items | Chemical Analysis of Titanium Substrate | Structure and Thickness of the coating; Uniformity of coating thickness; Adhesion | Size and Weight, Permissible Variations; Anode Finish and Appearance |
| Equipment & Devices | / | JCM-6000 Plus Scanning Electron Microscope; DWW-K-100 Galvanostat; VCC101A Multimeter; Calomel Reference Electrode | Visual Inspection, Microscopes, Calipers, Tap Measure etc. |

PACKING

| Anode Model | Packing Detail | | | | | |
|--|----------------|------------------|------------------------------|-------------------|-------------------|--|
| | Unit | Reel Length | Reel Dimension | Net Weight | Gross Weight | Number of Reels |
| JA - MMO –SuperLinear100 JA - MMO –SuperLinear300 | FOOT | 500ft. (152m) | Φ36" × 30" (Φ900 × 760mm) | 473lbs (215kg) | 540lbs (245kg) | 24 Reels / 20ft. Container 54 Reels / 40ft. Container |

Shipping Documents

- Invoice, Packing List, Chemical, Physical Test, Performance Test Reports
- 3rd Party Independent test reports can also be provided at cost