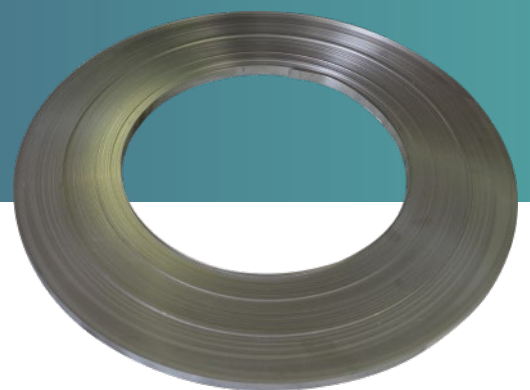




# TITANIUM CONDUCTOR BAR



50 YEARS EXPERIENCE IN CATHODIC PROTECTION



JENNINGS ANODES

# TITANIUM CONDUCTOR BAR

## DATA SHEET

Regarded as an ideal auxiliary anode material, titanium conductor bar is a bus bar to interconnect anode elements. It is designed to evenly distribute current to MMO titanium-based anode for many cathodic protection (CP) and Electro-Osmotic-Pulse (EOP) applications. Considering the attenuation of all linear anodes, sometimes auxiliary conductors must be augmented. The titanium conductor bar is particularly useful for controlling attenuation over long spans.

### ■ Quality Substrate Material

Our conductor bar is pure titanium and its chemical composition complies with ASTM B265 Grade I. It can have a life expectancy of 50 years or more.

Standard Element	Grade I	Grade II
Iron (Fe)	0.20% max.	0.30% max.
Carbon (C)	0.08% max.	0.08% max.
Nitrogen (N)	0.03% max.	0.03% max.
Hydrogen (H)	0.015% max.	0.015% max.
Oxygen (O)	0.18% max.	0.25% max.
Titanium (Ti)	Remainder	Remainder

### ■ Dimensional Stability

Thanks to its stable chemical composition, this aerospace material is mechanically strong as well as ductile. It is easy to form and install in applications where available space is restricted.

Coefficient of Thermal Expansion	$8.7 \times 10^{-5} / \text{K}^{-1}$ ( $4.8 \times 10^{-6} / \text{in} / \text{in} / ^\circ\text{K}$ )
Thermal Conductivity @ 20°C	15.6 W/m <sup>2</sup> K (9.0 BTU/hr-ft <sup>2</sup> -°F)
Electrical Resistivity @ 20°C	$56 \times 10^{-6} \Omega \cdot \text{cm}$ ( $22 \times 10^{-6} \Omega \cdot \text{in}$ )
Modules of Elasticity (Min.)	105 GPa (14,900,000 PSI)
Tensile Strength (Min.)	245 MPa (35,000 PSI)
Yield Strength (Min.)	175 MPa (25,000 PSI)
Elongation (Min.)	24%



### ■ Excellent Corrosion Resistance

The titanium conductor bar is highly resistant to corrosion in various environments. It can be utilized in sandy soil, coke, seawater, brackish water and other complex environments with the presence of oxygen evolution, chlorine evolution or a mixture of the two.

### ■ Easy Installation

Conveniently being cut and welded in the field, to suit various geometries, eliminating the need for time consuming saw cuts and grouting. This efficient installation helps reduce the total installed cost.

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### APPLICATIONS

It is commonly used with MMO ribbon anodes or MMO mesh ribbon anodes for impressed current cathodic protection of aboveground storage tank bottoms and reinforced concrete structures.

The titanium conductor bar and the MMO ribbon/mesh anode are laid vertically to form a lattice grid pattern, and the intersections are connected by spot welding. The connection to the power source is achieved by a special anode joint.



### ELECTROCHEMICAL PROPERTIES

Item No.	Electrical Resistance	Current Density	Design Life
JA-TCB-01	0.005 $\Omega$ /ft. (0.015 $\Omega$ /m)	0.278 A/ft <sup>2</sup> (3.0 A/m <sup>2</sup> )	50 yrs.
JA-TCB-02	0.26 $\Omega$ /ft. (0.081 $\Omega$ /m)		50 yrs.

### SPECIFICATIONS

Item No.	Width	Thickness	Coil Length	Weight
JA-TCB-01	1/4" (6.35 mm)	0.025" (0.635 mm)	500 ft. (152 m)	8.4 lbs (3.8 kg)
JA-TCB-02	1/2" (12.7 mm)	0.035" (0.9 mm)	500 ft. (152 m)	17.2 lbs (7.8 kg)

### TESTING DETAILS

We employ ISO 9001:2015 quality management system and rigorous internal testing standards to ensure the optimum lifespan and performance of our titanium conductor bar. Each titanium conductor bar is labelled with a unique serial number for quality tracking.

Technical Measurement	Chemical Composition	Electrochemical Performance	Physical Properties
Testing Standard	ASTM B265 Grade I	NACE TM0108 / ASTM D3359	Foundry ITP
Testing Content	Chemical Analysis	Electrical Resistance / Design Life	Dimension & Weight
Equipment	Optical Emission Spectrometer OBLF QSN 750	Electrochemical Analyzer EPI 200	Calibrated Digital Measuring Devices

\* Third party testing is conducted by customer's special request at extra charge.

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### PACKAGING INFORMATION

We have strict packing protocols to guarantee safe delivery of our products. Clear shipping marks and documentation make delivery acceptance straightforward and simple.

Item No.	Coil Length	Coil Dimension	Weight	
			N.W.	G.W.
JA-TCB-01	500 ft. (152 m)	15.5" x 15.5" x 1" (390 x 390 x 24mm)	2.75 lbs (1.25 kg)	3.6 lbs (1.65 kg)
JA-TCB-02	500 ft. (152 m)	19" x 19" x 1.0" (480 x 480 x 24 mm)	17.2 lbs (7.8 kg)	18.07 lbs (8.2 kg)



## Worldwide Service Network

Our worldwide network of sales and service centers can provide immediate advice and assistance on the complete range of products.

### Global Headquarter

3115 Fry Road Ste 303, Katy, Texas  
77449, United States

Email: [sales@jenningsanodes.com](mailto:sales@jenningsanodes.com)  
Tel: +1 (281) 501 8398 / +1 (713) 799 3884

[www.jenningsanodes.com](http://www.jenningsanodes.com)

### UK Office

Tatham Street, Hendon, Sunderland  
SR1 2AG, United Kingdom

Email: [sales@jenningsanodes.co.uk](mailto:sales@jenningsanodes.co.uk)  
Tel: +44 (0) 191 510 8843  
Fax: +44 (0) 191 514 7749

[www.jenningsanodes.co.uk](http://www.jenningsanodes.co.uk)

### Asia Pacific Office

120 Lower Delta Road, #07-13 Cendex  
Centre, Singapore 169208

Email: [inquiries@jenningsanodes.com](mailto:inquiries@jenningsanodes.com)  
Tel: +65 6715 1514



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