



HIGH SILICON CAST IRON STICK ANODES



50 YEARS EXPERIENCE IN CATHODIC PROTECTION



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DATA SHEET

Having previously manufactured Durichlor-51 anodes in vast quantities, we have been supplying high silicon cast iron anodes for over 50 years. Our high silicon cast iron stick anode is manufactured by "chill" casting method using gravity to feed the metal mold, which guarantees a rapid solidification of the molten metal.

We have developed strict quality controls for the chill casting process in accordance with the leading industry standards — meeting X-Ray Level 1 as per ASTM E186/E446, chemistry to either ASTM A518-99 Gr 1 or 3. Currently, Jennings Anodes has developed a full product line of high silicon cast iron solid anodes with a capacity of over 3,000 tons per year from two foundries based in the UK and China.

■ Centrifugal Casting Process

Our solid stick high silicon cast iron anodes are centrifugal chill cast. The casting mold rotates at over 1000rpm producing a g-force that eliminates any trapped gas from silicon iron and throws any impurities to the inside bore of the anode where they do not hinder anode performance. Hence, the metal matrix is tight and dense, effectively improving anode utilization by up to 60% ~ 70%.

■ Compact Structure

Due to the consistent weight and greater density of the anode, there is less flake grain boundaries and lower chemical segregation. No gas porosity, no internal shrinkage and no non-metallic inclusions.

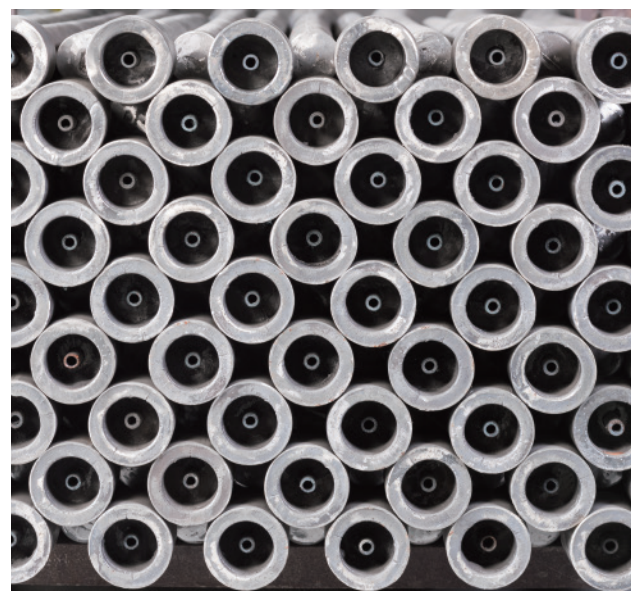
■ Tight Sealing Connection

Cast in taper pin or bolt connection with high quality epoxy resin encapsulation & heat shrink sleeve ensures superior cable connection at the anode head.

APPLICATIONS

Our high silicon cast iron stick anode are widely used in the impressed current cathodic protection in a variety of environments.

- Conventional grounding bed
- Vertical deepwell
- Shallow installation
- Offshore application



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CHEMICAL COMPOSITION

Standard Element	ASTM A518/A518M Grade 1	ASTM A518 / A518M Grade 3	BS 1591 1975
Silicon (Si)	14.2% ~ 14.75%	14.2% ~ 14.75%	14.25% ~ 15.25%
Chromium (Cr)	0.5% max.	3.25% ~ 5%	0.5% max.
Manganese (Mn)	1.5% max.	1.5% max.	0.5% max.
Copper (Cu)	0.5% max.	0.5% max.	—
Molybdenum (Mo)	0.5% max.	0.2% max.	—
Carbon (C)	0.65% ~ 1.1%	0.7% ~ 1.1%	1.4% max.
Phosphorus (P)	—	—	0.25% max.
Sulphur (S)	—	—	0.1% max.
Iron (Fe)	Remainder	Remainder	Remainder

ELECTROCHEMICAL PROPERTIES

Technical Measurement	In Soil	In Coke Breeze	In Seawater
Current Density	0.2 ~ 0.5 A/ft ² (2 ~ 5 A/m ²)	0.5 ~ 1 A/ft ² (5 ~ 10 A/m ²)	1 ~ 5 A/ft ² (10 ~ 50 A/m ²)
Consumption Rate	0.2 ~ 1.2 lbs/A.y (0.1 ~ 0.5 kg/A.y)	0.1 ~ 0.7 lbs/A.y (0.05 ~ 0.3 kg/A.y)	0.7 ~ 1 lbs/A.y (0.3 ~ 0.5 kg/A.y)

SPECIFICATIONS



Item No.	Anode Dimensions			Surface Area	Weight
	ØA	ØB	L		
JA-48-SA2S	1.5" (38 mm)	2.5" (63 mm)	48" (1220 mm)	1.61 ft ² (0.15 m ²)	23.1 lbs (10.5 kg)
JA-48-SA3S	2.0" (51 mm)	3.0" (76 mm)	48" (1220 mm)	2.15 ft ² (0.2 m ²)	39.7 lbs (18.0 kg)
JA-48-SA3M	2.5" (63.5 mm)	3.5" (89 mm)	48" (1220 mm)	2.7 ft ² (0.25 m ²)	61.7 lbs (28 kg)
JA-48-SA4S	3.0" (76 mm)	4.0" (102 mm)	48" (1220 mm)	3.23 ft ² (0.3 m ²)	88.2 lbs (40.0 kg)
JA-60-SA2	1.5" (38 mm)	2.5" (63 mm)	60" (1524 mm)	2.1 ft ² (0.19 m ²)	28.7 lbs (13.0 kg)
JA-60-SA3	2.0" (51 mm)	3.0" (76 mm)	60" (1524 mm)	2.7 ft ² (0.25 m ²)	48.5 lbs (22.0 kg)
JA-60-SA4	3.0" (76 mm)	4.0" (102 mm)	60" (1524 mm)	4.0 ft ² (0.37 m ²)	108.0 lbs (49.0 kg)

Notes: All dimensions and weights are nominal. The parameter provided is subject to variation in material compositions and Jennings Anodes foundry tolerance.

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TESTING DETAILS

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

Technical Measurement	Chemical Composition	Electrochemical Performance	Physical Properties
Testing Standard	ASTM E350	ASTM E186/E446	Foundry ITP
Testing Content	Chemical Analysis	Current Efficiency Connection Resistance	Dimension & Weight Surface Finish Cable Connection Epoxy Resin Sealing
Equipment	Optical Emission Spectrometer Labspark 750A / Thermoscientific Niton XL2-980	Electrochemical Analyzer EPI 200	Calibrated Digital Measuring Devices

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

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.	Anode Qty (per pallet/crate)	Pallet/Crate Dimensions (L x W x H)	Weight		Pallet/Crate Qty (per 20ft. container)
			N.W.	G.W.	
JA-48-SA2S	90	57" x 24" x 29" (1450 x 600 x 730mm)	2083 lbs (945 kg)	2194 lbs (995 kg)	22
JA-48-SA3S	56	57" x 23" x 28" (1450 x 590 x 720mm)	2222 lbs (1008 kg)	2359 lbs (1070 kg)	20
JA-48-SA4S	25	57" x 24" x 27" (1450 x 600 x 690mm)	2205 lbs (1000 kg)	2348 lbs (1065 kg)	20
JA-60-SA2	90	69" x 24" x 29" (1760 x 600 x 730mm)	2379 lbs (1170 kg)	2734 lbs (1240 kg)	17
JA-60-SA3	56	69" x 23" x 28" (1760 x 590 x 720mm)	2716 lbs (1232 kg)	2877 lbs (1305 kg)	16
JA-60-SA4	25	69" x 24" x 27" (1760 x 600 x 690mm)	2701 lbs (1225 kg)	2855 lbs (1295 kg)	16

Remarks: Custom packing is available upon request.



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

2417 Katy Fort Bend Road,
Katy, Texas 77493
United States

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

www.jenningsanodes.com

UK Office

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

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

www.jenningsanodes.co.uk

Asia Pacific Office

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

Email: inquiries@jenningsanodes.com
Tel: +65 6715 1514



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