

High Silicon Cast Iron anodes for impressed current cathodic protection systems are available in two general shapes: (1) Solid, Rod = "Stick" or (2) Hollow Tubular = "Tube", as illustrated below.

For purposes of this article, anodes are classified as *Traditional* (established well before 2003) or *New Z-Series* (introduced in 2003 by Anotec). Figures 1, 2 and 3 also illustrate representative cable connection options. The range of available weights and dimensions are listed in Table 1.

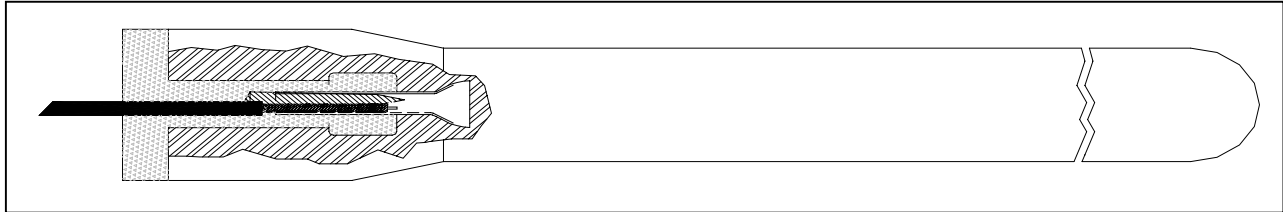


Figure 1 Traditional Solid Rod Stick Anode, Sand or Chill Cast

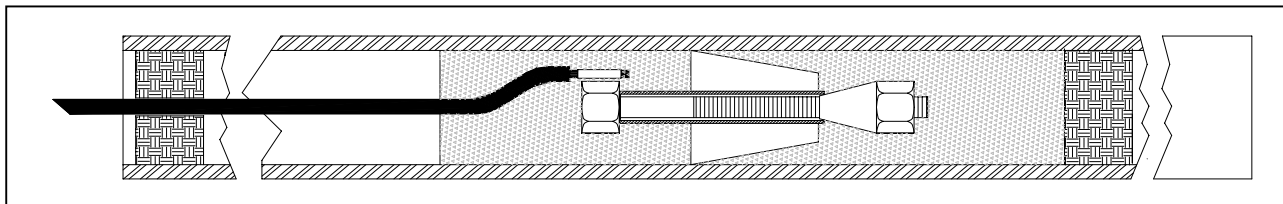


Figure 2 Traditional Centrifugally Cast Tubular Anode

(Not available from Anotec)

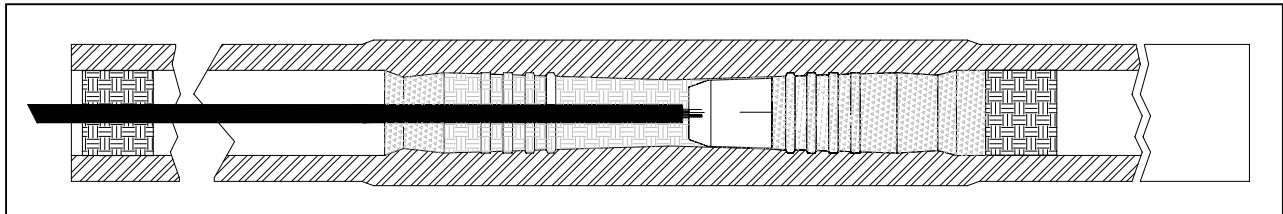


Figure 3 NEW Z-Series Chill Cast Tubular Anodes Exclusive to Anotec.

With many unique design features not available in generic Centrifugal tubes. Details on page 2.

Table 1: Range of Nominal Sizes and Weights of High Silicon Iron Anodes.

Refer Anotec Product Bulletins for specification details.

General Shape	Weight Range		Diameter Range		Standard Lengths		Nominal Amperage Note 1
	kg	lb	mm	inch	mm	inch	
Solid Stick	12-50	25-110	40-75	1.5-3	1520	60	1.5 - 6.8
Hollow Tubular	23-120	50-275	55-170	2.2-6.7	1520	60	2.9 - 13.3
					2130	84	3.9 - 22.3

Note (1): Basis: Nominal DC current discharge per anode for 15 year minimum life assuming a consumption rate of 0.31kg/Ayr (0.70lb/Ayr) at 65% utilization for sticks or 85% utilization for tubulars. In these instances Discharge Current Density may exceed 1 Amp per square foot. In fact, HSCI may be operated at 50A/sqm (4.6A/sqft) or higher without catastrophic failure of the anode itself.

Warnings: (a) Soils with drying potential may develop high resistance due to [Electro Osmotic Drying](#). Refer to [Anode Application \(#12 & #13\)](#) for Life and Limitations information. (b) Some jurisdictions limit Discharge Current Density (Electric Field Strength) in natural waters.

New Z-Series Tubular Anodes from Anotec

Improvement	increased wall thickness	diameter reduction
	more impact strength	improved cable connections at less cost Z-anodes use less space ^(#38) in deep wells

Figure 4: Comparing Traditional 4884L to New 4884LZ Tubulars

Traditional Chill Cast Tubular Anode with conical anchor seat.
 122mm od x 100mm id x 2130 55kg net / 4.8" od x 4" id x 84" long 120 lb net.

NEW Z-Series Chill Cast Tubular Anode with conical anchor seat.
 82mm od x 45mm id x 2130mm 56kg net / 3.2" od x 1.8" id x 84" long 123 lb net.

Both Anodes are 84" long. But the Z-Series is slightly heavier, with a more compact shape. The Z-Series makes better use of less epoxy for sealing the connection to maximum effect. As for reduced outer diameter of Z-Series, the impact on groundbed resistance is negligible.

[Anode Diameter and Resistance](#)

Anotec anodes can be assembled for special applications. Refer to [Sleds & Sea Anodes](#) and [HSCI Grounding Rods](#)