

## INTRODUCTION

TecnoAl aluminum anode is a kind of sacrificial anode that can be safely used in all kinds of waters. It has a very high current capacity which makes it very attractive in terms of efficiency. It is highly recommended to provide effective protection in low resistivity, fresh and brackish water applications. Some common applications include: protection of boat hulls, ballast tanks, docks, offshore platforms, among others.

Aluminum has an equilibrium potential of -1.90 V, therefore, thermodynamically it is a highly reactive metal. However, in many natural environments aluminum has been found to be stable due to the formation of a thin protective oxide film. This film has a high electrical resistance and therefore this makes pure aluminum useless as a sacrificial anode, which is why various aluminum alloys have been developed. The most used elements to induce the activation of aluminum are zinc (0.5% -4%) with indium (0.01% -0.05%) or mercury (0.030% -0.050%). The current capacity of these alloys is close to 2500 A.h / kg with efficiencies greater than 90%.



### Properties:

- DNV type approval
- Long-lasting performance
- High profitability
- Easy installation and replacement
- Personalized design

## CHEMICAL COMPOSITION

Standard	Zinc	Indium	Cadmium	Silicon	Iron	Copper	Others	Aluminum
<b>AL TYPE III (GALVALUM III)</b>	2.0 – 6.0%	0.01 – 0.02%	-	0.08 – 0.20%	0.13% Max	0.006% Max	0.10% Max	Balance
<b>DNV RP B401</b>	2.5 – 5.75%	0.015 – 0.040%	0.002% Max	0.12% Max	0.09% Max	0.003% Max	0.10% Max	Balance
<b>GS EP COR 201</b>	2.5 – 6.0%	0.015 – 0.030%	-	0.10% Max	0.09% Max	0.005% Max	0.10% Max	Balance

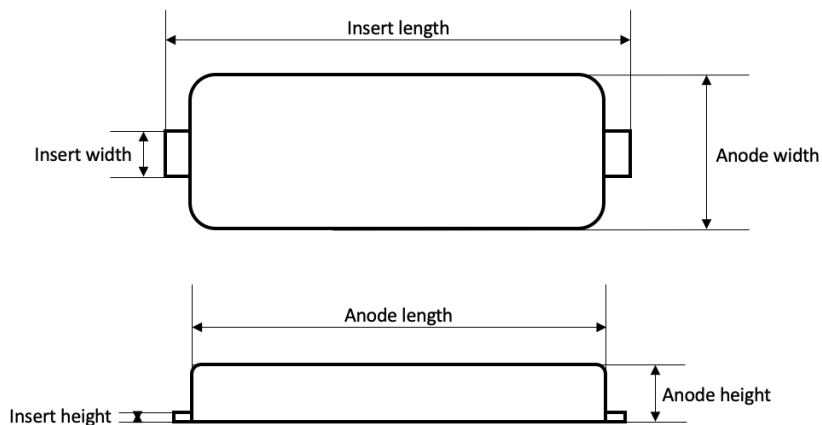
## ELECTROCHEMICAL PROPERTIES

Open circuit potential	Closed circuit potential	Actual capacity	Current efficiency
≤ - 1.1 V Ag/AgCl	≤ - 1.05 V Ag/AgCl	≥ 2500 A.h/kg	≥ 90%

## DIMENSIONS AND WEIGHT

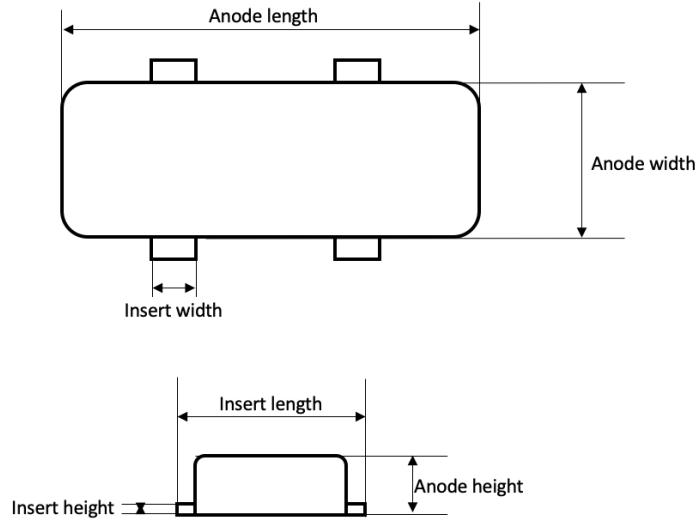
- **Ship Hull (Weld on type with single insert)**

Type	Specification (mm) Length x Width x Height	Steel insert (mm) Length x Width x Height	Net weight (kg)	Gross weight (kg)
TecnoAl-V01	800 x 140 x 60	900 x 45 x 6	16.5	18.4
TecnoAl-V02	800 x 140 x 50	900 x 45 x 6	13.8	15.7
TecnoAl-V03	800 x 140 x 40	900 x 45 x 6	10.8	12.7
TecnoAl-V04	600 x 120 x 50	700 x 40 x 6	8.7	10.0
TecnoAl-V05	500 x 140 x 40	600 x 40 x 6	6.7	7.8
TecnoAl-V06	400 x 100 x 40	500 x 40 x 4	4.0	4.6
TecnoAl-V07	300 x 100 x 40	400 x 30 x 4	3.0	3.3
TecnoAl-V08	250 x 100 x 40	350 x 30 x 3	2.5	2.7
TecnoAl-V09	180 x 70 x 40	260 x 25 x 2	1.2	1.3



- **Ship Hull (Weld on type with double insert)**

Type	Specification (mm) Length x Width x Height	Steel insert (mm) Length x Width x Height	Net weight (kg)	Gross weight (kg)
TecnoAl-D01	300 x 150 x 50	400 x 30 x 4	5.9	6.6
TecnoAl-D02	300 x 150 x 40	400 x 30 x 4	4.7	5.4

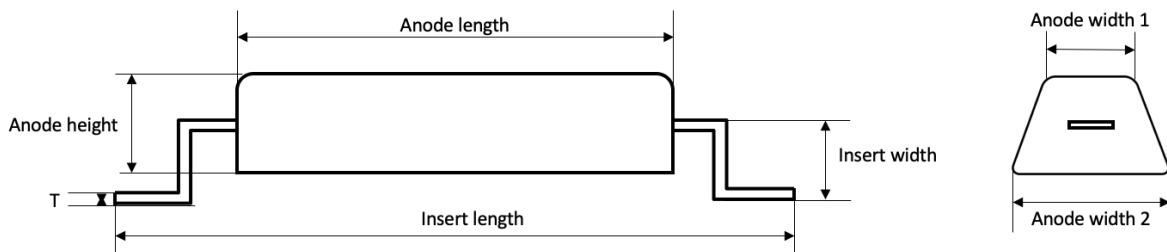


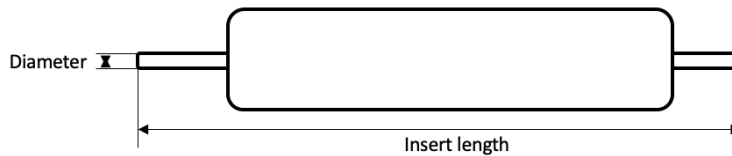
- **Ballast tank**

Type	Specification (mm) Length x (Width 1 + Width 2) x Height	Steel insert (mm) Length x Width x Diameter/T	Net weight (kg)	Gross weight (kg)
<b>TecnoAl-B01*</b>	1500 x (65+75) x 70	1800 x n/a x 16	19	22
<b>TecnoAl-B02</b>	500 x (115+135) x 130	800 x 50 x 6	21.5	24.6
<b>TecnoAl-B03</b>	500 x (110+130) x 120	800 x 50 x 6	19	22
<b>TecnoAl-B04*</b>	1000 x (58.5+78.5) x 68	1300 x n/a x 16	12	14.7
<b>TecnoAl-B05*</b>	800 x (56+74) x 65	1100 x n/a x 16	8.6	10.5
<b>TecnoAl-B06*</b>	1150 x (48+54) x 51	1450 x n/a x 12	7.7	9.1

\*Insert is a solid rod.

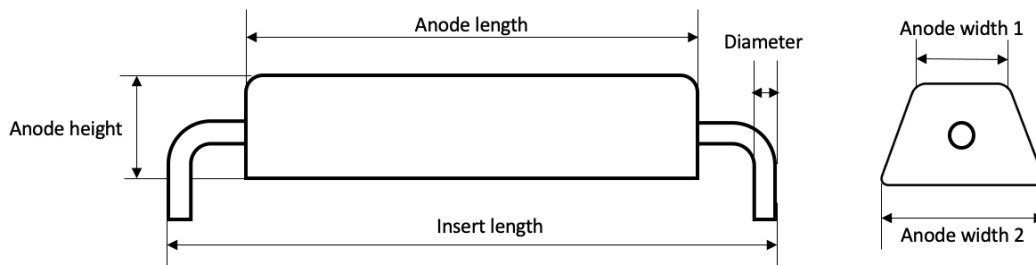
**TecnoAl B2, B3**



**TecnoAI B1, B4, B5 y B6**


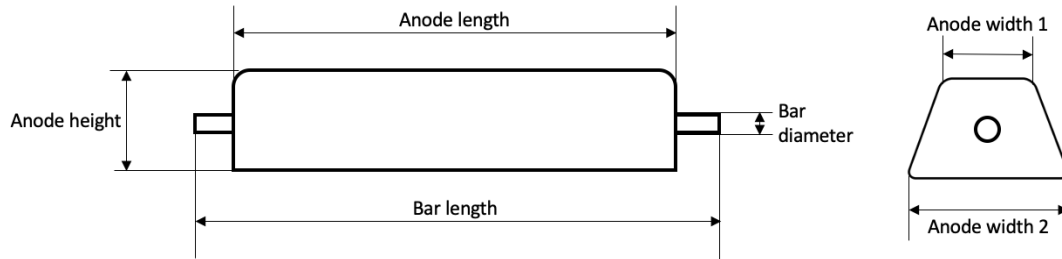
- Marine structure**

Type	Specification (mm) Length x (Width 1 + Width 2) x Height	Steel insert (mm) Length x Width x Stand-Off	Net weight (kg)	Gross weight (kg)
<b>TecnoAI-S01</b>	2300 x (220+240) x 230	2500 x 60 x 300	310	332.5
<b>TecnoAI-S02</b>	1600 x (200+210) x 220	1800 x 60 x 300	182.5	200
<b>TecnoAI-S03</b>	1500 x (170+200) x 180	1700 x 50 x 300	126.5	140.5
<b>TecnoAI-S04</b>	900 x (150+170) x 160	1100 x 40 x 300	59	65.5



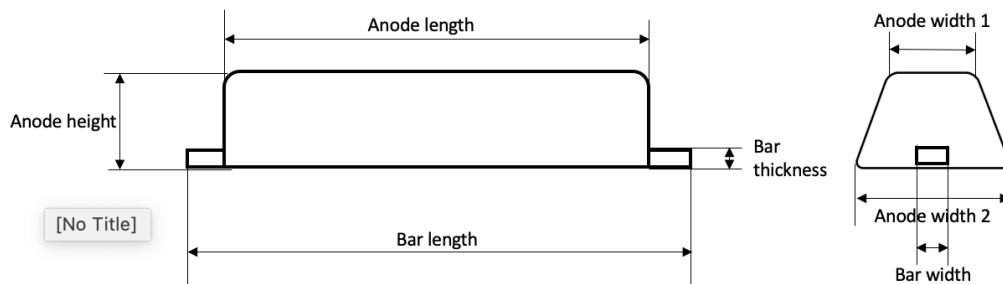
- Port Structure**

Type	Specification (mm) Length x (Width 1 + Width 2) x Height	Steel bar (mm) Length x Diameter	Flat bar (mm) Length x Width x Height	Net weight (kg)	Gross weight (kg)
<b>TecnoAI-T01</b>	1500 x (148+178) x 170	1800 x 25	1800 x 50 x 8	110.0	116.8
<b>TecnoAI-T02</b>	850 x (180+220) x 180	1100 x 25	1100 x 60 x 8	81.5	85.5
<b>TecnoAI-T03</b>	800 x (200+280) x 150	1050 x 25	1050 x 60 x 8	76.5	80.5
<b>TecnoAI-T04</b>	700 x (160+220) x 180	950 x 22	950 x 60 x 8	63.9	66.5
<b>TecnoAI-T05</b>	1250 x (115+135) x 130	1500 x 18	1500 x 40 x 8	54.0	56.9
<b>TecnoAI-T06</b>	1000 x (115+135) x 130	1250 x 18	1250 x 40 x 8	43.2	45.6
<b>TecnoAI-T07</b>	750 x (115+135) x 130	1000 x 16	1000 x 40 x 6	32.5	34.0
<b>TecnoAI-T08</b>	500 x (115+135) x 130	750 x 16	750 x 40 x 4	21.6	22.7



- **Internal storage tank**

Type	Specification (mm) Length x (Width 1 + Width 2) x Altura	Flat bar (mm) Length x Width x Thickness	Net weight (kg)	Gross weight (kg)
<b>TecnoAl-S08</b>	750 x (115+135) x 130	900 x 16 x 8	32.5	33.9
<b>TecnoAl-S09</b>	500 x (115+135) x 130	650 x 16 x 8	21.6	22.6
<b>TecnoAl-S010</b>	500 x (105+135) x 100	650 x 16 x 6	15.9	16.9
<b>TecnoAl-S011</b>	300 x (105+135) x 100	400 x 12 x 6	9.7	10.0



For any technical questions regarding which anode you should use for your application, let us support you by contacting our technical-commercial department.

Contact us, we have NACE certified professionals in cathodic protection ready to support you.

## NOTES

- Dimensions and weight may vary slightly by  $\pm 2\%$ .
- We have anodes in different configurations according to the client's needs.

## WARRANTY AND LIMITATION OF LIABILITY

TECNOLOGIA TOTAL will not be in any case responsible for damages of any nature that could be derived from an inadequate use of the product. Before using the product, the user must determine if the product is suitable for its intended use, taking all risks and liability that could be derived from its use.

If it's proved that a product is faulty due to manufacturing or its material at the time of sale, or that it does not fulfill during its warranty period the indicated properties in this technical sheet, the only responsibility of TECNOLOGIA TOTAL will consist of replacing the buyer with the quantity of product that is found to be defective.

*TECNOLOGIA TOTAL does not take any responsibility for any additional cost such as manufacturing cost, withdrawal or re-application of the products. If TECNOLOGIA TOTAL offers a warranty to their clients, express or implicit, or a compensation that differs from the established in this section, this stipulation cannot be altered unless a signed agreement by the parties.*

