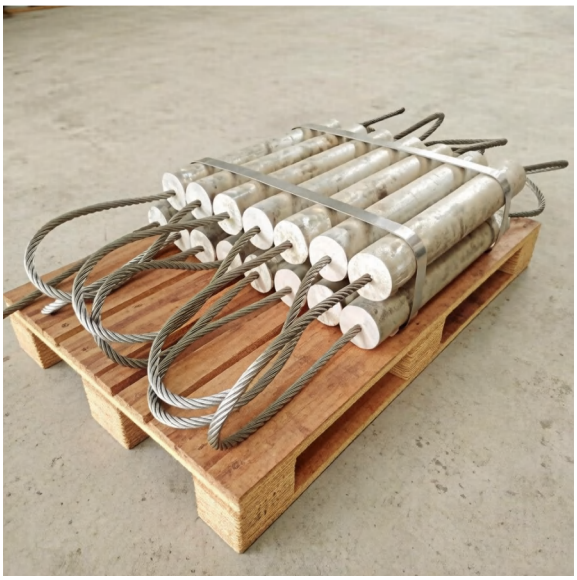
BASENNOVA

PRODUCT DATA SHEET

Aluminum String Anodes

Aluminum string anodes consist of multiple Al-Zn-In series aluminum alloy sacrificial anodes connected in series via a steel core, forming flexible or semi-rigid assemblies. They are typically installed as bracelet-type or string-type wraparound units around subsea pipelines, risers, or platform legs. The working principle is based on the galvanic cell effect: the aluminum alloy has a more negative potential (approx. -1.10 to -1.18 V vs SCE), causing it to preferentially dissolve in seawater while continuously releasing electrons to the protected steel structure, polarizing it to a corrosion-resistant potential below -0.85 V. Aluminum string anodes are widely used for full-lifecycle cathodic protection of subsea oil and gas pipelines, particularly suited for long-distance pipelines, bends, flanges, and other irregular geometries, offering the advantages of convenient installation, uniform current distribution, and no requirement for an external power source.



KEY FEATURES

1.Highest current output per unit weight
2.Lightweight, ideal for large marine structures
3.Moderate driving voltage, safer operation
4.Relatively controllable cost, suitable for mass production of large castings
5.Stable potential in seawater and brine

APPLICATIONS

1.Subsea pipelines
2.Risers
3.Platform legs

PRODUCT SPECIFICATIONS

Chemical Composition(%)			
Executive Standard	**DNV RP B401**	**GB/T4948-2025:A21**	**BS EN12496-2013: A3**
Zn	2.5-5.75	4.0-7.0	4.75-5.75
In	0.015-0.040	0.020-0.050	0.016-0.020
Cd	≤0.002	/	≤0.002
Si	≤0.12	≤0.10	0.08-0.12
Cu	≤0.003	≤0.01	≤0.003
Fe	≤0.09	≤0.15	≤0.06
Mg	/	0.50-1.50	/
Ti	/	0.01-0.08	/
Other	≤0.10	/	/
Each Impurity	/	/	≤0.02
Total Impurity	/	/	≤0.05
Al	Remainder	Remainder	Remainder

Electrochemical Property			
Executive Standard	**DNV RP B401**	**GB/T4948-2025:A21**	**BS EN12496-2013:A3**
Open Potential(-V,vs SCE)	/	1.10-1.18	/
Closed Potential(-V,vs SCE)	≥1.05	1.05-1.12	1.05-1.12
Actual Capacitance(A·h/kg)	≥2500	≥2600	≥2500
Current Efficiency(%)	/	≥90	/