

RetroSled™

General

RetroSled is a retrofit sacrificial anode system designed for pipelines where anode burial below the natural seabed is required or anticipated. The sled can be rapidly and safely deployed offshore with little-to-no diver intervention. RetroSled is suited for applications where there is little-or-no seabed movement. For situations where seabed movement is anticipated, Deepwater recommends the RetroMat (See RetroMat technical datasheet).

Frame (Item 2)

Steel grade	ASTM A53 [ASTM A106] ASTM A36 [EN 10025 S355]
Welding	All welding conducted in accordance with Steel Structural Welding Code – AWS D1./D1.1M:2006 [EEMUA 158]
Lifting (Item 3)	1/2" [12.7 mm] Padeye 4 points

Connection details (Item 4)

RetroSled	2 x Ø 1/2" [M12] Stud welded to frame
Structure	RetroClamp (See RetroClamp technical datasheet) Quantity as per requirements, typically 2 per RetroSled
Cable	4/0 AWG [~107 mm ²], EPDM insulated, heavy duty flexible cable 2 per RetroClamp

Overall weights & dimensions*

15 Year

Dimensions (W x H x L)	78" x 270" x 10" [1980 x 6780 x 270 mm]
Weight (Air)	1980 lb [890 kg]
Weight (Water)	1455 lb [660 kg]

20 Year

Dimensions (W x H x L)	78" x 270" x 11" [1980 x 6780 x 280 mm]
Weight (Air)	2140 lb [970 kg]
Weight (Water)	1575 lb [715 kg]

Anodes (Item 1)

Description

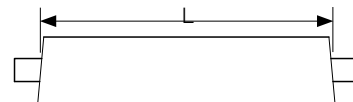
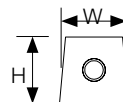
Design life

Net weight

Gross weight

Dimensions (L x W x H)

Core



Deepwater offers two standard dimensions of anode for the RetroSled. The anode size is selected based on design life.

15 Year	20 Year
285 lb [129 kg]	325 lb [148 kg]
370 lb [167 kg]	410 lb [186 kg]
120" x 5.3" x 5.5" [3050 x 135 x 140 mm]	120" x 5.5" x 5.9" [3050 x 140 x 150 mm]
2" Sch 80 Pipe	2" Sch 80 Pipe

Anode composition / electrical properties

Description

RetroSled is available with two anode compositions. Deep10 alloy was designed as an effective, general-purpose offshore alloy for use in tropical water environments. Deep7 alloy, with low iron content, is more effective in cold, deep water.

Composition (%)

	Deep7	Deep10
Iron (Fe)	0.07 max.	0.10 max.
Silicon (Si)	0.10 max.	0.10 max.
Copper (Cu)	0.003 max.	0.006 max.
Zinc (Zn)	4.75 - 5.25	4.75 - 5.75
Indium (In)	0.015 - 0.025	0.010 - 0.020
Titanium (Ti)	0.025 max.	0.025 max.
Others (each)	0.02 max.	0.02 max.
Aluminium (Al)	Remainder	Remainder
Open circuit potential (sw)	(-) 1.08 V vs Ag/AgCl	(-) 1.08 V vs Ag/AgCl
Closed circuit potential (sw)	(-) 1.05 V vs Ag/AgCl	(-) 1.05 V vs Ag/AgCl
Seawater capacity @ 25°C	1100 Ahr/lb [2420 Ahr/kg]	1100 Ahr/lb [2420 Ahr/kg]
Seawater capacity @ 5°C	1100 Ahr/lb [2420 Ahr/kg]	Variable

