

### RetroMat CP

#### General

RetroMat CP is a standard flexible concrete stabilization mattress with an integrated cathodic protection system comprising many interconnected small aluminium anodes cast directly into the concrete. The system is designed to provide cathodic protection for pipelines at crossings or in other unstable conditions. The mattress utilizes plastic FLXMAT shells, which offer added dimensional flexibility and allow the concrete to be poured locally on-site.

#### Single concrete block

Shell (Item 2)	Plastic FLXMAT shell
Size	20" x 20" x 12" [ 500 x 500 x 300 mm ]
Volume	1.5 ft <sup>3</sup> [ 0.042 m <sup>3</sup> ]
Weight (air)	225 lb [ 100 kg ]
Weight (water)	130 lb [ 60 kg ]
Lifting (Item 3)	5/8" [ 16 mm ] Polypropylene rope
Continuity (Item 4)	Electrical continuity provided by 3/4" [ 19 mm ] wire rope
Concrete (Item 5)	Typical density 150 lb/ft <sup>3</sup> [ 2400 kg/m <sup>3</sup> ]

#### Connection details

RetroMat CP	Malleable wire rope clips connected to wire rope
Structure (Item 6)	RetroClamp (See RetroClamp technical datasheet) Quantity as per requirements, typically 2 per RetroMat CP
Cable (Item 7)	3/4" Galvanized wire rope 2 per RetroClamp

#### Features

- Available in kit form for concrete pouring on site to reduce freight costs
- Fabricated in virtually any shape to suit a variety of applications and sizes
- Optional protective rubber pads are available for the underside if installed on a pipeline
- Any block can be provided with or without an anode for the most optimal system while meeting design and stabilization requirements
- Optional steel coupon may be inserted in place of an anode allowing structure potential measurements to be taken
- Additional coupon may be installed electrically isolated to verify CP readings against free-corroding potentials

#### Anodes (Item 1)

Net weight	17 lb [ 7.7 kg ]
Gross weight	18.5 lb [ 8.4 kg ]
Dimensions	Ø 7" x 4.5" [ Ø 180 x 114 mm ]
Core	Ø 1/2" x 4-5/8" [ Ø 12.7 x 118 mm ] Steel insert

#### Anode composition / electrical properties

Description RetroMat CP 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

