RIDGEWAY

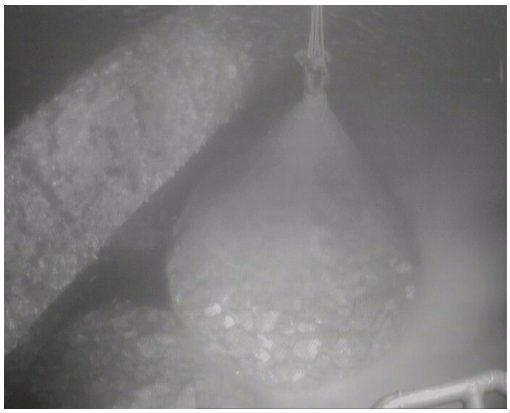
ROCKBAGS®

100% RECYCLED

Kyowa Filter Unit

Subsea engineering

Oil & Gas



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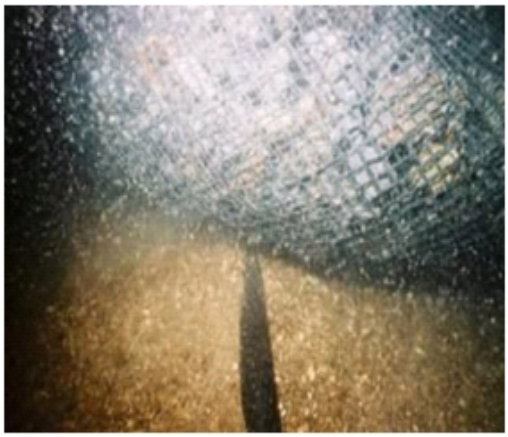


The filter unit was developed in 1987 to protect the foundations of the Great Akashi Bridge in Japan.
For over 25 years the product has been widely used for foundation and cable protection on offshore wind farms, civil engineering works on rivers, bridges and coastal environments.

Over 18,000 reference sites in Japan with over 700,000 filter units installed.
In Europe the product has been utilised for a number of offshore projects including scour, cable and pipeline protection.

FPAL
empowered by Achilles
Registered

Product Structure

Synthetic fiber material

The filter unit is made of recycled polyester. It's an ideal solution or all hydraulic works as it is non- corosive, rot proof, non rusting and weather resistant.

- Suppleness and flexiablity of the fiber makes it adaptable to all ground conditions

- Reduced installation time

- Extended lifetime

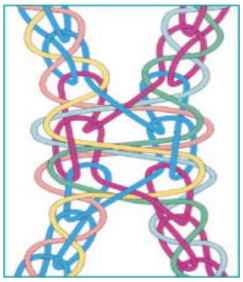
Ecogreen type
Double net

S type
Double mesh

Structure of the Mesh

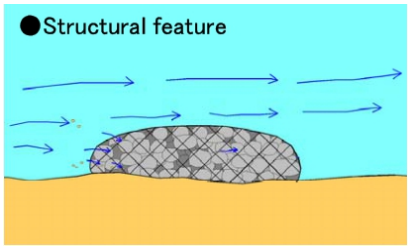
- The specific structure of the Raschel mesh guarantees the stability of the filter unit by preventing the mesh thread from unraveling even is a strand breaks.

- Highly resistant to impacts and pressure.



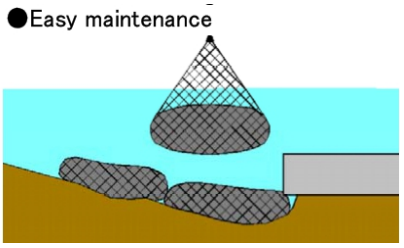
Characteristics

●Structural feature



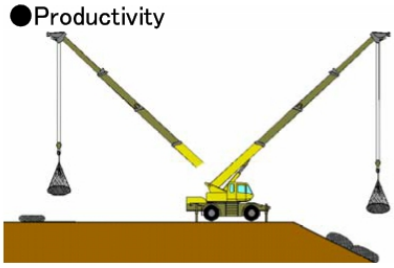
- Filter unit is highly flexible, it fits well with undulating seabed topography.
- Stone fill prevents suffusion of sands.

●Easy maintenance



- Due to its flexibility it is possible to install under scoured structures.
- One point lifting system allows easy installation and removal, if necessary.

●Productivity



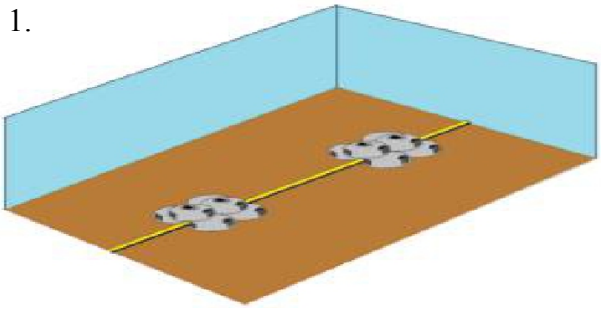
- Production of filter unit is fast, there is no need to wait for concrete to mould or set.
- Once filled and sealed it is ready to be installed.

●Environmental aspect

- Crevices in the stone fill encased by the net provide spawning areas encourraging marine life.
- Filter unit overtime will eventually generate an artificial reef.

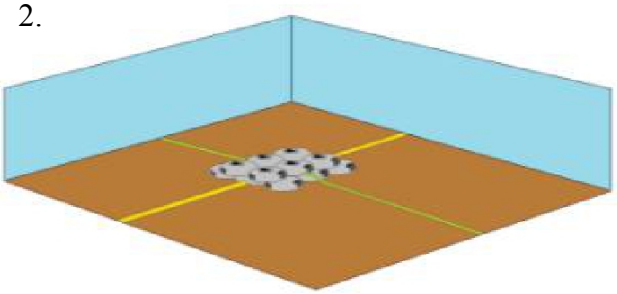
Filter unit applications - Offshore oil & gas

1.



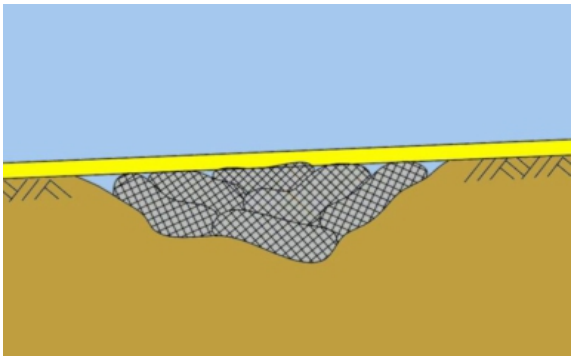
Pinning and stabilising pipelines on seabed

2.



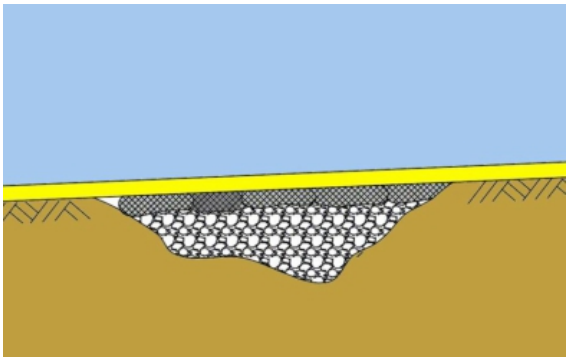
Protection and stabilisation at pipeline and cable crossing points

3.



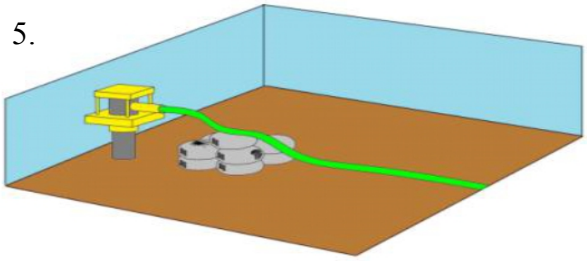
Span correction or adjustment of uneven seabed

4.



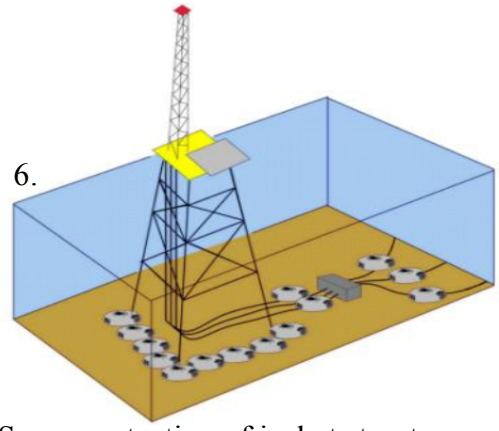
Adjustment of uneven seabed below pipeline combination with rock dump method

5.



Reduction of tension between christmas tree flow mouth and flexible pipeline by creating subsea dyke

6.



Scour protection of jacket structure and protection of umbilicals

Product Specifications

According the the appliced conditions, filter unit can be selected from 2 tonne type to 8 tonne type.

Type	Mesh Size	Stuffing stones *1 particle diameter	Weight of empty filter unit	Dimensions in meters, filter unit installed			Applicable velocity	
				Diameter	Height	Volume	Unit	Grouped
2T Model	25mm	50~200mm	6kg	1.9m	0.4m	1.24m³	3.1m/s	4.6m/s
4T Model	25mm	50~200mm	13kg	2.4m	0.6m	2.5m³	3.4m/s	5.2m/s
8T Model	50mm	75~200mm	48kg	3.0m	0.7m	5.0m³	3.9m/s	5.8m/s

Filling procedure of filter unit

Set filter unit in production frame and fill with stones

Attach forged steel ring and bind mouth

Lift production frame off the unit

Lift using one point lifting ring to stock pile

Easily stacked and presented on quayside for vessel loading

Fast and accurate installation in single or multiple lifts

Benefits of filter unit

- Fast and accurate deployment
- Minimum 50 years in saline water
- Minimum 30 years against UV rays
- Reduces vessel time
- Easily recovered from seabed
- 100% environmentally friendly
- Filled using local resources
- Can be installed during tidal cycles
- Temporary or permanent solution
- Durable, versatile & adaptive
- Encourrages accumulation of sands
- Divers not essential for installing

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Tel: +44 (0) 2890 454599

Sales Contacts:
Gavin Donnelly
Tel: + 44 (0) 7712935391
Email: gdonnelly@ridgeway-online.com

Michael Ferguson
Tel + 44 (0) 7751 931384
Email: mferguson@ridgeway-online.com

Web: www.rockbags.com