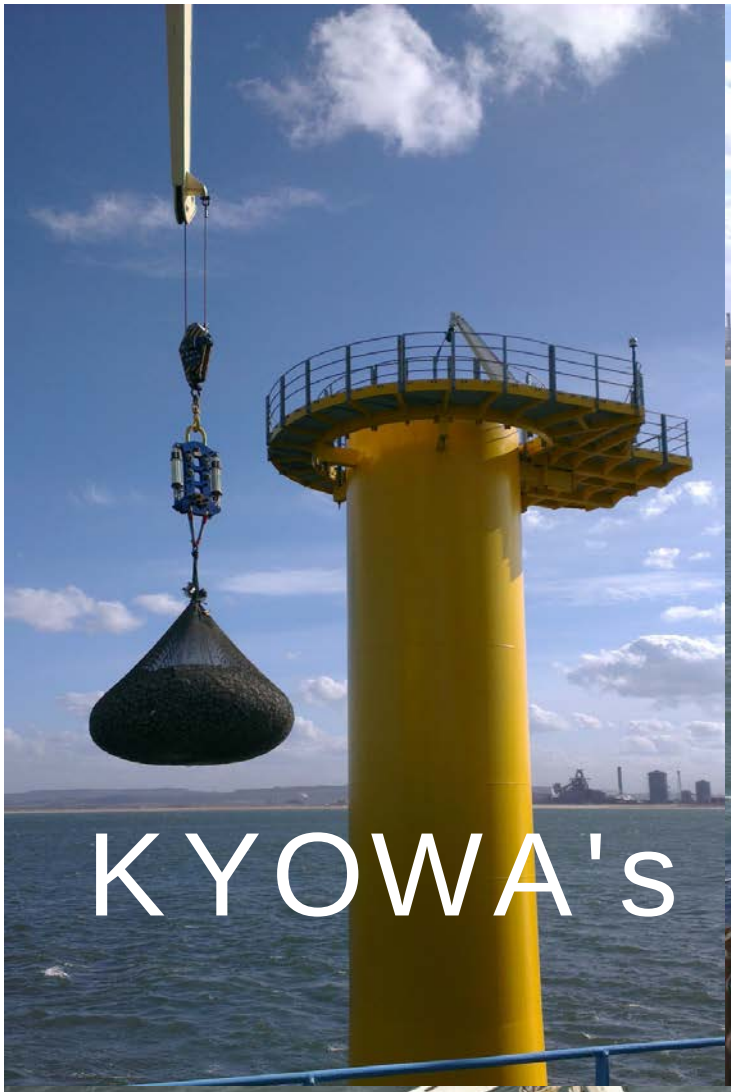


KYOWA's Filter Unit

For Offshore Wind Farm, Oil &Gas market
Japanese Technology

RIDGEWAY MARINE

Outline

Kyowa, founded in 1969, is the leading company in the Japanese market for mesh sheets and safety nets for industry and construction.
Filter Unit was used for the first time in 1987 to protect the foundations of Akashi-Kaikyo Bridge at Akashi strait, Japan (the world's longest span bridge with a total length of 3,911m).
For more than 25 years, Filter Unit has been widely used in civil engineering for rivers and port works.
We have been promoting Filter Unit for Offshore Wind Farm market and Oil & Gas market in Europe since 2010, and we are increasing the number of application sites every year.

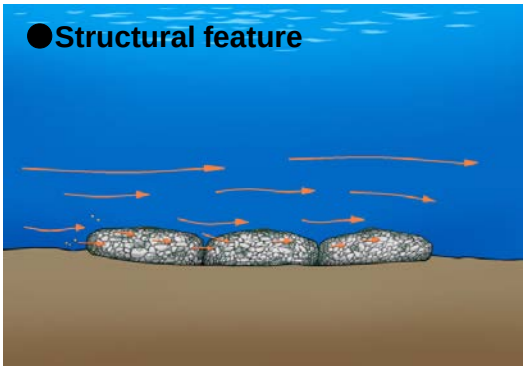
CE Marking
【Acquired：2008】

Eco mark (certificate of using recycled material)
【Acquired：2003】

Certificate of Public work Research Center
【Acquired：1995】

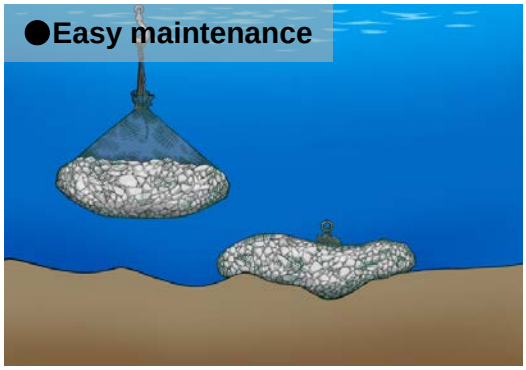
Characteristics

●Structural feature



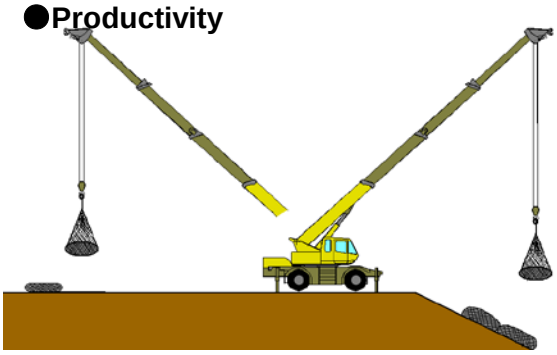
・Due to its flexible structure, Filter Unit fits well with irregular seabeds.
・Filter Unit has high efficiency of covering the surface that it prevents the seabed from suction

●Easy maintenance



・Due to high flexibility, it is easy to fill a gap by installing additionally.
・Installation and removal of Filter Unit can be done easily by one point hanging system.

●Productivity



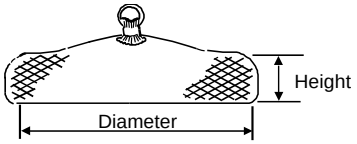
・Stone filling and installation is easy that those works can be done with smaller number of people, shorter construction period and lower cost.

●Environmental aspect

・As stuffed stones in the Filter Unit creates porous structure, it creates a space for small marine life such as fish, to live.
・Filter Unit is made of synthetic fiber that it will not rust and toxic substances will not elute.

Product Specifications

According to the applied places and conditions, Filter Unit can be selected from 2ton type to 8ton type.



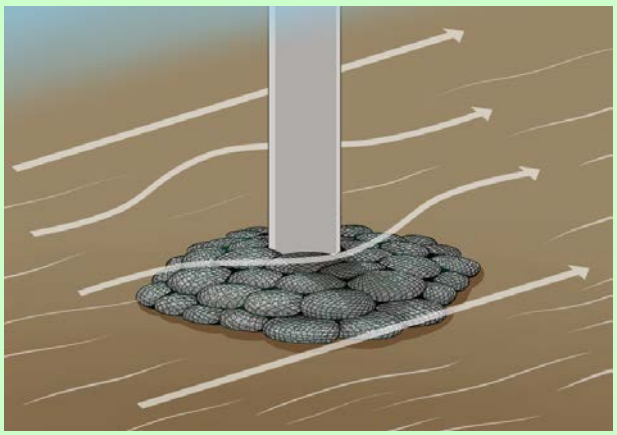
Type	Mesh size	Stuffing stones*1 recommended size	Unit weight, Filter Unit empty	Dimensions in meters, Filter Unit installed			Applicable velocity*2	
				Diameter	Height	Vol	Unit	Grouped
2t type	25mm	50mm	6kg	1.9m	0.4m	1.25m^3	3.1m/sec	4.6m/sec
4t type	25mm	50mm	13kg	2.4m	0.6m	2.5m^3	3.4m/sec	5.2m/sec
8t type	50mm	75mm	48kg	3.0m	0.7m	5.0m^3	3.9m/sec	5.8m/sec

＊1：Stuffing stones with specific gravity of 2.6-2.65, and with diameter smaller than 200mm, are recommended for all types.
＊2：Above applicable velocity of flow is a theoretical value when Filter Unit is installed in seawater.

Effective application for Offshore works

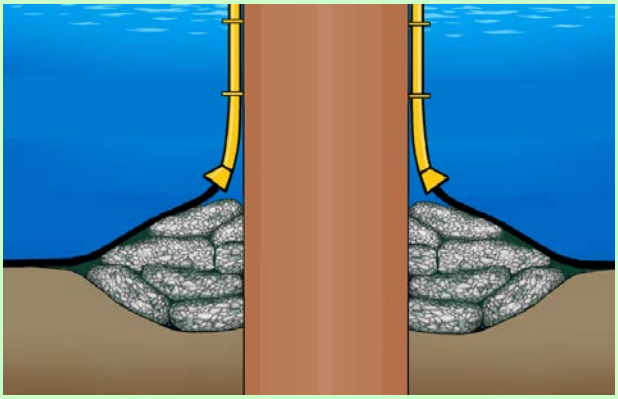
Offshore Wind Farm

① Scour protection at foundation of wind turbine



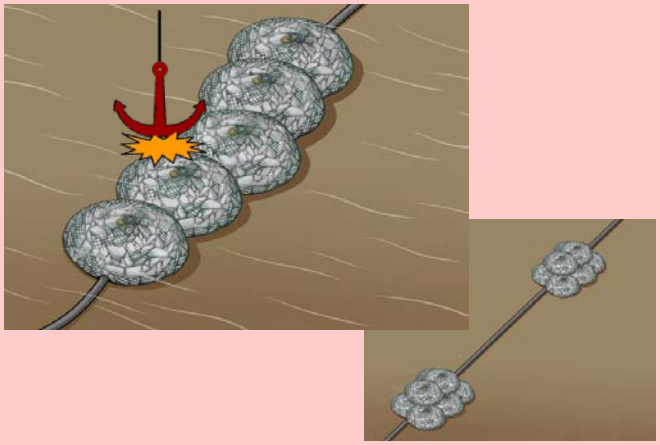
※Patented work method

② Free-span adjustment under J-tube

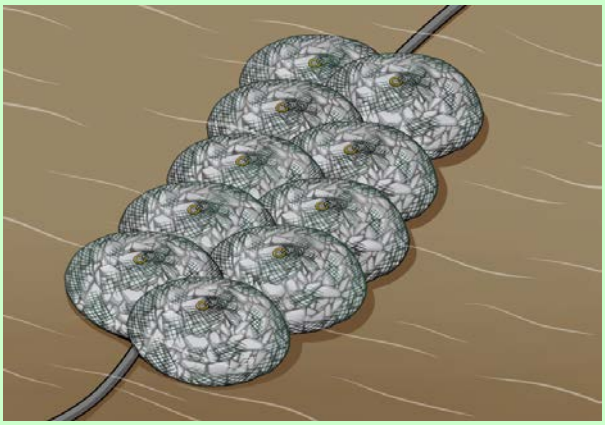


Oil & Gas

④ Protection of pipeline from dropping objects
Stabilization of pipeline



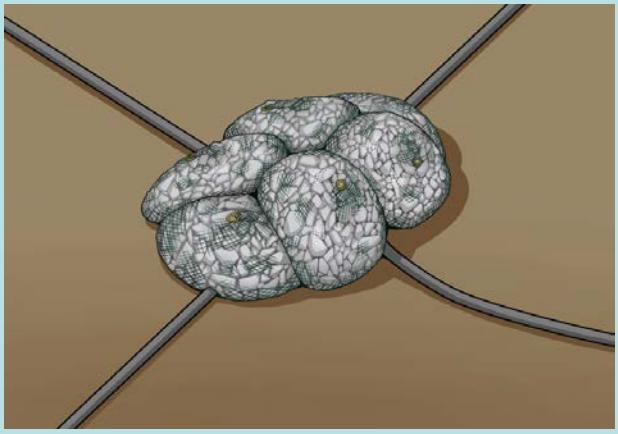
③ Protection of array cable or export cable



※Patented work method

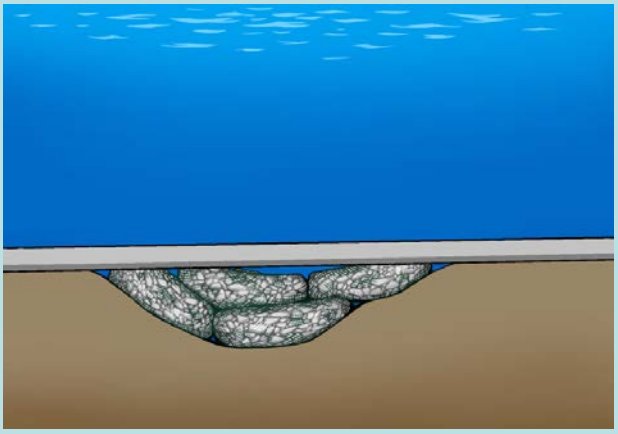
Offshore Wind Farm, Oil & Gas

⑤ Protection of cable/pipeline crossing point



※Patented work method

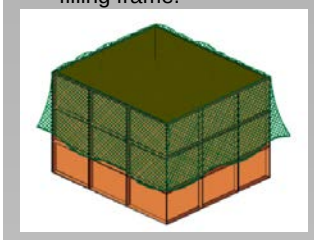
⑥ Adjustment of uneven seabed (rocky seabed)
Creation of gentle slope



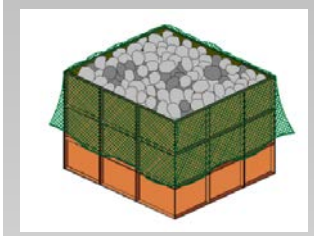
※Patented work method

Procedure of stone filling

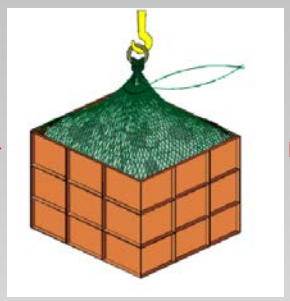
① Set Filter Unit in a filling frame.



② Fill stones with an excavator.

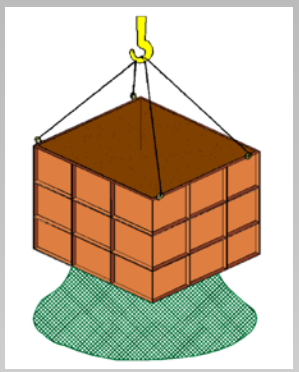


③ Put a lifting ring.
Lift slightly to bind the top of the bag.



④Bind the top of the bag.

⑤Lift up the filling frame and leave the Filter Unit.



Installation

・One point lifting ring allows easy and quick pin-point installation and removal.
・No need for divers when installing Filter Unitt, installation can be achieved using a combination of sonar and remote controlled hooks or ROV's/ UTROV's.
・You can install several Filter Units at once by using a lifting frame.

Contact us

E-mail : info@ridgeway-online.com
WEBSITE : www.ridgeway-online.com
CONTACTS : Gavin Donnelly
Jonathan Kane

ADDRESS : 103 Airport Rd West,
Belfast,
BT3 9ED
Tel No : 02890454599

RIDGEWAY MARINE