Breakwater Armouring Underwater Placement
Visual aid for the accurate underwater placement of armour units

POSIBLOC™
underwater placement system

POSIBLOC™ V4 is a topographical 3D system jointly developed by Sogreah Consultants and MESURIS for optimum placement control of armour units on breakwaters revetments when using either land based or marine equipment. It is especially effective when visibility conditions are limited during the underwater installation of the primary armour units onto rubble mound structures.

SCHEMATICS OF THE SYSTEM

Removable measurement box BIB

1- Removable measurement box BIB on unit
2- Power and measurement cable (downwards)
3- RTK GPS positioning system along the cable + load sensor
4- Power cable (upwards)
5- Cabin Display (VISIBLOC* under QINSY)
6- Site manager computer with VISIBLOC* software
7- GPS reference station

* VISIBLOC is an integrated software for virtual imaging of the placement, specially developed for the POSIBLOC™ system.
This aid to accurate placement is recommended for projects where CLI single layer armour units are specified: i.e. ACCROPODE™ (I and II: first and second generations), 1 m3 and more or CORE-LOC™ 1,4 m3 or more.

ACCROPODE™ (First generation)

ACCROPODE™ II (Second generation)

CORE-LOC™

MAIN CHARACTERISTICS OF THE POSIBLOC™ VISUAL AID SYSTEM:

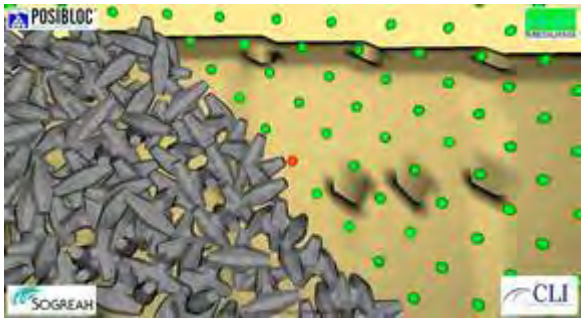
- System installed in crane driver cabin.
- Real time 3D display of geo-referenced unit position and orientation.
- Removable measuring box easy to install on units.
- RTK positioning, to compute armour unit's center of gravity and orientation
- Load sensor included for contacts detection.
- Real time graphical display (virtual display) of the actual armour layout.
- Operates 24 hours a day, production from 50 to 105 units placed per 10 hours shift.
- Blocks rotations are not under POSIBLOC control.

COST EFFECTIVENESS & QUALITY: REAL-TIME DATA DISPLAY OF THE ACTUAL AS-BUILT ARMOUR LAYOUT, MORE ACCURATE, QUICKER AND SAFER THAN PLACEMENT CONTROL USING A CONVENTIONAL DIVING TEAM

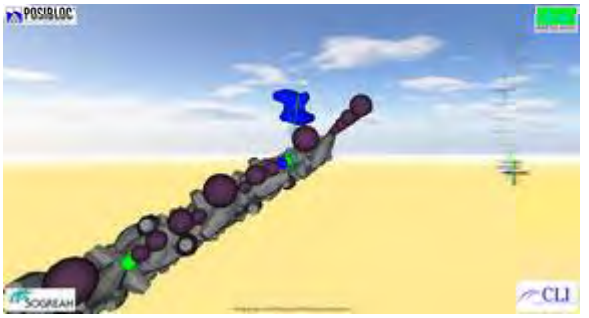
POSIBLOC™ V4 SYSTEM – SPECIFICATIONS

Unit center of gravity XYZ accuracy:	15cm or H/12, witchever is greater (H= unit height)
Resolutions:	1cm- 0,1° -load sensor: 0,1 Ton
Range/depth:	90m crane cable length + 30m sling, depth 0 to 30m.
Number of units displayed:	Up to 1000
Number of units stored:	Up to 1000 per section
Blocks size:	Sizes: ACCROPODE >1 m3, ACCROPODE II and CORE-LOC >1,3 m3.
VISIBLOC* Display:	3D with controlled field of view
Terrain model grid size:	0,25m x 0,25m to 1x1 m
Output format:	JPG Images and PDF secured reports
Input format MNT,KP,layout:	XYZ, ASCII
Rate:	3 Hz measurement rate
Calibration:	integrated
Reference:	GPS station on shore with UHF radio link
Geodesy:	Worldwide local projection with QINSy software.
Display:	DVI-D 1268x1024
System communications:	RS485
Dimensions, measurement frame:	1300x740x1770 millimeters (WxLxH)
Cables spacing (2,4 or 6 cables):	Up to 800 mm (cable separation 56 to 190 mm).
Weight, measurement frame (BIPS):	200 kg
Weight, measurement module (BIB):	1 kg
Weight, crane system with CPU (BACC):	35 kg (+ optional air conditioning 10Kg)
Supply voltage:	24 VDC 180 W max (or 220 Vac with air conditioning)
Operating temperature:	From -10 to + 50 deg C.
Storage temperature:	From -40 to + 70 deg C.
EMC:	According to CE

VISIBLOC - screen data display in crane cabin



Various virtual camera angles are possible



POSIBLOC™ hardware is exclusively distributed by MESURIS. Detailed information, should be obtained from:
marinesystems@mesuris.com - www.mesuris.com

Basic information can be obtained from: cli@concretelayer.com – www.concretelayer.com

The VISIBLOC* software sub-licence to be obtained for each specific project where CLI single layer armour units are implemented can be granted by MESURIS.
The POSIBLOC™ intellectual rights are the property of Sogreah Consultants.

Scope of delivery:	
1 x POSIBLOC™ close circuit AC computer	1 x GPS – GLONASS RTK for crane
1 x User's Manual	1 x GPS RTK-GLONASS base station
1 x Power Cable and signal cables,	1 x UHF Radio link Satel
1 x Measurement frame + load sensor	1 x wireless and waterproof labtop remote display unit
1 x Measurement cables (90m) assy.	1x High luminosity LCD display 1x spare kit including second measurement module
1 x Set of 2 FSG 45m measurement cable drums	OPTIONS:
1 x Set of spares and Fisher plastic pins	1x VISIBLOC Processing replay software
1x VISIBLOC* site sub-licence (USB dongle)	1 x POSIBLOC EC for Excavators