CanDOCK Modular floating systems

Anchoring

-OWNER'S MANUAL-

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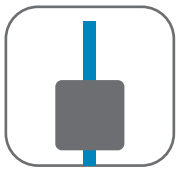
Modular floating systems
CanDOCK

TABLE OF CONTENT

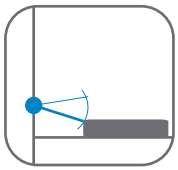
ANCHORING METHODS

RELATED PRODUCTS



PILINGS

UNDER WATER ANCHOR POINTS WITH ANCHOR LINES



ANCHORING STRUTS

MISCELLANEOUS

***** Note that it is preferable to consult the manual on a COLORED printed version, or directly on your computer screen*****

*The following instructions are guidelines to be followed. Candock will not be responsible for damages incured by the non-compliance to these guide lines. All distributors are required and responsible to provide theoretical and practical training to clients on the complete use of the different dock systems. Candock inc. can not be held responsible in any way for any damages resulting from the fact that the client has not received adequate training.

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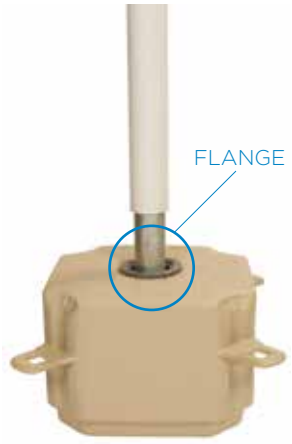
G2 POST CUBE



Material/Composition :
High-density polyethylene resin
Interior filled with expanded polystyrene

Surface :
Anti-skid

Dimensions :
L x W : 48 cm (19") x 48 cm (19")
H : 36 cm (14")

Dimensions (low profile cube) :
L x W : 48 cm (19") x 48 cm (19")
H : 23 cm (9")

Weight :
Cube: 9.55 kg (21 lbs.)
Low profile cube : 7.5 kg (16.5 lbs.)

Needed tools :
G2 key for pin "combo-pack"
Key for nut
or
Ratchet key for nut + ratchet tool
Piling bull 2 7/8"
or
Piling driver 2 7/8"
Piling lever (for pile removal)
Zip cut grinder
(to cut-off exceeding pipe)
PVC glue
(to glue on the PVC cap)

Needed accessories (sold separately) :
2 7/8" steel pipe
PVC pipe (3")
PVC cap

TERMINOLOGY

FLANGE: Ultra resistant plastic insert that allows a fluid yet durable system. Allowing the G2 POST CUBE to move up and down on the pile (with tidal or seasonnal variations) witout any restriction while ensuring a sturdy and durable anchoring method.

ASSEMBLY PROCEDURE

G2 POST CUBES AND PILING INSTALLATION

See regular G2 CUBE assembly procedure as for the G2 POST CUBE installation while abiding to these rules:

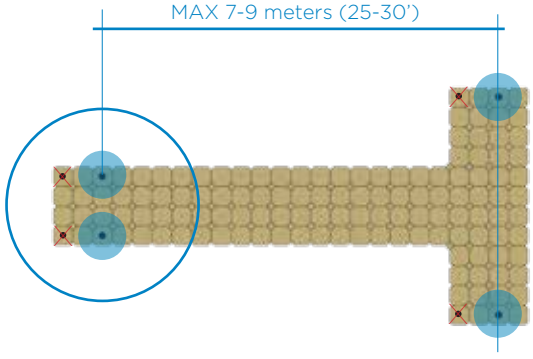
The pilings are mainly used in shallow water conditions (MAX 2 meters). Needing soft or muddy sea bottoms, pilings are mainly used on shore lines where the soil is soft and tractable. If the evironment is filled with rocks or other solid debris, other methods should be prefered to anchor your CANDOCK dock. An important aspect of the piling method consists in keeping the piles perfectly vertical. Using a level or other precision tools is mandatory for every pile. If the sea bottom is made of clay, be careful not to penetrate the soil too deep as a suction effect will make the removal of those pilings practically impossible. Another important notion, never use pilings in agitated water (maximum waves 0.6 meter / 2 feet). Furthermore, pilings should not be used in areas that are consisting of loose soils and that are exposed to waves as the pilings maybe pulled out of the ground by wave action.

G2 POST CUBES DISPOSITION

-Maximum 7 to 9 meters between each post cubes. (ideally 13-14 cubes)

-Always surround "POST-CUBE" with 5 regular cubes on a minimum of 3 faces*
(*To optimse efficiency)

-Always try to work the pilings in pairs.



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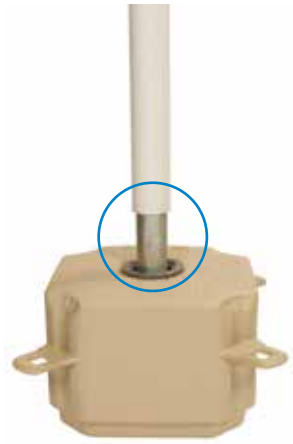
2 7/8 " STEEL PILE (galvanized or staineless steel)



Material/Composition :
Galvanized steel
OR
Staineless steel

Dimensions :
Diameter (exterior) : 2 7/8"
(73 mm)
Gage: .100

Weight :
3.5 lbs / linear foot
(5.25 kg / linear meter)

Needed tools :
Piling bull 2 7/8"
or
Piling driver 2 7/8"
Piling lever (for pile removal)
Zip cut grinder
(to cut-off exceeding pipe)

Needed accessories (sold separately) :
PVC pipe (3")
PVC cap
G2 POST CUBE

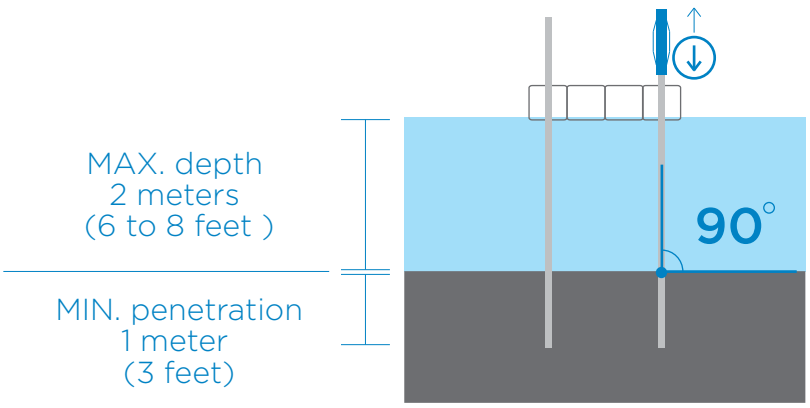
ASSEMBLY PROCEDURE

G2 POST CUBES AND PILING INSTALLATION

See regular G2 CUBE assembly procedure as for the G2 POST CUBE installation while abiding to these rules:

The pilings are mainly used in shallow water conditions (MAX 2 meters). Needing soft or muddy sea bottoms, pilings are mainly used on shore lines where the soil is soft and tractable. If the evironment is filled with rocks or other solid debris, other methods should be priorised to anchor your CANDOCK dock. An important aspect of the piling method consists in keeping the piles perfectly vertical. Using a level or other precision tools is mandatory for every pile. If the sea bottom is made of clay, be careful not to penetrate the soil too deep as a suction effect will make the removal of those pilings practically impossible. Another important notion, never use pilings in agitated water (maximum waves 0.3 meter).

PILING INSTALLATION



-Using the piling driver or piling bull, insert piles into the ground by pounding on the top of the piles.

-For optimal resistance, we suggest to use the proper material. Staineless steel being adapted for "salt water" and galvanized steel for "fresh water" environement

-Maximum dept of water: 2 meters. Penetration: depending on water dept and the soil, minimally 1 meter.

-Make sure to insert the pilings perfectly vertical (90 degrees)

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3" PVC PIPE and CAP

Material/Composition :
PVC

Dimensions :
Diameter (exterior) : 3 1/2"
gage: 1/4"

Weight :
1 lbs / linear foot
(.45 kg / linear meter)

Needed tools :
Zip cut grinder
(to cut-off exceeding pipe)
PVC glue

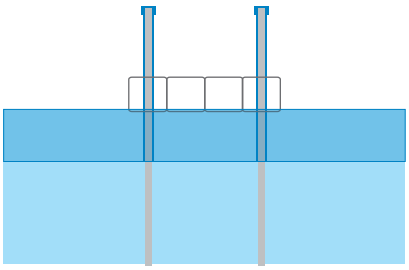
Needed accessories (sold separately) :
PVC pipe (3")
PVC cap
G2 POST CUBE
Piece of cloth or foam

PVC CAP

ASSEMBLY PROCEDURE

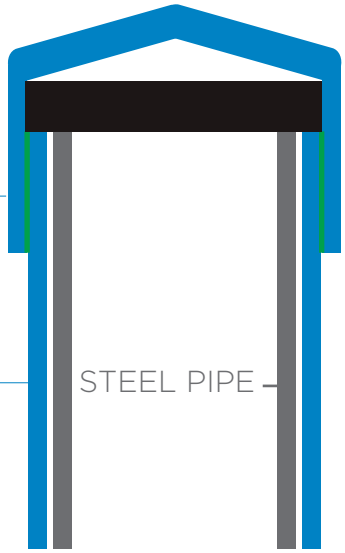
PVC PIPE AND CAP INSTALLATION

Ususal lenght:
2 meters (6 to 8 feet)



-Always use PVC pipe sleeve for pile covering to prevent premature wear of the "POST CUBE" flange.

Anticipate water level variation without risking pre-mature wear and tear of the G2 POST CUBE flange by lenghtening the PVC pipe under "usual" water line.



-Use PVC CAP to give a more "finished" look to your pilings. Make sure to insert provided ruber disc into the PVC CAP prior to inserting it onto the PVC pipe. The rubber disk will act as a damper to absorb the shocks if the PVC pipe slides up and down on the steel pile.

-Simply use PVC glue to secure the cap on the topof the PVC pipe.

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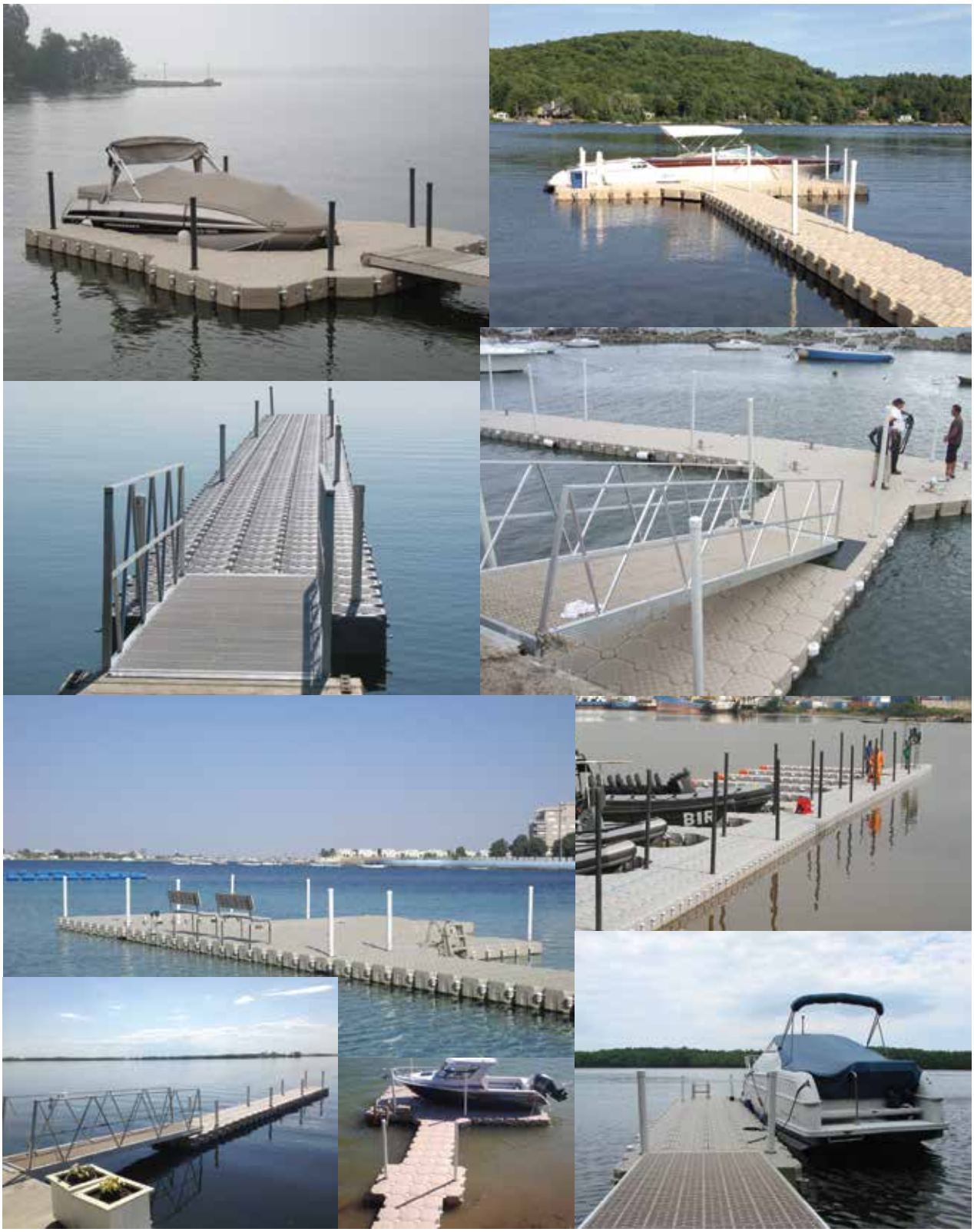

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PILLING GUIDE (6” to 15” inches diameter)

Material/Composition :
-Aluminum
-Staineless Steel 316 hardware

Components:
-1 Aluminum bracket (against cube)
-1 Aluminum 90 degrees bracket
with UHMW slide plate
-1 SS 316 cable (48” / 121 cm)
-11 UHMW rollers
-SS 316 harware and manillas

Needed tools:
-Key for nut
or
-Ratchet key for nut
-wrench key
-pliers

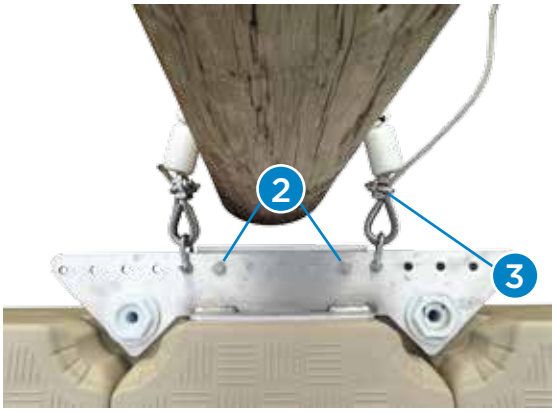
Needed accessories to install the product (sold seperately):
-2 CANDOCK LUG CONNECTORS
-2 CANDOCK NUTS

ASSEMBLY PROCEDURE

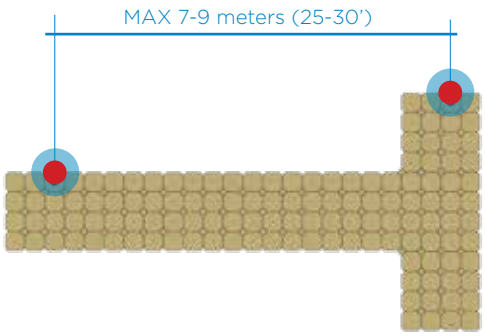
1. Using the requested CANDOCK LUG CONNECTORS(2) and CANDOCK NUTS(2), secure the aluminum bracket against the cube assembly

2. Using the supplied hardware, fasten the adjustable 90 degrees “slider” at ideal position depending on the pile position.

3. Adjust the cable lenght and roller assembly to optimize vertical movement while eliminating lateral movements. Proper hardware is already included in the bracket kit



DISPOSITION



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ANCHOR PLATE FOR CHAIN

Material/Composition :
Staineless steel 316

Dimensions :
5/16 " chain gage
OR
3/8" chain gage

Needed tools :
15/16" key wrench
Key for nut
or
Ratchet key for nut + ratchet tool

Needed accessories (sold separately) :
1 CANDOCK LUG CONNECTOR
1 CANDOCK NUT

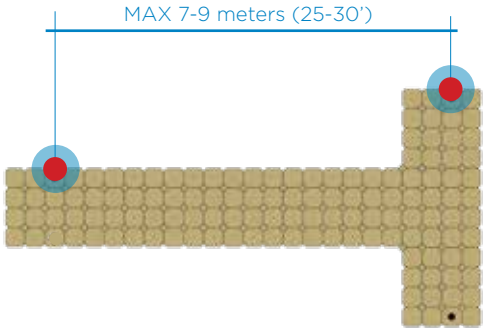
ASSEMBLY PROCEDURE

1-Simply insert the CANDOCK LUG CONNECTORS into the cube tabs wherever the ANCHORING PLATES are needed. Secure by screwing the proper CANDOCK NUTS with proper toolings. (KEY FOR NUT or RATCHET KEY FOR NUT)

*If in doubt refer your self to the CANDOCK LUG CONNECTOR section of the "regular products OWNER'S MANUAL".

2-Insert the Staineless steel "anchor plate" into the CANDOCK LUG CONNECTOR, and to firmly secure it with the provided hardware. Make sure to angle it in the desired direction prior to final tightening.

DISPOSITION



SEE CONFIGURATION GUIDELINES FOR DETAILS

CHAIN ADJUSTER

Material/Composition :
Staineless steel 304

Dimensions :
Designed for 5/16 " chain gage

Needed tools :
Pliers to manipulate the manilla
Key for nut
or
Ratchet key for nut + ratchet tool

Included components:
1 CANDOCK LUG CONNECTOR
1 CANDOCK NUT
1 manilla

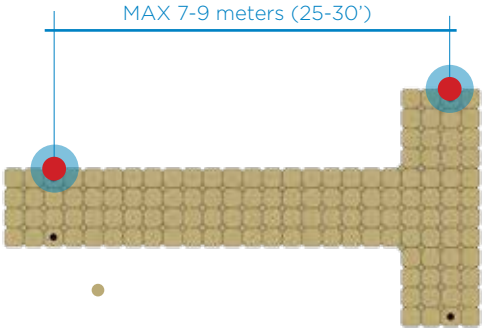
ASSEMBLY PROCEDURE

1-Simply insert the CANDOCK LUG CONNECTORS into the cube tabs wherever the CHAIN ADJUSTERS are needed. Make sure to insert the 90 degrees angled staineless steel part prior inserting the CANDOCK LUG CONNECTOR. Secure by screwing the proper CANDOCK NUTS with proper toolings. (KEY FOR NUT or RATCHET KEY FOR NUT)

*If in doubt refer yourself to the CANDOCK LUG CONNECTOR section of the "regular products OWNER'S MANUAL".

**Make sure to secure your assembly by fastening the exeeding chain back to anchor line with a regular manilla.

DISPOSITION



SEE CONFIGURATION GUIDELINES FOR DETAILS

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EXTERIOR ANCHORING RING FOR CHAIN (REGULAR OR H.D.)

Material/Composition :
Staineless steel 304 (REGULAR)
Staineless steel 316 (H.D.)

Dimensions :
Interior diameter of the loop;
2 5/8" (67mm)

Needed tools :
15/16" key wrench
Key for nut
or
Ratchet key for nut + ratchet tool

Needed accessories (sold separately) :
1 CANDOCK LUG CONNECTOR
1 CANDOCK NUT

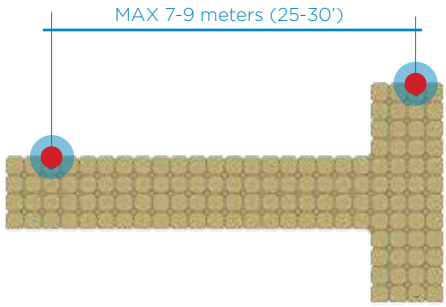
ASSEMBLY PROCEDURE

1-Simply insert the CANDOCK LUG CONNECTORS into the cube tabs wherever the ANCHORING RINGS are needed. Secure by screwing the proper CANDOCK NUTS with proper toolings. (KEY FOR NUT or RATCHET KEY FOR NUT)

*If in doubt refer your self to the CANDOCK LUG CONNECTOR section of the "regular products OWNER'S MANUAL".

2-Insert the Staineless steel "TREADED ROD" into the CANDOCK LUG CONNECTOR and firmly secure with the provided hardware.
Make sure to determine ideal vertical position prior to final tightening.

DISPOSITION



SEE CONFIGURATION GUIDELINES FOR DETAILS

G2 CONNECTING PIN FOR ANCHORING

Material/Composition :
Staineless steel 304
HDPE
Concrete

Dimensions :
Designed for 5/16 " chain gage

Needed tools :
G2 key for pin "combo-pack"
Pliers

Needed accessories (sold separately) :
1 Manilla

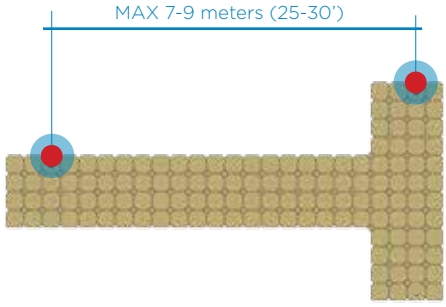
ASSEMBLY PROCEDURE

1-Simply follow the regular G2 CONNECTING PIN assembly procedure. Make sure to validate their positionning prior to placing them. Connect chain to anchoring pin from underneath the dock (in the water).

IDEAL APPLICATIONS

These G2 CONNECTING PNS FOR ANCHORING are made to simply give a more aesthetic anchoring method. Also restricting its access, this method discourages any malicious person from stealing your <floating system.

DISPOSITION



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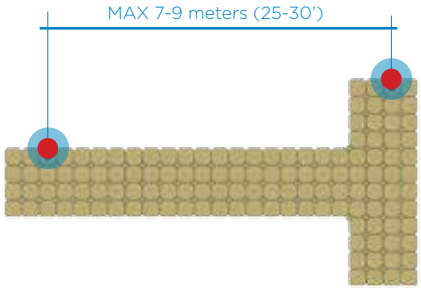
CHAIN (GALVANIZED OR STAINELESS STEEL, 5/16” OR 3/8” GAGE)

Material/Composition :
Staineless steel 304 or 316
Galvanized

Dimensions :
5/16” or 3/8“

Needed tools :
Chain cutter
or
zip-cut grinder

DISPOSITION



SEE CONFIGURATION GUIDELINES FOR DETAILS

TMS (TIDE MANAGEMENT SYSTEM)

Material/Composition :
-304 Staineless steel eyelet
-Flexible materiel:
Natural latex
-Orange wrap:
Polyester sheath

Needed accessories (sold separately) :
2 Manillas

Dimensions :
1 meter OR 2 meters

ASSEMBLY PROCEDURE

1-Simply insert this TMS cable to middle section of your anchoring lines. Using proper shackles and harware, securely fasten each ends against the the “fixed anchor point” and the “dock line” sections of your anchoring lines.

IDEAL APPLICATIONS

Install “**TIDE MANAGEMENT SYSTEM**” (TMS) to the middle section of the line if water level fluctuates or if location is exposed to regular waves and rough waters.Make sure to use proper shakles depending on the requirements.

SEE CONFIGURATION GUIDELINES FOR DETAILS

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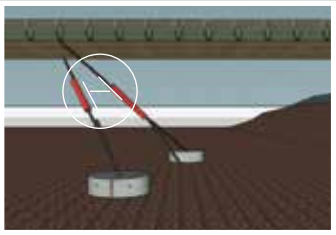
CONFIGURATION GUIDELINES

Prior to every installation, make sure to analyse these few key points to ensure a proper installation:

-NATURE OF SEA BED
-TIDAL VARIATIONS
-WATER CURRENTS
-RULES AND REGULATIONS APPLYING TO YOUR AREA
-MOST COMMON AND USUAL WEATHER CONDITIONS
-USUAL LOADS THAT WILL BE APPLIED TO THE DOCK

1 SUFFICIENT SPACE BETWEEN LINES

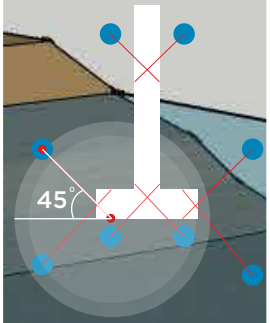
-Leave sufficient spacing between crossing lines to prevent friction and premature wear.



2 PARITY IN APPLIED FORCES

-Always keep parity between opposing lines and achors. Also equally adjust tensions in lines

45 DEGREE RULE

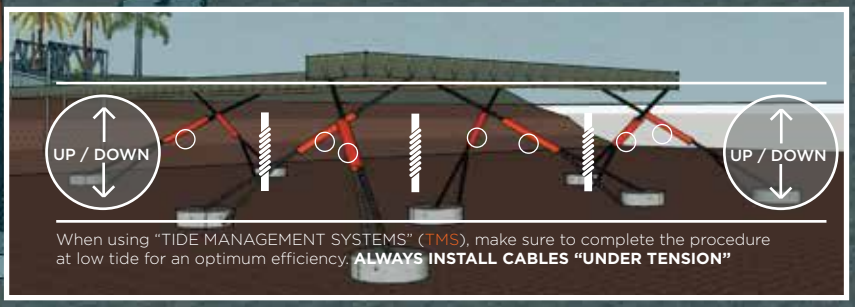


3 [TOP VIEW]

-When applying tension on anchoring lines, always pull away from the system with a 45 degrees angle. Such method will ensure an even tension in the lines and will optimize the stability of the anchoring pattern

4 TIDE MANAGEMENT SYSTEM

-Install "**TIDE MANAGEMENT SYSTEM**"(**TMS**) on the middle section of the line if water level is fluctuating (tidal or seasonnal) or if location is exposed to regular waves and rough waters.Make sure to use proper shakles depending on the requirements. **NOTE THAT THE CABLES CAN BE COMBINED TO CREATE A STURDIER ANCHORING, DEPENDING ON THE CHARGES THAT WILL BE APPLIED TO THE DOCK.**



When using "TIDE MANAGEMENT SYSTEMS" (TMS), make sure to complete the procedure at low tide for an optimum efficiency. **ALWAYS INSTALL CABLES "UNDER TENSION"**

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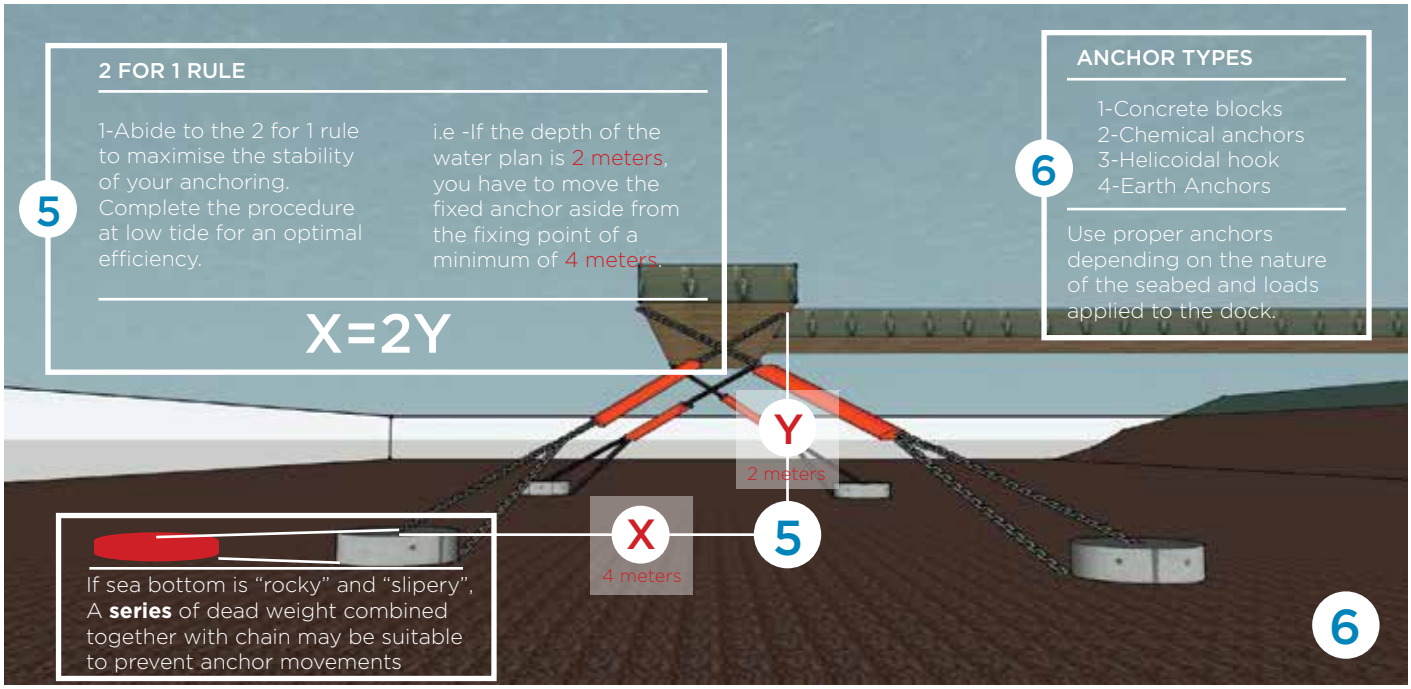
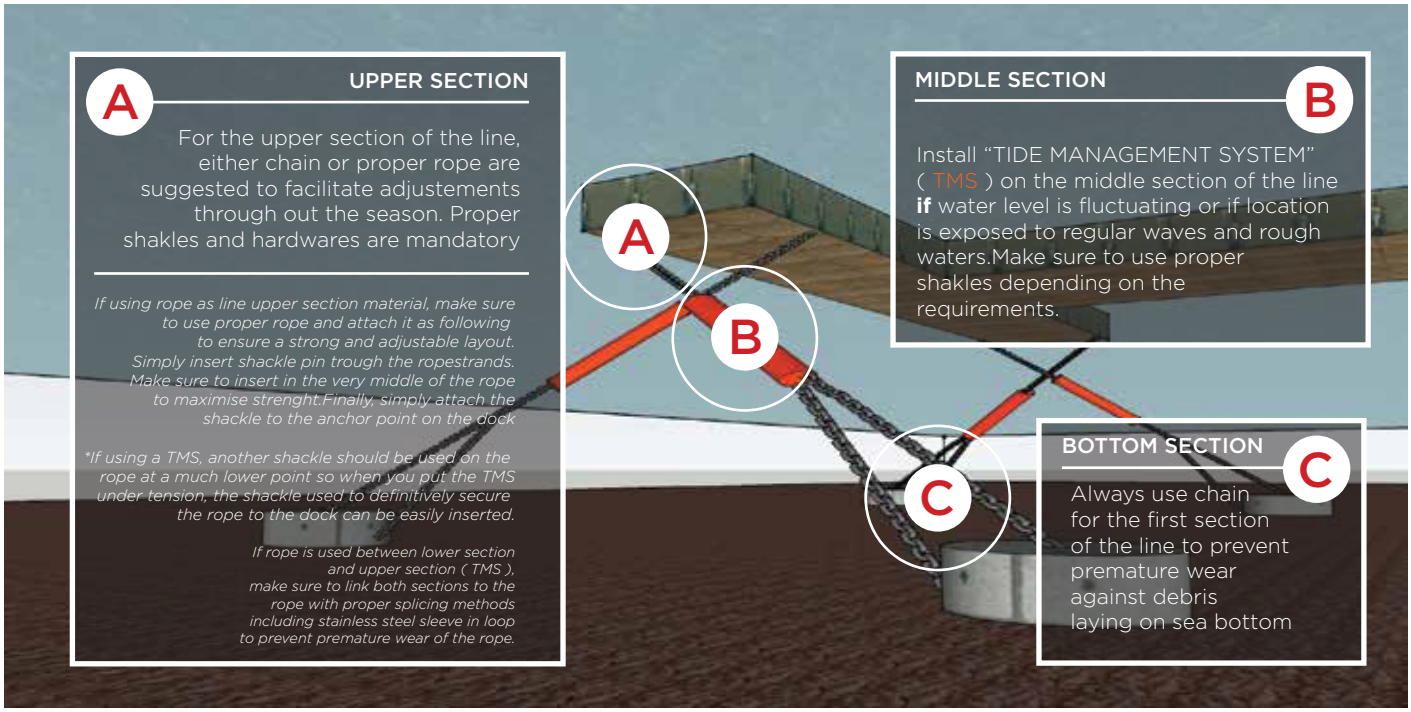
PROPER ANCHOR CHOICE AND POSITIONNING



PROPER LINE CONFIGURATIONS



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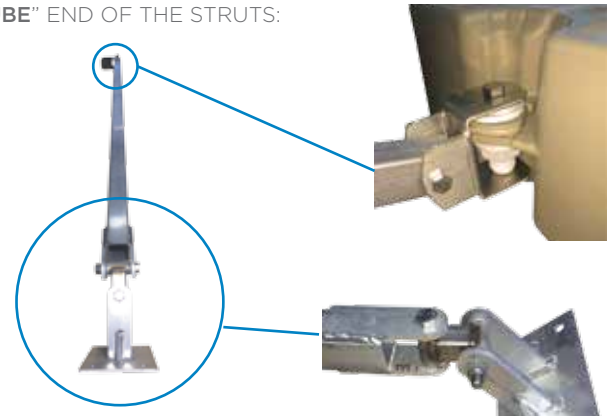
ANCHORING STRUTS (ALUMINUM OR STAINELESS STEEL)

"**CUBE**" END OF THE STRUTS:



"**SHORE**" END OF THE STRUTS:

When used perpendicularly:

UP TO 5 METERS VARIATION

When used with a certain angle:

UNDER 1 METER VARIATION

Material/Composition :
Aluminum
OR
Staineless steel 316

Dimensions :
lenth of 10' or 16'
Custom lengths also available upon request

Needed tools :
Key wrench kit
Hammer drill or
Regular drill
Bits and **hardware***
*Depending on the environement and utility of the arms.

Needed accessories (sold separately) :
1 CANDOCK LUG CONNECTOR
1 CANDOCK NUT

IDEAL APPLICATIONS

The anchoring struts are very useful in different situations; making it possible to solidly anchor a dock to shore line foundations or rocks, these arms have practicaly no limitations. CANDOCK offers a wide range of these arms depending on the size of the project and the conditions it is operating in. From 1 meter long to 10 meter long, for tidal variations up to 5 meters, these anchoring systems are a great way to securelly attach your dock to permanent structures. Swivelling head, or fixed head, aluminium or staineless steel body, everything is possible. Depending on the situation, struts should be installed every 6 to 9 meters (20' to 30').

ASSEMBLY PROCEDURE

1-"**CUBE**" END OF THE ARMS:

1-Simply insert the LUG CONNECTORS into the cube tabs wherever the ANCHORING ARMS are needed. Secure by screwing the proper CANDOCK NUTS with proper toolings. (KEY FOR NUT or RATCHET KEY FOR NUT)

*If in doubt refer your self to the CANDOCK LUG CONNECTOR section of the "regular products OWNER'S MANUAL".

2-Install the destined part of the arms on the CANDOCK LUG CONNECTORS and firmly secure it with the provided hardware. Make sure to angle it in the desired direction prior to final tightening.

2-"**SHORE**" END OF THE ARMS *** If installed on a concrete wall/structure, see last page of this manual for specific hardware suggestion***

1-Using proper hardware and tools, secure the fastening plate against concrete structure. Other structures may act as anchor points but an extensive analysis of the structure must be done to insure a strong and durable anchor point for the arm.

NOTES

-Make sure you install the arms at low tide and verify that they will accept variations. Make sure the installation moves freely in all conditions.
-If installed perpendicular to shore, use steel cables or chains positionned in a "X" conguration to prevent unwanted lateral movements.
-If used in a 45 degree angle, water level variations will be limited and a minimum of 3 struts should be used in oposite directions to prevent lateral movements

SEE IMAGES LOWER

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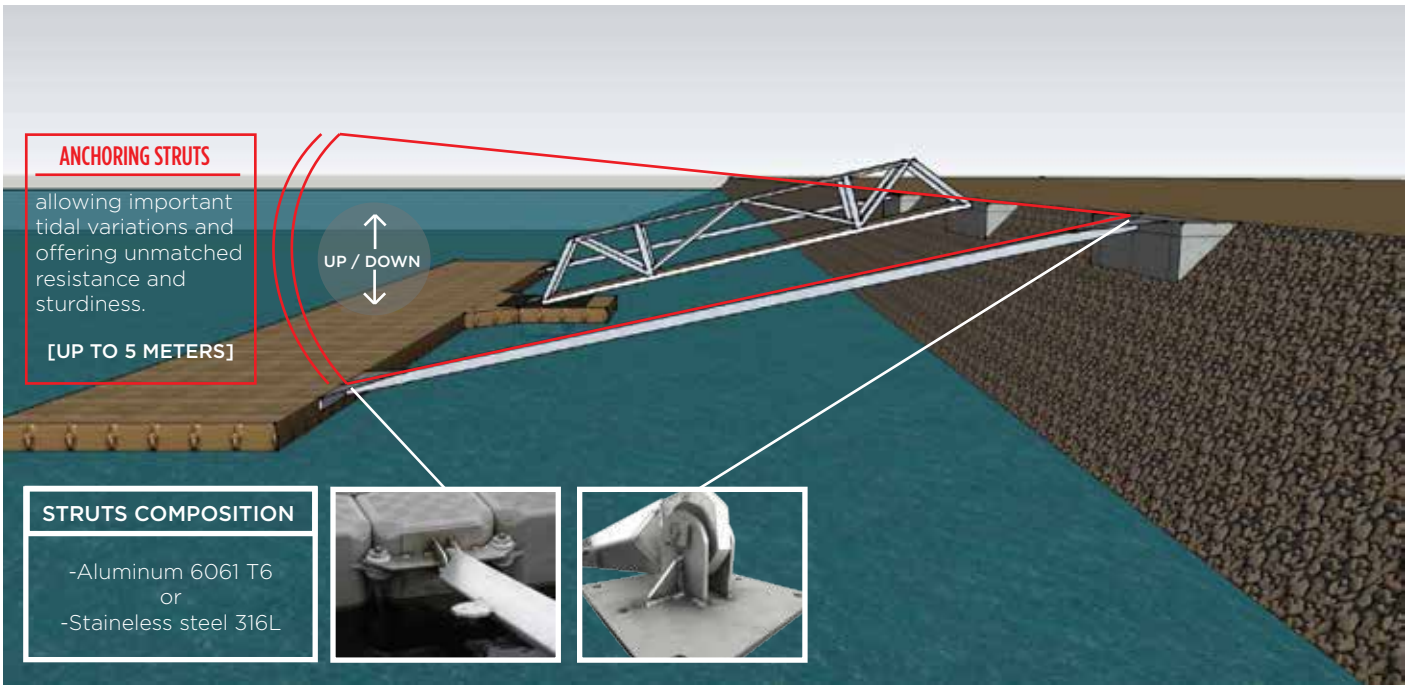
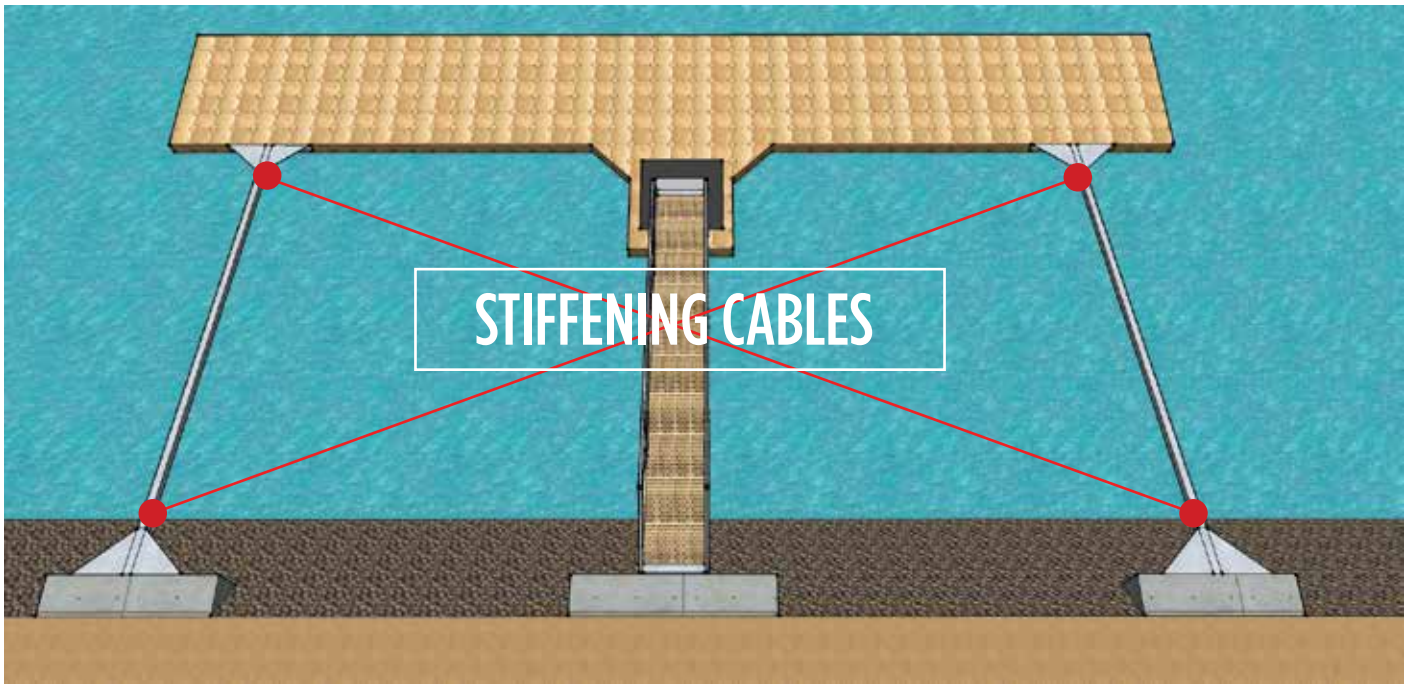
ALLOWING VERTICAL VARIATIONS (TIDAL, SEASONNAL OR FLASH FLOOD SURGES)



PREVENTING ANY LATERAL MOVEMENTS



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DOCK LEG SUPPORT

Material/Composition :
Aluminum

Dimensions :
Diameter of piles : 1 11/16”

Needed accessories (sold separately) :
Pile 1 11/16”

Needed tools :
Piling driver 1 11/16”
Zip cut grinder
(to cut-off exceeding pipe)
Key wrench
Drill and bits

ASSEMBLY PROCEDURE

The DOCK LEG SUPPORT, combined with piles 1 11/16", is a simple and affordable way to support our gangways and / or fixed dock sections. Indeed, they can be adjusted in height and are easy to manipulate. It can also be used to connect our floating systems to aa existing, floating OR fixed, structure. When installing the bracket on a floating structure, the 1 11/16 " galvanized steel pile is to be inserted into the DOCK LEG SUPPORT ,then into the cubes tabs and, finally, it must lengthened up to about 1 meter (3 feet) below the water line. If the support is to be installed on a fixed structure, the pile will necessarily have to sunked into the seabed to ensure durability. You can create an effective, affordable and easy to install attachment point to connect our systems to all other structures, floating OR fixed.

WALL ANCHORAGES (PAINTED STEEL OR STAINLESS STEEL)

Material/Composition :
Painted steel
or
Satineless steel

Needed tools :
15/16” key wrench
Key for nut
or
Ratchet key for nut
+ ratchet tool

Included accessories:
1 CANDOCK LUG CONNECTOR
1 CANDOCK NUT

Other needed accessories and tools:
Proper hardware and tools to fix the bracket to existing floating structure.

ASSEMBLY PROCEDURE

1-FIXING THE BRACKET TO THE CUBE:

1-Simply insert the CANDOCK LUG CONNECTORS into the cube tabs wherever the WALL ANCHORAGE are needed. Secure by screwing the proper CANDOCK NUTS with proper toolings. (KEY FOR NUT or RATCHET KEY FOR NUT) *If in doubt refer your self to the CANDOCK LUG CONNECTOR section of the -“regular products OWNER’S MANUAL”.

2-Install the destined part of the bracket on the CANDOCK LUG CONNECTORS prior to firmly secure it with the provided hardware. Make sure to angle it in the desired direction prior to final tightening.

2-FIXING THE BRACKET TO THE FLOATING STRUCTURE:

1-Using proper hardware and tools , secure the fastening plate against the floating structure*. Other structure may act as anchor points but an extensive analysis of the structure must be done. (*additionnal parts and brackets may be needed to properly connect to the dock if heights don’t concur)

MUST BE INSTALLED ON A FLOATING STRUCTURE OR AGAINST A FIXED STRUCTURE IN AN ENVIRONMENT WHERE WATER DOES NOT FLUCTUATE.

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