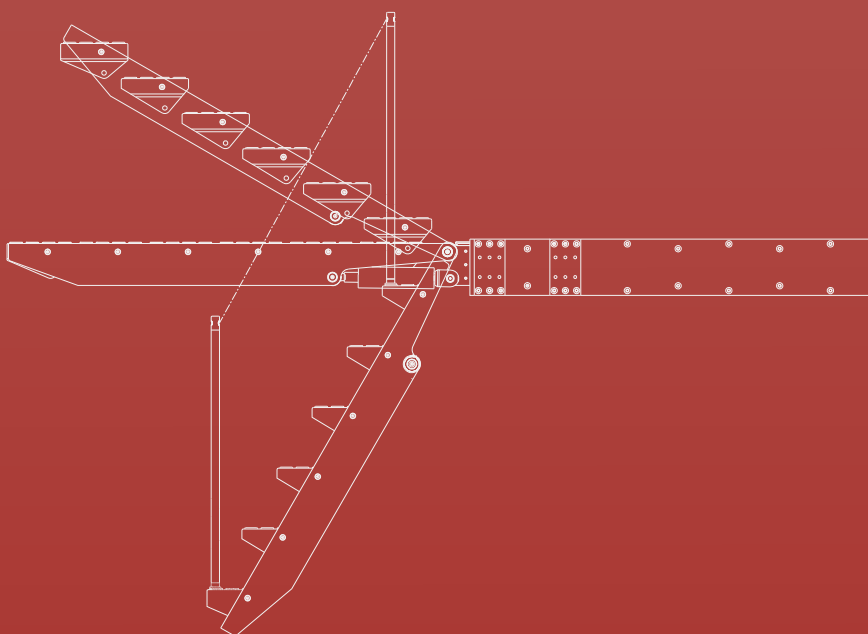
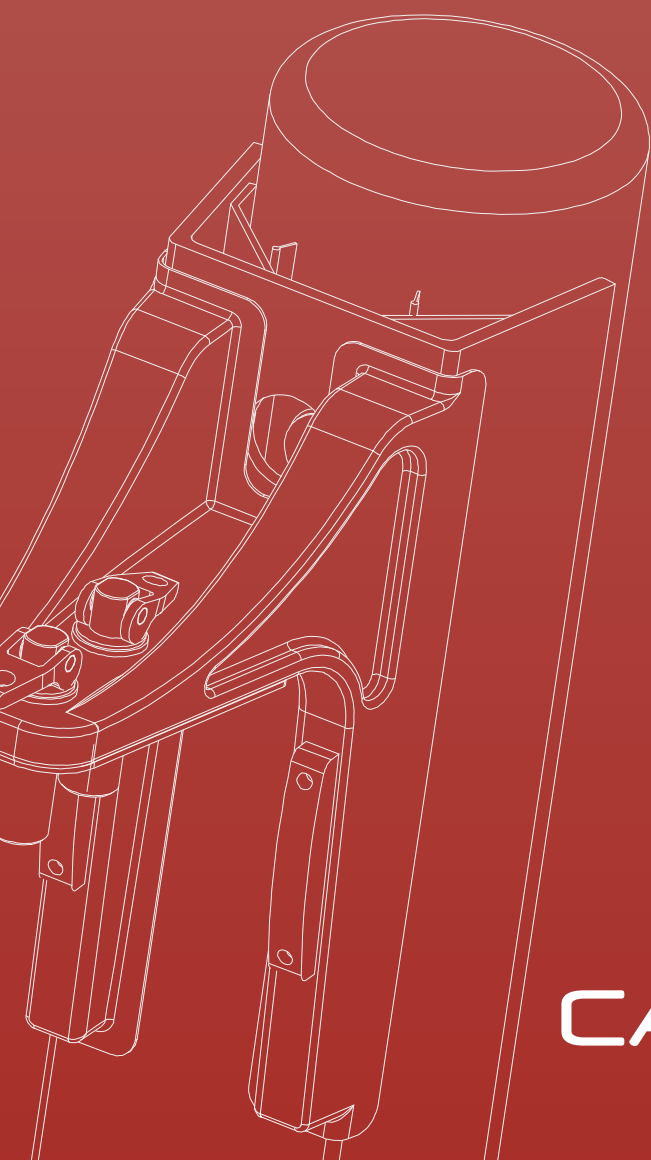
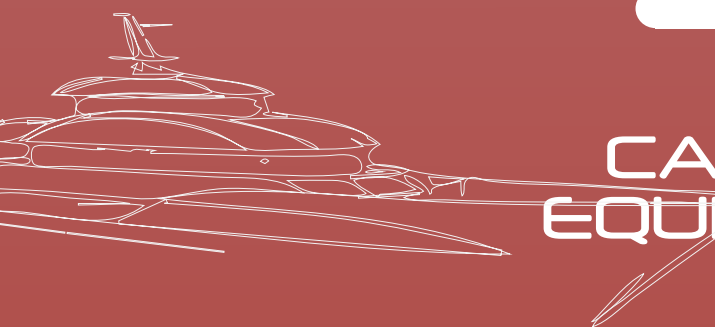




# CARBON EQUIPMENT



# CATALOG

# ABOUT US

Carbon Equipment starts as an engineering company in 2001 where for decades develop composite structures as yachts, mega yachts and equipment for the naval business.

In 2012, to complete the service, an equipment production begun.

In 2015 was founded the brand Carbon Equipment as it's now and its team and production grow till today.

Our team build his experience upon methods and processes developed for aerospace, marine, tooling and interiors.

All our products undergo a careful technical development during which we customize everything to better suit customer wishes and needs with the help of state of the art software.

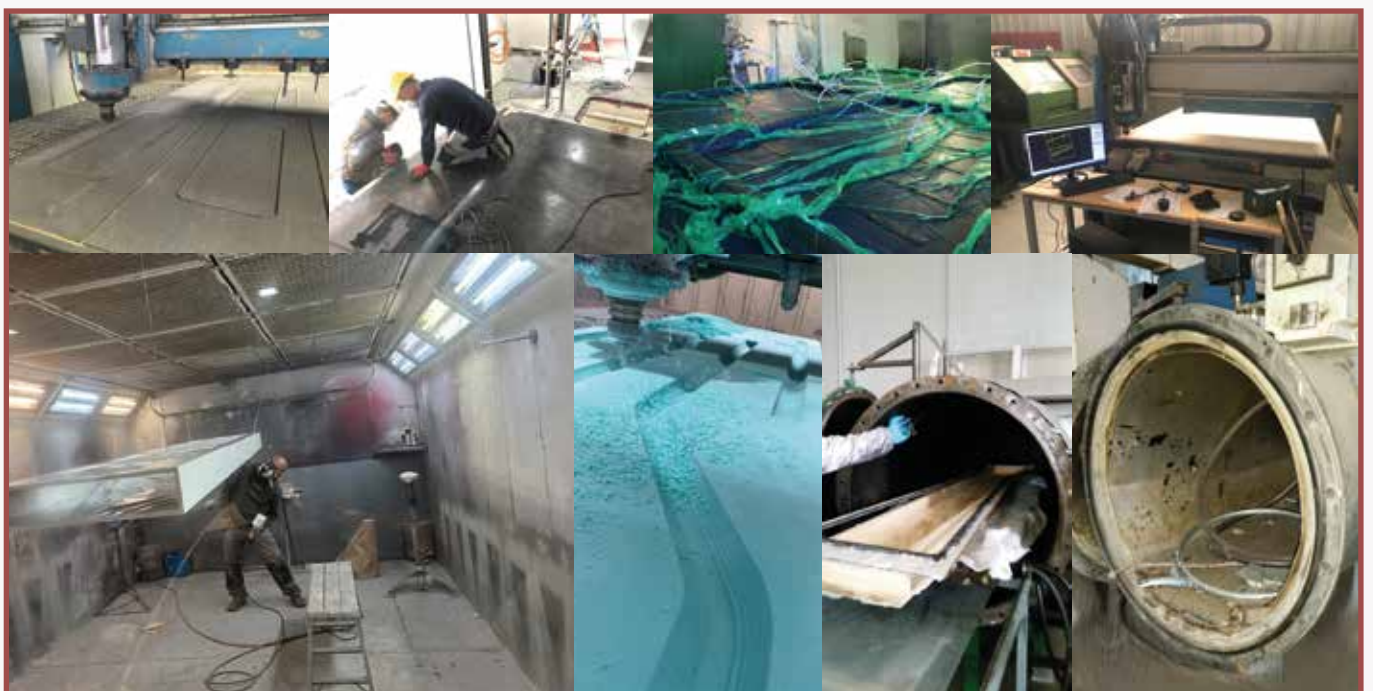
A great attention is always paid to the aesthetic result even for secondary hardware.

Each project includes:

- 2D drawing and 3D modelling
- FE analysis and optimisation
- Kinematic controls and optimization
- Development of electro-hydraulic
- Development of electro-hydraulic secondary components
- As built structural testing
- As built functional testing.

Each component, unless otherwise requested, is laminated with pre-preg carbon fiber fabrics, cured at high temperature and vacuum consolidated.

Al stainless steel AISI 316L and 6083T6 aluminium fittings, are CNC machined and verified through a thorough quality control procedure.



# CARBON TUBES

We supply carbon tubes of diameter range 4 – 230mm and required length.

Production is made by wrapping technology and using pre-preg materials.

Laminate is bulked in Autoclave and post-cured at high temperature.

Laminate sequence may be required by customer or internally developed following customer's stiffness and thickness needs.

Every tube may be CNC machined following customer needs.

Tubes may be delivered as they are or painted.

Many finishing materials and colour are available.

Our tubes are used in different fields: radiology, robotics, marine.

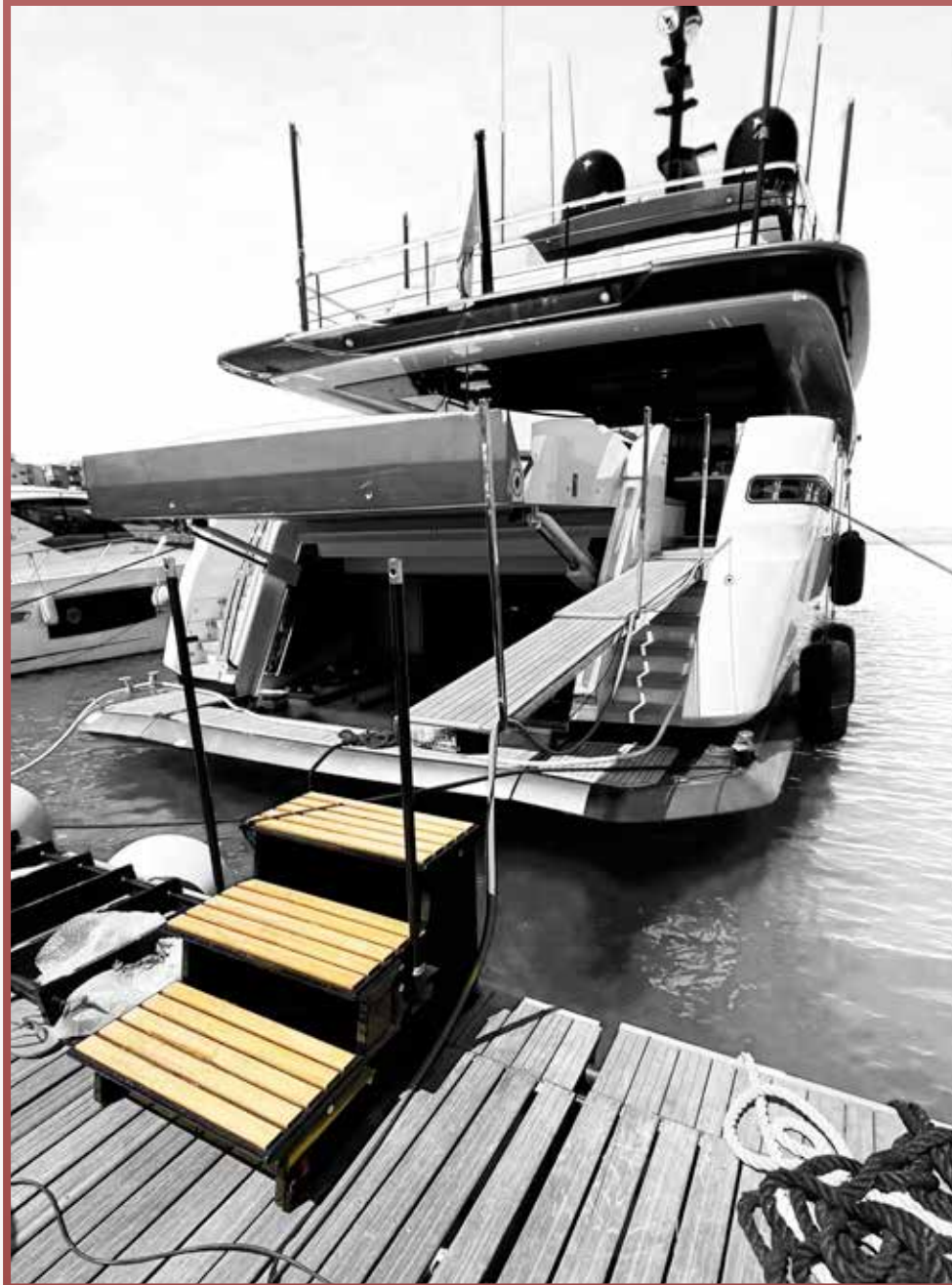
Average delivery time is 20 days.

No minimum quantity is required.





# DOCK STEPS - Folding



*Two / three steps ladder that give you a first class access to the yacht.*

*Dock steps ladder consist in 2 or 3 removable steps that may be easily installed on their foldable side. When in stored configuration, the ladder is composed by 2 flat bags.*



## FINISHING

Standard finishing is clear C-Look.  
Matt finishing or different colours are available on demand.

## CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ). All fittings used are stainless steel AISI 316L shiny polished where visible.

## HANDRAIL

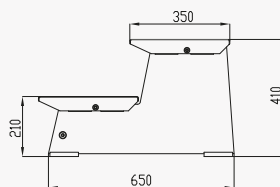
three steps configuration includes nr.2 removable carbon stanchions.

## STORAGE BAGS

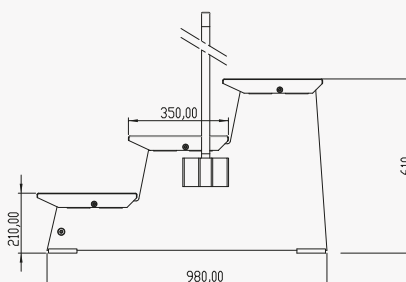
Nr.2 storage bags to protect the folded sides and the 3 steps.



2 STEPS LADDER

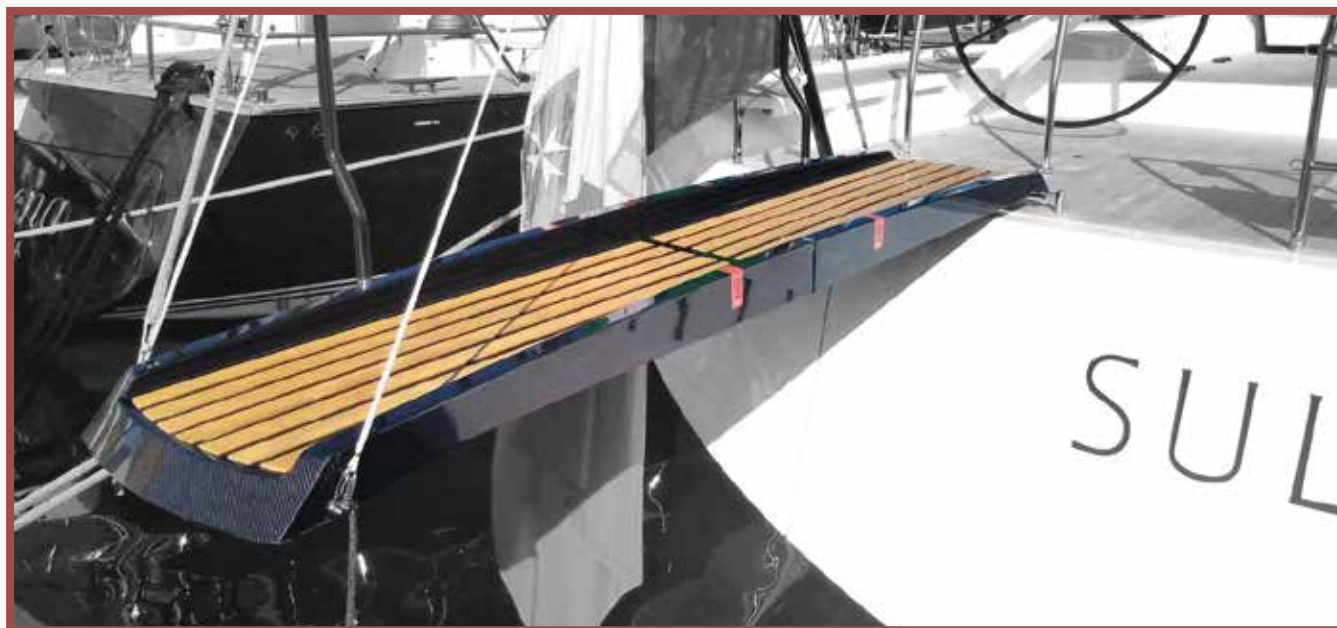


3 STEPS LADDER



# REMOVABLE GANGWAY

## DI.3 Folding



*Designed to maximize its strength and comfort, our removable gangway will give you the same feeling of a superyacht hydraulic gangway.*

### CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature (>90°). All fittings used are stainless steel AISI 316L shiny polished where visible.

### HANDRAIL

Standard solution includes nr.2 removable carbon stanchions provided with a spectra life-line of black colour.

Rigid handrail or different solutions are available on demand.

### FINISHING

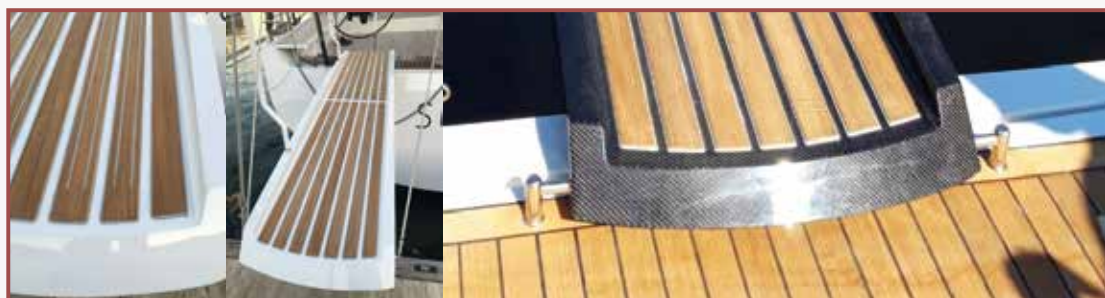
Standard finishing is clear C-Look.

Matt finishing or different colours are available on demand.

### YACHT ATTACHMENT

The standard attachment is the "bridge solution", that is with two deck sockets that guarantees a very high stability.

Available the "slewing solution" with the single deck socket.





## DI.2 Three Pieces



*The 3PIECES GANGWAY is developed to provide the yacht with a first class gangway of 3m length that may be stored as a small one.*

**STORABLE DIMENSION = 110x45 h31 cm.**

### CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature (>90°). All fittings used are stainless steel AISI 316L shiny polished where visible.

### FINISHING

Standard finishing is clear C-Look. Matt finishing or different colours are available on demand.

### HANDRAIL

Standard solution include nr.2 removable carbon stanchions, provided with safety hook.

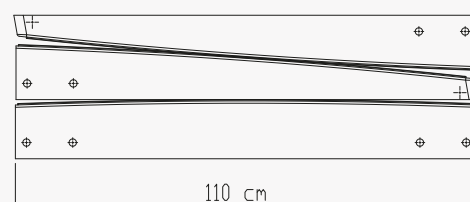
Rigid handrail or different solutions are available on demand.

### STORAGE BAGS

Gangway will be provided with 3 single bags where to store protected the 3 gangway parts.



### STORAGE CONFIGURATION



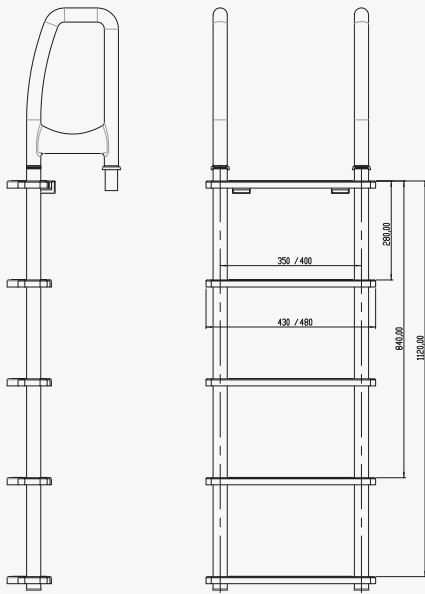
# REMOVABLE LADDER

## ER.1 Mid Range Ladder

*ER.1 is the small dimension ladder developed for tender and boat.*

*Structure is vertical and it may have 4 or 5 steps.*

*Standard dimensions are: 840/1120mm depth ; 350/400mm step's width.*



### CONSTRUCTION

Structure is made out of carbon fibre and epoxy resin, built with pre-preg technology, Consolidated in Autoclave and cured at high temperature (>90°).

### FINISHING

Standard finishing is clear C-Look.

Matt finishing or different colours are available on demand.

Walkway is painted with a NO-skid paint.





## ER.2 Super Yacht Ladder

*ER.2 is the Superyacht removable ladder, STIFF, WIDE & LIGHT*

*Main structure may be vertical or 10° heeled.*

*Standard steps dimensions are: 500x120mm ; 650x120mm ; 650x200.*



### FINISHING

Standard finishing is clear C-Look.  
Matt finishing or different colours are available on demand.

### WALKWAY COVERAGE

Steps walkway may be coated with a NO-skid paint or with teak planks of 4mm thickness.

### CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature (>90°).

All fittings used are stainless steel AISI 316L shiny polished where visible.



# REMOVABLE BOARDING STAIR

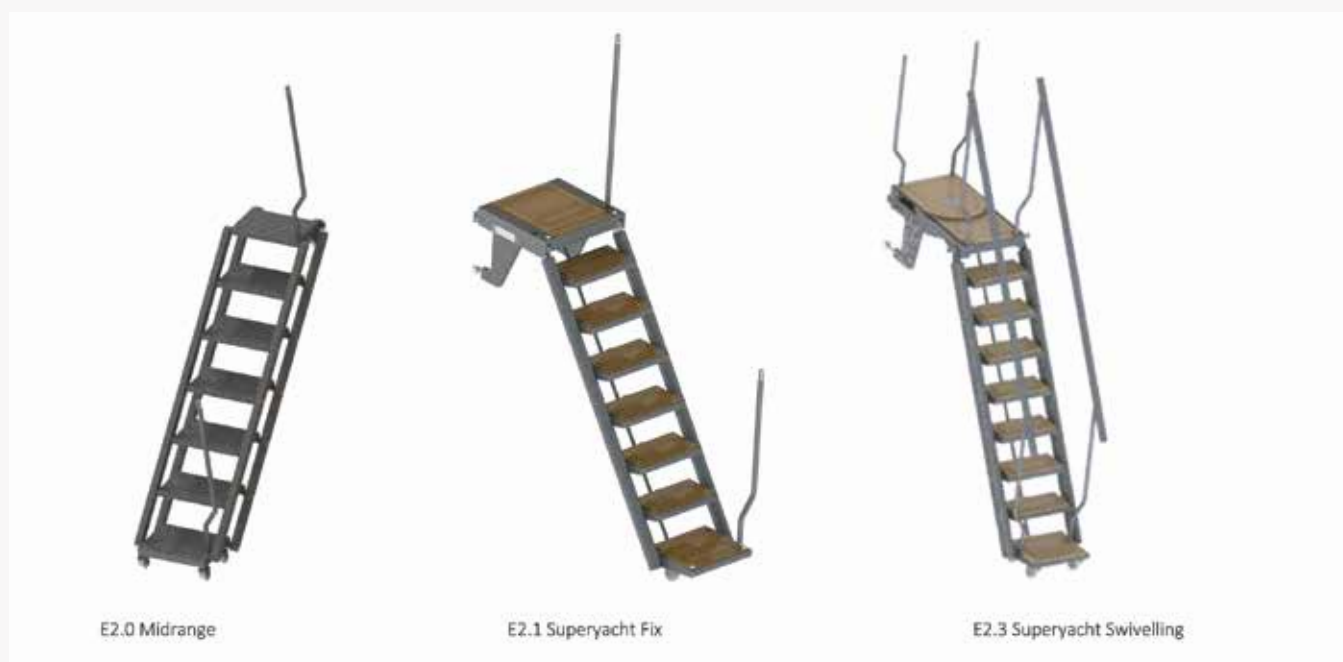
Docking Type



*E2.1 / 3 are removable boarding stairs of "DOCKING TYPE"!*

*Steps standard dimensions are:*

*width: 420 / 500 / 550 / 650 mm ; length : 220 / 235 mm.*



## CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ). All fittings used are stainless steel AISI 316L shiny polished where visible. Hull protection has been made by an adjustable foot made of a white Nylon disc.

## FINISHING

Finishing may be C-LOOK, both clear or matt, or painted.

## STORAGE BAGS

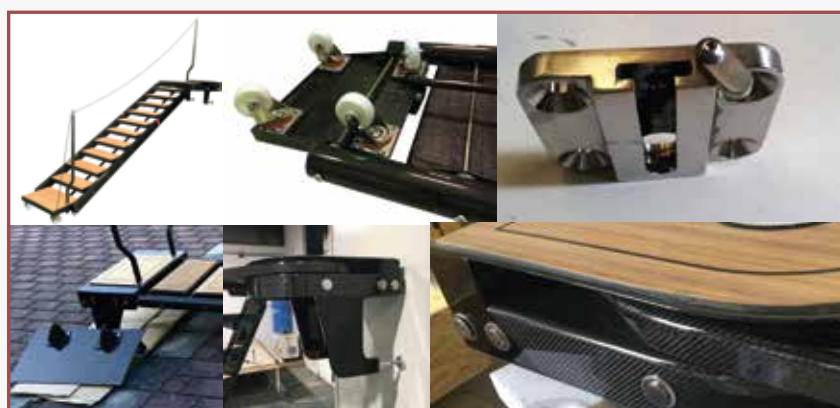
Standard connection is made with two sliding flanges stainless steel made. On request, a removable carter will be provided.

To lift/hold the lower platform may be provided a removable davit. The removable crane will be developed to better suit yacht needs.

## HANDRAIL

Standard solution include nr.2 removable carbon stanchions.

Rigid handrail or different solutions are available on demand.



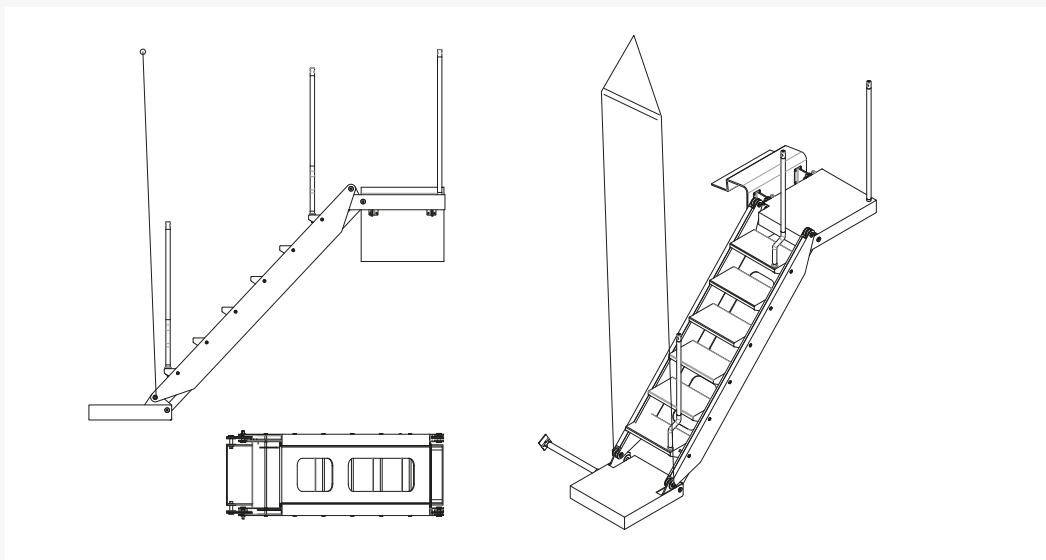


# MANUAL BOARDING STAIR

## Self Standing



*E2.2 is a manual boarding stair of "SELF STANDING TYPE", that is the lower platform shall be lifted/holded by an halyard or davit.  
Most of dimensions are customizable and it may be provided with or without its lifting crane.*



## CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ). All fittings used are stainless steel AISI 316L shiny polished where visible. Hull protection has been made by an adjustable foot made of a white Nylon disc.

## FINISHING

Finishing may be C-LOOK, both clear or matt, or painted.

## STORAGE BAGS

Standard connection is made with two sliding flanges stainless steel made. On request, a removable carter will be provided.

To lift/hold the lower platform may be provided a removable davit. The removable crane will be developed to better suit yacht needs.

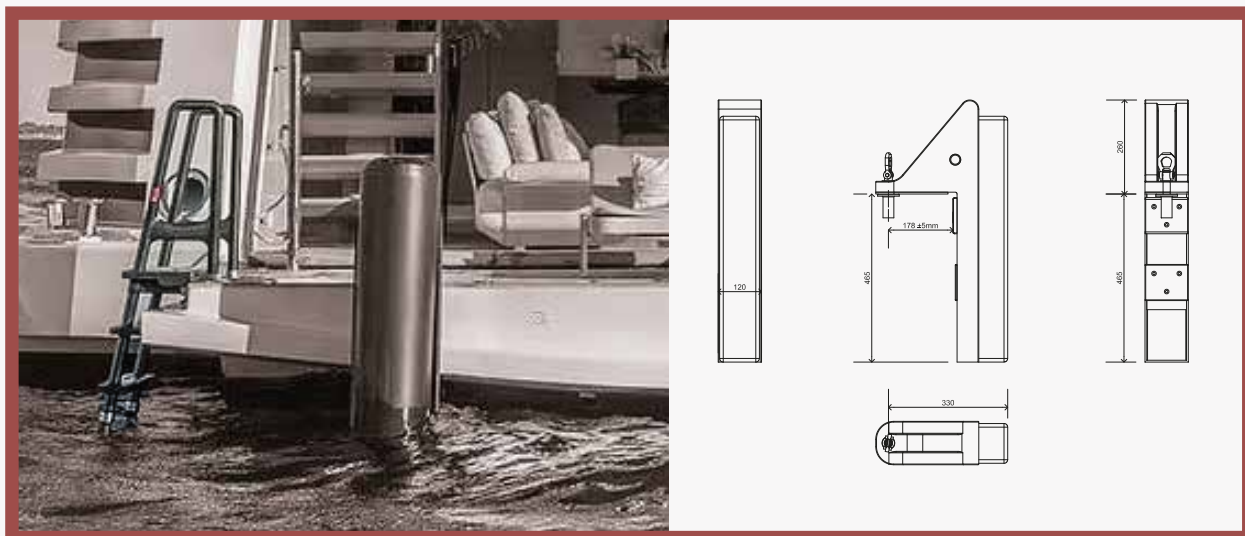
## HANDRAIL

Standard solution include nr.2 removable carbon stanchions.

Rigid handrail or different solutions are available on demand.



# FENDER FLANGE



*L1 are the mid-range fender designed to be installed on boat terrace or yacht side door.*

## CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ).

Deck and hull protection is made out of white Nylon. Pins, sockets, bushing and luff are stainless steel made, AISI 316, shiny polished.

## FINISHING

Finishing may be C-LOOK, both clear or matt, or painted.

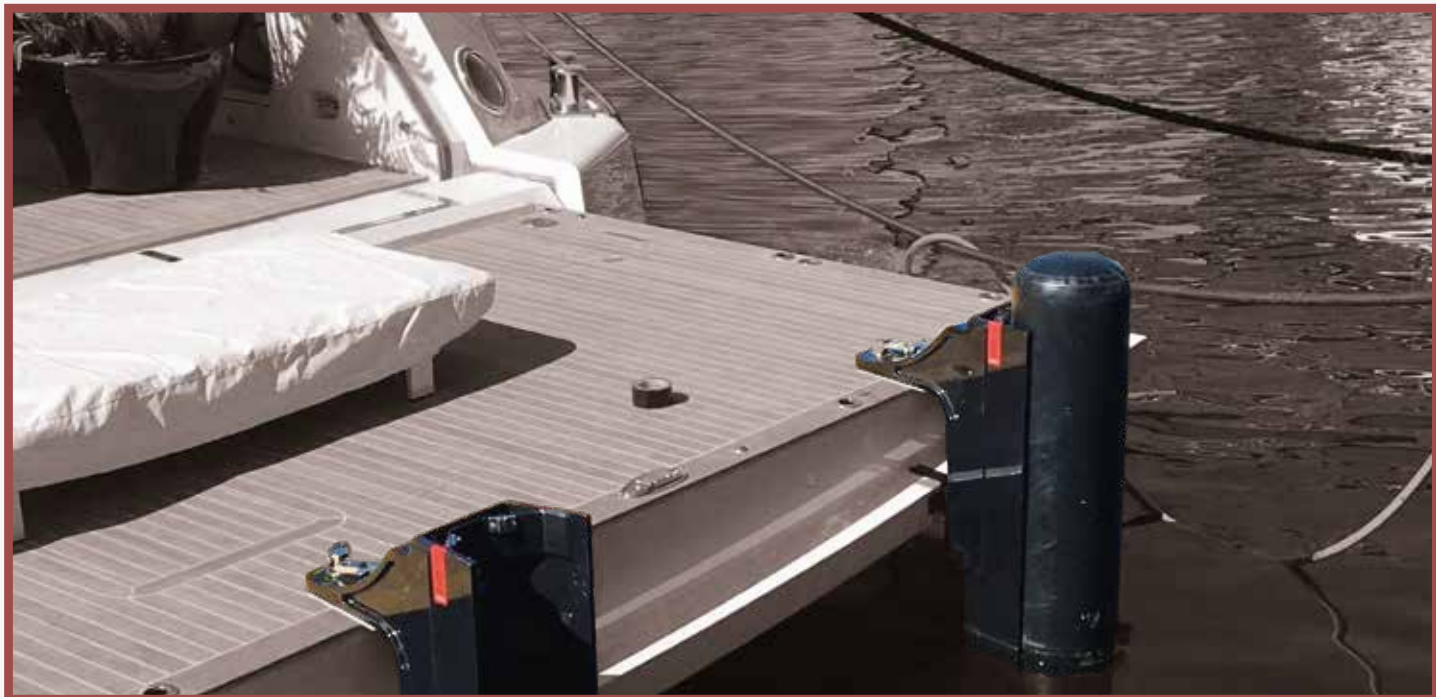
## DECK CONNECTION

One deck sockets and its threaded pin.





# TENDER FENDER



*L2.1 is the tender fender for yacht and superyacht provided with carbon made structure and inflatable hypalone.*

*The carbon construction ensure strength and stiffness together with a light weight, 7,5Kg for 1m structure.*

*The inflatable hypalone ensure an easy store and an easy install procedure.*

## CONSTRUCTION

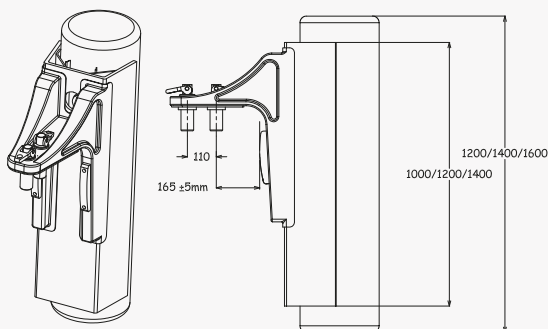
The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ). Deck and hull protection is made out of white Nylon. Pins, sockets, bushing and luff are stainless steel made, AISI 316, shiny polished.

## FINISHING

Finishing may be C-LOOK, both clear or matt, or painted.

## DECK CONNECTION

Standard connection is provided by two deck sockets and their threaded pins.



# SUN awning POLES



*Taylor made solution to improve your comfort*



CHARACTERISTIC	MODEL D30	MODEL D47	MODEL D65	MODEL D90	MODEL D120
Pole Type	AW.1	AW.2	AW.3	AW.5	AW.7
Pole construction material	Carbon	Carbon	Carbon	Carbon	Carbon
Pole diameter	30mm	40mm	65 mm	90 mm	120 mm
Max working load*	30 Kg	80 Kg	140 Kg	200 Kg	300 Kg
Max pole length **	1500mm	1700 mm	1700m m	2100 mm	2500 mm
Internal Tackle reduction	Fix point	1:1	2:1	3:1	3:1
Pull line diameter	Not availabe	6 mm	6 mm	6 mm	8 mm
Exit line diameter	Not availabe	6 mm	6 mm	6 mm	6 mm
Socket construction material	S.Steel	S.Steel	GRP/CR P	GRP/CRP/ S.STEEL	GRP/CRP/ S.STEEL
Additional lines	Not availabe	Not availabe	+ 1	+ 1,2,3,4	+ 1,2,3,4
Finishing ***	C-LOOK	C-LOOK	C-LOOK Painted	C-LOOK Painted	C-LOOK Painted

*Carbon made Awning System, the lightest customized solution  
dedicated to your comfort.*

*Our poles are typically designed to withstand a transverse load acting  
on its top of 200Kg and over.*

*Poles standard diameters are :  
D=30mm; D=45mm; D=65mm; D=90mm; D=120mm.*

*Poles may have 1 to 4 top holding lines and on or more in the middle length.  
Poles are provided with an hidden tackle of 2:1 or 3:1 reduction.*

*Blinder fabric is customized on request.*





# SPORT LINE GANGWAY

## D2.3 External Mounting



### CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ).

Hull & cylinder flanges are aluminium made, grey anodized.

### HYDRAULIC POWER PACK

Hydraulic power 24V/dc 2,2 Kw. Electric box provided with a control panel and remote controls, 4 buttons

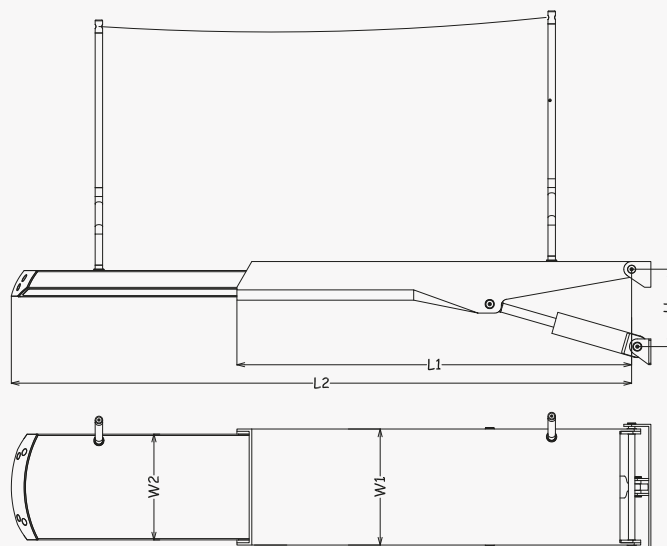
### FINISHING

Structure finishing may be C-LOOK, both clear or matt, or painted.

Walkway is coated by NO-SKID paint. Teak Planks coating is available on demand

### HANDRAILS

Nr:2 carbon made stanchions provided with a  $d=8\text{mm}$  soft rope life line.



## D2.5/6 Slide Out Gangway



### CONSTRUCTION

Gangway elements are made out of carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ).

Sliding car and box are aluminium made black anodized.

### HYDRAULIC POWER PACK

Hydraulic power pack 24V/dc 2,2 Kw. Electric box provided with configuration selector. Control panel with carbon bezel and remote controls, 4 buttons

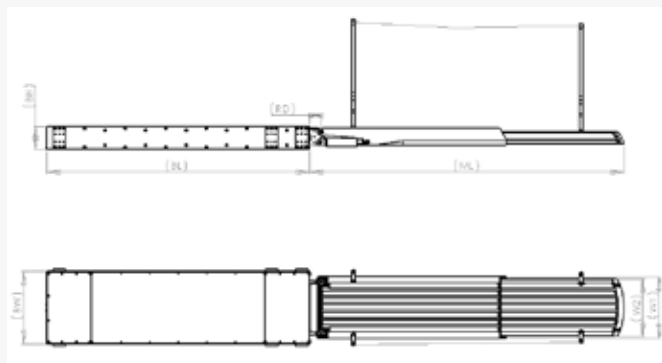
### FINISHING

Structure finishing may be C-LOOK, both clear or matt, or painted.

Walkway is coated by NO-SKID paint. Teak Planks coating is available on demand.

### HANDRAILS

Nr:2 carbon made stanchions provided with a  $d=8\text{mm}$  soft rope life line



# TAYLOR MADE CARBON GANGWAY



*D3 is a full carbon hydraulic gangway that may reach up to 7mt lenght*

## CONSTRUCTION

All gangway elements are made out of carbon fibre and epoxy resin, consolidated with vacuum pressure and cured at high temperature ( $>90^{\circ}$ ). Housing box is aluminium or steel made. It may be watertight on request.

## HYDRAULIC POWER PACK

Hydraulic power pack 380V 50Hz  
Electric box 24V dc provided with configuration selector.  
Control panel with carbon bezel and remote controls, 4 buttons

## FINISHING

Structure finishing is C-LOOK, both clear or matt, or painted.  
Walkway is painted by NO-SKID paint or coated by teak coverage of agreed design.

## HANDRAILS

Handrail's configuration is developed on the specific needs.

## BOX DOOR

Box door system is provided on request.





### 3RD ELEMENT

Gangway may be provided with 2 or 3 slide element depending on needed length and available box length. All elements are made out of carbon fibre.



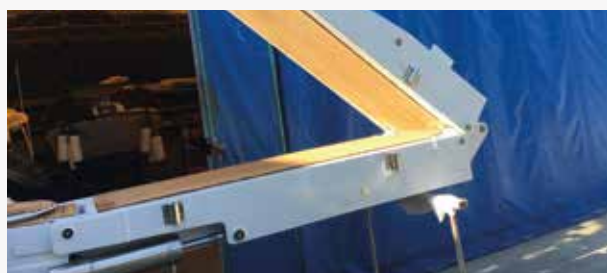
### SLEW SYSTEM

The slewing system is available, where needed. Motion is guarantee by a hidden cylinder and all elements are made out of carbon fibre.



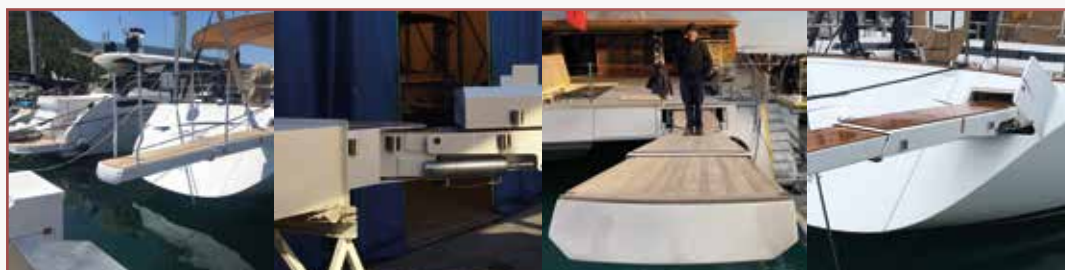
### CAPSIZE SYSTEM

The capsize system is available, where needed. Motion is guarantee by 4 hidden cylinders and 2 stainless steel flanges..



### BOX DOOR SYSTEM

A box door system may be developed on the specific needs. Motion is integrated in the gangway automation.



# STEP PASSERELLE

## 04.3 The Midrange passerelle



*The step passerelle for your yacht*

### CONSTRUCTION

Gangway elements are made out of carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ).

Sliding car and box are aluminium made black anodized.

### FINISHING

Structure finishing may be C-LOOK, both clear or matt, or painted.

Walkway is coated by NO-SKID paint. Teak Planks coating is available on demand

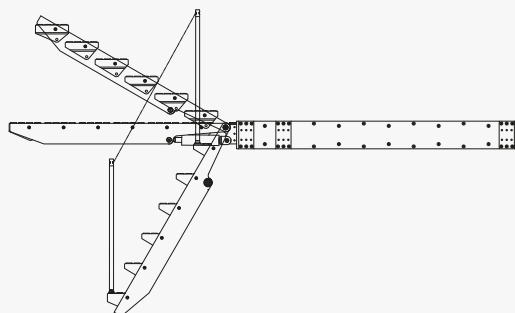
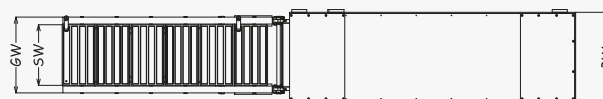
### HYDRAULIC POWER PACK

Hydraulic power pack 24V/dc 2,2 Kw. Electric box provided with configuration selector. Control panel with carbon bezel and remote controls, 4 buttons

### HANDRAILS

Nr:2 carbon made stanchions provided with a  $d=8\text{mm}$  soft rope life line.

MODEL		6 STEP	8 STEP
BOX WIDTH	BW [mm]	650	650
BOX HEIGHT	BH [mm]	200	200
BOX LENGHT	BL [mm]	2075	2600
GANGWAY WIDTH	GW [mm]	550	550
STEP WIDTH	SW [mm]	430	430
GANGWAY LENGHT	L [mm]	1650	2150
STEP LENGHT	SL [mm]	240	240
LOWER PLATFORM LENGHT	LPL [mm]	240	240
DISTANCE TO ROTATION AXE	RL [mm]	105	105
FOLDING ANGLE	A [degree]	$-30^{\circ}/+60^{\circ}$	$-30^{\circ}/+60^{\circ}$
TOTAL HEIGHT UP	H.up [mm]	715	965
TOTAL HEIGHT DOWN	H.down [mm]	926	1360
TYPICAL WEIGHT (box included)	W [Kg]	135	150
MAX WORKING LOAD	WL [Kg]	150	200



## D4.4 Super Yacht Model



*The full carbon Step Passerelle with no compromise*

### CONSTRUCTION

The whole gangway structure is made out of carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ). Housing box is aluminium made black anodized. It may have the watertight configuration on request.

### HANDRAILS

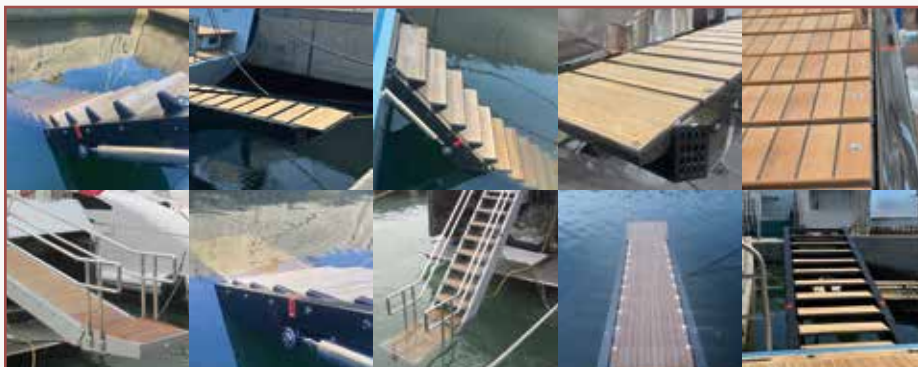
Nr:2 carbon made stanchions provided with a  $d=8\text{mm}$  soft rope life line.  
Rigid hinged pulpit or different configuration available on request.

### FINISHING

Structure finishing may be C-LOOK, both clear or matt, or painted.  
Walkway is coated by NO-SKID paint. Teak Planks coating is available on demand

### HYDRAULIC POWER PACK

Hydraulic power pack 24V/dc 2,2 Kw or 380V 50Hz  
Electric box 24V dc provided with configuration selector.  
Control panel with carbon bezel and remote controls, 4 buttons





# HYDRAULIC boarding STAIR



***THE FULL CARBON BOARDING STAIR PROVIDED WITH  
A SLIDE-OUT MOVEMENT OR THE FOLDING DOWN  
It's a full custom equipment whose dimensions are developed starting  
from the available room for its housing box.***





## CONSTRUCTION

The whole construction is carbon fibre and epoxy resin, consolidated in Autoclave and cured at high temperature ( $>90^{\circ}$ ). Pins and bearing are stainless steel AISI 316L with shiny polished finishing, where visible.

## FINISHING

Finishing may be C-LOOK, both clear or matt, or painted. Transparent paint has ceramic features, so to maximize its hardness, and it's provided with UV shield.

Walkway is coated by NO-SKID paint. Teak Planks coating is available on demand

## HANDRAIL

Handrail's configuration is developed on the specific needs.

## LIGHTING SYSTEM

nr.2 spot light to be placed on each step. Lower platform is provided with under water light on 3 sides

## SPACER ARM

Lower platform is provided with an hydraulic arm that, going close to hull side, prevent damage from tender hit. System is linked with the main automation.

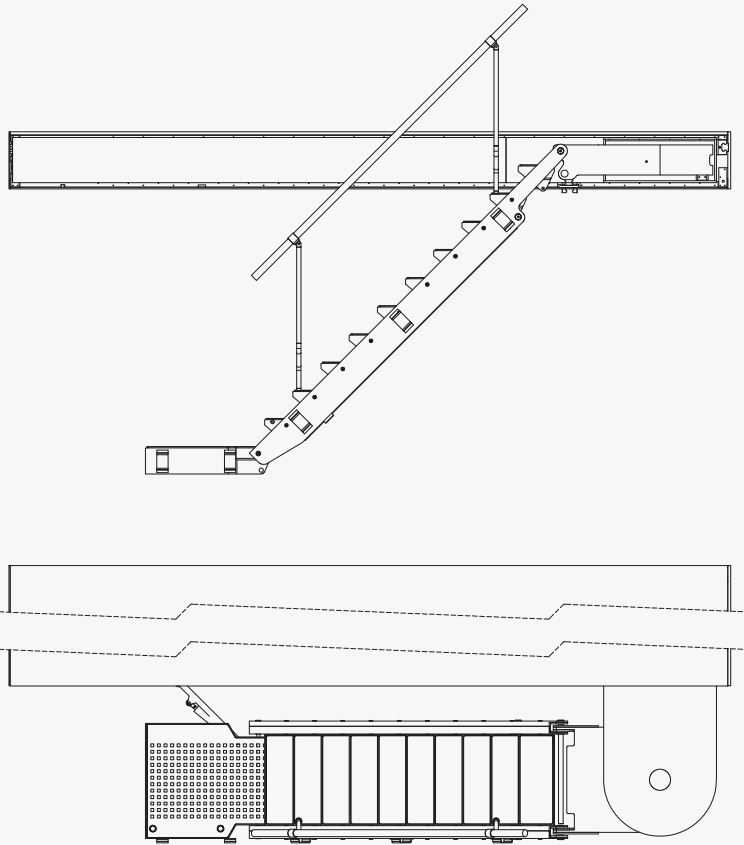
## HOUSING BOX

Housing box is aluminum CNC machined with black anodized finishing.

## HYDRAULIC POWER PACK

Hydraulic power pack 24V/dc 2,2 Kw or 380V 50Hz.  
Electric box 24V dc provided with configuration selector.

Control panel with carbon bezel .



# MAST ANTENNA



**Mast antenna** is a very critical element of yachts and it must be:

- with a nice design
- light so to keep the centre of gravity as low as possible
- stiff, because vibrations occur
- strong, because applied loads are critical.

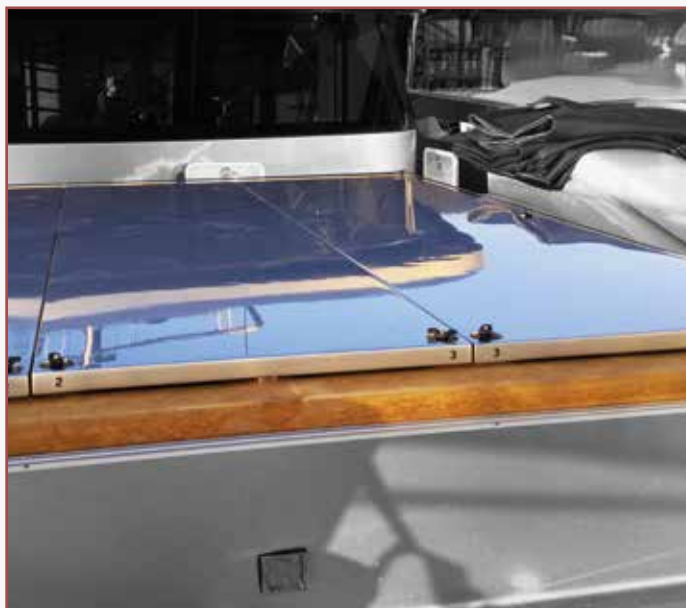
Our technical department, starting from customer design, develop:

- design feasibility
- structure, laminate schedule and optimization working with a deep FE Analysis
- main engineering, that is antenna connection and wire passage.

Main construction is made with infusion technology, while for minor components autoclave consolidation is used. All elements are finally post-cured at high temperature ( $>75^{\circ}\text{C}$ ).



# HARD TOP & COVER



Carbon Equipment technical department develop the design of hard top, T Top, pool cover and others following shipyard request.

Particularly we perform:

- first design
- design feasibility where design supplied by shipyard
- engineering
- structure lamination and optimization providing FEA report.

When the design is agreed, we perform the lamination of the parts with infusion, vacuum or in-autoclave lamination.

Every product is finally dry tested, verified and finally painted and delivered.



# CONTACTS

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