

# Over ProZero & Van Dyke Marine

De ProZero-serie van Tuco Marine staat voor toonaangevende kwaliteit en maatwerk in high-performance werkboden en crew transfer vessels. Elke boot wordt ontworpen op basis van uw operationele eisen, met een doordacht design en bewezen technologie. Het resultaat: maximale snelheid, brandstofefficiëntie en veiligheid, zelfs onder de zwaarste omstandigheden.

Van Dyke Marine is vertegenwoordiger van ProZero in de BeNeLux en begeleidt klanten volledig: van eerste advies en ontwerp tot levering, onderhoud en service.



## VAN DYKE MARINE

Vertegenwoordiging in de  
BeNeLux van

PROZERO  
WORK BOATS

### CONTACT

**Van Dyke Marine**  
Burg. Catshoeklaan 10  
4681 RJ Nieuw-Vossemeer – Nederland  
+31 6 44 880 888  
[www.vandykemarine.nl](http://www.vandykemarine.nl)  
[info@vandykemarine.nl](mailto:info@vandykemarine.nl)





**PRO:ZERO**  
Fast Boats for Professionals



PROVEN TECHNOLOGY

**PROZERO** FIRST RESPONDERS



At Tuco we specialize in fast boats for professionals. Every day we work to set the standard in innovative lightweight maritime constructions and supreme material technology. We strive to deliver durable solutions that reflect and support the development of a safe, sustainable and prosperous future in maritime logistics.

Customers can rely on Tuco as a loyal partner that draws on intimate market knowledge, expert craftsmanship and years of experience with successful deliveries to ensure more than just customer satisfaction.

#weloveworkboats



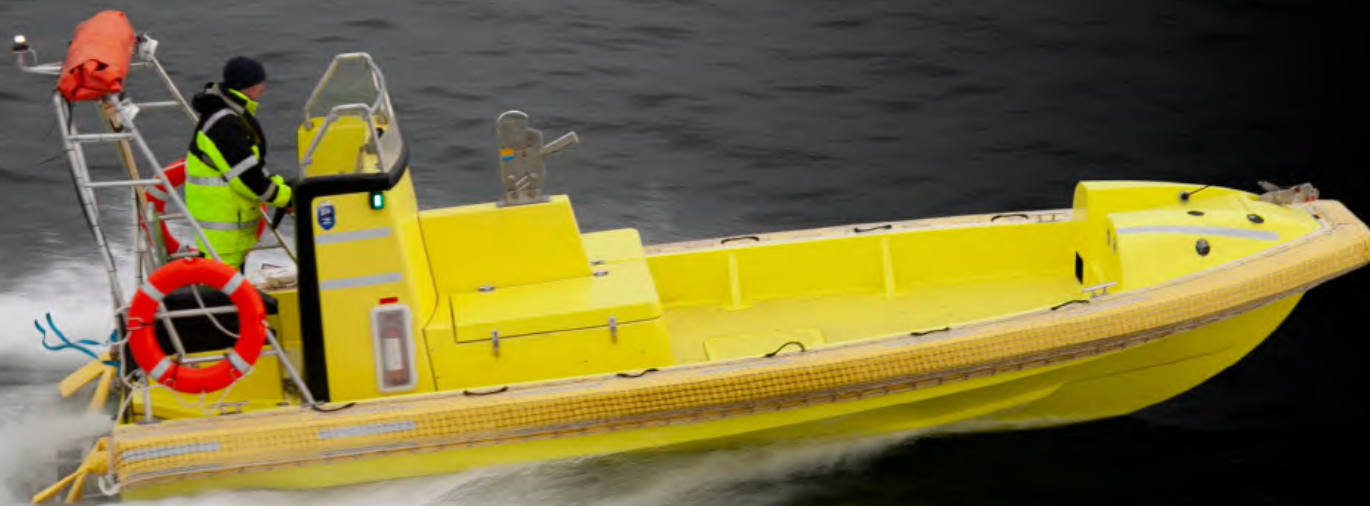
**PRO:ZERO**

The ProZero series is a range of fast boats designed specifically for professional use. They are built to endure the harsh conditions of operations on open sea while providing the operator with an ideal work environment.

With advanced design and sophisticated application of composites materials, the ProZero series offers the customer significant commercial benefits and enhance overall vessel performance and energy efficiency. The ProZero range covers Offshore, Workboats and vessels for Security & Defense.

#weloveworkboats

# PRO:ZERO



## HISTORY OF TUCO'S WORKBOATS

### CONSTANTLY EVOLVING

The ProZero vessels represent the cutting edge of a development process that constantly aims to balance technology innovation, customer demands and industry trends.

This process took flight in 2002 when Tuco launched the first vessels of the now superseded AluGuard series. These vessels have proven themselves over years of service and have benefitted many satisfied customers. Furthermore, our key proficiencies have been tried, perfected and validated through contributions to several large-scale, both national and international, development projects. The technical, empirical and commercial insights and accomplishments gained during many years in the business have been condensed and applied in our state-of-the-art ProZero vessels.



### PROVEN TECHNOLOGY

The ProZero series of workboats is the quintessence of years of experience. Building on well-consolidated technology and Tuco's long and productive history in the industry, the ProZero workboats provide unrivaled safety, performance and comfort.

We are the trusted supplier of many customers and have delivered vessels to both private organizations, shipyards and governmental institutions.



**Efficient and proven hull**  
**Matchless strenght-to-weight and seaworthiness. Shaping first-class hulls with precision technique and cost-effective production.**



# PRO:ZERO



## PROVEN TECHNOLOGY

# PRO:ZERO

## FIREBOATS

## 15M MULTIMISSION VESSEL

### 15M MULTI MISSION VESSEL

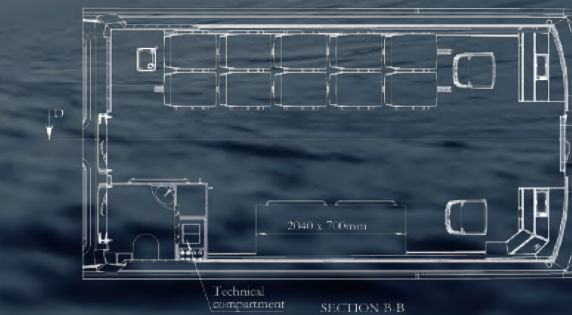
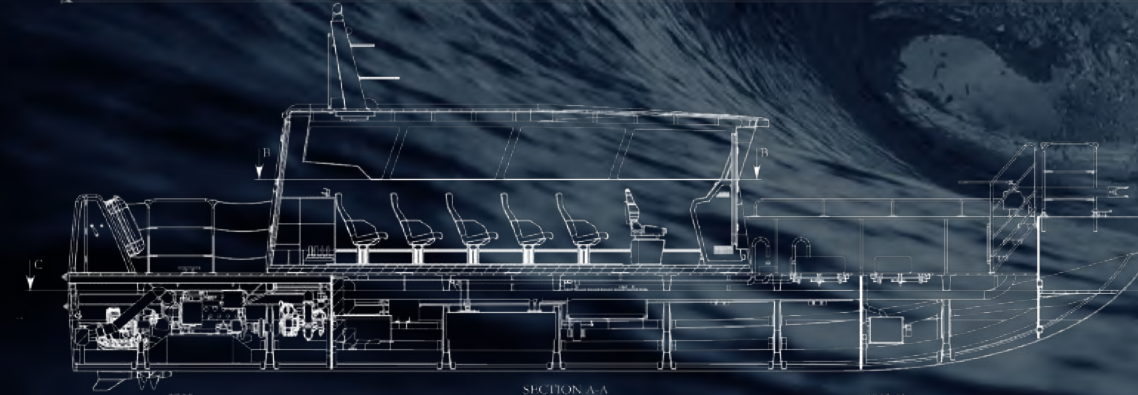
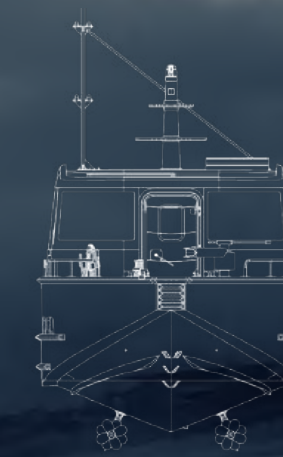
The 15m ProZero Multi Mission Vessel is built on the proven, reliable and extremely seaworthy ProZero hull platform. The vessel is strategically sized and carefully equipped for fast response, crew transport and patrol missions in coastal and offshore waters and comes equipped for emergency firefighting.

Particular attention has been paid to crew comfort. The vessel is built to minimise noise and vibrations while preserving structural rigidity, integrity and strength and enhancing mission-capability.

The full beam cabin has been designed with acute attention to ergonomics and working environment. Noise insulation ensures comfort and easy communication under all operating conditions and the layout have been organized to facilitate workflow coordination, both during the missions and during transport to and from the sites. The cockpit layout is arranged to maximize the use of state-of-the-art operations management equipment and electronic aids for situational awareness.



**Unmatched strength**  
Confront the elements with confidence. Built for strength, safety and durability.





# PRO:ZERO 15M MULTI MISSION VESSEL



**Design:** 2018 | 5000-03-65  
**Length overall, approx.:** 14,82 m  
**Beam overall, approx.:** 3,84 m  
**Capacity:** 12 persons  
**Maximum load:** 3.000 kg  
**Engines:** 2 x inboard diesel

## OPERATIONAL FEATURES:

Speed: 25 kt (with 3 persons)  
Speed: (cruise): 25 kt  
Range: 8 hours at cruise speed.

## BENEFITS:

This multi mission vessel is developed for fast response service, equipped for emergency fire-fighting and personnel transfer. The design of the ProZero cabin ensure a huge amount of daylight, this also improve the personal comfort. Benefits by being significantly lighter than market average are lower fuel consumption. Supporting the great and proven sailing capabilities.

## DESCRIPTION:

The boat has been built to meet the requirements from the competent authorities, and features a redundant propulsion system.

## HULL, DECK AND SUPERSTRUCTURE:

The boat is made of a combination of glass- and carbon fibre as sandwich construction with PVC as core material. This core material act as a natural buoyancy reserve material, due to its lightweight and zero water-absorption. Moreover, the sandwich construction avoids the use of internal stiffeners, increasing the usable internal space and offers a natural insulation capability, improving the comfort in the cabin and manned compartments.

## FENDER:

The fender is constructed EPDM Rubber. Not deflating with solid core that cannot lose buoyancy or absorb water. Damage is strictly cosmetic keeping crew safe. Fender system absorbs major impacts and retains integrity and shape.

## DECK:

Hydraulic crane in starboard fore deck. Large working area in the fore deck. Transfer raised platform in the bow with stepped transition between this one and the main deck. 4 mooring bites. Aluminium railings in aft and fore deck.

## CABIN & COCKPIT:

Toilet with WC and washbasin. Roof-mounted manually operated firefighting turret, accessed through a hatch in the roof. 10 comfort seats for passengers plus 2 pilot seats. Hinged door in the aft of the cabin. Hinged door in the front of the cabin. Defreeze system for windows with hot air blowers. All windows are glued into the structure. Led lights in cabin and cockpit. Comfort insulation in the cabin.

## TECHNICAL:

### ENGINES, PROPULSION, STEERING etc.

2 x inboard diesel engine  
2 x IPS

## TANKS:

Structural diesel tank with hatch and filling protection. Independent fresh water tank. Independent dark water tank with odourless filter.

## ELECTRICAL SYSTEM & LIGHTING:

All electrical wiring in marine cable. Shore power with control lamp, marked fuses, earth connection. Isolation transformer with earth plate for protection of galvanic corrosion. 24-volt electrical system. Main switches with separate battery systems for start and consumption. Battery charger with indicator. Navigational lights. 2 x floodlight on the working foredeck

## NAVIGATION & ELECTRONIC EQUIPMENT:

Complete engine instruments supplied by engine manufacturer. Control panel for all lighting and other electrical equipment. 1 x magnetic compass

## SECURITY EQUIPMENT:

Bilge pumps  
Fire extinguisher at helmsman station  
Automatic fire extinguisher system in engine room.

PRO:ZERO



FIREBOATS  
15M MULTIMISSION VESSEL



## INTERIOR DESIGN

The cabin offers great comfort and is equipped with an adjustable heating system, an air-suspended driver's seat, ergonomic passenger seats and state-of-the-art electronic equipment.



### Comfortable cabin

Attending to the human factor. Functional, bright and ergonomic working conditions with noise insulation for ease of communication.



PRO:ZERO

INTERIOR  
DESIGN



## FIREBOATS 15M MULTIMISSION VESSEL

### ONBOARD EQUIPMENT

For firefighting, The ProZero 15m Multi Mission Vessel is equipped with a N25 Rosenbauer pump, a fixed water cannon and storz coupling. Up to 180 metres of fire hoses are brought along in addition to a portable OTTER pump to place on land. Furthermore, The vessel features a fixed marine radar, sonar, echo-sounder, VHF radio, SINE terminal, digital sea maps, AED, first aid supplies and oxygen equipment to support the first responder team.



**Low weight**  
Cutting weight and adding value.  
Low weight design lifts the value chain.





**PRO:ZERO**

**FIREBOATS**  
**7.5M FRC MRK3**



**PRO:ZERO**

**FIREBOATS**  
**7.5M FRC MRK3**

## 7.5M FRC MRK3

The 7,5 m FRC is a third-generation design built around the already well proven ProZero 7,5-meter Fast Rescue Boat. The first two iterations of the 7,5-metre FRC design have been developed and tested thoroughly during the ProZero development project for which Tuco received funding under the Horizon2020 SME Instrument programme.

This development project ended in 2018, but Tuco Marine has continued to refine the project results and implement them in the ProZero series. The third generation FRC represents the highest level of refinement yet.

The carbon fibre materials technology secures ultra-high levels of strength and durability at a very low structural weight. The new design presents a very large deck area which will accommodate large payloads or up to 16 persons. New bow and fender configurations have been added for improved safety during transfer operations across the bow.

As standard the FRC features a single water jet installation, but twin water jet installations are available upon request.

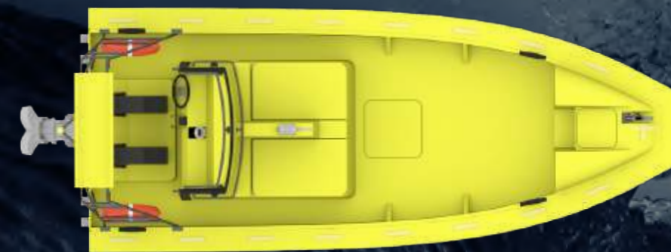


**Low weight**  
Cutting weight and adding value.  
Low weight design lifts the value chain.





# PRO:ZERO 7.5M FRC MRK3



**Design:** 2019 | 5000-01-19  
**Length overall, approx.:** 7.7 m  
**Beam overall, approx.:** 2.86 m  
**Draft, approx. (without sterndrive):** 2.36 m  
**Crew:** 2 persons  
**Capacity:** 14 persons  
**Maximum Load (incl. persons):** 1310 kg  
**Engine:** 1 x Water jet

## OPERATIONAL FEATURES:

Speed (lightweight): 27 kts.  
Speed (full load): 20 kts.

## DESCRIPTION

The boat has been built to meet the SOLAS requirements for fast rescue boats

## HULL, DECK AND SUPERSTRUCTURE:

The boat is made of a combination of glass- and carbon fibber as sandwich construction with PVC as core material. This core material act as a natural buoyancy reserve material, due to its lightweight and zero water-absorption. Moreover, the sandwich construction avoids the use of internal stiffeners, increasing the usable internal space.

## FENDER:

The fender is made from closed cell polyethylene foam. It is non-deflatable and features a solid core that cannot lose buoyancy or absorb water. Any damage is strictly cosmetic keeping crew safe. The fender system absorbs major impacts and retains integrity and shape. The ProZero fender profile gives substantially more interior room than a comparable RIB.

## DECK:

Deck is self-bailing.  
Stowage for SOLAS equipment and mooring equipment.  
Mooring bites.  
Single point lifting hook (optional equipment).  
Self-righting system.  
Metallic arch.  
Seats for crew.  
Steering console with all around railing.  
Painter hook (optional equipment).

## TECHNICAL:

### ENGINES, PROPULSION, STEERING & MANOUVERING

1 x Diesel inboard engine.  
1 x Water jet (Option 1).  
1 x Stern drive (Option 2).

Possibility of twin engine and drive installation for redundant propulsion system.

Main switches with separate battery systems for start and consumption.  
Battery charger with indicator.  
Navigational lights.  
Working lights.  
Searchlight.

## TANKS:

Fuel tank (130 liter).

## ELECTRICAL SYSTEM & LIGHTING:

All electrical wiring in marine cable.  
Isolation transformer with earth plate for protection against galvanic corrosion.

## NAVIGATION & ELECTRONIC EQUIPMENT

Electric engine controls. Complete engine instruments with RPM, temperature, oil pressure and voltmeter for start batteries supplied by engine manufacturer.  
1 x start battery and 1 x consumption battery  
Fuel gauge.  
Control panel for all lighting and other electrical equipment.  
Fixed VHF (optional equipment)  
Magnetic Compass

## SECURITY EQUIPMENT:

Manual bilge pump.  
Electrical emergency pump in bilge, manual start, in the bilge and in the engine room.  
Fire extinguisher on starboard side of steering console.  
2 x lifebuoys.

## DELIVERY:

All boats are launched, tested and calibrated and has gone through a scrupulous quality control at the yard in Denmark.  
Delivery, hand over, test drive and technical review with customer at yard in Denmark. All boats are delivered with a complete owner's manual.

## GENERAL:

The boat is built as standard according to the technical specification and our general quality standard. The specification is valid when being printed. Details in construction, design and equipment can be changed as a result of the experience from the use of the boats. The quality and the equipment standard, however, are equivalent at least to this specification. The hull and structure have a 2 years' warranty from the date of delivery. The equipment and devices fitted in the boat have a 1 year's warranty from the date of delivery.

PRO:ZERO



FIREBOATS  
7.5M FRC MRK3



DECK LAYOUT

The boat has been designed to offer best in class maximized deck areas, enabling optimized operations, load carrying, and passenger capacity.

OPTIMIZING OPERATIONS

Attending to the human factor. Functional, and ergonomic console layout arranged to maximize the use of state-of-the-art operations management and situational awareness electronic aids.



PREVIOUS MODEL



PRO:ZERO

DECK  
LAYOUT

# PRO:ZERO

Marine Stretcher

SECTION B-B

SECTION A-A

8994

## FIREBOATS

## 8M FULL CABIN DC INBOARD

### 8M FULL CABIN DC - INBOARD

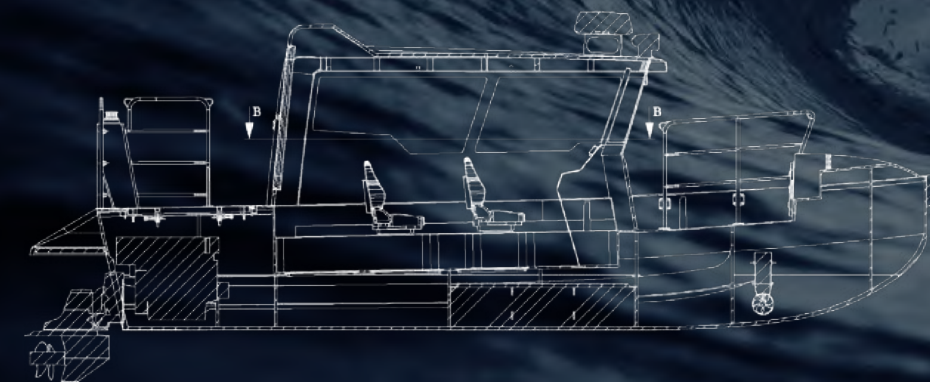
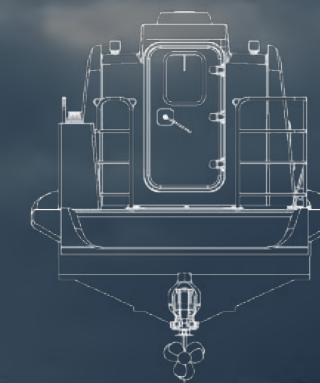
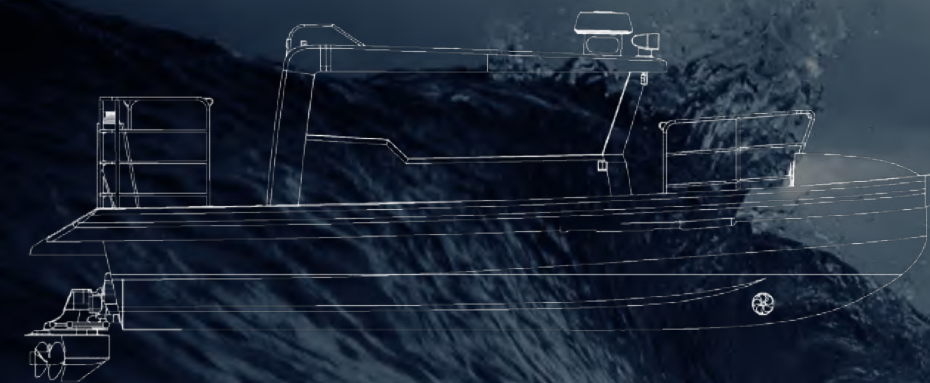
#### Rapid reaction vessel

The 8M FULL CABIN DC - INBOARD LOW CABIN is a rapid reaction vessel equipped with firefighting equipment. Built on the proven reliable and extremely seaworthy ProZero hull platform. The vessel is strategically sized and carefully equipped for fast response, crew transport and patrol missions in coastal and offshore waters. Particular attention has been paid to crew comfort. The vessel is built to minimize noise and vibrations while preserving structural rigidity, integrity and strength and enhancing mission-capability.

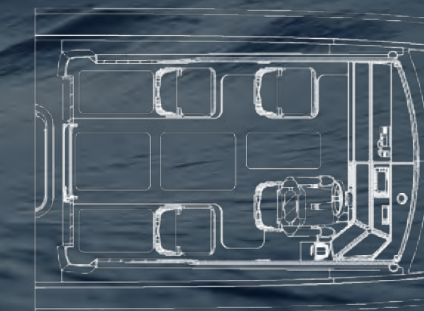
#### Designed for comfort during exhausting missions

The cockpit layout in the ProZero 8m Full Cabin DC is arranged to maximize the use of state-of-the-art operations management and situational awareness electronic aids. And the cabin can be delivered in a variety of layouts including benches and separate suspended seatings.

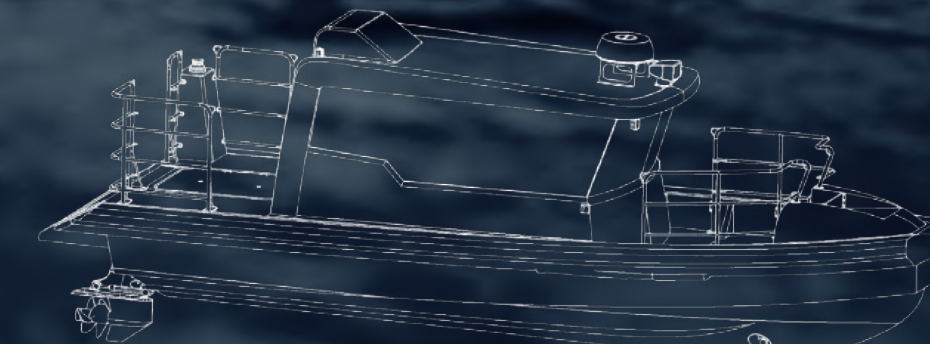
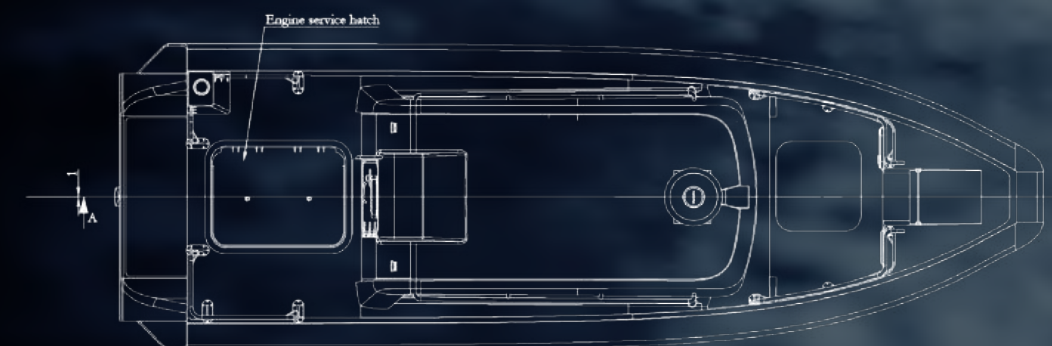
Like all ProZero vessels, this boat is built from robust lightweight glass- and carbon fibre composites, which reduces the weight of the boat and thereby allowing both higher speeds and lower fuel consumption. Good ride quality and ergonomics is key to enduring long and exhausting missions, and the ProZero 8m full cabin DC is designed to provide just that. With its non-stepped, variable deadrise deep V-bottom hull featuring good forward entry, a flared bow, wide chines and lifting strakes/spray rails, the hull provides a safe and reliable base for high-speed operations and will tackle even very agitated sea states.



SECTION A-A



SECTION B-B





# PRO:ZERO 8M FULL CABIN DC - INBOARD



**Design:** 2017 | 5000-02-21  
**Length overall, approx.:** 7,95 m  
**Beam overall, approx.:** 2,84 m  
**Draft, approx. (sterndrive):** 0,7 m  
**Crew:** 2 persons  
**Capacity:** 6 persons  
**Payload:** 750 kg (including passengers)  
**Engines:** 1 x inboard diesel

**BENEFITS:**  
The boat is specially designed for transport of up to 6 passengers at high speeds. The design of the ProZero cabin ensures a huge amount of daylight, this also improves the personal comfort. The boat is significantly lighter than the market average which benefits fuel consumption and adds to the already proven seaworthiness.

**OPERATIONAL FEATURES:**  
Speed, approx.: +25 kt (lightweight condition).  
Range: 4 hours at cruise speed.

**DESCRIPTION:**  
The boat has been built to meet the requirements from the competent authorities.

**HULL, DECK AND SUPERSTRUCTURE:**  
The boat is made of a combination of glass- and carbon fibre as sandwich construction with PVC as core material. This core material acts as a natural buoyancy reserve material, due to its lightweight and zero water-absorption. Moreover, the sandwich construction avoids the use of internal stiffeners, increasing the usable internal space and offers a natural insulation capability, improving the comfort in the cabin and manned compartments.

**FENDER:**  
The fender is constructed of closed cell polyethylene foam. Not deflating with solid core that cannot lose buoyancy or absorb water. Damage is strictly cosmetic keeping crew safe. Fender system absorbs major impacts and retains integrity and shape. The ProZero fenders profile gives substantially more interior room than a comparable RIB.

**DECK:**  
Deck and cabin are self-bailing.  
Metallic mooring bollards.  
Modular and easy detachable aluminium railings.  
Lashing points on aft deck for equipment.  
Aluminium frame on the aft with strong points for towing and equipment attachment.  
Protection bar on the transom for engines protection.

**CABIN & COCKPIT:**  
Hinged door in the aft of the cabin.  
Windshield wiper.  
LED lights in cabin and cockpit.  
Seats for crew.  
1 x Padded foldable bench for up to 3 persons.  
1 x Padded deployed bench for 3 persons.

**TECHNICAL:**  
  
**ENGINES, PROPULSION, STEERING etc.:**  
1 x inboard diesel equipped with sterndrive.  
1 x Mercruiser TDI-260PS, BR III, DTS Other engine configurations on request.

**TANKS:**  
Petrol tank with hatch and filling protection.

**ELECTRICAL SYSTEM & LIGHTING:**  
All electrical wiring in marine cable.  
Shore power with control lamp, marked fuses, earth connection and shore cable.  
24-volt DC system electrical system.  
Main switches with separate battery systems for start, navigation and consumption.  
Battery charger with indicator.  
Navigational lights.

**NAVIGATION & ELECTRONIC EQUIPMENT:**  
Electric engine controls. Complete engine instruments with RPM, temperature, oil pressure and voltmeter for start batteries supplied by engine manufacturer.  
Fuel gauge.  
Control panel for all lighting and other electrical equipment.  
1 x magnetic Compass.  
1 x electric horn.

**SECURITY EQUIPMENT:**  
Manual bilge pump, electrical emergency pump.  
Portable fire extinguishers.

PRO:ZERO

## HULL AND MATERIAL

### 8M FULL CABIN DC - INBOARD

## HULL

### Hull construction and material

The composite structure is designed, calculated and built to the requirements of DNV Craft 2.21. The hull is manufactured in a high precision mould with either glass fiber, carbon fibre or a combination of both and vinylester resin. The hull is weight optimized and configured in a sandwich structure using PVC core material to provide high strength, proper stiffness and very low overall density. The hull is built to endure extreme slamming loads and hydrodynamic pressures produced at high velocity as well as concentrated point loads during lifting, cradling and grounding. The hull geometry and lightweight construction ensures smooth water-entry, excellent maneuverability, course stability and roll dampening. The vessel is equipped with a fixed circumferential fender to protect it during both normal and harbor operation.

Careful attention is paid to weight control and detailed design to produce a robust and seaworthy craft fit for crew transport. In view of the operational requirements, weight refinement is not taken to the minimum limits allowed by classification rules, but is carefully balanced to combine robust construction with efficient operation. The main hull shell is produced using vacuum infusion in a one-shot operation in accordance with the hull construction drawing. The first two laminates in moulded parts are of powder bound chopped strand mat reinforcement impregnated with resin. Subsequent laminate is applied as dry fabrics and core material and then infused in one operation with vinylester resin. In general, the complete structure is built as sandwich laminate but in specific areas core material is replaced with additional laminate. The hull frames, stringers and longitudinals are built from of a combination of bi-directional fibers and uni-directional reinforcement impregnated with vinylester resin, over foam sections. Adequate limber holes are fitted throughout the craft to allow bilge water to drain. Under the main engines limber holes are omitted so the framing will form a drip tray. Throughout the structure, compartments are finished in top coat. Primary stiffening is to be by longitudinal engine beds and the fuel tank construction. Deck joint knees are bonded in at each frame. All deck knees etc. shall taper into frames as gradually as possible. Stiffeners are formed in WR with unidirectional tapes (UDT) reinforcement as necessary on stiffener faces. A general arrangement plan is provided together with details of the proposed hull and the arrangement for the rest of the vessel.



**Efficient and proven hull**  
Matchless strength-to-weight and seaworthiness. Shaping first-class hulls with precision technique and cost-effective production.

### Engine beds

The main longitudinals are profiled and built up within the machinery and tank space to form engine beds that suit the specified engines. The construction is a box-type section with tapping strips along their upper faces to accommodate the engine feet. The mild steel tapping strips span the full width of the bed and are suitably abraded before inclusion into the laminate.

### Fuel tank/tanks

The fuel is tank is mounted below deck and fasted to secure the best possible integration. Baffles are fitted inside the tank to prevent surging. Tank openings are fitted in the top face of the tanks for easy access for cleaning the tank. The tank lids are molded from composite and are secured in place with a strong backing plate. The tank will be subjected to a 0.2 bar leakage test. A Tank Tender contents gauge will be fitted with the display head mounted in wheelhouse. A fuel filler station is to be positioned on the main deck and is fitted with container to collect any spillage. The filling system allows filling by normal fueling hose. The fillers are routed down to the tank(s) in flexible approved hoses. The main filler line is 38mm with the vent line being double Ø38mm. The vent lines will terminate inside the fuel filler locker and be fitted with a gooseneck.

### Bulkheads

The vessel is to be fitted with structural watertight bulkheads dividing up the vessel as follows:

- Forepeak
- Tank / technical compartment
- Engine Room

Main bulkheads are constructed from composite board and fully bonded to the structure. Furthermore, the vessel is strengthened with open frames, to ensure hull and deck support, to comply with relevant rules.

PRO:ZERO

FIREBOATS

8M FRB NAVY RIB

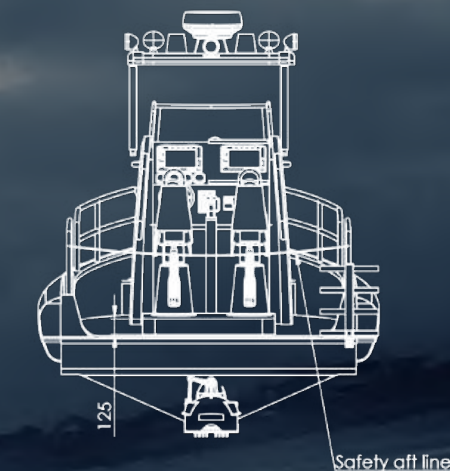
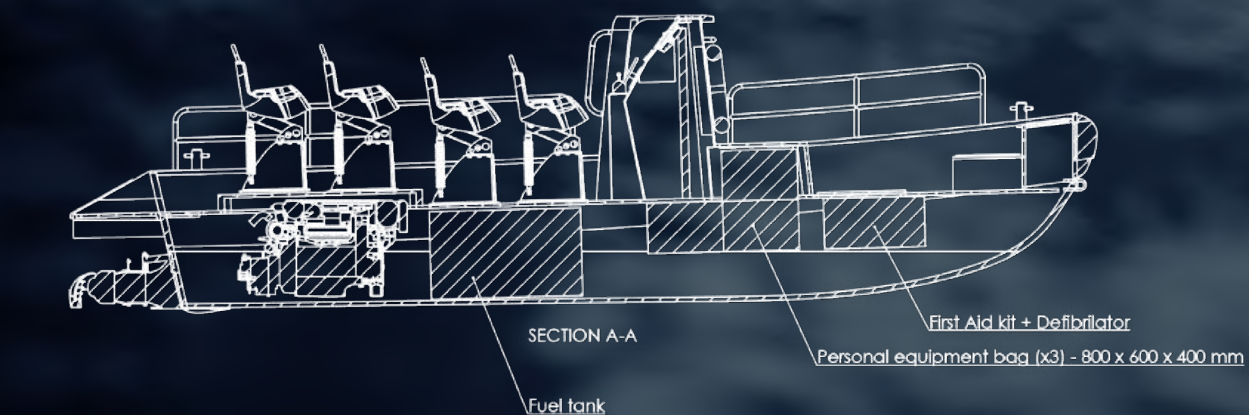
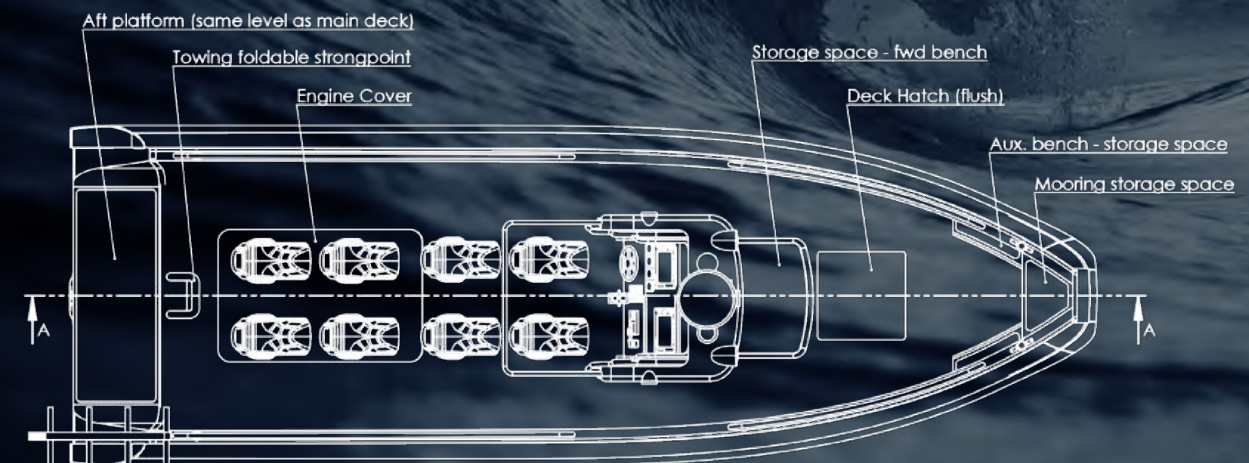
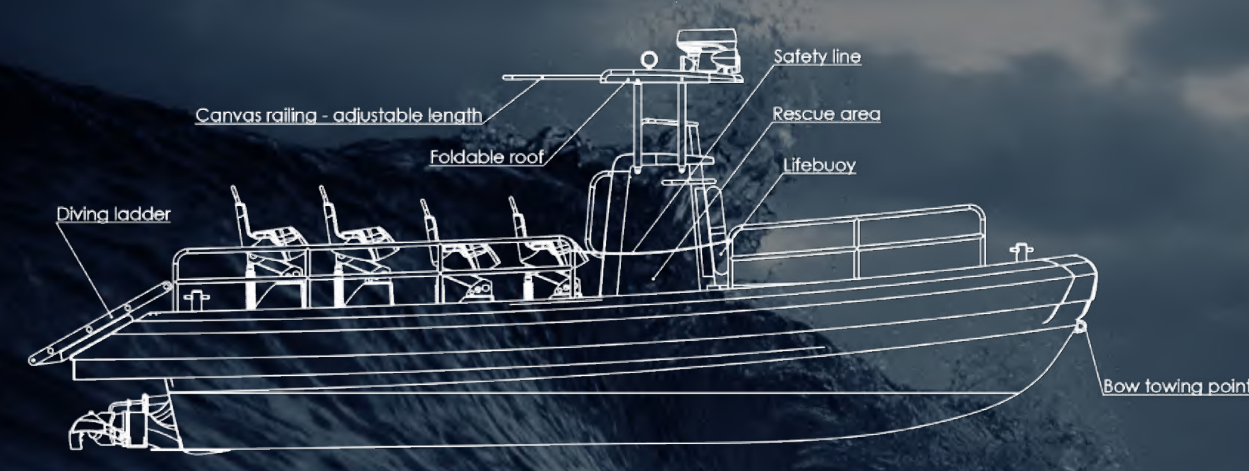
## 8M FRB NAVY RIB

### High-speed fire-fighting response missions

The ProZero 8-metre FRB First Responder RIB is built on the proven, reliable and extremely seaworthy ProZero hull platform. This boat is designed to accommodate first responder specialist and rescue operations. The boat is strategically sized and carefully equipped with emergency fire-fighting equipment for high-speed response missions. Seating arrangement are designed for comfort with room for up to 2 crew members and 6 passengers.

### Enhanced mission-capability

Good ride quality and ergonomics is key to enduring exhausting high-speed missions, and the ProZero 8m First Responder RIB is designed to provide just that. With its non-stepped, variable deadrise deep V-bottom hull featuring good forward entry, a flared bow, wide chines and lifting strakes/spray rails, the hull provides a safe and reliable base for high-speed operations and will tackle even very agitated sea states. Particular attention has been paid to crew comfort, shock mitigation and safety during high-speed and boarding missions while enhancing mission-capability and preserving structural rigidity, integrity and strength. The Center Console deck layout provides flexibility and room for a variety of missions and boarding situations. The deck layout is adjustable and can be transformed through built-in cargo rails into mission-specific environments with shock mitigating seating arrangements, first responder equipment or extra cargo areas.





# PRO:ZERO 8M FRB NAVY RIB



**Design:** 2015 | 5000-01-05  
**Length overall, approx.:** 8,14 m  
**Beam overall, approx.:** 2,84 m  
**Draft, approx. (sterndrive):** 0,58 m  
**Crew:** 2 persons  
**Capacity:** 6 persons  
**Payload:** 720 kg  
**Engines:** 1 x inboard diesel

**BENEFITS:**  
This police multipurpose vessel is designed as a platform that can fulfill patrol and custom duties. Benefits by being significantly lighter than market average is lower fuel consumption. Supporting the great and proven sailing capabilities.

**OPERATIONAL FEATURES:**  
Speed (max): 45 kt.  
Speed (cruise): 30 kt.  
Range: 170 nm @ 28 kt.

**DESCRIPTION:**  
The boat has been built to meet the requirements from VTT for commercial crafts in category B.

**HULL, DECK AND SUPERSTRUCTURE:**  
The boat is made of a combination of glass- and carbon fibre as sandwich construction with PVC as core material. This core material acts as a natural buoyancy reserve material, due to its lightweight and zero water-absorption.

**FENDER:**  
The fender is constructed of closed cell polyethylene foam. Not deflating with solid core that cannot lose buoyancy or absorb water. Damage is strictly cosmetic, keeping the crew safe. ProZero fenders profile gives substantially more interior room than a comparable RIB.

**DECK:**  
Self bailing deck.  
Aft platform in level with the main deck.  
Open transom (with security rope line between railings).  
Low profile hinged engine cover with assist gas struts.  
Large working area in the aft deck.  
Multiple storage spaces, above and below deck.  
4 x mooring bites.  
Foldable towing strongpoint in the aft.  
Foldable diving ladder integrated into the aft platform.  
2 x Crew shock absorbing seats.  
6 x Passengers detachable shock absorbing seats.  
4 Lifting points.  
Steering consoled with rugged construction, frontal windshield and foldable roof for deploying lights and electronic devices. The roof is fitted with a length adjustable railing for deployed a protection canvas able to offer weather protection to the 2 first rows of seats. The console has aluminium railings all around and several hatches to access the electronics and storage compartments.

**TECHNICAL:**

**ENGINES, PROPULSION, STEERING & MANOUVERING:**  
1 x Castoldi Waterjet.  
1 x Yanmar V8 inboard diesel engine.

**TANKS:**  
1 x independent detachable diesel tank.

**ELECTRICAL SYSTEM & LIGHTING:**  
24-volt electrical system.  
Main switches with separate battery systems for start, navigation and consumption.  
Shore 230 VAC power supply for battery charger and heating starting systems.  
Battery charger with indicator.  
Heating system in engine room.  
Heating system in steering console electronics compartment.  
Navigational lights.  
4 x floodlights on the steering console roof pointed front, aft and both sides.  
2 x searchlights, manually operated, 1 of them detachable and handheld opearable.  
2 x blue rotating enforcement lights.

**NAVIGATION & ELECTRONIC EQUIPMENT**  
1 x Radar.  
2 x Chart Plotter.  
1 x Echo sounder with transducer.  
1 x GPS compass.  
Electric engine controls. Complete engine instruments with RPM, temperature, oil pressure and voltmeter for start batteries supplied by engine manufacturer.  
Fuel gauge.  
Control panel for all lighting and other electrical equipment.  
1 x Fixed VHF with DSC.  
1 x AIS .  
1 x Magnetic Compass.  
1 x Foghorn.

**SECURITY EQUIPMENT:**  
1 x Manual bilge pump  
2 x Electrical emergency pump with manual start, in the bilge and in the engine room  
1 x Fire extinguisher at helmsman station  
1 x Automatic fire extinguisher system in engine room.  
1 x Medical First Aid box.  
1 x Lifebuoy.  
10 x Lifejackets.

**DELIVERY:**  
All boats are launched, tested and calibrated and has gone through a scrupulous quality control at the yard in Denmark. Delivery, hand over, test drive and technical review with customer at yard in Denmark. All boats are delivered with a complete owner's manual.

**GENERAL:**  
The boat is built as a standard according to the technical specification and our general quality standard. The specification is valid when being printed. Details in construction, design and equipment can be changed as a result of the experience from the use of the boats. The quality and the equipment standard, however, are equivalent at least to this specification. Photographs may contain items that are extra equipment.  
The hull and structure have a 2 years warranty since delivery.  
The equipments and devices fitted in the boat have a 1 year's warranty since delivery.

# PRO:ZERO

## FIBRE REINFORCED COMPOSITES

### SUPERIOR MATERIALS

#### High strength, low maintenance

Clever choices of materials increase performance and productivity. Fiber reinforced composites have great strength-to-weight ratio, physical stability and molding flexibility. This makes them highly attractive for manufacturing the fast and durable ProZero vessels.

#### Safe and durable

Improved safety is also a benefit of using composites. Drop tests proves that the "sandwich"-type composite panels used in the ProZero series have better energy absorption capacity compared to for instance aluminium. This means that the structural integrity of the vessel is better preserved in the occasion of collision with objects. The sandwich panel acts as a closed cell, so that in the event of a collision where the outer skin is compromised, water intake is confined and obstructed whereas a similar aluminum panel will suffer full penetration which sets the vessel and crew at risk.

#### Working together

At Tuco, we carefully draw out all the potential inherent in these materials and we continuously work together with the Danish Technical University amongst others to verify the mechanical properties and advantages of composites.



**Unmatched strenght**  
Confront the elements with confidence. Built for strenght, safety and durability.

### WORKSHOP AND INSTRUCTIONS

#### Professional training – skilled instructors

We can provide a variety of operations and maintenance courses that can accommodate clients from a number of sectors including Wind, Maritime, Oil & Gas and Military. Teaching is performed by our expert instructors, who have trained more than 8000 people.

#### A selection of ProZero courses:

- Introduction to materials
- Introduction to basic techniques
- Safety
- STCW - Personal Survival Techniques
- STCW - Proficiency in Fast Rescue Boats
- STCW - Proficiency in Fast Rescue Boats Refresh

Contact us at [mail@tuco.dk](mailto:mail@tuco.dk) for more info.



# PRO:ZERO

## TWO DAY WORKSHOP INCLUDED

## DROPTEST: COMPOSITE

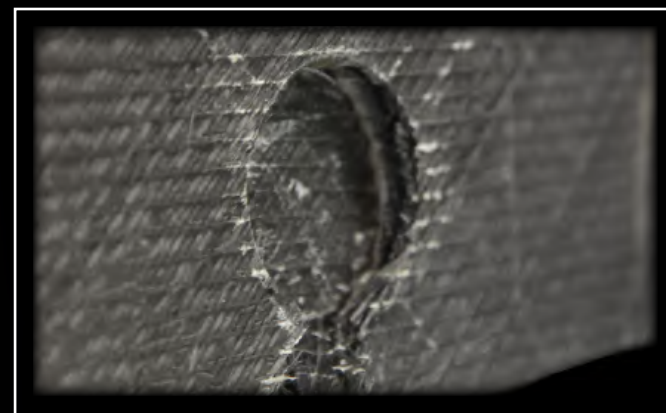
### Composite hull structure

- Dropping a 12,5 kg load from 6 m height.
- 25mm sandwich panel with PVC core.
- A controlled release mechanism lets the load falls straight down and ensures reproducibility of results.

## RESULT:

### Absorbs the impact

- Only the outer skin of the hull structure is penetrated – **No water intake, no immediate risk** for boat and crew.
- The sandwich core absorbs the energy from the impact and the inner skin remains undamaged.
- The vessel can return safely to harbour with no risk for crew and vessel.



\* Image shows penetration of only the frontside of the sandwich panel because the inner core absorbed the impact

## DROPTEST: ALUMINIUM

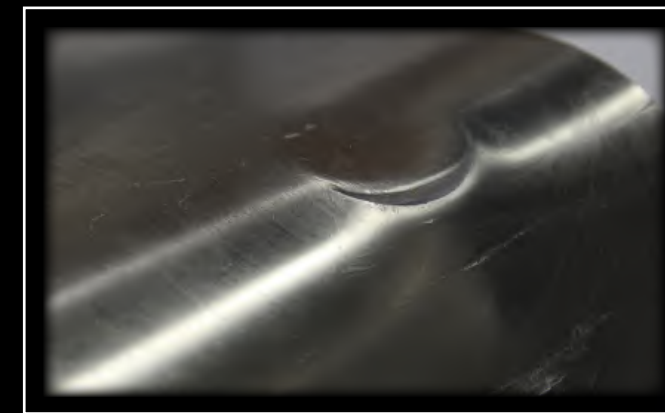
### Aluminium hull plating

- Dropping a 12,5 kg load from 6 m height.
- 5 mm aluminium hull plate.
- A controlled release mechanism lets the load falls straight down and ensures reproducibility of results.

## RESULT:

### Water intake

- Impact on the aluminium hull plating results in **immediate water intake** with **crucial risk** for crew and boat.
- Damage like this requires instant attention.



\* Image shows full penetration of the aluminiums plate

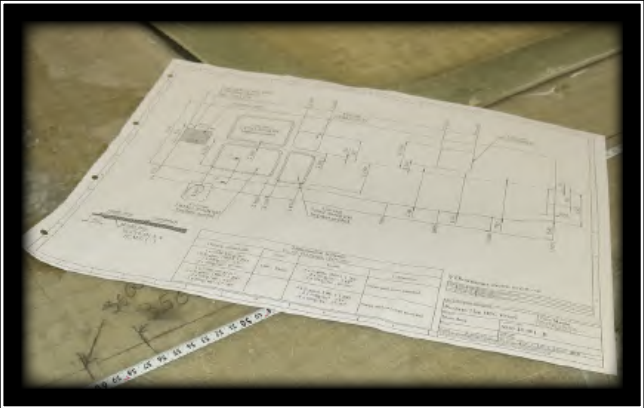
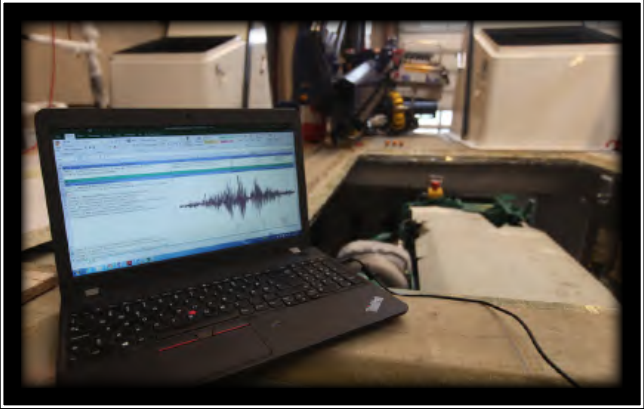


QUALITY  
ASSURANCE

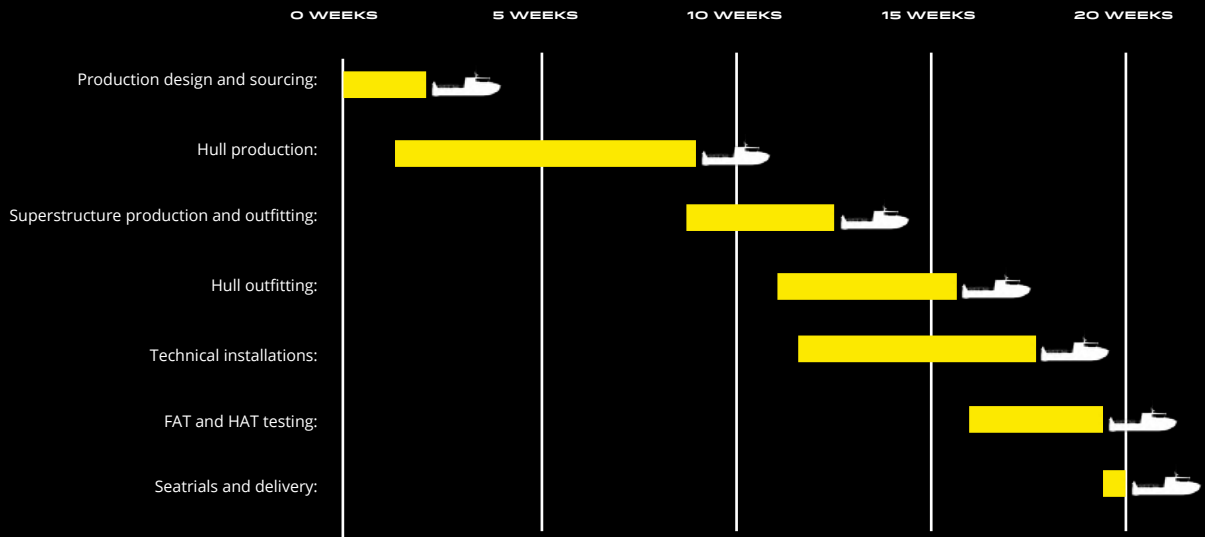
QUALITY ASSURANCE

Quality comes first

Quality is a keyword at Tuco Marine Group. In our pursuit of excellence, it is crucial that the quality is under complete control. We work nonstop to ensure that our products and services not only fulfill, but surpass quality requirements. Our skilled employees secure high quality at every step in the manufacturing process by performing systematic measurements and continuous monitoring of raw materials, components, assemblies and finished products.



PRO:ZERO



SHORT LEAD TIME  
EFFICIENT PRODUCTION PLATFORM

SERIAL PRODUCTION

Merging unparalleled quality with cost-efficiency and prompt delivery

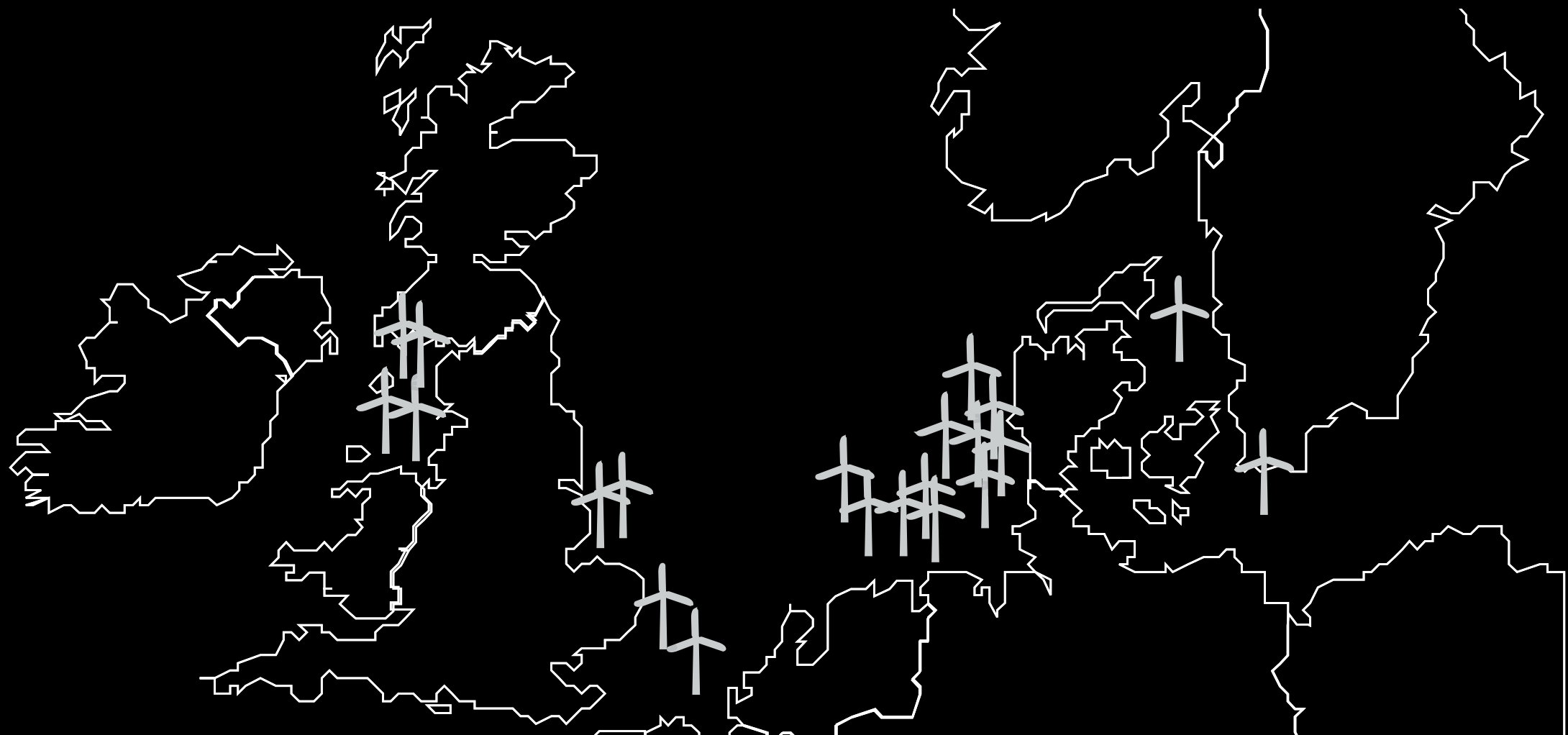
Construction with fiber-reinforced composites is highly suited for serial production. Tuco has developed an exceptionally efficient modular production method to fully exploit the advantages inherent in composite materials. To guarantee product excellence and quality uniformity across our range of vessels, female moulds are applied in the production of all ProZero hulls. This permits a very high degree of accuracy and consistency in the manufacturing process so that every single hull lives up to our rigorous quality standards. Production using high quality moulds outperforms any other building technique in terms of cost-effectiveness.

Our modular production method enables us to integrate specific design requests and we cooperate closely with all involved stakeholders to deliver uncompromising quality and excellent products without sacrificing short delivery times.



# WIND FARM REFERENCES

- Belwind 1
- Horns rev 1
- Horns Rev 3
- Sandbank
- Belwind Alstom Haliade
- Anholt wind farm
- Dolwin 2
- Gwynt y Môr Offshore Wind
- Meerwind OWF
- Borkum Riffgrund Offshore
- Gemini offshore
- Race bank Windfarm
- Butendiek OWF
- Godewind 1
- Godewind 2
- Baltic 2
- Dantysk
- Veja Mate
- Burbo Bank
- Lincs
- Walney Phase 1
- Walney phase 2
- Meerwind Sûd/Ost
- EnBW Baltic 2
- Galloper



## THE BEST TEAM

### Expert team

Modern boat building requires more than the expert skill of a single artisan. To build boats that accommodate the demands of today's maritime infrastructure, it requires innovative thinking and careful coordination of a long range of complementary skills. That is why the team at Tuco Marine is represented by everything from traditional craftsmen to 3D animators and marine engineers, who work together to create the synergy and momentum that is essential for the company to succeed. The sense of mutual commitment and shared accountability amongst the members of our team is exactly what keeps Tuco Marine at the vanguard of maritime commerce and technology. Thus, the team at Tuco Marine is not just a collection of individual people, but a collective working toward a common goal and sharing the rewards.



## PRO:ZERO

# REFERENCES



\*To the above comes a large number of businesses within Renewable Energy and Offshore that are covered by Non-Disclosure agreements