BENETTI DELFINO 95'

Technical Specification

Release 06 April 2018

Valid for Hull: **106**

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00.10 GENERAL INFORMATION

00.10.01 GENERAL

Azimut-Benetti Shipyard is pleased to present the general specifications for the Delfino 95 feet length full displacement Motoryacht, with bulbous bow and equipped with twin screw propellers and twin diesel engines.

The yacht has been specifically designed, and is to be used solely, for recreational purposes.

The configuration of this Yacht is a triple deck arrangement, plus sun deck and with raised pilot house.

The design and construction will be strictly in accordance with the following specifications, that describe the standard Yacht version.

The present Technical Specification, named Specification in the following, is referred to the General arrangement (edition in force at the date of the present specification).

Any Owner request of upgrading/modification to the Specification, to the general arrangement and to the drawings, will be evaluated and quoted accordingly if feasible.

Some options, that can be illustrated apart, are available for the Delfino 95'.

00.10.02 PARTIES

The Builder:	Azimut|Benetti S.p.A, Div. Benetti.
Exterior and Concept Designer:	Giorgio M. Cassetta – Yacht & Interior Design
Interior Concept Designer for Owner's and guests areas:	A+A
Naval Architect:	Pierluigi Ausonio Naval Architecture. Azimut|Benetti S.p.A, R&D Department.
Engineering:	Azimut|Benetti S.p.A, R&D Department and Div. Benetti Technical Department

00.20 DESIGN AND PERFORMANCES

00.20.01 MAIN CHARACTERISTICS

Length overall:	95'	28,95	m	
Waterline length at full load:	79'	24,07	m	
Load line length	<78' 9"	< 24	m	
Beam moulded:	22' 2"	6,75	m	
Beam overall:	23'	7,00	m	
Draft at half load (midship value relating to the lowest point, including the appendage of stabilizer fin not operating):	5' 11"	1,82	m	approx
Draft at full load (midship value relating to the lowest point, including the appendage of stabilizer fin not operating):	6'2"	1,89	m	approx
Displacement light ship **(1)**:		114,5	t	approx
Displacement half load **(2)**:		130,5	t	approx
Displacement full load **(3)**:		139	t	approx
Total Fresh water capacity:	660 USG	2,500	lt	approx
Total Black/Grey water capacity:	766 USG	2,900	lt	approx
Total Black/Grey water capacity:	766 USG	2,900	lt	approx
Accommodations for Owner & guests:	10 persons in 5 cabins			
Accommodations for crew:	5 persons in 3 cabins			

The above values are susceptible of updating after the completion of the first construction.

Notes:

(1) Lightship load condition: standard equipment installed (no tender, no pwc, no luggage, no options, no owner's supply…), empty fuel/fresh/sewage/grey water tanks, 10 passengers + 5 crew.

(2) Half load condition: standard equipment installed (no options considered), owner supply up to 2,5 ton, provision at 50% (0,3 ton), fuel, fresh water and black/grey water tanks at 50% of nominal value, 10 passengers + 5 crew and their effects.

(3) Full load condition: standard equipment installed (no options considered), owner supply up to 2,5 ton, provision at 100% (0,6 ton), fuel and fresh water tanks at 100% of nominal value, empty black/grey water tank, 10 passengers + 5 crew and their effects.

00.20.02 HULL DESIGN, STABILITY

Trim and stability calculations will be carried out to verify that the vessel will have suitable trim and stability in normal service conditions and will comply with applicable rules.

The Yacht is to float according to his design waterline in the full load condition, with a tolerance of ± 0.30 m on the design LBP for the trim.

A Stability information booklet containing the stability characteristics of the Yacht under standard load conditions (lightship condition, full load/departure and 10% load/arrival) will be prepared according to the Rina Rules for Pleasure Yachts.

The standard loading conditions for stability calculations are defined in the following way.

- Full load / Departure condition for stability calculation:
  - fuel oil and fresh water tanks at 98% of maximum capacity, with max free surface correction,
  - sewage and greywater tanks at 10% of maximum capacity, with relevant free surface correction,
  - full number of passengers and provisions at 100%.
- 10% load/ Arrival condition for stability calculation:
  - fuel oil and fresh water tanks at 10% of maximum capacity, with relevant free surface correction,
  - sewage and greywater tank at 90% of maximum capacity, with relevant free surface correction,
  - full number of passengers and provisions at 10%.

An Inclining Test and Lightweight Check will be carried out by Shipyard for the prototype, in order to establish the Yacht lightship weight and center of gravity position to be used in the Stability

information booklet. For the sister ships, according to RINA Rules for the Classification of Pleasure Yachts criteria, a Lightweight Check will be carried out.

Owner's supplies up to 2.5 metric tonnes (see para 10.01.01) will be allowed and will be considered in the lightship condition for stability calculation (not to be considered in performance calculation displacement).

An extra weight of 5 metric tonnes will be taken into account in stability calculation as yacht growth margin (not to be considered in performance calculation displacement).

00.20.03 PERFORMANCES

Max speed [(4)]:	14 knots
Speed at 85% of max power [(4)]:	13 knots
Range at 10 knots [(5)]:	2320 nm

The above values are susceptible of updating after the completion of the first construction.

Notes:

[(4)] Speed performance must be considered as a "target"; cruising speed levels refer to the following conditions:

- test displacement conditions: half load, defined at 00.20.01;
- suction air temperature = 25°C;
- sea water temperature = 25°C;
- atmospheric pressure = 103250 Pa;
- sea condition almost quite (Douglas scale 1);
- wind speed not exceeding Beaufort scale 1, with wave height < 0.2 m;
- hull, transmissions, steering and propellers clean;
- stabilizer fins operating;
- in water with a depth of more than 50 m;
- liquids inside the tanks adjusted to obtain the right static trim and heel;

For different environmental conditions, performance data will be adjusted according to:

- ITTC 7.5-04-01-01.2 rev.00 2005 "Full scale measurements speed and power trials – Analysis of speed/power trial data,
- ISO 3046.

For all optional and additional equipment reduction in speed performance will be applied:

- maximum speed: 0.2kn for every 5t weight in addition.

The maximum overload allowed is equal to 10t.

(5) Performance range must be considered as a "target"; and it is refered to the following conditions:

- half load displacement, defined at 00.20.01;
- suction air temperature = 25°C;
- sea water temperature = 25°C;
- atmospheric pressure = 103250 Pa;
- sea condition almost quite (Douglas scale 1);
- wind speed not exceeding Beaufort scale 1, with wave height < 0.2 m;
- hull, transmissions, steering and propellers clean;
- stabilizer fins operating;
- in water with a depth of more than 50 m;
- liquids inside the tanks adjusted to obtain the right static trim.

Performance range is estimated taking into account no suctionable fuel (2,5%) and consumption of one standard generator (55 kW) at 75% load.

For different environmental conditions, performance range will be adjusted according to ISO 3046.

For all optional and additional equipment reduction in range performance will be applied:

- speed 10kn: 100nm for every 5t weight in addition.

The maximum overload allowed is equal to 10t.

00.20.04 NOISE AND VIBRATION

Benetti has performed a complete noise and vibration study finalized to control the relevant levels in the various loading conditions.

The main design features adopted to reduce noise and vibration, according to the above study, are specified in the following.

a) the noise critical machinery and systems will be provided with following noise control measures:
   - suitable stiff foundations for propulsion system,
   - elastic mounting and submerged exhaust for propulsion engines,
   - elastic mounting, exhaust silencers and acoustic enclosures for gen sets,
   - flexible connectors for selected sections of piping and ducting,
   - flexible connectors at inlet and outlet of noise critical machinery,
   - the fan coils will be selected to be intrinsically quiet and will be installed in such a way to minimize the noise emitted into cabins and public spaces.

b) to minimize the transmission of airborne noise from noisy compartments to quiet spaces, adequate insulation material will be installed on all critical boundary surfaces. Of course, adequate sealing will be provided at penetrations of pipe, duct and wiring.

c) to guarantee a high degree of acoustic privacy, internal partitions with adequate insulation performances will be selected at the boundaries cabin-to-cabin, cabin-to-corridor; etc.

Noise requirements

The noise levels shall not exceed the following value in dB(A) in the specified areas and conditions, with one generator running and air conditioning on (fan coils at min. speed).

Area	Deck level	Anchor E.R. fans at min. speed	Navigation Two engines @ 1400 RPM E.R. fans at half speed
Aft guests cabins:	LD	48	65
Fwd guests cabins:	LD	45	57
Crew quarters:	LD	45	55
Main saloon:	MD	50	63
Owner's cabin:	MD	45	52
Galley:	MD	58	62
Wheelhouse:	UD	50	57
Aft main deck (ext. area):	MD	60	78

Middle sun deck (ext. area):	SD	58	73

A + 2 dB(A) tolerance will be applied to the above figures on the all measured noise levels.

Noise levels are to be measured in the centre of the compartment or external area, between 1.2 m and 1.6 m above the floor or deck, at a distance of at least 1 m from reflecting surfaces.

Noise levels measurements are to be carried out by means of a precision grade sound level meter. This sound level meter must comply with IEC60651 and IEC 60804 Type 1 standards (or recognized equivalent standard).

Noise levels have to be recorded in dB using the weighting filter - dB (A).

The sound level meter is to be set for slow response and calibrated with an acoustic calibrator before and after the measurement campaign.

The measurements shall be carried out in accordance with the following conditions:

- all doors installed and closed;
- all interior spaces to be fully decorated and finished with carpet, draperies, etc.. loose furniture in place (where applicable);
- all Owner and guest accommodation and public spaces as well crew cabins, are assumed to have carpet floor covering; all other spaces are assumed to have wooden (or equal) floor covering;
- galley extraction fan operating at lowest speed;
- galley hood extraction fan will be off;
- bow thruster not operating;
- stabilizers operating at anchor and during navigation;
- noises transmitted, by radios, HiFi equipment and kitchen appliances, shall be avoided;
- electronic noise in the wheelhouse to be such to do not dominate the target noise levels stated for the space.

Notes:

- The data indicated in this paragraph are referred to the main engines/reduction gears configuration mentioned in Chapter 7.10, to the standard General arrangement. For different configuration they have to be verified.

- In the event that a rope cutting device is installed as option upstream the propellers, the above target noise levels in navigation will be increased by 3 dB(A) in the all lower deck spaces and main deck, and by 2 dB(A) in the upper deck and sun deck area.

Vibration requirements

The maximum value of the vertical velocity vibration levels, over the frequency spectrum from 5 Hz to 100 Hz, shall not exceed following values, when measured in RMS [mm/s] in the specified areas and conditions.

Area	Navigation Two engines @ 1400 RPM E.R. fans @ half speed
Owner and guests interior luxury areas	1 mm/s
Open deck entertainment areas	1.5 mm/s
Crew quarters	1.5 mm/s

A +0.5 mm/s measurements tolerance will be accepted on the all measured vibration levels.

The vibration levels must be analyzed in FFT from 5 to 100 Hz with spectral line in constant band of 0.25 Hz and Hanning window type

Vibration levels have to be measured in the centre of the specified area.

General test conditions

The above noise and vibration requirements are based on the following conditions to be respected during noise and vibration measurements:

- wind not exceeding Beaufort scale 1, with wave height < 0.2 m,
- in water with a depth of more than 50 m,
- yacht evenly trimmed fore and aft, and athwartships,
- clean hull,
- stabilizer fins operating,
- half load; the displacement at Sea trial will correspond to the half load condition (fuel oil, fresh water and black/grey water tanks of nominal value at 50%, extra and options excluded; liquids inside the tanks may be adjusted to obtain that displacement and the even keel.

00.20.05 STANDARD AND WORKMANSHIP

Outfitting, engineering details, materials used and works carried out shall conform with the Benetti shipbuilding standards for this class of yachts.

All materials and equipment used in the construction of the Yacht will be new and suitable for the use to which they will be put.

Benetti will choose materials and equipment from a list of suitable Manufactures. The list will be delivered to the Owner's Representative before the signature of the Contract.

The selection of the Manufacturers indicated in the list for each item is at Benetti discretion. The Manufacturers, brands, materials and equipments may be changed with equivalents one at Benetti discretion.

Benetti reserves the right to change their own library/standard/selection at his sole discretion.

The layout and installation of all machinery, accessories and equipment will allow, as far as practicable, access for routine maintenance and servicing.

The workmanship and materials may be inspected by the Owner's Representatives, both at Benetti facilities and at the subcontractor facilities, after having agreed the survey date.

00.20.06 CLASSIFICATION

The Yacht described in the Specification, including its machinery, equipment and systems will be built in accordance with the following rules and regulations:

- RINA Rules for Classification of Pleasure Yachts , Class Notation: C ✠ HULL • MACH Y.

As an option the yacht will be built according to:

- Small Vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats - Alternative Construction Standards (MGN 280 for vessel operating in Area Category 2).

00.30 PROJECT MANAGEMENT

00.30.01 PROJECT MANAGEMENT

A Project Manager will be appointed by Benetti as the interface with the Owner's Representative.

Benetti will advise the Project Manager name one week following signature of the Contract.

The Owner will appoint only one Representative acting on his behalf. His name will be given to Benetti within one week following signature of the Contract.

Owner's Consultants involved, have to refer to the Owner's Representative.

Selection of materials or items of equipment to be done by the Owner and/or his Representative must be carried out in accordance with the schedule presented by Benetti to the Owner's Representative at the sign of the Contract.

The communication language will be English.

00.30.02 CHANGE ORDERS

Any modification of the design, construction, furnishing, equipment, etc. which implies a change in price, weight, stability, speed, range, noise and vibration levels, delivery time and/or whatever other feature as described in the Specification and/or shown on the drawings shall only be carried out after such modifications and any related change have been agreed in writing between the Owner and Benetti on a change order form.

It should be considered that any increase of weight will be reflected in a speed and range reduction to the figures specified in previous para 00.20.03.

When changes are requested by the Owner's Representative to Benetti, Benetti shall take into consideration the Owner's Representative requests, provided the requested change is not contrary to the Specification and the request is made prior to Benetti issuing the construction drawing to the production department, placing his order or carrying out the work relevant to the request.

Benetti will be entitled to refuse any requests in the last five months before the contractual delivery.

00.30.03 DISCREPANCIES

If there is any conflict between the Specification on the one hand and any plan or drawing relating to the Yacht on the other, then the Specification will prevail.

If, as a result of increased experience or general technical developments, other designs, materials or methods of manufacture than those stated in this Specification are found to be more efficient or better suited to the intended purpose, they may be adopted at Benetti discretion.

00.30.04 ACCEPTANCE AND DELIVERY

After Sea trial and Quay Tests the Yacht will be delivered to the Owner afloat at Benetti Yard in a clean condition with all systems in proper working order. An official delivery and acceptance protocol as specified in the Contract will be signed.

00.30.05 TEST MEMORANDA

Before delivery, the Shipyard will carry out below-listed trials and tests to verify all the systems and equipments:

1. <u>Quay tests</u>

- Fuel oil system.
- Fire extinguishing system in engine room,
- Sea water cooling system.
- Cold and hot fresh water system.
- Sewage and sanitary system.
- Scuppers system.
- Engine room ventilation.
- Air conditioning system.
- Tender launching and haulage.
- Stern gangway.
- Doors, windows, portholes hose test.
- Alarms and monitoring.
- Navigation and communication equipment set-up.
- Entertainment equipment.

- Fire detection system.
- Diesel generators load test.
- Lighting system, internal and external.
- Batteries and battery charger.
- Shore power.
- Navigation lights.

2. <u>Sea trial</u>

- Yacht speed (measured by the onboard instruments).
- Consumption at three speeds (to define a consumption curve).
- Main engines exhaust back pressure.
- Manoeuvring and steering gear.
- Noise and vibration levels measurements at navigation.
- Windlasses.
- Watermaker.
- Magnetic compass adjustment.
- Bow thruster.
- Stabilizer fins, underway and at anchor.
- Navigation and communication equipment.

All costs in connection with the Quay tests and Sea trial will be at Benetti account.

After delivery of the Yacht, remaining fuel oil and lubricating oil in tanks will be invoiced to the Owner, at current prices at time of delivery.

00.40 DOCUMENTS AND DOCUMENTATION

00.40.01 CERTIFICATES

At the time of the Yacht delivery, Benetti shall obtain and supply the following documents and certificates necessary for the proper operation of the Yacht such as:

- Builder's Certificate, issued by Benetti;
- Short Term Classification Society Certificate, issued by RINA.

At the end of the validity of Short Term Certificate, Benetti will deliver the Certificate of Class to the Owner's representative.

As an option the yacht will be built according to:

- Small Vessels in Commercial Use for Sport or Pleasure, Workboats and Pilot Boats Alternative Construction Standards (MGN 280 for vessels operating in Area Category 2).

Upon specific request, the following certificates (option) may be supplied:

- International Sewage Pollution Prevention Certificate (Marpol Convention Annex IV), issued by RINA on behalf of the Flag Authority.
- Shipyard Hull antifouling Declaration.
- Semplified Tonnage Certificate.

When RINA is not authorized by the Flag Authority, the above certificates will be issued by other delegated Bodies.

00.40.2 DRAWINGS

Benetti will prepare drawings and carry out calculations necessary for the construction of the Yacht in accordance with the Classification Society requirements.

The following engineering and arrangement drawings will be made available to Owner's Representatives for operational purpose. The Shipyard may deliver such drawings in electronic format (.pdf):

1) general arrangement;
2) stability booklet;
3) capacity plan;
4) manhole/tank penetration plan;
5) bilge and fire fighting system;
6) sea water cooling system;
7) air venting system, overflows, sounding pipes;
8) scupper system;

9) fuel oil system;

10) hot and cold fresh water system;

11) stabilizers system (included into the manufacturer instruction manual);

12) bow-thruster arrangement (included into the manufacturer instruction manual);

13) steering gear system (included into the manufacturer instruction manual);

14) black and grey water system;

15) mooring arrangement;

16) engine room arrangement;

17) main engine exhaust system;

18) generator exhaust system;

19) shaft line arrangement;

20) electrical wiring diagrams and cable list;

21) electric switch board and distribution panels arrangement;

22) antennas plan,

23) safety plan;

24) docking plan;

25) engine room ventilation plan;

26) air conditioning system.

00.40.03 DOCUMENTATION AT DELIVERY

The following documents will be supplied to the Owner's Representative at the delivery of the Yacht:

- one set of Original Equipment Manufacturers manuals for engine room main machinery, stabilizer fins, bow thruster, deck equipment, air conditioning system, galley and laundry equipment, entertainment equipment, nav/comm/signalling systems. All manuals will be in English language. The manuals will be in the electronic format (.pdf).
- Reports of shop tests of main engines and generators, if available.
- Drawings as per above paragraph 00.40.02.
- Magnetic compass adjustment report.

- Certificates as per paragraph 00.40.01.

01 STRUCTURE

01.11.00 HULL MATERIALS

Hull and deck will be built in glass-fiber reinforced plastic (GRP).

The Yacht will be constructed of a combination of foam (closed-cell) core sandwich and single skin fiberglass construction utilising mat, unidirectional, biaxial and woven E-glass as shown on the structural drawings approved by the Classification Society.

For the lamination of structural parts, hull, deck and reinforcements, a polyester isophtalic and vynilester resin will be emploied.

The prevention of osmosis phenomenon of the hull will be carried out by using a iso-neopentylic gelcoat, in order to create a suitable barrier to water.

A further barrier to hydrolysis of the GRP laminate will be obtained by using a vynilester resin for the execution of the skincoat (first lamination layers after the gelcoat).

Antifouling paint will be applied to the underwater hull as per manufacturer recommendations.

The mechanical and chemical properties of the laminates will be verified by material tests in accordance with the Classification Society requirements.

01.11.01 HULL STERN STRUCTURE

A carbon fiber (CFRP) bathing platform will extend aft of the transom above waterline for the full width. On the sides it will be integrally built with the stern section of the hull and in the center will be created by the transom door. The transom door becomes a large bathing platform when it is opened.

01.11.02 HULL AND DECK CONSTRUCTION

The structural design and assessment will be according to the most recent experience in design and construction of GRP for this type of Yacht.

The hull structure shall be framed with longitudinal main bottom and main deck girders and transversal web frames and bulkheads.

The hull bottom, transom and the hull side will be built in single skin-type GRP with longitudinal stiffeners and transversal frames.

The main deck will be built in GRP sandwich-type with PVC foam core.

Shell and deck thickness will be according to calculations, levels of stress to be carried, and Rules.

The hull will have GRP tanks for fuel oil, fresh water, black and grey waters integrated into the hull structure.

The main fuel oil tank will extend from the port to starboard side.

Black and grey waters tank will be located between the structural fuel oil tank, at bow of the central fuel oil tank.

Water tank will be located at bow of the other tanks.

Each structural tank will have at least one GRP manhole.

Tank internal surfaces will be treated in order to avoid that the liquid stowed in the tank will penetrate the GRP material.

Structural bulkheads will be carried out in of the sandwich-type GRP, consisting of a PVC foam and single skin GRP on external layers.

The watertight collision bulkhead will be positioned as standard configuration in accordance with the Classification Society requirements for Pleasure Yachts.

Stabilizer fins will be provided below guests area. The shaft will be properly supported by a local reinforcement.

01.11.03 HULL BOW STRUCTURE

The bulbous bow will be in GRP and integrated in the hull.

Nr. 2 chain lockers of such a volume suitable to contain port and starboard chains will be provided forward the watertight collision bulkhead and aft the forepeak.

A GRP bow thruster tunnel will be provided and will be fixed to the hull by means of an adequate lamination.

01.11.05 MAIN SEA CHESTS

GRP sea chests integrated in the hull bottom will be installed for main engines, generators and auxiliary services sea water supply.

01.11.08 STRUCTURAL REINFORCEMENTS

Local reinforcement into hull, deck and bulwark will be provided in areas of heavy loading such as:

- fore and aft sections, in order to allow adequate strength to resist wave action and pitching;
- heavy machinery foundations;
- shaft brackets;
- stabilizers fins;
- rudders;
- bow thruster tunnel;
- sea chests;
- hull transducers;
- anchors windlasses;
- capstans;
- bollards;
- fairleads;
- anchors pockets;
- tender and pwc hauling and launch system.

01.11.10 KEEL

The structural keel will not protrude below the baseline of the Yacht and will have a structure designed to resist to the stress caused by docking.

01.11.11 BULWARK

GRP bulwark will be provided, and will be integrated to the hull sides.

The bulwark will be equipped with freeing ports, in compliance with the applicable rules.

01.11.12 HULL DOORS

The Yacht will be equipped with a transom door that will open turning down to allow the launching and haulage of the tender and the pwc.

01.11.99 HULL MANUFACTURE

The lamination will be made by hand lay-up process.

Hull and superstructure will be built out following the standard process coming from the shipyard's experience.

The hull and the superstructures will be laminated into female moulds.

The mould surfaces will be fair and smooth.

The moulding will be free from uneven edges and its exterior surface will be properly faired.

01.13.01 ANODES AND SENSORS HOUSING

Suitable housings will be fitted into the hull bottom for depth-sounder, speed transducer and other sensors.

01.13.02 PROTECTION FROM ANCHORS AND CHAINS

Stainless steel profiles will be fitted on the bow bulbous as protection from anchor chains.

01.13.05 WINDOWS AND PORTHOLES FRAMES

GRP porthole flanged collar will be provided integrated into the hull side.

GRP window support will be provided for glued fitting windows.

01.13.08 PROPELLER SHAFT BRACKETS

Single type brackets will support the shafts on the stern side.

The spread angle and bracket thickness will depend on the number of propeller blades and the propeller revolutions in order to reduce structural resonance.

Shaft brackets will be provided of single profiled arm and constructed of bronze and connected to a properly designed foundation integrated in the hull.

01.13.09 DOUBLE PLATES AND INSERTS

Aluminium and steel inserts will be fitted to distribute concentrated stress due to the fastening of heavy machinary and parts to the hull structure.

01.13.10 MAIN ENGINES OVERBOARD DISCHARGE

Main engines will have main exhausts located below the waterline in GRP boxes integrated in the hull bottom, and will have the by pass exhausts located above the waterline for low speeds.

Outlets will be designed, in order to keep back-pressure below the limit allowed by the engines Manufacturer.

01.13.11 GENERATORS OVERBOARD DISCHARGE

Diesel generators exhausts will be provided, with sea water discharge placed under waterline and gas exhaust placed above waterline.

01.13.12 RUBBING STRAKE

Rubbing strakes, integrally built in GRP, will be provided at main deck level and above waterline level.

01.13.14 ANCHOR CHAIN HAWSE PIPES AND POCKETS

Hawse pipes will be of stainless steel AISI 316 L with half-round ends in anchor pockets and at deck level.

Eyebolt for each chain and quick release will be provided.

The hull will be laminated with the hawse positioned into the mould. This procedure will reduce gaps and will allow the alignment of the hawses with the hull surface. The fixing bolts will be laminated to prevent water infiltrations.

01.14.01 HULL BASEMENTS AND SUPPORTS

Proper base plates will be provided to support each machinery, equipment and switchboard in engine and technical rooms.

The engine foundation will be made by GRP structure (longitudinal girder) on which a suitable metallic support will be fitted.

The girders will be an integral part of the girder system.

Adequate drip trays provided with discharge valve will be fitted under fuel oil and oil machinery and equipments subject to leakage.

Drip trays and equipment base plates in engine room and outside engine room will be in aluminium.

01.20 SUPERSTRUCTURE STRUCTURE

01.21.00 SUPERSTRUCTURE MATERIALS

The superstructure will be built, mainly, with a cored sandwich structure in the decks and on the sides utilising, carbon fiber reinforced polymers (CFRP) for second superstructure and e-glass fiber for first superstructure (GRP), as shown on the structural drawings approved by the Classification Society.

Where necessary single skin laminate will be provided.

01.21.01 SUPERSTRUCTURE CONSTRUCTION

The manufacturing process will be VIP (vacuum infusion process). Post-curing will be carried out, according to recommendations of resin supplier, in order to guarantee polymerization process completion.

FRP bulwarks at upper and sun deck level will be provided.

The bulwarks will be lined internally with FRP.

01.21.07 SUPERSTRUCTURE REINFORCEMENTS

Local reinforcements will be fitted, when necessary, to support concentraded loads due to heavy parts and objects.

01.23.02 ROLL-BAR

A CFRP arch will be provided.

An upper part will be provided to meet the antennas plan for the standard navigation and communication equipment listed at Ch. 06.

01.23.05 SUPERSTRUCTURE PILLARS

Steel pillars will be fitted in the superstrucure between the main deck and the first order and between the first and second order.

01.40 ASSEMBLING

01.41.00 SUPERSTRUCTURE TO HULL FASTENING

The connection between the superstructure and the main deck will be obtained by means of structural adhesive or laminate joint, in according to the Classification Society requirements.

02 OUTFITTING

02.10 EXTERNAL DECKS OUTFITTING

02.11.00 DECK LINING

External decks will be planked with teak as per general arrangement and according to Benetti standard 21100, nominal thickness 12 mm (+/-0,6 mm).

Bathing platform and transom door will be planked with teak as per general arrangement and according to Benetti standard, nominal thickness 12 mm (+/-0,6 mm).

External stairs will be planked with teak as per general arrangement and according to Benetti standard, nominal thickness 12 mm (+/-0,6 mm).

The colour of the bonding is black.

02.14.00 EXTERNAL CEILINGS

External ceilings will be made in GRP panels, painted to match the superstructure color, with satin finish.

02.15.00 EXTERNAL FURNITURE OUTFITTING

External lockers will have a scupper on the drip tray around the horizontal hatches. In the technical lockers there will be a plastic grating on the floor.

Lockers used for storage of deck equipment will be Formica lining with removable shelves.

Lockers will have stainless steel fittings according to Benetti selection.

02.15.01 EXTERNAL LOOSE FURNITURE

Loose chairs, armchairs, tables, stools, sofas, etc. will be supplied and installed by Benetti according to the Loose furniture plans.

External loose forniture will be provided, according to Benetti select. Deviation from standard equipment will be quoted accordingly.

02.20 FAIRING, PAINTING AND INSULATION

02.22.00 TECHNICAL SPACES FLOORING

The external lockers, storages and internal surfaces of FRP furniture, will be finished in white gelcoat.

02.25.00 PAINT, GENERAL

Hull and superstructure external surfaces will be painted, colour Snow White.

The external surfaces appearance will be as per Benetti standard BEN-MI-081.

02.25.01 HULL TOPSIDE PAINTING

The topsides will be painted, colour Snow White.

One boot stripe will be painted above the water line, colour black.

02.25.02 UNDERWATER HULL PAINT

Hull bottom will be treated with anti-osmosis primer and antifouling paint, colour black.

02.25.03 SUPERSTRUCTURE PAINT

The superstructure will be painted, colour Snow White.

02.25.04 INTERNAL PAINT

Bilges

The bilges will be finished in gelcoat, colour white.

Tanks Top

Tanks top will be finished in gelcoat or paint, colour white.

Bulkheads and sides

All the visible and uncovered internal surfaces will be finished in gelcoat or paint, colour white.

02.25.07 TANK TREATMENT

Fuel oil and black/grey water tanks will be covered with a gelcoat based on vinylester resin.

Fresh water tank will be coated with a gelcoat based on isophthalic/neopenthylglycol polyester resin.

02.25.08 PIPING PAINT

Metallic pipes in technical spaces, visible areas or in bilges will be white painted unless originally treated by the manufacturer. The following type of pipes and fittings will not be treated: inox polished, copper, plastic, PVC, press-fitting, cuni-press, multilayer, watermist, hydraulics.

02.25.09 MACHINERY AND OUTFITTING EQUIPMENT PAINT

Main machineries and the equipment (main engines, diesel generators, bilge and fire pumps…) will be white painted unless originally treated by the manufacturer.

Nuts and bolts, gaskets, inox parts, copper stripes, piping insulation, auxiliary machinery base plates and drip trays will not be painted.

02.27.02 EXHAUST GAS PIPES INSULATION

The hot sections of exhaust pipes in stainless steel of main engines will be completely insulated by a rigid material which allows a maximum temperature of about 65°C.

02.27.03 PIPING INSULATION

Hot water pipes will be insulated.

Scupper and grey/black water pipes will be insulated only in the guest accommodation.

Chilled water pipes will be insulated inside and outside engine room. Maximum care will be taken to ensure the insulation continuity in order to avoid any condensation.

02.27.04 AIR CONDITIONING DUCTS INSULATION

Air conditioning supply ducts will be insulated with proper material in order to reduce heat/cold loss and avoid condensation when is necessary.

02.27.05 MOUNTING OF FLOOR BULKHEADS, CEILINGS AND PARTITIONS

The floor of lower deck is built with lightened panels and it is elastically assembled on the support structure which is realised with aluminium section bar. The aluminium section bar are sized with adhesive to the hull bottom structures.

Hatches and removable sections will be made where required, hatches will be fitted with proper lifting devices.

Partition panels of ceilings will be installed with rigid connection.

02.27.07 VIBRATION DAMPING TREATMENT

Vibration damping treatment will be applied in the most critical part at Benetti discretion to minimize the transmission of vibration and structural born noise.

02.27.09 FIRE AND COMFORT INSULATION

Yacht insulation will be carried out taking into account fire and comfort requirements and will be installed on board according to insulation plans and details developed by Benetti.

02.27.10 ENGINE ROOM INSULATION

The insulation of the engine room will be carried out in compliance with the Benetti Standard to guarantee the fire protection according to Classification Society requirements and carefully applied.

Additional material will be added where necessary to improve comfort levels, thickness and weight will be chosen according to the noise and vibration study.

Engine room ventilation casings will be properly reinforced and insulated to achieve the minimum noise transmission to the adjacent accommodation.

02.30 NAUTICAL AND DECK EQUIPMENT

02.31.01 RUDDER BLADES AND STOCKS

Two spade rudders will be provided, made of AISI 316, sized to ensure good evolution capabilities at low speed.

Rudder stocks will be made in Marinox 17, sized according to Classification Society requirements.

The rudder skeg will be mounted with a minimal clearance to the rudder blade.

02.31.02 RUDDER HOLES

Rudder tubes of suitable diameter will be connected to the hull bottom with flange and filling with chockfast orange or blue steel for any tolerance.

02.31.03 RUDDERS BEARINGS

Rudder bearings at lower end of rudder stocks to be made of bronze material.

02.31.04 RUDDER MACHINERY, PUMPS AND ACCESSORIES

The steering gear will consist of nr. 2 rams connected to the rudder stocks and connecting rod.

Rudder angle will be limited to 35 degrees each side.

The steering gear will be consists of the following components:

- nr. 2 electrical actuator for wheelhouse and sun deck stations;
- nr. 1 hydraulic power pack will be fitted in the engine room, it will have two electric pumps and one oil tank;
- nr. 2 cylinders (one for each rudder);
- tiller arms.

An hydraulic hand pump with steering wheel will be provided for emergency manoeuvring.

02.31.05 RUDDER CONTROL SYSTEM

Rudder angle indicators will be installed at all steering positions.

02.32.01 ANCHORS WINDLASSES

Nr. 2 electric windlasses of the vertical type (MZ ELECTRONIC/ITALWINCH SUN) will be installed. The windlasses will be placed at the bow of the Yacht, on a recessed stainless steel plate of the main deck floor.

Electric power will be 230 Vac, 3 phases, 50Hz, 4000W.

02.32.02 CAPSTANS

Nr. 2 electric foot-operated vertical capstans (MZ ELECTRONIC/ITALWINCH SAMOS) will be fitted on aft deck. The capstans will be raised from deck level on a dedicated manoeuvring area each side and locally controlled.

Electric power will be 230 Vac, 3 phases, 50Hz, 2200W.

02.32.03 MOORING BOLLARDS

The following polished AISI 316 L stainless steel bollards will be supplied and installed:

- nr. 4 on aft main deck;
- nr. 4 on forward main deck.

Size according to Benetti standard.

02.32.06 FAIRLEADS

Nr. 2 polished AISI 316L stainless steel fairleads will be provided on main deck at mid sides.

Size according to Benetti standard.

02.32.07 ROLLER FAIRLEADS

The following polished AISI 316 L stainless steel roller fairleads will be supplied and installed:

- nr. 2 on aft main deck bulwark;
- nr. 4 on forward main deck bulwark.

Size according to Benetti standard.

02.32.08 ANCHORS

The Yacht will be equipped with nr. 2 galvanised steel SHHP (Super High Holding Power) anchors of 97 kg each, according to rules.

The anchoring equipment specified in this document is intended for temporary mooring of a Yacht within or near a harbour, or in a sheltered area.

The equipment is therefore not designed to hold the Yacht off fully exposed coasts in rough weather or to stop the Yacht which is moving or drifting. In such conditions the loads on the anchoring equipment increase to such a degree that its components may be damaged or lost owing to the high energy forces generated.

The anchoring equipment specified in this document is deemed suitable to hold the Yacht in good holding ground where the conditions are such as to avoid dragging of the anchor. In poor holding ground the holding power of the anchors will be significantly reduced.

It is assumed that under normal circumstances the Yacht will use one anchor only.

02.32.09 MOORING LINES

The following lines will be supplied:

- nr. 3 mooring lines, each of 70 m length;
- nr. 3 mooring lines, each of 25 m length.

The lines will be in polyestere with diameter in accordance with the Classification Society requirements

02.32.10 CHAIN ROLLERS

Polished stainless steel rollers will be fitted for each anchor in order to prevent friction at the upper end of the hawse pipes.

Size and type will be chosen from Benetti standard.

02.32.11 CHAIN STOPPERS

Stainless steel stoppers will be installed for each anchor to hold in position the anchors against the anchor pocket.

Size and type will be chosen from Benetti standard.

02.32.13 CHAIN QUICK RELEASE

Anchor chains will be connected to the hull by a quick release system, to allow safe release when in emergency conditions.

02.32.14 ANCHOR CHAINS

The Yacht will be equipped with nr. 2 chains made in galvanised steel of 12 mm diameter link, length of each chain 137,5 m.

02.33.01 FLAG POLE

A stainless steel flagpole will be fitted on the stern, as per Benetti Standard.

02.33.02 FOREMAST

A GRP forward mast will be provided on the external top of the wheelhouse as shown on the profile. It will have the necessaries bases for the masthead light, searchlight and whistle.

02.33.03 JACK STAFF

A stainless steel jack staff will be fitted on the bow, as per Benetti Standard.

02.34.01 BOAT HOOKS

Nr. 2 varnished wood boat hooks, will be provided.

02.34.02 ROPE LADDER

Nr. 1 rope ladder will be provided for pilot boarding.

02.34.05 YACHT BELL

One chromed brass Yacht's bell, 300 mm diam. will be supplied. The bell will be engraved with Yacht's name and year of delivery and fitted on the fore deck.

02.34.06 SIGNAL SHAPES

Three balls and one diamond, black colour and of folding type will be provided.

02.34.08 NAUTICAL INSTRUMENTS

A round clock and barometer will be installed in the wheelhouse.

02.35.00 PROTECTIVE FABRIC COVERS

Protective covers for:

- nr.2 anchor windlasses;
- nr.2 capstans;
- nr.1 horn;
- nr.1 search light;
- nr.1 bell;
- nr.1 coffe table aft main deck;
- nr.1 sofa aft main deck;
- nr.1 sunpad forward upper deck;
- nr.1 dining table aft upper deck;
- nr.1 coffe table aft upper deck;
- nr.2 sofas aft upper deck;
- nr.1 bar furniture upper deck;
- nr.1 storage upper deck;
- nr.1 sofa forword upper deck;
- nr.1 consolle sun deck;
- nr.1 pilot sofa sun deck;
- nr.1 sofa sun deck;

will be provided in white "textile".

Sun screen black colour for wheelhouse windows will be provided.

02.40 WINDOWS, DOORS AND HATCHES

02.41.01 PORTHOLES AND DEADLIGHTS

Permanent fixed type portholes and openable will consist of polished stainless steel frame provided of tempered glass fixed to GRP collars integrated into the hull. The portholes will be approved by the Classification Society.

Openable portholes will be fitted with a deadlight, in the crew area.

02.41.02 WINDOWS

Sizes and positions of the windows are shown in the general arrangement drawing.

The glass thickness will be according to Classification Society requirements.

Windows colour will be grey europe, wheelhouse front and side windows will be clear.

Windows will not be openable.

All windows will be bonded to the GRP frame formed as part of the hull or superstructure.

Each glass will be provided with a black band around its contour in order to prevent the UV degradation of the bonding.

02.41.03 WINDOW WIPERS

Electric window wipers will be fitted on the forward wheelhouse windows, suitable for marine use, with a selector switch for intermittent running.

A fresh water spray, operated by a push button solenoid valve mounted on the wheelhouse console, will be provided for the front windows.

02.43.01 WATERTIGHT DOORS

Hinged watertight doors will be provided for the engine room. They will be manually operated. The open and closed position will be monitored in the wheelhouse.

02.43.02 WEATHERTIGHT DOORS

A pantograph door will be provided on the main deck at starboard for side access to the engine room/garage area. The door will be manually operated.

Size and position according to the general arrangement.

02.43.04 EXTERNAL SLIDING DOORS

Nr. 1 sliding door with stainless steel AISI 316L frame and tempered

glass will be provided on the aft main deck saloon. The glass colour will be grey europe. The door will have four leafs, one fixed at stardboard side, two sliding in the center and one on port side fixed/siliding. The door will be manually operated.

Nr. 1 sliding door with stainless steel AISI 316L frame and tempered glass will be provided on the main deck at port side for access to the galley. The glass colour will be grey europe. The door will have one leaf that will be manually operated.

Nr. 1 sliding door with stainless steel AISI 316L frame and tempered glass will be provided on the main deck at starboard side for acces to the foyer. The glass colour will be grey europe. The door will have one leaf that will be manually operated.

Nr. 1 sliding door with stainless steel AISI 316L frame and tempered glass will be provided on the aft wheelhouse. The glass colour will be grey europe. The door will have one leaf that will be manually operated.

All the doors will be weathertight according to the Classification Society requirements and secured in open position.

Size and position according to the general arrangement.

02.44.01 EXTERNAL HATCHES

Watertight hatches for access to forward locker, chain locker, engine room escape and garage escape, will be provided.

02.44.02 INTERNAL HATCHES

Hatches will be used as secondary escape from compartments. They will be fitted at deck and at bulwark and they will be watertight or weathertight according to the position.

Hatches for crew escape, guest escape and owner escape will be provided.

Panels for access to the stabilizer fins, bow thruster and technical area will be provided.

02.45.01 MANHOLES

At least one manhole for each tank will be provided.

Handles will be fitted to the manholes.

02.46.02 HULL DOORS

The stern door will be hydraulically operated and, in open position, will create a bathing platform.

Nr. 2 folding cleats will be provided on the edge of the door for tender and watertoys pwc mooring (when the door is open).

02.50 STAIRS, LADDERS, GANGWAYS, TECHNICAL FLOORS

02.51.02 INTERNAL STAIRS

Internal stairs in the guest and crew areas will have an aluminium alloy structure, properly covered as for interiors book. The stair leading to the engine room/garage area will have a GRP structure and will be properly covered as for interiors book.

Aluminium alloy ladders will be provided for access to technical room under crew area.

Ladders will be provided for escape in accommodation.

Polished stainless steel ladders will be provided for escape in engine room.

02.52.01 GANGWAY

An hydraulic retractable telescopic gangway will be fitted at stern.

The gangway will be carried out in polished AISI 316 stainless steel with teak grating and manual stanchions.

The control panel will be located on bulwark near the gangway.

Radio-operated remote control system for extension and retraction of the gangway from the quay will be supplied.

02.53.04 MANUAL SWIMMING LADDER

Nr. 1 manual/removable stainless steel swimming ladder will be provided.

The swimming ladder will be mounted on the side of the transom door when it's open. The ladder will be stored in the garage.

The steps will be made in teak.

02.54.01 ENGINE ROOM FLOORING

Aluminium knocked plate floor will be installed in engine room and technical areas.

This will be of the lean-on type. Neoprene gaskets will be mounted between the plating and the supporting angle bars.

Removable sections will be made in way of valves, filters, etc. where quick manoeuvring or access is required.

The supporting structure will be in white painted. The plating will be in anodized aluminium of the titanium colour.

02.60 HANDRAILS, PILLARS, SUN AND WIND PROTECTIONS

02.61.00 EXTERNAL METALLIC HANDRAILS

Polished stainless steel handrails prevalently made by tube diameter 42.4 mm, 33.7 mm and 26.9 mm as shown on the profile, according to Benetti standars be provided:

- main deck bulwark;
- aft upper deck bulwark;
- fore upper deck area;
- around deck opening for aft stairs on upper deck;
- nr. 2 gates will be fitted aft, at main deck level, on the stairs leading to the bathing platform;

The height and the spacing of the horizontal bars of the handrails will be according to the Classification Society requirements.

02.62.00 ENGINE ROOM AND TECHNICAL SPACES HANDRAILS

Polished stainless steel handrails will be fitted around the engines.

02.63.02 AWNING

A motorized awning will be fitted on the sun deck, on aft of the mast, to cover the aft area.

02.64.01 WINDSCREENS

A windscreen made of stainless steel frame provided with plexiglass screen will be installed on the forward part of the sun deck. The plexiglass colour will be grey europe.

02.70 LIFTING DEVICES

02.73.01 TROLLEYS FOR TENDERS AND JET SKIS

Nr. 2 electro-hydraulic stainless steel trolleys will be provided in the garage for tender and pwc handling.

The trolleys will be of the sliding type.

Tender capacity will be 900 Kg, pwc capacity will be 400 Kg.

The trolleys will be supported by the garage structure.

A remote control system for extension, retraction and lifting (inside/outside) will be supplied.

The dimensions for the tender and pwc are:

TENDER AND PWC CHARACTERISITCS		
Nr. 1 Tender	max. length	3820 mm
	max. beam	1760 mm
	max. height	960 mm
	max. weight	900 kg
Nr. 1 Pwc	max.length	2790 mm
	max. beam	1180 mm
	max. height	1040 mm
	max.weight	400 kg
NOTE: 1. The above characteristics are standard; the tender and pwc dimensions and weight suggest by the Client must be verified by Benetti technical department. 2. Tender, pwc and accessories are not included in standard equipment.		

02.75.01 EXTERNAL RAILS

External rails will be provided on both superstructure sides, in way of the external windows at side, to allow crew to clean them.

Tracks will be in anodized aluminium and will be provided with sliderod cars with pivoting shackle top. One slinging for crew use will be provided.

02.80 VARIOUS OUTFITTINGS

02.81.00 CATHODIC PROTECTION

Sea chests, piping and equipment in contact with sea water will be connected by copper wire or tape to zinc anods fitted into the transom and hull below the waterline level for cathodic protection.

A sintered bronze ground plate will be fitted externally.

A copper type ring of suitable section will be fitted all around the Yacht.

All the machinery, electrical motors, equipment, boards will be connected to the above copper tape.

All the minor features will be earthed by means of the ground wire.

A lighting conductor will be fitted at mast top and directly connected to the ground plate by a dedicated wiring.

02.81.01 ZINC ANODES

Zinc anodes will be installed to protect piping and metallic equipment from galvanic erosion.

02.82.01 DRIP TRAYS

Drip trays will be fitted under machinery and equipment that may leak or discharge fluids or condensate when in use or being serviced.

02.82.05 CHAIN LOCKER

Nr. 2 chain lockers of a such volume suitable to contain the chains will be provided forward the collision bulkhead. A grating shall be fitted on the bottom of the chain lockers, material AISI 316 L stainless steel.

02.82.07 BATTERY BOXES

Batteries will be installed in boxes.

02.82.08 NAVIGATION LIGHTS HOUSING

Stern and side navigation lights will be installed in the superstructure.

02.82.09 ANTENNAS SUPPORTS

Navigation and communication system antennas will be installed on the mast or on the superstructure.

02.82.15 SUPPORTS FOR LIFERAFTS

Supports with cradles and hydrostatic release will be installed on upper deck.

02.83.01 DRAFT MARKS

Polished stainless steel draft marks will be fitted, two forward and two aft.

02.83.03 YACHT NAME

Name of the yacht will be made of adhesive letters fitted on transom.

On both sides of the Yacht superstructure the Yacht name will be made by an adhesive film, silver colour.

The port of registry will be similarly made and fitted on the transom.

The font type will be decided by the Owner and it will be supplied to Benetti during the design stage. Benetti, if requested, can prepare proposal to the Owner.

On both sides of the Yacht superstructure the Benetti logo will be made by chromium plated brass.

02.83.07 PIPE AND VALVE LABELS

Main valves, filters, pumps, electrical components controls, will be clearly identified in the English language by suitable engraved thermoplastic plates.

Operating positions of valves and switches will be marked.

Arrow direction will indicate flow direction and arrow colour will indicate the type of fluid circulating inside the piping system. The Benetti Standard piping systems colour code will be used.

02.84.01 SIDE FENDERS

Eight white fenders type F8 will be supplied. The diameter will be 380 mm and the length will be 1470 mm. The fenders will be provided with polyester tails of 4 m, black colour, diam. 14 mm.

Each fender will be protected with a cover with Benetti logo.

02.84.03 FENDER HOLDERS

Eight leather covered fender holders will be supplied to be fitted on GRP bulwarks. They will be provided with line eyes and stopper. The size and type will be according to Benetti Standard.

02.84.08 STEM PROTECTION

A stainless steel stem protection will be provided.

02.85.01 VENTILATION GRIDS

GRP ventilation grids will be provided for:

- engine room;
- bathrooms air extraction outlets;
- main galley hood extraction fan;
- garage;
- UTA air inlet.

Grids will be according to Benetti standard.

02.85.02 EXHAUST GAS GRIDS

Grids will be fitted on the hull for generators and main engines low speed gas exhaust.

Grids will be painted with the same color of the hull.

02.85.03 SEA CHESTS GRIDS

Stainless steel grilles will be bolted to the hull to protect sea water inlets from risk of obstruction.

02.86.00 HULL AND SUPERSTRUCTURE RECESSES

Frames and recesses will be built in the structure to install grilles, life buoys, fire hydrants, bunkering and shore discharge connections, deck washdown connections, capstans and windlasses controls, lights, telephone plugs, TV plugs, sockets, gangway and transom/side doors.

02.87.00 FIXED BALLAST

Fixed ballast may be used to adjust list and trim and in order to comply with stability criteria if necessary. Ballast will be made with lead pellets fitted in enclosed spaces.

02.90 SAFETY EQUIPMENT

02.91.03 FIRE EXTINGUISHERS

Portable CO_2/foam/powder fire extinguishers, stored in suitable places, will be provided as per fire and safety plan. Type and number will be according to Classification Society requirements.

02.91.05 FIRE HOSES

Fire hoses and nozzles will be as per Classification Society requirements.

02.91.06 FIRE FIGHTING BLANKET

One fire blanket will be provided in the galley as per fire and safety plan.

02.91.07 MEDICAL KIT

A medical kit will be provided.

02.93.02 LIFE RAFTS

Nr. 2 life rafts for eight people each, with hydrostatic release and survival kit will be installed on upper deck; as per fire and safety plan.

02.93.03 LIFE BUOYS

Nr. 2 life buoys with painted Yacht name and port of registry will be fitted recessed in the superstructure.

02.93.04 PARACHUTE FLARES

Parachute flares (6 pieces) and smoke signals (2 pieces) will be provided.

02.93.06 LIFE JACKETS

Nr. 15 life jackets will be stowed in the cabins.

03 AUXILIARY MACHINERY

03.10 BILGE, FIRE AND BALLAST EQUIPMENT

03.11.01 FIRE PUMPS

Nr. 1 electric self priming pump (Gianneschi BMA-S 50/160 230Vac, flow rate 183lt/min, 48usg/min at 31m H_2O) will be installed in the engine room for fire extinguishing system.

Nr. 1 manual pump (Gianneschi Excelsior 5, flow rate 60lt/min, 16usg/min at 30m H_2O).

03.11.02 BILGE PUMPS

Nr. 1 electric self priming pump (Gianneschi ACM 431 230Vac, flow rate 166lt/min, 44usg/min at 17,5m H_2O) will be installed in the engine room for main bilge system, with capacity in accordance with Classification Society requirements.

Automatic submergible electric pumps will be provided for each compartiment.

Nr. 1 manual pump (Gianneschi Excelsior 5, flow rate 60lt/min, 16usg/min at 30m H_2O), used also for fire system.

03.12.03 ENGINE ROOM FIRE EXTINGUISHING SYSTEM

A FM 200 fixed fire extinguishing system will be installed for engine room, with adequate nozzles and a release handle fitted on the emergency control panel situated near the access to the engine room.

03.20 FUEL OIL SYSTEM

03.21.01 FUEL OIL TRANSFER PUMPS

The transfer system shall allow to transfer fuel oil from each tank to each other, by means of nr. 1 electric transfer pump (Gianneschi CP30 230Vac, flow rate, 75lt/min, 20usg/min at 7m H_2O) and nr. 1 manual pump (Gianneschi Excelsior 2, flow rate 24lt/min, 6usg/min at 30m H_2O).

Electric pump controls on the main electrical panel and in wheelhouse on the monitoring panel.

03.21.04 FUEL OIL FILTERS

Water separator filters will be installed for main engines (double) and diesel generators (single).

03.30 SANITARY EQUIPMENT

03.31.01 SANITARY SYSTEM

Collecting tanks will be installed in the lower decks to collect grey water from various users (showers, sinks, bath tubes, fan coils drain). They will be connected through common manifold to the sewage/sanitary tank.

Ceramic floor mounted WC will be provided.

03.31.04 GREY/BLACK WATERS PUMP

Nr. 2 electric driven grey/black waters pump (Gianneschi MV44G 230Vac, flow rate 45lt/min 12gals/min at 9m H_2O) will be provided.

03.31.05 SMELL SYSTEM

An ozone generating system will be provided to eliminate bad smell from black/grey waters tank air vent.

03.40 AIR PRESSURE AND HYDRAULIC EQUIPMENT

03.42.01 STERN HYDRAULIC POWER UNIT

Nr. 1 hydraulic power pack will feed the stern doors and the gangway. Manual operation in case of emergency will be possible.

03.42.06 GARAGE DOOR MECHANISM

The garage door will be hydraulically operated by means of rams and will be locked using stainless steel pins. Microswitches will allow monitoring of door status (open/closed).

03.50 FRESH WATER SYSTEM

03.51.01 FRESH WATER PUMPS

Nr. 2 electrical pumps (Gianneschi JET4 230Vac, flow rate 80lt/min, 21usg/min to 40m H_2O each) will be provided, connected to the fresh water tank.

The pumps are connected to the deck washing system by section valves.

03.51.02 HOT WATER PUMPS

Nr. 2 hot water circulating pumps (Gianneschi Z25 230Vac) will be installed to keep constant temperature in hot water ring.

03.51.04 WATERMAKER

Nr. 1 reverse osmosis watermaker (Idromar MC3J) will be fitted.

Nominal capacity 4300 liters (1135 USG) of water per day at 25° C sea water temperature.

03.51.05 WATER HEATERS

Nr. 2 electric hot water stainless steel heaters will be fitted, each with 120 liters (26 USG) capacity. Resistance 3+3 kW for each heater.

03.51.07 FRESH WATER STERILISER

An active carbon filter will be installed between fresh water pumps and the users.

03.60 SEA WATER COOLING EQUIPMENT

03.61.01 SEA WATER COOLING PUMPS

Main engines and generators will have their own driven sea water pump.

Nr. 2 sea water pumps, one spare to the other, will be installed for air conditioning chiller unit.

03.70 VENT AND SOUNDING EQUIPMENT

03.71.01 LEVEL SWITCHES

Level switches will be installed in the bilges of each compartment near bilge suction, connected to alarms in the monitoring system.

03.71.02 LEVEL GAUGES

Remote gauges will be provided for the tanks (fuel oil, fresh water, black/grey waters). The level value will be displayed in the monitoring system and main electrical panel.

03.80 EXHAUST GAS EQUIPMENT

03.81.03 SMOKE WATER SEPARATOR

Each generator exhaust system will have a muffler and a smoke/water separator.

03.81.04 EXHAUST GAS VALVES

By-pass valves will be fitted on the main engine exhaust line, controlled to have gas discharged on the hull side at low rpm and under water at high rpm.

03.90 VARIOUS AUXILIARY EQUIPMENT

03.91.01 RESILIENT MOUNTINGS

Main engines exhaust silencers and rotating machinery, with the exception of windlasses and capstans, will be installed on resilient mountings. Mountings will be selected according to the weight and the characteristics of the machinery, to reduce vibrations transmission to the structure.

03.91.02 VACUUM AND PRESSURE GAUGES

All vacuum and pressure gauge sets will be arranged in a support as close as possible to the relevant pump.

04 PIPING

04.10 BILGE, FIRE AND BALLAST PIPES

04.11.01 BILGE AND FIRE PIPING

Each watertight compartment will have a separate bilge suction with electric valve, connected through a bilge manifold to the electric pump.

The garage will be protected by a spray sprinkler system connected to the main fire line by a manually operated valve.

Fire pump will be connected to the fire manifold for supply sea water to the fire system. Fire manifold will be connected to the anchor hawse pipes to supply water for chain washing.

Fire hydrant valves connected to sea water fire main will be fitted, on all decks in accordance with Classification Society requirements, in the following positions:

- Nr. 1 on main deck, portside;
- Nr. 1 on main deck, starboardside;
- Nr. 1 on upper deck, aft area.

Nr. 5 submergible automatic pumps will be provided for secondary bilge service.

All sea water piping for fire and bilge system will be made in CuNi.

04.20 FUEL OIL AND LUBRICATING OIL PIPES

04.21.01 FUEL OIL PIPING

The system will have nr. 2 fuel oil storage tanks and nr. 1 daily service tank. All fuel oil tanks will be fitted in the hull bottom and the service tank will be located in a central position.

Tanks disposition has been designed in order to ensure trim and stability in every tanks filling condition.

Tanks will be connected each other, in order to allow transfer operations.

Filling stations, will be located on main deck sides, one at port side and the other one at starboard side; located at the main deck level. The locker will be obtained in the superstructure and will be fitted

with threated cap and closing door. Tanks have to be filled by gravity only.

Each tank will be provided with inspection manhole and vent pipe. Remote level gauge and high level alarm will be provided; low level alarm will be provided for daily tank.

Emergency cut-off quick closing valves with remote control outside of engine room, will be provided on tanks for diesel engines supply lines.

All feeding and backflow piping from daily tank to main engines and generating sets will be of stainless steel with flexible connection of approved material.

Fuel oil pipes will be made of stainless steel AISI 304 seamless type. Connections to main engines will be carried out with flexible pipes with oil resistant synthetic rubber.

04.30 SANITARY AND SCUPPERS PIPES

04.31.01 SCUPPERS AND DRAINAGE PIPING

A scupper and drainage system will be provided to collect and discharge outboard the waters collected on exposed decks.

Pipes outside engine room will be made of PVC. They will be in CuNi only up to 1.2 m above water level.

In engine room the pipes will be in CuNi.

04.31.02 SANITARY PIPING

A system for toilet discharge into the black/grey water complete with high level alarm will be fitted.

Wash basins, showers drains and galley will discharge into the black/grey water tank directly for gravity or through small collecting tanks equipped with submersible pump.

Washing and dishwasher machines will discharge into black/grey water tank through a small collecting tank equipped with submersible pump.

WC waters will be delivered to the black/grey water tank by their own pump.

The black/grey water tank can be discharged overboard when allowed by international regulations by means of electric pump.

The black/grey water tank can also be discharged ashore via an international flange deck connection.

An adequate vent line will be provided discharging onto the hull.

In case of failure of one pump, it can be used in emergency the other one to discharge the tank, after having suitably operated section valves.

Piping will be made in high density PVC outside the engine room and in stainless steel inside the engine room.

04.40 HYDRAULIC PIPES

04.42.01 HYDRAULIC SYSTEMS PIPING

Flexible pipes will be used for high pressure hydraulic system. The related connection will be high pressure fittings, according to system Manufacturer recommendations.

04.50 FRESH WATER AND AIR CONDITIONING WATER PIPES

04.51.01 FRESH WATER PIPING

Nr.1 GRP structural fresh water tank will be fitted in the hull bottom according to capacity plan. A deck connection to shore waterline will be provided, in order to feed the system directly from the marina via an overpressure control valve or to fill, by gravity, the fresh water tank.

Cold and hot water lines will be installed to feed the various users.

The hot water will be distributed onboard by a ring, a circulating pump will keep the constant temperature along the ring. Hot water pipes will be insulated.

Filling lines will be provided on the main deck on port side, starboard and aft.

The watermaker production will be delivered directly into the bottom tank.

Hand held shower with hot and cold water will be provided for the stern platform.

The following wash down connections, integrated into the fresh water system, will be provided:

- nr. 1 on main deck aft;
- nr. 1 mooring forward area;
- nr. 1 on upper deck portside;
- nr. 1 in garage.

Water supply will be provided to the windscreen jets in the wheelhouse.

The fresh water tank equipped with remote level indicator, low level alarm and access manhole for cleaning and maintenance will be fitted.

Piping in engine room will be in pressfitting AISI 316L stainless steel, outside engine room will be in multilayer.

04.52.01 AIR CONDITIONING PIPING

Pipes for air conditioning chilled/heated water will be made in CuNi in engine room insulated with Armaflex and multilayer outside engine room insulated with Armaflex.

04.60 SEA WATER COOLING PIPES

04.61.01 SEA WATER PIPING

In the engine room will be located nr. 2 sea chests for main engines, generators and auxiliary services, connected by manifold,

Connections to the engines will be flexible.

In the forward technical area will be provided one sea chest for watermaker. Under the area near engine room and garage will be provided two sea chests for auxiliary services.

Pipelines carrying sea water will be made of CuNi.

04.70 AIR VENTS AND SOUNDING EQUIPMENT

04.71.02 VENT LINES

All bottom tanks will be provided with proper air vent lines.

Fuel oil tanks vents will be led above the main deck. The holes are on the side of the hull.

Sizes are according to Classification Society requirements.

Fresh water vent line will be led on the side of the hull.

Grey/black waters tank will have vent line running to the top of the mast.

04.80 GAS EXHAUST SYSTEM

04.81.01 MAIN ENGINES EXHAUST GAS PIPING

The exhaust of each main engine is of the water injection type and it is equipped with flexible connection at the engines gas outlet and will be resiliently mounted in order to minimise noise and vibration.

Resilient mounts are of the low frequency type and they are protected against the high temperatures in order to avoid any rubber modification which would lessen the resilient damping properties.

Gas exhaust of each engine will be led to underwater and by-pass discharges.

The main outlet is located below the water level, the minimum outlet (by-pass) is located above the water level, with an electrically operated butterfly valve according to engines RPM.

Pipes will be made of stainless steel AISI 304 for those portions subject to high temperatures, while the water injection and following is made by AISI 316 L stainless steel.

After the water injection the pipe is connected to the hull via a silicon rubber and double wave flexible hose.

The hose is fixed with stainless steel clamps.

The system will be designed to guarantee a back-pressure level compliant with engine Manufacturer's requirements.

04.81.02 GENERATORS EXHAUST GAS PIPING

Exhaust gas will be discharged through an outlet located above the water line and the cooling water through an outlet below the waterline.

04.90 VARIOUS SYSTEM EQUIPMENT

04.91.02 SCUPPERS BOXES

FRP scupper boxes will be provided in number and position to assure proper water drainage and discharge from the external decks.

Scuppers will be protected by a polished stainless steel grill.

04.91.03 PIPES FLEXIBLE CONNECTIONS

All piping connected to rotating and vibrating mechanical equipment will be connected with flexible couplings, oil resistant material will be used on fuel systems.

04.91.04 PIPE BRACKETS

All piping will be installed using appropriate clamps bonded to the Yacht structure.

All hydraulic oil piping will be supported by plastic saddle type pipe clamps with rubber insulation inserts.

Chilled-water pipes will be connected to the structure with rigid insulated brackets.

05 VENTILATION AND AIR CONDITIONING

05.10 ACCOMMODATION VENTILATION AND AIR CONDITIONING

05.10.00 AIR CONDITIONING SYSTEM GENERAL

The air conditioning system (Frigomar) is based on the following parameters:

Summer conditions:	external air 35°C, 95 °F R.H. 90%
	internal air 22°C, 72 °F R.H.55%
	seawater temperature 32°C, 90 °F
Winter conditions:	external air 0°C, 32 °F
	internal air 22°C, 72 °F
	seawater temperature 10°C, 50 °F

05.11.02 FAN COILS

The fan coil units shall be fed by chilled/heated water. The units shall be complete with heat exchanger, fan, drip-tray with double drain connected to a separate drain tank, electric actuated.

Each fan coil unit shall be provided with a twelve speed controller for up and down room temperature and fan speed settings and a display panel.

05.11.03 MAIN CHILLER UNIT

Nr. 3 chiller units (Frigomar 608NT) shall be installed in the engine room, serving the fan coils and the air treatment units throughout the Yacht.

The chiller unit will provide cold water in summer and heated water in winter, working in reverse-cycle.

The total installed chilled water cooling capacity will be 186.000 BTU/h.

The total installed chilled water cooling capacity will be defined so as to meet design conditions.

The chilled water unit shall consists of modular elements including:

- motor compressors;
- exchangers sea water/coolent;

- exchangers fresh water/coolent;

Each modular element shall be fully independent, so that one system can run while the other is being serviced/repaired.

05.11.04 AIR CONDITIONING SEA WATER PUMPS

Nr. 2 sea water pumps (Frigomar B-CM41) will be provided for the chiller unit, one as back-up to the other.

05.11.05 AIR CONDITIONING FRESH WATER PUMPS

Nr. 2 fresh water pump (Frigomar CM41) will allow chiller water circulation, one is supplied as a spare.

05.11.06 AIR TREATMENT UNITS

Unit for the primary treatment of the air will fitted onboard. They will be equipped with filter, damper, heat exchanger and fan.

The air treatment system will be used only for guest and Owner cabins.

05.11.07 FANS AND EXTRACTORS

Extraction fans will be provided for accommodation areas (for the cabins it will be through the bathrooms).

Extraction fans will be provided for the galley hood and heads.

Extraction fans will be provided for the bilge under crew area, garage, area between garage e and engine room, secondary and local electrical panels where necessary.

05.11.08 AUXILIARY COOLING SYSTEM

An independent cooling system will be provided for the racks and technical room in way of engine room access. It will consist of a air conditioning unit with fan coil, provided with a dedicated sea water pump.

05.12.02 AIR CONDITIONING DUCTS

Air treatment unit delivery ducts will be made in pre-insulated galvanized steel, exhaust ducts will be made in pre-insulated galvanized steel.

Air conditioning delivery ducts for the fan coils will be made in pre-insulated galvanized steel.

Each duct is to be independently supported by steel brackets connected to the Yacht structure. Brackets will be insulated from the duct by a rubber lining to reduce resonance.

05.30 ENGINE ROOM AND TECHNICAL SPACES VENTILATION SYSTEM

05.31.01 ENGINE ROOM FANS

A supply and extraction fans system will be installed for engine room ventilation. The fans will be of the axial flow type, flexibly mounted in the ventilation trunks or in the engine room.

One axial flow fans (Gianneschi ELL/AP 635), will be installed for intake.

One axial flow fans (Gianneschi ELL/AP 453), will be installed for exhaust.

05.31.02 ENGINE ROOM FIRE DAMPERS

Fire dampers will be fitted to close the engine room ventilation trunks, as per Classification Society requirements.

05.31.03 ENGINE ROOM FANS SILENCERS

Silencers will be installed in the engine room air extraction and delivery trunks to reduce the noise generated by the air flow.

05.31.04 WATER MIST SEPARATOR FOR ENGINE ROOM

Water mist separators will be installed in way of the engine room ventilation air grids.

05.32.01 VENTILATION OUT OF ENGINE ROOM

In general technical compartments and storages will be naturally ventilated to ensure adequate ventilation of each space to avoid overheating and condensation.

The following compartments will have forced extraction:

- garage,
- technical space under crew area, under sunbed,
- forward technical space,
- area between engine room and garage,
- service and emergency battery.

06 ELECTRIC AND ELECTRONIC SYSTEM

06.10 EMERGENCY ELECTRICAL SYSTEM

06.11.0 EMERGENCY LIGHTING SYSTEM

The emergency lighting system will be installed in accordance with the Classification Society requirements using 24V DC batteries and dedicated battery charger.

In correspondence of stairs, corridors, wheelhouse, crew mess, any room exit and escapes emergency lights will be provided. They will switch on automatically in case of failure of the AC system.

Accommodations emergency lights will be normally supplied with 24V AC circuits. An automatic device will be provided for switching from main circuit to the 24V DC emergency one.

Engine room and main technical spaces will be provided with dedicated emergency light(s).

In the engine and technical rooms, suitable lamps will be fitted in correspondence of escape and main switchboard.

06.11.01 EMERGENCY BATTERIES

One group of 24V DC batteries for emergency Capacity in accordance with the Classification Society requirements.

06.20 LOW VOLTAGE SYSTEM

06.21.01 BATTERIES , GENERAL

All batteries will be installed in battery boxes in accordance with the Classification Society requirements.

All batteries will be GEL or AGM type according to their usage.

06.21.02 RADIO BATTERIES

Nr. 1 group of 24V DC batteries for radio equipment Capacity in accordance with the Classification Society requirements.

06.21.03 SERVICE BATTERIES

Nr. 1 group of 24V DC batteries for service Capacity in accordance with the Classification Society requirements.

06.21.04 ENGINES STARTING BATTERIES

Nr. 2 groups of 24V DC batteries for main engines starting. Capacity as per engine manufacturer requirements. Each group will be dedicated to one main engine.

Nr. 2 groups of 12V DC batteries for diesel generators starting. Capacity as per generator manufacturer requirements. Each group will be dedicated to one diesel generator.

A selector for the temporary cross connection between the two main engine starting battery will be provided as per Rules.

06.21.05 BATTERY CHARGERS

Alternator will be provided on each main engine and generator charging the relative battery set.

The following automatic battery chargers will be installed:

- nr. 1 main engines battery set charger;
- nr. 1 diesel generators battery set charger;
- nr. 1 service/emergency battery set charger;
- nr. 1 radio/emergency battery set charger.

06.22.02 GROUNDING SYSTEM

The main electrical grounding system is composed by:

- nr. 1 synthesised copper ground plate fitted externally on the hull bottom;
- a copper tape ring of suitable section fitted all around the vessel.

All the machinery, electrical motors, equipment, will be connected to the above named copper tape.

A lightning conductor will be fitted at mast top and directly connected to a dedicated ground plate by a dedicated wiring.

Metallic pipes, valves and equipment connected to the sea water will be connected to the anodes fitted on the hull by the above named copper tape for cathodic protection.

06.30 MAIN VOLTAGE SYSTEM

06.32.00 ELECTRIC POWER SYSTEM, GENERAL

GENERAL

Electrical equipment, wiring, fixtures, boards, switches, etc. will be designed, located, installed and tested in accordance with the Classification Society requirements.

Electrical equipment will be selected and located to ensure adequate protection against damages from water, oil, humidity, vibration and will be arranged in such way to facilitate access for maintenance.

DISTRIBUTION

The electrical distribution will be as hereafter described:

Main machinery	- 230V AC/50Hz/3 phases
Lighting and household appliances, stereo, TV sets and other low power users	- 230V AC/24V AC single phase
Emergency lighting system	- 24V DC battery system
Service equipment	- 24V DC battery system
Radio equipment	- 24V DC battery system

The AC power will be supplied by Nr. 2 diesel driven generator sets and as alternative by a shore power system.

Diesel generators and shore supply switches will be of removable type, so that they can be substituted without causing black out.

Automatic paralleling system for the two generators will be provided.

SHORE SUPPLY SYSTEM

The Vessel may receive shore power supply by means of one 100 A shore power inlet socket.

Nr. 1 of 20 mt shore power cable will be provided with a 4-pin connector.

One three phase 55Kw shore insulating transformer will be installed to receive the power from the shore socket.

Seamless Transfer System between Generator and Shore Power Supply will be provided.

ELECTRIC MOTORS

Electric motors will be:

- single phase for small (typically for small loads);
- three phases induction type;
- protection grade (IP) according to Classification Society requirements;
- class F insulation.

STARTER DEVICES AND PANELS

Where possible, starters and protections of equipment located in the engine room will be centralized in the main switchboard.

Start-stop push buttons can be positioned on the main switchboard or locally near the users according to the engine room available space.

CABLES

Cables with stranded wires suitable for marine use will be used. All supply cables for electronic equipment shall be of the shielded type. Cables will be of the multiple conductors type for all AC circuits and meeting Classification Society requirements. All cables connected to terminal blocks will have 'ferrule end connectors' or other approved means of connection as per the Classification Society requirements. All the wires and terminal strips will be marked with identification code in the switchboard, in junction boxes and at the termination of the wire. Shielded cables will be used for low power equipment liable to be affected by strong magnetic or electrostatic fields. All connection boxes (also in the accommodations) to be accessible and as per Classification Society requirements. Penetration of watertight bulkheads and all electrical switchboards and boxes will be done as per Classification Society requirements and with approved penetrations systems.

06.32.01 ELECTRICAL PANELS

MAIN SWITCH BOARD

The Main switchboard will be positioned in the engine room, made of steel framing or aluminium alloy and plating. All panels will be hinged or removable with quick release locks. Main switchboard will incorporate a copper busbar system with protection and control gear

for the power sources and main distribution. Main switchboard will incorporate circuit breakers, contactors and relays, and instruments for main generators and shore transformer. Ventilation grids will be provided at each side.

Main switchboard front panel will have:

- Volt, Amp, kW and Hertz meter for each generator;
- Volt, ammeter for shore supply;
- Volt meter for 24 DC system;
- automatic switches for the main users.

The main switchboard will contain two main bus-bar interconnectable by a bus-bar connector. If the connector is open, each generator can feed the users of each bus bar. The shore transformer can feed both bars or one of them if the bar connector is open. We can also feed one bus-bar with a generator and the other with the shore connection.

All the redundant machinery and equipment will be equally distributed on the two bus-bars. A not essential user trips device will be acted in case of generators overload.

A not essential user trips device will be acted in case of generators overload in order to avoid generators power off.

DISTRIBUTION PANELS

Sub-switchboards will be installed for local distribution of electrical power. They will contain automatic circuit breakers for different lines or circuits. They will be built in a light alloy or aluminium box with painted panels; to be covered by a decorative door matching with the surrounding joinery. For technical spaces industrial type boxes will be used. Main panel and sub panels will be drip proof type as per Classification Society requirements. A sub-switchboard will be installed in the wheelhouse, with AC and DC circuit breakers for the navigation and electronic users and all external lights.

The distribution panels will be installed in the following areas:

- main saloon,
- guest accommodations,
- crew accommodations,
- galley,
- wheelhouse.

WIRING

Wiring type will be according to the Classification Society requirements.

All wires and their terminals will be marked with identification label in the main switchboard, distribution panels and junction boxes.

06.40 LIGHTING AND PLUGS

06.41.00 LIGHTING SYSTEM

All lighting will be installed as per detailed decoration list and according to Shipyard standard.

Low intensity red lights will be installed in wheelhouse for safety running of the yacht during night navigation.

Exteriors: overhead waterproof lights at superstructure ceilings and foot waterproof lights will be installed.

Lights will be 24V AC as well as emergency lighting.

All lighting circuits will be protected by circuit-breakers fitted on distribution panels.

The position of the light fittings, sockets and switches will be shown on the Interior's Book.

06.41.01 ENGINE ROOM AND TECHNICAL SPACES LIGHTS

In the engine room neon lights will be fitted. Technical spaces will be fitted with 24 V DC lights in IP54 housing. Some emergency lights will be incorporated in the existing fixtures.

06.41.02 ACCOMMODATION LIGHTS

Dimmers will be fitted in the perimetral ceiling of all guest areas, corridors excluded. Spotlights will be of LED type low voltage 12 or 24 V. Low intensity red lights and one adjustable chart lights will be installed in wheelhouse deckhead. All instrument and pilot lights in wheelhouse console will be provided with dimmers.

06.41.03 EXTERNAL LIGHTS

LED Lights will be provided for deck lighting.

Exteriors: overhead waterproof lights at superstructure ceilings and foot waterproof lights will be installed.

The following lights will be fitted:

- footlights all the way around main deck;
- ceiling lights on main deck and rollbar;
- stairs lights on steps.

06.44.01 EXTERNAL FLOOD LIGHTS

Nr.1 search light, remotely controlled from wheelhouse.

06.44.03 SIDE DOORS LIGHTING

Floodlights will be fitted in the main deck ceiling edge to illuminate the mid port and stbd bulwark doors.

06.44.04 ELECTRICAL FITTINGS IN ACCOMMODATION

All accommodation light switches and equipment will be as per Interior's Book.

All lighting circuits will be protected by circuit-breakers fitted on distribution panels.

06.44.05 ACCOMMODATION LAMPS

All lighting will be installed as per detailed decoration list and according to Shipyard standard.

06.44.07 ACCOMMODATION CEILING LIGHTS

Spotlights will be installed in Accommodation ceilings as per Interior's Book.

Waterproof spotlights will be installed in bathrooms and showers.

06.44.10 LINEAR LIGHTING

Linear lights to be fitted for indirect lighting as per Interiors Book in guest and Owner's areas.

06.44.11 WARDROBE LIGHTING

Internal lighting to be provided inside all wardrobes as per Interior's Book.

06.50 NAVIGATION COMMUNICATION AND SIGNALLING EQUIPMENT

06.50.00 NAV/COMM/SIGN EQUIPMENT

The following controls will be provided in wheelhouse:

- steering actuator with wheel,
- bow thruster control lever and running indicator,
- main engines throttles,
- MMEE Key, start/stop buttons and alarm signal,
- emergency stop for main engines,
- rudder angle indicator,
- fin stabilizers control panel.

The following controls will be provided on sun deck consolle:

- steering actuator with wheel,
- bow thruster control lever and running indicator,
- horn,
- main engine throttles,
- MMEE start/stop buttons and alarm signal, emergency stops,
- NMEA DATA display 3,5",
- engine data indicators (Analog),
- autopilot panel,
- search light control panel.

The following equipment will be installed:

INTEGRATED NAVIGATION SYSTEM "iBridge"

GENERAL DESCRIPTION

Visualizing system comprising of:

- nr. 2 LCD monitor (standard) 15" IP 65 marinized;
- nr. 1 NMEA Display 3,5" for sun deck;
- nr. 1 cartography systems (charts excluded);
- nr. 1 cartography software.

Control system comprising of:

- nr. 1 Navnet TZT tillers;
- nr. 2 touch control panels 15'', for the control of the following equipment:
  - radars;
  - echosounder;
  - CCTV (Option);
  - wipers;
  - horn;
  - steering pumps;
  - monitors dimming;
  - search lights;
  - steering mode;
  - monitoring system.

Navigation sensors comprising of:

- nr. 1 radar NN TZT, 64mn, 6 KW;
- nr. 1 echosounder dual frequency/speed/ temp sensor;
- nr. 1 GPS;
- nr. 1 magnetic compass for wheelhouse;
- nr. 1 magnetic compass for sun deck.

Charting plotter system comprising of:

- nr. 1 chart plotter integrated with radar/echo system + charting software (charts excluded).

Weather station comprising of:

- transducers interface;
- ultrasonic wind and pressure/temperature sensor on mast (integrated);
- integrated GPS (in addition to the stand alone one).

Autopilot and manoeuvring system comprising of:

- nr. 1 autopilot system, micro-processor controlled, with feedback system;

- nr. 1 autopilot remote control station for sun deck;
- nr. 1 rudder angle indicator for wheelhouse;
- nr. 1 rudder angle indicator for sun deck.

06.52.01 NAVIGATION LIGHT

Navigation lights will be provided.

Control of navigation lights in the wheelhouse panel, with audible and visual alarms in case of failure.

06.52.02 INTERCOM SYSTEM

Nr. 1 emergency internal communication system will be fitted in:

- wheelhouse;
- engine room;
- emergency steering location.

06.52.04 LOG

Nr. 1 speed-log system will be provided included in the triducer at point 06.52.06. Included in integrated navigation system.

06.52.06 ECHOSOUNDER

Nr. 1 echosounder will be provided with dual frequency transducer (depth, log, water temp) with PC interface for chart plotter software. Included in integrated navigation system.

06.52.07 MAGNETIC COMPASS

Nr. 2 magnetic compasses (for wheelhouse and sun deck) will be provided.

06.52.08 WIND SYSTEM

Nr. 1 wind system with no moving parts and with GPS, air temperature and pressure sensors will be supplied. Included in integrated navigation system.

Nr. 1 NMEA data Display will be provided for sun deck.

06.52.09 VHF SYSTEM

The following equipment will be installed:

- nr. 1 VHF class D (wheelhouse);
- nr. 1 remote unit for sun deck.

06.52.11 X-BAND RADAR

Nr. 1 6 kW- 64 nm - X band - 4 ft antenna radar will be provided. Included in integrated navigation system.

Nr. 1 radar interface will be provided.

06.52.14 AUTOPILOT

Nr. 1 autopilot will be provided comprising of: nr. 1 NFU tiller interface, nr. 1 rudder angle indicator, nr. 1 feedback unit (included in integrated navigation system).

06.52.16 GPS SYSTEM

Nr. 1 GPS systems included in integrated navigation system.

06.52.17 TELEPHONE SYSTEM

Nr. 1 VOIP Telephone system for internal communications.

06.52.18 CHART PLOTTER

Nr. 1 system for charting will be provided. Included in integrated navigation system. Charts are not included.

06.52.21 HORN

A pneumatic horn will be provided (Kahlenberg T-0A).

Controlled by the integrated navigation system.

06.52.23 TELEPHONE UNITS

Nr. 12 VOIP telephones connected to the IT network will be provided.

06.52.24 EXTERNAL DATA CONNECTION

Two means of data connection will be provided for internet and IT services:

- nr. 1 Harbour Wi-Fi connection system,
- nr.1 UMTS – 4G (single SIM) connection system.

06.60 MONITORING AND AUTOMATION SYSTEM

06.61.01 MONITORING SYSTEM

An integrated Yacht monitoring system will be provided.

The system is composed by two intelligent units, one is located in the engine room, the other is located in the wheelhouse, they are connected by redundant LAN net.

The main system's components are:

- nr. 1 15" touch panel in wheelhouse console (part of integrated navigation system);
- nr. 1 6,5" touch panel in engine room;
- nr. 1 monitoring and control unit (wheelhouse and engine control room);
- field cards (I/O) (sufficient number for the proper working system);
- multiserial cards (sufficient number for the proper working system);
- nr. 1 alarms repeater panel (crew mess).

The main ship's systems controlled by automation an monitoring system are:

Power station

The system is interfaced with the electric generators and the shore line to monitor their electric parameters and operates as supervisor of the electric sources. The system will show the operator the generators status (on/off), if they are in line or not (breaker open/close), the electric parameters (V, A, Hz, W), and will make it possible to start and stop the generators themselves and command their paralleling. The system will monitor some generators alarms: overspeed, low oil pressure, high engine temperature. The same philosophy is for the shore line, all the electric parameters will be

recorded and will be visible as graphics and alphanumeric, showing the real time and recorded value.

Navigation lights

The system will monitor and will control the navigation lights.

Main engines gas exhaust valves

The system controls and automatically operates the bypass gas exhaust valves on the main engines.

Bilges

The system controls and display the level of all the ship's bilges.

Tanks

The system controls and display the level of all the ship's fuel and water tanks.

Main engines

The system is interfaced with the control units of the main engines, monitoring the status of the engines, the working parameters and occurring alarms.

Fans and dampers

The system will monitor the operation of the engine room fan and its damper, either manually or automatically indicating to the operator the status. In case of fire in the engine room, the fan will be stopped and the damper will be closed.

Batteries and battery chargers

The system will monitor the status of the batteries and the battery chargers.

Electric pumps

The system is interfaced with the starters of the following electric pumps: fuel oil transfer, fire and bilge.

Alarm notification

The system receives alarm notifications from all ship's main systems, displays and keeps memory of them. An acoustic signal indicates that a new alarm has occurred.

Alarms repetition

In the crew mess one panel with acoustic indication to repeat alarms and anomalies will be fitted.

06.61.04 EMERGENCY STOP SYSTEM

Main engines emergency stop will be provided in wheelhouse and sun deck.

06.61.05 MAIN ENGINES CONTROL SYSTEM

Main engines throttles will be provided in wheelhouse and sun deck.

06.62.01 FIRE ALARM SYSTEM

A fire alarm system will be installed with sensors fitted throughout the vessel.

The control unit will be fitted in wheelhouse.

Nr. 1 or more heat or smoke detector will be fitted in each cabin, room and technical space. They will actuate an audible and visible alarm in wheelhouse.

Gasoline vapour sensors fitted in the garage.

06.62.05 SERVICE CALL

A service bell will be installed with audible and visible signalling on two master stations, one in the main deck galley and one in the crew mess.

Calls will be possible from:

- upper deck forward area,
- main deck aft area,
- Owner's cabin,
- external dining area on upper deck,
- dining area.

06.70 ENTERTAINMENT EQUIPMENT

06.70.00 ENTERTAINMENT SYSTEM

The entertainment system is fully integrated and based on a CAT6 high speed network managed by a CRESTRON-based control network.

The system is composed of some central racks where all the servers and the storage system devices are integrated; access to services goes through diverse terminals including AV entertainment clients, mobile and handheld devices.

All the equipment is centralized outside cabins and saloon in order to maximize living and usable spaces.

Audio video functionality

Distribution of audio video streams coming from an internal storage system (video on demand). Function like audio video and images archival and indexing are available.

Voice communication functionality

It involves handling of Yacht internal voice communication, as well as with the outside world (OPTION) through different communication means.

Automation and control functionality (OPTION)

From specific devices one can manage lighting, temperature and curtains.

The following equipment will be installed area by area:

06.70.01 CREW MESS

- Nr. 1 TV 32" LCD FULL HD;
- nr. 1 Micro Hi-Fi – AM/FM Tuner - BD player;
- nr. 1 Pair of loudspeakers.

06.70.02 GALLEY

- Nr. 1 AM/FM Tuner - CD player- iPod Ready;
- nr. 1 pair of loudspeakers.

06.70.03 TWIN GUEST CABINS

Items to be considered for two cabins.

- Nr. 1 TV 28'' LCD FULL HD;
- nr. 1 Blue Ray player;
- nr. 1 Audio Video Receiver (Centralized);
- nr. 1 Pair of loudspeakers;
- nr. 1 Integrated wi-fi remote control (mini iPad);
- nr. 1 Mini iPad charge docking station;
- nr. 1 Apple TV (Centralized).

06.70.04 VIP CABINS

Items to be considered for two cabins.

- Nr. 1 TV 32'' LCD FULL HD;
- nr. 1 Blue Ray player;
- nr. 1 Audio Video Receiver (Centralized);
- nr. 1 Pair of loudspeakers
- nr. 1 Integrated wi-fi remote control (mini iPad);
- nr. 1 Mini iPad charge docking station;
- nr. 1 Apple TV (Centralized).

06.70.05 CREW CABIN

Items to be considered for two cabins.

- Nr. 1 AM/FM Tuner - CD player- iPod Ready;
- nr. 1 Pair of loudspeakers.

06.70.07 OWNER'S CABIN

- Nr. 1 TV 55'' LED ULTRA HD;
- nr. 1 Blue Ray player;
- nr. 1 Audio Video Receiver (Centralized);
- nr. 1 Audio-Video Client (Centralized);
- nr. 1 speaker system surround 5.1 with powered subwoofer;
- nr. 1 Integrated wi-fi remote control (Mini iPad);
- nr. 1 Mini iPad Charge Docking Station;
- nr. 1 Apple TV (Centralized).

06.70.10 MAIN SALOON

- Nr. 1 TV 55'' LED ULTRA HD;
- nr. 1 Blue Ray player;
- nr. 1 Audio Video Receiver (Centralized);
- nr. 1 Audio-Video Client (Centralized);
- nr. 1 speaker system surround 5.1 with powered subwoofer;
- nr. 1 Integrated wi-fi remote control (Mini iPad);
- nr. 1 Mini iPad Charge Docking Station;
- nr. 1 Apple TV (Centralized).

06.70.11 MAIN SALOON DINING (slave of main saloon)

- Nr. 1 Keyboard for volume control;
- nr. 1 Pair of loudspeakers.

06.70.12 EXTERNAL MAIN DECK (slave of main saloon)

- Nr. 2 Pair of marine loudspeakers;
- nr. 1 Keyboard for volume control.

06.70.13 WHEELHOUSE

- Nr. 1 Mini Hi-Fi - AM/FM Tuner - CD player;
- nr. 1 Pair of loudspeakers.

06.70.14 CAPTAIN CABIN

- Nr. 1 AM/FM Tuner - CD player- iPod Ready;
- nr. 1 Pair of loudspeakers.

06.70.18 EXTERNAL UPPER DECK FORWARD

- Nr. 1 Integrated wi-fi remote control (Mini iPad);
- Nr. 1 Mini iPad Charge Docking Station;
- Nr. 1 Apple TV (Centralized);
- Nr. 2 Pairs of marine speakers;
- Nr. 1 Power amplifier (Centralized).

06.70.19 EXTERNAL UPPER DECK AFT

- Nr. 1 Integrated wi-fi remote control (Mini iPad);
- Nr. 1 Mini iPad Charge Docking Station;
- Nr. 1 Apple TV (Centralized);
- Nr. 2 Pairs of marine speakers;
- Nr. 1 Power amplifier (Centralized).

06.70.21 TECHNICAL SPACE

The technical spaces are located in the Main and lower Decks.

06.70.22 SERVER RACK

- Nr. 2 switches managed 24 ports full gigabits;
- Nr. 1 Service PC for rack maintenance and remote service;
- Nr. 1 AVoD storage system 9 Tbytes raw (6Tb net) RAID System;
- Nr. 1 Crestron processor;
- Nr. 1 Voip Server;
- Nr. 1 Wi Fi controller;

- Nr. 2 A/V Client;
- Nr. 6 A/V Receivers;
- Nr. 8 Apple TV;
- Nr. 1 Power amplifier;
- Nr. 1 UMTS Router;
- Nr. 1 UPS rack mount;
- Nr. 2 Racks for devices housing.

06.70.24 DISTRIBUTED EQUIPMENT

- Nr. 7 Access point WiFi;
- nr. 1 TV/RADIO antenna system for terrestrial broadcasting reception.

07 MAIN MACHINERY

07.10 PROPULSION MACHINERY

07.11.01 MAIN DIESEL ENGINES

Two turbo charged after cooled four stroke diesel engines suitable for marine propulsion will be installed on the dedicated foundations in the engine room:

2 x MAN V8 1000, of 735 kW (1000 HP) @ 2300 rpm each.

Main engines will have integrated fresh water cooling systems and fresh water pumps, heat exchangers, and sea water pumps.

The primary main engine controls and monitoring gauges will be mounted near the main engines.

The engines will be supplied with standard equipment, including instruments and alarms.

Exhaust emissions of these engines are in compliance with EPA TIER III and IMO TIER II regulations.

07.11.02 REDUCTION GEAR BOXES

A reduction gear box ZF 2300 for each engine will be provided.

Reduction ratio determined on relation to the propeller design and propulsion set is 4:1.

07.11.03 ELASTIC COUPLING

The main engine/gearbox/shaft line configuration will be: reduction gear and engine in the flanged version, thrust bearing with elastic joint from reduction gear to shaft line.

07.11.05 RESILIENT MOUNTS

Main engines and reduction gear boxes will be elastically mounted on resilient mounts.

07.13.01 SHAFT LINES

Each shaft will be made in high resistant AQUAMET 17, diameter 95 mm.

A water lubricated bearing shaft line will be provided for each propulsion set.

07.13.03 SHAFT BEARINGS

Shafting will be arranged with rubber bearings water lubricated.

07.13.04 SHAFT SEALS

Mechanical seals will be provided inside hull.

07.13.05 PROPELLERS

Nr. 2 highly skewed propellers, diameter 1150 mm to obtain high efficiency and low noise will be provided.

They will be made by five nickel - aluminium - bronze blades and hub.

Each propeller will be statically balanced manufacturing tolerances will be according to ISO 484/2 CLASS S

07.30 ELECTRIC POWER GENERATORS

07.31.01 MAIN GENERATORS

The generating system will consist of nr. 2 diesel generators with the following characteristics:

Manufacturer:	Kohler
Models:	55EFOZDJ
Rated outputs:	55 kW
Rated voltage and frequency:	230V AC / 50 Hz
Number of phases:	3
RPM:	1500
Insulation class:	H
Tension regulation:	± 0.5 %
Frequency regulation:	± 0.5 %
Starting system:	12 V DC

Each generator will be provided with automatic stop for:

- low oil pressure;
- high water temperature;
- overspeed.

Each diesel generator will be equipped with:

- sound-proof enclosure;
- built-in freshwater circulating and cooling system with heat exchanger;
- oil cooler;
- electronic speed regulators;
- instrument panel mounted outside the soundbox equipped with:
  - starting/stop push buttons;
  - volts, amps and hour meters.

Diesel generators will be provided with isolated ground.

Automatic paralleling system for the two generators will be provided

07.31.02 GENERATORS SOUND SHIELDS

Generators will be enclosed in a sound shield, supplied by the generator Manufacturer.

07.31.03 GENERATORS MOUNTING

The generators will be resiliently mounted on a rigid structural foundation.

07.40 SIDE PROPULSION

07.41.01 BOW THRUSTER TUNNEL

The GRP bow thruster tunnel passing through the hull will be connected by means of an adequate number of GRP layers in accordance with the Classification Society requirements. Adequate reinforcement will connect it to the bottom to resist the transverse propeller thrust.

Hull at bow thruster insertion will be properly faired to minimize drag.

07.41.02 BOW THRUSTER

A electrical bow thruster (CMC BTM40) will be provided with an electrical motor having 37 kW input nominal power supplied by generators.

Voltage will be 230 Vac, 3 phases, 50Hz, duty cycle S6-40%.

The propeller thrust will be 560kgf. A thrust reduction of 30% is expected with the installation of tunnel grids.

Control joystick will be installed on the wheelhouse console and on sun deck console.

07.50 STABILIZERS

07.51.01 STABILIZER FINS

Nr. 1 pair of non retractable stabilizer fins (CMC SE060) will be provided for underway operation and at anchor as well.

The fins will be provided with an electrical motor having 5 kW input nominal power supplied by generators.

Fin area will be 1.4 m^2.

Voltage will be 230 Vac, 3 phases, 50Hz, duty cycle S1.

08 INTERIORS

08.00 INTERIORS

The Interior's styles are based on the Interior's Concept Design, done by Achille Salvagni Atelier for Benetti. The Interior's Concept Design are:

- Classic style;
- Contemporary style.

The Interior's style will be shown through a set of renders for the following areas:

- Vip Cabin;
- Vip bathroom;
- Master Cabin;
- Master Bath;
- Main Salon.

The renderings will be prepared as per the following process:

- First Stage (one time) – Interior Concept - will be composed by Main Salon Rendering and Interior Design Mood Board, for the definition of interior style, main materials selection and finishing based on the General Arrangement and the contractual definition;
- Second Stage (one time) will be composed Vip Cabin and bathroom renderings based on the General Arrangement, Interior Concept and the contractual definition;
- Third Stage (one time) will be composed Master Cabin and Bathroom based on the General Arrangement, Interior Concept and the contractual definition.

The rendering is purely indicative of style and may include options and/or change order. It doesn't necessarily correspond to the executive drawings. These images are indicative and show the style and volume environments and may be modified during construction according to technical reasons-executive proposals or modifications required by the customer. Any new rendering or updated rendering not included in the above list will be quoted accordingly.

The accommodation layout will be according to the general arrangement which will be part of the building specification.

All decorative material, loose furniture, fittings, accessories, hardware etc. will be chosen according to the proper interior style and according to the Functional Plan Book.

The Functional Plan Book represent the quantity and the position for each decorative element.

Deviation from decoration standard and the Functional Plan Book will be quoted accordingly, in therms of finishing, materials and quantity.

All the confirmed selections will be collected into the Décor Book.

The Book of Interiors, with plan and elevation, will be delivered as per information and as reference for the general looking of the interiors.

08.00.01 ACCOMMODATION PARTITIONS

GUEST & OWNER:

- LOWER DECK: Port Vip Cabin, Port Vip Bath, Port Twin Cabin, Port Twin Bath, STBD Vip Cabin, STBD Vip Bath, STBD Twin Cabin, STBD Twin Bath, Lobby;
- MAIN DECK: Main Saloon, Main Foyer, Galley, Powder room, Owner's Cabin, Owner's Bathroom, Owner's Dressing;
- UPPER DECK : Wheelhouse.

CREW :

- LOWER DECK: STBD Aft Crew Cabin 01, STBD Aft Crew Bath 01, STBD Forward Crew Cabin 02, STBD Forward Crew Bath 02, Port Crew Cabin 01, Port Crew Bath 01, Crew Mess and Crew Corridor;
- MAIN DECK: Laundry

08.10 CREW INTERIOR

08.11.02 CREW INTERIOR LININGS AND FURNITURE

The natural wood, solid and veneer, will be light satin Tay and dark polished Tay as per Modern style and light satin Eucalipts and dark satin Mahogany as per Classic style. The finish will be satin. Lacquered wood will be as per reference 9001 tactus, satin finish.

Hull sides, superstructure sides and bulkheads will be lined with glued marine plywood panels, stiffened where required and with removable sections where necessary to access technical equipment or accessories (valves, electrical junction boxes etc.).

The Crew Quarters (Corridor, Crew Mess and Cabins) will be lined in natural wood veneer satin finishing. All the Crew Quarters furniture will be made of plywood finished in veneer with solid wood trim.

Crew Bathrooms and Laundry will be lined by satin lacquered wood with solid wood boundary detail in satin finishing.

Crew Bathroom and Laundry furniture will be finished with satin lacquered wood and solid wood trims in satin finishing.

Ceiling finishes will be lacquered panels as per reference RAL 9010, satin finishing.

Built in furniture will be made according to the General Arrangement.

Air conditioning grills will be flush with the furniture and removable for service.

08.11.03 CREW INTERIOR FLOOR LININGS

Floors in Crew Areas will be fitted according to the Functional Plan Book, as per Benetti selection:

- Crew Cabin => Synthetic Carpet;
- Crew Bath => Wood;
- Corridor, Crew Mess, Laundry and Stairs => Vinyl Floor.

CREW AREA:

ROOM	TYPE	BRAND
CABIN	CARPET SYNTHETIC	BENETTI SELECTION
BATH	WOOD FLOOR	BENETTI SELECTION
CORRIDOR	VINYL FLOOR	BENETTI SELECTION
STAIRS	VINYL FLOOR	BENETTI SELECTION
LAUNDRY and TECHNICAL SPACE	VINYL FLOOR	BENETTI SELECTION

08.11.04 CREW LOOSE FURNITURE

Loose furnitures in crew areas will be fitted according with the Functional Plan Book as for Benetti selection.

08.11.05 CREW INTERIOR HARDWARE

The following hardware will be provided for Crew Areas, as per Benetti selection:

- Furniture knobs;
- Door handles;
- Door stoppers.

Polished stainless steel pipe handrail will be fitted on Crew staircases.

Crew Area doors will be equipped with a twist lock from the inside and safety opening system from the outside.

08.20 GUESTS INTERIOR

08.20.00 GUESTS FURNISHING

Guests interior linings and furniture

Hull sides, superstructure sides and bulkheads will be lined with glued marine plywood panels, stiffened where required and with removable sections to access the technical equipment or accessories (valves, electrical junction boxes etc).

Wall linings and ceilings will be covered with fabric, leather, wall paper, veneer or lacquered wood and according to the Interior's Concept Design.

Doors which are not fire doors will be made of double plywood sandwich panels. Doors will be painted, mirrored or veneered with solid mouldings according to the Interior's Concept Design.

Built-in furniture (cupboards, drawers, consoles, night tables, wash basin units, A/C units, desks, etc.) will be made according to the Interior's Concept Design and the General Arrangement. Furniture will be made of wood (timber or veneered marine plywood).

Interior stairways wall will be covered with veneered marine playwood.

Around portholes and windows curtain boxes will be fitted, made of lacquered or leather, as per Interior's style.

All selected wood samples (three copies, size 210 x 297 mm – A4 size) will be double signed both by the Owner and by Benetti.

Lining and furniture panels will have a balancing and sealing coat on the reverse side to avoid bending.

Air conditioning grills will be flush with the furniture and panels and removable for servicing according to the Interior's style.

Satin varnish or lacquer will be used according to the Interior's style Interior's Concept Design.

Special decorations selected together with the Benetti Interior's Decorator, will be quoted accordingly.

Guests loose furniture

Guest loose furniture (seats and tables) will be supplied and installed according to the Interior's Concept Design and the Functional Plan Book.

MAIN DECK

EXTERNAL AFT AREA:

TYPE	QUANTITY	BRAND
COFFE TABLE	1	BENETTI SELECTION
ARMCHAIR	2	BENETTI SELECTION

MAIN SALOON:

TYPE	QUANTITY	BRAND
SOFA, 4 SEAT	1	BENETTI SELECTION
SOFA, 2 SEAT	1	BENETTI SELECTION
COFFE TABLE	2	BENETTI SELECTION
DINING CHAIR	10	BENETTI SELECTION
DINNING TABLE	1	BENETTI SELECTION
ARMCHAIR	2	BENETTI SELECTION

OWNER'S CABIN:

TYPE	QUANTITY	BRAND
VANITY CHAIR	1	BENETTI SELECTION
ARMCHAIR	2	BENETTI SELECTION
COFFEE TABLE	1	BENETTI SELECTION

UPPER DECK

WHEELHOUSE:

TYPE	QUANTITY	BRAND
BACKREST	1	BENETTI SELECTION

UPPER DECK

EXTERNAL:

TYPE	QUANTITY	BRAND
DINING CHAIR	10	BENETTI SELECTION
DINING TABLE	1	BENETTI SELECTION
SOFA, 4 SEATS	2	BENETTI SELECTION
COFFE TABLE	1	BENETTI SELECTION

Guests interior hardware

Guest Area doors will be equipped with a twist lock from the inside and safety opening system from the outside.

Doors stoppers will be provided to hold the doors in the open position.

All cupboard / storage / wardrobe / cabinet doors will be provided with closing devices. Full height cabinet doors will be provided with top, bottom and central hinges and locking pins. All cabinet doors will have fastening latches; touch latches where possible.

The following hardware will be detailed in according to the Interior's Concept Design:

- Furniture knobs;
- Anti-roll fiddles;
- Hand rails;
- Door handles;
- Door stoppers.

Polished stainless steel hand rails will be fitted on guest staircases.

Guests cabinets outfitting

Dedicated storage will be provided, with plexiglass supports for the following Owner's supplies:

Glasses - Plexiglas supports - one table service for nr. 12 people (Nr. 48 pieces in total);

Dishes - Plexiglas supports - one table services for nr. 12 people (nr. 48 pieces in total);

Cutlery - drawers with partitions lined with velvet - one table services for nr. 12 people (max. nr. 2 drawers);

Bar (glasses, various liquors bottles) for nr. 12 people (bar glasses nr. 24 pieces):

Four months before the Vessel's delivery the Owner shall supply a list of supplies with a sample of each item to be stored so that proper plexiglass fittings can be made.

08.26.00 UPHOLSTERY, MARBLES, CARPET

Guest interior floor linings

Carpet, wood, marble, stone and vinyl floor will be chosen, supplied and installed according to the Interior's Concept Design and the Functional Plan Book.

GUEST&OWNER:

ROOM	TYPE	BRAND
CABINS	CARPET	BENETTI SELECTION
BATHROOMS	WOOD	BENETTI SELECTION
SHOWER FLOOR	MARBLE	BENETTI SELECTION
LOBBY	CARPET	BENETTI SELECTION
STAIRS	CARPET	BENETTI SELECTION
GALLEY	VINYL FLOOR	BENETTI SELECTION
ROOM	**TYPE**	**BRAND**
MAIN SALOON	CARPET AND WOOD	BENETTI SELECTION
MAIN FOYER	CARPET	BENETTI SELECTION
OWNER'S CABIN	CARPET AND WOOD	BENETTI SELECTION
OWNER'S BATHROOM	MARBLE	BENETTI SELECTION
ROOM	**TYPE**	**BRAND**
WHEELHOUSE	WOOD	BENETTI SELECTION

08.26.01 INTERIOR UPHOLSTERY AND BLINDS

Fabric and leather will be chosen according with the Interior's Concept Design and the Functional Plan Book.

All windows and portlights, except Wheelhouse windows, will have curtains and/or blinds as per Functional Plan Book. The decorative curtains will be wooden venetian blind and have horizontal folding. The blinds will be roller translucent shades.

Wheelhouse windows will have a black mesh type shade, fixed on the outside.

Fabric for decorative cushions, headboard, curtains, sofa, chair, walls, ceiling etc.. will be chosen according to Interior's Concept Design.

Nr. 1 night pillow and one decorative cushion will be supplied for each person.

Nr. 1 set of bed linen will be supplied for each bed.

Nr. 1 decorative cushion will be supplied for each sofa's seat.

08.26.02 EXTERNAL UPHOLSTERY

Sun bathing mattresses and external cushions will be covered with proper upholstery for external use.

External Fabrics and leathers will be chosen according to Interior's Concept Design.

08.26.03 MARBLES AND STONES

Marble floors, walls, and furniture tops will be fitted as shown as per Functional Plan Book.

Marbles will be chosen according to Interior's Concept Design.

Marbles and stones will be mounted on light support when installed on walls and floors, for a total thickness of 20 mm. For tops and other surfaces, where solid slabs will be used, maximum thickness of the slab will be 20 mm.

All selected marble samples (Nr. 3 copies) will be double signed (one by the Owner, one by Benetti).

GUEST&OWNER:

ROOM	TYPE	BRAND
GALLEY	WORK TOP + BACKSPLASH (H.MAX10cm)	BENETTI SELECTION
ROOM	**TYPE**	**BRAND**
OWNER'S BATHROOM	FLOOR	BENETTI SELECTION
BATHROOM	VANITY TOP + BACKSPLASH	BENETTI SELECTION

	(H.MAX20cm)	
BATHROOM WITH SHOWER	SHOWER FLOOR	BENETTI SELECTION

CREW AREA:

ROOM	TYPE	BRAND
BATHROOM	VANITY TOP + BACKSPLASH (H.MAX10cm)	BENETTI SELECTION

08.26.04 CARPET

Carpet will be chosen according with the Interior's Concept Design and the Functional Plan Book.

All edges of carpet will be bound, where necessary.

08.26.05 WOOD AND VENEER

In the guest interior areas, the wood and veener are described accordingly the style selected.

Any different selction of wood and veneer from the style selected will be check in term of time and cost and could generate extra.

The main wood will be satin accordingly to the concept style selected.

The maximum wood and veneer gloss varnishing value is 100° for the parts of details indicated in the interior concept style.

Lacquered panel will be satin colour varnishing following any RAL code for the parts indicated in the interior concept style; any different or custom finishing (for example metallized, polished, ect) will be check in term of time and cost and could generate extra.

Galley and pantry will be in lacquered wood satin finishing.

Crew quarters will be in oak in satin finishing and satin lacquered wood with satin lacquered wood ceiling as per Benetti selection.

08.28.01 SANITARY EQUIPMENT

Wash basins, sinks will be fitted in Guest's Areas per the Interior's Concept Design and the Functional Plan Book.

Shower doors for Guest and Owner's Bath will be of commercial type with proper locking system.

Crew Areas sanitary equipment will be fitted as per Benetti Selection, in according with the Functional Plan Book.

08.28.02 TAPS

Taps in the Guest's Areas will be fitted in Guest's Areas per the Interior's Concept Design and the Functional Plan Book.

Crew areas taps will be fitted as per Benetti Selection, in according with the Functional Plan Book.

08.28.03 BATHROOM ACCESSORIES

The bath accessories fitted in the Guest's Areas will be chosen according to the Interior's Concept Design and the Functional Plan Book.

GUEST&OWNER:

ROOM	TYPE	QUANTITY	BRAND
BATHROOMS	SINK	1	BENETTI SELECTION
BATHROOMS	WASHBASIN FAUCET	1	BENETTI SELECTION
BATHROOM WITH SHOWER	SHOWER MIXER	1	BENETTI SELECTION
BATHROOM WITH SHOWER	SHOWER DIVERTER	1	BENETTI SELECTION
BATHROOM WITH SHOWER	SHOWER HEAD	1	BENETTI SELECTION
BATHROOM WITH SHOWER	SHOWER HANDSET	1	BENETTI SELECTION
BATHROOM	SOAP HOLDER	1	BENETTI SELECTION
BATHROOM	GLASS HOLDER	1	BENETTI SELECTION
VIP AND OWNER'S BATHROOM	TOWEL RAIL	2	BENETTI SELECTION
GUEST AND DAY HEAD BATHROOM	TOWEL RAIL	1	BENETTI SELECTION
BATHROOM	TOILET BRUSH HOLDER	1	BENETTI SELECTION

BATHROOM	TOILET PAPER HOLDER	1	BENETTI SELECTION
BATHROOM	CLOTHES HOOK	2	BENETTI SELECTION
BATHROOM	TOILET GARBAGE BIN	1	BENETTI SELECTION
BATHROOM	SHOWER/BATH BASKET	1	BENETTI SELECTION
GALLEY	SINK	1	BENETTI SELECTION
GALLEY	FAUCET	1	BENETTI SELECTION

CREW AREA:

ROOM	TYPE	QUANTITY	BRAND
CREW BATH	SINK	1	BENETTI SELECTION
CREW BATH	FAUCET	1	BENETTI SELECTION
CREW BATH	SHOWER COLUMN SET	1	BENETTI SELECTION
CREW BATH	SOAP HOLDER	1	BENETTI SELECTION
CREW BATH	GLASS HOLDER	1	BENETTI SELECTION
CREW BATH	TOWEL RAIL 45cm	2	BENETTI SELECTION
CREW BATH	TOILET BRUSH HOLDER	1	BENETTI SELECTION
CREW BATH	TOILET PAPER HOLDER	1	BENETTI SELECTION
CREW BATH	CLOTHES HOOK	2	BENETTI SELECTION
CREW MESS	SINK	1	BENETTI SELECTION
CREW MESS	FAUCET	1	BENETTI SELECTION

EXTERNAL:

ROOM	TYPE	QUANTITY	BRAND
BAR	SINK	1	BENETTI SELECTION
BAR	FAUCET	1	BENETTI SELECTION

08.30 VARIOUS ACCESSORIES

08.32.0 MISCELLANEOUS

GUEST&OWNER:

ROOM	TYPE	BRAND
ALL	DOOR HANDLE	BENETTI SELECTION
ALL	DOOR STOPPER	BENETTI SELECTION
ALL	FURNITURE KNOB	BENETTI SELECTION
ALL	ANTI-ROLL RODS	BENETTI SELECTION
ALL	HAND RAIL	BENETTI SELECTION

ROOM	TYPE	QUANTITY	SIZE	BRAND
MASTER CABIN	SAFE	1	210X297 MM	BENETTI SELECTION

Decorative lamps

Decorative lamps fitted in the Guest's Areas will be chosen according to the Interior's Concept Design and the Functional Plan Book.

GUEST&OWNER:

ROOM	TYPE	QUANTITY	BRAND
VIP CABIN STBD	WALL LAMP	2	BENETTI SELECTION
VIP CABIN PORT	WALL LAMP	2	BENETTI SELECTION

TWIN CABIN STBD	WALL LAMP	1	BENETTI SELECTION
TWIN CABIN PORT	WALL LAMP	1	BENETTI SELECTION
MAIN SALOON	TABLE LAMP	2	BENETTI SELECTION
OWNER CABIN	WALL LAMP	2	BENETTI SELECTION
WHEELHOUSE	CHART LAMP	1	BENETTI SELECTION

CREW AREA:

ROOM	TYPE	QUANTITY	BRAND
CREW CABIN	READING LAMP	5	BENETTI SELECTION

Special request will be quoted accordingly.

08.34.01 MATTRESSES

Owner's, Guest, Captain mattresses will be of the spring type, custom made, with padding.

The Crew 's mattresses will be of rubber foam, custom made.

There will be some clearance between the mattress and the bedframes.

08.40 DOMESTIC APPLIANCES

08.41.00 APPLIANCES

Domestic equipment fitted on board will be chosen according to the Functional Plan Book.

CREW:

ROOM	TYPE	QUANTITY	BRAND

SERVICE SPACE	WASHER MACHINE	1	BENETTI SELECTION
SERVICE SPACE	DRYER MACHINE	1	BENETTI SELECTION
CREW MESS	MINIFRIDGE	1	BENETTI SELECTION

GUEST&OWNER:

ROOM	TYPE	QUANTITY	BRAND
GALLEY	COOKING TOP 90cm	1	BENETTI SELECTION
GALLEY	EXHAUST HOOD	1	BENETTI SELECTION
GALLEY	OVEN 90cm	1	BENETTI SELECTION
GALLEY	MICROWAVE	1	BENETTI SELECTION
GALLEY	DISHWASHER	1	BENETTI SELECTION
GALLEY	GARBAGE MACERATOR	1	BENETTI SELECTION
GALLEY	FREEZER	1	BENETTI SELECTION
GALLEY	FRIDGE	1	BENETTI SELECTION
OWNER'S CABIN	MINIFRIDGE	1	BENETTI SELECTION

EXTERNAL:

ROOM	TYPE	QUANTITY	BRAND
BAR	ICE MAKER	1	BENETTI SELECTION
BAR	MINIFRIDGE	1	BENETTI SELECTION

08.50.00 SPECIAL DECORATION

The builder will design and execute all the interior furniture and decor according the material selection and typical details indicated in the specification.
Any request of change and or modification to the interior furniture and decor of what proposed and not expressly mentioned in the specification and related interior documents such as high gloss interior varnishing, special wood lacquering, metallic lacquering, metal decorative inlays, wood marqueteries and inlays, special woods decorations, gold leaves, silver leaves, marbles inlays, mosaics, custom made decorative items, custom made hardware ecc... will be evaluated and quoted accordingly.

10 MISCELLANEOUS

10.00 MISCELLANEOUS

10.01.01 OWNER'S SUPPLY

Owner's supplies up to 2,5 t have been considered for weight calculation within this Specification. These are typically to include but not limited to:

- tender;
- pwc;
- water sports equipment;
- pots, pans and cooking utensils;
- crockery;
- cutlery and serving pieces;
- table accessories;
- table linens;
- bed linens, blankets;
- towels and robes;
- stationary;
- guest booklets,
- decorative items;
- uniforms;
- charts, pilots, almanacs, chart table equipment, nautical books and publications (including those for MGN280 compliance, when Option is purchased);
- computers;
- tools;
- spare parts;
- diving bottles with scuba accessories and swimming equipments.