



VIKOMA INTERNATIONAL LTD

Kingston Road, East Cowes, Isle of Wight, UK, PO32 6JS

T.+44 (0) 1983 200560 F.+44 (0) 1983 200561

E.sales@vikoma.com WWW.VIKOMA.COM

PART OF THE ENERGY ENVIRONMENTAL GROUP



**Outline Specification
for version Work 30**

Contents

1 GENERAL DESCRIPTION	3
Operational requirements	5
GENERAL ARRANGEMENT	5
11 Project management and design	5
13 Documents and spare parts	6
16 Tests and trials	7
17 Delivery	7
18 Commissioning and user's training	8
19 Warranty	8
2 HULL	9
21 Hull structure	9
22 Tanks	9
23 Fire, thermal and sound insulation of the engine spaces	9
3 DECK STRUCTURES	9
31 Superstructure	9
32 Viewports	9
33 Hatches, ladders, handrails, bollards and other fixed structures	9
34 Deck equipment	9
37 Non-integrated tanks	10
4 PAINTING, ANTI-CORROSION	11
41 Painting of hull	11
42 Painting of superstructure	11
43 Anti-corrosion	11
44 Hull markings	11
5 SHIP SYSTEMS	12
51 Cooling system	12
52 Fuel oil transfer	12
53 Lubricating oil system	12
54 Fire-fighting system	12
55 Ballast and bilge water systems, drainage and air pipes	12
56 Hydraulic systems	12
57 Fresh water, deck washing and sewage systems	12
58 Ventilation in engine spaces	13
59 Exhaust gas piping	13
6 PROPULSION SYSTEM, OTHER MACHINERY	14
61 Main engines	14
62 Reduction gear and clutch	14
63 Propeller shaft, bearings and propeller	14
64 Auxiliary engine and generator	14
65 Remote control	14
66 Steering	14
7 ACCOMODATION	15
72 Thermal, fire and noise insulation	15
73 Interior surfaces	15
74 Heating and ventilation	15
75 Bridge Deck level accommodation	15
76 Main Deck level accommodation	15
77 Workshop/ Deck Storage	16
8 ELECTRICAL SYSTEM	17
81 General	17
82 Switchboards	17
83 Shore connection and batteries	17
84 Cabling	17
85 Lights and lighting	17
86 Navigation equipment	18
87 Communication equipment and intercom	18
880 Alarm systems	18
9 OUTFITTING	19
92 Emergency equipment	19
93 Other outfitting	19
10 OPTIONS	20
101 Machinery	20
102 OUTFITTING	20
103 ACCOMMODATION	20

1 GENERAL DESCRIPTION

Vikosprint 30 offers an exceptionally wide and stable working platform for working. The vessel hull form is a carefully optimised trimaran. Different load conditions have relatively little influence to speed. Fuel consumption is low allowing for smaller fuel tanks and better payload. Smaller operation costs.

The vessel is intended for longer open sea expeditions, which can last from one week to one month.

Vikosprint 30 has accommodation arranged so that there are three cabins: One for the Captain on bridge level and two cabins on main deck level for the crew.

Bridge deck level: Navigation area, Captain's Cabin, Operation Centre

Main Deck level: Pantry, Mess room, two crew cabins, Two Heads, Shower, Change area, Deck Storage.



On main deck there is 200 m² for Equipment area. This picture shows a 20` container, Rib, two open ocean boom reels 500m of boom on each. There is still a good amount of working space around the deck.



The basic model of the vessel is not constructed for navigation in ice field. However, we have tested the trimaran hull in arctic laboratory and know that when the hull is properly strengthened, the 30 m version can go in 25cm ice. The shape has been patented for navigation in ice conditions. The navigation ability in Nordic waters will be offered as an option

The bridge is designed for two navigation persons. One at the There can be a co-pilot sitting next to the person in helm. A small sofa with table is mounted behind the pilots as shown in the GA.

On main deck level there will be dedicated workshop/deck storage. There is a space for changing clothes and washing in a shower. From this space there is entrance to a separate water closet and shower.

Additionally there will be a small pantry and mess room.

The vessel propulsion is marine diesel engine with conventional shafting and propeller arrangement.

Controllable pitch propeller is offered as an option for constant low speed working and maximum hydraulic power output in different sea states and load conditions. CP-propeller helps moving the vessel accurately and allowing simultaneous use of the needed hydraulic equipment.

The vessel has low wave making properties. Because of the relatively high speed low-weight materials and constructions are preferred throughout the vessel.

The vessel can be outfitted for many different types of operations with optional equipment. For example the vessel can be turned into an oil recovery version by equipping it with an integrated FinnSweep® brush skimmer. See 1021.

Operational requirements

The vessel described in this text is designed for any work operations in coastal waters and on open sea. However, oil spill response work can only be made in relatively calm waters due to the nature of the work.

The specified operational requirements are as follows:

Special service vessel/Open Sea.

The vessel shall be classified by Bureau Veritas.

Ambient temperature: + 0 °C - + 35 °C

Sea water temperature: + 0 °C - + 28 °C

GENERAL ARRANGEMENT

VESSEL DIMENSIONS ~

Length over all	32,2 m
Length, moulded	30,0 m
Beam	12,2 m
Draft	2,5 m (with fixed-pitch propeller)
Working deck area	200 m ²
Speed, service	20 kn
Fuel Capacity	12 tons
Range	600 nm
Deadweight	Work 24 tons, (FinnSweep 4,5 tons incl.)
Accommodation	Crew 4, classified max capacity 12 persons.

Deck house on main deck level has deck storage for equipment and minor repair works, Mess room with sofas and pantry and cupboards for inventory. Change room for changing the overall and shower and head.

11 Project management and design

111 Project monitoring and quality assurance

Vikosprint quality assurance system is based on ISO9001-2003.

112 Design

The Vikosprint is responsible of the design of the vessel and takes care that the plans are properly approved by Classification Society.

1121 Project plans and timetable

Before starting the construction of the vessel Vikosprint will send basic design documents to the buyer for information. The buyer has 14 days to comment on the documents after that the building continues.

Vikoma will prepare a construction timetable for the owner for information.

The following plans and drawings will be sent to the Owner:

- General arrangement
- Quality assurance plan
- System diagrams
- Engine room arrangement
- Deck house arrangements and material specifications.
- Tank arrangement
- Electrical main diagrams

1122 Workshop drawings

Workshop drawings are property of the Builder and they will not be part of the delivery material.

113 Purchases

The following principles are followed when purchasing materials for this vessel

- Purchases are only made from audited and approved suppliers.

- The purchased materials, equipment and services are in accordance with the contract specification and approved drawings.
- Purchase contract is legally binding the subcontractor or supplier.
- Materials are stored under good conditions

13 Documents and spare parts

131 Classification and inspections

General

The vessel shall be built and surveyed by to Bureau Veritas according to rules I ~~X~~**HULL**

•MACH Special service/Workboat

Owner's inspectors

The Owner's inspectors shall have free access to all spaces, where parts of the vessel are being manufactured within normal working hours.

Vikosprint will arrange for Owner's representatives possibility to visit the workshops of all the subcontractors making parts or equipment for the Vessel.

Tank tests

The tanks will be pressure tested in order to find possible leaks. The tests will be made with water or air, depending on tank type or size.

Welding inspection

The inspection in hull welds will be in accordance with Class requirements. An authorised inspection company will be used to perform the tests. Reports of the tests will be given to Classification society for approval.

Lifting equipment

All lifting equipment will be inspected by an authorised lifting equipment inspector or equivalent authority that gives certification of proper installation and testing.

132 Insurance

The vessel has full insurance coverage during building period.

133 Delivery documents

Delivery drawings and instructions in 2 paper copies and in PDF- format on a CD-ROM will be delivered to the Owner on the boat's delivery at the latest. All delivery material shall be of as-built type. The following drawings will be included in delivery material:

- General arrangement
- System diagrams
- Engine room arrangement
- Accommodation arrangements
- Shaft line drawing
- Tank arrangement
- Electrical main diagrams
- Safety plan
- Hydrostatic and stability data
- Trim and stability book for different loading conditions (100%, 50% and 10%)
- Docking plan

The manuals of the equipment suppliers will be delivered onboard, for example:

- Main engine and reduction gear
- Shaft sealing
- Steering propeller
- Steering gear
- Deck crane
- Anchor winch
- Navigation equipment
- Radio equipment
- Equipment in accommodation

134 Certificates

Hull aluminium materials will be delivered with certificates 3.1.B or equal (see 21).

On delivery of the vessel certificates according to Rules and regulations will be delivered:

- Builder's Certificate
- Delivery and Acceptance Protocol
- Lifesaving Equipment Certificate
- Stability Booklet approved by the classification body.

All certificates will be free of any conditions.

135 Spare parts

Maintenance spare parts for first normal service of the main engine will be included in the delivery.

Other possible spare parts that client wants to be delivered (like spare propeller) has to be agreed with Vikoma during the project.

16 Tests and trials

The representatives of the Owner can participate in all trials. The Owner will be informed of all trials not later than 2 weeks beforehand.

Water tightness of hatches, windows and doors will be tested with water spray.

At Quay trials the following will be tested

- Main engine running test (Engine supplier specialists shall tune the engine before any trials)
- Tests of electric installations in different loading conditions
- Test of manoeuvring and alarm functions
- Radar
- Steering system
- Navigation equipment
- Anchoring equipment
- Mooring equipment
- Deck crane
- Test of piping and pumps
- Test of windows, doors, handles, keys etc.
- Test of heating and ventilating installation
- Test of fire extinguishing system including fire alarm
- Test of bow propeller
- Test of all machinery and installations

Sea trials

The sea trial program will be done together with the Owner. Following tests will be done:

- Turning circle test to both directions
- Starting and stopping test including crash stop test consecutive 2 times
- Sea trial time will be at least 8 hours; special attention to main engine cooling system.
- Test of steering propeller with different speeds from 0 to 5 knots
- Noise level measurements at main engine 85% RPM
- Fuel oil consumption test from idling to full speed will be done under sea trial.
- (Mechanical testing of FinnSweep oil recovery system in case in delivery)

17 Delivery

The vessel will be delivered in full operational condition after the tests have confirmed, that the vessel corresponds to design documents.

The vessel will be delivered in ready-for-sailing condition, with full lubricating and hydraulic oil tanks. No fuel.

18 Commissioning and user's training

Commissioning and user's training will be arranged as part of the quay and sea trials.

19 Warranty

The guarantee period is 12 months from delivery. The guarantee is for materials equipment failures and workmanship. It is not covering normal wearing and damage caused by failure of faulty maintenance. The Builder's standard guarantee report form has to be used for reporting faults during the guarantee period.

2 HULL

21 Hull structure

The hull and superstructure will be made of marine grade aluminium. All structures will be welded. Plate materials are EN AW 5754 (AlMg3) or EN AW 5083 (AlMg 4,5). The profiles are made of alloyed aluminium EN-AW 6082 or equivalent.

The materials shall have material certificates; aluminium plates EN 10204//3.1B and profiles EN 10204/2.1.

Hull protection fenders shall be installed according to the GA drawing. Fender material is PE-black pipe.

The top edge of the transom will be rounded to prevent wearing of booms or ropes. Handrail over transom is removable in three separate sections to give optimum working area in lowering and hoisting of equipment.

22 Tanks

There will be two fuel tanks of abt. 6 m³ in each side hull. Tanks are not interconnected. The tanks shall have remote level measurement with display at helm station. The tanks are filled on main deck above the tank on each side.

23 Fire, thermal and sound insulation of the engine spaces

The engine room fire and sound isolation shall be made according to the Rules.

3 DECK STRUCTURES

31 Superstructure

The superstructure will be made of aluminium.

311 Doors

Door construction shall be according to SFS shipbuilding standards. Door to engine room is watertight. Doors to other spaces are splash water tight.

312 Masts

There will be one fixed aluminium mast for radar and navigation equipment.

32 Viewports

Toughened glass will be used for all viewports; thickness according the Rules. Viewports frames will be welded to the aluminium plates and the glass glued to the frame. Thus the water tightness is secured.

324 Window wipers

Window wipers with fresh water spooling shall be installed on helm station for all viewports ahead and one window on both sides.

33 Hatches, ladders, handrails, bollards and other fixed structures

All hatches, handrails and bollards are according to the GA and made of aluminium.

34 Deck equipment

341 Anchor winch

Self-stowing hydraulic anchor windlasses 2pcs, cable locker and locker for warps etc will be on main deck, one forward the other in the aft.

342 Anchors

Two anchors, weights according to rules.

343 Anchor and mooring ropes

Anchor and mooring ropes and chains according to Rules.

344 Deck crane

Hydraulic crane, capacity ~ 20tm with winch shall be installed on main deck. Reaching 15 meters.

345 Deck fittings

There are 16 lifting eyes to allow fixing of equipment on the deck.

350 Floor covers

There are aluminium floor covers in engine room and in main hull storage room. These covers have anti slip grooves.

37 Non-integrated tanks**372 FW tanks**

Fresh water tank size ~ 5000 litres and filling from main deck fittings.

373 Septic tanks

Black water vacuum collection tank with deck discharge points.

376 Bilge oil tanks

Small bilge oil tanks in engine room according to Rules.

4 PAINTING, ANTI-CORROSION

41 Painting of hull

Surfaces to be painted are deckhouse (outside), hull (outside) and board (outside).
Colours will be agreed with the customer.

Sandblasting or equivalent to SA 2.5.

Wet Hull

Primer 1 x Epoxy, total 150µm

Coating 1 x Topcoat, total 135µm

Others

Primer 1 x Epoxy primer, total 60µm

Finish 1 x Topcoat, total 60µ

Deck with anti-slip finish.

All coating work will be carried out by professional painters only. Coating products are from Jotun or equivalent.

The Builder and their subcontractors(s) are to have their own Quality Control and pre-inspect all items prior to calling the Owner for painting inspection.

Welding seams of stainless steel parts will be acid-treated or polished properly to prevent surface corrosion.

42 Painting of superstructure

Surfaces to be painted are deckhouse (outside)

Colours will be agreed with the customer.

Sandblasting or equivalent to SA 2.5.

Primer 1 x Epoxy primer, total 60µm

Finish 1 x Topcoat, total 60µ

All coating work will be carried out by professional painters only. Coating products are from Jotun or equivalent.

43 Anti-corrosion

Zinc anodes suitable for aluminium shall be mounted to the hull near propeller, rudder and water intakes in order to prevent corrosion of aluminium.

44 Hull markings

Vessel name and Owners logo shall be placed on both sides of the hull depending on client.
Depth marks shall be painted to bow and stern.

5 SHIP SYSTEMS

51 Cooling system

Seawater cooling is used for cooling of:

- main engine
- auxiliary engine
- exhaust gas
- reduction gear
- hydraulic oil system

511 Seawater pumps and filters

A closing valve shall be mounted to each seawater line intake.

52 Fuel oil transfer

Fuel system with double filters and water separators will be installed in fuel lines. Fuel to engines can be taken from each tank with the help of manual valves.

53 Lubricating oil system

The main engines shall have a built-in lubricating system

54 Fire-fighting system

541 Fire-fighting in engine spaces

A fire-fighting system type Pyrogen or equivalent shall be installed in the engine room.

542 Fire extinguishers

Portable fire extinguishers are mounted according to rules and location according to the Safety Plan.

543 Fire / deck washing pump

Fire pump can be used as emergency bilge pump.

55 Ballast and bilge water systems, drainage and air pipes

Each hull shall have a bilge water pump. In main the main hull fire pump is used for emergency drainage. Side hulls have separate electrical bilge pumps. Main bilge pump has capacity according to rules. Each hull section is ventilated with an air pipe.

56 Hydraulic systems

Power for hydraulic pump is taken off from PTO of either main engine or the reduction gear. The system consists a volume regulated pump, an oil tank and a seawater cooler.

57 Fresh water, deck washing and sewage systems

571 Fresh water

A fresh water generator with salinity monitor will be installed.
Hot & Cold pressurised fresh water system to pantry and toilets and shower.

572 Boiler

An about 150-litre hot water boiler will be installed.

574 Deck washing/fire water

Seawater outlet is on working deck. The water comes from emergency fire pump.

575 Sewage systems

Black water system has own storage tank. Tank discharging is arranged with a vacuum suction point in the port side.

58 Ventilation in engine spaces**581 Engine room ventilation**

Engine room ventilation arranged with separate electrical fans inlet. Fan is installed in connection with the stairway to center hull.

582 Other spaces

Natural ventilation with goose necks to be installed.

59 Exhaust gas piping

The main engine exhaust gas pipes and auxiliary engine pipes are of wet type and they are led out between the hulls. Main engine cooling water is sprayed into the exhaust gas after the highest point of the line. After that point the piping is made of heat resistant exhaust gas hose.

6 PROPULSION SYSTEM, OTHER MACHINERY

The vessel propulsion is marine diesel engine with conventional shafting arrangement. Engine mounted fixed to the hull and reversing gearbox with PTO mounted to it. The shaft connected to the gearbox. Normal fixed pitch propeller mounted to the shaft. Steering is arranged with a rudder.

61 Main engines

Two marine diesel engines total power ~ 1500 kW, fixed installation.

62 Reduction gear and clutch

Reduction gear has a clutch and reversing possibility.

PTOs for hydraulic pump and deck wash/fire pump either from the main engine or reduction gear; depending on the engine/reduction gear manufacturer.

63 Propeller shaft, bearings and propeller

631 Propeller shaft

The propeller shaft material is seawater resistant steel.

632 Propeller

Propellers are 4- or 5-bladed,

633 Propeller shaft bearings

The shaft bearings are water lubricated rubber bearings

635 Propeller shaft sealing's

The shaft seal is of axial type.

64 Auxiliary engine and generator

Auxiliary engine unit will be installed. The engine is a water-cooled diesel with wet exhaust pipe. Total generator output is ~ 50 kVA. The fundament is flexibly mounted to the hull.

65 Remote control

There will be one control position for the helmsman in the middle of control pulpit and a side steering position at the back of the wheelhouse. The side steering can be used while working over the side of the vessel or when the vessel is moored in the port. In both positions there shall be electric control of rudder, main engine and a bow thruster additionally the rudder angle indicator shall be at the aft steering position.

Control pulpit shall have all communication equipment, alarm panels, light panel, motor control panel and indicators.

66 Steering

661 Bow thruster

Hydraulic bow thrusters 2x50 kW (propeller power) will be installed in the main hull.

662 Rudder machine

Rudder machine includes hydraulic cylinders, hydraulic components and a tiller.

663 Rudder stock

Rudder stock is made of seawater resistant material.

664 Rudder

Balanced spade rudder is high-power profile of plate construction.

Rudder angle shall be +40 --40 degrees.

665 Bearings

Two water lubricated bearings with a shaft sealing in the engine room.

666 Steering system

The steering system will be electro hydraulic.

7 ACCOMODATION

Low weight materials and constructions will be preferred in the accommodation.

72 Thermal, fire and noise insulation

Walls, ceilings and floors in the Pilothouse will be insulated.

73 Interior surfaces**731 Walls**

Walls are covered with a laminate.

732 Ceilings

Ceilings upholstery is made with vinyl.

733 Floor

In all interior spaces the floor material is rubber flooring Norament® or equivalent. Flooring is chosen so that the floors can be washed with water and detergent.

74 Heating and ventilation**741 Window de-misting**

De-misting system for the Pilothouse front viewports is arranged with warm air blowing to the viewports.

742 Air condition and ventilation

One roof mounted air condition unit Aurora EOS 85 or equivalent is mounted on bridge deck. There will be one ventilation unit for the Pilothouse. There is mounted one air-conditioning unit in the mess room.

75 Bridge Deck level accommodation**751 Control desk**

The control desk will be according to the GA.

752 Other furniture

Sofas and table according to GA.

753 Pilot seat

There will be 1 pilot seat.

754 Captain´s cabin

Cabin has basic cabin furniture and a desk for paper works.

76 Main Deck level accommodation**761 Pantry**

The arrangement is made according to the General arrangement.

The pantry shall have the following equipment:

1 cupboard/work desk with a sink and faucet

1 microwave oven

1 refrigerator with freeze box, total volume abt. 100L

762 Mess room

Next to Pantry there is a mess room area. The place is intended for eating or living when not in duty.

The arrangement is made according to the General arrangement.

There will be a 40" Flat screen TV

763 Head

There will be a head with entrance from the mess room area. Another similar head in connection of the shower and changing room.

It has the following outfitting:

- 1 toilet bowl
- 1 cupboard with mirrored door
- 1 sink and faucet
- 3 hand towel hooks

764 Shower

Arrangement is according to the GA-plan.

77 Workshop/ Deck Storage

The workshop is intended for small repairs and for storing spares of the oil spill response equipment onboard. Arrangement is according to the GA-plan.

8 ELECTRICAL SYSTEM

81 General

Electrical system is 400 V/ 50 Hz, 3 phase, zero wire isolated from ground. There shall be one or two auxiliary engines with total power abt. 50 kVA. 230V is supplied via a transformer. Emergency consumers are using 24 V system. Earth separated double cable installation is used also in low voltage system. An earth leakage measurement system constantly monitors cables and equipment.

The generator will give output power for all installed AC-consumers.

82 Switchboards

821 Switchboard 400/230V

Switchboard contains generator connection, shore connection and the starters of main consumers. Located in main hull.

822 Switchboard 24 V

Low voltage switchboard and the instrumentation connection boxes are mainly concentrated in control desk and in the space in front of engine room.

83 Shore connection and batteries

831 Shore connection transformer

Shore connection box shall be installed on main deck behind the deckhouse. Vessel's network separated from shore network by transformer. Shore cable 20 m included in the delivery. When shore connection is on, the vessels own generator should not be connected to the circuit.

832 Batteries

In engine room there shall be two battery packs (24V). One battery pack is for starting the engines and the other one for consumers. Battery packs can be cross-connected in case needed for starting main engines or generator.

84 Cabling

841 Cable trays and electrical outlets

Cables are fixed to cable trays or into cable pipes. Only abt. 300mm of cable is without support at a time.

842 Penetrations

Cable penetrations on watertight bulkheads are made of standard parts.

843 Cables

All cables installed by Vikosprint are Halogen-free

85 Lights and lighting

851 Navigation lights

Navigation lights according to Rules. Additionally NUC (Not Under Control) lights to be installed.

852 Searchlight

One remotely operated searchlight type Golight 220 or equivalent to be installed on Pilothouse roof.

853 Internal lighting

In deckhouse and accommodation area standard fluorescent lamps will be used

854 Deck lighting

The work deck shall have 4 off ~ 70W halogen floodlights installed in each corner of the pilothouse to give illumination on the working area.

86 Navigation equipment

The following equipment installed at the helm station
Raymarine system with

- C120 Multifunction Navigation Display 20",
- Radar Pathfinder RD424 4kW
- GPS + Antenna
- Echo sounder DSM 300
- Rudder angle indicator
- Magnetic compass
- FM radio, car model Philips with antenna Or equivalent

87 Communication equipment and intercom**871 VHF-telephone, fixed**

VHF/DCS -radio Ray 240E or equivalent shall be installed

872 VHF-telephone, portable

Portable VHF radio Geonav Pocket 4300 or equivalent.

877 Signalling system

Signal horn ~ 100dB, type Marco, AFI or equivalent approved by BV.

878 Command telephone

Raymarine 430 Loudhailer at helm station, bi-directional weatherproof loudspeakers on both fore and aft deck.

880 Alarm systems**881 Fire alarm system**

A fire alarm system with control panel on the helm station is installed in accordance with the Rules.

882 Bilge water alarm

There will be a bilge water alarm from each hull section on the bridge.

884 Current alarms

Earth-leakage alarm is installed on the bridge.

885 Engine alarms

Main engine manufacturers' standard alarms will be used.

886 Level alarm of fuel tank

No separate alarm. See 22.

9 OUTFITTING

92 Emergency equipment

life raft for 12 persons	2 off
Life-buoy with line/light	4 off
Inflatable life jacket	12 off

Other life saving equipments will be according to the rules.

93 Other outfitting

Electronic clock on the bridge

A ship's bell will be installed on the aft bulkhead of the superstructure.

Signs will be mounted according to technical project to doors, hatches, valves, pipelines and cables.

Tools, navigation and ship's inventory, flag, signals shall be Owner's delivery

10 OPTIONS

101 Machinery

1011 CP-propeller (63)

In oil recovery mode the speed of the vessel is to be kept low, typically between 1,5 to 2 knots. However, simultaneously the hydraulic systems for the bow thruster, oil recovery system, crane and others must be on. Because the hydraulic pump uses the PTO of the main engine, revs must be kept high. On the other hand, hull resistance of this vessel is low, so typical speed even at idling exceeds the target speed.

Using a fixed-pitch propeller means that speed can be kept low only by switching the clutch on and off. At larger oil spill the recovery time can be days, so control of the vessel becomes straining for both the helmsman and the clutch.

This is why we recommend a CP-propeller for oil recovery application and it is practical to almost any other work also.

1012 Remote control (65)

There will be one control position for the helmsman in the middle of control pulpit and a side steering position at the back of the wheelhouse. In both positions there shall be electric control of rudder, main engine and bow thruster. Additionally the rudder angle indicator shall be at the aft steering position.

Control pulpit shall have all communication equipment, alarm panels, light panel, motor control panel and indicators.

102 OUTFITTING

1021 FinnSweep® oil recovery system

The vessel can be delivered with a well proven integrated FinnSweep oil recovery system. There shall be mounted two brush skimmers in a watertight compartment behind the engine room. Under pressure is created behind the brushes and when oily water flows through them oil is separated from the water separated from the brush with the help of a comb. After the comb oil is pumped with a dedicated pump to sacks, a deck container or a rubber container tank floating behind the vessel.

Classification change: "Oil recovery boat, non-sinking with one flooding department, deck crane".

For details see "FinnSweep® for Vikosprint COR oil recovery boats – Outline Specification".

1022 Environmental Monitoring system "Aptomar"

The vessel can be mounted with an environmental monitoring system type "Aptomar".

The system helps to monitor and plan the recovery operation in real time. With the help of cameras integrated to the position system and radar the operator can make an effective plan for limiting the spill area with the help of the effective esa booms and to recover the oil from the sea.

103 ACCOMMODATION

1031 Heating

Heating for Nordic conditions