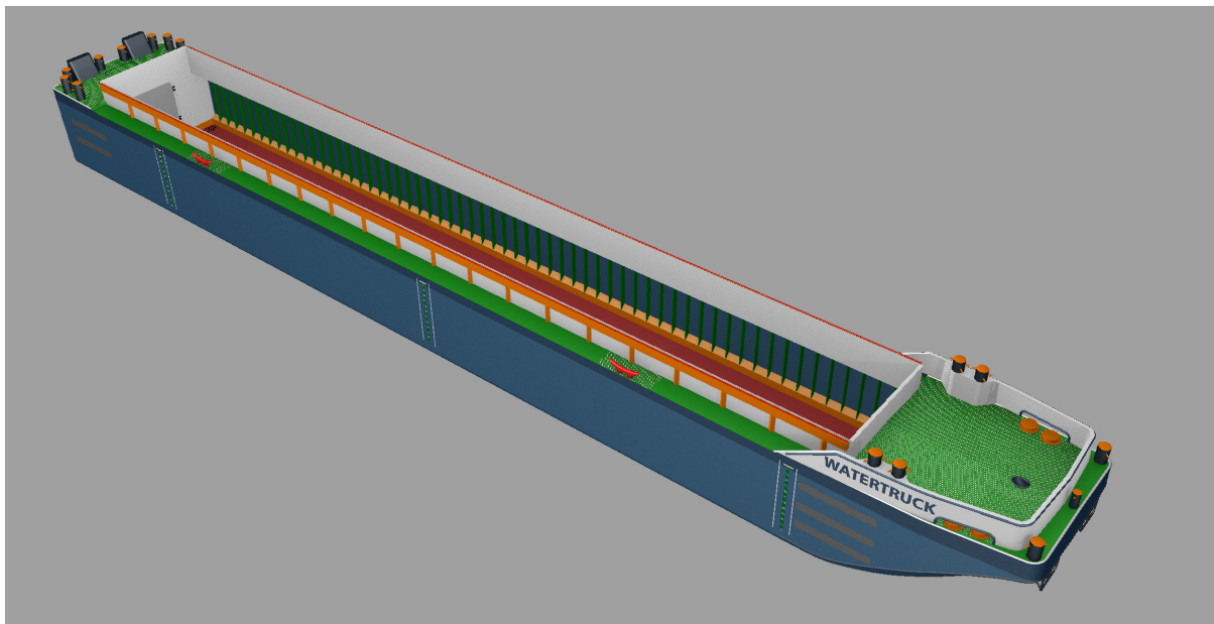


BUILDING SPECIFICATION

*For
Watertruck+ barges
Type CEMT II Long*



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DEFINITIONS & ABBREVIATIONS

Definitions

Vessel	An inland waterway vessel or sea-going ship, In this specification the vessel means the barges specified in the specification. The barges developed shall be barges conform the EU Directive definitions of barges and lighters.
Pushed convoy	A rigid assembly of craft of which at least one is positioned in front of the craft providing the power for propelling the convoy, known as the 'pusher(s)'; a convoy composed of a pusher and a pushed craft coupled so as to permit guided articulation is also considered as rigid. <i>[EU-Directive 2006/87/ec Art. 1.01]</i>
Pusher	a vessel specially built to propel a pushed convoy
Flag	Body, National Authority, where the vessel is registered
Class	Classification Society
Design	Basic design covers 'class construction package'
Owner	Watertruck+ BVBA or its representative
Operator	Barge operator or its representative
Shipyard	Main contractor of the barge / builder (could be hull/casco and/or completion yard)
Hull / Casco	Casco steel work could be including some outfitting equipment
Completion	Outfitting work, could be on different location than hull/casco yard
BENELUX	Belgium, The Netherlands, Luxemburg

Abbreviations

Loa	Length over all
Boa	Breadth over all
LD	Lightship Draft
IACS	International Association of Classification Societies
CEMT	<i>Conférence européenne des ministres des Transports</i> , EN: European Conference of Ministers of Transport
CEMT I / II	Refers to CEMT Classes, the classes are depending on the size for each waterway and is limited by the dimensions of the structures including the locks and boat lifts on the route.

0000 - GENERAL

0001 Design Philosophy

The barges in the Watertruck+ project are to be modern, high performance barges especially designed for the operation on small inland waterways of the classes CEMT I and CEMT II. Standardization is a crucial element in the Watertruck+ concept. The design philosophy aims for standardization in the structural design. Therefore a basic design is developed where customizations can be added. Typical customizations are the propulsion outfitting installation, wheelhouse, the cargo hold area for different types of cargo, a small crane for loading and unloading of unitized cargo and cargo hatch covers. The barges without propulsion are prepared for propulsion installation afterwards. The idea behind these customizations is optimal economic applicability of the concept.

Environment:

The aim is a CO2 reduction of at least 25% compared to the baseline of

- CO2 operational emissions for inland shipping in g/tonkm for CEMT I self-propelled barge: 36,4 g/tkm
- CO2 operational emissions for inland shipping in g/tonkm for CEMT II self-propelled barge: 42,9 g/tkm

The emission values need at least to comply with the EURO VI norm for road transportation or equivalent. In order to achieve these values the design shall be optimized in terms of weight, hull shape, energy consumption and propulsion system.

Where there is a choice between different systems, materials or parts in terms of environmental impact and which are equal in other respects, in principle the most environmentally friendly solution will be selected. Alternatives will be evaluated in terms of reliability, durability, installation cost, life cycle costs, ease and cost of repairs. Proposals shall be discussed with the owner and operator.

Building and operational cost:

The design is to be developed cost conscious without harming the functionality.

0002 Main particulars

Main dimensions of the Watertruck+ Barges.

		CEMT II (Long)
Length o.a.	[m]	50,00
Beam o.a.	[m]	6,60
Depth at side	[m]	2.90
Draught max.	[m]	2,80
Air draft	[m]	3,70
Payload capacity approx.	[MT]	750
Cargo hold volume approx.	[m ³]	890

Tank storage capacities

MDO	approx.	3,0	m3
Fresh water (loose tank)	approx.	1,0	m3
Sewage	approx.	1,0	m3

0003 Scope of supply

This specification describes the building of different types of barges including its equipment. Any supply which is not mentioned in the paragraph “The supply excludes” or in the paragraph “Owners Supply” or “Operator Supply” is considered “Included” in the services to be delivered.

The supply includes notably but not exclusively:

1. The studies for the layout interface and connection of equipment supplied by the shipyard or by ship owner if any.
2. The attainment of the approval of the drawings and regulatory calculations by the Classification Society for the documents issued by the shipyard, if this is necessary.
3. The construction of the vessel in compliance with the approved drawings.
4. The building survey costs by the Classification Society.
5. The cathodic protection of the hull with zinc anodes.
6. The supply, installation, connection and commissioning of the equipment supplied by the shipyard.
7. The installation, connection and assistance for commissioning of the equipment supplied by subcontractors or Owner/Operator.
8. The handling and storage, in the appropriate conditions, of all the equipment supplied by the Owner/Operator and his suppliers and/or subcontractors.
9. The installation, connection and commissioning assistance for the equipment supplied by the Owner/Operator.
10. The surface preparation, the supply of the different paints, the application of the painting system and the survey costs by the paint supplier’s approved representative in order to obtain the paintwork warranty.
11. The cleaning products for the paint application tools and materials.
12. The disposal of all residues in respect to surface preparation and paint application.
13. The protection of all equipment, either supplied by shipyard or the Owner/Operator or their subcontractors, damage and/or soiling throughout the construction period.
14. The availability of competent personnel, tools, measuring equipment and safety materials fulfilling the local regulations.
15. The procurement and utilization of all required consumables up to completion.
16. All tests required by Classification Society and Operator, e.g. scantling tests, tightness test, welding tests (radio graphical, ultrasonic, etc.).
17. All the sea trials (with Operator’s crew, yard remains responsible for sea trials).
18. The embarking of the spare parts supplied by the Operator, their storage, stowage or securing on shelves in the different locations.
19. The complete cleaning of the machinery space bottoms, bilges and other spaces and decks before delivery.
20. The sea fastening and/or the protections necessary for and during the transport to the destination port.
21. If (ocean) transport is needed, the complete transport of the hull respectively or the complete barge shall be CIF (cost, insurance, freight) BENELUX.
22. Observing and fulfilling the guidelines IMO RESOLUTION A 765(18) and IMO-MSC-CIRC 884-19981221 Safe ocean towing.
23. If (ocean) transport is needed, installation and removal of the sea fastening and/or the protections required during transportation after arrival at the destination port, the BENELUX.

24. Ensuring availability of an office for the Owners/Operators representatives or his subcontractors throughout the construction and trial period of the barge up to delivery.
25. Ensuring free access for Owners/Operators representatives or his subcontractors or surveyors of the Classification Society throughout the complete building process, starting with prefabrication and ending with delivery.
26. The drawings and documents to be supplied by the shipyard and its subcontractors, i.e. as build drawings, installation drawings, diagrams and schematic.

The supply excludes:

1. The equipment supplied by the Owner/Operator if applicable.
2. The costs of the Owners/Operators personnel or that of his suppliers and/or subcontractors for the survey of the construction and assistance with the trials at the shipyard or at sea.
3. The costs of the flag state Authority for the survey of the barge if not covered by the Classification Society.

Owners supply:

1. The (class approved) drawings and documents in accordance with the lists in the APPENDICES.
2. The equipment and services provided by the owner and his suppliers and/or subcontractors if applicable.

Operators supply:

1. The equipment and services provided by the Operator and his suppliers and/or subcontractors if applicable.

0004 Barge and equipment guarantee

All the material and equipment is guaranteed for at least 1 year for parts and labor from the delivery date of the barge by the shipyard to the operator after commissioning and satisfactory tests and trials. Tests and trials are to be to the satisfaction of Classification Society as well as to the satisfaction of the operator. The paintwork is to be guaranteed for at least 5 years by the paint supplier covering both surface preparation and application of the paint.

0005 Quality policy

All involved yards and subcontractors must have installed effective systems concerning QHSE (quality, health, safety, and environment) to satisfy both the owner and or its operator/client.

0006 Workmanship

The workmanship of the hull and all equipment and fittings shall be of high marine standard. Care shall be taken to ensure fair lines, smooth surfaces and neat welding. All materials and equipment installed in, or delivered with the barge shall be new and of good marine quality.

During the building and outfitting, high standards are kept regarding clean-keeping, safety and environmental protection.

Trade names and names of specific manufacturers mentioned in the specification are intended to describe the desired quality and/or construction of the equipment and materials and not to exclude any other makes of similar quality or construction.

All bolts, chains, fittings and other small equipment exposed are, where possible, of stainless steel and at least of galvanized steel.

0007 Delivery

The barges are to be delivered completely with all equipment installed, tested and accepted by class society and the owner/operator or their representatives. Delivery will take place by means of a final delivery protocol signed and accepted by the shipbuilder and owner. All bilges, and other spaces throughout the barge are thoroughly cleaned and painted surfaces are touched up or repaired where necessary. All stores, inventories and spare parts shall be on-board and shall be properly stored. The final acceptance and delivery are to be in an agreed location within the BENELUX.

0008 Planning

A building schedule shall be issued shortly after the contract date, at least not more than one month after. The planning / building schedule is to be supplied electronically preferably in PDF format.

The planning shall show the different phases from the completion of the contract and all the main intermediate milestones for each phase, in case delivery will take place in different batches the phases are to be specified per batch:

- Engineering / manufacturing documentation
- Procurement
- Construction
- Testing schedule of all necessary trials and tests before delivery
- A progress report is to be delivered every month. As far practicable, pictures should be included in these reports

0009 Shipping routes

The barge has to be able to operate also in complete inland range according to 2006/87/EC in any case, but not limited to, operational zone 2, 3 and 4 of the community.

0010 Optional customizations

The barge is designed to add customizations, on a plug and play base, concerning following items:

- Installation of cargo holds customizations:
 - Shell Frame closing plated
 - Double side, extension of the coaming plate
 - Different type of hold floorings (thickness, grade, type)
- Installation of cargo hatches

0011 Extra works

Extra works and its associated costs not covered in this specification are to be agreed between the Shipyard and Owner or Operator before starting the works. Such agreement is only valid in case properly documented and approved by the owner or operator.

0012 Insurance

The shipyard will bear all risks connected with the hull construction and outfitting's until delivery to the owner in the BENELUX.

The owner shall be co-assured on the insurance policies for their objects which are under construction with full waiver of subrogation.

The owner shall be listed as Loss Payee for the sum(s) paid according the payment schedule.

All deductibles shall be for the shipyards account.

0100 CLASSIFICATION

0101 Classification Society

The barge is designed and shall be built under supervision of and in accordance with the Rules and Regulations of a Classification Society, IACS member, Lloyd's Register.

All drawings and documents are to be in accordance with the Rules and Regulations applicable for the following class notation: **+ A1 IWW Container / Bulk carrier barge** (or equivalent)

Possible additional notes could be applicable, to be decided by the Classification Society:

- self-propelled notation

0102 Flag State Authority

The design and build should meet and reflect the applicable requirements of the Belgium Flag Authority.

At least the following rules and regulations (latest versions) apply:
European Directive 2006/87/EC.

0103 Test and Trials

The acceptance trials take place in the presence of the Owners and Operators representative(s) and the Classification Society. They will include at least but not exclusively the following:

- Regulatory trials in accordance with the applicable regulations which are at least based on applicable European Directive 2006/87/EC and the Classification Society Rules and Regulations.
- Especially extensive testing of the welding's in accordance to the NDT plan to be approved by Classification Society. Also the films of the radiographic tests of the welding are to satisfaction of Classification Society and the Owners / Operators representative.
- Pressure test of all tank and compartments.
- Individual testing of each electrical, combustible, air, fresh water, fire, ballasting, etc. circuit respectively system where applicable.
- Anchor tests
- Tests of deck equipment

All tests are subject to a procedure drawn up by the Builder. A test report in which the values measured and the contractual values are mentioned, together with the remarks is to be provided to the owner and/or operator.

0200 DOCUMENTS

0201 Design Documents and Drawings

All drawings, calculations and documents are to be in the English language. Documents related to the operation of the barge are additionally to be in a language as specified by the operator.

All class approved hull construction drawings will be delivered by Watertruck+ BVBA. The shipyard is responsible for the detailed engineering, i.e. work shop documentation and nesting files.

The approved hull construction documents delivered do not alter in any way the responsibility of the shipyard with regard to applicable regulations.

Upon delivery a construction file shall be delivered, containing all material certificates, compliance certificates, drawings and documents approved by the Classification Society.

It is the responsibility of the shipyard to arrange a set of as built drawings.

0202 Design Parameters

The barges are designed for the following loads:

Hull:

Scantling draft:	2,80m
Zone	Inland Zone 3/4

Cargo hold:

Bottom structure	4 t/m ²
Container stack load:	maximum 15 ton

0203 Manuals / documentation

Instruction and installation manuals are to be delivered in hardcopy and PDF, either in the English or Dutch language containing as a minimum description and references, instructions for use, instructions for maintenance and list of spare parts.

0204 Hull Arrangement

The barge arrangement can be described in short as follows:

- The main structure of the midship consists of a double bottom with single side shell. In principle the double bottom is not designed for ballast purposes.
- One forepeak consisting of one compartment including an anchor pocket and hawse pipe.
- The hull structure in the bow and aft section is adequately reinforced, in order to support the pushing boxes.
- One fore engine room with space for 1 bow thruster, fuel tank with manhole, sewage tank with manhole and a seating for machinery/generator skid.
- One cargo hold.
- One aft engine room/aft peak with a canal thruster housing and channels.

0205 Hull Subdivision

Three transverse bulkheads divide the hull in 4 watertight compartments:

CEMT II Long	Length	Frame	Spacing
Aft peak / Engine room	2,500 m	0-5	500 mm
Cargo hold	41.250 m	5-87,5	500 mm
Bow thruster room	4,250 m	87,5-96	500 mm
Fore peak	2,000 m	96-100	500 mm

0206 Certificates

At its delivery the barge shall have all relevant certificates according to Class Rules and Regulations, the European Directive 2006/87/EC. At least the following certificates have to be available and delivered with the barge:

- Flag State Registration Certificate
- Certificate of Class
- EU Directive Community Certificate with a note suitable for restricted navigation.
- Vessel gauge certificate and table (NL Meetbrief)

All certificates shall be free of any restriction. The owner will initiate administrative procedure in Belgium for Authority documents. The shipyard shall undertake appropriate actions in order to provide all necessary documents, certificates and/or attestations to the owner.

1000 HULL STRUCTURE AND HULL OUTFITTINGS

1001 General

This specification describes the requirements for a steel hull and steel hull outfitting. Shipyards tendering are allowed to propose alternative building materials. Alternatives will be evaluated in terms of life cycle costs, strength, durability, stiffness and ease and cost of repair. Proposals shall be discussed with the owner and operator.

The hull is made of steel plates and profiles (grade A or equivalent), certified by one of the major Classification Societies. In the cargo hold high strength materials may be used for life time extension purposes.

The hull is of an entirely welded construction in accordance with the rules of the Classification Society. All welds are double continuous unless otherwise stated in the drawings or welding table. If drain holes or cut-outs ensuring the drainage of the bottoms or the degassing of the ceilings are present in profiles, floors, frames, etc. the welding has to circumvent those holes or cut-outs. All unacceptable faults are repaired according to good shipbuilding practice and to class requirements. Hull, decks and bulkheads are adjusted wherever necessary in order to eliminate local warping; the decks in particular do not develop puddles of stagnant water when in operation. With respect to these quality items the IACS No. 47 Shipbuilding Quality standard, needs to be complied with. The sharp angles of drainage holes or plate cut-outs have to be ground and rounded in order to ensure the paintwork guarantee. Even if tanks are not painted all such drainage holes and cut-outs are to be well rounded and grinded smoothly.

1002 Hull quality control

The shipyard building the hull is obliged to carry out hull construction tightness tests and obtain Classification Society acceptance of works. All QC operations will be carried out in accordance with Classification Society regulations.

1003 Structural and tightness testing of tanks or compartments

Technical presentation of all tanks, cofferdams and or void spaces, by shipyards QA in presence of Classification Society and operators representative, before painting and launching of the hull.

Leak air testing:

This shall be carried out prior to the protective coating being applied to the welds. Shop primer may be applied to welds. An efficient indicating liquid shall be applied, when air is used as the test medium. The air pressure shall be kept at a maximum pressure of 20 kPa for minimal 1 hour. In addition to an effective means of reading the air pressure, a safety valve, or a reliable equivalent alternative, shall be connected to the compartment being tested.

Test pressure shall be verified by means of one master pressure gauge. Small repairs / leakages will be repaired/welded after release of pressure, a renewed leak pressure test to be carried out.

All testing of tanks will be reported, reports to be signed by Classification Society.

Structural testing:

All tanks shall be tested with a hydrostatic test, which may be carried out after a protective coating has been applied, provided a leak test is carried out before application of the protective coating. All pipe connections to tanks shall be fitted before structural testing. When structural testing at the building berth is undesirable or impossible, structural testing afloat may be accepted. The structural testing shall be carried out by filling each tank separately to the test head. Normally equal to the height of the overflow or 1.0 m above the top of the tank, whichever the greater.

1004 Steel structure materials

All construction elements as well as welding works shall comply with requirements of the Classification Society. Thickness and scantlings shown in drawings approved by the Classification Society will be considered as final and valid. All welded joints shall be of perfect quality, tight and smooth. Special attention should be paid to avoid shell plating dents between frames.

In general a system of plates and profiles will be applied. The length and width are to be as large as practical for the surfaces to be built respecting the available sizes in the market. Size and tolerance of steel profiles and flat bars are to be in accordance to the appropriate DIN Standard.

All steel plates and profiles should be cleaned by sand-blasting or grit-blasting and protected with a shop-primer, minimum thickness 20µ, suitable for 2-component conservations.

Steel plates with thicknesses of half millimeters shall be avoided as much as possible. The maximum tolerance in the thickness of the steel plates shall be in according with the DIN Standards, and in smaller than +/- 0,3mm. Due to the fact that corrosion margins are applicable it should be avoided that plates are thinner than nominal.

The plates and profiles are procured from reputed manufacturers and the different batches are identified and delivered with the material certificates 3.2 (chemical analyses, heat treatment and mechanical characteristics). The traceability of the plates and the certificates must be ensured (casting number or equivalent). The costs for the material certificates of steel plates, profiles, pipes, etc. are for the shipyard.

In principle all construction works are to be in accordance with the IACS No. 47 Shipbuilding Quality standard.

Maximum tolerances of plating

Shell plating above water line:	Max 4 mm of frame length
Shell plating below water line:	Max 5 mm of frame length
Bottom:	1% of frame length
Superstructures:	3 mm of frame length
Length:	1 mm per meter length, max 50 mm
	CEMT II Long - Length over all restricted to max 50.000 m
Breadth overall:	1 mm per meter width
	CEMT II Long - Breadth over all restricted to max 6.600 m
Cargo hold width or length:	(- 10 to + 10) mm
Bulkheads:	6 mm deviation Longitudinal/Transverse/Swash
Shear stroke:	4 mm of frame length

Notes:

In certain circumstances, deviations from the recommended tolerances may be accepted after written agreement between Owner and or Operator, Shipyard and Classification Society.

In case the deviation doesn't meet these above mentioned requirements, it should be stretched or reconstructed according operator's satisfaction.

1005 Piping materials

Piping materials applied in the hull construction are equivalent to those determined in the German DIN 2448 Standard and are to be of seamless type.

- Piping wall thickness: According to Classification Society regulations (pipeline fittings shall have wall thicknesses at least the same as the respective pipeline).
- All pipes located in double bottom or double hull shall be reinforced type (ANSI schedule 40, or higher schedule 80 or XS) and galvanized.
- Piping is fully welded and shall be made of standard elbows, tees and flanges or fittings.
- All piping shall be carefully cleaned after manufacturing, pressure tested at 1.5x nominal working pressure and tightness tested after installation on board before connecting to equipment.
- All open ends of pipes outside tanks or compartments to be blinded with blind flanges or closing caps. All pipelines should be fitted "stress free" and sufficiently vibration free clamped.
- Pipe penetrations through watertight bulkheads will be continuously welded on both sides.
- In case construction elements are pierced with holes for the passage of piping, electric cables, etc. the inertia of the section is restored in accordance with Class Rules. All penetrations to enable pipes or cables to pass steel plates are designed in accordance to the rules (water tightness and fire resistance).
- All piping's except for fuel and lube oils are galvanized.

Galvanization

Care should be taken by the design and preparation of items which needs to be galvanized in order to guarantee good distribution and penetration of the galvanization, especially in hollow bodies. In the exceptional case where a galvanized item must be welded or cut for assembly on site, or for a local modification or repair of galvanization this must be carried out by cold galvanization. Hot galvanization has to take place after forming, assembly and welding. Use of hot-galvanized screws, bolts, washers and nuts for assembly is mandatory. The minimum galvanization thickness is 80µm.

Piping joints

Pipe sections should be connected with flat flanges or welding neck flanges complying with requirements of the DIN 2576 Standard, PN10 or as per respective drawing Pipelines to be in accordance with Classification Society requirements.

1006 welding standards

Welding procedures and welders are to be qualified in accordance with the procedures of the Classification Society.

- Welding operations including welding preparations are to be carried out under proper supervision by the Shipyards Quality Control.

- Abrupt change of sections and plate thicknesses are to be avoided. When the difference in plate thickness exceeds 3 mm a beveled edge to be made (tapering 1:3 standard or as specified in the drawings).
- It is in no circumstance acceptable to fill a gap between joined components with electrode wires, steel round bars or scrap etc.
- Welding operations are to be carried out sheltered free from rain, snow and wind.
- Storage tanks, ballast tanks, chain lockers, sea chests and all outside structures are to be welded double continuous.
- A good quality standard of visual appearance of welds is to be maintained.
- All welds on outside corners of the hull construction outside, including superstructures, hatch coamings, cornered plate or profile connections, must be grind smoothly. No grooves and/or sharp edges may be seen / occur.
- All welding slags and spatters are to be removed.
- Preparation of welding seems and execution of welding is to be in accordance with the approved welding tables, as per relevant constructions plans and according to Class Rules and Regulations.

1007 NDT non-destructive testing

Weld control is carried out by radiographic and ultrasonic control in accordance with the class requirements and those of the operator's representative. In addition to the NDT plan the barge-owner reserves the right to determine 20 welding locations to be tested by radiographic or ultrasonic control for costs of the contractor.

Where defects are observed at or near the ends of the radiographs additional radiography is to be carried out to determine the full extent next-to the defect. Unacceptable defects should be repaired and a second non-destructive examination is to be carried out. Companies performing non-destructive examinations are to be qualified in accordance with Classification Society rules

1008 Space for survey

All distances, sectional areas and spaces required by class and/or authorities have to be respected in order to be able to fully inspect the hull. There is no place and/or closed space in the hull which cannot be visually inspected except for the double bottom under cargo hold, for this technical openings are to be made in case there is a need to inspect.

1009 Hull structure building

The contracted shipyard (being the Shipyard contracted by the Owner) may decide to build the hull structure in a country outside of Belgium or the Netherlands. If transport is needed, the sea fastening and sea protection for towage are installed before leaving the hull construction yard. The contracting shipyard will dry-dock the barge after such a transport for inspection by owner and or operator or its representative, shipyard and the Classification Society. An inspection report needs to be signed by the parties concerned. Issuance of a transport and/or dry docking attestation by the Classification Society is arranged by the shipyard. The hull shall be cleaned properly and paintworks shall be well dried before transport is applied.

1010 Survey and classification survey

The owner / operator or its representative will have a right to carry out an inspection in all building phases within normal working hours of the Shipyard. The supervision of the Classification Society during the hull building phase of the barge will be arranged by the shipyard.

1011 Certificates / reports and documents hull structure

The following reports / documents and certificates by the hull structure yard QA will be issued and attached to the final acceptance delivery protocol of each of the barges:

- NDT test Reports
- WPS welding procedure specifications
- Welder qualifications for used welders
- Structural tightness test Reports (signed by the Classification Society)
- Hull main dimensions measurement
- Class approved material certificates of used plates, profiles and piping.
- Paint Inspection Report (signed by the paint company or representative)
- Paint applied thickness report (signed by the paint company or representative)

1100 HULL STRUCTURE

1101 Hull Scantlings

The hull is designed as light as practical possible in order to reduce the building cost and to allow for a low resistance shape within the minimum cargo capacity requirements.

Hull structure to be build according approved class drawings.

1102 Hull Inlet Chest

Inlet chests are to be integrated in the bottom construction large enough to accommodate the box coolers for the internal cooling systems.

- Each chest is to be provided with sleeves, flush with the bottom and sides.
Upper sleeves are to be placed close to the sea chests cover, so the sea chest can de-aerate in all circumstances, otherwise a de-aeration pipe and valve to be installed.
- Grating sleeves to be grinded smoothly with R=2mm, so paint application is well adhesive.
- Box coolers of engines are to be installed in this sea chest.
- Suction pipe ends of possible auxiliary pumps (fire, ballast, etc.) are to be made in this sea chest.
- Sea chests to be fitted with removable grids, so they can be inspected from outside.

1103 Engine or machinery skid seatings

Machinery seatings are sufficiently stiffened to minimize hull vibrations exerted by the engine(s).

The engines and/or machinery skid is to be properly secured/fastened to the top plates of the seatings. Provisions are to be made in the barges without machinery in order allow for possible motorization in the future according the plug and play concept. Seating details will be provided.

1104 Shell insert and/or fender plates

Thicker insert plates or double plates in/on the shell are to be installed as per drawings. Fender plates are fixed at different levels on the shell as per design drawings. They are to be mounted in such way that it's guaranteed that the barge doesn't exceed the overall breadth.

1105 Scuppers

A sufficient number of deck drains / recesses in the shear strake of the barge's outer shell are to be provided in order to avoid water on deck.

1106 Ballast tanks

Ballast tanks are not applicable in basic version. In case applicable the requirements are included in the customization appendices.

1107 Fuel tanks

One fuel tank with a minimum capacity of circa 3m³ is to be installed for fuel oil or any other carburant depending on the propulsion type. The tank has to be integrated in the structure without having common boundaries with the shell. All fuel tanks are to be fitted and equipped according to the applicable rules and regulations and at least with:

- 1 ND50 vent pipe with spark/flame arrestor, ending in a gooseneck, lowest point min. > 600mm above main deck.
- 1 ND40 filling inlet pipe equipped with a standardized cap (TW coupling). The tank inlet is to be mounted in such way that spraying/splashing of fuel is avoided.
- 1 fuel return inlet.
- 1 low level alarm at 30% of its tank level.
- 1 high level alarm sensor which triggers the bunkering safety loop.
- 1 gauge glass with graduated scale including the necessary valves.
- 1 manhole for cleaning and inspection.
- 1 quick closing valve outlet with regulatory remote closure control from outside this space.
- 1 purge drain tap placed at the lowest point.
- 1 drainage box suitable for 3 oil filters, with perforated grating above the bottoms box, and a drain connection with ball valve.
- The interior work (cut-outs, welds, grinding of sharp edges, etc.) is of particularly high quality in order to allow thorough cleaning.

1108 Lube oil tanks

Lube oil tanks are not applicable in basic version.

1109 Potable water tank

- A loose potable water tank is installed in bow engine room, for barges fitted with a wheelhouse. This tank can either be made from steel or suitable plastic.
- Its capacity has to be in accordance with operator's request, normally circa 500 litres
- An access manhole is fitted, gasket material shall be food compatible.
- The potable water tank is to be provided with a vent pipe.
- Filling inlet pipe shall be equipped with a standardised cap (TW coupling).
- The fresh, potable water tank shall be specially cleaned before usage.

In case made of steel, all rust and drop of weld shall be completely removed by grinding. Sharp edges are rounded to preserve conservation or resin. After complete cleaning two layers of food compatible conservation/resin are to be applied. The food compatibility certificate of the resin and gasket shall be provided. The manhole cover needs also to be treated with the resin.

1110 Sewage water tank

- One sewage tank with a capacity of circa 1m³ is to be installed for sewage reception. The tank is integrated in the hull structure.
- Feed of the dirty water tank via fire resistant pipes or galvanised / stainless steel pipe (in no case the use of plastic pipes is accepted). Applicable in case the optional wheelhouse is installed.
- The internal faces are covered by suitable conservation in order to avoid corrosion.
- Fitting of necessary sensor sockets (e.g. level indicators to trigger the sewage pump).
- Internal suction pipe-end ND40, with a coupling flange outside the tank, to connect to an optional sewage pump suction-system.
- One manhole enabling full inspection possibilities.
- Equipped with a weathertight vent pipe ND50 which ends in a gooseneck at a location not conflicting with crew's personal safety and comfort.
- Bulkhead flange ND50 with a blind flange serving optional high level alarm mounted on the top.

1111 Dirty oil tank

Dirty oil tanks are not applicable in basic version. Separate drum or canister to be provided.

1112 Forepeak / anchor pocket

The forepeak will be accessible via a manhole and ladder. In the bow construction, stem plating, one anchor pocket will be fitted to avoid that the anchor exceeds the shell's line. The increase of the barge's resistance is to be avoided. Stowage, fixation of the anchor should be possible in order to avoid damages caused by bow slamming.

One hawse pipe as per constructions drawings. The hawse pipe is to be fitted with a massive round bar to protect its edges and to guide the anchor wire preserving sharp edges.

1113 Chain locker

Chain locker is not installed, wired anchor and winch to be used in order to save space and weight.

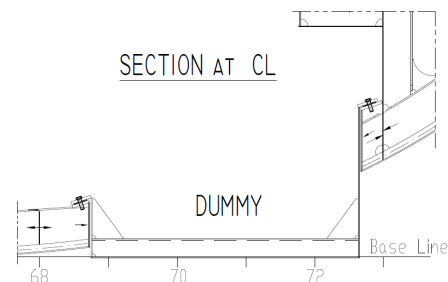
1114 Fore engine room

This compartment is constructed watertight. It contains a fuel tank, sewage tank, sea chest and seatings for the skid / engine. Furthermore it contains a possibility to accommodate the bowthruster. This compartment will be accessible via a hatch with a hatch coaming of min. 600mm. The closing hatch needs to be foreseen with at least 2 toggles and 2 hinges. The galvanized ladder is to be placed under this hatch.

On deck a flush dismantling hatch as per drawings, with approx. dimensions of 3000mm width, and 3250mm length. Water tightness is to be secured with an EPDM rubber packing, in combination with galvanized bolts. Opening edges to be sealed with 'Sikaflex' or a similar product. The dismantling hatch has to be water hose tested under min. 2 bar pressure.

In the bottom structure one sea chest with sleeves in shell plating in bottom and side is to be fitted the size needs to be sufficient for the installed machinery.

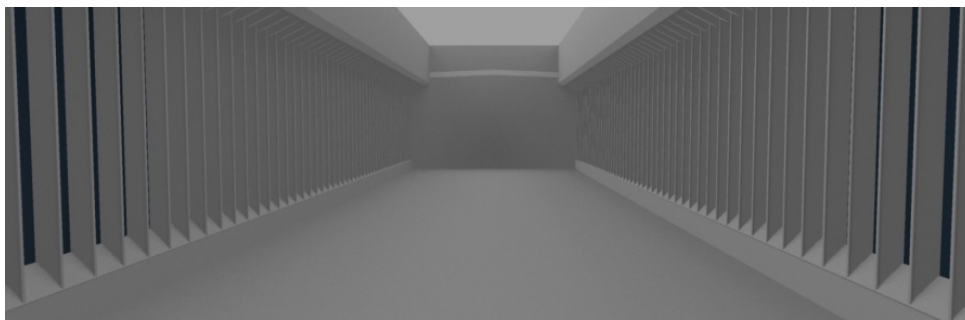
In the bottom structure a bow thruster housing box will be installed. For the basic barges, not fitted with a bowthruster, a dummy box shall be constructed and installed. This dummy box will be secured watertight with an EPDM rubber packing, in combination with galvanized bolts. See for information only the sketch below, final details might deviate.



In the double bottom one echo sounder base pipe DN125x12.5mm is to be fitted with flange and blind flange. The height of the pipe is 150mm above empty waterline, so an optional echo sounder can be installed or replaced afloat in the light ship service draft.

1115 Cargo hold

The cargo hold is to be constructed as a boxed shaped compartment as per image below. The cargo hold transverse bulkheads fore and aft are flat, thus the stiffeners are installed on the other side. The cargo holds sides are single walled in the basic version, the frames are visible. At the bottom of the cargo hold these frames are protected by an inclined plate of 12mm "trimvulling", so easily unloading the cargo hold by grabbers and bobcats is guaranteed. The cargo hold inner bottom plating is from mild steel 10mm.



One sand gutter is designed eccentric in order to stay away from the container supports, near the centerline in midship, below the cargo hold plating. Drainage pipes and connections are not fitted, as for holes in the sand gutter top-plate, both are optional.

In the fore and aft bulkhead steps are integrated acting as ladders for easy access of the cargo hold.

The inner bottom of the cargo hold is locally reinforced for containers, with brackets and stiffeners.

1116 Cargo hold coaming

The cargo hold has a coaming above the main deck, it is horizontal stiffened with an UNP260 profile, surrounding the entire hold. On SB side it serves as a cable pipe, on PS it serves as a fi-fi channel. On both ends appropriate details are to be fitted providing possibilities for the cables and fi-fi water to enter the engine rooms in the fore and aft part. The coaming is vertical stiffened with smooth bended profiles. On top of the coaming profile, a hand railing is installed.

1117 Bilge wells

The cargo hold is to be provided with two (one PS aft and one SB forward) bilge wells for bilge and cleaning purposes of the cargo hold. Bilge wells are covered either with a steel perforated plate, or a closed plate per operator request. Bilge wells are fitted with a flanged pipe-end ND80x8 into the adjacent machinery room, ending close at the bilge wells bottom, serving as an optional piping connection to a bilge or ballast system. Bilge wells are to be configured and detailed in order to allow transport of containers containing dangerous goods as per the ADN regulations.

1118 Aft peak / Machinery Space

The aft peak is a watertight compartment. This compartment will be accessible via a hatch with a hatch coaming of min. 600mm. The closing hatch needs to be foreseen with at least 2 toggles and 2 hinges. The galvanized ladder is to be placed under this hatch. This hatch might be combined with the dismantling hatch above the thruster unit. The dimensions of the dismantling hatch are to be suitably sized for placing and removing equipment from the aft machinery space.

Water tightness is to be secured with an EPDM rubber packing, in combination with galvanized bolts. Opening edges to be sealed with 'Sikaflex' or a similar product. The dismantling hatch has to be water hose tested under min. 2 bar pressure.

In the bottom structure a thruster housing box including channels will be installed.

The thrusters housing is made of steel grade A plates. The housing has 4 channels and on top a base flange is installed serving an optional thruster with steering clock. The flange is covered with a bolted steel plate cover and EPDM rubber packing, in combination with galvanized bolts.

1200 HULL STRUCTURE OUTFITTING

1201 Bollards

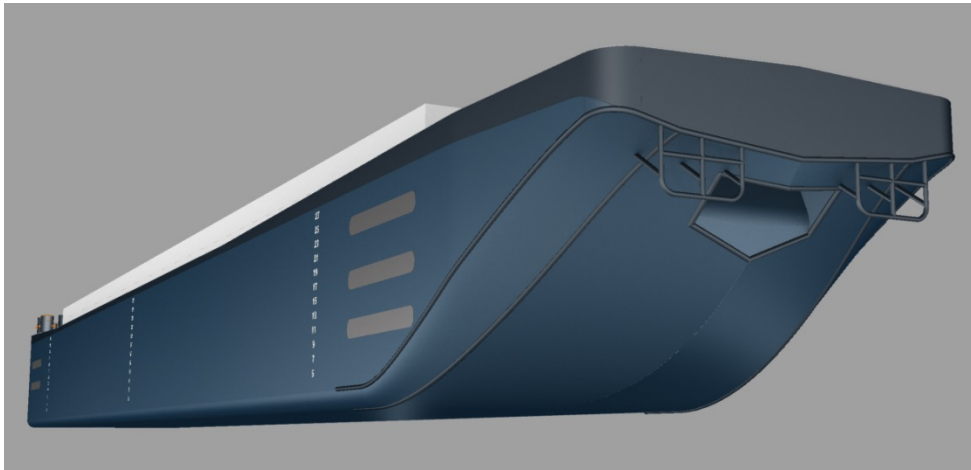
The following fixed mooring equipment shall be fitted on board, at all times suitable for the ropes breaking loads and coupling forces.

- 12 bollards, fabricated of pipe 323,9 x 12,5mm, having each two pins, diameter 40mm. SWL 70 ton. 6 of them are coupling bollards build in AH36 material.
- 1 bollard on centerline on the fore deck fabricated of pipe 219,1 x 12,5mm, having one pin diameter 40mm.
4 small double bollards mounted on side deck, dimensions circa 250mm long x114mm wide, height circa 250mm.
- Protection in way of bollards for ropes etc, ½ round bar 60mm.

1202 Pushing Posts

On the stern of the barges 2, suitably stiffened boxed shaped pushing posts are fitted as per the construction drawings.

On the forepart, 2 pushing posts from round bar 100mm are installed well integrated in the forepeak and shell, which allow pushing other coupled barges with a varying draft.



1203 Cargo hold door

Not installed

1204 Lantern supports

On aft deck of the barge, 3 supports for navigation lanterns shall be installed, for stern and side lights. On the fore deck, 3 supports for navigation lanterns shall be installed, for the head and side lights.

1205 Doors and Hatches

All external doors and hatches on deck shall be made from steel with watertight sealed gaskets. All hinges are adjustable and provided with grease nipples. All hinges / eye bolts and pins are of stainless

steel material 316.

The minimum required opening size, the number of toggles and the resistance of the locking device of the doors and hatches shall be in accordance with the applicable regulations. All external doors are fitted with barrel safety locks. The doors and hatches are to be identified with labels. All hatches on deck are equipped with a sea water resistant padlock closing provisions. Provisions for securing hatch covers in open position are to be provided.

Three copies of the keys are supplied and are equipped with a tag identifying the doors respectively hatches. Exemptions for emergency exits are to be discussed with the Authorities and Class Society in order to avoid conflicts between personnel safety and applicable rules.

1206 Manholes

The access to all other compartments than the aft peak, forepeak and fore engine room is made via bolted manholes which are inserted in the top or on the side of the tanks / compartments. The minimum clear size of a manhole opening is 600x400mm. The area directly behind the opening should be free of construction members and pipes in order to allow easy access to the compartment. The manholes are closed by watertight plate covers, secured by bolts. In exposed areas the bolts are of stainless steel. The manholes are fitted with a tight rubber gasket. The covers are to be foreseen with two welded handles. For storage tanks the tank number and its content being either (FW/FO/SW) are marked on the manhole, in written welding letters of 100mm. Also handles of round bar (16mm minimum) are placed judiciously in order to facilitate capacity entry and exit during inspection visits.

The following compartments are accessible via bolted manholes:

- Fuel tanks.
- Closed void spaces.
- Sewage tank.
- Fresh water tank (if made of steel, otherwise a plastic manhole)

1207 Railings

Railings are to be installed as per applicable Rules and Regulations. Railing deck sockets are to be provided for installation of removable railings on the outside of the midparts walkways according design drawings.

1208 Ladders

Ladders are to be removable if necessary for access reasons. Ladders giving access e.g. to the aft and fore peak, machinery spaces, voids, double hull compartments, etc. are installed directly below the access openings and consist in general of 2 vertical strips made of flat bar 80x8mm spaced at least 400mm apart. The strips are connected by square bars 22x22mm positioned inclined at a 45° angle. The square bars are fitted in the openings provided in the strips and welded.

The following ladders to be installed in the barge as per drawings.

- Aft peak/machinery space
- Cargo hold aft / forward, steps are created from pipe boxes with inserted square 20mm steel bars, these step boxes mounted under an inclined angle for self-drainage.
- Forward machinery space
- Forepeak

1209 Draft marks

Regulatory water draught scales are placed at the fore, mid and aft part, on both sides PS and SB. Scales starts directly above the bilge plate and goes up to the maximum draft of 2,80m. The draft marks consist of digits, flat bars of steel plates showing each 10cm of draft and being protected on each side by flat bars. The draft marks must not increase the barge's breadth over all. Maximum draft for optional operation zones is marked separately by additional flat bars.

1210 Bulwark / Name / ENI number

On the fore and aft deck a railing or bulwark has to be fitted. According requirements specified in the EU-Directive 2006/87/EG. Stanchions or stiffeners per max 1500mm.

On both sides of the bulwarks sufficient clamps to be welded for fender purposes.

On both sides of the fore bulwark the barge's name is to be welded. The letters, having a height of approximately 450 mm are to be fabricated from 6 mm steel plates. On the transom the barge's name letters are to be welded. The name is to be positioned exactly in the middle (CL). In addition, with a smaller letter type port of registry and country of registry are to be welded.

A regulatory registration number and ENI number (European Number Identification) of the barge are soldered at the stern and on the both sides of hatch coaming.

All digits and letters are to be painted in a sufficiently contrasting color.

1211 Anti-skid arrangement

Non-slip studs (stainless steel spot welds) are welded to the deck in the walking areas and on bollard tops to make it non-slip. The density of the Non-slip studs (spot weld) is doubled in working areas surrounding deck equipment for mooring the barge and on top of the bollards. The bollards tops are painted in a light contrasting color.

1212 Outboard pipe system connections

In the (double) bottom of the forward engine room the following outboard connections are to be installed from reinforced carbon steel pipe according to the applicable regulations, fitted with flange and blind flange. The height of pipe is at least 150mm above empty draft, so optional outboard valve and connecting piping systems can be installed or replaced afloat in the light ship service condition.

- Firefighting / ballast inlet, suction end mounted in sea chest, in ND80x8.
- Sewage outlet, suction end mounted in shell plate on PS, in ND50x8.

2000 CONSERVATION / CORROSION PROTECTION

2001 Anodes

A passive cathodic protection system via zinc/aluminium sacrificial anodes is to be installed. The quality and quantity of the anodes have to be calculated for five (5) years protection for operation on inland waters. No anode shall be located under the flat bottom of the barge.

The following items are to be protected by these anodes including the estimated quantity:

- Propulsion thruster casings if installed min. 10
- Bow thruster casings if installed min. 4
- bilge plating minimal every 6m
- Inner side of sea chests min. 4

2002 Paint Preparations

The paintwork is to be guaranteed for at least 5 years in accordance with standard 7 Re 3 of the European scale of degree of rusting for anti-corrosion paints of the European Commission of applicators and paint manufacturers. All compartments of the barge including the shell, (bow) thruster casings, sea chests and all surfaces on deck have to be painted according to the painting scheme.

The preparation of the surface to be painted, including the zones deteriorated by drainage holes, cut-outs or welding works according the paint supplier's representative. Scaffolding for access and all the necessary ventilation, heating, security and safety means are included in the service amount.

The parts and sections forming part of the construction are sand blasted SA2,5 ISO 8501-1 or SSPC SP10 and primed with an epoxy shop primer. This shop primer for the steel plates and profiles is compatible to the proposed paints in the several compartments. The condition of this shop primer has to be the full satisfaction of the paint supplier's representative in the moment painting starts. Non-painted parts may not be mounted.

2003 Paint Works

The surface preparation is to be according to the paint specification and the conditions of applying the paint meet the requirements of paint supplier. Where necessary remove all weld splatter, smooth weld seams and sharp edges. Fresh water wash to remove all dirt and contamination, if necessary. Degrease according to SSPC-SP1 solvent cleaning. Ensure area is clean and dry prior to application of paint. Clean welds, damaged and corroded shop primer repaired by blasting to near white metal SSPC-SP10 or Sa21/2 ISO 8501-1 or by power tooling to Pt3 JSRA SPSS- 1984. For optimised mechanical properties on typical zinc and iron oxide epoxy shop primers, grit sweep intact areas to AS.2. All parameters like ambient temperature, steel temperature, air humidity, etc. have to be recorded for each painting work in a report. Continuously survey during hull construction processes concerning painting is included. An appendix (paint specification) from paint manufacturer to be supplied in accordance to the Operator.

Barge to be painted by layers of 2-component paint, according to paint specification of paint supplier, following minimum dry thicknesses to be applied.

Area	Surface preparation	Product	Shade	Dry thickness in µm.
Flat bottom , vertical sides Incl. sea chest Incl. anchor pocket Incl. thruster casings	HPFW washing , min 220bar and PST3	TBN	TBN	300
Decks	HPFW washing , min 220bar and PST3	TBN	TBN	250
Top structures, Bulwarks , wheelhouse , hatches	HPFW washing , min 220bar and PST3	TBN	TBN	250
Cargo hold	HPFW washing , min 220bar and PST3	TBN	TBN	250
Inner bottom cargo hold ,voids , dry parts	HPFW washing , min 220bar and PST3	TBN	TBN	100
Engine rooms	PST3	TBN	TBN	150
Bilge areas	PST3	TBN	TBN	150
Fore and aft peak	PST3	TBN	TBN	200
Behind insulation, wheelhouse	ST2	TBN	Grey	100
Sewage tank	HPFW washing , min 220bar and PST3	TBN	Grey	300
Fresh water tank if applicable	HPFW washing , SA2.5	TBN	White	300

TBN = to be nominated

The following applies as subject of paint program:

- The paint application should not take place when the steel temp is less than 3°C (5F) above the dew point, relative humidity may never be higher than 85%.
- Application of paint in tanks or closed spaces may only be done after tanks pressure testing and technical acceptance of construction by class society.
- Painting bottom, shell and under the water/light ship draft line may only be applied before launching. After launching of the barge, painting of the inside part under the water line is only to be applied in special condition (heating, ventilation etc.), to prevent condense drops appearance.
- All sharp edges will be grinded smoothly with a radius of minimum 2mm, so cohesion of paint is granted.
- Before painting the welding joints, they will be cleaned; rust and sandblasting materials will be removed. Rough welding's, tack welding, welding spots, etc. will be grinded smoothly and the welding-slag shall be removed carefully before paintworks commence.
- After cleaning and surface preparation, all welding joints, edges, angled parts have to be painted with protective primer before painting.
- Any zone damaged during construction or outfitting deteriorated by burning or welding during the work is repaired as soon as possible after deterioration.
- Special attention is to be made for painting the fresh water tanks, cleaning and painting according to Paint Company specifications.
- Fuel tanks need to be mechanical cleaned inside, however not painted internally, also no shop-primer to be applied.
- It is prohibited to have paint spray on electric cables.
- Paint supplier and paint system to be proposed by Shipyard.

2004 Piping Conservation

All piping, not galvanized, shall be painted. Galvanized pipes are not painted.
Pipes are applied with shop primer before pipe manufacturing and touched up after manufacturing.
Final paint is to be at least two layers of paint.

Pipes to be labelled by colored stickers according to circuits:

Fire lines: red

Cooling lines of diesel engines: violet

Fuel pipes lines: brown

Fresh water lines: green

Ballast lines: blue

Other lines: grey

All paint preparation shall be performed as per normal shipbuilding practice

3000 DECK EQUIPMENT

3100 ANCHOR EQUIPMENT

3101 General

The anchor, mooring and coupling equipment and its installation is to be in accordance with the applicable Rules and Regulations. The anchors shall be suitable to fit properly in the designed anchor pockets. The anchor wires are guided from the drum(s) through hawse pipes to the anchors.

3102 Anchor equipment

- Bow, 1x stockless anchor type D'hone 985kg , standard (not balanced), inclusively crown-shackle. Swivel and D-shackle connection
- 1x 60m, steel wire, diameter 28mm, 400kN break load, with swivel and D-shackle connected to the anchor.
- Certificates in compliance with criteria of the Class Society.

3103 Anchor winch

On the fore deck one anchor winch with wire drum is to be fitted.

Depending on the operator a diesel driven winch or electrical driven winch shall be installed.

- The power has to be sufficient power for establishing a winch wire hauling speed of 10 meter per minute.
- In case an electrical winch will be installed an electric control box is to be installed in the forward engine room, including a power socket, in order to connect via cable and power plug to either a push boat, to a remote power supply or local power supply from the (optional) power plant.
- Local winch control is to be supplied, near the winch on the deck, serving start/stop/up/down control. (To be fitted in a IP65 control box, protected housing)
- Brake with sufficient holding power shall be installed.
- One steel wire drum
- One mooring head
- Suitable winch support foundations shall be integrated in the hull structure.

3200 COUPLING EQUIPMENT

3201 Coupling winches

- Four manual operated coupling winches type 40 tons are to be fitted, two on the fore deck, and two on the aft deck. Left and right model types to be installed.
- The winches are bolted on welding brackets in order to allow easy replacement.
- Suitable winch support foundations shall be integrated in the hull structure.

Max static load:	400kN
Nominal pull manual drive	40kN

Coupling winches are shall have a manual brake, and a wire eye on the front of the winch to guide the wire onto the drum.

3202 Coupling wires

Sufficient sized (kN according rules) coupling wires, min. length 25m, are stored on each coupling winch.

3203 Coupling bollards

4 Deck coupling rollers mounted on fore deck as per drawing:

- fabricated from pipe 323,9 x 20mm, total height approximately 130mm
- rolling mechanism is established by a roller made of pipe 355.6 x 14.2mm
- fitted with a lube channel to grease the roller, rollers are to be well-greased upon delivery

3300 MOORING EQUIPMENT

3301 General

Coupling winches and bollards are also to be used for mooring purposes. Mooring equipment to be on board is to be in accordance with the applicable rules and regulations.

3302 Mooring lines

The barges equipped with customizations concerning propulsion, are fitted with 3 mooring cables or ropes according the applicable Rules and Regulations and Operator's request:

- 1 mooring line, length 60m, tensile strength according rules.
- 1 mooring line, length 40m, tensile strength according rules.
- 1 mooring line, length 20m, tensile strength according rules.

All cables and/or ropes are to be supplied with a certificate in accordance with European standard EN 10 204:1991.

3400 LIFE SAVING

3401 General

Lifesaving appliances are to be in accordance with the applicable rules and regulations for Inland service.

3500 INVENTORIES

3501 General inventories

1 embarkation ladder of min 3.0m.



APPENDICES

APPENDIX 1 – DRAWING LIST CEMT II (LONG)

Final class approved drawings will be delivered to the building shipyard. Drawings, drawing numbers and titles might be subject to minor changes. The drawings provided together with this specification are for quotation purposes.

Project	Type	Drawing Number	Name
31261	CEMT II L	0000	General Arrangement-050.00x6.60x2.95
31261	CEMT II L	0001	3Dform
31261	CEMT II L	0002	Layout-Volume Cargo Hold
31261	CEMT II L	0003 Sh. 1/2	Lines Plan Aftship
31261	CEMT II L	0003 Sh. 2/2	Lines Plan Foreship
31261	CEMT II L	0004 Sh. 1/2	Midship Sections
31261	CEMT II L	0004 Sh. 2/2	Customizations
31261	CEMT II L	0005 Sh. 1/3	Construction Cargo Part-Longitudinal Sections
31261	CEMT II L	0005 Sh. 2/3	Construction Cargo Part-Horizontal Sections
31261	CEMT II L	0005 Sh. 3/3	Construction Cargo Part-Customizations
31261	CEMT II L	0006 Sh. 1/3	Construction Aftship-Horizontal Views
31261	CEMT II L	0006 Sh. 2/3	Construction Aftship-Longitudinal Sections
31261	CEMT II L	0006 Sh. 3/3	Construction Aftship-Cross Section
31261	CEMT II L	0007	Shell Expansion
31261	CEMT II L	0008 Sh. 1/4	Construction Foreship-Horizontal Views & Side Shell
31261	CEMT II L	0008 Sh. 2/4	Construction Foreship-Longitudinal Section
31261	CEMT II L	0008 Sh. 3/4	Construction Foreship-Cross Sections Fr87.5 to 92
31261	CEMT II L	0008 Sh. 4/4	Construction Foreship-Cross Sections Fr93 to Bower
31261	CEMT II L	0009 Sh. 1/3	Construction Aftship-Canal Thruster-Horizontal Views
31261	CEMT II L	0009 Sh. 2/3	Construction Aftship-Canal Thruster-Longitudinal Section
31261	CEMT II L	0009 Sh. 3/3	Construction Aftship-Canal Thruster-Cross Sections
31261	CEMT II L	0010	Welding Table
31261	CEMT II L	0016	Arrangement Bollards & Welding Nops
31261	CEMT II L	0020	Drain wells cargo part Aft-Fore
31261	CEMT II L	0022	Removable Railing Cargo part
31261	CEMT II L	0025	Deck Coupling Roller
31261	CEMT II L	0028	Container Arrangement
31261	CEMT II L	0030	Loose FO tank-1m3
31261	CEMT II L	0032	Oil-WT manhole 600x400
31261	CEMT II L	0035	Support for Lanterns
31261	CEMT II L	0037	Cleats in Gangway
31261	CEMT II L	0040	Door in Cargo hold Bulkhead
31261	CEMT II L	0041	Entrance Foreship Hatch
31261	CEMT II L	0042	Dismantling Hatch Aftship
31262	CEMT II L	0043	Dismantling Hatch Foreship
31261	CEMT II L	0044	Pushing Post

31261	CEMT II L	0045	Equipment Number & Anchor Weight
31261	CEMT II L	0050	Draught Marks
31261	CEMT II L	0055	Tank Arrangement
31261	CEMT II L	0056	Air and Filling Pipes
31261	CEMT II L	0061	Positions of the centres of gravity
31261	CEMT II L	0100	Coupling Plan
31261	CEMT II L	0201	Thruster Foreship
31261	CEMT II L		Stability Calculations