**MV Vessel**

**DRY-DOCKING SPECIFICATION**

**DATE 2\*\*\***

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# *SHIPS DETAILS*

## Ships Particulars

|  |  |  |  |
| --- | --- | --- | --- |
| **TYPE OF VESSEL** |  | **FORMER NAMES** |  |
| **CLASS NO** |  | **IMO NO** |  |
| **YEAR BUILT** |  | **LAST DOCKING** |  |
| **CLASS** |  | **BUILT AT** |  |
| **FLAG** |  | **DELIVERED** |  |
| **CALL SIGN** |  | **NOTATION** |  |
| **SATCOM TEL** |  | **PORT OF REGISTRY** |  |
| **SATCOM FAX** |  | **OFFICIAL NUMBER** |  |
| **GROSS TONNAGE** |  | **LENGTH OVERALL** |  |
| **NET TONNAGE** |  | **MOULDED BREADTH** |  |
| **DEADWEIGHT** |  | **MOULDED DEPTH** |  |
|  |  | **SUMMER DRAFT** |  |
| **HULL AREAS**  **Topside**  **Vertical Side**  **Flat Bottom** | M2  M2  M2 |  |  |
| **Current Hull Coating System** |  |  |  |
|  |  |  |  |

# REPAIR/DRYDOCKING PERIOD SERVICES

## Circulating Water

To supply cooling water to accommodation air conditioning machinery, domestic refrigeration machinery and engine control room air conditioning machinery, auxiliary engines etc.

Connection and disconnection to and from three sets of machinery inlet and outlet manifolds.

A constant water pressure of minimum 3 bar to be maintained at the vessels inlet manifold.

Quote per line per time to connect & disconnect cooling water.

Quote per line per day to supply cooling water to vessel machineries.

## Supply of ballast Water by Hose.

Quote price for supply of ballast water to the vessel prior undocking including connection, disconnection and use of pumps and all lines enable supply water to be distributed to tanks at the Masters discretion.

a. Per Cubic Metre

b. Per connection/disconnection/tank

## Supply of Potable Fresh Water

Quote price for:-

a. Per ton

b. Per connection/disconnection

## Electrical power

Quote cost per time for connection & disconnection of cables from shore power switchboard to vessel’s main switchboard. Per connection & disconnection is treated as one time.

Quote per kilowatt-hour supply for ship’s use only.

Quote to provide generator set for power supply to vessel’s for ship use In lieu of direct supply from shore main

Mobilization & demobilization include connection & disconnection, per day for generator set include diesel .

Quote to supply of a second shore connection including connection & disconnection for direct starting of a large electric motor up to 400kw.

**Note:**

The shore Generator item can only be charged if it is an additional request by attending superintendent.

The shipyard and vessel’s Electrician at commencement of supply, daily and at each disconnection and reconnection of supply must jointly check Shore power meter reading.

## Heating Appliances

Quote to fit heating lamps to approximately30 motors (3 lamps per motor) for entire duration of repairs including all connection and disconnection as well as power consumption.

Quote price for :-

a. Electric Motor "Heating Lamps" - quote price per lamp.

b. Engine Room "Heaters" - quote price per heater

c. Accommodation/Cabin Heaters - quote price per heater

## Fire Line Supply

Please advise no of fire lines required in accordance to yard safety regulation, during the repair period.

Fire lines to be provided with **minimum pressure of 7 bar** on vessel’s deck at all time during the repair period

### Line Supply

Quote cost per fire line per day to be provided with min pressure 7 bar at all times

### Line Connection

Quote cost per time for connection a disconnection of one fire line. Per connection & disconnection is treated as one time.

## Fire Watch

Number of fire patrol watchmen required on board during the repairs period to meet the Port Authority and/or shipyard safety requirements.

Attendance of fire watchmen for hot work is required at all time and this shall be included in individual item as per yard’s safety requirement. Cost for attendance of fire watchmen for hot work shall be included in individual item.

## Fire Patrol

Please advise :-

Number of fire patrol watchmen required on board during the repairs period to meet the Port Authority and/or shipyard safety requirements.

### Fire Watchmen

Advise **cost per fire watchman per day** for patrolling on board during the repairs period.

Attendance of fire watchmen for hot work is required at all time and this shall be included in individual item as per yard’s safety requirement. Cost for attendance of fire watchmen for hot work shall be included in individual item.

### Security Watch

At the discretion of owner’s representative, security watchman may require during the repair period.

Provide one security watchman on board for round the clock.

## Safety Services

Any additional fire/safety services to be specified according to local regulations.

Quote for these services.

## Garbage

Quote total cost for all garage removal, which must be disposed, a daily basis during the entire duration of the repair period.

**Note:**

This includes scrap metal, flammable material, waste food stuff and plastics.

Quote , daily cost for garbage removal.

Garbage and Plastic disposal certificate in accordance with Marpol requirements as requested by the Chief Officer’s and/or Chief Engineer’s to be provided to the vessel.

## Cleaning

Every endeavour is to be made to remove debris and dirt at regular intervals throughout the repair period and the vessel is to be thoroughly cleaned of all dirt and debris on completion of repairs.

Quote price per day.

## Sewage

If the vessel is in dry-docking arrangements are to be made for a sewage collection tank to be placed in the dock with a pipe connected to the sewage overboard discharge.

Quote price a. Per day

b. Per connection/disconnection

## Telephone

Quote total cost of telephone for ship’s use during repair period to be installed in cargo control room and engine control room for entire quoted repair time frame including connection / disconnection costs.

**Quote** daily hire rates per telephone.

**Quote** cost of connection / disconnection per telephone.

***Office facilities for Superintendent’s Room:***

Fax Machine.

Photocopier.

IBM compatible, to current version with fax modem and printer.

Quote total cost, if any, for use of these facilities for time frame of repairs.

**Note:**

Unless otherwise stated it is assumed that IDD, Fax, Telephone calls will be charged at cost

## Cranage

The services of the repair facility cranes are to be supplied as required for receiving ships spares and stores.

Quote price a. Per hour

b. Per hour during overtime

## Compressed Air

To supply compressed air, at a constant pressure of 7 bar pressure, at ships manifold. Cost to include removal of inlet pipe and/or valve on the vessels general service air cylinder or other location as advised by the Chief Engineer.

Quote for connection and disconnection of compressed air lines from shore to vessel’s general service air bottle.

Quote per day per line for supplying compressed air.

Quote to provide compressor set to vessel’s for ship use in lieu of direct supply from shore main.

## Steam Supply

**Quote** daily rate to supply and maintain heating steam to vessels accommodation heating system at constant pressure of 7 bar.

**Quote** cost for connection and disconnection of heating steam lines to and from vessels steam inlet and outlet manifolds, including connection and disconnection of condensate line, if required.

## Bottom Plugs

A cost is required for the removal and refitting of bottom plugs.

Quote price per plug.

## Gas Free Certificate

### Initial Gas Free Certificate

Quote cost for issuance of initial Free Certificate for entry into yard premises, either issue by Port State or Shipyard. Cost to include all necessary launch etc if any.

If yard standard practice is to arrange by owner then indicate ***Owner To Arrange*.**

### Subsequent Gas Free Certificates

Quote per day for **Daily Gas Free Inspection** of all tanks and confine space either by Port chemist or shipyard, include report to be submitted on each day.

Advise number of times daily that Gas Free checks will be made.

### Hotwork Certificates

Quote per visit for **Gas Free Inspection For Hot work** either by Port chemist or shipyard, include issuance of hot work certificate.

**Note**

Advise the standard requirement for tank cleaning to hot work standard in accordance to the safety policy, i.e. the area or distance from the hot work area of low rise.

Advise the standard requirement for tank cleaning to hot work standard in accordance to the safety policy, i.e. the area or distance from the hot work area of high-rise.

Advise minimum height above tank top / main deck where Hot Work is allowable without cleaning internally in the tank.

Advise minimum distance from Fuel / Lube Oil tank where HOT Work is allowable without emptying and cleaning the tank.

Copies of all Gas Free Certificates / report to have copies submitted to the vessel’s master and to the attending Superintendent on a daily basis.

Quote price per certificate issued.

# REPAIR BERTH / DRYDOCKING

## Vessel Shifting and Mooring

For the purposes of quotation it should be assumed that the vessel will proceed from sea to dry-dock, or repair berth, and at the completion of repairs from these facilities to sea using tug assistance.

Advise Quotes for the following:-

### Arrival & Departure

Cost of tugs, including riggers and pilotage for arrival and departure to/from wet berth to from sea.

**Quote per move...................................US$ Lumpsum**

### . Escort Tug for Arrival & Departure

Advise and quote, if escort tugs are required to accompany the vessel during pilotage to and from the shipyard and quote total cost if shipyard’s tugs/pilot are used in addition to item a) above.

**Quote per move...................................US$ Lumpsum**

### Shifting Between Wet-Berth:

**Quote per move...................................US$ Lumpsum**

Note: This is for owner’s reference only. To quote cost of tugs, including riggers and pilotage for shifting between wet-berth to wet berth.

**Port Authority**

If tugs and pilotage are from port authority, please quote local cost at the time of tender.

**Quote per move...................................US$ Lumpsum**

**Note :**

Any additional movements of the vessel other than those indicated above, will be regarded as being for the convenience of the shipyard and no supplementary charges or additional repair time due to these movements will be accepted.

## Repair Berth

Advise number of days wharfage required for repairs in accordance with the specifications to be completed in addition to in dock time.

**Note:**

In the event of the stay in exceed of the quoted time frame, such additional cost shall not be charged to the owner unless otherwise mutually agreed between the Attending Superintendent and shipyard representative for extension of repair time.

If due to reduction in time frame, caused by owners reducing work scope, or other reasons then the cost for the actual days alongside shall be on pro-rata basis.

Please advise if the shipyard or port authorities require any change in draft between docking and wet berth.

**Quote per Day...................................US$ /Day**

## Dry-Docking

The Vessel is to be dry-docked on soft capped wood blocks of a suitable height to carry out work as listed in this specification and undocked on completion of underwater work.

Advise total number of days that the vessel will be required to remain in the dry dock. The total number of days in dock shall include the day vessel is dry docked and undocked.

Advise cost of dockage charges which shall include all cost inherent to dry dock and undock the vessel and during the stay in the dry dock. All such charges as but not limited to tugs, mooring and unmooring, pilotage, dock preparation and block arrangement, surcharge on public holiday, Sunday, after normal working hours if such operation to be carried out to suit yard’s docking program and convenience etc.

### Days in Dock

Firstand last days in dock.

**Quote...................................US$ Lumpsum**

### Additional Days In Dock

Additional dry dock hire per subsequent day dock hire thereafter.

**Quote per Day...................................US$ Lumpsum**

### Block Adjustment

Charges if any, for adjusting side blocks to allow for the Rise of Floor

**Quote per unit...................................US$ Lumpsum**

### Block Removal

Costs for removing and replacing dry-dock block for access to repairs / inspection if any:-

1. Per side block.
2. Per keel block

**Quote per unit...................................US$ Lumpsum**

**Notes:**

If due to reduction in docking time frame caused by Owners reducing the work scope, or other reasons, then the cost should be charged according to the actual number of days in the dry dock.

SHIPYARD TO ADJUST THE DRY DOCK BLOCKS PRIOR TO DRY DOCKING OF THE VESSEL TAKING INTO CONSIDERATION THE PLACEMENT OF ALL TRANSDUCERS WHICH PROTUDE FROM THE VESSEL’S HULL. DOCKING PLAN & DRAWING WILL BE GIVEN TO AWARDED YARD IF NOT ATTACHED IN THIS SPECIFICATION.

## Trials Berth

Advise number of days wharfage required for repairs in accordance with the specifications to be completed in addition to in dock time.

A berth suitable for carrying out Main Propulsion trials whilst berthed to be provided as required by the Owners Representative.

**Quote per Day...................................US$ Lumpsum**

## Gangway

Two gangways are to be provided, one forward and one aft to provide safe and adequate access to the vessel is to be provided and maintained at all times.

The gangway is to be equipped with safety netting rigged beneath it and covering the entire length of the gangway.

Approval of these arrangements is to be obtained from the vessels Master.

Quote price a) Per installation

b) Daily charge

**Quote per unit...................................US$ Lumpsum**

## Dock & Sea Trials

Quote total cost for four hour engine trial alongside including costs for additional mooring and attendance of necessary inboards / outboard riggers.

Quote total cost for eight hours sea trial allowing necessary shipyard workers and foreman to be in attendance for correction of any defects found during sea trials, which are related to work, performed by the shipyard. If a launch is required for returning shipyard workers to shore after sea trials, this should be included in the quoted costs.

**Note:**

If sea trials are required to be carried out in international waters then please separately advise additional cost, if any, for immigration procedures.

**Quote per Day...................................US$ Lumpsum**

# EXTERIOR SURFACES PREPARATION/ COATING & CATHODIC PROTECTION

## General

### Preparation

Substrate preparation shall be carried out in accordance with ISO 8504:1992E.

### Spot Blasting

Grit Spot Blasting shall be in accordance with ISO 8501-2:1998

All coating edges of spot blasted areas are to be feathered edged either by blasting or power tooling

### Blasting Grit

i) Yard supplied blasting grit shall be non-recycled, salt free, copper slag grit of grain size 1.5-2.0mm

ii) Grit blasting shall produce a surface profile of maximum height 75- 100micron. Grit blasting may only be undertaken during the hours of daylight

### Dock Conditions

i) Prior to and during coating application the Dock bottom is to be kept free from water and grit accumulation

ii) The Yard is to ensure that coatings delivered to the vessel are evenly distributed prior to application and all empty drums are disposed of upon completion.

iii) The Yard are to ensure that an adequate minimum distance is maintained between the Hull and dock wall/bottom to ensure blasting and coating operations are conducted in accordance with Coating suppliers requirements.

iv) The Yard is to ensure that designated areas such as but not limited to, propellers, hull fittings, ship rails, portholes, anodes, decks and machinery are protected from grit or coating impingement in an acceptable manner

v) All overboard Scuppers and discharges to be blanked and 1M length steel drainage pipes led from the shipside. The end of the drainage pipe is to be fitted with a drainage hose led to the dock bottom.

### Coating Application

i) Coating application may only be undertaken on the instructions of the Owners Representative

ii) Full coating may only be undertaken during the hours of daylight

iii) Coating application will be subject to humidity substrate temperature and inter coating period but in general terms coatings will not be applied when the substrate temperature is less than 3 degrees Centigrade below the Dew Point temperature

iv) Coatings will be applied using airless spray in accordance with the Coating Suppliers Instructions with particular reference to spray gun fan and nozzle dimensions.

v) All coatings to be correctly stored and mixed prior to application. Thinners may not be added to coatings at any stage of the application

### Inspection/Supervision

i) Prior to coating application, all blasted areas to be inspected and accepted by Owners Representative and his designated supervisors.

ii) The shipyard is to ensure that timely advised of blast inspection times

iii) Substrate inspections will only be taken during the daylight hours

iv) The Owners do not accept responsibility or costs for any delays caused through rejection of blasted substrates or flash rusting as a consequence of incorrect edge preparation.

v) All Paint Spay Applicators are to be provided with wet film thickness combs to ensure coating are being applied at the correct film thickness.

vi) The Owners representative retains the right to inspect coating thickness at any time during the application

## Hull Coating Areas

### Flat Bottom to Bilge Keel.

Inclusive of Sea Chests.

**Total Area - XXXXX M2**

i) Upon docking all marine shell and vegetable growth to be removed by hand scraping allow **XXXXX** M **…………………………….U.S.$/M2**

ii) Area to be fresh water washed in conjunction with Vertical Side and Top Side at a minimum pressure of 350 Bar **…………………………….U.S.$/M2**

iii) **XXXXX** % of the above area to be spot blasted. Quote for: -

* 1. Spot Blasting to S.A. 2.5

**…………………………….U.S.$/M2**

b) Spot Blasting to S.A. 2.0

**…………………………….U.S.$/M2**

1. Grit sweeping to S.A. 1.0

…..**……………………….U.S.$/M2**

1. The remaining area to being grit swept to S.A.1.0 to remove Anti fouling coatings. Abrasion of the top anti-corrosion coating to be completed with minimal A/C coating removal

…..**……………………….U.S.$/M2**

iv). Upon completion and acceptance of Spot Grit Blasting, the **XXXXX** % Spot Blast area to be blown down and coated with one touch-up coat of primer @ **XXXXX** micronDFT

**……………………….U.S.$/M2**

v) The above primed area to be coated with **XXXXX** x T/U coatings of anti corrosion each at **XXXXX** micron DFT

**……………………….U.S.$/M2**

vi) The completed area to be fresh water rinsed in conjunction with Vertical Side and Top Side

**…………………………….U.S.$/M2**

vii) Following the full fresh water wash down, 1 Full Sealer Coat at **XXXXX** micron DFT to be applied

**…………………………….U.S.$/M2**

viii) Following the sealer coat application, 2 Full Coat of anti-corrosion at **XXXXX** micron DFT to be applied.

**…………………………….U.S.$/M2**

ix) Upon completion of A/C coatings and the application of all Topside Coatings, **XXXXX** full coats of antifouling are to be applied each at **XXXXX** micron DFT

**…………………………….U.S.$/M2**

### Vertical Sides-Bilge Keel

Deep Loadline, Inclusive of Rudder and Rudder Trunk **Total Area** **XXXXX M2**

1. Upon docking all marine shell and vegetable growth to be removed by hand scraping allow **XXXXX** M

**…………………………….U.S.$/M2**

1. Area to be fresh water washed in conjunction with Flat Bottom and Top Side at a minimum pressure of 350 Bar

**…………………………….U.S.$/M2**

iii) **XXXXX** % of the above area to be spot blasted Quote for: -

1. Spot Blasting to S.A. 2.5

**…………………………….U.S.$/M2**

b) Spot Blasting to S.A. 2.0

**…………………………….U.S.$/M2**

c) Grit sweeping to S.A. 1.0

**…………………………….U.S.$/M2**

d) The remaining area to being grit swept to S.A.1.0 to remove Anti fouling coatings. Abrasion of the top anti-corrosion coating to be completed with minimal A/C coating removal

…..**……………………….U.S.$/M2**

iv). Upon completion and acceptance of Spot Grit Blasting, part area to be blown down and coated with **XXXXX** touch-up coat of primer @ **XXXXX** micron

**……………………….U.S.$/M2**

v) T/U primer area to be coated with **XXXXX** x T/U coatings of anti corrosion at **XXXXX** micron DFT

**……………………….U.S.$/M2**

vi) The completed area to be fresh water rinsed in conjunction with Flat Bottom and Top Side

**…………………………….U.S.$/M2**

vii) Following the full fresh water wash down, **XXXXX** Full Sealer Coat at **XXXXX** micron DFT to be applied

**…………………………….U.S.$/M2**

viii) Following the Sealer Coat Application, **XXXXX** Full Coat of anti-corrosion at **XXXXX** micron DFT to be applied.

**…………………………….U.S.$/M2**

ix) Upon completion of A/C coatings and the application of all Topside Coatings, **XXXXX** full coats of antifouling are to be applied each at **XXXXX** micron DFT

**…………………………….U.S.$/M2**

### Topside Area

Deep Loadline to Main Deck, Poop Deck and Forcastle Apron. **Total Area** **XXXXX M2**

i) Upon docking all marine shell and vegetable growth to be removed by hand scraping allow **XXXXX** M **…………………………….U.S.$/M2**

ii) Area to be fresh water washed in conjunction with Flat Bottom and Vertical Side at a minimum pressure of 350 Bar **…………………………….U.S.$/M2**

iii) 30 % of the above area to be spot blasted Quote for: -

1. Spot Blasting to S.A. 2.5

**…………………………….U.S.$/M2**

b) Spot Blasting to S.A. 2.0

**…………………………….U.S.$/M2**

c) Grit sweeping to S.A. 1.0

**…………………………….U.S.$/M2**

d) The remaining area to being grit swept to S.A.1.0 to remove Anti fouling coatings. Abrasion of the top anti-corrosion coating to be completed with minimal A/C coating removal

…..**……………………….U.S.$/M2**

iv). Upon completion and acceptance of Spot Grit Blasting, part area to be blown down and coated with **XXXXX** touch-up coat of primer @ **XXXXX** micron

**……………………….U.S.$/M2**

v) T/U primer area to be coated with **XXXXX** x T/U coatings of anti corrosion at **XXXXX** micron DFT

**……………………….U.S.$/M2**

vi) The completed area to be fresh water rinsed in conjunction with Flat Bottom and Top Side

**…………………………….U.S.$/M2**

vii) Following the full fresh water wash down, **XXXXX** Full Polyurethane Coats at **XXXXX** micron DFT to be applied

**…………………………….U.S.$/M2**

### Hull Markings

Upon completion of Hull underwater and Topside coatings the following Hull Markings are to be remade using brush/roller application of 2 coats each

a) Bow Marks x **XXXXX**

b) Bulbous Bow Marks x **XXXXX**

c) Draft Marks x **XXXXX**

d) Ships Name x **XXXXX**

e) Port Of Registry x **XXXXX**

f) Boarding Ladder Marks x **XXXXX**

g) Freeboard Marks x **XXXXX**

h) Tug Push Marks x **XXXXX**

j) Bulkhead/Tank Marks x **XXXXX**

k) Frame Marks x **XXXXX**

l) Plug Marks x **XXXXX**

m) Propeller Marks x **XXXXX**

m) Liner Name “**XXXXX**” 5m high x **XXXXX**

# INTERNAL COATINGS

## General

### Preparation

Substrate preparation shall be carried out in accordance with ISO 8504:1992E.

### Spot Blasting

Grit Spot Blasting shall be in accordance with ISO 8501-2:1998

All coating edges of spot blasted areas are to be feathered edged either by blasting or power tooling

### Blasting Grit

i) Yard supplied blasting grit shall be non-recycled, salt free, copper slag grit of gain size 1.5-2.0mm

ii) Grit blasting shall produce a surface profile of maximum height 75- 100micron. Grit blasting may only be undertaken during the hours of daylight

### Dock Conditions

i) Prior to and during coating application the Dock bottom is to be kept free from water and grit accumulation

ii) The Yard is to ensure that coatings delivered to the vessel are evenly distributed prior to application and all empty drums are disposed of upon completion.

iii) The Yard are to ensure that an adequate minimum distance is maintained between the Hull and dock wall/bottom to ensure blasting and coating operations are conducted in accordance with Coating suppliers requirements.

iv) The Yard is to ensure that designated areas such as but not limited to, propellers, hull fittings, ship rails, portholes, anodes, decks and machinery are protected from grit or coating impingement in an acceptable manner

v) All overboard Scuppers and discharges to be blanked and 1M length steel drainage pipes led from the shipside. The end of the drainage pipe is to be fitted with a drainage hose led to the dock bottom.

### Coating Application

i) Coating application may only be undertaken on the instructions of the Owners Representative

ii) Full coating may only be undertaken during the hours of daylight

iii) Coating application will be subject to humidity substrate temperature and inter coating period but in general terms coatings will not be applied when the substrate temperature is less than 3 degrees Centigrade below the Dew Point temperature

iv) Coatings will be applied using airless spray in accordance with the Coating Suppliers Instructions with particular reference to spray gun fan and nozzle dimensions.

v) All coatings to be correctly stored and mixed prior to application. Thinners may not be added to coatings at any stage of the application

### Inspection/Supervision

i) Prior to coating application, all blasted areas to be inspected and accepted by Owners Representative and his designated supervisors.

ii) The shipyard is to ensure that timely advised of blast inspection times

iii) Substrate inspections will only be taken during the daylight hours

iv) The Owners do not accept responsibility or costs for any delays caused through rejection of blasted substrates or flash rusting as a consequence of incorrect edge preparation.

v) All Paint Spay Applicators are to be provided with wet film thickness combs to ensure coating are being applied at the correct film thickness.

vi) The Owners representative retains the right to inspect coating thickness at any time during the application

# STRUCTURAL STEEL HULL & INTERNALS

## Preamble For Structural Steelwork Repair Items

The following are to be allowed for using your Standard Tariff prices for "all in" rates per kilo, see Appendix 4 Item 4.08 a to m, and Item 4.09 a to c:

1. Shaping and corrugation of shell plates etc.
2. Access work.
3. Ventilation.
4. Lighting.
5. Staging.
6. Protection of adjacent plates.
7. Fairing of adjacent plates.
8. Grit blasting to SA 2.5, preparation and coating as original of new and disturbed steel and equipment. (Owner's supply paint).
9. Classification and owner's NDT requirements.
10. Gas Free Certificates and chemists visits.
11. Fire watch in way of repair area.
12. All pressure tests and retests.
13. Removal and disposal of debris, cleaning after repairs.
14. X-rays.
15. Rigging and cranage, compressed air supply.
16. Delivery of all material and equipment to and from the vessel.
17. Steel specific gravity is to be taken as 7.85 or as otherwise specified.

General notes with reference to steel renewal work:

(a) Where defective steelwork is cut away, the resultant edges are to be ground smooth and edge prepared where required.

(b) Where plating only is removed from bulkheads, the remaining bulkhead stiffener edges are to be ground smooth prior to refitting the plating. Where stiffeners only are removed from the bulkheads, the plating in way of the removed stiffeners is to be ground smooth prior to fitting the new stiffener.

(c) New steel to be fitted and properly faired with due care to obtain proper alignment. Owner's representative to witness "fit up" condition.

(d) Any high tensile steel is to be pre-heated immediately prior to welding as per classification requirements. Approved low hydrogen electrodes are to be used.

(e) Owner's representative is to see back gouging prior to final welding.

(f) All butt-welding is to be full penetration welding with proper edge preparation.

(g) Electrodes approved by the ship's Classification Society are to be used throughout the repair.

(h) Your proposed welding sequence is to be submitted for approval to Owners and Class. All welding practice and sequences are to be carried out with due care hence minimising welding stresses. Care has also to be taken to ensure all welding is returned in way of plate edges at slots, scallops etc.

(i) All steel fabrication and renewals are to be carefully prepared prior to painting. All weld spatters is to be removed, all sharp edges rounded, weld bead dressed and scars removed, etc.

(j) Where horizontal stringers are repaired by fitting inserts, the top weld reinforcement is to be ground flush. Welding is to be dye penetrant tested prior to any coating. Where inserts are fitted in way of original access/drainage holes, these holes are to be reinstated.

(k) Edges of all holes, slots, etc. to be ground smooth with no serration. Particular care to be taken at scallops.

Fabrication steel sections are to be grit blasted to SA 2.5, inspected and then coated ashore prior to delivery on board. Final coating also to be inspected. All steel used for deck and shell repairs are to be supplied onboard, blasted and primed after fitting having 2 primers and 1 finish coats.

All steel work is to be repaired or renewed as stated in this specification subject to on site examination by owner's representative before authorisation. The dimensions indicated can be used for your estimating purposes.

Prior to any work being carried out, repairs are to be "lined off" onboard and approved by Classification and the owner's representatives.

Some repairs are for repair/renewal of plate work only, not plate plus internals. Your "all in" kilo rates should also include "plate work only" repairs rate. Some repairs may consist of repair/renewal of internals only, not plate plus internals. Your "all in" kilo rates should also include "internals only" repairs rate. You are to confirm in your quotation that all steel material, staging and other equipment required to carry out the repairs as indicated is available. You should also indicate if further material is available and to take account of a reasonable amount of additional work which may be found.

High tensile steel may in some cases be required and all steel used must have Certificates from the ship's Classification Society.

(a) There may be an isolated repair, which will be repaired in a small section. You are to confirm that these small piece repairs will be charged at the "all in" kilo rate. If you require a different kilo rate, this rate per kilo is to be quoted.

(b) If a different rate is required you should confirm that where the repair is accessible from "all in" kilo rate staging, that no additional charge for staging is included.

All staging for steel repairs will be included in "all in" rate per kilo for steel. The repair facility is to make a tank-by-tank drawing of any additional staging for access or cleaning or any other purpose when this staging is erected. This drawing is to show the location of the staging, with dimension on which the cost will be based.

The details on this drawing are to be agreed by the repair facility and owner's representative prior to the staging being dismantled.

Classification surveyors and Owner's representative are to sight and obtain copies of all plate certificates and sight plate stamping prior to cutting for the vessel. If certificates are presented after the plate is cut they may not be accepted.

Any piping used in this specification for handrails or guardrails is to be heavy quality, minimum schedule 40.

# STRUCTURAL STEEL DECKS & ACCOMODATION

## Preamble For Structural Steelwork Repair Items

The following are to be allowed for using your Standard Tariff prices for "all in" rates per kilo, see Appendix 4 Item 4.08 a to m, and Item 4.09 a to c:

1. Shaping and corrugation of shell plates etc.
2. Access work.
3. Ventilation.
4. Lighting.
5. Staging.
6. Protection of adjacent plates.
7. Fairing of adjacent plates.
8. Grit blasting to SA 2.5, preparation and coating as original of new and disturbed steel and equipment. (Owner's supply paint).
9. Classification and owner's NDT requirements.
10. Gas Free Certificates and chemists visits.
11. Fire watch in way of repair area.
12. All pressure tests and retests.
13. Removal and disposal of debris, cleaning after repairs.
14. X-rays.
15. Rigging and cranage, compressed air supply.
16. Delivery of all material and equipment to and from the vessel.
17. Steel specific gravity is to be taken as 7.85 or as otherwise specified.

General notes with reference to steel renewal work:

(a) Where defective steelwork is cut away, the resultant edges are to be ground smooth and edge prepared where required.

(b) Where plating only is removed from bulkheads, the remaining bulkhead stiffener edges are to be ground smooth prior to refitting the plating. Where stiffeners only are removed from the bulkheads, the plating in way of the removed stiffeners is to be ground smooth prior to fitting the new stiffener.

(c) New steel to be fitted and properly faired with due care to obtain proper alignment. Owner's representative to witness "fit up" condition.

(d) Any high tensile steel is to be pre-heated immediately prior to welding as per classification requirements. Approved low hydrogen electrodes are to be used.

(e) Owner's representative is to see back gouging prior to final welding.

(f) All butt-welding is to be full penetration welding with proper edge preparation.

(g) Electrodes approved by the ship's Classification Society are to be used throughout the repair.

(h) Your proposed welding sequence is to be submitted for approval to Owners and Class. All welding practice and sequences are to be carried out with due care hence minimising welding stresses. Care has also to be taken to ensure all welding is returned in way of plate edges at slots, scallops etc.

(i) All steel fabrication and renewals are to be carefully prepared prior to painting. All weld spatters is to be removed, all sharp edges rounded, weld bead dressed and scars removed, etc.

(j) Where horizontal stringers are repaired by fitting inserts, the top weld reinforcement is to be ground flush. Welding is to be dye penetrant tested prior to any coating. Where inserts are fitted in way of original access/drainage holes, these holes are to be reinstated.

(k) Edges of all holes, slots, etc. to be ground smooth with no serration. Particular care to be taken at scallops.

Fabrication steel sections are to be grit blasted to SA 2.5, inspected and then coated ashore prior to delivery on board. Final coating also to be inspected. All steel used for deck and shell repairs are to be supplied onboard, blasted and primed after fitting having 2 primers and 1 finish coats.

All steel work is to be repaired or renewed as stated in this specification subject to on site examination by owner's representative before authorisation. The dimensions indicated can be used for your estimating purposes.

Prior to any work being carried out, repairs are to be "lined off" onboard and approved by Classification and the owner's representatives.

Some repairs are for repair/renewal of plate work only, not plate plus internals. Your "all in" kilo rates should also include "plate work only" repairs rate. Some repairs may consist of repair/renewal of internals only, not plate plus internals. Your "all in" kilo rates should also include "internals only" repairs rate. You are to confirm in your quotation that all steel material, staging and other equipment required to carry out the repairs as indicated is available. You should also indicate if further material is available and to take account of a reasonable amount of additional work which may be found.

High tensile steel may in some cases be required and all steel used must have Certificates from the ship's Classification Society.

(a) There may be an isolated repair, which will be repaired in a small section. You are to confirm that these small piece repairs will be charged at the "all in" kilo rate. If you require a different kilo rate, this rate per kilo is to be quoted.

(b) If a different rate is required you should confirm that where the repair is accessible from "all in" kilo rate staging, that no additional charge for staging is included.

All staging for steel repairs will be included in "all in" rate per kilo for steel. The repair facility is to make a tank-by-tank drawing of any additional staging for access or cleaning or any other purpose when this staging is erected. This drawing is to show the location of the staging, with dimension on which the cost will be based.

The details on this drawing are to be agreed by the repair facility and owner's representative prior to the staging being dismantled.

Classification surveyors and Owner's representative are to sight and obtain copies of all plate certificates and sight plate stamping prior to cutting for the vessel. If certificates are presented after the plate is cut they may not be accepted.

Any piping used in this specification for handrails or guardrails is to be heavy quality, minimum schedule 40.

# SEA VALVES

Quote for overhauling & survey of the following sea valves. Listed sea suction, over board discharge, air vent and steam out valves are to be opened up for cleaning, inspection, overhauling and survey. Seats, discs are to be ground in, lapped and polished. All moving parts are to be eased / greased, packings, joints and corroded nuts, bolts and studs renewed (yard supply) and refitted in good working order. All sea chest and overboard valves to be given two full coats of antifouling internally. Butterfly valves rubber seat rings to be renewed if found necessary, new seat rings are owner’s supply.

Quote is to include allowance for 1) the removal of floor plates / pipes in way and afterwards replacement of same, 2) repair of any ballast pipe sections found pitted, by welding and grinded smoothen afterwards, coated with 2 coats of epoxy / 1 coat of anti-fouling with owners supplied paints, 3) Any burnt areas to be mechanically wire brushed and given two stripe coats with owners supplied paints, 4) Any transportation to / from vessel / workshop that may be necessary, 5) removal of all debris associated with the overhaul of the above valves.

While the valves are open they should be covered or blanked so that no blasting grit/dust from the hull maintenance programme can enter the engine room. On refloating vessel all valves are to be proved tight, in presence of owner's representative/ Chief / 2nd Engr.

## Sea-Chest Suction Valves:

### Engine Room:

**Location** **Size Qty Type Price**

**XXXX XXXX XXXX XXXX XXXX**

**…………………………….LumpsumU.S.$**

### Bow Thruster Room:

**Location** **Size Qty Type Price**

**XXXX XXXX XXXX XXXX XXXX**

**…………………………….LumpsumU.S.$**

## Over Board Valves:

### Engine Room

**Location** **Size Qty Type Price**

**XXXX XXXX XXXX XXXX XXXX**

**…………………………….LumpsumU.S.$**

### Bow Thruster Room:

**Location** **Size Qty Type Price**

**XXXX XXXX XXXX XXXX XXXX**

**…………………………….LumpsumU.S.$**

### Bosun Store:

**Location** **Size Qty Type Price**

**XXXX XXXX XXXX XXXX XXXX**

**…………………………….LumpsumU.S.$ Price**

### Draft Indicator Valves:

**Location** **Size Qty Type Price**

**XXXX XXXX XXXX XXXX XXXX**

**…………………………….LumpsumU.S.$**

# RUDDER & STEERING GEAR

# SHAFTING AND PROPELLERS

# ANCHORS & CABLES

Anchor Type **XXXX**   
Anchor Weight **XXXX** kgs each Chain Type **XXXX** Chain Dimensions **XXXX** mm Chain Lengths Port **XXXX** Lengths Stabd **XXXX** Lengths

Minimum size permitted = **XXXX** mm or – **XXXX** % reduction.

## Range Clean & Gauge Chains

Lower and restore both PS and STB anchors and cables into the dock floor, range out, clean by HPFWW and calibrate chain link diameters, and identify any loose links. Present readings to Owners Representative and prepare ready for visual inspection by Class Surveyor and Owner's Representative.

**Lumpsum………………………………….USD$**

## Clean & Coat Anchors

Grit blast to Sa 2.5 both anchors for inspection and coat anchors only, afterwards with 1 off coat of inorganic zinc silicate to a DFT of **XXXX** microns and **XXXX** coats of **XXXX** paint to a DFT of **XXXX** (All coatings Owners supply).

**Lumpsum………………………………….USD$**

## Mark Chains

Chains links to be conventionally marked at each joining shackle with White and Red coatings. Each joining Shackle to be marked using Yard Supplied canvas and Stainless Steel Banding (“BANDIT TAPE” or equivalent)

**Lumpsum………………………………….USD$**

## Coat Chains

During re-stow of Chains into Chain Lockers Chains are to be liberally coated with Owner Supplied Fish Oil. Oil to spray applied as the Chain enters the Spurling Pipe into the Chain Locker

**Lumpsum………………………………….USD$**

## Weld Chain Studs

Weld centre studs, one side

**Per Stud Lumpsum………………………………….USD$**

# WINDLASS & DECK MACHINERY

# MASTS & DECK FITTINGS

# CARGO SPACES AND CARGO MACHINERY

# BALLAST SPACES AND MACHINERY

# EXTERNAL HULLSYSTEMS & EQUIPMENT

# INTERNAL HULL SYSTEMS & MACHINERY

# HOTEL, GALLEY & SYSTEMS

# MAIN ENGINE & GEARBOX

# MAIN TURBINE & EQUIPMENT

# AUXILIARY ENGINES

# MAIN BOILERS

# AUXILIARY BOILERS & EGB

# STEAM PLANT AUX MACHINERY

# POWER GENERATORS & SWITCHBOARDS

# ELECTRICAL MOROTS & STARTERS

# INSTRUMENTS & AUTOMATION

# PUMPS, PURIFIERS,COMPRESSORS

# MISC MACHINERY

# PRESSURE VESSELS, HEATERS,COOLERS

# MACHINERY SPACE PIPE SYSTEMS

# COMMUNICATION & NAVIGATION SYSTEMS

# SAFETY EQUIPMENT

# MODIFICATIONS & DAMAGES

# APPENDICES

# Hull And Machinery Equipment Details

|  |  |  |
| --- | --- | --- |
| **MOORING EQUIPMENT** | | |
| **ANCHOR CHAIN SIZE** : **XXXXX** **MATERIAL** : **XXXXX**  **ANCHOR TYPE** : **XXXXX** **WEIGHT** : **XXXXX**  **PROPELLER/S**  : **XXXXX** **FIXED/VARIABLE**: **XXXXX** **BLADES** : **XXXXX**  **PROPELLER WEIGHT** : **XXXXX**  **MATERIAL** : **XXXXX**  **TAILSHAFT DIA** : **XXXXX** mm  **LENGTH** : **XXXXX** mm **WEIGHT**: **XXXXX** T  **INTERM. SHAFT No.1** **DIA** : **XXXXX** mm  **LENGTH** : **XXXXX** mm  **WEIGHT**: **XXXXX** T  **No.2** **DIA** **XXXXX** mm **LENGTH** **XXXXX** mm **WEIGHT** **XXXXX**  **RUDDER TYPE** : **XXXXX** **DIMENSION** : **Area** – **XXXXX** m2 **WEIGHT**: **XXXXX** T  **STERN GLAND TYPE** : **XXXXX**, **SIZE** : **XXXXX** **DIAMETER**: **XXXXX** mm  **BOW THRUSTER** : **XXXXX**  TYPE/SIZE: **XXXXX**  **Prop.Dia**.- **XXXXX** mm  **POWER**: **XXXXX** kWt  **STABILISER TYPE/NUMBER** : **XXXXX** | | |
|  | | |
| **HULL PAINTING AREAS**  **FLAT BOTTOM (M2)** :  **V.SIDE TO DEEP LOAD LINE**  **V.SIDES TO BALLAST DRAUGHT**:  **TOP SIDES**  **RUDDER & BOW THRUSTER**  AREA INCLUDED IN FLAT BOTTOM    **DEEP LOADLINE DRAUGHT**  **CURRENT HULL COATING SYSTEM** | **XXXXX** m2  **XXXXX** m2  **XXXXX** m2  **XXXXX** m2  **XXXXX** m2  **XX M** |  |
|  | | |
| **MAIN PROPULSION PLANT** | | |
| **MAKE AND TYPE** : **XXXXX**  **NUMBER OF CYLINDERS** : **XXXXX**  **BHP AT 85% MCR** : **XXXXX**  **FUEL BEING BURNT** : IFO **XXXXX** | | |
| **MAIN GENERATING PLANT** | | |
| **MAKE AND TYPE**: **XXXXX**  **NUMBER OF UNITS**: **XXXXX** Engines, **XXXXX** Cyl.Units each  **BORE / STROKE**: **XXXXX** mm  **RPM**: **XXXXX**  **KW (NOMINAL)**: **XXXXX** kWt x **XXXXX** Sets  **GENERATORS MAKER/TYPE**: **XXXXX** TYPE: NTAKL **XXXXX** kWt  **VOLTAGE/FREQUENCY**: **XXXXX** V, **XXXXX** Hz  **SHORE CONNECTION BOX FITTED**? : Yes Capacity **XXXXX** Amps  **STEAM GENERATING PLANT** | | |
| **COMPOSITE BOILER**. **MAKE/TYPE** : **XXXXX**  **SMOKE TUBE COMPOSITE BOILER TYPE**: **XXXXX** | | |
|  | | |

# STANDARD TARIFF ITEMS

## Slop Disposal

All tanks, slop disposal, cleaning and gas freeing for dry-docking, survey or repair.

Slop disposal of Cargo Oil slops may be required.

Cleaning of the vessel's slop tank will be carried out using ship's equipment.

The slops are to be received immediately upon arrival and prior to berthing at a repair quay or dry-dock.

Quote price for:

a) Removal of slops (per cubic metre)

b) Removal of ballast/sludge (per cubic metre)

c) Removal of scale from cargo and fuel oil tanks (per cubic metre)

d) Removal and refitting of manhole doors for access using new joints and fastenings (per manhole door)

e) The services of certified Marine Chemist as required for the issue of a Certificate for the Vessel certifying that it is gas free and certified for hotwork covering all tanks, cofferdams, pumprooms, bunker tanks, and adjacent spaces and the engine room for access and/or repairs as required before docking and during the repair period.

## 37.2 Gas Free Certificates

Where repairs involving "hotwork" are known arrangements are to be made to have the spaces concerned tested for gas daily during repairs, and cleaned as necessary.

i) For initial visit

ii) Any subsequent visits

## 37.3 Ventilation Fans

i) Connection/disconnection (per fan)

ii) Daily hire (per fan)

## 37.4 Lighting

Provision of lighting (per unit)

## 37.5 Cleaning

Cleaning labour (per man hour)

## 37.6 Supply of Ballast Water

a) Per ton supplied

b) Per connection/disconnection

c) Hydrostatic testing of double bottom tanks (per tank)

d) Air pressure test of double bottom tanks (per tank)

## 37.7 Staging

a) On deck (per Bay metre height)

b) In the engine room (per Bay metre height)

c) In cargo tanks (per Bay metre height )

d) In holds (per Bay metre height)

## 37.8 Steelwork

Repair facilities to quote "All-in" prices per kilo (kilo rate) for the following steel renewals/repairs:

(a) Flat shell plating with internals

(b) Shaped shell plating, with internals

(c) Shaped shell plating, no internals

(d) Internal plating up to 500kg

(e) Internal plating up to 1000kg

(f) Internal plating over 1000kg

(g) Deck plating with internals up to 500kg

(h) Deck plating with internals over 500kg

(i) Deck plating without internals up to 500kg

(j) Deck plating without internals over 500kg

(k) Bulwarks/railings/chequered plating

1. Fairing of shell plating in place
2. Fairing of shell plating, which has been removed, including the release of plating and rewelding it in situ.

## 37.9 Steelwork Non Destructive Testing

1. Quote the costs per x-ray where required for steelwork repairs.

(b) Quote for cost of Vacuum test where required for steelwork repairs.

(c) Certificates

High tensile steel may in some cases be required. All steel used must have certificates from the ship's Classification Society.

e) Classification surveyors and the Owners Representatives must sight and get copies of all plate certificates prior to cutting for the vessel. If certificates are presented after the plate has been cut they may not be accepted.

## 37.10 Steel Pipework Renewals

Please quote for the following renewals at the under mentioned nominal bore diameters, with the options of schedule 40 and 80 and black or galvanised:

(a) 80mm to 600mm - straight per metre

(b) 80mm to 600mm - price per bend

(c) 80mm to 600mm pipe flanges - per flange

(d) Renewal of flange jointing and fastenings

80mm to 600mm - price per joint

(e) Renewal of pipework insulation including removals, refitting, etc. - price per metre

## Valve Renewals

Please quote for the renewal of the following types of valves to the under mentioned range of sizes:

(a) Screw Down Non Return Valves

(b) Butterfly Valves

(c) Gate Valves

Size range 80mm to 600mm NB

(d) Globe valves from 20mm to 60mm NB

## Valves Overhauls

Please quote for the overhaul and preparation for surveying of valves of the following types to the under mentioned range of sizes.

You are to include:

1) Removal to the workshop

2) Opening up the valve, cleaning and examination

3) Grinding in of the seats as appropriate

4) Renewal of seat facings as appropriate

5) Preparation of all components to the Classification Surveyors and Owners Representatives requirements

6) Reassembly using new packing etc.

7) Re-fitting en situ using new jointing and fastenings

**Types of valve to quote for**

1) Screw Down Non Return Valves

2) Butterfly Valves

3) Gate Valves

Size range 80mm to 600mm NB

Material specifications for the body, seat, spindles etc. must be quoted.

## Fresh Water Tanks

Cleaning of Domestic Fresh Water Tanks to include UHP hydro blasting and application of one coat of Owners supplied paint price per square metre.

Quote also for needle gunning of the same space. Your quote to include removal of chippings and one coat of Owners supplied paint or cement - price per square metre.

## Cathodic Protection

Hull sacrificial anodes of material and weight specification as approved by the Owners representative to be fitted in accordance with the vessels’ “anode plan drawing”.

1. Allow for the cropping and/or removal of the fastenings and anodes.
2. Allow for Welding or other fastenings in situ of the new anodes

Quote price per anode.

(a) Renewal of Seachest sacrificial anodes of material and weight specification as approved by the owners’ representative.

1. Allow for the cropping and/or removal of the fastenings and anodes.
2. Allow for the welding or other fastenings en situ of the new anodes.

## Tank Cleaning

Quote cost, for pumping out heavy fuel oil, 380 Cst. From Port Fuel Oil Tank and discharge to Starboard Fuel Oil tank to allow hot work repairs to be carried out. Cost to include connection and disconnection of pumps.

Quote cost for pumping 150 tonnes of slops (mainly water and small amount of oil) from Port Slop / Fuel oil Tank and discharging to shore disposal. Cost to include connection / disconnection of pumps and all onward disposal costs and Government Fees if any. Certificate of disposal to be issued to the vessel’s Master and/or the Chief Engineer.

Quote cost per tonne for removal and disposal of oily sludge. (Note Chief Officer to witness the weighing or any sludge for disposal). Cost to include all onward disposal and Government Fees if any. Certificate of disposal to be issued to the vessel’s Master and/or the Chief Engineer.

Quote cost per tonne for removal and disposal of tank rust scale.

Note: The vessel’s Chief Officer or a person nominated by him to witness weighing of any scale for disposal.

Quote cost, for pumping out 50 tones of marine diesel oil from starboard diesel oil double bottom tank and discharging to shore storage tank for temporary storage. After repairs carried out diesel oil to be pumped back to vessel’s tanks. Costs to include connection and disconnection of pumps and all appropriate additional costs.

Quote hourly rate for supply of cleaners who may be required by the attending Owner’s Representative for cleaning in the Fuel Oil Tank for Hot Work or other repair purposes.

normal working hours, state normal working day hours e.g. 0800 - 1700 hours.

Overtime.

Weekends / Holidays.

## Bilge Cleaning

Yard to provide pump c/w hoses etc to pump out engine room or pump room bilges to shore collection facilities. Certificate of disposal to be issued to the Chief Engineer/Chief Officer stating quantity of each item disposed.

Quote for bilge pump connection/disconnection per pump

Quote per tonne for bilge pumping including disposal at shore facility.

## 37.17 Manpower

General Labours & Cleaners. Engine Fitters / Pipe-workers / Welders / Steelworkers:- For normal working hours, state normal working day hours e.g.

0800 ~1700 hours.

Overtime.

Weekends / Holidays.

**Note:**

**Daily time sheets indicating actual hours worked must be submitted and signed by the Chief Engineer and/or the Chief Officer.**

**Quoted man-hour rate shall cover all insurance expenses, government levy/tax and allowance etc)**

## Ventilation

Yard to provide ventilation fans for ship crews to carry out work on board during the repair period.

Ventilation fans for yard’s repairs shall not be included in this item, but should be included under individualitems.

Please confirm ventilation fans for yard repairs has included in individual quoted item.

**Quote** per ventilation fan per day to be provided for ship’s work including power consumed.

**Quote** connection / disconnection cost per fan.

## Accommodation Protection

Quote cost to supply and fit heavy-duty per square meter of heavy duty polythene sheeting in accommodation.

Floor areas to be covered: -

Vessel’s accommodation alleyways & stairways on all decks.

Master’s Office.

Chief Engineer’s Office.

Chief Officer’s Office.

Cargo Control Room & ship’s office.

Wheelhouse.