

HINDUSTAN SHIPYARD LIMITED:: GANDHIGRAM :: VISAKHAPATNAM

1. SCOPE OF WORK OF SHIPYARD:

- 1.1 Shipyard shall provide detailed working drawings, coordination drawings to carry out the work as required under contract.
- 1.2 Shipyard shall provide required facilities like lighting, power supply, crane lifts depending upon the availability.

2. SCOPE OF THE WORK OF THE CONTRACTOR:

Supply & installation of the total accommodation items as below:

1. Accommodation furniture
2. Windows
3. Side Scuttles
4. Window wipers
5. Clear view screens
6. Insulation
7. Flooring
8. Doors
9. Paneling – partitions, lining & ceiling
10. Toilet Modules & Sanitary Fittings

1. Furniture:

- 1.1. The furniture & furnishings shall be as per List attached at Annexure – 1
 1. The design and construction of the furniture shall be to the Indian Navy / Indian coast guard standards.
 2. All the material used in the fabrication of furniture shall meet National / International standards and class approved.
 3. The design and construction of furniture shall be to the manufacturer's standards and in harmony with decorative treatment of respective spaces and shall be approved by Shipyard and Owners.
 4. Metallic frames / supports for chairs, sofa / settees, centre tables, etc., shall be of light weight construction and anodized Aluminium alloy may be used.
 5. Selection of furniture will be based on the lightest furniture of adequate strength for the intended purpose.
 - 6 The steel surfaces of the furniture shall be of baked enamel paint finish.
 7. The top of desks, tables, chest of drawers, cabinets, lockers, shelves etc., shall be finished with melamine plastic laminate which shall be of scratch / cigarette proof hard laminate.
 8. The chairs and sofas / settees shall be covered with fire retardant fabric.
 9. Holding down fixtures for loose furniture such as chairs, shall be provided.
 10. Chairs shall be additionally strengthened in way of holding down arrangement. Similarly fixtures / foundations required for fixing the furniture to Decks / Walls / Ceiling of ship for all furniture shall be supplied.

11. All fixtures in way of foundations / fastening to ship shall be adequately strengthened. Hand rails & window boxes shall be fixed as per drgs.

2. **WINDOWS:**

The windows shall be supplied & installed as per the enclosed list at Annexure -2

BOLTED TYPE WINDOWS:

The windows shall be manufactured in conformity with BSMA 25. Marine quality Al. alloy material shall be used for main frame and glass holder. The Alu. Alloy frame shall be anodized to natural color. The channel rubber for glass shall be of neoprene rubber and gaskets shall be with hardness of 40+ or -5 IRHD and working temperature from -20 deg. C. to +70 deg. C.

3. **SIDE SCUTTLES:**

The side scuttles shall be supplied & installed as per the enclosed list at Annexure -3

The side scuttles shall be manufactured in conformity with ISO/BSMA 24/JIS/Equivalent specification. All the side scuttles shall be of Bolted type with Aluminium glass holder. The material for main frame, glass holder, dead light and lugs shall be of **aluminium alloy**. The hinge pins shall be of stainless steel. The channel rubber for glass shall be of neoprene rubber and gaskets shall be synthetic rubber resistant to sea water and ozone with hardness of 40 + or -5 IRHD and working temperature from -20 deg.C. to + 70 deg.C.

4. **Window Wipers**

The Clear view Screens shall be supplied & installed as per the enclosed list at Annexure -4

Electrically operated Marine Window Wipers of straight line wiper, variable speed, single blade, self parking, fitted with de-icing heater Complete with motor, console mounting control unit etc.

MOVEMENT :

Horizontal, Sweeping from side to side of the window (with stowing position at side).

CONTROL UNIT :

A control unit with switches for ON / OFF is to be provided. It shall be of console mounted type. The motor shall be of marine type and with 'B' class insulation.

Dimensional and Wiring details of the control unit shall be submitted along with the equipment.

5. **Clear View Screens**

The Clear view Screens shall be supplied & installed as per the enclosed list at Annexure -5

The Electrically operated Clear View screens of 200 /250 / 300 mm / dia. Toughened safety glass of optical quality, self ventilated, continuously rated electric motor with Class "F" insulation and with / without de-icing heater. Control unit with ON / OFF switch for CVS shall be supplied.

Control panel shall be suitable for flush mounting on IBS console and dimensional and wiring details shall be submitted.

6. INSULATION:

- 6.1 The sound, thermal and fire class insulation shall be supplied & fixed as per the enclosed list Annexure-6. The installation work is to be carried out as per drawings issued along with the specification and to the satisfaction of HSL, MMD and Ship Owners. The thicknesses at various bulkheads, decks, deck heads and air ducts (Round or rectangular) are to be followed as stipulated in the drawings to maintain required temperatures inside the rooms during heat balance tests and also noise level tests at the time of commissioning, thereafter during the guarantee period of the vessel.
- 6.2 Pins, Lugs, Sheet metal Angles etc., Pins for fixing insulation, MS Lugs, Sheet Metal Angles and Boundary Bars are to be fabricated as required and welded as per the details indicated in the drawings, and as per Yard general practice.
- 6.3 All steel surfaces including frames, stiffeners, brackets and beams over which insulation is to be laid are to be cleaned and primed with one coat of ZSP primer by HSL before releasing the areas to insulation contractor. **The burnt areas due to pin welding and any damaged areas during the execution of work shall be mechanically cleaned and primed by the contractor.**

7. Flooring:

The flooring materials shall be supplied and laid as per the enclosed list Annexure-7.

7.1 LAYING OF FLOORING:

- 7.2 Laying of different types of flooring on board the ship, finishing and polishing the surfaces to the satisfaction of Shipyard and Owners representatives as per the technical specification, laying procedure (Installation method of flooring) and as per drawing.

7.3 DESCRIPTION OF WORK PER SHIP:

Primed and scheme painted surfaces shall be released to flooring contractor. Contractor has to lay the flooring as described below.

- (a) Laying of Light weight deck covering as per approved procedure to a minimum thickness of 5 mm.
- (b) Laying of A60 Floating floor as per approved procedure
- © Laying of A60 Dk .Covering
- (d) Fixing of PVC vinyl flooring
- (e) Fixing of Non Slip Synthetic Rubber mat
- (f) Fixing of Carpet .
- (g) Fixing of Non Slip Tiles.
- (h) Fixing of Ceramic Tiles
- (i) Application of white cement

8. DOORS & HATCHES:

- 8.1 The Doors & Hatches shall be supplied & fitted as per the enclosed list at Annexure -8

The door shall be side hinged outside openable/Top hinged as shown.

The doors/hatches shall be proto type approved by a National Authority or Classification Society confirming to SOLAS 1974 as amended rules.

International convention on load line 1966 with protocol and latest amendments, for the doors/hatches locations indicated in the enclosed list.

A-Class fire doors shall be designed, constructed and tested as per FTP Code, complying to SOLAS 74 as amended, IMO Resolution A-754 (18), A-799 (19) and as per type approval certificates and drawings issued by a Class / National Authority.

Single leaf door shall be single lever operated; multiple dog water tight doors shall be opened or closed connecting all the required cleats with smooth functioning.

The degree of tightness of doors shall be the same as that of the structure in which they are installed. The thickness of bulkhead is 5mm for Steel / Aluminium structure of ship.

Door shall be identified with its door no. prominently at the top of the door blade by way of welding steel label or by stamping in accordance with location markings.

8.2 **WATER TIGHT HATCHES:**

The hatches shall be proto type approved by a National Authority or Classification Society per International Convention on Load Line 1966 with protocol and latest amendments.

The coaming height of raised hatch shall be in accordance with the requirements of Classification Society. Single wheel and multiple clip action type WT hatches to be provided.

Hatch Covers shall be provided with approximate tally plate in accordance with the location markings to identify the compartment to which the hatch gives access.

8.3 **Water tight sliding bulkhead door**

The Water tight sliding bulkhead door shall be with independent hydraulic system as per Regulation 25 - 9 of Chapter-II-I Part B of SOLAS 1974 with latest amendments.

Indicators are to be provided at the control positions showing whether the doors are open or closed, and an audible alarm is to be provided at the door closure. The power, control and indicators are to be operable in the event of main power failure. Particular attention is to be paid to minimizing the effect of control system failure. Each power-operated sliding water tight door shall be provided with an individual hand-operated mechanism. It shall be possible to open and close the door by hand at the door itself from both sides.

The doors shall be inspected, tested and certified by Classification Society complying to the SOLAS and Classification rules at manufacturer's works before the equipment is dispatched.

Door shall be provided with self contained hydraulic power pack, including electrical motor, valves and fittings (oil tank filling valve and hose connection also to be included).

9. Panelling:

Supply, assembly/Installation of Partition panels, lining panels & ceiling panels, as per the respective drawings and as indicated at Annexure -9.

10. Toilet Modules & sanitary Fittings:

The Toilet modules & sanitary fittings shall be as per the list attached at Annexure -10

- 10.1 The prefabricated Toilet Module (Wet Units) shall be as per manufacturer's standard and to Owners and Shipyard approval.
- 10.2 The Toilet Module offered shall be of approved construction by a National Authority and Classification Society for use on cargo ships as per the relevant rules specified.
- 10.3 Certification:
 - 10.3.1 The partition, ceiling and door shall be tested as per FTP Codes, complying to SOLAS-74 and their latest amendments, IMO Resolution A - 754 (18) and A-799 (19).
- 10.4 The door shall have high pressure decorative laminate.
The door shall be provided with a louver at the lower side. Doors shall be provided with positive closure.
- 10.5 The flooring shall be covered with anti – skid ceramic tiles.
- 10.6 The European type water closet shall be with flush valve arrangement and front open type seat with cover.
- 10.7 The porcelain wash basin shall be provided with faucet of chromium plated brass taps for hot water and cold water and 'S' shaped drainage trap.
- 10.8 Fixed shower with hot and cold water thermo sensing mixing valve shall be provided. Thermo sensing mixing valve shall be type approved and stamped by a National Authority.
- 10.9 Fresh water supply for hot and cold water and sea water supply for flushing will be provided.
- 10.10 Supply and drain piping shall be complete in all respects with stop valves for each lead. The pipe line shall be insulated to prevent condensation. Shipyard shall only connect the leads to the respective lines. Supply pipes for fresh water and hot water shall be copper.

III. INSPECTION & SURVEY:

1. HSL / Class / MMD / Owners will inspect the job while in progress, during execution at different stages of work and after completion of work. Contractor shall provide required facilities for such inspection.
2. Survey shall be done in presence of concerned Yard departments / Quality Control / Owners / Class / MMD as per HSL inspection schedules.

IV. **GUARANTEE:**

The contractor shall guarantee the Quality of Workmanship for a period of 12 months from the date of delivery of the vessel to Owners. Any defect noticed during the guarantee period shall be repaired / rectified by the Contractor at his cost as soon as the information is given.

LIST OF FURNITURE ITEMS		Annexure - 1		
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	wooden bed-900 mm width	No.		
2	wooden two tier bunk-900 mm width	No.		
3	wooden three tier bunk-800 mm width	No.		
4	metallic bed	No.		
5	metallic two tier bunk	No.		
6	metallic three tier bunk	No.		
7	Aluminium bed	No.		
8	Aluminium two tier bunk	No.		
9	Aluminium three tier bunk	No.		
10	Drawers under bunks	No.		
11	sofa - 3 seater	No.		
12	sofa - 5 seater	No.		
13	corner sofa	No.		
14	dining table -20 persons	No.		
15	dining table -10 persons	No.		
16	dining table chairs	No.		
17	Arm chairs	No.		
18	office tables	No.		
19	bed side tables	No.		
20	ward robe lockers	No.		
21	double ward robe lockers	No.		
22	dirty cloths lockers	No.		
23	cutlery & crockery lockers	No.		
24	Library locker	No.		
25	Musical instrument lockers	No.		
26	safety equipment lockers	No.		
27	wine locker	No.		
28	Book shelf	No.		
29	writing table with stowage drawer for computer	No.		
30	low table - teapoy	No.		
31	chart table with chart stowage drawers	No.		
32	GMDSS table	No.		

33	Helmsmann's chair	No.		
34	Notice board	No.		
35	Lockable notice board	No.		
36	State board	No.		
37	NBCD board	No.		
38	key board	No.		
39	wooden gratings	sq.mtrs		
40	rubber gratings	sq.mtrs		
41	waste bin - Aluminium	No.		
42	Fire retardant curtain cloth	Sq. mtrs		
43	curtain rods with end fittings	RM		
44	Curtain rings	No.		
45	Shower curtains	No.		
46	Pure wool carpets	Sq.mtrs		
47	Mattresses	No.		
48	Pillows	No.		
49	Buffet / Ref box	No.		
50	TV table	No.		
51	Coffee table	No.		
52	Coat hooks	No.		
53	hat hooks	No.		
54	Galley storage locker - 2 door St St	No.		
55	Galley storage locker - 4 door St St	No.		
56	Galley work table - St St	No.		
57	Galley work table with Sink - St St	No.		
58	grease seperator - 5L	No.		
59	grease seperator - 10L	No.		
60	Side Board - 1 door	No.		
61	Side Board - 2 door	No.		
62	flag locker	No.		
63	Hand rails	mtr		
64	Hand rails with PVC cover	mtr		
65	Window Boxes	sq. mtr		

LIST OF WINDOWS			Annexure - 2	
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	Bolted Type fixed windows	sq.mtr		
2	Bolted Type openable windows	sq.mtr		
3	Weldon type openable windows	sq.mtr		
4	Weldon typefixed windows	sq.mtr		
5	Double glass type MCR window	sq.mtr		
6	Mosquito screens	sq.mtr		
7	Sun screens	sq.mtr		
8	Spare glasses for windows	sq.mtr		
9	Spare rubber channel for glasses	sq.mtr		
10	Spare rubber gaskets for glass holder of openable windows	sq.mtr		
11	Special spanners for the cone type locknut	No.		
12	Window Boxes	sq. mtr		

LIST OF SIDE SCUTTLES

Annexure - 3

Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	Side Scuttle of 200 dia -Brass- NON OPENABLE	set		
2	Side Scuttle of 250 dia -Brass- NON OPENABLE	set		
3	Side Scuttle of 300 dia -Brass- NON OPENABLE	set		
4	Side Scuttle of 350 dia -Brass-NON OPENABLE	set		
5	Side Scuttle of 200 dia -Brass- OPENABLE	set		
6	Side Scuttle of 250 dia -Brass- OPENABLE	set		
7	Side Scuttle of 300 dia -Brass- OPENABLE	set		
8	Side Scuttle of 350 dia -Brass- OPENABLE	set		
9	Side Scuttle of 200 dia -Al- NON OPENABLE	set		
10	Side Scuttle of 250 dia -Al- NON OPENABLE	set		
11	Side Scuttle of 300 dia -Al- NON OPENABLE	set		
12	Side Scuttle of 350 dia -Al- NON OPENABLE	set		
13	Side Scuttle of 200 dia -Al- OPENABLE	set		
14	Side Scuttle of 250 dia -Al- OPENABLE	set		
15	Side Scuttle of 300 dia -Al- OPENABLE	set		
16	Side Scuttle of 350 dia -Al- OPENABLE	set		
The side scuttles shall be complete with brass wing nuts etc.,				

LIST OF WINDOW WIPERS		Annexure - 4		
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	Electrically operated window wiper horizontal type with de-icing heater	set		
2	Electrically operated window wiper horizontal type without de-icing heater	set		
3	Electrically operated window wiper radial type with de-icing heater	set		
4	Electrically operated window wiper radial type without de-icing heater	set		

LIST OF CLEAR VIEW SCREENS			Annexure - 5	
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	CVS of 200 dia -with de-icing heater	set		
2	CVS of 250 dia -with de-icing heater	set		
3	CVS of 300 dia -with de-icing heater	set		
4	CVS of 200 dia -with out de-icing heater	set		
5	CVS of 250 dia -with out de-icing heater	set		
6	CVS of 300 dia -with out de-icing heater	set		

LIST OF INSULATION MATERIAL			Annexure - 6	
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	A-60 Insulation-130 kg/cu.m density - 50 mm thk	Sq.mtrs		
2	A-60 Insulation - 130 kg/ cu.m density-25 mm thk	Sq.mtrs		
3	Thermal insulation -Rock wool insulation - 50 mm thk (45-48 kg/cu.m density)	Sq.mtrs		
4	Thermal insulation-Rock wool insulation - 25 mm thk (45-48 kg/cu.m density)	Sq.mtrs		
5	MFMB insulation - 50 mm thk	Sq.mtrs		
6	MFMB insulation - 25 mm thk	Sq.mtrs		
7	MFRB insulation - 50 mm thk	Sq.mtrs		
8	MFRB insulation - 25 mm thk	Sq.mtrs		

The supply shall include the following material for carrying out the insulation works:

- a) 20 x 22 G G.I. Hexagonal wire mesh
- b) G.I. Binding wire
- c) 8 G x 10 mm long G.I. round self tapping screws for fixing sheet metal lining.
- d) Annealed M.S. pins for fixing insulation
- e) White spirit for cleaning of steel surfaces behind insulation and sheet metal lining.
- f) Welding equipment, electrodes, tools and other accessories for carrying out the job satisfactorily.

LIST OF FLOORING MATERIAL		Annexure - 7		
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	Underlay of light weight material of Durastic / Macrotec / J D Jones or equivalent	Sq.mtrs		
2	Ceramic tiles (un glazed) for wet compartments	Sq.mtrs		
3	PVC tiles for dry compartments	Sq.mtrs		
4	wooden grating / rubber mat in shower spaces	Sq.mtrs		
5	Glue for fixing ceramic floor tiles & skirting tiles	Sq.mtrs		
6	Glue for fixing vinyl floor tiles & skirting tiles	Sq.mtrs		

LIST OF DOORS & HATCHES			Annexure - 8	
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	A-60 Doors	sq.mtr		
2	A-30 Doors	sq.mtr		
3	Watertight doors - Steel	sq.mtr		
4	Weldon typefixed windows	sq.mtr		
5	Watertight doors - Aluminium	sq.mtr		
6	Weather tight doors -steel	sq.mtr		
7	Weather tight doors -Aluminium	sq.mtr		
8	Wooden doors for internal accommodation	sq.mtr		
9	Water tight sliding door as per SOLAS requirement	sq.mtr		
10	Access hatches - steel	sq.mtr		
11	Access hatches - Al with steel coaming.	sq.mtr		
12	Access hatches - Al	sq.mtr		
13	A 60 doors with PVC/PVC	pc		
14	A 60 doors Stainless Steel	pc		
15	A 30 doors	pc		
16	A 0 Doors PVC/PVC	pc		
17	A 0 doors Stainless steel	pc		
18	Watertight doors with central locking	pc		
19	watertight sliding doors- hydraulic	pc		
20	watertight doors - A 0 class	pc		
21	A class Sliding doors	pc		
22	B class Sliding doors	pc		
23	H class doors	pc		
24	Weathertigh doors with central locking	pc		
25	Weathertight doors with A class	pc		
26	B class Joiner doors	pc		
27	B class Joiner doors Stainless Steel	pc		

28	C class joiner doors	pc		
29	A class access Hatch - stainless steel	pc		
30	Mortise locks	pc		
31	Cylinder lock	pc		
32	Door closers	pc		
33	Ventilation grill	pc		
34	Door stoppers	pc		
35	Automatic Door closers	pc		
36	Sight Glass	pc		

LIST OF PANELLING (LINING / CEILING / PARTITIONS)			Annexure - 9	
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	Lining panelling -Aluminium - 0.8 mm	Sq.mtrs		
2	Lining panelling -Aluminium - 1.0 mm	Sq.mtrs		
3	Lining panelling -Aluminium - 1.2 mm	Sq.mtrs		
4	Ceiling panelling -Aluminium - 0.8 mm	Sq.mtrs		
5	Ceiling panelling -Aluminium - 1.0 mm	Sq.mtrs		
6	Ceiling panelling -Aluminium - 1.2 mm	Sq.mtrs		
7	Partition panelling - both sides 0.8 mm thk Aluminium sheet with Rock wool insulation in between	Sq.mtrs		
8	Partition panelling - both sides 0.8 mm thk Aluminium sheet with MFRB insulation in between	Sq.mtrs		
9	Partition panelling - both sides 0.8 mm thk Aluminium sheet with MFMB insulation in between	Sq.mtrs		
10	Stain less steel lining of 1.0 mm thk. For Engine room / galleys	Sq.mtrs		
11	Stain less steel lining of 0.8mm thk. For Engine room / galleys	Sq.mtrs		
12	Perforated Al. sheet of 1.0 mm thk	Sq.mtrs		
13	B 15 / BO standard partition & lining panel - 50mm - PVC/PVC	Sq.mtrs		
14	B 15 / BO standard partition & lining panel - 50mm - PVC/St St	Sq.mtrs		

15	B 15 / BO standard partition & lining panel - 25mm - PVC/Gal	Sq.mtrs		
16	B 15 / BO standard partition & lining panel - 25mm - StSt/Gal	Sq.mtrs		
17	B -15 Hi-noise panel - 50mm	Sq.mtrs		
18	B-15 cable conduit panel	Sq.mtrs		
19	B 30/BO class no gap type ceiling panel	Sq.mtrs		
20	B15/BO class corrugation type ceiling panel	Sq.mtrs		
21	B 30/BO class no gap type ceiling panel - St St	Sq.mtrs		
22	B15/BO class corrugation type ceiling panel - St St	Sq.mtrs		
23	Metallic sections required for each type of paneling	mtrs.		

LIST OF TOILET MODULES & SANITARY FITTINGS		Annexure - 10		
Sl.No.	Item Description	unit	Unit rate of material	Unit rate for installation
1	Prefabricated A-30 Toilet Modules	No.		
2	Prefabricated C class Toilet Modules	No.		
3	EWC with flush valve arrangement.	set		
4	Hand shower with approved type Thermosensor mixing valve of make THERMOG-1.	set		
5	Porcelain wash basin with faucet of chromium plated brass taps for hot & cold water.	set		
6	Fresh water tap near W.C. Self closing type.	No.		
7	Soap tray	No.		
8	Toilet paper holder.	No.		
9	Towel rail of 500 mm long.	No.		
10	Hand grips at WC and shower area.	No.		
11	Coat hook & Hat hook.	set		
12	PVC / GRP grating in the shower space.	No.		
13	Toilet cabinet with mirror.	No.		
14	Vinyl shower curtain.	No.		
15	W.C. Cleaning Brush.	No.		
16	PL type mirror light.	No.		
17	PL type general illumination light.	No.		
18	Double pole ON / OFF switch.	No.		
19	Bib Cocks	No.		

The Toilet Module shall be provided with the following fittings :-

- EWC with flush valve arrangement.
- Hand shower with approved type Thermosensor mixing valve of make THERMOG-1.
- Porcelain wash basin with faucet of chromium plated brass taps for hot & cold water.
- Fresh water tap near W.C. Self closing type.
- Soap tray.
- Toilet paper holder.
- Towel rail of 500 mm long.

- Hand grips at WC and shower area.
 - Coat hook & Hat hook.
 - PVC / GRP grating in the shower space.
 - Toilet cabinet with mirror.
 - Vinyl shower curtain.
 - W.C. Cleaning Brush.
 - PL type mirror light.
 - PL type general illumination light.
 - Double pole ON / OFF switch.
 - Junction box.
-