

TECHNICAL SPECIFICATION FOR FABRICATION OF PANELS

1. SCOPE OF WORK OF SUB-CONTRACTOR :

The broad scope is inclusive of but not limited to the following:

1.1 Fabrication of Panels:

- 1.1.1 The sub-contractor has to assemble the processed elements and fabricate the panel as per the relevant drawings / Fly Sketches. The processed elements shall be supplied by Shipyard. Every individual elements shall be checked by the subcontractor for dimensional accuracy, compliance with respect to drawings and discrepancies if any, are to be notified prior to commencement of fabrication. Incidental cutting for final adjustments during assembly is to be carried out by Sub-Contractor as necessary.
- 1.1.2 The sub-contractor has to make his own arrangements for making the necessary templates, fabrication skids, jigs, fixtures etc., as may be required for assembly of the structure. Bracings & temporary supports are to be provided where necessary to avoid distortions. The necessary staging is to be arranged by sub-contractor out of the material supplied by HSL on returnable basis.
- 1.1.3 The sub-contractor shall arrange to collect the processed elements from HSL and deliver the finished panel assembly as per the drawing(s). The work is to be carried out within the HSL premises, under the overall supervision of the yard/production departments and Q.C.
- 1.1.4 The party shall have his own quality personnel with identification and should be able to control the day to day works being executed.
- 1.1.5 All the panel sub-assemblies shall be progressively inspected at various stages of assembly as per the approved quality plan. Dimensional accuracy, fairness, weld quality etc., shall be as per HSL construction standards. Dimensional reports shall be prepared by the sub-contractor to demonstrate the pre-weld and post-weld dimensions achieved. Such reports shall be documented and forwarded to concerned department in HSL.
- 1.1.5 Upon completion of each defined stage, the job shall be offered for inspection to HSL's supervising department & quality control .The Quality Control Inspector shall thereafter present the job to the Classification Society as per Q.A. Plans. All remarks of the Supervising Department/ Q.C./Surveyors are to be reworked by the sub-contractor without claiming extra cost. Records of inspection shall be maintained in the prescribed formats as per the prevailing quality systems. The same are to be forwarded to HSL. for records.
- 1.1.6 The panels are to be handed over to HSL and job conformity reports generated. Handling of the sub-assemblies and fabricated units shall be the responsibility of the sub-contractor till the panel is handed over to concerned department in HSL.

- 1.17 Any dimensional discrepancies arising due to welding shrinkages/defects or consequential misalignments shall be attributable to the sub-contractor. Necessary re-work/repair is to be carried out by the sub-contractor, as per the approved methods at no extra cost, to meet acceptable standards.
- 1.1.8 Pad eyes for lifting, turning and erection along with local stiffening arrangements as required for lifting the panels are to be welded in position, as per separate drawings issued by HSL. Shoring lugs are to be provided by the sub-contractors as necessary. Welders with valid certificates are to be deployed for welding works.
- 1.1.9 The sub-contractor is required to follow proper sequence of assembly/welding and the quality procedures stipulated for such work. CO2 and submerged arc welding is to be carried out as specified on the relevant drawings. All welding equipment required to carry out welding is to be mobilized by the contractor (inclusive of CO2 and submerged arc welds).
- 1.1.10 The parties shall have their own Baking ,Holding ovens for pre-heating the Electrodes & flux as per WPS and to be carried to the work spots in the portable ovens. Any deviation to the quality standards will be viewed seriously and lead to appropriate action
- 1.1.11 All survey documents duly certified and signed by the supervising departments. QC department and surveyors are to be submitted. Certificates with pending work/remarks will not be accepted and treated as incomplete work execution.
- 1.1.12 Material supplied by HSL is to be reconciled by the sub-contractor.
- 1.1.13 NDT/Radiography, if any, shall be carried out by HSL. However, the subcontractor shall make all the requisite arrangements at his work place for conducting of the same. Defects, if detected, are to be rectified by the subcontractor at no additional cost. However the contractor should avoid rework/repair.
- 1.1.14 Arrangement for temporary lighting at the work spots is under contractor's scope

2. SCOPE OF SUPPLY OF HSL:(Free issue and on returnable basis except consumables)

2.1 Working drawings.

2.2 Processed elements as per the drawings.

2.3 Material for skids, bracing and temporary supports upon sub-contractor's indent.

2.4 Material for staging.

2.5 Welding consumables as per HSL's estimates will be supplied.

2.6 Power, oxygen/acetylene/LPG Gas, Compressed air and craneage will be provided with proper regulations and under strict control to avoid misuse. Electrical Meters are required to be installed by the contractors to establish consumption pattern.

2.7 Relevant inspection procedures/quality plan.

2.8 NDT/Radiography as necessary (refer. Cl.1. 1. 12).

**TECHNICAL SPECIFICATION FOR CONSOLIDATION, WELDING ,
PRESSURE TESTING AND SURVEY OF PANELS**

SCOPE OF WORK OF SUB-CONTRACTOR:

The broad work scope is inclusive of but not limited to the following:

1. Consolidation, welding and survey of panels.
2. The party shall have his own quality personnel with identification and should be able to control the day to day works being executed.
3. The parties shall have their own Baking ,Holding ovens for pre-heating the Electrodes & flux as per WPS and to be carried to the work spots in the portable ovens. Any deviation to the quality standards will be viewed seriously and lead to appropriate action
4. The work content consists of proper alignment of all matching internals such as deck, bulkhead girders, longitudinal, transverses etc. fitment of all those elements in way of the joint, tack welding, edge grinding fit up survey of the joint, or gouging, full welding, finishing works like removal of unwanted lugs/supports, grinding, dry survey of weld joint, hose test/pressure test of the weld joint, attending to survey remarks, NDT remarks and ensuring final certification.
5. Loose elements and under deck stiffening members as indicated on the relevant drawings, are to be provided in position, after sizing the elements as required to suit.
6. Undulations, if any, during the time of consolidation are to be rectified by approved methods to the satisfaction of QC/Surveyors/Owners.
7. The allowances, margins/ extra material available at the mating faces are to be trimmed by the sub-contractor while taking all care to ensure that there are no excess gaps, mismatch in the alignment, dimensional discrepancies, or variations to frame spacing or other governing dimensions.
8. Necessary care is to be taken by the sub-contractor to provide the requisite allowance at weld joints to cater for shrinkages during welding.
9. Any dimensional variation arising due to weld shrinkage or consequential misalignment shall be responsibility of the sub-contractor and necessary rework/repair is to be carried out by the sub-contractor to the acceptable standards, at no extra cost.
10. The tank is to be pressurized and tested with compressed air and thereafter by Filling fresh water(if required) as per the pressure indicated in the "survey-testing plan". The guidelines offered in HSL's quality standards shall be complied. The testing shall be carried out to the satisfaction of HSL'S QC/Surveyors/Owners.

11. All the boundaries and tank faces are to be thoroughly inspected and leaks if any, are to be rectified by the sub-contractor.
12. Care is to be taken with regard to the safety of the Hull Structure during the build up/ retention of the designed pressure.
13. After completion of pressure testing, the tanks/compartments are to be drained and thoroughly cleaned.
14. All the gadgets and accessories for conduct of the pressure test such as dummies, blanks, tools, gauges, manometers etc., are to be mobilized by the contractor.
15. Necessary staging required for carrying out the above work is to be arranged by the sub-contractor. However, staging material shall be supplied by HSL.
16. Bracing and temporary supports, if required, are to be provided by sub-contractor. The sub-contractor is also to mobilize all the requisite tools for panel alignment such as turn buckles, water level tubes, gay wires etc.
17. Lifting eyes provided on panels for its handling are to be cut, chipped and ground smooth after the work is completed.
18. All survey documents duly certified and signed by the User Department, QC Department, Surveyors of Classification Society and Owner's Representative are to be submitted. Certificates with any pending remarks will not be accepted.
19. Stage-wise records of inspection are to be maintained in the prescribed formats as per HSL's internal quality control system.
20. Accounting and reconciliation of materials supplied by HSL shall be the subcontractor's responsibility.
21. Arrangement for temporary lighting at the work spot is under contractor's scope.

2. SCOPE OF SUPPLY OF HSL:(Free issue and on returnable basis except consumables)

- 2.1 Relevant drawings.
- 2.2 Material for butt straps, locking pieces, bracings and temporary supports, upon sub-contractor's indent.
- 2.3 Estimated quantity of electrodes and backing strip as per HSL standards.
- 2.4 Material for staging upon sub-contractor's indent.
- 2.5 Power, Oxygen/Acetylene/LPG Gas, Compressed air and Craneage will be provided with proper regulations and under strict control to avoid misuse. Electrical Meters are required to be installed by the contractors to establish consumption pattern.
- 2.6 Relevant inspection procedures /approved Quality Plan.
- 2.7 NDT/Radiography as necessary.

TECHNICAL SPECIFICATION FOR ADVANCE OUTFITTING

1. **SCOPE OF WORK OF SUB-CONTRACTOR:**

The broad scope is inclusive of but not limited to the following:

- 1.1 Advance outfitting like Bilge /Ballast, Air & Sounding piping systems, Manhole/Hand hole covers assembly, Access Hatch covers with fittings, Vertical ladders, Rungs, Hand grips, platforms, gratings and lashing eyes etc., been considered outfitting along with the growth of the panel and such advance outfitting works are required to be taken up by the sub-contractor while fabrication of the panel. The sub-contractor has to fabricate and erect the items as per drawing and survey/pressure test along with panel survey. Detailed Technical specification shall be given at later stage.
- 1.2 Arrangement for temporary lighting at the work spots is under contractor's scope.

2. **HSL SCOPE OF SUPPLY:**

(Free issue and on returnable basis except consumables)

- 2.1 All required raw material.
- 2.2 Working drawings.
- 2.3 Consumables like welding electrodes as per HSL's estimates will be supplied.
- 2.4 Power, Oxygen/Acetylene/LPG Gas, Compressed air and Craneage will be provided with proper regulations and under strict control to avoid misuse.
- 2.5 Galvanizing, if required.
- 2.6 Relevant inspection procedures/quality plan.
- 2.7 NDT/Radiography as necessary.

Note:- **DETAILS OF MANPOWER ENGAGED:**

- 1 The sub-contractor has to furnish the details of the manpower deployed every week. The sub-contractor has to maintain a log book as per the attached format.
- 2 In case an employee is appointed afresh, details of his antecedents are to be submitted.
- 3 In case, the sub-contractor engages a person/persons from any other sub-contractor 'No Objection Certificates' from his earlier employer is to be furnished.

COMMERCIAL TERMS & CONDITIONS

1. Contractors may submit their Tenders as specified. The tenders should be in English Language only.
2. Tenders posted or submitted after the due date are considered as "LATE TENDERS" and are liable for rejection. Tenders posted before the due date but received after the due date are considered as "DELAYED TENDERS" and are liable for rejection.
3. Tenders shall be submitted in duplicate in accordance with the Technical Specifications and other instructions if any in the manner prescribed.
4. Each page of the Tender must be numbered consecutively and bear the Tender number and signature of the Contractors.
5. Unit rates shall be clearly given both in figures and words.
6. Corrections and alterations in the Tenders, if any shall be initiated by the Contractor.
7. Each item of the Technical Specification attached to this Tender Schedule is to be considered as a separate Tender. Shipyard has the right to accept in full or any portion or part of the Tenders at the unit price indicated in the Tenders.
8. Only the authorized representative (s) of the Contractors who have submitted their Tenders are eligible to be present at the time of opening of Tenders and they may if they so desire, note down the particulars of the other Tenders in the manner directed by the officer who presides over the said Tender opening.
9. Contractors or their representative (s) who failed to attend the Tender Opening on the specified date (s) are not entitled to have the particulars of the other Tenders at a later date (s).
10. Where the Contractors are not in position to submit their Tenders, they shall inform HSL before the due date, of their inability to quote.
11. Non-adherence to any of our conditions may render your quotation liable to be rejected.

12 CORRUPT PRACTICES:

The Contractors shall not offer or give or agree to give any person in the employment of the HSL or working under the orders of the HSL any gift or consideration of any kind as an inducement or reward for doing or forbearing to do or for having done or forborne to do any act in relation to the obtaining or execution of the contract or any other contract with HSL or for showing any favour for forbearance to show disfavour to any person in relation to the contract or any other contract with HSL. Any breach of the aforesaid condition by the Contractors, or any one employed by them or acting on their behalf whether with or without the knowledge of the Contractors or the commission of any offence by the contractors or by anyone employed by them or acting on their behalf under Chapter-IX of the Indian Penal Code 1860 or the Prevention or Corruption Act 1947 or any other Act enacted for the prevention of corruption by Public Servants shall entitle HSL to cancel the contract and all or any other contracts with the contractors and to recover from the Contractors the amount of any loss arising from such cancellation in accordance with the provision of clause.

13. APPROPRIATION:

Whenever under the contract any sum of money is recoverable from, and payable by the contractor, HSL shall be entitled to recover such sum by appropriating in part or whole by deducting any sum then due or which at any time thereafter may become due to the contractor in this or any other contract. Should this sum be not sufficient to cover the full amount recoverable the contractor shall pay to HSL on demand the remaining balance due. Not applicable to new contractors, who will be covered as per provision at sl no 11 of notice inviting tender.

14. ARBITRATION:

"All disputes between the parties shall be referred to the Sole Arbitration of the Chairman, Hindustan Shipyard Ltd., or a person to be appointed by the Chairman/Managing Director and if the Arbitrator so appointed resigns his appointment or vacates his office or is unable to and unwilling to act due to any reason whatsoever, the authority appointing him may appoint a new Arbitrator to act in his place. The

Arbitrator so appointed may from time to time with the consent of the parties enlarge the period of time for making and publishing the award. The Arbitrator shall on all matters referred to him indicate his finding as along with the sums awarded separately on each individual item of dispute and the venue of Arbitration in all cases, subject the convenience of the Arbitrator be Visakhapatnam only. The award of the Arbitrator shall be final and binding subject to the provisions of the Indian Arbitration & Reconciliation Act, 1996."

15. JURISDICTION:

The enforcement of the term of the contract as well as all the transactions entered into by the Contractors, with the Purchasers shall be deemed to have taken place within the jurisdiction of Visakhapatnam where Hindustan Shipyard is situated and any cause of action arising in the due performance or breach of contract by either of the parties hereto shall be deemed to have arisen within the jurisdiction of Visakhapatnam notwithstanding the residence or place of the Purchasers or Contractor.

16. LAWS APPLICABLE:

Execution of work(s) covered by the Tender Schedule shall be governed by all the Laws of Government of India including the labour laws in force. You shall undertake to fulfill all claims that they may become payable under these provisions.

17. ESTOPEL:

In case any term (s) specified in this Tender Schedule are not acceptable, the Contractors shall make a positive statement to that effect in their Tender. And where no such mention is made, it shall be construed as the acquiescence on the part of the Contractors to execute the work (s) for which the Tenders are submitted in strict accordance with the terms and conditions specified in the Tender Schedule. Anywhere an order is placed on the basis of such Tenders, such order shall be deemed to be the concluded contract between HSL and Contractors and the Contractors are bound to or execute the work (s) covered by such contract. Failure on the part of the Contractors to execute the contract so concluded, without prejudice to the other rights available to the parties, shall make the Contractors liable under the terms and conditions of this Tender Schedule.

18. PARALLEL RATE CONTRACT:

HSL reserves the rights to conclude parallel contracts and also to get contracted work done outside, irrespective of the value of the work, when such course considered necessary. Penalty shall be levied in the event of the contractor indulging in the following activities and the action, which affect the spirit of the contract adversely.

19. PENALTY:

Penalty will be imposed on parties as appropriate based on costs incurred / consequent delays on the schedules/ delivery of the ship if the parties indulge in the following:

- 19.1 Strikes, Dharnas, Bundhs, intentional slowing down of the pace of the work.
- 19.2 Failure to mobilize the required work force in proportion to the required tempo in executing the work.
- 19.3 Deviating the work force to the other works, which are not connected to the contract.
- 19.3 Frequent adverse remarks by the quality control dept. on the quality of the works being executed.
- 19.4 Deploying sub- standard machinery and unqualified personnel in contrast to the commitments indicated in their offers for the contract.

20. FORCE MAJEURE:

Unforeseeable causes beyond the control and without any fault or negligence of either party which effect delay or failure to fulfill this arrangement partially or wholly shall be regarded as Force Majeure and shall include causes such as Acts of God. War, Fires, Floods, Epidemics, Quarantines, Govt. restrictions, Nationwide Strikes, Severe Storms, Typhoons etc. HSL will examine such claims and reserves the right to accept them or reject them, depending upon the merits of each case.

21. Safety

- 21.1 The contractor has to ensure that th workmen engaged by the contractor report to the work spot with all relevant personal protective equipment like boiler suits, helmets, safety shoes, safety belts etc.,
- 21.2 The representative of principal employer i.e. HSL will be vested with the authority of sending the workmen out of the workspot if they do not wear the personal protective equipment.
- 21.3 Repeated violation of safety norms may lead to termination of contract.

PRICE SCHEDULE FOR PANEL FABRICATION FOR BULKERS

(As per Technical Specification at Enclosure –I)

Unit rate per TON fabrication of the panels

	Description	Unit Rate per Ton
a.	Double Bottom Panel	
b.	Hooper Side/Side Tanks	
c.	Top Side Tanks	
d.	Hold Corrugated Bulkheads	
e.	Corrugated Bulkhead Pedestals	
f.	Upper Deck Panels	
g.	Hatch Coamings	
h.	Super structure Panels	
i.	Aft peak & engine room panels	
j.	Fore peak panels	
K	Bullwark	

N.B. Please note that the rates quoted by the tenderer should be firm and remain unchanged till successful completion of the works/ contract.

PRICE SCHEDULE FOR PANEL FABRICATION FOR TUGS

(As per Technical Specification at Enclosure –I)

Unit rate per TON fabrication of the panels

	Description	Unit Rate per Ton
a.	FORWARD BLOCK	
b.	AFT BLOCK	
c.	MID SHIP BLOCK	
d.	SKEG BLOCK	
e.	DOCKING PAD	
f.	SUPER STRUCTURE BLOCK	
g.	FUNNEL	
h.	BULWARK	

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works/ contract.

PRICE SCHEDULE FOR PANEL FABRICATION FOR IPVS/OPVS

(As per Technical Specification at Enclosure -I)

Unit rate per TON fabrication of the panels**BELOW 6MM THICKNESS OF HULL**

	Description	Unit Rate per Ton
a.	FORWARD BLOCK	
b.	AFT BLOCK	
c.	MID SHIP BLOCK	
f.	SUPER STRUCTURE BLOCK	
g.	FUNNEL	
h.	MAST	
I	ALUMINIUM SUPER STRUCTURE BLOCK	
J	ALUMINIUM FUNNEL	
k	ALUMINIUM MAST	

6MM - 8MM THICK NESS OF HULL

	Description	Unit Rate per Ton
a.	FORWARD BLOCK	
b.	AFT BLOCK	
c.	MID SHIP BLOCK	
d.	SKEG BLOCK	
e.	DOCKING PAD	
f.	SUPER STRUCTURE BLOCK	
g.	FUNNEL	
h.	BULWARK	
I	ALUMINIUM SUPER STRUCTURE BLOCK	
J	ALUMINIUM FUNNEL	
k	ALUMINIUM MAST	

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works/ contract.

PRICE SCHEDULE FOR CONSOLIDATION, WELDING, PRESSURE TESTING AND SURVEY OF THE PANELS FOR BULKERS

(As per Technical Specification at Enclosure –II)

Unit Rate per TON Consolidation, Welding, Pressure Testing and Survey of panels.

	Description of work	Unit Rate per Ton
a.	Double Bottom Panel	
b.	Hooper Side/Side Tanks	
c.	Top Side Tanks	
d.	Hold Corrugated Bulkheads	
e.	Corrugated Bulkhead Pedestals	
f.	Upper Deck Panels	
g.	Hatch Coamings	
h.	Super structure Panels	
i.	Aft peak & engine room panels	
j.	Fore peak panels	
K	Bullwark	

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works/ contract.

PRICE SCHEDULE FOR CONSOLIDATION ,WELDING, PRESSURE TESTING AND SURVEY OF THE PANELS FOR TUGS

(As per Technical Specification at Enclosure –II)

Unit Rate per TON Consolidation, Welding, Pressure Testing and Survey of panels.

	Description	Unit Rate per Ton
a.	FORWARD BLOCK	
b.	AFT BLOCK	
c.	MID SHIP BLOCK	
d.	SKEG BLOCK	
e.	DOCKING PAD	
f.	SUPER STRUCTURE BLOCK	
g.	FUNNEL	
h.	BULWARK	

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works/ contract.

PRICE SCHEDULE FOR CONSOLIDATION ,WELDING, PRESSURE TESTING AND SURVEY OF THE PANELS FOR IPV's/OPV's

(As per Technical Specification at Enclosure –II)

Unit Rate per TON Consolidation, Welding, Pressure Testing and Survey of panels.

BELOW 6MM THICKNESS OF HULL

	Description	Unit Rate per Ton
a.	FORWARD BLOCK	
b.	AFT BLOCK	
c.	MID SHIP BLOCK	
f.	SUPER STRUCTURE BLOCK	
g.	FUNNEL	
h.	MAST	
I	ALUMINIUM SUPER STRUCTURE BLOCK	
J	ALUMINIUM FUNNEL	
k	ALUMINIUM MAST	

6MM -8MM THICK NESS OF HULL

	Description	Unit Rate per Ton
a.	FORWARD BLOCK	
b.	AFT BLOCK	
c.	MID SHIP BLOCK	
d.	SKEG BLOCK	
e.	DOCKING PAD	
f.	SUPER STRUCTURE BLOCK	
g.	FUNNEL	
h.	BULWARK	
I	ALUMINIUM SUPER STRUCTURE BLOCK	
J	ALUMINIUM FUNNEL	
k	ALUMINIUM MAST	

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works/ contract.

PRICE SCHEDULE FOR ADVANCE OUTFITTING

(As per Technical Specification at Enclosure -III)

1. Unit Rate of pipe fittings – Deck fittings & Bulkhead fittings fabrication, erection, pressure testing and survey as per drawing.

Up to 100 NW and below	Rate per each	
Above 100 NW and up to 200 NW	Rate per each	
Above 200 NW and up to 300 NW	Rate per each	
Above 300 NW	Rate per each	

2. Unit rate of Cable coaming & ventilation coamings for bulk head piercing

Below 600 X 200 mm	Rate per each	
Above 600 X 200 mm	Rate per each	

3. For fabrication and installation of pipes as advance out- fitting, the established RC for piping works shall be applicable
4. Unit rate for Fabrication of Cover & Coamings with fittings, erection, pressure testing and survey of manhole / hand hole covers, access hatch covers as per drawing.

Description of Work	Fabrication (Each)	Erec. Cons. & Survey (Each)
Each manhole cover Flush Type		
Each manhole cover Box Type		
Each hand hole Cover		
Each Access hatch Cover		
Grill cover		

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works / contract.

5. Unit rate for fabrication, erection and survey of Rungs, Vertical ladders & hand rails / grips as per drawings.

Description	Fabrication	Erec. Con. & Survey
Rungs	Rate per each	Rate per each
Handrails	Rate per /Meter	Rate per /Meter
Vertical Ladder	Rate per one meter length and part	Rate per one meter length and part
Drain plugs	Rate per each	Rate per each
Lashing eyes-at bulkheads	Rate per each	Rate per each
Lashing eyes with pockets	Rate per each	Rate per each
Non-skid bars	Rate per/sft	Rate per/sft
Anodes	Rate per each	Rate per each

N.B. Please note that the rates quoted by the tenderer shall be firm and remain unchanged till successful completion of the works / contract.

CHECK LIST

S. No.	Description	YES / NO
1.	Submission of offer in two bid system	YES / NO
2.	Tender Fees	YES / NO
3.	EMD	YES / NO
4.	Bid Validity	YES / NO
5.	Solvency	YES / NO
6.	Turnover	YES / NO
7.	Previous Experience	YES / NO
8.	Workmanship Guarantee	YES / NO
9.	Submission of PBG	YES / NO
10.	Submission of Essential Requirements	YES / NO
11.	Acceptance of tender conditions in TOTO	YES / NO