

भारत सरकार, गृह मंत्रालय
महानिदेशालय सीमा सुरक्षा बल
(रसद निदेशालय: आधुनिकीकरण सैल)
ब्लाक संख्या . 10, सीजीओ काम्पलैक्स, लोधी रोड, नई दिल्ली-03
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संख्या. पी-63013/44/2023/मोड-1/सीसुबल/1161-64

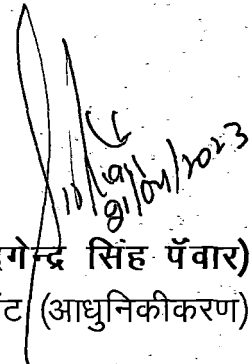
दिनांक 21 अप्रैल 2023

विषय : "Fast Patrol Boat (FRP Twin Engine Speed Boat)" के गुणात्मक आवश्यकता/परीक्षण निर्देशों पर हितधारकों/निर्माताओं/विक्रेताओं की टिप्पणी के लिए अनुरोध।

1. "Fast Patrol Boat (FRP Twin Engine Speed Boat)" के प्रस्तावित गुणात्मक आवश्यकता और परीक्षण निर्देशों को परिशिष्ट 'ए' के रूप में संलग्न किया गया है। हितधारकों/निर्माताओं/विक्रेताओं से अनुरोध किया जाता है कि वे उस उत्पाद की विस्तृत एवं स्टीक जानकारी दें। साथ ही प्रत्येक पैरामीटर के अनुरूप अपने उत्पाद के सही विवरणों को प्रस्तुत करें। सिर्फ 'अनुपालना' या 'अनुपालना नहीं' वाली टिप्पणी स्वीकार नहीं की जाएगी।
2. आवश्यक जानकारी/विवरण 07 मई 2023 तक निम्नलिखित पते पर भेजे जा सकते हैं।

रसद निदेशालय, सीमा सुरक्षा बल
लेवल-8, ब्लाक-10,
केन्द्रीय कार्यालय परिसर, लोधी रोड,
नई दिल्ली-110003
ईमेल:- comdtord@bsf.nic.in

3. शीघ्र प्रतिक्रिया का अनुरोध किया जाता है।


(दिगोन्द्र सिंह पेंवार)
उप कमाण्डेंट (आधुनिकीकरण)

Government of India
Ministry of Home Affairs
Directorate General Border Security Force
(Prov Dte: Mod Cell)
Block No.10, CGO Complex, Lodhi Road, New Delhi-03
(Fax: 011-24367683, Email-comdtord@bsf.nic.in)

No. P-63013/44/2023/Mod-I/BSF/ 1161-64

Dated, the 21 April 2023

Subject : Request for comments of stakeholders/OEM/Firms on QRs (Qualitative Requirements) & TDs (Trial Directives) of Fast Patrol Boat (FRP Twin Engine Speed Boat)


1. The revised QRs/TDs "Fast Patrol Boat (FRP Twin Engine Speed Boat)" is attached as Appendix 'A'. The OEMs/Vendors are requested to forward information of the product, which they can offer and also forward correct specifications of their system against each parameter. Only complied or not complied remarks will not be accepted. The firms are also requested to furnish the following details:-

- Whether you are OEM/Vendor?
- If vendor details of OEM.
- Authorization certificate from OEM.
- Original catalogue of the product
- Brochure/Literature of the product

2. The required information/details may please be forwarded at the following addresses by 07.05.2023.

Directorate General BSF,
Level-8, Block No. 10,
CGO Complex, Lodhi Road,
New Delhi-110003
Email: comdtord@bsf.nic.in

3. An early response is requested.


21/04/2023
(Digendra Singh Panwar)
Dy. Commandant (Mod)

Annexure – I to QRS of FPBs

TECHNICAL SPECIFICATIONS OF HAZARDOUS DUTY LIFE JACKET (HDLJ)

1. This statement of technical requirement covers the design, manufacturing, supply, testing and product support for single buoyancy Hazardous Duty Life Jacket (HDLJ), DS CAT No N4220-000835(Indian Navy), required to be worn by personnel whilst carrying out hazardous duties at sea such as Boarding Party Ops, Seamanship evolutions, High speed boat operations etc.
2. **Construction.** The HDLJ should be manufactured considering following requirements:-
 - (a) **General Requirements**
 - (i) As per para 1.2 of SOLAS LSA code, MSC resolution 48(66)-
 - (ii) As per para 5 of SOLAS LSA code, MSC resolution 207(81)-
 - (b) The quality of workmanship (eg seam stitching, fixing of various fixtures, ergonomics of design and placement of fixtures etc) must be of high order.
 - (c) It should be fitted with a whistle made of a rustproof material, capable of making a loud shrill note in fresh water/sea water, and firmly secured by a cord.
 - (d) **Vest** HDLJ should be fitted on a nylon sleeveless mesh vest. Vest should have pockets / pouches. HDLJ should also have means for airlifting a survivor during search and rescue operation.
 - (e) The buoyancy of Life Jacket should be at least 16 kg in fresh water. Weight of HDLJ should not exceed 1.5 Kg. Life jackets should be suitable for use by adults.
 - (f) **Emergency Gears.** HDLJ should be provided with the following emergency gears, suitably affixed on HDLJ:-
 - (i) **Distress Marker Light And Battery Unit.** A distress light with a water activated battery is to be provided for locating the wearers in darkness or fog. There must be a provision to replace battery and / or lamp if it has been utilized. The light and the battery should have a shelf life of five years from the date of delivery onwards.
 - (ii) **Buddy Line.** A five foot buddy line should be attached to the HDLJ. The line should have a loop on the end to connect to a rescue boat or to another person.
 - (g) Auto-inflation mechanism and valise / bladder material should confirm to the test requirements of MSC 81(70)
3. **Miscellaneous Features .**
 - (a) The model number and the year of manufacture, Buoyancy and details of approving authority should be printed on the Life jacket.
 - (b) Each Life jacket should have mark of inspecting authority on the valise and a permanent marking of date of expiry.
4. **Testing and Certification.**
 - (a) HDLJ should have the approval of national authorities like Navy/ DOT / MMD/Coast Guard of the country of manufacture or confirm to SOLAS specifications.

(b) The life jackets should have been type tested in accordance with IMO resolution MSC 81(70) and 226(82). However, SOLAS requirement of twin buoyancy chamber is not applicable.

(c) Necessary certificates for Type approval are also to be submitted.

5. **Product Support & Performance Guarantee** The supplier has to guarantee the satisfactory performance of the life jacket for a minimum period of five years, and product support for the same duration from the date of delivery to Indian Navy.

6. **Spares** - The On Board spares (OBS), and test equipment and the quantity, if any, are to be recommended by the supplier. Such recommendations are to be commensurate with the reliability of critical components and component use in the jacket. Special tools and test equipment are to be supplied for on board maintenance.

(a) **On Board Spares** - An itemized list of OBS, special tool and special equipment, which will be supplied with the life jacket are to be furnished along with the main offer. The OBS are to cater for all on-board maintenance routines and possible repair requirements. The OBS should include the following:

- (i) All spares required for exploitation upto 2 years.
- (ii) One set of general-purpose maintenance tools along with each lifejacket.
- (iii) One set of special tools required for dis-assembling/ assembling of components for repair by replacement.
- (iv) OBS list is to be furnished.
- (v) Detailed specification of various components is also required to be provided.

7. **Documentation** Each life jacket should be provided with an operating, technical and maintenance manual, type test and acceptance test certificates. In addition following documents are to be provided by the supplier:-

Description	Content	Copies
	Field and Depot Maintenance Manual	
	Parts and Tools Catalogue	
Technical Data	GA Drawing	
	Test Procedure and Documentation	
	Minor Repair Procedure	
	Certified Test Report	

8. **Warranty.** The life jacket with its associated components is to be guaranteed for stipulated performance for 2 years. The system supplied shall be warranted from defects, arising due to manufacturer and performance for the said period and cover all the defects arising from malfunction through design faults, inappropriate material, bad production and non-conformance to specifications. Any expense on account of repair/supply of spares against guarantee defects is to be borne by the supplier.

DRAFT QRS & TDS OF FAST PATROL BOAT (FRP TWIN ENGINE SPEED BOAT)

S/ No	Proposed QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Complied/ Not Complied
01.	Overview	<p>The boat shall be utilized for coastal patrol and surveillance with the aim to protect area of Haraminala, Creeks of Gujarat and area between Medi & Jakhau, costal area of India and inland water including Brahmaputra river & Sunderbans Delta of Bengal. The boat shall be highly seaworthy. The boat shall have propulsion, power generation, lifesaving & other engineering and electrical systems to carry out safe and reliable operation to perform the various functions as under:-</p> <p>a) Patrol in shallow coastal waters. b) To carry out coordinated secure operations and Force Protection, Vessels, other crafts/boats deployed. c) Seaward anti-terrorist patrols for security of coastal/inland installations, own vessels and own coast line. d) Search and Rescue.</p>	Water trials may include operation in shallow water during day and night at users place.	
02	Class	<p>Fast Patrol Boat shall be designed & constructed as per IRS rules class notation SWASTIK, SU, HSLC, RS-2 or equivalent for construction of patrol boat for operation within 12 nautical mile from coast having sea condition such that the design significant wave height of sea state-3 (the Creek/ Sundarban and Inland water of India). Boat should have 'V' shape at front planning hull with optimum dead rise angle to meet the desired speed and stability requirements. Classification society should consult user department to confirm the suitability of vessel at the area of employment of concerned origination before approval of GA drawing.</p> <p>Any GA drawing existing boat(time tested) of organization/purchaser of such kind may be corroborate to ensure the quality check to confirm the ops requirement. The builder should exhibit the final 3D model for analysis of comfortness by the owner/purchaser.</p>	Examine the class certificate issued by classification society with the specified Class Notation for compliance.	
03	Capacity	Fast Patrol Boat shall have a capacity of 08 people i.e. total 800 Kgs weight on board including Crew. The boat shall be fitted with two out board motors (OBMs) of sufficient Horse power to generate speed in environmental conditions mentioned below.	Check with 8 people x 100 kgs = 800 kgs load.	
04	Environmental Condition	<p>The equipment and the machinery fitted on the FPB should be suitable for marine applications and capable of satisfactory operation, under the following environmental conditions:-</p> <p>(a) Wind speed 10-30 knots (b) Ambient air temperature from zero to +50 C. (c) Water temperature from 01 C to 40 C. (d) Max relative humidity of 90% at 32 C. (e) Salinity of water up to 36 PPM</p>	Check the condition of environment.	
05	General Features	The boat shall be utilized for coastal patrol and surveillance with the aim to protect area of Haraminala, Creeks of Gujarat and area between Medi & Jakhau, costal area of India and inland water including Brahmaputra river & Sunderbans Delta of Bengal. The boat shall be highly seaworthy. The boat shall have propulsion, power generation, lifesaving & other engineering and electrical systems to carry out safe and reliable operation to perform the various functions as under:-	<p>a) Check the capability b) Check the running of OBM with GPS and stop watch. c) Check the strength d) Check the comfortness. e) Check record physically.</p>	

S/ No	Proposed QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Complied/ Not Complied																				
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06	Operating Profile	The FPB shall conform to the following operating Profile :- <table border="1"> <thead> <tr> <th>S/ No</th> <th>Speed</th> <th>Nos of Hrs</th> <th>Operating Time</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>From 30 knot to 35 knots</td> <td>60 Hrs</td> <td>10% of annual exploitation</td> </tr> <tr> <td>B</td> <td>From 25knot to 30 knot</td> <td>240 Hrs</td> <td>40% of annual exploitation</td> </tr> <tr> <td>C</td> <td>From 15 knot to 25 knots</td> <td>180 Hrs</td> <td>30% of annual exploitation</td> </tr> <tr> <td>D</td> <td>From 5 knot to 15 knots</td> <td>120 HRs</td> <td>20% of annual exploitation</td> </tr> </tbody> </table>	S/ No	Speed	Nos of Hrs	Operating Time	A	From 30 knot to 35 knots	60 Hrs	10% of annual exploitation	B	From 25knot to 30 knot	240 Hrs	40% of annual exploitation	C	From 15 knot to 25 knots	180 Hrs	30% of annual exploitation	D	From 5 knot to 15 knots	120 HRs	20% of annual exploitation	Check the running of the boat.	
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07	Speed	(a) 35 knots at sea state-2 with 04 POB including crew. (b) 29 knots at sea state-2 with 8 POB with personnel weapon and equipments at full load displacements.	To be physically measured in creek water after loading the boat with 4/8 pers with all equipments @ 100 Kgs per person during sea trial with the help of GPS and stop watch. Speed trails need to be undertaken with and against tide /current using standard procedure.																					
08	Seaworthiness	The boat should have seaworthy to patrol with reduced performance in Sea State 3 and adequate stability up to Sea State 4.	Check the boat in sea state 3 and 4.																					
09.	Supervision during Construction	As the boats are being built to class, these would be inspected by the Classification Society in present of user. The Owner reserves the right to undertake additional inspections either directly or by third party. Boat builder would be required to provide all inspection facilities at yard premises to the inspecting team. Periodic reviews by the Owner would be conducted for ascertaining work progress by a team including technical member from user end. A technical team consisting of one officer, one Inspr/SI(Wksp), Inspr/SI/HC(Master) will be detailed to monitor the entire building of boat from the initial stage for confirmation design drawing as per the requirement of area of deployment to suit the Ops/Adm requirement. Team will visit the yard in the regular interval and complete the task in addition to the assigned task at posted place.	Stage wise supervision may be carried out as per owner requirement.																					
10	Life Time Support	The Shipyard is to obtain a Contractual commitment from the various equipment suppliers to provide Product Support for a minimum period of 10 years including electronics, after delivery of the last FPB. In case the equipment is likely to become obsolete, the manufacturer of boat should be committed to give a clear three year notice to the user.	Confirm from boat builder.																					
11	Dimension	Length of Hull Length incl appendages & OBM – 6.812 Mtr ± 30 cm Moulded length ± 6.200 Mtr ± 30 cm	Check with measuring steel tape in calm water and tally with approved drawings. Check lines plan and general arrangement drawings.																					
		Breadth – 2.409 Mtr ± 30 cm	Check with measuring steel tape in calm water and tally with approved drawings. Check lines plan and general arrangement drawings.																					

S/ No	Proposed QRs/Technical Specification	Trial Directive/ Procedure suggested for trial	Complied/ Not Complied
	<p>Draft Lightship draft without OBM – 0.200 Mtr (Aft) Lightship Draft without OBM – 0.400 Mtr(Fwd) Mean draft not more than 0.4 mtr with full load. Boat should have optimum dead rise angle to meet the speed & stability criteria at creek, Sea coast and inland water of India.</p>	Check with measuring tape after loading the boat with 8 pers with all equipments @ 100 Kgs per person and tally with drawings.	
	Depth Hull – 1.048 Mtr	Check with measuring tape and tally with approved drawing. Check lines plan and general arrangement drawings.	
	<p>Weight Not more than 1100 Kg (With all accessories including Batteries and all fittings except OBM & fuel) The design corresponding to the other criteria like speed, endurance, stability etc be met. The material and FRP construction to meet out the weight criteria should be followed by the boat builders to meet the class requirement.</p>	Check in the weighing machine as per design.	
12	Compliment	08 persons including Crew along with personnel weapon and equipment i.e. total weight 800 Kgs.	To be physically checked after loading the boat with 8 pers with all equipments @ 100 Kgs per person.
13	Hull	<p>(a) The hull shall be constructed in accordance with classification society rules and shall be of single piece FRP mould with smooth mat finish scratch proof Gel coat outer finish in single mould. Hull design of Fast Patrol Boat should be identical to the existing hull design of daughter boats of Floating BOP. (As the existing FPBs of FBOP have already covered more than 15 years life against prescribed life, so that this can replace the existing one as and when required in due course).</p> <p>(b) Under deck includes longitudinal and transverse stiffeners and sub division bulkheads, with anti-flooding and damage control as per class requirements.</p> <p>(c) To have minimum draft for easy beaching and sail in shallow water. Bottom should be strengthened for this purpose.</p> <p>(d) Glass reinforcement plastic materials used in construction of the boat with comply with following standard:- Gel coat- IRS/IACS members approved. Vinyl ester Resin - IRS/IACS members approved. CSM'E' – IRS/IACS members approved.</p> <p>e) The hull should be strengthened to resist the slamming effect of the water waves as per sea state specified in QRs.</p> <p>f) The construction of the boat should be done in controlled temperature/humidity to gain the best lamination property.</p> <p>g) Under floor buoyancy as per class requirement. Buoyancy should be air tight and hallow and sealed properly.</p> <p>(h) The hull should be strengthened for beaching on the sea shore/beds for shallow water operation.</p>	<p>a) Check the hull physically in presence of IRS rep. It should be as per class society recommendation.</p> <p>b) Certificate to this effect be obtained from the builder.</p> <p>c) Check with measuring tape.</p> <p>d) Material type approved certificate to be submitted by builder.</p> <p>e) The inclining experiment of the first boat is to be carried out if applicable as per class requirement.</p> <p>f) Check in prototype inspection.</p> <p>g) Certificate be obtained from class. Check in prototype inspection.</p>
14	Fender	Boat shall have compact/good quality/ heavy duty rubber fender with suitable shape corresponding to the design all around the boat. 04 Nos. pneumatic fender to be provided.	Check fender for adequacy/location as per approved drawing. Check class approval certificate for materials.

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15.	Accommodation	<p>a. Height adjustable seats for Helm's Master & Co-Driver, suitable hand grip shall be provided in front of co-driver and 01 wooden bench each side (i.e. port & STBD) having seating capacity of 03 persons should be provided. Front upper deck should be of aerodynamic design and side of driver and co-driver should have adequate height compatible with aerodynamic front deck so that no water ingress inside the deck while sailing of boat.</p> <p>b. The area below deck forward of the helm provides a storage area.</p> <p>c. Walk through wind screen to be provided.</p> <p>d. Detachable with locking system, LMG mounting post at forward deck to be provided with comfortness to the gunner.</p> <p>e. Provision of seat belt, hand-rails and toe grips.</p>	<p>(a) Check Shock absorbing capacity of seats during speed trial. Ascertain comfortable sitting by 06 people on port & stbd site. (b), (c) & (d) Check physically. (e) Physically check hand-rails, belt and toe grips.</p>	
16	Electrical	<p>(a) Power should be sufficient to charge the battery system.</p> <p>(b) Battery should be placed in the boxes suitability fixed.</p> <p>(c) The marine application battery with sufficient power to start the OBM and operate the navigational lights and accessories.</p>	<p>a) Check gauge. b) & (c) Check physically.</p>	
17	Floor	Anti-Skid floor/deck and All surfaces shall be of minimum maintenance and easy to clean. The areas of floor/deck shall have adequate handholds where ever required.	To be physically checked as per approved plan/drawing.	
18	Life Saving and fire fighting Equipment	<p>(i) 04 Nos Hazardous Duty Life Jackets as per Indian Navy Standard attached as Annexure 'I' to QRs or equivalent.</p> <p>(ii) Life jackets -09 Nos SOLAS approved type.</p> <p>(iii) Life buoy – 02 Nos SOLAS approved type.</p> <p>(iv) Fire extinguisher as per class approved.</p>	<p>- Lay out the buoys/jackets count. - Check class approved certificates. - Random testing of kit/life jackets be done to ensure functionality. - Check pressure test certificate of fire fighting extinguisher.</p>	
19	Engine	<p>The FPB shall be fitted with Twin Four Stroke petrol Out Board Motors (OBM) reputed make not less than 90 HP each with suitable propeller. The FPBs shall be fitted with remote wheel with suitable hydraulic steering system, remote trimming and tilting arrangement for engine and throttle/gear controls, tachometers, engines hour-meters, engine water temperature gauges, battery meters, and boat speed indicator, oil temperature. Oil pressure meter etc. OBM should be of world reputed make/model with advanced technology. The OBM should install along with all meter and accessories as per the OEM specification and instructions as per the manual. The OBM should have service facility in India with establish network of dealer and service centre. OBM harness, gear shift cable etc should fitted upper side of the boat to avoid entries water from rear.</p> <p>Engine make and model to be provided by bidders during Technical bid.</p>	<p>Engine performance to be checked during speed trial. Check functioning of all instrument panel. Check panel remote till & trim arrangements. Start stop engine 6-8 time and specific gravity and batteries to be tested before and after engine start.</p>	
20	Endurance	The Fast Patrol Boat should have endurance of 04 Hrs of continuous operation without refueling at the speed of 25 -30 knots with full load	Distance travelled & consumption of fuel to be recorded. 02 hours average Range/ Endurance trial to be carried out with 08 pers alongwith all equipments @ 100 kgs per person during sea trial with the help of GPS.	
21	Fuel Tanks	Two below-floor high quality FRP/Plastic fuel tanks of capacity to meet the endurance with extra 10% reserve shall be fitted. Fuel tank shall be fitted centre of the boat maximum forward line with proper hatches having cleaning facility. A fuel gauge for each tank shall be fitted having display on the instrument panel. Each tank shall supply only to its own- side OBM, which shall provide separation and	<p>a) Check fuel capacity meets endurance requirement. Certificate issued by class society/builder be obtained.</p> <p>b) Check additional uv-resistant fuel tank capacity</p>	

S/ No	Proposed QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Complied/ Not Complied
		<p>redundancy in the fuel supply in case of contamination, damage etc. However, a synchronization system shall be provided to allow both OBM to be run with either tank in emergency in case of one fuel tank supply choked. Two 25 Ltrs UV-resistant polyethylene fuel tanks may be stowed in addition for emergency use along with the accessories. Proper vent to be provided for de-vaporization. Water separator and filter detachable and transparent OEM of OBM make to be installed (to drain the separated water time to time).</p>		
22	Navigation/Com munication- Approved Type	<p>a) Simple bracket-mounted magnetic compass shall be fitted to the instrument panel. b) Removable type bracket mounted hand held GPS system with Colour Display unit. c) Suitable place for installation of VHF set and bracket for fitting to its antenna. d) Navigational light to be provided Port/STBD side, and to be placed at a position to prevent damage from stacking at jetty. e) One 150mm/100 W hand held search light to be provided and facilitated to connect by 5 meter cable from panel arrangement run by on board battery.</p>	<p>a) Check magnetic compass. b) Check functioning of GPS, Check correctness of GPS reading by compass. c) Check mounting of VHF Set/Antena. d) Check all navigational lights are functional. e) Physically checked.</p>	
23	Lifting/Lashing	<p>Four lifting points at freeboard top (freeboard should be strengthened accordingly) with single lifting center shall be provided for quadruple quick-release sling to enable simple lifting on board the FBOP by davit or by crane in other cases. Supplier shall ensure that normal deck cleats of stainless steel marine grade SS 316 or superior are provided, as well as two stainless steel towing lugs. Lifting of the FPB shall be with the existing boat davit fitted on FBOP. The Center of Gravity of boat/Lifting center shall match with boat davit hook center. The supplier shall provide cradle for the stowage of boats,</p>	<p>a) Check lifting points in number, check strengthening record position and also test its functionality. (Lowering & Hoisting tests to be carried out as per class approved plan. b) Load test certificate to be provided by builder.</p>	
24	Boat Equipment	<p>a. Galvanized Grapnel anchor as per class approved with 19mm PP rope having 50 mtr length with sufficient breaking strength. b. Boat hook having 8' length of teak wood with Galvanized hook at the end. c. Oars 02 Nos with rowing lock. d. Pneumatic fender 04 Nos e. Mooring Lines 20 Mtr length, size 16mm PP rope of sufficient strength – 02 Nos f. Mooring line 30 mtr length, size 12 mm PP rope of sufficient strength – 02 Nos. g) VIP flag post brass detachable – 01 No. h) Hard bamboo 1.5 inch X 9 feet length. 02 Nos</p>	<p>Check anchor & other equipment's as per class requirements.</p>	
25	On Board Spares	<p>Supplier will provide on board spares (OBS) required for 600 hours run operation of the OBM as per OEM recommendations. List of on board spares to be furnished by the supplier in the tender documents. In the list of OBS provided by the bidder, Purchaser will reserve the right to make any amendments (addition/deletion or increase/decrease in the quantity) as per Ops its requirement. The decision of purchaser will be final in this regard at the time of Technical evaluation.</p>	<p>Check quantity and record inventory.</p>	
26	Bilging arrangement	<p>Hand operated and electrical bilge pumps be provided as per class requirement.</p>	<p>Check by operating its functionality by drawing out water from bilge.</p>	
27	Bollard and cleats	<p>(Properly strengthened according to the class notation requirement) Bollards-03 Nos, 01 Fwd and 02 Aft Cleats -04 Nos 02 Fwd & 02 Aft</p>	<p>(i) Check bollards in number and load for length/thickness. (ii) Check Load & Material Test certificate is to be submitted by builder.</p>	

S/ No	Proposed QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Complied/ Not Complied
28	Fitting & Fixture	All fitting & fixtures including nut, bolt, screw, washer etc shall be of SS-316 grade unless other materials are suitable for a particular application as per BIS standards.	Material test certificate to be submitted by builder from accredited lab.	
29	Materials	(a) Vinyl ester resin should be used for construction of hull should be approved by IRS/any other member of the International Association of Classification Society (IACS). (b) Glass Reinforced Plastic materials used in construction such as Chopped Standard Mat, Woven Roving etc. shall be IRS/IACS member approved. (c) Core materials approved by IRS/IACS member. (d) All SS Material used in the Deck or any other places should be Marine Grade of SS 316. (e) Toughened Glass Wind screen-Approved Type to be provided wherever necessary in front & side of Helm man & Co-driver seat (f) The quality of materials should be ensured/certified by classification society at every stage of construction. (g) Required rain water drain plug in the Boat to flush out rain water from the Boat.	a),(b) & (c) Check material used certificate issued by class society. d) Check test report of SS items. It should be SS-316. e) Check material and certificate. f) Certificate be obtained from class. g) Check physically.	
30	Certificate	The following Certificate and Documents shall be supplied at the time of delivery of the vessel :- a) Classification Certificate as the construction of boat according to the class notation mentioned at Srl No.2 above issued by Classification Society Rules. b) GA drawing along with other plans approved by class. c) Load test certificate of four point lifting arrangement. d) The certificate of materials used in the construction of boat by Classification Society..	Check the all required certificate/ approved drawing provided by builder duly approved by class society.	
31	Classification Regulations & Marks on Hull, Superstructure, Colour Scheme	Classification Regulations FPB shall be designed, built and outfitted to comply with all the applicable provisions and requirements of the current International Rules and Regulations of Classification Society State approved Statutory authority. Marks on Hull, Superstructure The Boat name, ID No, user emblem, National Flag is to be affixed to both sides of the hull at super structure level. Size and location to be as approved by purchaser. Colour Scheme: The outer skin of the fiberglass hull is to be gelcotted with white colour glossy finish. To protect the surface of the boat, sealing the fiberglass beneath from the elements including water moisture and the sun's ultraviolet-rays.	Craft ID No., BSF emblem etc to be physically checked.	
32	Cathodic Protection External	Anodes: Suitable anodes to be fitted at appropriate places wherever required (OBM) for 18 months of continuous service.	Check anodes for locations.	
33	Tools	One set of tools specified by the OEM for routine maintenance etc. 01 No propeller removing tool kit. 01 No hand oil drain pump. 01 No special tool for removing/fixing of oil filter to be provided. 01 No. spark plug spanner 01 Screw driver flat and star. 01 No. pliers 01 No. adjustable spanner.	Check physically.	

S/No	Proposed QRs/Technical Specification		Trial Directive/ Procedure suggested for trial	Complied/ Not Complied
34	Canopy	A stowable canopy parachute canvas cloth/SRF canvas cloth may be fitted. The stainless steel collapsible canopy frame folds aft and stows above the transom. Canopy should be able to withstand high relative winds of upto 60 knots (30 knots wind + 30 knots speed)	Check physically. Check canopy during speed trials against true wind.	
35	First aid box	Suitable first aid box and provisioning for keeping it.	Check physically.	
36	Document	Fast patrol should be supplied with documentations/drawings, fitted equipment details and Boat data Book. Certificate mentioned at Srl No. 30	Check all records,	
37	Guarantee/warranty	The firm will have to provide 02 years guarantee/warranty for FRP Twin Engine speed Boat from the date of acceptance of consignee location in satisfactory condition.	Check certificate.	

तकनीकी विशेषज्ञों के उप समूह द्वारा यह निश्चित किया गया है कि उक्त गुणात्मक आवश्यकता को अधिक बेहतर बनाने के लिए पुनः गृह मंत्रालय एवं सीमा सुरक्षा बल की वेबसाईट पर विक्रेताओं/फर्मों के सुझाव प्राप्त करने हेतु 15 दिनों के लिए अपलोड किया जाए।

नोट - सभी विक्रेताओं/फर्मों से निवेदन है कि अपने सुझावों के साथ निम्नलिखित कागजात संलग्न कर ई-मेल पता comdtord@bsf.nic.in पर भेजने का श्रम करें:-

1. उत्पाद की वास्तविक विवरण पुस्तिका।
2. उत्पाद की साहित्यिक रचना का ब्यौरा।
3. गुणात्मक आवश्यकताओं के उपर व्यापक टिप्पणीयों।

(दिगेन्द्र सिंह पवार)
उप कमांडेंट (आधुनिकीकरण)