

**TENDER SPECIFICATION OF FIN STABILIZER TRAINING MODEL  
FOR BNS SHAHEED MOAZZAM**

1. **Name of the Equipment.** Fin Stabilizer Training Model.
2. **Purpose.** It is a training model which aims to offer practical insights into the operation of ship stabilizers, complementing theoretical knowledge with hands-on experience for trainees.
3. **Quantity.** 1 (One).
4. **Manufacturer, Principal Supplier & Local Supplier.** Names and full addresses are to be mentioned in the following table.

Ser	Description	Remarks
a.	Manufacturer	To be mentioned.
b.	Principal Supplier	To be mentioned.
c.	Local Supplier	To be mentioned.

5. **Year of Manufacture.** 2024 or later. The item should be brand new and original.
6. **Country of Origin.** USA, UK, Canada, Australia, Japan, South Korea, Turkiye and EU Countries.
7. **Manufacturing Country.** USA, UK, Canada, Australia, Japan, South Korea, Turkiye and EU Countries.
8. **Certificate/Document of Authentication.** The local supplier must provide the following original certificate(s)/ document(s) with the offer/quotation of items as regard to the genuinity of the source and item(s) to establish a chain of links from the original source to supply:
  - a. One certificate/ document from the manufacturer in favour of the supplier (in the case of the manufacturer as the direct source).
  - b. Two certificates/ documents, one from the manufacturer to the authorised agent and the other from the authorised agent to the supplier (in case the authorised agent is the immediate source).
  - c. Three certificates/ documents, first one by the manufacturer to the authorised agent, second one by the authorised agent to the sub-agent and third one by the sub-agent to the supplier (in case of the sub-agent as immediate source). If the supplier is unable to obtain the first certificate (by the manufacturer to an authorised agent), then relevant documents to prove the agency-ship of its claimed agent of the recognised manufacturer need to be produced.
9. **Standard.** The Fin Stabilizer Training Model is to be designed and constructed according to international standards. The standard to which the quoted Fin Stabilizer Training Model complies is to be specified in detail (ISO, DIN, BS, AS etc).
10. **Operating Environment.**

Ser	Description	Remarks
a.	Ambient air temperature	+5°C to +45°C.
b.	Relative humidity	Up to 95% (non-condensing).



11. **Scope of Supply.** The scope of supply is to include the followings:
- a. 01 x Fin Stabilizer Training Model, with all items necessary for immediate operation without the requirement of any other items (attachments, accessories, consumables, etc) (as per paragraph 12 and 13).
  - b. Tools (as per paragraph 14).
  - c. Optional items (as per paragraph 15).
  - d. Spare parts (as per paragraph 16).
  - e. Installation, Test/Trial and acceptance services and Training (as per paragraph 17 to 19).
  - f. Pre-Shipment Inspection (PSI) and Factory Acceptance Test (FAT) (as per paragraph 20).
  - g. Documents (instruction manual, workshop level repair manual, parts catalogue, factory test certificate, etc, as applicable) (as per paragraph 21 and 22).
  - h. Warranty and Guarantee (as per paragraph 23 and 24).
  - j. Any other issue relevant (if any).

12. **Technical Specification**

Ser	Description	
a.	Type	Electro Hydraulic.
b.	Model	To be mentioned.
c.	Maker	To be mentioned.
d.	Capacity	To be mentioned.
e.	Power supply	220V AC, 50-60Hz, 3Phase.
f.	Material	Suitable material for durability and corrosion resistance
g.	Fin	(1) Material: High-density composite material or corrosion resistance quality material.
		(2) Size: Proportional to the model scale.
		(3) Shape: NACA (National Advisory Committee for Aeronautics) foil shape for hydrodynamic efficiency.
h.	Mechanical system	(1) Actuation Mechanism: Servo motor with precision control.
		(2) Control system:
		(a) Electronic control unit with feedback loop.
		(b) Feedback mechanism: Real-time data transfer.
		(c) Input device: Angle input will need to be applied with the help of joystick or knob.
		(d) LCD display.
j.	Any other particulars	System should be tuned to demonstrate specific angle designed.
k.	Hydraulic system	1. Hydraulic pump:
		(a) Type: gear pump or any positive displacement type pump



Ser	Description	
		(b) Flow rate: To be mentioned.
		(c) Pressure: To be mentioned.
		2. Hydraulic actuation:
		(a) Type: double-acting cylinder.
		(b) Stroke length: To be mentioned.
		(c) Bore Diameter: To be mentioned.
		3. Hydraulic fluid: To be mentioned.
		4. Reservoir capacity: To be mentioned.
l.	Fin Size	Appropriate fin design shall be followed to be accommodated with the available space. (Maximum 0.5 square meter). Pump capacity is to be considered while designing the fin shape.
m.	Fin shaft diameter	To be mentioned.
n.	Weight	To be mentioned.
p.	Dimension	Maximum available space L-2.5 m, B-1m (it will be kept on 2 <sup>nd</sup> floor of a 3 storied building where access door width 3ft and height 6ft).
q.	Safety mechanism	Necessary accessories/fittings to be provided to ensure safety of personnel and the machines during the operation.
r.	Reset Option	In case of system failure, manual reset option is to be provided.

13. **Standard Accessories.** Standard accessories must include all items and accessories essential to operating the Fin Stabilizer Training Model, whether mentioned in the specification or not. The price of standard accessories is to be included in FOB value. However, an itemised price list of standard accessories is to be provided with the offer for reference value only.

14. **Tools.** 01 (One) set of standard tools for maintenance of Fin Stabilizer Training Model is to be provided, indicating itemised price. The quantity and size of these tools are to be mentioned in the quotation. The price will be added to the total cost while evaluating the comparative price of the suppliers.

15. **Optional Items.** The quotation should include a list of optional items (if any) required to operate Fin Stabilizer Training Model. When evaluating the comparative prices of the suppliers, only the prices of selected items by BN will be added to the total price.

16. **Spare Parts.** A recommended list of spare parts required for 05 years of satisfactory operation must be provided, indicating the itemised price. Only the prices of selected items by BN will be added to the total price while evaluating the comparative price of the suppliers.

17. **Installation.**

a. Installation of the Fin Stabilizer Training Model will be done by the supplier at the Fin Stabilizer Training Model installation site i.e. Engineering School at BNS SHAHEED MOAZZAM, Kaptai, Rangamati Hill District as per approved installation drawings.

b. The supplier will be fully responsible for satisfactory test and trial of the Fin Stabilizer Training Model at site in Kaptai, Rangamati Hill District.

c. All materials, components, and accessories required for installation and satisfactory operation of the Fin Stabilizer Training Model are to be provided by the supplier. All civil engineering works related to Fin Stabilizer Training Model installation are to be completed by the OEM or local firm having experience of installing such Fin Stabilizer Training Model and related civil engineering works.

18. **Test, Trial, and Acceptance.** The buyer will carry out tests and trials of the item at the installation site in the presence of the supplier's representative. After satisfactory test and trial, an acceptance certificate will be signed jointly by the supplier's representative and the buyer's representative.

19. **Training.** The supplier's/maker's installation engineer will provide operation and maintenance training in Bangladesh to the operators for 2 (two) days after the Fin Stabilizer Training Model is tested, trialed, and commissioned. The bidder will quote the cost of training separately in their financial offer. The supplier will bear the cost of the trainers' air ticket, internal transportation, accommodation, food, medical support, etc.

20. **Pre-Shipment Inspection (PSI) and Factory Acceptance Test (FAT).**

a. Pre-shipment Inspection (PSI) and Factory Acceptance Test (FAT) will be carried out by 2 (two) BN officers for 3 (three) days, excluding the journey period, at the buyer's expense. The supplier should inform the buyer about the schedule/ and procedure of PSI and FAT at least 8 (eight) weeks prior to the commencement of the said PSI and FAT. After inspection, a joint inspection report will be prepared and signed by both the seller and buyer's representatives.

b. On return from the country of manufacturer, the BN officers will submit a report to DNE. DNE, through DTS, will, in turn, forward the final decision along with the PSI and FAT report within 2 (two) weeks, based on which DGDP will render clearance for the shipment of stores to the supplier concerned. The supplier will not ship any item of the contract without clearance from the DGDP.

c. All types of movement/ transportation (air, sea, road, rail) of the BN officer within the manufacturer's country, reception and arrangement for entry into the country/ concerned area for the PSI and FAT are to be borne by the supplier.

21. **Documents.** 2 (two) sets of the following documents in the English language are to be supplied with Fin Stabilizer Training Model (free of cost):

a.	<b>Instruction Manual.</b> It should contain the following:
	(1) Detailed particulars and specifications including drawing of the Fin Stabilizer Training Model and their components.
	(2) Operation and safety instruction.
	(3) Maintenance instructions including maintenance schedule for the Fin Stabilizer Training Model & their accessories.
b.	Workshop level repair manual.
c.	Parts Catalogue and Parts Identification List with internationally recognized Part No.
d.	Factory test certificate.

22. **Quality Assurance Certificate.** Quality Assurance Certificate in respect of the associated equipment regarding its manufacturing and performance is to be provided at the time of delivery of the items.

23. **Warranty.** The principal/manufacture will give a warranty for trouble-free operation for at least one year from the date of acceptance by the buyer. During the warranty period, if the Fin Stabilizer Training Model remains non-operational due to any action pending by the supplier, the warranty will be extended for the same period. The warranty covers all parts and labour (including the cost of the service engineer) throughout the warranty period.

24. **Guarantee.** The manufacturer will guarantee to supply the spare parts for at least 5 (five) years at a reasonable price. The annual increase in the price of spares should not be more than 5% of the price list provided with the quotation.

25. **Shipment.**

- a. The supplier will arrange the shipment of all items by sea to Chittagong Port, Bangladesh.
- b. All items are to be delivered in sea-worthy packing to ensure safe transportation by sea.
- c. All packages must have detailed packing notes showing their contents, and they must be marked with the consignee's name, address, and gross weight.
- d. The supplier will arrange transportation of all supplied items from Chittagong port to the NSD Chattogram.
- e. **Port of Shipment.** Any port of the manufacturing country. In case of shipment through any port of the manufacturer's authorised dealer, the relevant manufacturer's certificate is to be provided as proof of the genuineness of the offered item.

26. **Delivery.**

- a. The items are to be delivered within **9 (Nine) months** from the date of signing the contract to the following consignee:

The Commanding Officer  
Naval Stores Depot Chattogram  
New Mooring, Chattogram, Bangladesh

- b. **Place of Delivery.** NSD Chattogram.
- c. The supplier will carry the items from Chittagong Port to NSD Chattogram at the cost and risk of the supplier.

27. **Validity of Offer.** The offer should remain valid till 180 days from the date of tender opening.

28. **Currency.** Foreign Currency.

29. **Terms of Payment.** L/C for the full purchase amount will be opened in favour of the principal supplier under the following payment terms:

- a. 80% of the total CFR value will be paid on delivery of the items described under the scope of supply and on production of necessary shipping documents.
- b. The remaining 20% of the CFR value will be paid upon producing an 'Acceptance Certificate' after satisfactory test and trial jointly carried out by the buyer's and supplier's representatives.



30. **Condition for Acceptance of Quotation.** The quotation has to have supporting documents (booklets, leaflets, catalogues, brochures, etc.) with details about the Fin Stabilizer Training Model. If detailed information regarding specifications, maker's books and catalogue for the quoted model of the Fin Stabilizer Training Model, spare parts, accessories, scope of supply, etc, are not provided; the quotation will not be accepted.

31. **Compliance Statement.** A compliance statement fulfilling all the requirements of the tender is to be submitted with the offer for evaluation of the quotations. Merely stating 'Yes' or 'No' will not suffice, rather detailed descriptions/information as required are to be provided. An incomplete compliance statement may contribute to the cancellation of the offer. If any clause of this specification is not commensurate with the offered Fin Stabilizer Training Model, the deviation must be spelt out clearly.

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