

**Swami Vivekananda Museum, Khetri**  
**Tender for Fibreglass Reinforced Plastic (FRP) work**

Tenders are invited, from experienced FRP fabricators, for FRP work of different nature, with minute details, good finishing and coloring to give realistic look, of (a) historic human figures, (b) artificial trees with foliage, (c) horse-drawn carriage, and (d) relief mural work on the wall, as per following requirements:

No	Item	Qty	Rate	Amount
1	Human figures, life size, 5'3" to 5'8" ht in standing postures as per supplied photographs	36		
2	Human figures, life size, 5'3" to 5'8" ht in sitting postures as per supplied photographs	36		
3	Life Size figure of Shri Ramakrishna in dhyan posture on a lotus	1		
4	Trees 3.0 mt high, 0.50 mt trunk diam at the base, 3 mt diam of dense foliage	4		
5	Trees 2 to 2.5 mt high, 0.30mt trunk diam at the base, 2.0 mt diam of dense foliage	4		
6	Horse drawn carriage with Swami Vivekananda in life size in sitting posture	1set		
7	Relief FRP work of Belur Math temple, Size: 6mt x 3 mt	1	Rs per sq mt	

**Tender Conditions:**

- 1) **Study of scaled down models:** Vendors shall submit tenders after careful study of the scaled down models (1:10) in Ramakrishna Mission Institute of Culture, Golpark.
- 2) **Vendor's Experience:** Along with the tender, the Vendor shall furnish photographs of similar work done by them in museums of repute and indicate details of work done in such places.
- 3) **Submission of Tender:** Tenders shall be submitted in double sealed cover, the inside cover superscribing "**Tender for FRP work for Swami Vivekananda Museum, Khetri**", so as to reach the Secretary, Ramakrishna Mission Institute of Culture, Golpark, Kolkata 700 029, **latest by 2 pm on (date)** )
- 4) **Quotation:** The Vendor shall quote the total price for delivery by road to Khetri in Rajasthan and installation at site, inclusive of the cost of materials & labour, taxes, duties, octroi, packing, insurance, transportation, and travel and subsistence cost of their staff for assembly and installation.
- 5) **Variation in Quantities:** In case of variation in quantities payment shall be made as per the itemwise rate.
- 6) **Conditions:** General conditions of tender and technical specifications as attached shall remain in force.

**General Conditions:**

- 1) **Visual presentation :** Photographs and sketches attached with the tender documents and the scaled down models (1:10) are only indicative to give an idea about the nature of work and by no means are final. The Vendor shall be responsible for (a) securing necessary drawings, sketches, photographs, (b) preparing the final design, and (c) submit working drawings for obtaining the approval of the Employer before fabrication. On advice from the Employer, the vendor shall incorporate necessary changes without any extra charge.
- 2) **Specifications for materials and fabrication processing:** The Vendor shall scrupulously follow the 'Technical Specifications' attached with this tender document for materials and workmanship. In case of any confusion or apparent incompleteness, the decision of the Employer is final.
- 3) **Inspection:** Authorised representatives of the Employer shall inspect the on-going fabrication work whenever felt necessary, and advise the vendor on required modifications and rectifications which Vendors shall carry out.
- 4) **Transportation :** In case of large exhibits or large structures, the exhibits shall be made in several parts of convenient size, transported by the Vendor under their responsibility and fully assembled at site. The vendor shall carry out all necessary finishing work after installation at site.
- 5) **Warranty:** All exhibits shall have one year warranty during which period the Vendor shall be responsible for repair at their cost of all material and manufacturing defects. For this purpose 10% of the cost of model shall be held by the Employer for one year. In case of failure of the Vendor to promptly repair the defects, the Employer shall have the right to set things right at the cost of the Vendor.
- 6) **Definitions:** The term 'Employer' shall mean the head Monk in the Ramakrishna Mission, Khetri in Rajasthan; the term 'Vendor' shall mean the tenderers, and the term 'site' shall mean Ramakrishna Mission in Khetri, Rajasthan.
- 7) **Decisions :** The Employer shall have the right to accept or reject, partially or wholly, any offer without assigning any reason. Decisions of the Employer relating to this tender shall be final.
- 8) **Delivery and Payment Schedule:**

Stage	Details of Work	Time	Payment
1	Submission of visual presentation with working drawings and acceptance by the Employer	6 weeks from the date of order	25% with bank guarantee for 6 months
2	Preparation of clay models and acceptance by the Employer	8 weeks	
3	Fabrication of reinforcement structure, PoP or FRP mould	8 weeks	15% with bank guarantee for 6 months
4	FRP casting, finishing, painting and acceptance by the Employer	8 weeks	
5	Transportation and delivery at Khetri in Rajasthan	6 weeks	25%
6	Assembly, finishing and installation at site	6 weeks	25% on final acceptance by the Employer
7	Successful completion of warranty period	1 year from date of completion	Balance 10%

### Technical Specifications for FRP work

- a) *Clay models* – Clay models, as prepared in stipulated size and postures, are to be got approved by the Employer. Rectifications and alterations as per suggestions given at the time of inspection, are to be done without any extra cost.
- b) *Anatomy* – Human bodies and animals shall display perfect proportion in anatomy, the wrinkles and cleavages, and realistic simulation of hair, dresses etc.
- c) *Making of Moulds* -- After approval of the clay models, PoP or FRP moulds are to be taken for final casting. The moulds have to be approved by the Employer.
- d) *Final casting* -- From PoP or FRP moulds, final FRP castings (2 to 3mm thick) are to be done after obtaining approval of the Employer on moulds. The materials used for FRP castings shall be as per following specification :-
  - i. Fiber glass Chopped stand matt – 450 g/mt<sup>2</sup> – Benani / Vetrotex make
  - ii. Fibre glass woven roving – 610 gm density – Vetrotex make
  - iii. General purpose (G.P.) polyester resin – Ruia Chemicals
  - iv. Hardener Catalyst, 2% concentration and accelerator for setting
  - v. Kerox make pigment of specific colour
  - vi. All castings are to be coloured with natural texture and tone to give depths.
  - vii. The colour used shall be fast so that all specimens can be washable.
- e) *Stiffener* -- The FRP coating for the specimens above 50 cm shall be made with metal net as stiffener, so that it should retain the shape and stand erect, with minimum thickness of 3 mm for the FRP surface. For smaller varieties it may be 2mm thick.
- a) *Reinforcement* – Large trees and human figures shall stand erect on armature made of m.s. rods, properly welded, with joints ground and buffed, coated with 2 coats of anti-rust primer. Reinforcing metal parts, wherever needed, have to be made of suitably painted/plated brass or copper sheet, tubes, wires etc.
- f) *Base* -- Wherever needed for keeping the objects erect, the trees and human figures shall be fixed on 12mm thick phenol bonded ply, suitably framed with 2"x1" well seasoned teak wood sections in 2 ft x 2 ft grid and treated creosote oil.
- g) *Trees* -- The mould of the trunk may be taken from the original trees as far as possible to give natural look. The base should look like original with spreading roots and provided with fastening arrangement with the 12mm thick ply on the floor. The minimum thickness of FRP surface shall be 3mm.
- h) *Branches* -- Branches will be made of metal rods of different diameter as per scale and fixed rigidly with the main trunk. The metal rods shall be coated first with resin to avoid rusting and then wrapped with bandage cloth and coated by resin and glass fibre. All branches shall taper out from the base to the end.
- i) *Twigs* -- Twigs will be made with wires as per scale and also coated first with resin to avoid rusting and then wrapped with bandage cloth and coated by resin and then layer of fiber glass. All twigs are fixed with the branches rigidly.
- j) *Leaves* -- Leaves for specific type of trees to be made, first by taking rubber mould from the particular trees and then by either FRP or cloth or plastic with cloth stiffeners but it must have natural look. Leaves are to be fixed on twigs rigidly and shall be washable.
- k) *Painting* – all castings shall be coloured with best quality FRP paint in natural texture and tone.
- l) *Historic Figures* – All historic figures shall perfectly resemble the supplied photographs, and shall have a latex or silicone rubber coating at the top to give a natural feel.