

Expression of Interests (EOI) for obtaining Budgetary Quotes

Basic Information

Expression of Interest (EOI) is invited through offline bids in two parts, (technical and financial with budget quotes) are hereby invited by the Superintending Engineer, Eastern Circle, Irrigation & Waterways Directorate (I & Dte) , Government of West Bengal for preparation of detailed cost estimate, scope of work, construction methodology, inspection and testing in connection with the project “**Scour protection on urgent basis around the LCT Jetty on river Muriganga, at Kachuberia, Block & PS Sagar, District South 24 Parganas**”, from all interested bidders/agencies/contractors within the country having credential for execution of works of similar nature and adequate financial capabilities. The BoQ, specification of materials and works, quality control measures including testing and in-situ inspection, timeline of implementation and technical & financial PQ criteria to be adopted in the final tendering would be determined based on the technical & financial bids of this EoI.

2. Intending contractors/bidders desirous of participating in this EOI are required to visit the official website of the Irrigation & Waterways Department, Government of West Bengal <http://www.wbiwd.gov.in> to locate the same EOI by scrolling the “e-Tender” link.

3. The interested bidders eligible for the EOI are requested to download the EoI document from the above website mentioned above and submit their proposals, either in two separate folders (& Financial Proposal) through e mail “seeciwd2010@gmail.com” or physically in sealed envelopes (one main envelope addressed to the “Superintending Engineer, Eastern Circle, Irrigation & Waterways Directorate, Government of West Bengal” having office at 8th Floor Jalasampad Bhavan, Block DF, Bidhannagar, P.C 700091 with two separate inner envelopes one marked marked “Technical Proposal” and other marked “Financial Proposal”, by the date and time mentioned below:

4. Last date & time of submission of bid is on 21.09.2020 till 15.00 Hours (IST).

5. The applicant bidders/contractors are advised to carefully read the minimum desired Pre-qualification (PQ) works credential & financial eligibility criteria and should submit bids only if they fulfill the minimum PQ eligibility criteria. **No processing fee or bid security (EMD) is required for submission of the bid.**

Project background & details

6. I & W Dte. has engaged the National Technology Centre for Ports, Waterways and Coasts (NTCPWC), IIT Madras at Chennai for evaluating the health of the LCT jetty at Kachuberia

on river Muriganga at Sagar Island. It was observed that the low tide jetty has been observed to be oscillating during berthing of the vessels and during their movement. Accordingly, NTCPWC has taken up the study to suggest appropriate actions/ remedial measures so as to ensure safe transshipment and movement of bigger vessels carrying pilgrims that will use the jetty during the ensuing Gangasagar Mela of to be held in January 2021. Excerpts of the project report bearing observations and recommendations of the NTCPWC and the relevant sketches /drawings are at **Annex-1**.

7. The scope of work included,

- Performing NDT tests like impact & pile integrity tests to check the uniformity of the piles and stiffness of the jetty.
- Bathymetry survey around the jetty location (200m x 400m domain) using multibeam echo sounder in and around the LCT Jetty to prepare the bathymetry chart to understand the scouring around the jetty.
- Current observation for 7 days covering spring to neap tidal cycle.
- Hydrodynamic modeling to predict the magnitude of the current in the vicinity of the structure.
- Detailed structural analysis with the present site conditions using STAADPro.
- To propose suitable and more viable means of scour protection for the stability of the structure.
- To carry out detailed design and the preparation of detailed design drawings with the sufficient details for the determination of quantities to facilitate construction.

7. It has been certified by the NTCPWC that the structural elements of jetty are safe in design aspect. On the basis of borehole data, the load bearing capacity of the pile is checked for serviceability condition and it is found that the piles are safe in terms of load bearing capacity.

8. However, the scour around the piles has been found to be alarmingly high. Further, scouring would result in the collapse of the jetty. Hence, it has been recommended by the NTCPWC to provide the scour protection as an immediate solution to solve the problem. A scour protection system was proposed around existing jetty by using Geotextile Sandcontainers. Details of the arrangement recommended by the NTCPWC may be seen at the **Annex-1**. Briefly speaking, geotextile sandcontainers 3x 1.2x0.4m (length x width x height), have been recommended for laying around the piles in between -10.0m to -7.0m (below Chart Datum) contour as shown in the drawing, over a layer of geo-textile filter. on sea side at varies dredge level, for arresting or minimising scour. The maintained slope is 3:1. Each geotextile container is to be filled in-situ with locally available sand slurry or other materials and sealed at the open end, which are then to be deployed at specified depth, from the starting point of approach to the extra low tide jetty up to a distance of 22.6 m beyond the outermost pile line of that extra low tide jetty across the river flow direction, and 11.06 m on either side of the said jetty along the river flow direction.

It has also been recommended to use split bottom barge around inside and below the jetty. IWD has decided to implement the recommendations of the NTCPWC under short term measures, under this project. Long term measures recommended by the NTCPWC would not be taken up now.

Elements of Technical Proposal

8. The technical proposal should contain the following.

- I. Latest Professional Tax Payment Certificate (PTPC) or, PT deposit challan for current financial year or Government Order for exemption in other States where ever applicable.
- II. Valid PAN Card in the name of bidder/organisation.
- III. Income Tax Return of current Assessment year or, IT Return of immediately preceding Assessment year whichever latest available.
- IV. Valid GSTIN under GST Act & Rules.
- V. Company details.
- VI. Valid Trade License/ acknowledgement or Receipt of application for Trade License/ Revalidation.
- VII. A statement of turnover of last three financial years (2017-18, 2018-19 & 2019-20) duly authenticated by the Bidder /Authorized Signatory.
- VIII. Pre-Qualification (PQ) Work credential of one 100% completed work of similar nature, i.e. scour hole filling around jetty, pier of bridges across rivers, in navigation channels of rivers for movement of vessels with geo-bags, geo-containers, geo-tubes using barges /pontoons.
- IX. Construction methodology including specific details of the following:
 - Laying of filter underneath and securing in position
 - Type of filling materials, i.e. locally available sand slurry or river silt or any other and source location of such materials.
 - Methodology of filling and sequence of dumping in position, particularly below the jetty where the minimum headroom below the extra low tide jetty at average low tide level is only 1.8 m for 1.5 hours in a 12-hour tidal cycle. It may be noted here that access inside the extra lower jetty would be quite critical, where the clear spacing of pile-cum piers is only 2.75 m, both in the longitudinal and transverse direction.
 - Underwater videography before, during and after dumping operation or other in-situ inspection facilities.
- X. A brief description on the quality control of materials and the work proper.
- XI. A brief list of machineries & equipment to be deployed for the work.
- XII. Any other issues considered as relevant by the Bidder.

Elements of Financial Proposal

9. The financial proposal should contain the budgetary quotes against the relevant items of works as shown in the price schedule including all taxes & duties, i.e. GST at prevailing rate (now 12%) & Building & other Construction Workers Welfare Cess @ 1%.

Pre-Qualification/Credential for submitting the EoI:

10. The intending agencies/suppliers should possess the following for participating in the EoI.

- i) Work credential of one 100% completed work of similar nature, i.e. scour hole filling around jetty, pier of bridges across rivers, in navigation channels of rivers for movement of vessels with geo-bags, geo-containers, geo-tubes using barges /pontoons of value not less Rs 4.3 crore.
- ii) Average annual turnover of last 3 years not less than Rs 3.6 crore.

Pre Bid Meeting:

11. Pre-Bid meeting will be held in the office chamber of the EOI Inviting Authority as per Schule below in order to acclimatize the prospective contractors/bidders through an interactive open session, replying to their queries, and clear doubts in connection with the work/s, if any.

Schedule of dates for EoI:

12. Following are the key dates:

| Sl No. | Activity | Date & Time | Remarks |
|--------|---------------------|-----------------------------|--|
| 1. | Publishing Date | 10.09.2020 | |
| 2. | Pre- Bid Meeting | 16.09.2020 at 13.00 hours | Pre-bid meeting, bid submission & opening would be held at the office Chamber of the SE, eastern Circle at 8 th Floor, Jalasampad Bhavan. |
| 3. | EoI submission date | 21.09.2020 upto 15.00 hours | |
| 4. | EoI opening date | 21.09.2020 at 16.00 hours. | |
| | | | |

Evaluation of the EoI & subsequent stages:

13. The EoIs would be evaluated by the High value Bid/Tender Evaluation Committee (HTEC) comprising of i) Superintending Engineer eastern Circle as Chairperson and Convener, ii) Another Superintending Engineer within the zone as per High Value Tender Evaluation Committee order as Member, iii) Concerned Executive Engineer as Member. The findings of the EoI would be used in finalization of estimates, based on which tender would

be invited subsequently, by the last week of September 2020. The project proposed to be implemented within one month time is planned to be grounded by 1st week of November.

Encl: Annex 1 & 2.

ANNEXURE-I

1. Structural Arrangements of LCT Jetty

The berth structure is a three dimensional geometry connected to the pile of dia 750 mm and with connecting beams and deck slab. The extra low tide jetty piles are spaced at 3.5m in longitudinal direction and 3.625m in transverse direction. The low tide jetty piles are spaced at 6m and 4m in longitudinal direction and 3.13m in transvers direction. The approach jetty piles are spaced at 3.5m in longitudinal direction and 4.3m in transverse direction. The dimension of the extra low tide jetty is 16x26m, low tide jetty is 16x10m and approach is 5mx19m.

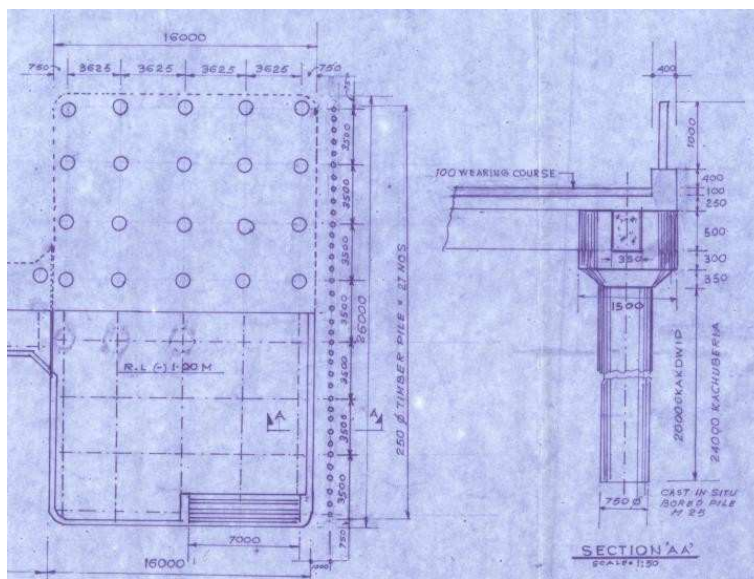


Fig 1: Cross section of LCT jetty

2. PROPOSED SCOUR PROTECTION

The bathymetry survey taken around the jetty location (200m x 400m domain) using multi beam echo sounder bathymetry was carried out in and around the LCT Jetty and the bathymetry chart is shown along with contour Figure - 2. The present status of LCT jetty at Kachuberia is found to be safe. However, the scour around the piles has been alarmingly high. Further, scouring would result in the collapse of the jetty. Hence, it is recommended to provide the scour protection as an immediate solution to solve the problem. A scour protection system was proposed around existing jetty by using Geotextile Sand containers.

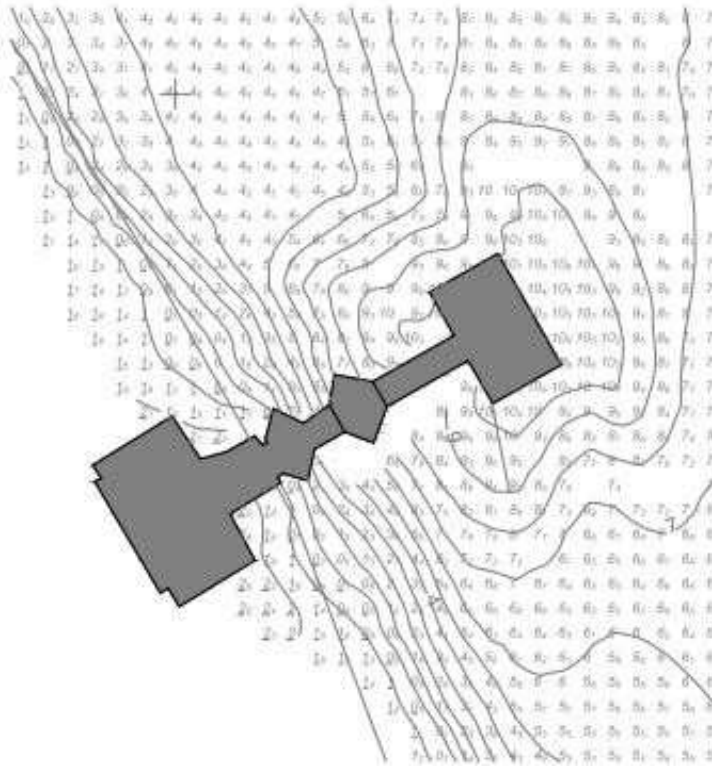


Fig 2:- Contour of bathymetry chart

3. Geotextile Containers As Short-Term Measure

4. Layout of scour protection around Jetty

The scour protection geotextile sand containers are provided below the jetty Structure. The geotextile sand containers to fill around existing jetty on seaside extend up to -9.0 m contour and on the land side up to the end of approach. The size of used geotextile sands container (3mx1.2x0.4m). The plan view of existing jetty with scour protection is shown in **Fig.3**

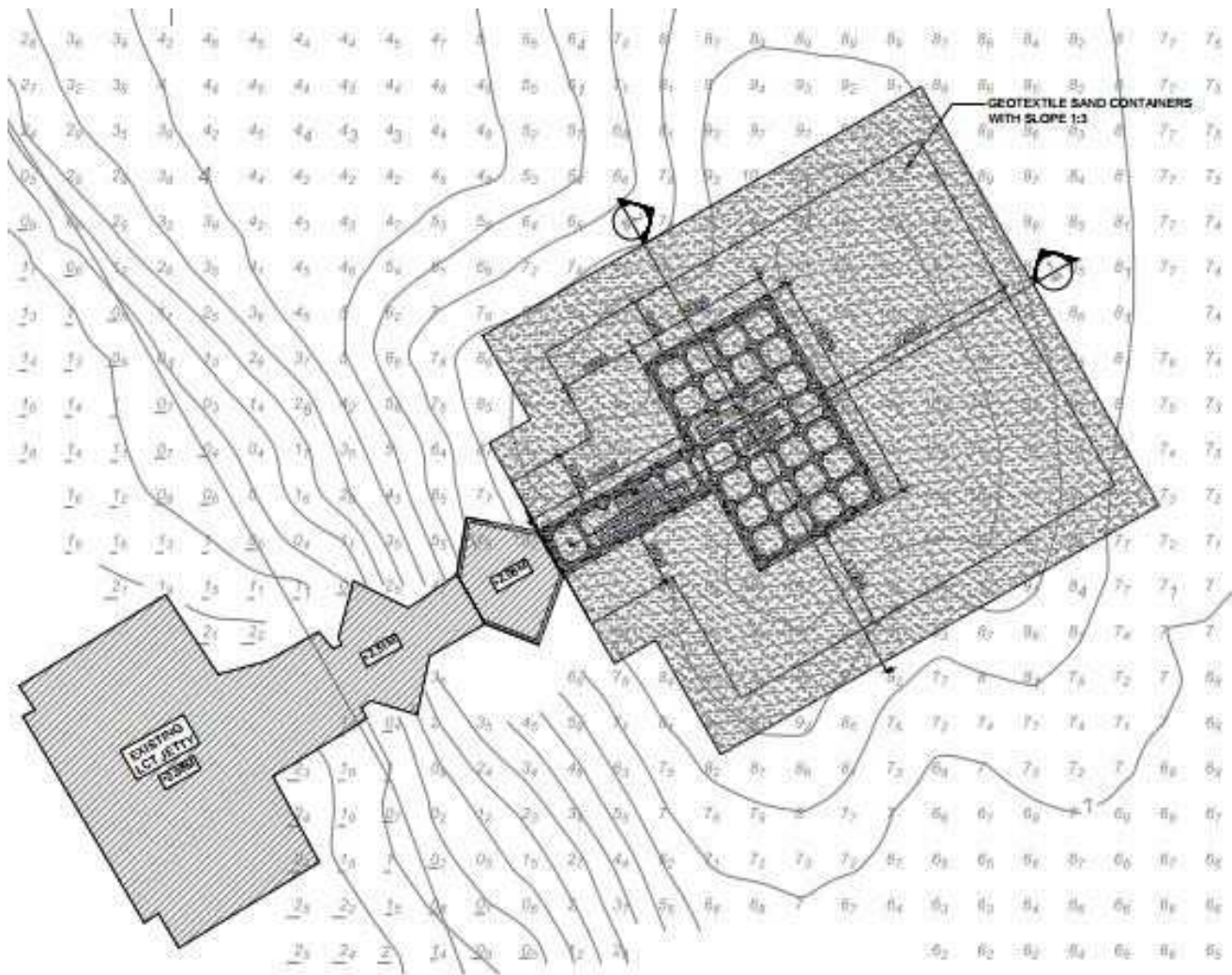


Fig: -3 Layout of Proposed Scour Protection Short term measure

5. Longitudinal Sections for Scour protection

The corresponding water depth was taken from the bathymetry survey. The geotextile sand containers are laid on sea side at varies dredge level to -9.0m to -8.0m contour and land side at various dredge level up to -7.0m contour. The maintained slope is 3:1. The detailed longitudinal section is shown in **Fig.4 (a)** and **Fig.4 (b)**.

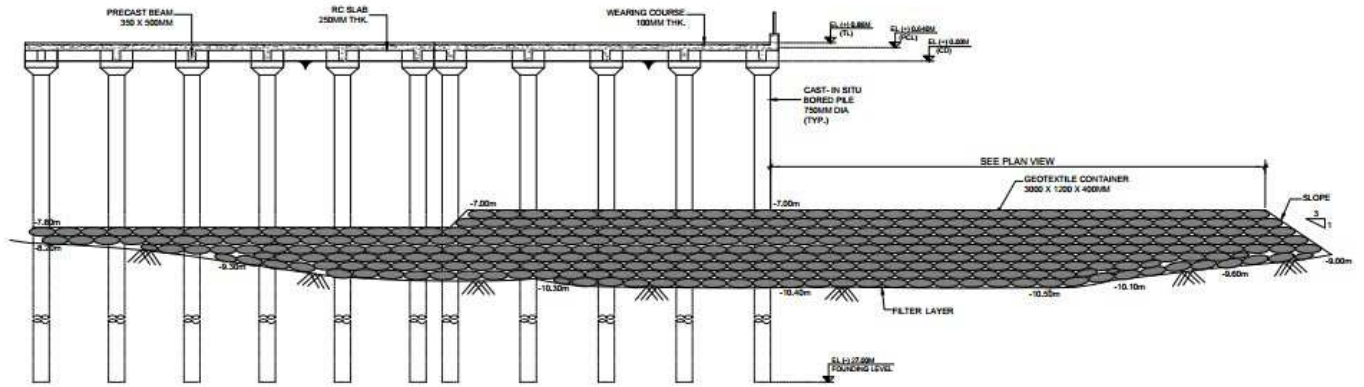


Fig.4(a) Cross section of Geotextile Sand Containers Arrangements

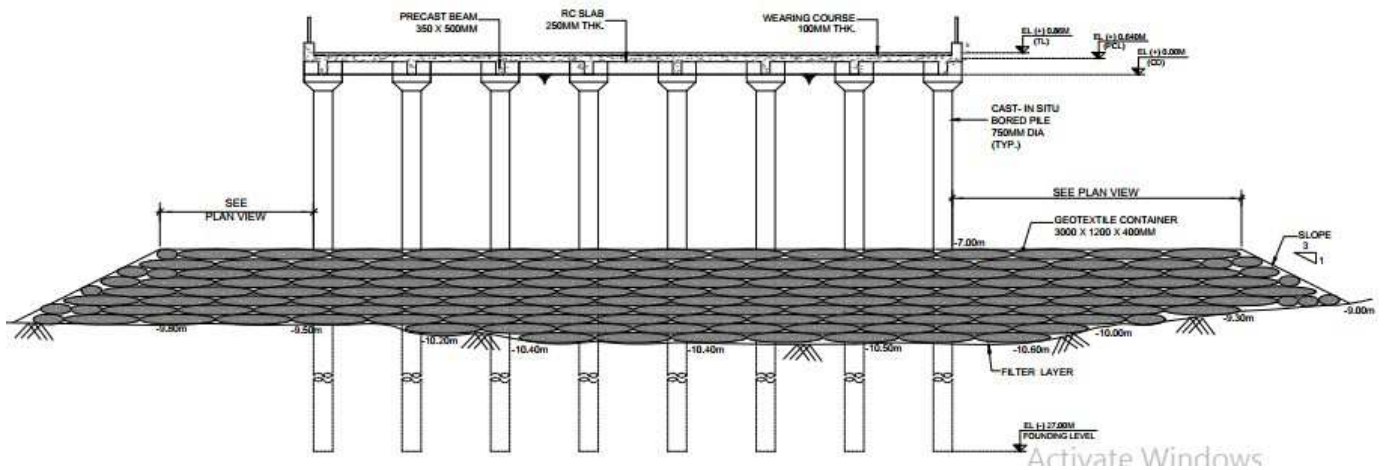


Fig.4(b) Typical Longitudinal section of Geotextile Sand Containers Arrangements.

Price schedule for budget quote**Schedule of Work of the Project:**

“Scour protection on urgent basis around the LCT Jetty on river Muriganga, at Kachuberia, Block & PS Sagar, District South 24 Parganas”,

| Sl.No | Description of work | Qty | Unit | Rate(Rs.) | Amount (Rs). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|--|-------------------------|-------------|---------------|--------------|---------------|---|--------|-----|-------------|-----|---|-----------------------------|------|----------|----|---|--|---|----------|--------|---|-----------------------|---|-------------|------|---|------------------------------|---|-------------|-----|---|-------------------|---|-------------|------|---|-----------|----|-------------|-----|---|-----------------------------|-------------------------|-------------|----|---|-----|----|-------------|-------|----|-------------------------------|---------------------|-------------|-------|----|--------------------------|---------|--|-----|--|--|--|--|
| 1 | Supplying woven polypropylene Geo-containers of size 3 mx 1.2 m x 0.4m (length x width x height) and stacking at site as per following specification: | 7309 | Nos. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <thead> <tr> <th>Sl No.</th> <th>Property</th> <th>Unit</th> <th>Test Method</th> <th>Desired Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Weight</td> <td>GSM</td> <td>ASTM D 5261</td> <td>800</td> </tr> <tr> <td>2</td> <td>Tensile Strength warp /weft</td> <td>KN/m</td> <td>IS: 1969</td> <td>70</td> </tr> <tr> <td>3</td> <td>Elongation at specified tensile strength warp/weft</td> <td>%</td> <td>IS: 1969</td> <td>27 /25</td> </tr> <tr> <td>4</td> <td>Grab Tensile Strength</td> <td>N</td> <td>ASTM D 4632</td> <td>1050</td> </tr> <tr> <td>5</td> <td>Trapezoidal Tearing Strength</td> <td>N</td> <td>ASTM D 4533</td> <td>425</td> </tr> <tr> <td>6</td> <td>Puncture Strength</td> <td>N</td> <td>ASTM D 4833</td> <td>1200</td> </tr> <tr> <td>7</td> <td>Thickness</td> <td>mm</td> <td>ASTM D 5199</td> <td>2.0</td> </tr> <tr> <td>8</td> <td>Flow water rate - 5 cm head</td> <td>Lit/m²/Sec</td> <td>ASTM D 4491</td> <td>25</td> </tr> <tr> <td>9</td> <td>AOS</td> <td>mm</td> <td>ASTM D 4751</td> <td>0.425</td> </tr> <tr> <td>10</td> <td>U.V. Resistance after 150 hrs</td> <td>% strength Retained</td> <td>ASTM D 4355</td> <td>>= 75</td> </tr> <tr> <td>11</td> <td>Minimum Specific density</td> <td>Kg /cum</td> <td></td> <td>950</td> </tr> </tbody> </table> | Sl No. | Property | Unit | Test Method | Desired Value | 1 | Weight | GSM | ASTM D 5261 | 800 | 2 | Tensile Strength warp /weft | KN/m | IS: 1969 | 70 | 3 | Elongation at specified tensile strength warp/weft | % | IS: 1969 | 27 /25 | 4 | Grab Tensile Strength | N | ASTM D 4632 | 1050 | 5 | Trapezoidal Tearing Strength | N | ASTM D 4533 | 425 | 6 | Puncture Strength | N | ASTM D 4833 | 1200 | 7 | Thickness | mm | ASTM D 5199 | 2.0 | 8 | Flow water rate - 5 cm head | Lit/m ² /Sec | ASTM D 4491 | 25 | 9 | AOS | mm | ASTM D 4751 | 0.425 | 10 | U.V. Resistance after 150 hrs | % strength Retained | ASTM D 4355 | >= 75 | 11 | Minimum Specific density | Kg /cum | | 950 | | | | |
| Sl No. | Property | Unit | Test Method | Desired Value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Weight | GSM | ASTM D 5261 | 800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Tensile Strength warp /weft | KN/m | IS: 1969 | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Elongation at specified tensile strength warp/weft | % | IS: 1969 | 27 /25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Grab Tensile Strength | N | ASTM D 4632 | 1050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Trapezoidal Tearing Strength | N | ASTM D 4533 | 425 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Puncture Strength | N | ASTM D 4833 | 1200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Thickness | mm | ASTM D 5199 | 2.0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Flow water rate - 5 cm head | Lit/m ² /Sec | ASTM D 4491 | 25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | AOS | mm | ASTM D 4751 | 0.425 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | U.V. Resistance after 150 hrs | % strength Retained | ASTM D 4355 | >= 75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Minimum Specific density | Kg /cum | | 950 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Note: 1. Payment will be made subject to the result of 3rd Party Testing, to be done by the Engineer-in-charge independently, cost | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Sl.No | Description of work | Qty | Unit | Rate(Rs.) | Amount (Rs). | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--------|---|--------|-------------|---------------|--------------|---------------|---|--------|-----|-------------|-----|---|-----------------------------|------|----------|----|---|--|---|----------|--------|---|-----------------------|---|-------------|------|---|-------------|---|------|-----|------|--------|--|--|
| | of which will be borne by the client. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | <p>Supplying at site and laying in position woven polypropylene geotextile of 300 gsm as filter of suitable thickness, as per the following specification, including placing the geotextile as per profile under water with at least 10% lap length, storage and transportation by all means, complete as per direction of the Engineer-in-charge.</p> <table border="1"> <thead> <tr> <th>Sl No.</th> <th>Property</th> <th>Unit</th> <th>Test Method</th> <th>Desired Value</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Weight</td> <td>Gsm</td> <td>ASTM D 5261</td> <td>300</td> </tr> <tr> <td>2</td> <td>Tensile Strength warp /weft</td> <td>KN/m</td> <td>IS: 1969</td> <td>70</td> </tr> <tr> <td>3</td> <td>Elongation at specified tensile strength warp/weft</td> <td>%</td> <td>IS: 1969</td> <td>27 /25</td> </tr> <tr> <td>4</td> <td>Grab Tensile Strength</td> <td>N</td> <td>ASTM D 4632</td> <td>1050</td> </tr> <tr> <td>5</td> <td>Trapezoidal</td> <td>N</td> <td>ASTM</td> <td>425</td> </tr> </tbody> </table> | Sl No. | Property | Unit | Test Method | Desired Value | 1 | Weight | Gsm | ASTM D 5261 | 300 | 2 | Tensile Strength warp /weft | KN/m | IS: 1969 | 70 | 3 | Elongation at specified tensile strength warp/weft | % | IS: 1969 | 27 /25 | 4 | Grab Tensile Strength | N | ASTM D 4632 | 1050 | 5 | Trapezoidal | N | ASTM | 425 | 3988 | Sq. m. | | |
| Sl No. | Property | Unit | Test Method | Desired Value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Weight | Gsm | ASTM D 5261 | 300 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Tensile Strength warp /weft | KN/m | IS: 1969 | 70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Elongation at specified tensile strength warp/weft | % | IS: 1969 | 27 /25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Grab Tensile Strength | N | ASTM D 4632 | 1050 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Trapezoidal | N | ASTM | 425 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Sl.No | Description of work | | | | | Qty | Unit | Rate(Rs.) | Amount (Rs). |
|-------|--|-------------------------------|-------------------------|-------------|-------|------|------|------------|--------------|
| | | Tearing Strength | | D 4533 | | | | | |
| 6 | | Puncture Strength | N | ASTM D 4833 | 1200 | | | | |
| 7 | | Thickness | mm | ASTM D 5199 | 2.0 | | | | |
| 8 | | Flow water rate - 5 cm head | Lit/m ² /Sec | ASTM D 4491 | 25 | | | | |
| 9 | | AOS | mm | ASTM D 4751 | 0.425 | | | | |
| 10 | | U.V. Resistance after 150 hrs | % strength Retained | ASTM D 4355 | >= 75 | | | | |
| | <p>Note: 1. Payment to be made on measurement of finished surface without lapping,</p> <p>2. Payment will be made subject to the result of 3rd Party Testing, to be done by the Engineer-in-charge independently, cost of which will be borne by the Client.</p> | | | | | | | | |
| 3 | <p>Filling up the containers with sand slurry /river silt or any like other materials in such a manner that filled up volume is not less than 92% of the gross volume, and the weight of each container above water not less than 1.8 M.T, placing /dumping the filled up containers in position as per profile and drawing in between -7m to -10 m below the Chart Datum, using split-bottom barge or any other equipment including cost of arrangement of the filler material, labor, machinery & equipment, complete.</p> | | | | | 7309 | Nos. | | |
| 4 | <p>Underwater videography and still photography, before, during and after execution of the project, in sets, per set comprising one video capsule of 5 minutes duration covering the entire area and 4 still photographs.</p> | | | | | 6 | Sets | | |
| | | | | | | | | Total cost | |

Special note:

1. The quoted price shall include, inter alia, cost of pre, during and post work surveys.
2. Geotextiles must be tested by the Client /Engineer-in-charge at accredited or well-equipped laboratories (e.g. BITRA, CIPET, Jadavpur University, etc.) having all testing facilities prescribed above. Cost of such testing, deemed to be 3rd Party Testing would have to be borne by the Engineer -in-charge and the responsibility of taking samples, and sending to laboratories shall entirely be vested on him, for which necessary provision for cost shall be made in the estimate, but may not be included in the BoQ of contract. This apart, the contractor also shall furnish Manufacturer's Test Certificates (MTC) from either own laboratory or from accredited laboratories stated above. No payment shall be released without MTC and full payment shall not be released until results of 3rd Party Testing. In case of non-compliance of the results of 3rd Party Testing with the specified parameters, the Engineer-in-charge shall make payment at reduced rate on pro-rata basis as stated below:

| Criteria | Reduced rate of payment |
|---|--------------------------|
| All properties other than UV resistance | @ 10% for each criterion |
| UV resistance | @ 50% |

3. The sampling and testing frequency must be in accordance with the following:

| Batch or order size (sqm) defined as the lot size | No. of samples representing the lot |
|---|-------------------------------------|
| Initial 10,000 sqm or part thereof | 1 |
| Each subsequent 10,000 sqm or part thereof | 1 |