



DESIGNED TO EXCEL

**ODISHA CONSTRUCTION CORPORATION LTD.
(A Govt. of Odisha Undertaking)
CUTTACK**

QUOTATION DOCUMENT

Bid identification No. OCCL-MBGP- 01 /2020-21

NAME OF WORK

**“SUPPLY OF
(1) DOUBLE LAYER CEMENTIOUS GEO-
SYNTHETIC CONCRETE MATTRESS (CGCM) AND
(2) 150 GSM NONWOVEN GEOTEXTILE.”**

**General Manager (Civil)
OCC Ltd., CZ, Cuttack**

PARTICULARS OF QUOTATION

1	Name of Goods to be supplied:	Supply of (1) Double Layer Cementious Geo-Synthetic Concrete Mattress (CGCM) (2) 150 GSM Nonwoven Geotextile.
2	E.M.D to be deposited:	1% of cost of quotation value
3	Time Period for supply of Goods:	60 (Sixty) days
4	Supplier Type	Reputed manufacturers or their authorized dealers / Distributors / Stockists/ authorized agent/ Applicator
5	Date of issue of Quotation call notice	12.10.2020
6	Cost of Quotation Documents	Rs. 11,800.00 including GST
7	Availability of Quotation notice & document in OCCL website & Govt. of Odisha website	From 13/10/2020, 10.00 AM to 27/10/2020, 5.30 PM
8	Period of downloading of quotation document	From 13/10/2020, 10.00 AM to 27/10/2020, 5.30 PM
9	Submission of Quotation Document	From 28/10/2020, 10.00 AM to 3.00 PM
10	Date of Opening of Quotation	28/10/2020 at 3.30 PM
11	Place of opening of Quotation	Office of General Manager (Civil), Central Zone, OCC Ltd., Plot No.1143, Vinayak Nagar, Mahanadi Vihar, Cuttack, Odisha.
12	Last date of bids validity	27/01/2021
13	Corporate office Address	ODISHA CONSTRUCTION CORPORATION LTD. (A Govt. of Odisha Undertaking) Gopabandhu Nagar, Unit-VIII, Bhubaneswar. DIST-Khordha-751012, Tel-0674-2562020, e-mail: theoccltd@odishaconstruction.com

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SECTION-I

QUOTATION CALL NOTICE FOR **SUPPLY OF GOODS**



ODISHA CONSTRUCTION CORPORATION LTD,
(A Govt. of Odisha Undertaking)
GENERAL MANAGER(CIVIL), CENTRAL ZONE,
Plot No.1143, Vinayak Nagar, Mahanadi Vihar,
Cuttack-4, Odisha (India)
(GSTIN-21AAACO2571K2ZM)

Lr. No / OCCL/ GMCZ/CTC/

Dated .

QUOTATION CALL NOTICE FOR SUPPLY OF GOODS

Bid identification No. OCCL-MBGP-CTC/01/2020-21

1. On behalf of Odisha Construction Corporation Ltd., the General Manager (Civil), Central Zone, Cuttack invite sealed quotation from the reputed manufacturers or their authorized dealers / Distributors / Stockists/ authorized agent/applicator for Supply of Double layer Cementious Geo-synthetic Concrete Mattress (CGCM) (i.e. Incomat) and 150 GSM Non-woven geotextiles for use in lining for renovation of Taladanda Canal at Cuttack as detailed in the table below.

Sl. No.	Name of Goods to be supplied	Time period for supply of Goods	E.M.D. to be deposited (in Rs.)	Cost of Quotation Document (Including GST) (in Rs.)
1	2	3	4	5
1.	Supply of (1) Double layer cementious geo-synthetic concrete mattress (CGCM) (i.e incomat) (2)150 GSM nonwoven geotextile.	60 days (Sixty days)	1% of total cost of Quotation value	11,800/-

2. The quotation document may be downloaded from the websites of OCCL www.odishaconstruction.com from Date. 13.10.2020 to Date.27.10.2020 up to 5.30 P.M. In such case, the firms/ Company has to deposit the cost of tender paper as above by demand draft to be drawn on or before dt. 27.10.2020 from any nationalized/ scheduled bank payable at Cuttack in favour of Odisha Construction Corporation Ltd. along with the Quotation during submission or can be purchased at the office of the General Manager (Civil), Central Zone, Cuttack / Senior Manager (Civil), OCCL, Mahanadi Birupa Group of Projects, Cuttack, Odisha during office hours by the above date on payment of non-refundable cost of quotation document as indicated in the table above in shape of Cash/Demand draft drawn on any nationalized/schedule bank payable at Cuttack only in favour of Odisha Construction Corporation Ltd.

3. The quotations must be accompanied with EMD (Earnest Money Deposit) @ 1% of total cost of quotation value in shape of Demand Draft/ pay order/ Bankers Cheque drawn in favour of Odisha Construction Corporation Ltd. payable at Cuttack and should be valid for minimum 90 (Ninety) days from the date of opening of quotations.
4. The quotation documents duly signed on each pages sealed in closed covers and superscribed as, "Quotation for supply of (1) Double layer Cementious geo-synthetic concrete mattress (CGCM) (i.e incomat) (2)150 GSM nonwoven geotextile" and must be submitted at the office of the General Manager (Civil), Central Zone, Odisha Construction Corporation Ltd., Plot No:-1143, Vinayaka Nagar, Mahanadi Vihar,Cuttack-4, Dist:-Cuttack (Odisha) on or before 3.00 PM of Date. 28.10.2020 and will be opened at 3.30 PM and on the same day of receipt in the presence of the quotationers or their authorized representative, who may like to be present. If there will be a public holiday on the last date of receipt & opening of the tenders as specified above, the quotation documents shall be received & opened on the next working day at the same time & venue.
5. The SSI/NSIC/MSME units participating in tender are not entitled for exemption from payment of EMD/Security Deposits/Tender paper costs as communicated vide DoWR Letter No.IIM-24/2018-14318/WR dated 24.05.2018 & OCCL Letter No.5502/OCC/CW-02/09(Vol-V) dated 30.05.2018.

6. **Qualifying Criteria**

SATISFACTORY SUPPLIED/COMPLETION OF SIMILAR ITEMS OF WORK

To qualify for award of the contract for supply of materials, the bidder should have completed supplying and / or supplying and laying of (1) 150 GSM nonwoven geotextile and (2) Double Layer Cementious Geo-Synthetic Concrete Mattress (CGCM) during **last 5 years** in any Government/ Semi Government/ Public Undertaking successfully. The bidder is required to submit copies of purchase Orders / Agreements for such work executed during the last five years.

- A. Preference may be given to the manufacturer or authorized representatives/dealers/applicators of the original manufacturer of the product.
 - B. Certificate of completion of such items/ or supply of such materials from the client may be furnished along with the quotation for verification.
 - C. The information furnished in the attached quotation documents along with supporting documents shall form the basis of qualification for the bid. The authority reserves the right to reject any bid if the information furnished is considered to be inadequate for this bid.
7. The quotation shall accompany with valid GST registration certificate & PAN card.
 8. The rate quoted shall be F.O.R., Cuttack, Odisha, India and inclusive of all taxes, duties, transportation etc. The rates quoted should be valid for a period of 90 days from the date of opening of quotation. Materials are to be delivered within the stipulated delivery period of the purchase order along with required test certificates.
 9. Payment shall be made after delivery of materials in good condition and verification thereof as detailed in Quotation document.

10. The undersigned reserves the right to accept or reject any or all quotations without assigning any reason thereof.

11. Any dispute arising thereof is to be settled in proper court under the jurisdiction of Orissa High Court at Cuttack or courts under the jurisdiction of Orissa High Court at Bhubaneswar.

For Odisha Construction Corporation Ltd.

Sd/-

General Manager (Civil)
Central Zone, Cuttack

Memo No. : OCCL/GM/CZ/CTC/

Dt .

Copy to Managing Director, O.C.C. Ltd, Bhubaneswar/ General Manager (Civil), Head Office, Bhubaneswar for favour of kind information and necessary action.

Sd/-

General Manager (Civil)
Central Zone, Cuttack

Memo No. : OCCL/GM/CZ/CTC/

Dt .

Copy to Chief Engineer, Flood Control & Basin Manager, Lower Mahanadi Basin, Bhubaneswar/ Superintending Engineer, Eastern Circle-I, Cuttack/ Executive Engineer, Mahanadi South Division, Jobra, Cuttack for favour of kind information and necessary action. The copy of this notice may be hoisted in their notice board for wide circulation.

Sd/-

General Manager (Civil)
Central Zone, Cuttack

Memo No. : OCCL/GM/CZ/CTC/

Dt .

Copy to Senior Manager (Civil), OCCL, SBD, Unit-VIII, Bhubaneswar-12 for information. He is requested to hoist the above notice & Tender document in web site of OCCL.

(By email – nanda8038@yahoo.com)

Sd/-

General Manager (Civil)
Central Zone, Cuttack

Memo No. : OCCL/GM/CZ/CTC/

Dt

Copy to Senior Manager (Civil), OCCL, Mahanadi Birupa Group of Projects, Cuttack for information & necessary action.

Sd/-

General Manager (Civil)
Central Zone, Cuttack

Memo No. : OCCL/GM/CZ/CTC/

Dt

Copy to Notice Board of OCCL / Notice Board of General Manager (C), Central Zone, Cuttack for wide circulation.

Sd/-

General Manager (Civil)
Central Zone, Cuttack

EMD and document deposit particulars

DETAILS OF EARNEST MONEY DEPOSIT (EMD) AND DOCUMENTS SUBMITTED ALONG WITH QUOTATION

1. EMD amount Rs. _____ (Rupees _____)
only vide A/C Payee D.D. / B.C./ Pay Order No.
_____ Dated _____ issued by _____
Bank, _____ Branch in favour of Odisha Construction
Corporation Ltd payable at Cuttack.
2. GST Registration No.
3. P.A.N. card No.
4. Any other documents. (As per Quotation Call Notice)

Full signature of Firm/Agency with date and seal

Undertaking of Firm/Agency

I/We Shri

(In case of the firm, the name of the proprietor/ head of the firm along with the designation & name of firm should be mentioned)

S/o _____, Permanent resident of

Vill./Street- _____, P.O.- _____, P.S.- _____

Via- _____, Dist- _____

State- _____, PIN- _____

E-mail- _____

Mobile No. - _____

declare that I/We have thoroughly gone through the quotation document and I/We know the sites of works. I/We agree to supply the materials/ work at rates quoted by me/us or at settled rates and abide by the terms and conditions of the quotation document.

Full signature of Firm/Agency with date and seal

Present address for correspondence: -

CERTIFICATE OF NO-RELATIONSHIP

I/We hereby certify that I/We am/are not related to any officer of Govt. of Odisha/OCC Ltd of the rank of Asst. Executive Engineer and above and any officer of the rank of Under Secretary and above in the W.R. Department. I/We am/are aware that if the facts subsequently proved to be false my/our contract will be rescinded with forfeiture of EMD / security deposit and I/We shall be liable to make good the loss or damage resulting from such cancellation.

I/We also note that, non- submission of this certificate will render my/our bid liable for rejection.

Signature of the Firm

Name _____

Address _____

Date : _____

SECTION-II

SPECIAL

TERMS & CONDITIONS

OF CONTRACT

SPECIAL CONDITIONS OF CONTRACT

1. The offer submitted by the Bidder will remain valid for 90 days or till finalization of bid. He is not entitled to withdraw his offer during the period of consideration of his offer. Withdrawal of offer prior to finalization of the bid will entail forfeiture of EMD.
2. Supply should be started immediately after the issue of Purchase order and supply of full quantity must be completed within 2(Two) months of issue of purchase order.
3. **PERIOD OF COMPLETION:**
 1. As the Period of supply of material is 02 (Two) calendar months, there is no provision for payment of Price Escalation.
 2. Before acceptance of bid, the successful bidder will be required to submit a delivery programme and milestone so as to complete the supply within the stipulated time and in case of failure on the part of the agency to achieve the milestone, liquidated damage as applicable will be imposed.
4. All materials supplied shall be approved by the Engineer-in-Charge before final payment. The Bidder must extend necessary co-operation for sampling and testing of materials by OCCL/client. However, testing charges shall be borne by the Bidder.
5. The Bidder has to obey all rules and regulations for movement of transport vehicles in main roads, village roads, in factory and colony areas. He has to obtain necessary permission from the concerned authorities at his cost and risk.
6. Payment shall be made in the following manner to the supplier for actual quantity received at destination (Divisional/ Central Godown) in satisfactory condition and as per specification after verification of the quantity and quality of supplied CCGM Mattress and 150 GSM non-woven geotextile, by the consignee Senior Manager (Civil).
 - a) 75% of cost of materials as per Tax invoice shall be paid after receipt of materials by the consignee in good condition along with all test certificate.
 - b) Balance 25% shall be released in two phases. In the first phase 10% of cost of materials shall be released after satisfactory completion of test of materials by Engineer-in charge as per Clause No:22 of Special condition of contract. In the second phase 15% of the cost of materials shall be released after actual use / laying in Canal Bed/Slope for lining.
7. The EMD will be released after full and final payment of supply.
8. **The supplier shall replace all materials / portion of material supplied if any defect is noticed during laying/actual use in worksite.**
9. The bidder shall be responsible for any defects arising from faulty materials design or workmanship in stores and shall remove such defects or replace the materials at his own cost.

10. The bidder shall warranty that all stores to be supplied shall be new and free from all defects and faults.
11. The workmanship and materials shall be of the highest grade.
12. The price should be quoted with brand and name of company for each item separately in English in words and figures inclusive of all taxes.
13. It shall be responsibility of the bidder to arrange for delivery of the materials to the required destination in good condition within the delivery period of Two months.
14. Statutory variation in the rate of GST, taking place between the date of award of contract/ or issue of purchase order and the original/refixed delivery period, shall be borne by the bidder. M/s OCC Ltd shall not be held responsible for any differential amount on account of GST.
15. No increase in price on account of statutory increase in the rate of GST taking place during the period of delivery period /extension with liquidated damage shall be admissible. Nevertheless M/s OCC Ltd shall be entitled to the benefit of any decrease in price on account of reduction in GST taking place during delivery period /extended delivery period.
16. The goods supplied under this contract shall be strictly in accordance with the contract specifications and quality and the goods shall have standard manufacturers Guarantee/Warranty from the date of receipt of goods by the authorized consignee.
17. However, where the lowest acceptable bidder against urgent requirement is not in a position to supply the full quantity required, the remaining quantity as far as possible, may be ordered to the next higher responsive bidder at the rate offered by the lowest responsive bidder.
18. By offering the price for goods, the bidder agrees for sharing price details of the offered goods with M/s OCC Ltd as regards to Excise & Customs duty & GST etc.
19. **Time of completion and supply of materials**
In case of delay, the Penalty @ 0.5% per day of agreement/ Purchase order amount for delayed period upto maximum 10% of agreement/ Purchase order amount will be deducted from the bill of Supplier.
20. The Bidders should carefully read the technical specifications before submitting their Bids.
 - (a) Bidder will be deemed to have read, understood and accepted the Terms and Conditions stated above and in the quotation call Notice.
 - (b) The authority will award the Contract to the bidder whose Bid has been determined to be substantially responsive to the quotation documents and who has offered the lowest evaluated quoted price.
 - (c) The basis of evaluation of Quotation will be bidder's credibility which can infuse confidence that selected bidder can complete the work within the given time, production/supply capacity, quality control system and past performance.
 - (d) The evaluation of the quotation may also be made on the basis of rate, experience, performances, available physical stock, capability and financial position of the bidder. Supporting documents to be attached.

21. Manufacturer Company / Authorized Dealer of manufacturer company having ISO Certificate can participate in the Bid.
22. Quality Test of the supplied CCGM Material and the 150 GSM Non-woven geotextile is to be done by supplier at his own cost. They have to submit the quality control test certificate to consignee with each consignment from standard institution/Laboratory. All charges towards quality control test will be borne by the Bidder.
23. For CCGM Material and the 150 GSM Non-woven geotextiles, the Engineer-in-charge of the work will collect two samples randomly from supplied material. The Engineer-in-charge will send the samples for quality test to any laboratory and after receipt of quality test report, it will be sent to concerned consignee Division. 10(ten) % amount will be deducted from the supplier's bill of CCGM Material and the 150 GSM Non-woven geotextiles till the receipt of quality test report. The deducted 10 % amount shall be released after receipt of positive test report. If test report is not positive the deducted 10% amount will be forfeited & necessary disciplinary action will be initiated against the Bidder. This test is in addition to the test done by the supplier and the cost of the test will be borne by the supplier.
24. The bidders who fails to supply, or supply not made as per specification or submit/declare any false statement/paper will be punished any/all as follows:-
 - (i) Blacklisting
 - (ii) Forfeiture of security money
 - (iii) Debar from participating in Bid
 - (iv) F.I.R
25. The authority reserves the right to make such increase or decrease in the quantity of items of Supply mentioned in the schedule attached to the bid notice as may be considered necessary for satisfactory completion of the work. All such increase or decrease shall in no way invalidate the rates. The Bidder shall not be entitled for any compensation on this account.
26. The Earnest Money Deposit submitted during participation of bid will be retained in the case of successful bid and will be dealt with as per the terms and conditions of the O.P.W.D. code and will not carry any interest. The earnest money of the unsuccessful bid will be refunded.
27. **No Relation Certificate.**
The Bidder shall have to furnish certificate along with the bid to the effect that they are not related to any officer of Govt. of Odisha/OCCL in the rank to an Asst. Executive Engineer and above and any officer of the rank of Under Secy. and above in the W.R. Department / OCC Ltd. If the fact subsequently proved to be false the contract will be rescinded. The earnest money and the total security will be forfeited and shall be liable to make good the loss or damage, resulting from such cancellation. (The proforma for no relation certificate is contained in a separate sheet).
28. If L1 bidder does not turn up for agreement after finalization of the bid, then they shall be debarred from participation in bidding for any other bid for three years and action will be taken to blacklist the Bidder. In that case, the L2 bidder, if fulfils other required criteria would be called for drawing agreement for supply subject to the condition that L2 bidder negotiates at par with the rate quoted by the L1 bidder otherwise the bid will be cancelled. In case a Bidder is black listed, it

will be widely published and intimated to all departments of Govt. and also to Govt. of India agencies working in the State.

29. When in response to a notice calling for bids, only a single bid is received in the first time, the bid shall be cancelled without opening of the bid and fresh bid will be invited publicly. If single bid is received even after rebidding then the approval of the next higher authority should be obtained, if the bid is otherwise in order and acceptable.
30. No compensation will be paid by the OCC Ltd. for any damage done by rain, flood, cyclone, tide or by any other natural calamities during the procurement of goods and handing over at work site.
31. Normally no extension of the schedule delivery date will be considered except where events constituting force majeure as provided in the contract have occurred.
32. (a) The Item Rate quoted by the Bidder in the bid for procurement of goods shall include GST that may be levied on turnover on the supply according to the Laws and Regulations as applicable & as amended from time to time.
(b) GST as applicable will be deposited by the Bidder before release of payment. The Bidder is to intimate the Corporation about deposit of GST for payment of Bill with documentary evidence.
33. The Bidders would be responsible for supply of materials conforming to the required specification from authorized sources and voluntarily disclose the source of procurement. Besides the bidder would be required to submit the details of quarry about procurement while submitting the bills.
34. All the forms attached to this bid document must be filled in properly along with the authenticated documentary evidence required therein, failing which the bid shall be treated as 'Non-responsive' and be rejected.
35. DESTINATION
The material is to be delivered near store at Taladanda Canal site inside Cuttack City, Odisha.
36. CONSIGNEE
The Senior Manager Civil), Mahanadi Birupa Group of Projects, Odisha Construction Corporation Ltd., Plot No:-1143, Vinayaka Nagar, Mahanadi Vihar, Cuttack-4, Dist:-Cuttack (Odisha) is the Engineer-in-charge of the work.

SECTION-III
TECHNICAL SPECIFICATION

1. INTENT

The Intent of this specification is to **Supply of - Cementious Geo- Synthetic Concrete Mattress (CGCM- 100mm to 120mm thick after filling Concrete)** with intermittent filter points to release the pore water pressure, made of Polyester (PET) of mass of 380 g/m² and tensile strength of > 50kN/m in both direction (Longitudinal & Transversal) for installation at **Taldanda Main Canal, Odisha**, India and 150 GSM non woven geotextile made of polyester or polypropylene.

2. SCOPE OF WORK

Scope of Work shall include supply of CGCM – for 100-120mm thick after filling of concrete alongwith

- (a) All relevant drawing, data and instruction manuals.

The materials to be provided will include but not be limited to the following.

- a) Design, engineering, procurement manufacture, inspection at factory packing and supply of all material & auxiliaries.
- b) Packing, forwarding, transport, insurance, loading and unloading, precaution against damage during transit.
- c) Statutory clearance from respective authority.

3. Completion Schedule :

All scope covered in this specification will be completed **within Two calendar months** from the issue of purchase order by purchaser. The bidder will indicate his best delivery commitment. The bidder will indicate the time for engineering, manufacture, dispatch and shipment to site from the date of issue of Purchase Order.

4. DRAWING DATA AND MANUAL SUBMISSION

A. GENERAL DETAILS FOR DRAWINGS, DATA AND MANUALS SUBMISSION

- (i) The manual shall clearly indicate method of installation, checkups and tests to be carried out before commissioning of the project.
- (ii) Any other relevant drawing or data necessary for satisfactory installation, operation and maintenance.

5. CODES AND STANDARDS

In addition to the codes and standards specifically mentioned in the technical specifications for the equipment, all equipment parts, systems and works covered under this specification shall comply with relevant CE, EN ISO Codes and currently applicable statutory regulations and safety codes of Republic of India including the following

- a) Bureau of Indian Standard
- b) Regulations of Central/State pollution control board.
- c) Regulations of Ministry of Environment & forest MoEF, Govt. of India.

Unless covered otherwise by Indian codes & standards and in case nothing to the contrary is specifically mentioned elsewhere in the specifications, the latest editions of the codes and standards given below shall also apply.

- a) American National Standard Institute (ANSI)
- b) American Society of Testing of Materials (ASTM)
- c) International Organisation for Standardisation (ISO)

Other applicable Indian Standards for any component part even if not covered in the listed standards shall also be followed providing valid reasons and supporting.

6. Inspection & Testing :

- (a) Routine Tests: (As per IS)

After complete supply and during supply of material they shall be subjected to routine tests in accordance with latest IS Standards on its different parts.

- (b) Type Tests :

Supplier shall have to submit test certificate as per relevant standard at their cost. Tests shall be performed in presence of owner's representative if so desired by the owner if required.

- (c) Test certification :

Certified reports of all the tests carried out at the works shall be furnished for approval of the owner.

7. PERFORMANCE GUARANTEE

Bidder/Vendor shall submit guarantee bond that the material supplied shall meet the performance requirement as stipulated in the specification. In case the performance is not as per the performance guarantee, the bidder shall rectify / replace it to the satisfaction of OCC/Client with defect replacement guarantee period of 5(five) years. Besides penalty clauses shall be applicable if the material fails to achieve performance warranty even after rectification / replacement.

8. PARTICULAR SCOPE

SCOPE OF SUPPLY

- a) All necessary hardware if required, along with the material rolls of the thickness specified.
- b) All relevant drawings, data and instruction of user manuals.
- c) Any other item as per recommendation of manufacturer of equipment

9. SCOPE OF SERVICES

The services of Senior Engineer, experienced in placing & fixing the erection and commissioning of the equipment of similar type and rating on per diem basis. The work includes but not limited to:

- Complete checking of materials at site and advising the owner/purchaser of any discrepancy thereof.
- Advice on procedure of placement to be followed.
- Regular supervision and follow-up action to be provided by the supplier/bidder during execution of this work by other agency.
- Testing, commissioning and laying **the mattresses** into successful commercial operation.

10. TECHNICAL SPECIFICATION

Technical Specification for (CGCM)

The materials must be manufactured by an ISO certified company, certified by an accredited registrar. Proof of registration must be submitted along with the bid.

Geo-Textile concrete mattress formworks with interwoven filter areas for creating an average of approximately 100 mm to 120mm thick concrete with incorporated filter points.

Description:

The work shall consist of supplying – CGCM, 100% Polyester mattress at worksite.

Material:

Cementitious Geo-Synthetic Concrete Mattress (CGCM): The mattress should consist of a double layer high strength woven made of polyester (PET), with interwoven filter zones for providing a concrete layer with an average overall thickness of approximately 100mm to 120mm after filling with highly fluid concrete.

The CGCM shall have the following properties:

The geotextile shall have the following properties:

- Weight (EN ISO 9864): $\cong 380 \text{ g/m}^2$
- Tensile strength* (EN ISO 10319): $\geq 50/50 \text{ kN/m}$
- Strain at nominal tensile strength* (EN ISO 10319): $\leq 20/20 \%$
- Minimum thickness after filling: $\cong 100 \text{ mm}$
- Pore size O_{90} * (EN ISO 12956) $\cong 200 \mu\text{m}$
- Water permeability index normal to the plane* (EN ISO 11058): $\cong 20 \text{ l}/(\text{m}^2\text{s})$
- Standard roll width: $= 5.00 \text{ m}$
(* per single fabric layer)

Life Expectancy:

After installation & filling up with the specified concrete mix, CGCM expected to give life of at least 25 years.

Others:

- Proven Performance, CGCM/ lining for waterway beds & slopes recognized by BAW (German Federal Waterways Engineering & Research Institute) under EOA (Recommendations for the use of lining systems on beds and banks of waterways;2002)
- Classed as environmentally harmless under M Geok E-2016 (Guidance Paper on the Use of Geosynthetic in Earthworks for Road-building projects) and BBodSchV (German Federal Soil Protection & Contaminated Site Ordinance)
- Tested to appropriate guideline for hygienic assessment of elastomers in control with drinking water (Elastomer Guideline)

Certificates by OEM (original manufacturer) shall be submitted when called for.

11. General

13.1 Double layer woven Geo-Synthetic Concrete Mattress are designed to be filled with Plain Cement Concrete and used for Canal Lining Work. Consequently, they are subject to water Pressure of canal. It is important that the mattress does not degrade during its lifetime of 25 years. In addition, the mattress must withstand loads resulting from filling, handling, transporting, and laying on the slope.

13.2 The 150 GSM Non woven geotextile are required for separation and filtration purpose below the CGCM.

13.3 The materials will fully meet the requirements of the technical specifications, specifically Physical, Mechanical and Hydraulic Properties. Product not meeting these requirements will be rejected.

13.4 The Bid will be accompanied by the following:

- Supplier's summary product information about the range of materials;
- Supplier's technical data sheet for the Cementious Geo-Synthetic Concrete Mattress (CGCM) and the 150 GSM geotextile to be used under this contract,
- Supplier's Quality Statement confirming compliance with these Specifications in the event the Bidder is awarded the contract, and

- Test certificates from independent, accredited laboratories covering all tests related to samples of the materials specified in the BoQ and properties in accordance with the required properties as specified in the bid document.
- Certification of the type of Mattress manufactured, brand name of proposed CGCM fabric, and sewing thread including certificate of origin for both items.
- Certificate by an acknowledged institution that the Mattress manufacturing plant is ISO 9000 accredited.
- A statement evidencing the CGCM fabric is sufficiently UV stable, if necessary, produce certificate that stabilizer is added.
- A Statement of Confirmation that the fabric is of polyster (PET) type, originating from an eligible source country and supply source is ISO accredited.
- Manufacturer's specification (technical data sheet) of the CGCM fabric, which includes all properties as required in the specification and the test methods used to determine the properties.
- The name of the test laboratory to be used to control the quality of the CGCM fabrics to be delivered to site and the certification of the laboratory to verify its ability to conduct the required testing according to the specified test norms.
- Non submission of documentation on test results will be considered as major deviation of the bid offer and, therefore, as grounds for rejection of bids
- Any other documents as mentioned in the Bidding document containing Technical Specifications, and Evaluation and Qualification Criteria.

14 Sampling and Testing

14.1 The manufacturers of CGCM Fabric and the 150 GSM geotextile will undertake all tests in independent, ISO accredited test laboratories, acceptable to the Purchaser. For example the following institutions or their equivalent may be considered for undertaking sample tests:

- i) India GAI-LAP, (<http://www.btraindia.com/gai.asp>)

The Bid will include (i) name, (ii) address, (iii) phone and fax numbers, (iv) webpage, (v) contact person, (vi) e-mail address and (vii) certificate of ISO accreditation of the laboratories suggested by the Supplier for testing his materials.

14.2 All costs related to tests will be borne by the Supplier/Manufacturer.

14.3 In general testing of materials should follow ISO standards in their latest version, unless otherwise stated. All tests are specified in sub-clause 4 of this technical specifications.

14.4 Testing of abrasion resistance will follow the standard rotating drum tests detailed by Bundesanstalt für Wasserbau (Federal Waterway Engineering and Research Institute, Kussmaulstr.17, 76187 Karlsruhe, Germany, phone +49 721 97260, (www.baw.de)). The remaining strength after the abrasion test is defined in Guidelines for testing Mattress for navigable waterways (RPG) 1994 (<http://www.baw.de/vip/publikationen/sonderinfo/richtlinie.php.html>). It is not mandatory that the abrasion test is conducted at the BAW in Germany. Bidders may carry out the test in any country listed the bidding document, but should follow the standards and procedures.

14.5 The abrasion test procedure is modified as follows: (i) The Supplier is asked to submit test results from 8 (eight) tested samples, 4 (four) tested in machine direction and 4 (four) in cross machine direction during fabrication of Mattress. During bid submission, the bidder must submit test certificates that consist of at least one machine run with two samples tested in machine direction and the other two in cross machine direction. (ii) In addition to RPG 1994, the O_{90} after abrasion testing will comply with the minimum criteria given in the table in Clause 4.3 under Abrasion.

14.6 Any Materials delivered to the sites or intended to be delivered under this contract may be tested at the discretion of the Purchaser by an independent and authorised testing laboratory following the test standards given in the Specifications. In case differences beyond the normal tolerances and fluctuations experienced during the fabrication process are found in the tests, the Supplier will be given the right to explain his test methods and how discrepancies can occur, for consideration of the Purchaser. If the Purchaser is not convinced the test results of the Purchaser's laboratory will prevail over those of the Supplier.

14.7 The mean values of each test will be within the limits permitted in these specifications. Any test value outside these limits will be considered/evaluated as disqualified.

14.8 The Purchaser reserves the right to supervise sampling of any Mattress through own entrusted personnel, consultants or pre-shipment inspectors.

15 Physical, Mechanical and Hydraulic Properties of the CGCM Mattress

15.1 The mattress has to consist of a double layer high strength woven mattress made of Polyester (PET), with interwoven filter zones which will provide a concrete layer with an average overall thickness from 100mm to 120 mm after filling with highly fluid concrete.

15.2 Technical Values and Test Standards: The properties of the Mattress to be delivered to the sites will be tested according to the relevant standards in their latest version and meet or exceed the technical values of the following table:

Properties	Test Standard	Minimum Test Values required
Weight	EN ISO 9864	□□380 g/m ²
Ultimate Tensile Strength per layer Longitudinal Transverse	EN ISO 10319	≥ 50 KN/m ≥ 50 KN/m
Strain at nominal tensile strength per layer Longitudinal Transverse	EN ISO 10319	≤ 20 % ≤ 20 %
Pore Size O ₉₀ per layer of fabric	EN ISO 12956	□□200 μm
Water Permeability Index Normal to the plane of single layer fabric	EN ISO 11058	□□20 l/(m ² s)
Average Thickness after filling	-	□□100 mm
Standard roll dimensions	-	5.00 m

b. Physical, Mechanical and Hydraulic Properties of the 150 GSM nonwoven Geotextile

The non-woven needle punched or thermally bonded or any equivalent geotextile shall be used. The geotextile shall be made of polyester or polypropylene manufactured through machine made process of needle punching techniques. The geotextile should be of 150 gsm. The mean Values of Geotextile shall be as shown in Table below

Properties:	Minimum required Values	Test Method
Tensile Strength	7kN/m	ASTM D 4595
Elongation at maximum load	> 50 %	ASTM D 4595
Grab Tensile Strength	500 N	ASTM D 4632/IS 13162 Part 5
Grab Elongation	> 55 %	ASTM D 4632/ IS 13162 Part 5
Puncture Strength (CBR)	1200 N	ASTM D 6241
Apparent Opening Size, AOS₉₀	0.4 mm	ASTM D 4751
Permittivity	0.02 sec ⁻¹	ASTM D 4491

16 Delivered Quality

- 16.1** CGCM fabric and 150 GSM geotextile delivered as Sheets will be clearly marked at regular intervals with the product name and grade and production lot number. The Purchaser accepts for example continuous marking which provides all relevant information after cutting the Mattress for laying and placing concrete. Alternatively the Purchaser accepts the common marking of the Mattress sheets and in addition a label with all relevant information.
- 16.2** Each roll of Mattress and geotextile sheet will be protected in a plastic foil wrapper, clearly labeled with the roll number, production lot number and description of the product, product name, grade and manufacturer's details.
- 16.3** Each batch of mattress delivered to the sites will be packed in standard numbers and marked with labels that identify the
- i). brand and grade,
 - ii). production lot number and date of production of Mattress
 - iii). The running number of the mattress,
 - iv). The size and capacity of mattress, and
 - v). Name and signature of the quality control person that certifies the compliance of the aforesaid specifications of the mattress in each bale.

17 Acceptance / Rejection

- 17.1 Mattress fabric not meeting the requirements of these Technical Specifications will be rejected and not be delivered to the sites or upon knowledge of defects, will be removed from the sites within two working days at the cost of the supplier.
- 17.2 The Purchaser will issue Receiving Certificates at the sites after reception of the material, verifying the quantities and the completeness of all related test certificates and the compliance of the test certificates with these Technical Specifications. The Receiving Certificate qualifies the Supplier for payment in accordance with the payment schedule.
- 17.3 Upon completion of the contract and before final acceptance by the Purchaser, the Supplier will deliver complete documentation of all details related to the manufacturing, delivery processes adopted and all test results, including the documentation of fabrication and delivery of CGCM and 100 GSM nonwoven geotextile in a format acceptable to the Purchaser. After acceptance of this documentation by the Purchaser, the Purchaser will issue the Acceptance Certificate to the Supplier.

18 Quality Assurance Requirement

- 18.1 Before starting production of CGCM fabric and 100 GSM nonwoven geotextile, the Supplier will submit to the Purchaser, a Quality Assurance Manual describing in detail his quality assurance and control system in effect in the materials supplied with specific details about quality assurance processes in effect during the production process under this contract. Details of the Supplier's quality assurance program will be submitted to the Purchaser not later than two weeks after contract award for formal acceptance.
- 18.2 The Supplier will submit test certificates separately for each consignment/shipment of CGCM fabric and 100 GSM nonwoven geotextile and make them available to the purchaser before the consignment is ready for shipment/delivery. Tests lasting longer, such as UV tests, will be made available before issuance of Receiving Certificates at the Site.

SECTION-IV
BILL OF QUANTITIES

**ODISHA CONSTRUCTION CORPORATION LTD.
CUTTACK**

NAME OF WORK: - SUPPLY OF

**(1) DOUBLE LAYER CEMENTIOUS GEO-SYNTHETIC CONCRETE MATTRESS (CGCM)
AND**

(2) 150 GSM NONWOVEN GEOTEXTILE.

BILL OF QUANTITIES/SCHEDULE OF ITEMS

Sl. No.	Item of work	Unit	Quantity	Quoted Rate (Rs) (including GST) <i>In figures</i>	Quoted Rate (Rs) (including GST) <i>In words</i>
1.	Supplying 150 GSM non woven geo textile, for separation & filtration purpose below the CGCM, as per the required specifications including all costs, labour, T&P, taxes, cess etc Complete as per site conditions as directed by the Engineer - In - Charge.	Sqm	46950		
2.	Supplying of Double Layer Cementious Geo-Synthetic Concrete Mattress (CGCM) (minimum 100mm thick maximum 120mm thick after filling) with intermittent filter points in both directions, (longitudinal & vertical) to release the pore water pressure made up of Polyester (PET) of mass 380g/m ² and tensile strength of $\geq 50\text{KN/M}^2$ and capacity to withstand the high UV resistance including cost of all materials, labour and track position etc, will all taxes, T&P, cess etc. Complete as per direction of Engineer - In - Charge.	Sqm	57750		
			Total :		

Note: - GST will be paid along with Invoice payment subject to amount indicated separately **only** on submission of proof of payment of GST as per provision of GST law. The bidder has to submit a declaration separately that his quoted rate is inclusive of GST. The percentage of GST included in his quoted rate should be clearly mentioned in his declaration so that, the tender inviting authority can assess the work value by deducting GST from quoted amount.

Signature & Seal of the bidder

**General Manager (Civil),
Central Zone, Cuttack**