

Tender Inviting Authority: Chief General Manager, Department of Premises, Security and Procurement, National Bank for Agriculture and Rural Development, Head Office, Mumbai

Name of Work: Structural Repairs, Waterproofing and Laying of Tremix for Exit Ramp in NABARD Head Office, Mumbai - 400 051

Contract No: NB.DPSP/ HO/ Ramp Repair/ / 2023-24

Name of the Bidder/ Bidding Firm / Company :	
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PRICE SCHEDULE (This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)									
NUMBER #	TEXT #	NUMBER #	TEXT #	TEXT #	NUMBER #	NUMBER #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	Quoted Currency in INR / Other Currency	BASIC RATE IN Figures To be entered by the Bidder in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT With Taxes @ 18%	TOTAL AMOUNT In Words	
1	2	4	5	12	13	53	54	55	
1	<b>Dismantling of floor:</b> Dismantling tile work in floors and roads laid in cement mortar for thickness of tiles and backfilling up to 75 mm including stacking and disposal of material to the designated dumping area of the municipal corporation complete in all respects as per the directions of EIC	280.000	Sqm	INR		0.00	0.00	INR Zero Only	
2	<b>Concrete Chipping:</b> Chipping/ removing of loose concrete upto reinforcing bars, without removing the reinforcement, removing all the loose materials and to make all the exposed surface free from dust, oil and all impurities, etc. Complete as per the directions of EIC	125.000	Sqm	INR		0.00	0.00	INR Zero Only	
3	<b>Anti Corrosive Treatment:</b> Removing corrosion of steel reinforcement by mechanical means like wire brushing, chipping to remove loose rust and then applying rust removal solution by using brush application, leaving the surface for at least 15 to 30 minutes, then removing loose materials by scrubbing or with brush and wash the reinforcement with potable water and dry the reinforcement. After detachment of loose scales of reddish rusted surface is still left exposed, this has to be retreated or as per approved manufacturers specifications. After 24 hours of cleaning and drying the reinforcement, applying zinc rich epoxy coating on the treated reinforcement and left for drying. (Note:- Consider surface area of concrete for payment)	125.000	Sqm	INR		0.00	0.00	INR Zero Only	
4	<b>Bond Coat:</b> Providing, mixing and applying bonding coat of approved adhesive on chipped portion of RCC with SBR Polymer (@10% of cement weight) modified cementitious bond coat @ 2.2 kg cement per sqm of surface area mixed with specified proportion of approved polymer as per specifications and direction of Engineer-in-charge complete in all respects.	330.000	Sqm	INR		0.00	0.00	INR Zero Only	
5	<b>Concrete Grouting:</b> Providing and injecting approved grout with - Stirrer mixed SBR Polymer (of approved make) modified Cement slurry made with Shrinkage Compensating Cement in concrete/RCC work in proportion recommended by the manufacturer into cracks/honey-comb area of concrete/ masonry by suitable gun/pump at required pressure including cutting of nipples after curing etc. complete as per directions of Engineer-in-Charge. (The payment shall be made on the basis of actual weight of approved grout injected.)	625.000	kg	INR		0.00	0.00	INR Zero Only	
6	<b>Micro Concrete:</b> Repairing to the existing RCC structural members (vertical or horizontal) using ready mix Micro Concrete of approved brand where the thickness of repair is more than 30 mm and upto 115 mm. It can be used for carrying out extensive repairs to beams, columns and other structural elements, repairing of structural members subjected to repetitive loading & for jacketing of beams, columns and other structural elements for strengthening. <b>Procedure for carrying out repairing/jacketing using ready mix micro concrete:</b> <b>Surface preparation:- (separate payment shall be made)</b> All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete shall be removed to obtain a keyed aggregate exposed surface. Non-impact/ vibrating cleaning methods, e.g. grit or high pressure water blasting are recommended. Cut the edges of the repair vertically to a minimum depth of 20 mm. Clean all exposed reinforcement to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 2944-4. Ensure back of reinforcing bar is also clean. Where reinforcing bars are corroded, cut back the concrete to at least 20mm behind the reinforcing bars and coat old and new with approved epoxy coating for corrosion protection Water Powder ration Grit blast around the reinforcing bars to remove corrosion products or any other method recommended by Engineer in charge or Structural Consultant. Anti-corrosion treatment is paid as per item no.3. Replace the affected part of reinforcing bar if the diameter after grit blasting is found reduced by more than 20% of the original diameter on the advice of the structural engineer responsible for the works. <b>Bond Coat:</b> Providing & applying One coat of structural grade epoxy bond coat (Nitobond EP or equivalent as approved by NABARD) by brush conforming to ASTM-C-882-87 to the prepared concrete surface to be repaired / strengthened and micro concreting pouring shall be done when the surface is tacky. <b>Formwork:</b> The forms must be of good quality, treated with a chemical release agent for smooth release, provided with water drain holes, strong and well braced to withstand the fluid pressure of the mortar until it hardens. <b>Mixing:-</b> Only full bags are mixed. Damaged or opened bags should not be used. Mix the ready mix Micro Concrete in a forced action pan mixer, or with a helical paddle attached to a low speed (300-600rpm) mixer for 3 minutes until a lump free, flowable consistency is achieved. Only use clean water. Mixing water needed: 3.25 to 3.75 litres per 25kg bag or as recommended by the Manufacturer of Micro Concrete. Allow the mortar to rest for 2 - 3 minutes and then remix briefly before pouring into formwork. If temperature more than 40°C then use chilled water for mixing. <b>Mortar application:-</b> The minimum temperatures must be maintained during application and for at least 24 hours thereafter for optimum curing of the product. The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying Ready Mix Micro Concrete ensure all water is removed from formwork prior to installation and formwork is resealed. Ready Mix Micro Concrete should be pumped or poured into the prepared formwork until the void is filled. Pumping is recommended for larger pours. Do not vibrate Ready Mix Micro Concrete as it could lead to segregation. The formwork should be removed after 1-3 days and a curing compound applied. If subsequent coats are to be applied the use of clear polythene is recommended for the first three days after removal of formwork. For repairs beyond 80mm to 100mm in thickness, extend Ready Mix Micro Concrete with up to 25kg of 5-12mm sized washed, saturated surface-dry (SSD), graded low absorption, high density aggregates with 25 kg of ready mixed micro-concrete or as per manufacturers specifications. <b>Curing:-</b> Minimum 7 days curing shall be done to the newly repaired/jacketed area using any suitable method. <b>Note:</b> Payment is to be made by weight premixed of micro concrete product consumed as per site register records as approved by NABARD's Engineer	6250.000	Kg	INR		0.00	0.00	INR Zero Only	
7	<b>Zycosil Waterproofing Application:</b> Water proofing treatment of ramp surface with Zycosil/ equivalent water proofing Solution as approved by NABARD (1 litre of Zycosil/ equivalent & 20 litres of water stirred first & 2 litres of Zycoprime/ equivalent added and stirred (total 23 litres) to a homogenous solution till it meets the saturation level and apply by spraying this solution using pump nozzle on the surface as per the manufacturer's specification. Before applying, testing solution as per RILEM or by water drops test in which water drops do not absorb but drops remain or rolls.	280.000	Sqm	INR		0.00	0.00	INR Zero Only	
8	<b>VDF Concrete:</b> Providing and laying C.C. pavement of mix M-25 grade with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished smooth by floating, etc. complete as per specifications and directions of Engineer-in-charge. (Note:- Cement content considered in this item is @ 330 kg/cum.Excess/less cement used as per design mix is payable/ recoverable separately).	21.000	cum	INR		0.00	0.00	INR Zero Only	
9	<b>Concrete Stamping:</b> Applying stamping finish to the top surface of freshly laid plain/ reinforced cement concrete of specified grade in porticos, sidewalks, driveways, pool decks and open yards as per direction of the Engineer-in-Charge. The process shall include the following - • The concrete shall be placed and screeded to the finished grade, and floated to a uniform surface by using standard finishing techniques. The approved color hardener @ 2.7 kg/sqm shall be applied evenly to the surface of the fresh concrete by the dry shake method by sprinkling in two or more shakes, floated after each shake and trowelled only after the final floating. The approved release agent @ 0.113 kg/sqm shall be applied evenly to the trowelled surface before stamping or the said release agent can be applied to the flexible polyurethane stamp moulds of approved design and in required sizes to achieve final stamped pattern. These stampings shall be placed on the surface of concrete in three to four pieces at a time and tapped gently with rammers of sufficient size & weight to leave proper stamp marks and the process repeated for the remaining concrete surface till the whole surface to be stamped is completed within the time while concrete is in plastic stage of setting. • After stamping, the curing shall be done as per manufacturers specifications. After initial curing the imprinted joints shall be grouted using cement slurry mixed with color hardener as per the requirement. The surface shall be sealed by applying acrylic based sealer not less than 0.167 litre/sqm on finished surface. • The construction joints shall be provided by groove cutting of size 4mm x 20mm in panel size 3m x 3 m or lesser as per the site conditions and filling the same with 10 mm baker rod and providing and laying (PU) Polyurethane based joint sealer of approved make as per manufacturer's specifications and finished by applying Polyurethane resin based top protective clear coat of minimum 80 micron applied with rollers on properly cured and dry clean surface.	280.000	Sqm	INR		0.00	0.00	INR Zero Only	
10	<b>Scraping of Old Paint:</b> Removing dry or oil bound distemper, water proofing cement paint and the like by scraping, sand papering and preparing the surface smooth including necessary repairs to scratches etc. complete.	525.000	Sqm	INR		0.00	0.00	INR Zero Only	
11	<b>Surface Painting:</b> Providing and applying first single coat of approved primer and two coats of anti-fungal, anti-fungal, exterior paint as specified below of an approved make and colour as per manufacturers specifications to any surface, upto 10m height from ground level and at all locations as directed including preparing surfaces for painting by any approved acrylic based exterior paint with silicone additives paint (Jotun make Jota shield elastic/mastic heat reflective exterior paint or equivalent as approved by NABARD) including scaffolding, cleaning and curing etc. complete as directed by Engineer-in-charge	525.000	Sqm	INR		0.00	0.00	INR Zero Only	

12	<p><b>Polymer Modified Mortar Repairs:</b>  Repairing to the existing RCC structural members (vertical or horizontal) using ready mix Polymer Modified Mortar (Fibre reinforced structural grade repair mortar) of approved brand where the thickness of repair is upto 30 mm in two layers. It can be used for carrying out extensive repairs to beams, columns, slab, and other structural elements, repairing of structural members subjected to repetitive loading for strengthening.  <u>Procedure for carrying out repair Polymer Modified Mortar:</u>  <u>Surface preparation-</u> (separate payment shall be made)  All loose traces of concrete or mortar, dust, grease oil, etc. must be removed. Damaged or contaminated concrete shall be removed to obtain a keyed aggregate exposed surface. Non-Impact' vibrating cleaning methods, e.g. grit or high pressure water blasting are recommended. Cut the edges of the repair vertically to a minimum depth of 20 mm. Clean all exposed reinforcement to a minimum grade of Sa 2 according to ISO 8501-1 / ISO 2344-4. Ensure back of reinforcing bar is also clean. Where reinforcing bars are corroded, cut back the concrete to at least 20mm behind the reinforcing bars and coat old and new with approved epoxy coating for corrosion protection Water Powder ratio Grit blast around the reinforcing bars to remove corrosion products or any other method recommended by Engineer In charge or Structural Consultant. Anti-corrosion treatment is paid as per item no.3  Replace the affected part of reinforcing bar if the diameter after grit blasting is found reduced by more than 20% of the original diameter on the advice of the structural engineer responsible for the works.  <u>Bond Coat:</u> (separate payment shall be made only for bond coat used for old surface to new surface)  Providing &amp; applying One coat of SBR latex bond coat as explained in item no. 4 to the prepared concrete surface to be repaired / strengthened and repairing with PMM shall be done when the surface is tacky.  <u>Mixing -</u>  Only full bags are mixed. Damaged or opened bags should not be used. Mix the ready-mix Polymer Modified Mortar in a forced action pan mixer, or with a helical paddle attached to a low speed (300-600rpm) mixer for 3 minutes until a lump free, thixotropic consistency is achieved. Only use clean water. Mixing water needed: 3.75 to 4.25 litres per 25kg bag or as recommended by the Manufacturer of Polymer Modified Mortar. Allow the mortar to rest for 2 - 3 minutes and then remix briefly before pouring into formwork. If temperature more than 40°C then use chilled water for mixing.  <u>Mortar application-</u>  The minimum temperatures must be maintained during application and for at least 24 hours thereafter for optimum curing of the product. The prepared substrate should be pre-soaked, preferably for 24 hours, but at least 2 hours before applying Polymer Modified Mortar. The surface must be saturated surface dry, but without standing water. Polymer Modified Mortar can be spray- or hand-applied. Apply mixed product directly to the prepared damp substrate, wet on wet onto the primed surface. Spraying the material with the necessary pressure will ensure good adhesion of the material. A thin scrape coat or contact layer before building up to the required thickness, wet on wet, will improve adhesion especially in case of hand application. Apply to the desired layer thickness upto 15 mm in single layer and after hardening, provide second layer of required thickness (total upto 30 mm) and level using a screeding bar, trowel or wooden board. Bond coat shall be provided as per the recommendation of manufacturer between two layers of polymer Modified Mortar and no separate payment shall be made for it. (However, between old &amp; new surface of concrete bond coat shall be applied &amp; paid separately) Smoothing with a trowel or finishing by float or sponge can be done as soon as the mortar has begun to stiffen.  <u>Plaster</u>  The repaired surface shall be matched to the surrounding surface by providing required thickness of plaster internal or external plaster with cement mortar 1:3 added with synthetic fibre (1-3% by volume) as per manufacturer's specifications.  <u>Curing</u>  Minimum 7 days curing shall be done to the newly repaired/jacketed area using any suitable method.</p>	75.000	Sqm	INR		0.00	0.00	INR Zero Only
<b>Total In Figures</b>						0.00	0.00	INR Zero Only
<b>Quoted Rate in Words</b>						INR Zero Only		