

## Renovation & Revamping works at Govt: Medical College, Kozhikkode

### PART A - CIVIL WORK

#### Leak rectification works at Govt. Medical College Hospital-Kozhikkode

BOQ ITEM NO	PARTICULARS	UNIT	QUANTI TY	RATE in (Figure & Words)	AMOUNT
1	Specification for Poly Urethane injection water proofing system using approved material				
	<p><b><u>METHOD STATEMENT FOR REPAIR TO LEAKAGE USING Chowgule</u></b></p> <p>Erecting scaffolding and other supports for doing the work. Clean off all surface coating and stain around the leakage area. Study and determine leak pattern and establish leakage source. Drill injection ports at distance of 200mm centre-to-centre to intercept the leak paths. The injection ports shall be drilled at a depth required. Check for positive interception of injection ports onto leak path by observing for leakage diversion through injection ports. If leak is not detected in the injection ports, change location or angle and re-drill. Once positive interception is confirmed, clean injection ports with water and install mechanical injection packers. Injection packers shall have check valve, which prevents back flush of grout and capable of holding pressure of up to <b>1050 psi (7 N/mm<sup>2</sup>)</b>. Pump water through injection packers to flush out leak paths as well as saturate it with water (if necessary). Seal off honey comb area or larger cracks, which leak severely when pumped with water, with hydraulic cement (if necessary). Pump the water-reactive polyurethane grout through injection packers to a prescribed pressure. The mixing of the material must be strictly according to the supplier's recommendation. As the grouts expand during the reaction with water, it is necessary to return to previously grouted points to check that the prescribed backpressure is maintained before grout is fully cured. Remove injection packer after the grout has fully cured. The quoted rate is inclusive of all labour involved in drilling, fixing packers, injecting, removing, sealing etc.</p>				
	Packer	EACH	500		
2	Specification for Structural repairing using approved structural repairing chemicals.				
	<b>Erecting scaffolding</b>				
	Erecting scaffolding for doing the work				
	<b>Chipping:-</b>				
	Repairing and strengthening defective & Deteriorated RCC slabs by chip off the spalling & weak concrete by light demolition hammers up to a strong substrate is obtained. Expose the corroded reinforcement by removing the concrete in and around the reinforcement bars.				

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	<p><b><u>Cleaning the reinforcement &amp; Replace the corroded reinforcement:-</u></b></p> <p>Cleaning the corroded reinforcement with mechanical cup wire brush, grinders and remove all sorts of corrosion from the reinforcement. Replace the corroded reinforcement by fixing new reinforcement as per the size of the existing reinforcement by using sheer connectors fixed on the slab using <b>approved material</b> anchoring epoxy grouting system <b>Lokfix</b> and weld join the sheer connectors and the weld mesh.</p> <p><b><u>Application of Anti-corrosive coating on the reinforcement:-</u></b></p> <p>Apply <b>approved material</b> of anti-corrosive coating Primer in and around the old reinforcement as per the manufacture's specification.</p>				

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	<p><b>Application of bonding agent:-</b></p> <p>Applying modified slurry coat added with cement and water on the prepared surface as a bonding agent for the further micro-concrete work.</p> <p><b>Application of Micro Concrete Of Approved Material</b></p> <p>Providing and applying approved material at the ratio 1:3 (1 part <b>approved material</b> and 3 part washed plastering sand) in two coats in 20mm thick each rough coat followed by fine finish coat to form a total thickness of 40mm including all material, labour, leading etc complete.</p>				
		SQM	1000		
3	<p><b>Specification for expansion joint treatment system on the top roof area using approved material</b></p> <p>moving the existing aluminum cover , surki concrete layer for exposing the mother slab in 20cm width</p> <p>Chipping and removing the existing expansion pads from the joints.</p> <p>Cleaning the surface and expansion joints with wire brush and coir brush.</p> <p><b>Application of Combiflex</b></p> <p>Providing and applying the first layer of epoxy adhesive (using approved material) on both sides of the joints as per the width of the <b>approved material</b> Tape.</p> <p>Providing and applying 150 mm x 1 mm <b>approved material</b> Tape as per manufacturers' method statement Providing and applying second layer of <b>approved material</b> and finishing the adhesive by tapering the edges while completely sand witching the <b>approved material</b> tape within as per manufacturers' method statement</p> <p>Laying Polyethylene foam on top of the Combiflex tape in 15cm width.</p> <p>Fixing 800 micron thick aluminum anodized sheet in 15cm width by providing one side oval shape hole and one side straight hole for getting expansion contraction movement on this aluminum sheet</p> <p>Laying 200 gsm Geotextile membrane on top of this aluminum anodized sheet for laying the further screed concrete.</p>				

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	Fixing ½ cm width thermocoal on the center area of the expansion joint in one day prior by using cement mortar.				
	Laying 1:2:4 cement screed on the joints in 15cm width by giving required depth.				
	Plastering the area in 15mm thickness in 15 cm width and let it dry for 7 days.				
	Removing the thermocoal from the expansion joint in 20mm depth				
	Filling approved material of Poly urethane sealant on the expansion joint.				
		Metre	59		
4	<p><b>Specification for PVC membrane on the roof area with loose laid 1.5 mm thick hot air welded PVC membrane using approved material</b></p> <p><b><u>Grinding and cleaning:-</u></b> Grinding and removing the sharp edged particles from the surface.</p> <p><b><u>Laying Geotextile membrane:-</u></b>Providing and laying 300 gsm Geotextile membrane on the roof area for laying the further PVC membrane.</p> <p><b><u>Laying PVC membrane:-</u></b> Laying <b>approved material</b> 1.5 mm thick(UV resistant) loosly laid PVC membrane by using hot air welding machines in 5 cm over laps as per the manufacture's specification</p>				

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	<b>Termination of PVC membrane:-</b> Terminating the PVC membrane on the parapet wall by using anodized aluminum flashing and P.U. sealant as per the manufacture's specification.				
		SQM	3200		
	TOTAL (In fogures & Words)				