**BILL OF QUANTITY**

**Name of Work: Water proofing treatment work at the connecting corridor from B-block to mess area of Barak Hostel in IITG Campus.**

| Item no. | Description of items | Unit | Qnty. | Rate in figure (`) | Rate in words | Amount (`) |
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| 1 | **Expansion Joints** | | | | | |
| | Step-1 Removal of all the filling materials from the joints. Clean and grind off edges to smooth of surface free from loose particle, pointing edges etc., and applying ABRO tape on either sides of the joints to earmark appliaction of adhesives, including cost of labour, consumables, tools and tackles etc., complete. | Sqm | 9.00 | | | |
| | Step-2 Providing and applying Talrak Tenseal EP or equivalent adhesive for sealing the moving/ non moving joints between the structural members, as per manufacturers specification, including cost of materials, labour, consumables, tools and tackles etc., complete. | Rm | 9.00 | | | |
| | Step-3 Providing and laying Talrak Tenseal XS or equivalent joint tap of 150 mm to 200 mm width for sealing the separation joint between the structural members, as per manufacturers specification, including cost of materials, labour, consumables, tools and tackles | Rm | 9.00 | | | |
| | **Water proofing treatment in the RCC Roof slab/ Portico Slab** | | | | | |
| | **Surface preparation** | | | | | |
| | Step-1 Removal of all the old tiles, if exist and cleaning the same to remove the loose particles, debris, dust etc., then saturating the surface with water, including cost of labour, consumables, tools and tackles etc., complete. | Sqm | 32.00 | | | |
| | Step-2 Providing and applying Koster Polysil TG 500 or equivalent primer on the prepared surface as per manufacturers specifications, including cost of materials, labour, consumables, tools and tackles, etc., complete. | Sqm | 32.00 | | | |
| | Step-3 Providing and applying Talrak Flexeal Elastic or equivalent waterproofing coating on the primed surface in two coats, as per manufacturers specifications, including cost of materials, labour, consumables, tools and tackles, etc., complete. | Sqm | 32.00 | | | |

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| **2** | Step-4 Providing and applying Koster Polysil TG 500 or equivalent primer on the water proofing coating, as per manufacturers specifications, including cost of materials, labour, consumables, tools and tackles, etc., complete. | Sqm | 32.00 | | | |
| | Step-5 Providing and laying vapour barrier polyethyene film of 200 gsm or equivalent without any wrinkles, as per manufacturers specification, including cost of materials, labour, consumables, tools and tackles etc., complete. | Sqm | 32.00 | | | |
| | Step-6 Providing and laying Non- Woven geotextile sheet or equivalent over the vapour barrier, as per manufacturers specification, including cost of materials, labour, consumables, tools and tackles etc., complete. | Sqm | 32.00 | | | |
| | Step-7 Providing and laying M20 Fibre Reinforcement Concrete Screed over the treated surface as per direction of Engineer in charge. | Cum | 3.20 | | | |
| **3** | **Repair of cracks in concrete** | | | | | |
| | (a) Providing and Sealing the cracks V groove shape, in the concrete surface, after opening the cracks using suitable tools or saw cut in the crack, and cleaning the interior sides of the crack using sharp tools to remove all loose materials, using two component, high strength, non-sag, epoxy compound complying with ASTM C881 Type I, Grade 3, Class B & C and formulated to achieve adhesive bond strength with concrete substrate an average of 1 MPa at 7 days or concrete failure when tested to ASTM D4541; Compressive strength in excess of 40 MPa at 1 day & 60 MPa at 7 days when tested as per BS: 6310 Pt 2, Flexural Strength of 20 MPa at 7days when tested as per ASTM C 580 – 07; Tensile Strength of 10 MPa at 7 days when tested as per BS: 6319 Pt 7 such as MasterBrace2200 of BASF Make or equivalent, inclusive of all Manpower, Material and Equipment. | Rm | 15.00 | | | |
| | (b) Drilling, Nozzle fixing and plugging the nozzle with MasterBrace ADH 2200 or equivalent at predetermine locations and cutting the nozzle after injection | Per Nozzle | 50.00 | | | |

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| | (c) Providing and grouting the cracks after fixing the injection ports at predetermine locations with the help of suitable injection grouting pumps at suitable pressures using two-component, high strength, low viscous (<350 cps @ ambient temperatures) **epoxy injection resin system** having minimum pot life of 30 minutes at ambient temperatures, achieves compressive strength higher than 55 MPa at 1 day & 65 MPa at 7 days; Flexural strength higher than 55 MPa at 7 days; slant shear bond strength higher than 15 MPa in 7 days such as **Master Inject 1315** of BASF make or equivalent, inclusive of Manpower, Material and Equipment | Per Nozzle | 50.00 | | | |
| **4** | Epoxy Bonding Agent - Supply and apply a epoxy resin based solvent free bond coat. Product:Talrak poly bond ® EP or equivalent. | Sqm | 56.00 | | | |
| | **Consumption**: 0.4-0.5Ltr./m2. Product requirements: Complies with ASTM C 881 Type II Grade 2 Class B+C. (Including scaffolding and working platform etc.suitable for safe working coditions) | | | | | |
| **5** | Providing and laying micro concrete thickness as per the drawing by consultant on the designated area to the prepared slurry tight shuttering with proper shear connector and bonding agent where ever necessary, The fluid micro-concrete repair material shall be a single component, cement based, Talrak microcrete ® GP or equivalent to which only the site-addition of clean water (and approved graded coarse aggregates where specified) shall be permitted. The micro concrete shall contain no metallic aggregates, or chlorides and shall be shrinkage compensated in the plastic state. The micro concrete in the flowable consistency should achieve a compressive strength of 50 MPa after 28 days at 30°C. The unrestrained expansion shall be between 1-4%. The flexural strength shall not be less than 5 MPa @ 28 days. The mixed density of micro concrete shall exceed 2100kg/m3 at 27° C strictly following manufacturer instruction direction of Engineer-in-charge. Cost including, supplying, laying, labour, mixing. (Including scaffval. Including fasteners with min. fastened with min. | Cum | 0.20 | | | |
| | **Repair work with pre-batched repair mortar** | | | | | |

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| **6** | Providing and applying pre batched one componened Polymer modified cementious patch repair mortar of 10-12 mm thick in a layer as per manufacturer recommendation ans as direction of EIC: If any where additional thickness required more than 12 mm, need to applying in two layers. Product: rENDERCEM @ GO or equivalent Compressive strength ≥ 50 Mpa (28 days) as per ASTM C 109 Flexureal Strength≥ 3 Mpa (7 days) As per ASTM C 293-79 (including scaffolding and working platform etc. suitable for safe working conditions) | Sqm | 16.00 | | | |
| **7** | Curing compound application by brush/ spray of liquid surface curing aid Talrakcure @ AS or equivalent supplied in white fugitive pigment, Specific Gravity: ~ 1.25, Viscosity: 14 secs. In B4 Cup, When first applied to a fresh cementitious surface the product, forms a surface coat. this coating, dries to a form a contineous film which provides a barrier to moisture loss ensuring more efficient cement hydration, improved durability and reduced shrinkage. Finish as per the Manufacturer's specification (Including scaffolding and working platform etc. suitable for safe working conditions) | Sqm | 16.00 | | | |
| | **Dismantling Work** | | | | | |
| **8** | Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. | | | | | |
| | For thickness of tiles 10 mm to 25 mm | Sqm | 56.00 | | | |
| **9** | Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. | | | | | |
| | Nominal concrete 1:4:8 or leaner mix (i/c equivalent design mix) | Cum | 2.40 | | | |

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| **10** | Providing and fixing machine moulded aluminium covering of approved pattern & design, made out of machine cut aluminium sheet and machine holed for receiving dash fastener, over expansion joints on vertical surfaces/ceiling floors, the fixing on plate in one row on one side of joint only shall be done with stainless steel dash fasteners of 8 mm dia and 75 mm long bolt including providing aluminium washers 2 mm thick & 15 mm dia , at a staggered pitch of 200mm centre to centre including drilling holes in the receiving surface and providing expandable plastic sleeves in holes etc. complete as per direction of Engineer in charge | | | | | |
| | Anodised aluminium sheet 2.5mm thick (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15) | Kg | 4.00 | | | |
| | **Total amount `=** | | | | | |
| | **Rebate if Any =** | | | | | |
| | **Total amount after Rebate `=** | | | | | |
| | **Rounded off =** | | | | | |

*(Rupees …… Only)*