

## Upgradation of fender for Cargo Berth 1 to 6 at Deendayal port

### **SCHEDULE – B**

Item No.	Description	Qty.	Unit		Rate		Amount INR	Remark
			In fig.	In words	In fig.	In words		
1	Dismantling and removing of existing rubber fenders, MS Ladder and Bollards including flat bars, nut, washer and angle, etc located at the existing berthing jetty. Dismantled materials shall be stacked as per the direction of Engineer-in-charge, DPA. Item rate is inclusive of charges for labour, supervision, tools tackles, scaffolding, safety equipment and shifting of concrete debris to the designated place etc., complete as per specification and as directed.by Engineer In Charge (Work under tidal condition)							
A	Triple cell 1000H fender	50.00	Nos	Each				
B	100T Bollards	100.00	Nos	Each				
C	MS Ladder	50.00	Nos	Each				
2	Breaking, removing and chipping mechanically loose disintegrated damaged concrete up to the good concrete including the cutting of reinforcements, Liner, channel sections left out portions of ladder using mechanical pneumatic hammer or suitable devices as per the direction of the Engineer in Charge. Item rate is inclusive of charges for labour, supervision, tools tackles, scaffolding, safety equipment and shifting of concrete debris to the designated place etc., complete as per specification and as directed. (Work under tidal condition)							
A	Up to 500mm depth	1806.13	S.qm	Square meter				
B	Up to 100mm depth	851.86	S.qm	Square meter				
C	Up to 50mm depth	564.00	S.qm	Square meter				
3	Providing and fixing shear keys by drilling the holes to the designated location and anchoring the rebar into the existing Structure by filling the holes with Epoxy resin based anchoring grout material Fosroc Lokfix S or equivalent to minimum portion of 1/3rd of the hole depth to fix shear connector/Additional reinforcement. The rate shall include cost of equipment's, plants, materials, instrumentation, scaffolding, labour and Transportation etc. complete as directed by Engineer in charge (Excluding the cost of reinforcement) (Work Under Tidal Condition)							

A	10mm	2225.00	Nos	Each				
B	32mm	1728.00	Nos	Each				
4	Epoxy Bonding Compound: Clean the concrete surface, remove the loose particle, if any. Make sure that the form work is ready for positioning. Mix the base and hardener of the epoxy resin jointing compound and apply 1 coat of the same to the prepared surface. Care should be taken that the rehabilitate locations need to be done within 5 hours maximum from the time of application of epoxy jointing compound Nitobond EP of Fosroc. The rate shall include cost of equipment's, plants, materials, instrumentation, scaffolding labour and Transportation etc. complete as per specification and as directed by Engineer in charge. (Work Under Tidal Condition)	3222.74	S.qm	Square meter				
5	Providing and fixing of GI welded wire mesh (4"x4"x16 gauge) or equivalent with 30 cm lap at junction one layer around the cross section of beams and along the span length completed as per specification. Item rate inclusive of materials, all labour, supervision, tools, tackles, transportation, scaffolding, fixing etc., complete as per specification and as directed.	3866.09	S.qm	Square meter				
6	Providing and fixing additional steel reinforcement for RCC work including straightening cutting, bending/Welding and Tying them to the prefixed shear connectors using binding wire/tack and placing them in position all complete to create a monolithic action with the existing bar as per site condition. Item rate inclusive of the materials, charges for labour, tools & tackles, scaffolding, welding, binding wire and applying two coats of Nitozinc Primer of Fosroc or equivalent material anti-corrosive coating on the reinforcement bar, transportation with loading/unloading charges etc. complete as per specification and as directed. (Work under tidal condition) ( a ).Thermo Mechanically treated of grade Fe500D Bars or more .	157473.93	Kg	Kilo gram				
7	Spray Mortar as per the Site Conditions Providing a single component, micro silica enhanced, high strength shotcrete mortar of FOSROC/BASF or equivalent material and applying on the exposed surfaces of Pile Cap and other miscellaneous structures using suitable pumping devices as per manufacturer specification. The repair spray mortar shall have a minimum compressive strength of 15 MPa after 24 hours and 40 MPa at 28 days. Item rate is inclusive of materials, all labour, supervision, tools and tackles and transportation etc., complete as per specifications and shown in approved construction drawing. Note - The weight of dry prepacked material (excluding additives like water, chemical etc.) used for spraying shall be considered for payment.	209.97	MT	Metric Tonne				

8	Providing and laying design mix cement concrete of M-30 grade using cement content as per design mix, using coarse sand and graded stone aggregate of 20 mm nominal size in appropriate proportions as per approved & specified design criteria, laying at site, spreading and compacting mechanically by using needle and surface vibrators, levelling to required slope/chamber, finishing with required texture, including steel form work with MS. channel sections, curing making provision for contraction/expansion, construction & longitudinal joints (10mm wide x 50 mm deep) by groove cutting machine including filling joints with approved joint filler and sealants, complete as per direction of engineer in charge (Reinforcement to be paid separately). (Note: - cement content considered in M-30 is @350kg/cum excess/less cement used as per design mix is payable/ recoverable separately)	424.51	Cum	Cubic Meter				
9	Providing and laying design mix in situ concrete of RCC M40 grade in accordance with IS 456 (Latest Edition) using minimum cement content of 450kg per cum, coarse aggregate, sand and Portland slag cement conforming to IS 455 for RCC stair, cantilever beam and fascia wall including steel shuttering, cost of cement, stone chips, sand, cost of all labour charges, mixing, conveying, placing, consolidation, screening and washing of coarse aggregate and sand, transportation charges of all materials to the Work Site, hire charges and running charges of batching plant, vibrator, consumables and all other equipment, cost of minor tools etc. complete, but excluding the cost of fixing reinforcement, which will be paid separately. (The design mix shall be provided by the contractor from the NABL approved laboratory).	903.06	Cum	Cubic Meter				
10	Protective coating Providing and applying a single component high build elastomeric, crack - bridging, resistant to CO2 and Chloride ion diffusion, UV resistant, breathable acrylic coating with elongation at break exceeding 200% using Dekguard S of Fosroc or equivalent material applied in two coats (Each coat 125 micron DFT) over one coat of acrylic based primer as per recommendation of the manufacturers at an average thickness of 250 microns DFT. Item rate is inclusive of the materials all labour, supervision, scaffoldings, tools and tackles and transportation etc. complete as per specification and as directed.(Work Under Tidal Condition)	3733.59	S.qm	Square meter				
11	Design, supplying, testing, fixing and installation of 1450H triple cell fender including cost of the fender with all its accessories, UHMW PE fender fascia pads (low friction), chains, anchors and other accessories including all labour charges, transportation charges up to site, installation and fixing of fenders on to the fascia walls and minor tools etc., complete. Note: The scope includes design of fender frame and testing in accordance with specifications. (Work Under Tidal Condition)	50.00	Nos	Each				

12	Supplying, handling, transporting and fixing in position of Cast iron Bollard with drilling holes of required dia and as required distance on the concrete substrates, cleaning and grouting the hole with two component Epoxy resin based anchoring grout master flow 935 of BASF/ HIT RE 500 OF HILTI/Lokfix or equivalent material. Item rate inclusive of all materials, fixing accessories, labour, tools, tackles and transportation etc., complete as per specification and as directed.							
A	100T Bollards	100.00	Nos	Each				
13	Supplying and fixing in position of Moulded rubber mooring ladder for a height of 9.145m along with necessary fixing accessories, hand railing at top complete as per the specification, drawing and as directed. Brand/Make: - Hitech Elastomers/Brahans Polymers/IRM or Equivalent (Work under tidal condition)	50.00	Nos	Each				