

**MAZAGON DOCK SHIPBUILDERS LTD.
TECHNICAL SERVICES DEPT.**

Scope of Work for Modernisation of Fitting Shop, NY, MDL

1. Earthwork in excavation by mechanical or manual for Storm water drain at South side & transportation of excavated material to dumping ground...
2. Dismantling of existing RCC & transportation of dismantled material to dumping ground...
3. Dismantling of existing PCC & transportation of dismantled material to dumping ground....
4. Dismantling of existing plaster inside area transportation of dismantled material to dumping ground....
5. Dismantling of existing dilapidated, aluminium, wooden, gypsum partitions, doors, windows, fixed glazing (north light) and false ceiling etc. & transportation of dismantled material to MDL scrap bins...
6. Removal of Old Dilapidated Roof & Cladding sheets, ridges, hips, valleys, gutters (betn Fitting Shop and S B Pipe Shop) & shift to MDL Scrap bins...
7. Removal of existing rainwater down take pipe, old pipeline, cable, compressor line & transportation of dismantled material to MDL scrap bins...
8. Removal of existing MS scrap /Rails etc. and transportation to MDL scrap bins after cutting in pieces...
9. Dismantling of Aluminium gutter north side in between Fitting Shop and S B Pipe Shop and transportation of dismantled material to MDL scrap bins...
10. Removal of existing Electrical Services/cables, providing new cables, wiring etc. prior to concreting of floor slab-to be executed under Electrical...
11. Removal of redundant Old compressed air line at North side, cut and handover to MDL scrap bins...
12. Providing and laying Rubble Soling...
13. Providing and laying PCC M20 for bed concrete....
14. Providing and laying Steel reinforcement...
15. Providing and laying RCC M40 for top concrete VDF...
16. Providing and fixing Shuttering for concrete work wherever required...
17. Providing and fixing Structural Steel work in Single Section wherever required including primer...



जयवंत राव
JAYWANT RAO
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CHIEF MANAGER (TS CIVIL)
माझगांव डॉक शिपबिल्डर्स लिमिटेड
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18. Providing and fixing Structural Steel work for Gates, Gratings, guard frames, ladders, railings, brackets, gutter including primer...
19. Providing and applying Epoxy paint to Structural works like Column/ truss...
20. Providing & fixing Double Scaffolding system (cup lock type)..
21. Providing & erecting bamboo's double scaffolding...
22. Providing and applying Epoxy Flooring Paint for workshop Floor area...
23. Providing & applying Plastering of 12mm thick for inside area ...
24. Providing & fixing 6mm thick North light glass incl. dismantling existing...
25. Providing & fixing Roofing sheets 0.5mm thick...
26. Providing & fixing Cladding sheets 0.5mm thick...
27. Providing and construction of Brick Masonry work in Plinth & foundation...
28. Providing and construction of Brick Masonry work in Superstructure...
29. Providing & Fixing 250mm dia. NP2 Class RCC Pipe...
30. Providing & Fixing 450mm dia. NP2 Class RCC Pipe...
31. Providing & Fixing 0.50mm thick Flashings...
32. Providing and fixing 75mm, 110mm, 160mm dia. PVC soil, waste, Rain pipe...
33. Providing & Fixing 2mm thick Polycarbonate Sheets...
34. Providing Crane of 5MT capacity incl. Fuel & operator for Shifting Machineries...
35. Providing and applying Plastic emulsion painting on inside wall plastered area...
36. Making of grooves of 5mm wide & 25mm deep in RCC Slab...
37. Providing & filling joints sealing compound...
38. Providing & applying 20mm thick Sand face Plaster in CM 1:3...
39. Finishing walls with Acrylic Smooth Exterior Paint...
40. Providing & Fixing 24inch Dia. Turbo Ventilators...
41. Providing & Fixing Chicken mesh.


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Sub:- Modernisation of Fitting Shop, NY, MDL, Mumbai

S. No.	Description of item	Unit	Quantity	Amount
1	Earth work in excavation by Mechanical means (Hydraulic excavator) / Manual means for all lift including stacking excavated earth, lead upto 50 m at designated place within MDL premises before disposal as per direction of Engineer - in- charge etc. complete. - All kinds of soil	Cum.	132.30	
2	Dismantling RCC Work Manually / by Mechanical means including cutting bars and stacking of steel bars within MDL premises and disposal of un-serviceable material outside MDL premises to municipal dumping ground complete as directed at any height / Location etc.	Cum.	858.56	
3	Dismantling carefully PCC Work Manually / by Mechanical means & carting away debris outside MDL premises to municipal dumping ground complete as directed at any height / Location etc.	Cum.	373.29	
4	Dismantling carefully damaged portion of cement plaster of any finish from the wall, ceiling, beams etc & raking out the joints to a suitable depth up to 20mm & carting away debris etc outside MDL premises to Municipal Dumping ground. complete as directed at any height / Location	Sqm	770.50	
5	Dismantling aluminium / wooden / Gypsum partitions, doors, windows, fixed glazing and false ceiling including disposal of un-serviceable surplus material and stacking of serviceable material with in MDL Premises as directed. Also include disposal of dismantled or waste materials by manual, mechanical means, including loading, transporting, unloading to approved municipal dumping ground or as approved by Engineer-in-charge, for all leads including all lifts involved. etc. complete.	Sqm	450.30	
6	Dismantling roofing including ridges, hips, valleys and gutters etc., and stacking the material within 50 metres lead of: G.I. Sheet/Galvalume Sheet .This item also includes disposal of unservisable /waste material from MDL site to approved municipal dumping yard for all leads including all lifts involved etc.	Sqm	3980.00	
7	Dismantling existing C.I or AC or PVC pipeline along with fittings & clamps including carting away debris etc. complete as directed. 150mm dia pipe line	Mtrs.	525.00	
8	Providing & Laying dry stone Rubble Soling with average 225 mm size hard stone set in regular lines, handpacked and interstices thoroughly filled with small chips including filling in with good quality murum brought from outside, compacting with iron rammers, watering, sand spreading 12mm thk. layer of grit on top etc complete as directed by Engineer In Charge.(Rate includes royalty & other taxes,if any)	Cum	864.57	
9	Providing & Laying Plain Cement concrete (PCC-Cast in Situ)at any location, curing excluding centering, shuttering etc;complete as directed. ---UPTO FLOOR FIVE LEVEL---(1:1.5:3) Concrete (1 Cement:1.5 coarse aggregate: 3 graded stone aggregate 20mm nominal size)	Cum.	388.75	
10	Providing and laying in position ready mixed or site batched design mix cement concrete for reinforced cement concrete work; using coarse aggregate and fine aggregate derived from natural sources, Portland Pozzolana / Ordinary Portland /Portland Slag cement, admixtures in recommended proportions as per IS: 9103 to accelerate / retard setting of concrete, to improve durability and workability without impairing strength; including pumping of concrete to site of laying, curing, carriage for all leads; but excluding the cost of centering, shuttering, finishing and reinforcement as per direction of the engineer-in-charge; for the following grades of concrete. Concrete of M40 grade with minimum cement content of 390 kg/cum	Cum.	1075.18	

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S. No.	Description of item	Unit	Quantity	Amount
11	Providing and Application of Nitoflor Hardtop, Non-metallic, monolithic surface hardening compound containing rust free, hardwearing aggregates to all concrete floors which cures monolithically to provide a dense, non-porous surface which is extremely hardwearing and abrasion resistant. Nitoflor Hardtop Standard shall be evenly spread at correct time while concrete is having adequate moisture to absorb floor hardener at application rate of 7 kg/Sqm etc., complete as directed by engineer in charge.	Sqm	3740.00	
12	Providing & fixing in position Centering & shuttering including strutting, propping etc. and removal of form work of approved type as directed by Engineer in charge. For all height Foundations, footings, bases of columns, Small lintels not exceeding 1.5 m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks	Sqm	2496.90	
13	Providing & fixing in position reinforcement bars including straightening, cutting, bending, placing in position & binding with binding wires / welding where ever necessary for slabs / beams / columns /Staircase/linlets/chajja/ footing/pile etc. all complete as directed at any location (Lapping / chairs will be measured & paid) Thermo-Mechanically Treated bars of grade Fe 500 D or more	Kgs.	36250.00	
14	Dismantling of Steel works : Dismantling steel work in built up sections in angles, tees, flats and channels including all gusset plates, bolts, nuts, cutting rivets, welding etc. including dismembering cutting the steel in less than 1m length/width and shifting to designated MS scrap yard as directed by Engineer-in-charge	Kg	30000.00	
15	Providing and fixing Structural steel work in single section including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete	kg	4709.40	
16	Providing and fixing Steel work welded in built up sections/ framed work including cutting hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc as required in gratings, grating frames, guard bar, ladders, railings, brackets,gutter, gates.	kg	42142.58	
17	Finishing with Epoxy paint (two or more coats) at all locations prepared and applied as per manufacturer's specifications including appropriate priming coat, preparation of surface etc. complete-On Steel work	Sqm	3591.44	
18	Providing and fixing double scaffolding system (Cup lock type) on the exterior side, up to seven story height made with 40 mm dia M.S. tube 1.5 m centre to centre, horizontal & vertical tubes joining with cup & lock system with M.S. tubes, M.S. tube challies, M.S. clamps and M.S. staircase system in the scaffolding for working platform etc. and maintaining it in a serviceable condition for the required duration as approved and removing it there after .The scaffolding system shall be stiffened with bracings, runners, connection with the building etc wherever required for inspection of work at required locations with essential safety features for the workmen etc. complete as per directions and approval of Engineerin- charge. The elevational area of the scaffolding shall be measured for payment purpose. The payment will be made once irrespective of duration of scaffolding.	Sqm	14868.00	
19	Providing and erecting bamboo's double scaffolding of required height and width and strength by sides of building for platform to enable workmen to carry out repairs to building at any level from ground to any floor height as directed including removing the same and clearing the site. (The rate for this item will be applicable for work beyond 10 m height for building / shed / workshop since all the items of work are inclusive of scaffolding upto 10 M height).	Sqm	230.00	



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S. No.	Description of item	Unit	Quantity	Amount
20	Epoxy Flooring : Supply & Providing Epoxy Flooring with following procedure: 1) Drying the Surface .Removing complete moisture . 2) Fill uneven surfaces & holes with mortar 3) 0.5mm Primer Coat to Hard/fix the surface without loops. 4) 25 mm Radius Coving Mixture of Sand hardner & white cement. to avoid the deposits of the dust. 5) Base Coat 2mm for the smoothness & toughness. 6) Color / Pigment Coat (mixture of Resin, Hardner & PIJpaint). 7) Painting Coving as per design supplied by EIC for better durability of color shade. Note : Warranty of one year for wear & Tear, colour shade. 5 years warranty for bubble formation & sign of peel off only. 5 % retention in bills for 5 years warranty.	Sqm	3749.89	
21	Providing and applying plastering on RCC/brick masonry work with 12 mm thick by using mix Cement Mortar CM 1:4 including curing etc; all complete as directed.	Sqm	659.50	
22	North light glass: Dismantling carefully existing broken glasses and providing & fixing 6mm thick wired glass for North Light with putty and nails, wherever necessary including cutting of glass etc. complete all as directed	Sqm	449.02	
23	Providing and fixing chicken mesh of 22gauge , with about 30cm.width at the junction of R.C.C.members and brickwork, of approved quality including fixing mesh in position by necessary drilling in concrete/B.B.masonry and or tying by binding wire etc. complete as directed by engineer in Charge.	meter	552.00	
24	Providing and fixing Bare Galvalume/ Zinalume sheets for roofing- single skin trapezoidal profiled sheeting 930 - 1020mm cover width 28-32 mm crests depth at 186-250 c/c (above 195 mm c/c crest distance there will be minimum 2 ribs at the centre for stiffening). The feed material shall be manufactured from AZ 150 (min. 150 gms/sq.mt total on both sides) Zinalume / Galvalume sheets of minimum yield strength of 550 MPa, 0.45 mm BMT, (0.5 mm TCT excluding paint coating thickness), metallic hot dip coated with Al- Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS 1397 / IS15961 & painted with Super Durable Polyester Colorbond steel XRW or equivalent quality paint system of approved color, suitable for exterior application conforming to AS/NZS 2728:2007 type-4 / IS15965: class3 of approved make. The sheet shall have a total coating thickness of 35 microns, super durable polyester paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system shall have stable inorganic pigments for color durability. The product will be fastened using no. 12-14x55 mm (or as per design requirement), mechanically coated with 25 micron Zn-Sn alloy or hot dipped zinc coated with min 40 micron hex self-drilling fasteners with EPDM washer of approved make confirms to AS3566:2002 class 3.	Sqm	3500.00	



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S. No.	Description of item	Unit	Quantity	Amount
25	Providing and fixing Colour Coated Galvalume/zincalume sheets for Cladding - single skin trapezoidal profiled sheeting 930 - 1020mm cover width 28-32 mm crests depth at 186-250 c/c (above 195 mm c/c crest distance there will be minimum 2 ribs at the centre for stiffening). The feed material shall be manufactured from AZ 150 (min. 150 gms/sq.mt total on both sides) Zincalume / Galvalume sheets of minimum yield strength of 550 MPa, 0.45 mm BMT, (0.5 mm TCT excluding paint coating thickness), metallic hot dip coated with Al-Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS 1397 / IS15961 & painted with Super Durable Polyester Colorbond steel XRW or equivalent quality paint system of apporved color, suitable for exterior application conforming to AS/NZS 2728:2007 type-4 / IS15965:class3 of approved make. The sheet shall have a total coating thickness of 35 microns, super durable polyester paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system shall have stable inorganic pigments for color durability. The product will be fastened using no.12-14x55 mm (or as per design requirement), mechanically coated with 25 micron Zn-Sn alloy or hot dipped zinc coated with min 40 micron hex self-drilling fasteners with EPDM washer of approved make confirms to AS3566:2002 class 3.	Sqm	600.00	
26	Providing second class Brick masonry with coventional / IS type class 7.5 bricks including scaffolding, watterring, racking out joints etc. complete SET IN CEMENT MORTAR (1 : 4) In Foundation & Plinth	Cum	5.00	
27	Providing second class Brick masonry with coventional / FPS (Non-Modular) type bricks including scaffolding, watterring, racking out joints etc. complete SET IN CEMENT MORTAR (1 : 4) In superstructure upto floor V level	Cum	13.80	
28	Providing and laying non pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc complete. 250 mm dia.	Rmt	10.00	
29	Providing and laying non pressure NP2 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including testing of joints etc complete. 450 mm dia RCC	Rmt	10.00	
30	Providing and fixing Colour Coated Galvalume/Zincalume Flashings and Cappings 600mm wide - single skin trapezoidal profiled sheeting 930 -1020mm cover width 28-32 mm crests depth at 186-250 c/c (above 195 mm c/c crest distance there will be minimum 2 ribs at the centre for stiffening). The feed material shall be manufactured from AZ 150 (min. 150 gms/sq.mt total on both sides) Zincalume / Galvalume sheets of minimum yield strength of 550 MPa, 0.45 mm BMT, (0.5 mm TCT excluding paint coating thickness), metallic hot dip coated with Al-Zn alloy (55% Aluminium, 43.5% Zinc, 1.5% Si) as per AS 1397 /IS15961 & painted with Super Durable Polyester Colorbond steel XRW or equivalent quality paint system of apporved color, suitable for exterior application conforming to AS/NZS 2728:2007 type-4 /IS15965:class3 of approved make. The sheet shall have a total coating thickness of 35 microns, super durable polyester paint system of 20 microns on exposed surface and 5 micron reverse polyester coat on back surface over 5 micron primer coat on both surfaces. The paint system shall have stable inorganic pigments for color durability.The product will be fastened using no.12-14x55 mm (or as per design requirement), mechanically coated with 25 micron Zn-Sn alloy or hot dipped zinc coated with min 40 micron hex self-drilling fasteners with EPDM washer of approved make confirms to AS3566:2002 class 3.	Rmt	60.00	



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S. No.	Description of item	Unit	Quantity	Amount
31	Providing and fixing in position uPVC/SWR (Soil/Waste/Rain) pipe of type-B 75 mm dia. in any position including all fittings and accessories, making joints / connections water tight with solvent cement, scaffolding if necessary and making good the damages if any (excluding excavation and refilling the trenches) etc. complete as specified and directed.(All fittings and accessories like clamps,etc. should be of same brand. No separate payment shall be made for fittings and accessories).	Rmt	50.00	
32	Providing and fixing in position uPVC/SWR (Soil/Waste/Rain) pipe of type-B 110 mm dia. in any position including all fittings and accessories, making joints / connections water tight with solvent cement, scaffolding if necessary and making good the damages if any (excluding excavation and refilling the trenches) etc. complete as specified and directed.(All fittings and accessories like clamps,etc. should be of same brand. No separate payment shall be made for fittings and accessories).	Rmt	260.00	
33	Providing and fixing in position uPVC/SWR (Soil/Waste/Rain) pipe of type-B 160 mm dia. in any position including all fittings and accessories, making joints / connections water tight with solvent cement, scaffolding if necessary and making good the damages if any (excluding excavation and refilling the trenches) etc. complete as specified and directed.(All fittings and accessories like clamps,etc. should be of same brand. No separate payment shall be made for fittings and accessories).	Rmt	260.00	
34	Providing and Fixing of 2mm thick Polycarbonate Translucent Roof Sheets to match with new roofing sheets including lapping, wastage, transportation, labour with hardware, etc. all complete.(Covered area of sheeting as fixed in position will be measured.)	Sqm	674.80	
35	Hire and running charges of Crane 5 MT capacity including fuel and operator	Hr	160.00	
36	Providing & Applying two coats of Premium Acrylic emulsion paint of interior grade of approved brand & manufacturer and shade to give uniform finish on new work with the help of brush, Rollers etc. complete as directed.	Sqm	1000.00	
37	Making of Grooves of 5mm wide and 25mm deep in RCC floor slab using mechanical saw after final curing of the concrete truly in line as directed by EIC.	Rmt	2000.00	
38	Providing and filling joint sealing compound with coarse sand and 6% bitumen by weight as per drawings and technical specifications etc. complete.	Sqm	59.80	
39	Providing and applying 20 mm thick external sand faced cement plaster in cement mortar (1:3) with neat cement rendering upto 10m from ground level and at all locations in cement mortar proportion specified below in two coats for masonry (except stone masonry) and concrete surfaces including providing water proofing compound to the first coat of plaster as per manufacturers specification, racking out joints, hacking of concrete surface, finishing, curing, scaffolding etc. complete as directed By Engineer In Charge. Min. time lag between two coats shall be 24 hours.(as per IS 2402 of 1963.)	Sqm	621.00	
40	Finishing walls with Premium Acrylic Smooth exterior paint with Silicon additives of required shade. New Work (Two or more coats applied @ 1.43lit/10Sqm over and including priming coat of exterior primer applied @ 0.90litre /10Sqm.	Sqm	935.00	
41	Turbo ventilator :Providing & fixing 24 inch dia Wind Driven Turbo Ventilator system in Aluminium along with FRP Base Plate of Approved make & type with all fittings, nuts, bolts, etc. including FRP base sheet of approved colour.shape & size including cutting of Galvalume sheets for fixing the Base to required size & length, lap, scaffolding, staging, etc as per instructions of EIC.Profile of FRP Base should match the profile of corrugated sheets.	No	40.00	

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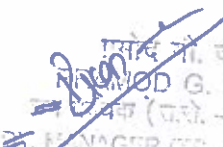
माझगाव डॉक शिपर्स लिमिटेड
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SCOPE OF WORK FOR MODERNIZATION OF FITTING SHOP, NY, MDL.

Electrical Work:

1. Dismantling existing cables of various sizes, existing electrical panels (02 nos), I.C. Metal Clad Switches, old distribution boards.
2. Dismantling of Highbay Light Fittings and Air Circulators and handing them over to Maintenance Dept.
3. Supply, laying and termination of 3.5 C x 400 & 3.5 C x 240 sq mm Ar. Al. cables from NY substation to the Main Electric Panel (New 02 Nos electrical panels, 800Amps will supply & install by Maintenance Dept).
4. Supply & Laying of Cable trays.
4. SITC of 02 nos. Sub Main LT Panel (200 Amp)
5. SITC of 200 A, 100 A MCCB enclosures with MCCB at various locations in Fitting Shop.
- 6 SITC of Lighting DBs, Power DBs at various location of Fitting shop.
7. Supply, Laying, Termination of various size cables from Main Electrical Panels & Sub Main LT Panels.
8. SITC of LED Highbay Light fittings in all bays of fitting shop.
9. SITC of Air Circulator (600 mm sweep) with speed regulator in all bays of fitting shop. A Separate MCB box shall be provided on column for ON/OFF control of Fan.
10. Supply, Laying & Termination of cable from Lighting Distribution boards for Light fittings and Air Circulator in all bays of fitting shop
11. Supply, Laying & Termination of cable from Power Distribution boards for 16 A, 32A, 63 A power outlet on all columns in all bays of fitting shop.
12. Marking & Labelling of each DB, Switches, Air Circulator etc for proper Identification.
13. Submission of test certificates of cables, light fittings, air circulator, MCCBs, MCBs etc.
14. Submission of GA drawings for Sub main LT panels for MDL approval. Also, submit test certificate of major switchgears fixed in panel.
14. Submission of As Built Drawings of Sub main LT panels, Layout of Light fitting, Layout of power distribution etc. in four (04) sets.


मो. ग. कासरे
CHIEF MANAGER (HOS-TS-ELECTRICAL)
MAZAGON DOCK SHIPBUILDERS LIMITED


स. र. चव्हाण
S. R. CHAVAN
मुख्य प्रबंधक (विभाग प्रमुख-तकनीकी सेवाएँ-इलेक्ट्रिकल)
CHIEF MANAGER (HOS-TS-ELECTRICAL)
माझगांव डॉक शिपबिल्डर्स लिमिटेड
MAZAGON DOCK SHIPBUILDERS LIMITED

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