

**BOQ - Civil & Interior Work**

S.N	ItemName	UOM	PO	Quantity	Length	Width	Height	Nos	Unit	Qty	Approved
1	Supply and installation of fire rated calcium silicate board Partition Wall with the necessary supports, fittings and fixtures (excluding final finishes). Purposed height of kitchen partition wall is 4925mm and pot wash room is 3000mm, it may be change as per site conditions. Note: Framing and double side board to be installed. Final Finishes price to be quoted in wall finishes section.	SQM		41						40.77	✓
	Kitchen RHS wall	SQM			2.48		3.64			9.03	✓
	Kitchen front wall	SQM			4.88		3.64			17.76	✓
	Less door	SQM			-0.9		2.1			-1.89	✓
	Pot wall 1	SQM			0.93		3.64			3.39	✓
	Pot wall 2	SQM			0.95		3.64			3.46	✓
	LHS wall kitchen	SQM			2.48		3.64			9.03	✓
2	Supply and installation of fire rated calcium silicate board cladding on the existing walls in the Kitchen pot wash area to pass the MEP services to receive the final finishes with the necessary supports, fittings and fixtures (excluding final finishes). Purposed height is 3000mm, it may be change as per site conditions. Note: Framing and single side board to be installed on existing wall. Final Finishes price to be quoted in wall finishes section	SQM		25						29.30	✓
	Behind counter wall	SQM			5.15		2.46			12.67	✓
	Kitchen Back wall	SQM			3.12		3.64			11.36	✓
	inside pot back wall	SQM			1.45		3.64			5.28	✓
3	Supply and installation of fire rated Gypsum board cladding on the existing walls to pass the MEP services to receive the final finishes with the necessary supports, fittings and fixtures in the FOH dining area walls. (excluding final finishes). Purposed height is 3150mm, it may be change as per site conditions. Note: Framing and single side board to be installed on existing wall. Final Finishes price to be quoted in wall finishes section.	SQM		66						55.11	✓
	FOH Entry front wall	SQM			3.15		3.65			11.50	✓
	LHS Entry wall	SQM			6.93		3.65			25.29	✓
	Counter pillar wall	SQM			1.31		3.65			4.78	✓
	Behind counter wall	SQM			2.44		3.65			8.91	✓
	Behind counter wall top	SQM			5.15		0.9			4.64	✓
4	160mm thick concrete floor screeding to raise the floor to accommodate the drainage pipes and floor gratings to receive floor finish in the Kitchen FOH counter areas; all in accordance with drawings site conditions. Note: Total height of floor to be raised including floor finishes is 200mm in the kitchen FOH counter area only	SQM		28						61.341	✓
	Counter BOH area as per drawing	SQM								15.33	✓
	Kitchen area as per drawing	SQM			4.835		2.6			12.57	✓
	FOH area as per drawing	SQM								33.44	✓

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BOQ - Electrical Work		PO QTY		Measurement Sheet					
S.N	ItemName	UOM	Quantity	Length	Width	Height	Nos	Unit	Qty
I	PANEL SWITCHGEAR								
	Supply, installation, testing commissioning of free standing, floor mounting compartmentalized panels fabricated out of CRCA sheet steel sections after carrying out 7 tank cleaning process and duly powder coated using Siemens Grey Shade No. RAL 7032. The frame structure, doors and gland plates shall have 2.0 mm thick sheets and partitions shall be with 1.6 mm thick CRCA sheet. Base channel size 75 x 40 x 6 mm of ISMC shall be provided. The panel shall be dust and vermin proof with neoprene gasket. The doors shall be provided with concealed hinges and with brazing wherever required to avoid deformation and shall be earthed. The bus bar shall be of tinned Copper with epoxy supports and shall be insulated with colour coded heat shrink sleeves. The control wiring min. 2.5 Sq.mm shall be ZHLS type. The Panel shall be provided with CTs, phase indication lamps, meters, relays and all switchgear, etc. as per the SLD. The panel shall be complete in all aspects as per the final approval of the Consultant. All components for Switchgears shall be L T Legrand								
a	Providing installing MAIN LT PANEL as per SLD Spec	Set	1						
	125 Amps 4 pole, 25kA MCCB as a Incomer with overload, short circuit Earth Fault protection, Energy manager with RS485 port for BMS connectivity 4A with SP MCB with 100 5A-3 Nos., 15VA, CL-1 CT s for metering of AE make and phase indicating lamps Vaishno make with SPMCB								
	Busbar chamber - 1 set, 4 pole 125A Tinned AL Busbar with necessary								
	OUTGOINGS								
i.	32A 4P MCB - 1 Nos.								
ii.	40A 4P MCB - 2 Nos.								
iii.	63A 4P MCB - 3 Nos.								
iv.	80A 4P MCCB 16kA TM Based O C, S C release.								
2	Supply, installation, testing commissioning of Switchgears.(Standard Product)								
b	Supply,Installation,Testing and Commissioning of 32 Amps,4Pole MCB for HVAC Outdoor Isolation all complete with mounting accessories.	Nos.	1						
c	Supply,Installation,Testing and Commissioning of 40 Amps, DP, MCB for UPS INVERTER Isolation all complete with mounting accessories for UPS.	Nos.	2						
p	20A Rey roll socket complete with 32 amps DPMCB with 3 pin metal clad socket - Legrand make Model No. 607B 41	Nos.	9						
q	5 15A Rey roll socket complete with 15 amps SPMCB with 3 pin metal clad socket - Legrand make Model No. 607B 41	Nos.	5						
II	INVERTER UPS								
1	Supply, Installation, testing and commissioning of 6 KVA UPS System Single Phase I C Single Phase O G complete with 30 Minutes Battery Back-up the required accessories as specified in the drawings the specifications.	Nos	1						
III	DISTRIBUTION BOARDS								
	Supply, installation, testing commissioning of Distribution Boards surface flush mounted with Double door containing MCB ELMCB as incomer and SPMCB as outgoing. All MCBs are of 10KA breaking capacity and ELMCBs RCCB should be of 30mA 100 mA sensitivity. The DB shall have appropriate no. of top and bottom knock outs for outgoing circuits and shall be complete with necessary busbars, interconnection terminals and earth studs. All terminations in DB shall be complete with ferulling, dressing and all circuits shall be properly labeled with PVC strip (sticker type) having identification as per the final approval of Consultant. For UPS DB MCB shall be D type and other MCBs shall be C category for lighting and raw power DB LEGRAND LT								
1	Lighting Distribution Board - LPDB	Nos.	1	1					1
	B WAY TPN DB								
	I C - 1 # 32A FP MCB, 10KA								
	SUB I C - 3 # 25A DP RCCB 30mA per phase								
	O G - 1B # 10A SP MCB								
3	Kitchen Power DB - (KPDB-1)	Nos.	1	1					1
	12 WAY TPN DB								
	I C - 1 #80 A FP MCB								
	SUB I C - 3#63 DP ELCB 100mA per ph								
	O G - 30 # 16 20A SP MCB								
4	EMERGENCY LIGHTING DB (ELDB)	Nos.	1	1					1
	12 way SPN DB								
	Incomer 40A DP RCBO 30mA								
	Outgoings 10 16 SP MCB, D Type - 8 Nos								
	TOTAL FOR DISTRIBUTION BOARDS								
IV	CABLES ACCESSORIES								
	Supply installation of following LT XLPE FRLS cables (FINOLEX RR KABLE POLYCAB) rated for 600 1100 volts AC as per IS standard 1554 Part 1 with necessary M.S. clamps. All cables shall be properly clamped or tied when run on cable trays. All such cables shall be provided with temporary labelling at every 20 mtrs and ten finally with metal identification tags showing the size and the location from to the specific Panel DB at both ends.								
9	3.5C x 35 Sq. mm A2XFY	Mtr.	100						
10	4C x 16 Sq. mm A2XFY	Mtr.	20						
14	4C x 6 Sq. mm 2XFY Cable ( Cu )	Mtr.	15						
15	4C x 4 Sq. mm 2XFY Cable ( Cu )	Mtr.	15						
17	3C x 6sq. mm YWY cable ( Cu )	Mtr.	15						
18	3C x 4sq. mm YWY cable ( Cu )	Mtr.	40						
9	3.5C x 35 Sq. mm A2XFY	Nos.	2						
10	4C x 16 Sq. mm A2XFY	Nos.	4						
14	4C x 6 Sq. mm 2XFY Cable ( Cu )	Nos.	4						
15	4C x 4 Sq. mm 2XFY Cable ( Cu )	Nos.	4						
17	3C x 6sq. mm YWY cable ( Cu )	Nos.	12						
V	WIRING ACCESSORIES								
	Notes								
	1) Rates for point wiring shall include supply installation of Wires wiring accessories such as angle holders ceiling roses as required. conduits, conduit accessories such as junction boxes, Ts, elbows etc. Switches, sockets fixtures shall not be included in the point wiring rates. These will be counted paid separately.								
1	Supply, installation, testing commissioning of point wiring for light points, power points. Point wiring for primary point shall include wiring from Distribution Board upto First point of the circuit and shall be measured in nos. Secondary points shall also be measured in nos and shall include the remaining light points of the circuit controlled from same distribution board where primary points are controlling. The Power points shall be measured in Nos. Cost of GI conduits and accessories shall be included.								
	Average point length of primary secondary to be derived by Contractor, from the drawing provided AND + 1Mtr Measured Radially								
a)	Primary Light points controlled by MCB (3R x 2.5 sqmm wire)	Nos	8						8
b)	Secondary Light points looped in the same circuit. (3R x 2.5 sqmm wire)	Nos	25						25
2	Supply, installation, testing commissioning of point wiring for light points, power points. Point wiring for primary point shall include wiring from Switch Board upto First point of the circuit and shall be measured in nos. Secondary points shall also be measured in nos and shall include the remaining light points of the circuit controlled from same switch board where primary points are controlling. The Power points shall be measured in Nos. Cost of FRLS PVC conduits, na switch switch board and accessories shall be included.								
a)	Primary Light points controlled by Switch (3R x 2.5 sqmm wire)	Nos.	2						2
c)	DB to SB SB to SB circuit wiring For Switch Operated Primary point @ SB to SB loop point								
	Wiring for switch board controlled by MCB already installed in DB by using 3 X 2.5 sq. mm flexible LSZH copper wires in 25mm GI conduits as per IS 9537 part 1 or surface mounted	Mtrs	10						

*Amir Noor*



*OK Sumbal 18/8/24*





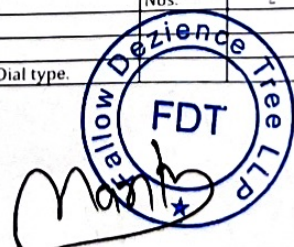


HVAC work, AJ Kitchen- Ahmedbad

PO QTY

Measurement Sheet

Sr No.	Item Code	Item Name	UOM	Quantity	Length	Width	Height	Nos	Unit	Qty
1		HVAC High Side work and Low side Work for AJ Kitchen Ahmedabad								
2	1	CHILLED WATER TYPE CEILING SUSPENDED AHU (AIR HANDLING UNIT)								
3	1.1	CEILING SUSPENDED AHU								
12		Contractor shall design the chilled water coil according to the following conditions								
13		a. Coil air entering temperature - 75.4°F DB								
14		b. Coil air leaving temperature - 54 deg. F DB 52.99 deg. F WB								
15		c. Chilled water temperature entering - 6.0 deg. C 42.8 deg. F								
16		d. Chilled water temperature leaving - 13.3 deg. C 55.9 deg. F								
17		Make VTS Zeco Citizen								
18		Type Capacity Tonnage ESP No. of								
19		(Cfm) TR (mm WG) Rows								
20	a	CS AHU 1500 4.32 25 4 6	No.	1						
29	2	CHILLED WATER PIPING WITH INSULATION								
30	2.1	CHW PIPE								
31		SITC of MS Heavy duty class C ERW Chilled Water pipe conforming to IS 1239 - 2004 primer painted including bends, tees, MS supports, PUFF saddles, anchor fasteners, steel angles and any other material required to complete the work. The piping flange connection bolts, washers and nuts should be hot dipped galvanised. Flourscent Plastic Sticker paint shall be applied to indicate Water flow directions. Only End flanges to be used for capping of pipes. Table E of BS code for flange thickness to be adhered.								
32		Make Jindal Hissar TATA								
33	a	F 32 mm	Rmt	20						
34	2.2	CHILLED WATER PIPING INSULATION - INTERNAL USE								
35		SITC of insulation for chilled water. piping. For internal pipe - Stick 25mm thick Nitrile rubber class O Closed cell nitrile rubber with anti-microbial coating on it. Insulation shall have Thermal conductivity of 0.033 W (m.K) and water vapor permeance of 0.10. Joints should be sealed with 50 mm wide 3 mm thick self adhesive tape and putting PVC bands at all supports.								
36		Make Armaflex K-flex								
37	a	F 32 mm	Rmt	20						
38	2.3	BALL VALVE								
39		SITC of following sizes of Ball Valve consist of Cap, Brass Body. Rated for 150 psi SWP, 600 psi WOG Pressure Two-piece construction; with brass body, regular port, B-16 chrome-plated ball and stem, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, vinyl covered steel handle, threaded or soldered ends and extended stem for insulated piping. Same valve shall be used as a Drain valve.								
40		Make Zoloto Audco Kitz								
41	a	F 32 mm	Nos.	3						
42	2.4	BALL VALVE WITH Y-STRAINER								
43		SITC of following sizes of Brass Ball Valve with Y-Strainer consist of Cap, Brass Body. Rated for 150 psi SWP, 600 psi WOG Pressure Two-piece construction; with brass body, regular port, B-16 chrome-plated ball and stem, replaceable "Teflon" or "TFE" seats and seals, blowout-proof stem, vinyl covered steel handle, threaded or soldered ends and extended stem for insulated piping. Filter element shall be of non magnetic SS sheet with perforation.								
44		Make Zoloto Audco Kitz								
45	a	F 32 mm	No.	1						
46	2.5	PIBCV VALVES								
47		SITC of Pressure Independent Balancing cum Control Valves (PIBCV) including integrated motorised control valve and balancing device for combined flow and water balancing requirement. Valve body to be rated for PN 16. The valve design flow rate should be factory calibrated with + - 5% flow accuracy. Valve shall have necessary measuring ports, drain port, flanges etc.. Valve shall also provide temperature sensor with necessary cabling (min 2mtr length to be considered with each valve). The balancing to be done through microprocessor based hand held terminal POT and the same results shall be furnished in the water balancing report as part of commissioning report and handing over manual.								
48		Make Oventrop Siemens Danfoss								
49	a	F 32 mm	No.	1						
50	2.6	Auto Air Vent Valves								
51		Make Anergy Flamco								
52		Providing and fitting Auto Vent Valves.								
53	a	SITC of Auto air vent in each risers common headers AHU. 3 4 auto vent valves at each coil riser header.	Nos.	2						
54	2.7	SITC of Pressure gauges Thermometers								
55		Make H Guru Waree								
56		Necessary pressure gauges and thermometers 4 Dial type.								



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57 a	Water Pressure gauges 150mm dial complete with gauge valves, mounting, fittings and copper tubing extension wherever required. Pressure gauges Range 0-10 Kg CM2	Nos.	2						
58 b	Thermometers of the mercury in glass stem type and copper separable well complete with guard etc., of industrial grade mounting on water lines. Length 9 12 inches, Thermometer, Range 0-50 deg C	Nos.	2						
59 c	Thermowells	Nos.	4						
61 2.8	INSULATED CONDENSATE DRAIN PIPE								
62	SITC of UPVC pipes of following sizes for drain with necessary supports and fittings such as elbows, tees reducers etc. The insulation line to be insulated with nitrile rubber insulation of thickness 9mm and wrapped by weather proof protection tape. The Pipe wherever concealed should also have a parallel line as a standby arrangement in case of block of primary pipe.								
63	Make Supreme, Prince, Astral								
65 b	F 32 mm	Rmt	10						
73	SUB-TOTAL								
74 3	VENTILATION SYSTEM								
75 3.1	KITCHEN DRY SCRUBBER								
76	SITC of Dry scrubber - Electrostatic Air cleaner with starter panel as per specifications, suitable for following capacities, including electrical starter panel. The Air filtration efficiency should be between 90 to 95% units shall be staked one above other or side by side as per site requirement, if vendor will propose multiple units.								
80	Efficiency - Upto 95%, meets NIOSH 5026 Oil Mist Test								
81	Particle Size - Collects particles as small as 0.01 microns								
82	Motor - Sealed ball bearings UL, single phase.								
83	Cell - Ionizing voltage - 12 KVdc								
84	Collector voltage - 6 KVdc								
85	One cell comprising of 9 ionizing wires and 25 collection plates								
86	Controls - Auto cut-off when door is opened. Indicator lights for fault, normal or wash function.								
87	Pre-filter - Aluminium mesh, washable Dry contact for BMS.								
88	Make Rydair Espair								
89	CFM - 3100	No.	1						
90	SUB-TOTAL								
91 4	SHEET METAL WORKS								
92 4.1	FACTORY FABRICATED G.I RECTANGULAR DUCT								
93	Supply, Fabrication, Testing, and Commissioning of Factory Fabricated GI Sheet Metal 120GSM Rectangular boxed ducting, Plenums, Cows, Elbows with turning vanes, Splitters, Reducers, Flanges, Collars etc as per IS and Installaton as per SMACNA standards. The complete ducting shall be provided with MS Supports, Rods, Angles, Flanges, Bracing, Rubber Gaskets, Wooden frames, Canvas Connections, etc. as per drawings and specifications.								
94	GI Sheet Makes Tata, Jindal, SAIL, Ispat								
95	Make Rola Star, Zeco Ductofab								
98 c	22 Gauge GI Sheet Metal Duct (751-1500mm)	Sq.mtr	15						
99 d	24 Gauge GI Sheet Metal Duct (0-750mm)	Sq.mtr	75						73.7965
									31.157
	Supply air duct	Sq.mtr	1.6	1.76		1			2.816
	Supply air duct	Sq.mtr	1.45	0.7		1			1.015
	Supply air duct	Sq.mtr	1.35	1.98		1			2.673
	Supply air duct	Sq.mtr	1.35	1.8		1			2.43
	Supply air duct	Sq.mtr	1.35	0.99		1			1.3365
	Supply air duct	Sq.mtr	1.1	0.63		1			0.693
	Supply air duct	Sq.mtr	1	2		2			4
	Supply air duct	Sq.mtr	1.075	0.3		6			1.935
	Supply air duct	Sq.mtr	1	0.75		3			2.25
	Supply air duct	Sq.mtr	1.1	0.8		1			0.88
	Supply air duct	Sq.mtr	1.4	1.425		1			1.995
	Supply air duct	Sq.mtr	1.4	1.5		1			2.1
	Supply air duct	Sq.mtr	1.125	0.3		1			0.3375
	Supply air duct	Sq.mtr	1.1	0.7		6			4.62
	Supply air duct	Sq.mtr	1.2	1.73		1			2.076
		Sq.mtr							42.6395
	Fresh & Exhaust air duct	Sq.mtr	1.4	2.4		5			16.8
	Fresh & Exhaust air duct	Sq.mtr	1.4	1.275		1			1.785
	Fresh & Exhaust air duct	Sq.mtr	1.4	1.1		1			1.54
	Fresh & Exhaust air duct	Sq.mtr	1.4	1.2		2			3.36
	Fresh & Exhaust air duct	Sq.mtr	1.4	1.44		2			4.032
	Fresh & Exhaust air duct	Sq.mtr	1.4	1.3		2			3.64
	Fresh & Exhaust air duct	Sq.mtr	1.2	1.3		1			1.56
	Fresh & Exhaust air duct	Sq.mtr	0.8	0.9		1			0.72
	Fresh & Exhaust air duct	Sq.mtr	0.8	2.1		1			1.68
	Fresh & Exhaust air duct	Sq.mtr	1.1	0.75		1			0.825
	Fresh & Exhaust air duct	Sq.mtr	1.4	0.71		1			0.994
	Fresh & Exhaust air duct	Sq.mtr	1.4	0.95		1			1.33
	Fresh & Exhaust air duct	Sq.mtr	1.3	0.5		1			0.65

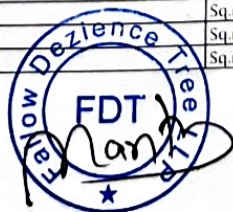


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	Fresh & Exhaust air duct	Sq.mtr		1.3	0.35		1		0.455
	Fresh & Exhaust air duct	Sq.mtr		1.4	0.35		1		0.49
	Fresh & Exhaust air duct	Sq.mtr		1.4	1.2		1		1.68
	Fresh & Exhaust air duct	Sq.mtr		1.2	0.2		1		0.24
	Fresh & Exhaust air duct	Sq.mtr		0.55	0.45		1		0.2475
	Fresh & Exhaust air duct	Sq.mtr		0.94	0.65		1		0.611
100	4.2	EXTRUDED ALUMINIUM CEILING GRILLES							
101		Supply, Installation, Testing and Balancing of Powder coated aluminium supply air grilles complete with removable inner core as per approved shop drawing and specifications. The area of grille can be of any geometrical shape (Square rectangular Linear). The grilles shall be with 15 30 45° deflections as per requirement. The Colour shall be decided and approved by client and architect.							
		Sq.mtr	3						
102		Make Cosmos, Air Master System Air							
103	4.3	DOOR TRANSFER GRILLE							
104		SITC of Aluminium extruded powder coated Door transfer grills.							
105		Door transfer grille (Back to Back)							
		Sq.mtr	1						
106		Make Cosmos, Air Master System Air							
107	4.4	EXTRUDED ALUMINIUM SQUARE AIR DIFFUSER							
108		Supply, Installation, Testing and Balancing of Powder coated aluminium supply air square diffuser complete with removable inner core as per approved shop drawing and specifications. The diffuser shall also be provided with Black painted GI opposed blade damper (OBD) of required sizes. The diffuser shall be suitable for gypsum grid ceiling. The Colour shall be decided and approved by client and architect.							
109		Make Cosmos Ruskin Titus Air Master							
110	a	SQUARE DIFFUSER FOR GRID CEILING 600X600mm							
111		Supply Air Diffuser with OBD - Neck Size 225x225mm							
		Nos.	1						
112	4.5	MULTI LEAF VOLUME CONTROL DAMPER							
113		SITC of opposed blade aerofoil type 1.2 mm thick Anodized Aluminium volume control dampers for ducts shall be provided with concealed gears, plastic operator and quadrants for manual control of volume of air flow and for proper balancing of the air distribution system as per the approved shop drawings and specifications.							
		Sq.mtr	1						
114		Make Cosmos, Air Master System Air							
115	4.6	OPPOSED BLADE DAMPER							
116		SITC of Aluminium Opposed blade dampers black powder coated vertical blades type for supply air collar. The damper should be gear operated type.							
		Sq.mtr	1						
117	4.7	CANVAS CONNECTION							
118		SITC of Flexible connections between mouth piece of Fan and initial piece of ducting with inspection zip. Flexible connections shall be double thickness non-flammable material (Fire retardant type).							
119	a	For AHU							
		No	1						
121	4.8	CURTAIN TYPE FIRE DAMPER							
122		SITC of fire dampers consist of 16G GI frame, 20G GI interlocking blades secured with SS springs, blades outside airstream clamped with fusible link UL-555 listed with melting point 165 225°F, etc; as per the approved shop drawings and specifications.							
123		Make Carryaire System Air Dynacraft Air Master							
125	b	Fusible link as per specification UL 555							
		No	1						
126		NOTES							
127		The ducting support should be as per tender specification and additional supports are to be provided by Contractor as decided by Consultant.							
128		Muslin cloth cover for all air outlets during construction.							
129		Pressure testing of complete duct work as per DW SMACNA standard.							
130		Silicon sealant for longitudinal transverse joints as per specification.							
131		Diffusers grilles shall be powder coated as per color approved by Architect.							
132		SUB-TOTAL							
133	5	THERMAL ACOUSTIC INSULATION							
134	5.1	THERMAL INSULATION							
135		Supply fixing of Thermal insulation for supply air duct using 13mm thick class 0 Closed cell nitrile rubber with anti-microbial coating on it. Insulation shall have Thermal conductivity of 0.033 W (m.K) and water vapor permeance of 0.10. Joints should be sealed with 50 mm wide 3 mm thick self adhesive tape. The duct shall be stick with recommended adhesive.							
		Sq.mtr	30						31.157
		Sq.mtr		1.6	1.76		1		2.816
		Sq.mtr		1.45	0.7		1		1.015
		Sq.mtr		1.35	1.98		1		2.672
		Sq.mtr		1.35	1.8		1		2.43
		Sq.mtr		1.35	0.99		1		1.3365
		Sq.mtr		1.1	0.63		1		0.693



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			1	2	2	4
		Supply air duct	Sq.mtr			1.935
		Supply air duct	Sq.mtr	1.075	0.3	2.25
		Supply air duct	Sq.mtr	1	0.75	0.88
		Supply air duct	Sq.mtr	1.1	0.8	1.995
		Supply air duct	Sq.mtr	1.4	1.425	2.1
		Supply air duct	Sq.mtr	1.4	1.5	0.3375
		Supply air duct	Sq.mtr	1.125	0.3	4.62
		Supply air duct	Sq.mtr	1.1	0.7	2.076
		Supply air duct	Sq.mtr	1.2	1.73	
136		Make Armaflex K-flex				
137	5.2	ACOUSTIC INSULATION				
		Supply fixing acoustic insulation for ducting using Class 1 closed cell elastomeric insulation of 10mm thick Nitrile rubber insulation adhesive, longitudinal transverse joints sealed with adhesive in neat clean manner. Material shall be processed Nitrile Rubber foam with anti-microbial protection. Insulation shall have thermal conductivity of 0.047 W (m.K) and density of 140 - 180 kg m <sup>3</sup> .	Sq.mtr	5		
138						
139		Make Armaflex K-flex				
140	5.3	THERMAL INSULATION FOR KITCHEN VENTILATION DUCTS				
		SITC of Glass Fibre Blanket Insulation material bonded with Thromosetting Resin, with factory applied laminated aluminium foil of 22 microns with fibre glass backing. Further, wire mesh along with 7 mil cloth shall be applied on above the insulation with proper adhesive. Nominal density 32 Kg CuM. Thermal conductivity, < 0.033 W m.K at 24 degreeC. All Insulation material and adhesives shall be as per Class I for surface spread and in accordance with BS 476, Class O for non-combustible grade.	Sq.mtr	55		42.6395
141			Sq.mtr	1.4	2.4	16.8
		Fresh & Exhaust air duct	Sq.mtr	1.4	1.275	1.785
		Fresh & Exhaust air duct	Sq.mtr	1.4	1.1	1.54
		Fresh & Exhaust air duct	Sq.mtr	1.4	1.2	3.36
		Fresh & Exhaust air duct	Sq.mtr	1.4	1.44	4.032
		Fresh & Exhaust air duct	Sq.mtr	1.4	1.3	3.64
		Fresh & Exhaust air duct	Sq.mtr	1.2	1.3	1.56
		Fresh & Exhaust air duct	Sq.mtr	0.8	0.9	0.72
		Fresh & Exhaust air duct	Sq.mtr	0.8	2.1	1.68
		Fresh & Exhaust air duct	Sq.mtr	1.1	0.75	0.825
		Fresh & Exhaust air duct	Sq.mtr	1.4	0.71	0.994
		Fresh & Exhaust air duct	Sq.mtr	1.4	0.95	1.33
		Fresh & Exhaust air duct	Sq.mtr	1.3	0.5	0.65
		Fresh & Exhaust air duct	Sq.mtr	1.3	0.35	0.455
		Fresh & Exhaust air duct	Sq.mtr	1.4	0.35	0.49
		Fresh & Exhaust air duct	Sq.mtr	1.4	1.2	1.68
		Fresh & Exhaust air duct	Sq.mtr	1.2	0.2	0.24
		Fresh & Exhaust air duct	Sq.mtr	0.55	0.45	0.2475
		Fresh & Exhaust air duct	Sq.mtr	0.94	0.65	0.611
142		Make Armaflex K-flex				
143		Note				
144	a.	Insulation work to be coordinated with other agencies and repair to be included by contractor as per site requirement.				
145	b.	Vendors to take care of the installation, if any damages takes place the vendor to repair or replace and hand over to clients in good and acceptable condition.				
146	c.	Thermal insulation shall be internal for Elliptical Exposed ducting.				
147		SUB-TOTAL				
148	6	ELECTRICAL WORKS				
149	6.1	STARTER PANEL				
		SITC of indoor outdoor, wall mounting type 3PH, 415VAC MOTOR STARTERS IN CRCA SHEET STEEL ENCLOSURE with necessary supporting brackets and required accessories, etc., The Enclosure shall be provided with knockouts suitable for cable termination at TOP BOTTOM for incoming and outgoing power cables of A2XFY type and size specified. The starters shall be complete with suitable MPCB MCCB, Contactor, Bi-metal O L relay with SPP, ON OFF Push buttons, on off trip indication Lamp, on off push button, phase indication Lamp. Selection of relay, contractor, MPCB MCCB etc. as per Type-2 Coordination. Panel shall have provision to connect with BMS.				
150						
151	a	Suitable for 1500 CFM AHU, DOL Starter Panel	No	1		
152	6.2	POWER CABLING				
		Supply, handling, laying effecting proper connections testing and commissioning of following sizes of 1.1 KV grade XLPE insulated FRLS Aluminium Copper conductor cables laid over MS supports cable racks or fixing on walls including clamping the cable to supports in an approved manner as required complete with Copper earthing as specified for continuous earthing along with cable. All complete as required and as per final instruction as given by Owners Consultants and as per Technical specifications. Earthing shall be measured separately and shall be connected in two runs. Power to ELCB to be provided near each ODU by electrical contractor.				
153						



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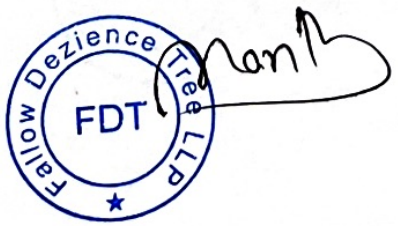
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**BOQ - Plumbing Work**

S.N	Item Name	PO QTY		Measurement Sheet					
		UOM	Quantity	Length	Width	Height	Nos	Unit	Qty
A	WATER SUPPLY PIPING: (PVC Pipes conforming to ASTM D-2918, SDR-11 grade and CPVC solvent weld fittings like elbows, tees, couplers, brass threaded adaptors, insert ring etc. suitable for (domestic and flushing) cold applications) cold, concealed piping within wall floor including jointing with fittings using solvent cement, brass threaded end fittings for making connection to fixtures. The work shall also include chasing the walls with machine wherever required for concealed piping and making good the same after laying of pipes. necessary pressure testing Chasing finishing shall be done with 1:1 cement mixed mortar. restore the same original condition for internal and shaft piping, including necessary hot deep galvanised supports vertical horizontal, as per direction of Site in-charge direction. [The rate shall include supply of SS screws and nut bolts etc chasing in walls done by machine] [For Domestic and Flushing water-Toilet internal] (Pipe shall be tested with 1.5 times working pressure as covered in specifications)								
1.1	20 mm Dia	Rmt	40						
1.2	25 mm Dia	Rmt	10						46
1.3	32mm Dia	Rmt	5						
2	Providing Fixing of gun metal heavy Ball Valves-PN-16 (Approved makes as covered in specification) screwed type for water system of the following diameters. Valve shall have with unions								
2.2	25mm Dia								
2.3	32mm Dia	Nos:	1						
3	Providing fixing, testing and commissioning capstan make Water Meter including providing fixing matching isolation valves, strainer, non-return valve, complete with all necessary fittings etc screwed type (5Kgs Sdcm) Valve shall have with union.	Nos:	1						
3.1	25 mm Dia incoming line	Nos:	1						
4	Supply, installation, testing, commissioning of Storage Type Electric Hot Water Generator of mentioned capacity, suitable for 3 KG/cm2 pressure, Wall Mounted Floor standing type, with Auto Shut-off Thermostat, along with isolation Valves, Air Release Valve, SS flexible connections and all other std accessories	Nos:	1						1
4.1	20 L Capacity								
6	SITE of ACO grease trap - model Lippmohli S-Capacity -32 lit (0.5 LPS) with all required accessories (Optional if not part of kitchen consultant Scope)	Nos:	1						1
7	SITE of SANITOM2 - Heavy Duty Duplex Drain Pump with all required accessories	Nos:	1						1
8	RO PACKAGE PLANT: Supply, installations, testing and commissioning of Package RO plant 100 Lit/hr including required pressure pumps, panel, pressurised tank if any, all accessories, valves and membrane cleaning system, ultra-violet sterilizer, internal piping, pressure gauges etc (System shall be Auto fill stop and Auto empty start mechanism)	No	1						1
B	DRAINAGE: UPVC SWR pipes conforming to IS 13592-92 including fittings conforming to IS-14935-99 and agrn type pipes above 100 mm dia conforming to IS 4985, cutting the pipes to required lengths, laying in the position to required grade and level, jointing, supporting with PVC cleat, hot deep galvanised bracket supports, hot deep galvanised nut-bolts, anchor fasteners, PVC coated U-clamp, testing and rectifying leakages for piping within vertical shafts supported on wall hang below slab etc with all material labor complete and as directed. [The Rate shall include supply and fixing of holdip galvanised bracket nut bolts PVC Coated U-Clamp and screws] Vertical line bracket shall be fixed at every 0.8 mtr [ For Waste-Vent-Internal and vertical shaft ]								
1.1	40mm Dia	Rmt	5						
1.2	50mm Dia	Rmt	15						15
1.4	75mm Dia	Rmt	20						11
1.5	100 mm Dia	Rmt	5						
2	Supply, install PVC Floor Trap for the following pipes including making all approved quality Solvent cement joints with material labour etc. all complete as per direction of the engineer-in-charge	Nos:	2						2
3	Supply, install PVC Multi Floor Trap for the following pipes including making all approved quality Solvent cement joints with material labour etc. all complete as per direction of the engineer-in-charge	Nos:	1						2
D	SS GRATING								
	Only installations testing and commissioning of SS Gratings								1
2	Making chamber in brick work including internal tiling etc for SS Grating size 350mm x 350mm, in 16 swg 25mm x 25mm Square Pipe around the frame and 20mm x 20mm Square pipe in center of frame with SS perforated tray (304 SWR). Complete as per architectural detail drawing Site Engineer's instruction	Nos:	3						3



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8/18/20