

## VJ ENGINEERS

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S.No.	DESCRIPTION	UNIT	QTY	RATE		Amount		Recomonded makes
				Supply	Installation	Supply	Installation	
	AIR HANDLING UNIT							
1	Modular Double skin floor mounted EUROVENT Certified Air Handling Unit 4400CFM / 11 TR / 150mm SP made out of 45 plus or minus 2mm thick PUF insulated panels Thermal break aluminium profile frame work with 0.8mm thick pre painted / powder coated inner and outer skins comprising of mixing box with fresh air and return air dampers, pre filters with 10 and 5 microns combination filters in single frame, Interlaced/Intertwined DX Cooling Coil suitable for connecting 2 nos of 8.5TR capacity 1W plus 1S out door condensing units, SS304 drain pan with , blower section with Nicotra / Kruger make direct drive/ Plug type fan, vibration isolators, EFF1 motor and blower section with on/off switches to operate from outside, limit switch for the fan section access door with a view port, fine filter section with 3 microns filters inspection doors for all filter and fan sections and damper at the outlet of unit. Ports for differential pressure gauges across all filters and blower to measure differential pressure.	No	1.00	613,800.00	25,000.00	613,800.00	25,000.00	VTS
2	SITC of air cooled condensing units with two scroll compressors, air cooled condenser, power panel, vibration isolating pads, stand for ODU, thermostat, etc. of the following capacities. The nominal capacity of the condensing unit shall be as under. Air cooled condensing unit shall have horizontal discharge. All refrigerant piping accessories sight glass, drier, expansion valve, etc. shall be supplied with the condensing units and suitable to connect above AHUs. Refrigerant shall be R 407C / R 410A. Necessary thermostat, control wiring, etc. shall be included. Derating of the unit shall not be more than 15percentage under 45 deg. C ambient temperature. Condensing unit shall be capable of operating up 50 deg. C ambient temperature. <b>11 TR capacity.</b>	No	2.00	200,277.00	15,000.00	400,554.00	30,000.00	Voltas/Blue Star
3	SITC of Magnehelic gauges across pre and fine filter at AHUs including mounting arrangement, SS nozzles, food grade PVC tubing, etc.	nos	3.00	14,200.00	1,000.00	42,600.00	3,000.00	Aerosense
4	SITC of Magnehelic gauges to measure the room differential pressures in operation theatres with SS mounting box, SS nozzles, food grade PVC tubing, etc.	nos	2.00	12,650.00	1,000.00	25,300.00	2,000.00	Aerosense

5	SITC of Flange type, Flame proof FLP duct heaters of 5 kW or 10 kw capacity with Mineral Filled AISI SS304/SS321 Sheathed Tubular Heater with GI Helical fins, Tube dia 8.2mm min and Helical Finn dia 25mm min, enclosed in the frame, FLP Terminal box etc., Nickel Chromium Inner Element, Silicon Sealing to Restrict Moisture pickup, Silver brazed mounting plate etc., and heaters shall be controlled with PID thyrestor controller based on the analog output signal of 0-10 V DC of controller . And this should have saftey thermostat and cutouts and air stat etc. all safety controls. The capacities as follows and sizes of the heaters shall be as per the duct sizes and approved drawing.	No	1.00	108,000.00	12,500.00	108,000.00	12,500.00	Matrusree
6	SITC of 20/21 G hard drawn copper refrigerant piping with all fittings, supports, insulation with 19 mm thk class O nitrile rubber insulation with factory laminated glass cloth for physical protection and UV protection etc. Quality of copper piping fittings shall be suitable for 18 G piping. Copper piping shall be clamped at every 1.5 mt. distance. copper piping shall be laid on inverted GI perforated cable trays and clamps as per specification inside the building. Copper piping on the terrace shall be laid with bottom and top cable tray. Thickness of the tray shall be 1.6 mm. Copper pipe size shall be as per OEM standards.							Mandev/Rajco Copper Pipe & Tubing is k -flex
a	Liquid line with fittings for 11.0TR Circuit	Rmt	12.00	1,316.00	290	15,792.00	3,480.00	
b	Suction line with fittings for 11.0TR Circuit	Rmt	12.00	1,863.00	290	22,356.00	3,480.00	
7	SITC of CPVC drain ping with supports, clamps and 9 mm thk. Nitrile rubber tube insulation of the following sizes. Insulation shall have factory laminated glass cloth. <b>25mm Dia</b>	Rmt	10.00	150.00	66	1,500.00	660.00	Ajay/K-flax
8	SITC of Factory fabricated and boxed ducting using Aluminium Sheets / coils, should be fabricated as per SMACNA, galvanised hardware and supports, silicon sealant at all longitudinal joints, Galvanized /GI Electroplated iron angle flanges for all the joints, bracing angles and minimum 5mm thick neoprene rubber gasket.- Duct pressure testing at 75mm to be carried out before insulatiting the duct. pressure testing to be done as per SMACNA. Procedure to be approved by consultant.							
a	20G	Sqm	5.00	2,070.00	300	10,350.00	1,500.00	JSW
b	22G	Sqm	175.00	1,850.00	300	323,750.00	52,500.00	JSW
9	Aluminium low leakage aerofoil design volume control dampers Suitable for manual and motorised operation.	Sqm	1.00	14,000.00	1980	14,000.00	1,980.00	Prabhavati,Navajothi & Airmaster
10	CBRI approved 16G GI Spring return actuated fire dampers rated for 90 minutes with limit switch.	Sqm	1.00	18,000.00	1650	18,000.00	1,650.00	Prabhavati,Navajothi & Airmaster
11	Supply of Duct and make SS304 perforated (capsule/round) Grill for Supply Air	Sqm	4.00	9,686.00	1980	38,744.00	7,920.00	
12	SITC of Collar Dampers made of Al. extrusions with black powder coating for Grilles.	Sqm	1.00	8,500.00	1980	8,500.00	1,980.00	Prabhavati,Navajothi & Airmaster
13	SITC of Aluminium powder coated Fresh air and Exhaust Louvers of non-vision type with nylon mosquito net etc.	Sqm	1.00	9,500.00	1980	9,500.00	1,980.00	Prabhavati,Navajothi & Airmaster

14	Duct insulation with Class O Nitrile Rubber material by using adhesive of following thickness.							
a	32mm thickness with 7 mil glass cloth and two coats of UV protective paint - for Exposed Supply air ducts	Sqm	30.00	750.00	300	22,500.00	9,000.00	K-Flax
b	25mm thickness with 7 mil glass cloth and two coats of UV protective paint - for Exposed Supply air ducts	Sqm	40.00	650.00	300	26,000.00	12,000.00	K-Flax
c	25mm thickness - for supply air ducts for Non exposed	Sqm	110.00	760.00	300	83,600.00	33,000.00	K-Flax
d	19mm thickness - for Retrun air ducts for Non exposed	Sqm	35.00	410.00	300	14,350.00	10,500.00	K-Flax
15	Supply and Installation of AL-powdercoated bottom loading type HEPA filter modules with bewel gear arrangement damper with access from clean room suitable to house the following size flange type HEPA filters including GI pressure plate, GI cleats with bolts and pressure drop & Integrity testing ports into room.							
a	600 X 600 X 150MM - HEPA filter - Module height <=350 mm	Nos	6.00	14,000.00	2000	84,000.00	12,000.00	Ultrafil
16	Supply and Installation of H14 HEPA filters with 99.995% efficiency of the following sizes							
a	600 x 600 x 150 mm - 1000 CFM	Nos	6.00	16,000.00	1100	96,000.00	6,600.00	Ultrafil
17	Supply and Intsallation of 25mm thick 10 microns filter of required sizes for Return raisers	Nos	6.00	4,900.00	150	29,400.00	900.00	Ultrafil
18	4C x 1.5 Sqmm Copper Flexible cable	Rmt	40.00	235.00	80	9,400.00	3,200.00	Polycab
19	MS Supports	Kgs	130.00	140.00	65	18,200.00	8,450.00	
20	Supply, fabrication & installation of AHU Supply & Retrun canvas flexible	Nos	2.00	4,600.00	2000	9,200.00	4,000.00	
<b>Total</b>						<b>2,045,396</b>	<b>249,280</b>	
							<b>2,294,676</b>	