



BILL OF QUANTITIES FOR HVAC - FITOUT WORKS							Date:	31.10.2025
S.NO	DESCRIPTION OF WORK	Approved Makes	UNIT	TOTAL QTY	UNIT RATE		AMOUNT IN INR	
					SUPPLY	INSTAL.,	SUPPLY	INSTAL.,
1	SITC of Double skin construction, Smart HORIZONTAL FLOOR MOUNTED Mounted Air handling Units with CHW- Coil connected thermal break profiles cabinets - Pl refer the layouts for quick understanding of the room dimentions and the unit sizing to be done accrodingly	ZECO						
	cabinet casing modular 45+/- 2mm thick double skin factory assembled / modular Double Skin Floor mounted Air Handling Units (AHU) with thermal break profiles complete with double skin insulated with CFC free polyurethane foam (PUF) panels of 42 Kg/cum density sandwiched between 0.63 mm thick Sheets. Outer skin shall be precoated GI. sheet. Food grade self adhesive coated epdm gasket to be provided between panels and structure of the AHU to ensure the entire housing is airtight.							
	The AHU shall be supplied with Fan: Backward Curve, DIDW type Centrifugal Fan with Squirrel cage induction motor, GSS frame supporting frame work, spring type vibration isolators, base frame, IE3 Motor shall be suitable for Variable Frequency Drive operation and 415±10% volts, 3 phase AC supply. Frequency range shall be 10% to 100%, the fan outlet velocity shall be limited to 1800 FPM							
	AHU with Dx- Based cooling coils: the coil shall be suitable for Direct Expansion (DX) copper tube / aluminium fin coil designed for connection to VRF outdoor units. should have Designed for continuous operation at VRF system pressures and variable capacity modulation. The fins shall be with aluminium corrugated fins, hydrophilic coated for corrosion resistance, the fin spacing is recommended min of 12 nos / inch. the face velocity of cooling coil shall be desinged for max of 500 FPM. No of Rows is 6 / 8 Rows based on selections and TR. The coil header shall be Copper. the working pressure is Working pressure is to be desinged to suite to the VRF OEM recommended with R410A, the coil pressure drop max to be limited to 15mmWC. <u>Refrigerant side pressure drop to be minimized; OEM to confirm circuiting and pressure drop.</u>							
	Signal interface: If AHU coil requires the VRF system to control EEV/EEV, include the VRF manufacturer's interface PCB mounted in AHU. Thermostat is to provide AHU-mounted thermostat & wiring per VRF communication protocol. Interlocks to be consdiered for AHU fan with VRF indoor control , pl consider the recommended logics as per VRF OEM recommended, cost should be incl.							
	Copper piping should be treated with protective coats: Use a high-performance epoxy primer followed by a polyurethane topcoat (designed for coastal environment), applied over properly prepared copper substrate (clean, degreased, slightly roughened if required) before insulating the pipes.							
	Important: VRF ODU with refrigerant (R410A / R407c), internal piping circuiting, and recommended external components. Treat the spec above as industry-standard recommendations — confirm final refrigerant type, max allowable working pressures, allowable line lengths/height differences and any proprietary connection-kit items with the VRF OEM before procurement.							
	Filters: Each unit shall be provided with a factory assembled filter section containing washable synthetic type air pre filters bag type fine filter media, class MERV-08 & Provisional space for MERV 13 ounted on Aluminum Frame. Filter bank framework shall be fully sealed and constructed from GSS. The efficiency of the filters shall be 99%down to particle size of 10 & 3 microns as per IS 7613, and ASHRAE 52.1 & ASHRAE 62.1 standards/CEN standards 13779-2007.AHU shall be supplied with one set of additional pre filters for pre/commissioning.							
	AHU shall be supplied with one set of pre commissioning filters & Cora cloth to provide while commissioning of the system							
	Unit shall be offered with required inlet section mixing Boxes & aerofoil dampers & All Duct conn. To the unit shall be provided with double layer fire retardant flex connection with 200mm long & zip for 6 inch length @ outlet							
	AHU should have marine lamp including adequately rated LED bulb inside the AHU Cabinet. AHU inspection door should have View window with perfectly sealed gaskets on either side to ensure air tightness. all AHUs shall be provided with door limit switch and also door safety GI guard. All internals shall be powder coated for corrosion resistance. required cabling for integrating mirie bulb is incl. in unit cost							
	Static pressure: the Indicated static pressure and motor rating is only provisional. Contractor to calculate static pressure based on final approved construction drawing and pressure drop of finalized Equipment & submit for review / approval to the consultants.							
	Noise Level: To ensure noise level < 65 dBA all around the AHU.							
	Unit static Pressure: TSP-85mmWC / 35mm ESP (note: while unit TSP calulations by AHU supplier, where the unit filter meadia Pr. drop (MERV8+13) to be considered for clean to dirty average condition)							
	Unit Capacities							
1.1	FLOOR MOUNTED AHU - 4th Floor - 13000CFM / 34 TR / 85mm TSP (This Incl. the VRF ODU Conn. Kits as per OEM Recommended)		Nos	2	4,68,913	30,000	9,37,825	60,000
1.2	FLOOR MOUNTED AHU - 2nd Floor - 13000CFM / 34 TR / 85mm TSP (This Incl. the VRF ODU Conn. Kits as per OEM Recommended)		Nos	2	4,68,913	30,000	9,37,825	60,000
1.3	FLOOR MOUNTED AHU - 1st Floor- 13000CFM / 34 TR / 85mm TSP (This Incl. the VRF ODU Conn. Kits as per OEM Recommended)		Nos	2	4,68,913	30,000	9,37,825	60,000

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					SUPPLY	INSTAL.,	SUPPLY	INSTAL.,
	VRF ODU - FOR ABOVE AHU's Connect							
	VRF System ODU's MIN COP requirements: COP to comply with LEED and wellness requirement, pls refer the sheet provided separately							
2	SITC of AIR COOLED VRF System (Variable Refrigerant Flow/Variable Refrigerant) Outdoor units suitable with high efficiency heat transfer Cooling Coil suitable for Environment friendly R410 A refrigerant and 415 V+/- 10%, 50 Hz, 3 phase A/C supply complete with Hermetic inverter Scroll/DC Twin Rotary compressors, top discharge connectable to multiple indoor units. Air cooled propeller type condenser fan with DC motor drive, interconnecting piping, suction line insulation etc, Outdoor unit shall be factory assembled weather proof casing constructed from heavy gauge mild steel panels, safety devices, controls, fault alarm indications, memory storage, . The aluminium fins shall be covered with anti-corrosion resin. The VRF systems should have cooling mode. All ODUs are top discharge type units unless specified.	MIDEA						
	Copper piping should be treated with protective coats: Use a high-performance epoxy primer followed by a polyurethane topcoat (designed for coastal environment), applied over properly prepared copper substrate (clean, degreased, slightly roughened if required)							
	Lifting, Shifting, Positioning and ITC of All Capacities of VRF OutDoor Units, Pls refer the GFC Layouts for respective locations of the ODU's, this cost Incl. suitable Rubber pads & MS stands / Pedestals as per unit fitment.							
	LEED requires min COP to be higher than that mandated by ASHRAE 90.1 for VRF aircooled units							
2.1	4th Floor - AHU - VRF ODU - 44HP - (Combination of 16+16+12) (note: considered 22HP +22 HP)	Set	2	6,15,522	30,000	12,31,044	60,000	
2.2	2nd Floor - AHU- VRF ODU - 44HP - (Combination of 16+16+12) (note: considered 22HP +22 HP)	Set	2	6,15,522	30,000	12,31,044	60,000	
2.3	1st Floor - AHU - VRF ODU - 44HP - (Combination of 16+16+12) (note: considered 22HP +22 HP)	Set	2	6,15,522	30,000	12,31,044	60,000	
	SUB TOTAL - BASIC						65,06,608	3,60,000
	TOTAL - BASIC							68,66,608
	GST EXTRA @ 18%							12,35,989
	GRAND TOTAL (WITH GST)							81,02,597

TERMS & CONDITIONS

- 1 WARRENTY:- 12 MONTHS FROM THE DATE OF COMMISSIONING OR 15 MONTHS FROM THE DATE OF INVOICE WHICHEVER IS EARLIER.
- 2 THE QUANTITIES ARE ESTIMATED ONLY ACTUAL QUANTITIES WILL BILLED.
- 3 ANY CIVIL WORK LIKE CHIPPING, CORE CUTTING, SCAFFOLDING AND FALSE CEILING WORKS ARE NOT IN OUR SCOPE WORKS.
- 4 INCOMING SUPPLY NOT IN OUR SCOPE.
- 5 WATER, POWER AND STORAGE SPACE TO BE ARRANGED BY YOU AT FREE OF COST.
- 6 **WE HAVE NOT CONSIDERED COPPER PIPING, DRAIN ETC LOW SIDE WORKS IN OUR ABOVE OFFER. THEY WILL CHARGED EXTRA.**
- 7.a PAYMENT TERMS : FOR SUPPLY OF EQUIPMENT 40% IN ADVANCE ALONG WITH ORDER AND BALANCE BEFORE DISPATCH AGAINST PERFORMA INVOICE.
- 7.b FOR LOW SIDE WORKS- 20% ADVANCE, 65% AGAINST ERECTION AND BALANCE AFTER COMPLETION.
- 8 **OUT DOOR PLACEMENT CIVIL & STRUCTURAL WORKS CUSTMOR SCOPE ONLY (NOTE: WE HAVE CONSIDERED ODU STAND ONLY)**
- 9 ANY OTHER ITEMS / WORKS WHICH ARE NOT MENTIONED IN THE ABOVE OFFER BOQ WILL BE CHARGED EXTRA.

For AVSTS Projects Pvt Ltd

Authorized Signatory