

**SMECC, NAGPUR**

**VRF TYPE AIR-CONDITIONING SYSTEM INCLUDING ALL REQUIRED ANCILLARY WORK :-**

**S.No Description Unit Quantity Unit Rate**

**PART A) ANNEXURE – I : HIGH SIDE : EQUIPMENTS:**

**Preambles**

- 1 All Items shall be quoted in the given format.
- 2 Client reserves the right to take any item as client supplied
- 3 Client reserves the right to add or delete any item from the tender during or after the finalization of the tender.
- 4 Boq items shall be read with the technical specifications
- 5 In case of discrepancy in Boq and technical specifications the stringent shall be followed.
- 6 Control cable from outdoor unit to indoor unit (condenser to evaporator) with necessary insulating tape etc.
- 7 It is advice to visit the site before quoting the boq
- 8 MS Powder coated bracket with fasteners to be fixed on walls / slab with all necessary fixing accessories ALONG WITH ANIT VIBRATION CUSHOR FOOT MOUNTING ONLY.
- 9 The Items in the Boq may or may not be operated as per site conditions.
- 10 Any deviation with respect to boq shall be informed and mentioned while quoting TENDER.
- 11 Insulation shall be done properly with vapour barrier and to provide mechanical protection against abrasion.
- 12 Indoor unit shall be considered with required structural support to hang in ceiling or floor / loft with anchor fasteners, rubber gaskets, nuts, bolts, inlet outlet connections
- 13 Treated fresh air unit shall be considered with MERV 13 pre filter
- 14 Copper piping shall be considered with T and Y joints with insulation.
- 15 All AHUs except VRF ductable unit shall be DX type unless otherwise mentioned.
- 16 Any item missed in the tender for competing the installation, testing, commissioning of the complete HVAC system all also to be included.

1 **CARRIER / BLUE STAR / HITACHI / TOSHIBA / MITSUBUSHI / DAIKIN -VRF UNITS : FULLY INVERTER ONLY :-**

Supply Installation, commissioning & testing of VRF Multi- split systems as specified and complete with the following and suitable for cooling

**DX VRF OUTDOOR UNITS :**

a) Outdoor units complete with DC Twin rotary compressors / FULLY DIGITAL BASED SCROLL COMPRESSOR with atleast 2 x 100% inverter compressors cooling only etc as specified latest technology fully inverter based compressor. Each Outdoor Unit will require minimum 2 Nos. Fully Inverter Compressor Only.

b) Environmental friendly refrigerant. (HFC) : R410 REFRIGERANT GREEN GAS

c) The required distribution board with required isolators to supply power two both ODU in a MS fabricated & Powder Coated Enclosure of IP 65 Protection with weatherproof canopy.

d) with Required cowl piece on fan discharge.

1.1 VRF Modular Type Outdoor unit 24 HP Top discharge : Space Saver Compact Model ONLY. Sets 1

2 **VRF INDOOR UNITS : Indoor units of types mentioned below complete with Panel - Grill, cordless remote controller, mounting arrangements, drain pump etc.**

2.1 FOUR WAY COMPACT CASSETTE AC's VRF Indoor Units :

a	3.0 TR Capacity Four Way Cassette AC	Nos	6
b	2.0 TR Capacity Four Way Cassette AC	Nos	1
c	1.5 TR Capacity Four Way Cassette AC	Nos	1

**TOTAL BASIC COST**

**PART B) ANNEXURE – II : LOW SIDE ANCILLARY INSTALLATION WORK :**

S.No	Description	Unit	Quantity	Unit Rate Rs.
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**APPROX. INSTALLATION BREAK UP**

1	Hard Copper Piping with 19mm thick nitrile rubber "O" Class insulation and necessary supports : minimum 18 G Hard COPPER PIPES Make Of Copper Pipes : Mandev / Rajco / Max Flow / Totaline Only & With "O" Class 19 mm thick Insulation make "Superlon / Armaflex" : Piping material shall Confirm to ASTM B280 Standards : For VRF System as per following dimension :			
1.1	31.05mm	RMT	100	
1.1	28.6 mm	RMT	100	
1.2	25.4 mm	RMT	100	
1.3	22.1 mm	RMT	100	
1.4	19.1 mm	RMT	100	
1.5	15.9 mm	RMT	100	
1.6	12.7 mm	RMT	20	
1.7	9.5 mm	RMT	25	
1.8	6.4 mm	RMT	45	
2	Control Cabling between Indoor & Outdoor Units (3 CORE X 1.5 SQMM SHEILDDED CABLE ) CABLE MAKE "POLYCAB / FINOLEX." - Laid in Conduits Pipe Only.	RMT	110	
4	Hard UPVC Drain piping with 6 mm Rubber Nitrile Class "O" Insulation Make "Plasto/ Supreme" 32 mm dia.	RMT	100	

6 Supply & Laying of 300 mm Width GI Tray fabricated with 16 G Thick perforated sheet for laying of copper piping / electrical cabling / drain piping etc. RMT 30

7 MS stand for Outdoor Units WITH PROVISION OF ANTI VIBRATION CUSHOR FOOT MOUNTING FOR MACHINE & Hanging Stand For Indoor Units with required MS frame arrangements only : MS "C" Channel Structure Type as per site requirement only - Fabricated with MS "C" Channel only & fabricated hanging stand for Indoor Units, DX Units for mounting of independent Outdoor units as require. Nos 1

9 Standard Installation / Pressure Testing / Vaccumissing / Commissioning

9.1 Leak Testing of Outdoor Machines for inverter Compressors complete with provisioning of anti-vibration isolators pads for complete machine etc.

10 24 HP OUTDOOR UNITS. Sets. 1

10 Installation, Testing & Commissioning Of Cassette AC's Type VRF Indoor Units :

a 3.0/2.0 TR Capacity Four Way Cassette AC Nos 9

11 Supply & Fixing Of Refrigerant Joints as per company STD. material for VRF units only. Nos 10

13 Lifting Shifting of Indoor & Outdoor Units On Terrace Level. LOT 1

16 Providing Comprehensive annual maintenance for Airconditioning units which includes servicing and repairing of all the Airconditioning units by predefined frequency. The AMC Period will start after completion of 1 year warranty period.

For 1st Year HP 24

For 2nd Year HP 24

For 3rd Year HP 24

For 4th Year HP 24

For 5th Year HP 24

**TOTAL BASIC INSTALLATION COST**

**TOTAL PROJECT VALUE (EXCLUDING GST) SUPPLY + INSTALLATION (A+B)**