

**BOQ**

Item	Description	Unit	Qty	Rate	Amount
1	<b>AIRCOOLED PACKAED UNITS</b>				
	Supplying, installing and commissioning of Air cooled type Packaged air-conditioning units complete with Hermetically sealed MULTI SCROLL compressors fitted inside the indoor unit & first charge of refrigerant & oil ,air cooled condensor, fan section with statically/dynamically balanced centrifugal blower driven by a TEFC squirrel cage three speed motor, Multi rows cooling coil of copper with aluminium fins etc. The enclosures shall be fabricated of M.S. The Package unit shall be equipped with synthetic fibre filter, insulated drain pan, controls all encased in a unit. The casing shall be factory powder coated. Electrical panel board for Package units shall comprise of SFU's, Fuses, Voltage scanner, complete with overload, low voltage, high voltage & phase imbalance protection. Along with VI Pads complete with all ancillary including MS painted stand for Outdoor units of suitable size, foundation ( RCC cubes with double vibration pad and GI strip) and allied minor civil works as per instructions of engineer in charge of following ratings including GI supply air damper of suitable size, outdoor control				
1.1	16.5 TR nominal capacity suitable for atleast 6400 cfm air capacity. (with 3 compressors)	Nos	3		
1.2	11.5 TR nominal capacity suitable for atleast 4400 cfm air capacity. (with 2 compressors)	Nos	2		
2	<b>REFRIGERANT PIPING</b>				
	Supplying, Installation, Testing and Commissioning of Refrigerant copper piping complete with all fittings such as bends, tees, elbows etc. as per specifications. The quoted rates shall include rates for chiseling, making good of wall and clamps etc.				
2.1	Refrigerant piping for 16.5/17 TR units (for 3 circuits – 3 suction and 3 discharge lines)	Rmt	42		
2.2	Refrigerant piping for 11/11.5 TR units (for 2 circuits - 2 Suction and 2 discharge lines)	Rmt	30		
3	Supply, Installation, testing and commissioning of PPRC piping complete with fittings, supports as per specifications (condensate water drain line)				
3.1	25 mm Dia	Rmt	150		
4	Supply, installation, balancing and commissioning of fabricated at site GSS sheet metal rectangular/round ducting complete with neoprene rubber gaskets, elbows, splitter dampers, vanes, hangers, supports etc. as per approved drawings and specifications of following sheet thickness complete as required as per specifications.				
4.1	Thickness 0.63 mm sheet	Sqm.	60		
5	Supply and installation of External Thermal insulation on ducts with cross linked nitrile rubber class O as per the approved specifications. Quoted price shall be inclusive of adhesive, 3” black tapes as per				
5.1	Inside the building				
5.2	13 mm thick insulation for air ducts.	Sqm	65		
6	Supply and fixing of UL approved Underdeck thermal insulation for the roofs with 25 mm thick closed cell nitrile rubber insulation of class 'O' Fire rating confirming to BS 476 part 6 including providing adhesive, adhesive tapes, etc all complete	sqm	300		
7	Supply, installation, testing and commissioning of 32 kg/m3 density fiberglass insulation in the form of 25 mm Thick Fiber Glass boards, 2 Layers of Tissue paper finished with 28 gauge perforated Aluminum sheet with nuts, bolts complete as per specifications.				
7.1	25 mm thickness acoustic lining inside the duct and 0.6 aluminium perforated sheet	Sqm.	65		
8	Supply, installation, testing and balancing of powder coated extruded return air aluminum grills without aluminum volume control dampers as per approved drawings and specifications.	Sqm	10		
9	<b>Power Cabling:</b>				
	Supply, laying testing and commissioning of 1100 volt grade armored XLPE. insulated and sheathed aluminium/copper conductor cables of sizes as below, on cable trays with suitable clamps, saddles, hooks, bolts etc. complete as per specifications and as required. The quoted rate shall include the cost of proper dressing of cables and also providing				
9.1	4 C x 6 sqmm copper cable	Rm	150		
9.2	4 C x 10 sqmm copper cable	RM	100		
1	Fire Damper with Control Mechanism	sqm	7		

Ref no 16.20.1	Supplying, Fixing,testing and commissioning of fire dampers in supply air duct/main branch and return air path as and where required of required sizes i/c control wiring,the damper shall be motorized and spring return so as to close the damper in the event of power failure automatically and open the same in case of power being restored. The spring return action shall be inbuilt mechanism and not externally mounted. The damper shall also be closed in the event of fire signal complete as required and as per Electric Actuator		
Ref no 16.20.2	Electric actuator with necessary linkage to actuate fire dampers complete with required wiring and associated accessories.	Nos.	10
	Note: Fire dampers shall be supplied with sensors/actuators/control etc duly factory fitted and tested at manufacturers works and certificate to this effect produced along with delivery of fire damper.		