

**ESTABLISHMENT OF NON-COMMUNICABLE DISEASE AND GERIATRIC CARE FOR INDIAN
INSTITUTE OF DIABETES AT PULAYANARKOTTA,TRIVANDRUM-PHASE II**

PART III - HVAC WORKS

Item No.	Description of items	Unit	Qty	Rate in figures & words	Amount (Rs.)
PART A -MACHINERY					
1	Supply, intallation, testing and commissioning (SITC) of 8.5 TR capacity aircooled Outdoor condensing unit with scroll compressor as per specifications complete with suitable capacity drive motor, air cooled condenser with all accessories, hermetically sealed scroll compressor, electronic microprocessor pendant controller with digital display, first charge R 22 refrigerant gas, vibration isolator pads and saftey devices like thermal protector, pressure relief valve, over load relays single phase preventor, high-low pressure cut out, suitable for three phase 440V supply.	Each	1		
2	Supply, installation, testing and commissioning of suitable hard drawn copper refrigerant piping for 8.5TR machine with 13 mm nitrile rubber insulation interconnecting the condensing unit to evaporating unit for packaged units as per site condition				
a	Suction Line	RM	40		
b	Liquid Line	RM	40		
3	SITC of DX type double skinned air handling units,ceiling suspended mounting type 8.5 TR, 1500 lps capcity complete with suitable DIDW blower (asper approved make), blower section, static pressure of 40mm of water column, built in pre filter(EU4), fine filter(EU7) and controls connected to condensing units, insulated SS drain pan, 6 row cooling coil, electric motor, belt drive package with TEFC motor class 'B' insulation, suitable for 3 phase, 415 V, 50Hz supply, suitable AHU panel, ARI certified, belt guards, with 0.6mm double skinned 40 mm thick PUF panel, suitable supports for suspending from slab, vibration isolator, etc. conforming to specifications. The air handling units shall have 1 inlet refrigerant coils and 1 outlet refrigerant coils suitable for 1 numbers of 8.5 TR capacity ODU and shall conform to specifications.	Each	1		

Item No.	Description of items	Unit	Qty	Rate in figures & words	Amount (Rs.)
4	Supply, intallation, testing and commissioning (SITC) of 5.5 TR capacity aircooled Ductable split air conditioner with scroll compressor, Ceiling Suspended Indoor Units (IDU) and all standard fittings, IDU SS drain pan, as per specifications complete with suitable capacity drive motor, air cooled condenser with all accessories, hermetically sealed scroll compressor, electronic microprocessor pendant controller with digital display, first charge R 22 refrigerant gas, vibration isolator pads, ODU MS stand and saftey devices like thermal protector, pressure relief valve, over load relays single phase preventor, high-low pressure cut out, suitable for three phase 440V supply.	Each	3		
5	Supply, installation, testing and commissioning of suitable hard drawn copper refrigerant piping for 5.5TR machine with 13 mm nitrile rubber insulation interconnecting the condensing unit to evaporating unit for packaged units as per site condition (in case of multiple compressor machine, unit length will be 1m of multiple pipes as required) .	Each			
a	Suction Line	RM	66		
b	Liquid Line	RM	66		
6	Supply, installation, testing and commissioning of Air Cooled High Wall mounted Split Air Conditioner of following capacity consisting of high wall mounted type room unit (fan coil) with cordless remote control and one number outdoor condensing unit comprising of enegy efficient suitable rotary compressor for operation on single phase, 230 V, 50Hz supply, fixing the outdoor unit on a raised platform as per manufacturers recommendation and fixing of room (fan coil) unit on wall, standard 5 m distance refrigerant copper piping with 13mm nitrile rubber insulation, providing and making interconnection between room & condenser as per site conditions, comprising of 1" dia drain PVC pipe with insulation 5m, canvas connections, full electrical cabling from power plug near indoor unit and to outdoor unit, ODU MS stand, first charge refrigerant gas, suitable stabilizer etc complete as required.				
6.1	2 TR 4 star rated as per BEE	Each	1		

Item No.	Description of items	Unit	Qty	Rate in figures & words	Amount (Rs.)
6.2	1.5 TR 5 star rated as per BEE	Each	7		

Item No.	Description of items	Unit	Qty	Rate in figures & words	Amount (Rs.)
7	Supply, installation, testing and commissioning of suitable hard drawn copper refrigerant piping with 13 mm nitrile rubber insulation and electrical connection interconnecting the condensing unit to evaporating unit for split AC's as per site condition	RM	40		
8	Supply, Laying and Fixing of control wiring of suitable size required from the Indoor to outdoor units for all units as per specification.	RM	55		
9	Supply, installation, testing and commissioning PVC drain pipe of 25mm dia ISI marked, connecting the drain lines from the indoor units to floor sump, with 9mm nitrile rubber insulation as per specification	RM	72		
10	SITC of Humidity Controller electric strip heaters in supply air plenum complete with fixing arrangements, thermostats and safety thermostat including all power and control wiring	Each	1		

Item No.	Description of items	Unit	Qty	Rate in figures & words	Amount (Rs.)
PART B - AIR DISTRIBUTION					
11	Supply, installation, testing and commissioning of factory fabricated rectangular GSS sheet metal ducting for Supply/return/fresh air duct/collar connecting to indoor unit as per ducting specifications and with suitable supports using MS angles, channels, rods, anchor bolts, etc to roof /truss as per IS 655 and as per specifications.				
11.1	20 G	SQM	11		
11.2	22 G	SQM	28		
11.3	24 G	SQM	182		
12	SITC of External thermal insulation on supply air ducts using min 13mm thick nitrile rubber class "O" closed cell type with antimicrobial protection as per specifications	SQM	220		
13	Supply, installation, testing and commissioning of Acoustic duct lining using 10mm nitrile rubber insulation open cell type inside the ducts, antimicrobial protection at the outlets of all indoor units upto 4m distance from fan outlet as per spec provided.	SQM	44		
14	Supply, fabrication, installation, testing of flexible connections made out of fire resistant flexible double canvas sleeve.	Set	4		
15	Supply, installation, testing and comissioning of Powder coated extruded aluminium Continuous grilles 16mm frame, as per spec	SQM	3		
16	SITC of Powder coated extruded aluminium supply air diffusers 4 way both side coated with collar damper aluminium extruded black anodized . (300mmX300mm/600mmx600mm)	SQM	9		

Item No.	Description of items	Unit	Qty	Rate in figures & words	Amount (Rs.)
17	SITC of Powder coated extruded aluminium return air diffusers 4 way both side coated without VCD.(300mmX300mm/600mmx600mm)	SQM	9		
18	SITC of Fire Control Damper made of 16G GSS sheet blade and frame with 165mm casing, heavy duty interlocking blades and fully enclosed blade linkage mechanism, SS lateral seal blade seals, self lubricating sintered bronze bushes, fire rating as per UL555-1995 tested as per BS-476 part 20 with 18G extended sleeve 450mm and with fusible link, spring mechanism control panel temp sensor, smoke sensor, limit switch with lever for auto shut off in case of fire/smoke as per specifications.	SQM	1		
19	SITC of multi blade type volume control dampers made of extruded aluminium for ducts/ collars to be provided with suitable links, levers and quadrants for manual control of volume of air flow and for proper balancing of the air distributions system in main ducts, return ducts & other area as per specification.	SQM	4		
20	SITC of Fresh air GI louvers of size 300x300 mm with wire mesh and birds screen for IDUs/AHUs as per specifications.	SQM	1		
21	Supply, installation, testing and commissioning of Inline Centrifugal duct fan with dynamically balanced impeller of 500cfm capacity, min 10 mm static , complete with GI box, with single phase direct driven motor with class B, IP44 protection with an internal automatic safety thermal overload protection, dynamically balanced impeller of following capacity, with an operating sound level of less than 55dB at 3 m distance.	Each	2		
	TOTAL PART III - HVAC WORKS				