

BILL OF QUANTITIES**NAME OF WORK:- SARAI BUILDING AT SARAGHARI.**

S.No.	DSR No.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
1	NS	SOLAR PANEL				
1.1		Supply installations, testing and commissioning of 12000 LPD capacity solar water heating system comprising of ISI marked solar Flat Plate Collector of size 1860mmX1240mmX100mm laser welded fin and tube, copper solar absorption panels with toughened solar glass covering and Rockwool insulation, interconnecting supply and return headers, M.S. Pressurized insulated hot water tank, Plate type Heat Exchangers of required surface area with necessary pumps for recirculation of water in primary and secondary circuit with necessary control panel etc.				
	1	Flat Plate Collector Fin and tube Type of size 1860mm X 1240mm X 100mm ISI marked of Make Inter Solar/Bipin Solar/ Bosch solar panels of approximate size 2.3 sqr. Mtr. With necessary M.S. painted stands, support etc.	Set	96		
	2	Hot water storage tank :				
		Hot water mixing tank of 12000 liters capacity of fabricated out of 10mm thick plate dished end and 8 mm thick MS plate shell complete with 90 KW Electric Back up with inlet cold water, inlet/outlet , drain connector, with flanges, manhole with nut bolts including valves, pressure gauge, dial type, thermometer, pressure relief valve complete in all respects. The tank shall be duly insulated with 100 thick FGP/ mineral wool insulation with 22 gauge aluminium cladding to withstand pressure upto 10kg/sqr.cm with MS supporting structure, with access ladder upto manhole duly painted with red oxide.	Set	1		
	3	Heat Exchanger :				
		Stainless steel: 316 plate type Heat Exchanger openable type of suitable area to exchange 100000 K. cal/hr. shall be provided between primary and secondary circuits to prevent scale formation inside the tubes of Absorber of collector and to transfer required heat energy from Primary to Secondary circuit.	Set	1		
	4	Hot water recirculation pumps (for solar system)				

		Providing, fixing and testing of horizontal multistage centrifugal pumping with SS-304 stage casing and SS-304 impellers with SS-304L shaft as per IEC standards and SS-304 suction and discharge casing, connected to TEFC ventilated induction motor of 4 pole, 2900 RPM, suitable for 400/440 volts, 3 phase, 50 Hz A.C. supply with pressure gauge and with gunmetal isolation cocks, vibration elimination pads etc. complete with base and frame, nuts & bolts and necessary RCC foundation as per requirement as per instruction and pumps shall have following duty :				
	4(a)	Primary Pumps:				
		No. of pumps : 02 Nos				
		Capacity : app. 10000 Ltrs.				
		Head : app. 30 mtrs.	Set		2	
	4(b)	Secondary Pumps:				
		No. of pumps : 02 Nos				
		Capacity : app. 10000 Ltrs.				
		Head : app. 25 mtrs.	Set		2	
	4(c)	Recirculation Pumps:				
		No. of pumps : 02 Nos				
		Capacity : app. 2500 Ltrs.				
		Head : app. 30 mtrs.	Set		2	
	5(a)	Main electrical control panel, made out of 16 SWG, CRC sheet powder coated with incoming isolator switch, H.R.C fuses Ammeter, Volt Meter, Selector Switches with digital differential temperature controller etc., suitable for fully automatic operation of primary and secondary pumps with necessary contactors relays.	Set		1	
		Main electrical control panel, made out of 16 SWG, CRC sheet powder coated with incoming isolator switch, H.R.C fuses Ammeter, Volt Meter, Selector Switches with digital differential temperature controller etc., suitable for fully automatic operation of Electrical backup of 90KWHcut off, high pressure safely cut off, earth leakage protection device etc. complete.	Set		1	
	5(b)	Providing and fixing of copper conductor armoured flexible cable insulated with cable tray of following sizes.				
		4core x 6mm ²	Metre		100	
		4core x 4mm ²	Metre		80	
		3core x 2mm ²	Metre		60	
	6(a)	Providing and fixing, G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls and floors and excavation and back filling wherever necessary etc. complete.				
		Ø For 25mm nominal bore	Metre		40	
		Ø For 32mm nominal bore	Metre		50	
		Ø For 40mm nominal bore	Metre		90	

		Ø For 50mm nominal bore	Metre	30		
		Ø For 65mm nominal bore	Metre	30		
	6(b)	Providing and fixing materials for painting of exposed pipes with two or more coats of synthetic enamel paint of approved shade as per pipe color code including painting of legends in English script with direction arrows.				
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		Ø 25mm dia	Metre	20		
		Ø 32mm dia	Metre	RO		
		Ø 40mm dia	Metre	RO		
		Ø 50mm dia	Metre			
		Ø 65mm dia	Metre	30		
		Ø 80mm dia	Metre	30		
		Ø 100mm dia	Metre	30		
	6(c)	Providing and fixing insulation for hot water pipeling (Externally) with resin bounded mineral wool of density 48kg/m ³ of 50mm thickness, including cleaning of pipes, securely fixing of insulation to the pipes with all joints bolted together tightly and stitching with 24 SWG G.I wire mesh netting over the insulation and cladding with 24 guage aluminium sheets with 50mm overlap and fixing with self tapping recessed screws complete as per requirement				
		Ø For 25mm dia	Metre	40		
		Ø For 32mm dia	Metre	50		
		Ø For 40mm dia	Metre	90		
		Ø For 50mm dia	Metre	30		
		Ø For 65mm dia	Metre	24		
	7	Providing and fixing of butterfly valve tested to non-shock cold working pressure upto 20kg/Sq.cm equivalent to I.S:778-1971class-II. (equivalent ball valve is also acceptable)				
		Ø For 25mm nominal bore	No.	2		
		Ø For 32mm nominal bore	No.	2		
		Ø For 40mm nominal bore	No.	8		
		Ø For 50mm nominal bore	No.	8		
		Ø For 65mm nominal bore	No.	4		
	8	Providing and fixing gunmetal/Iron non-return valves vertical of horizontal tested to 20 Kg/sq.cm as per IS:778				
		Ø 50mm dia	No.	4		
	9	Providing and fixing of Y strainer as per IS.				
		Ø 50mm dia	No.	4		

	10	Providing and fixing M.S. structural work fabricated from standard section e.g. M.S. rounds, angles, channels, plates including cutting to size, drilling, welding fixing and welding to insert plates in RCC structural members as directed by engineer-in-charge including cutting and making good the walls, ceiling and floors (for pipe support, clamps etc.)	Kg	1000		
		TOTAL CARRIED TO SUMMARY				