

TENDER REFERENCE # PAKIS/RFQ/25/2167

Technical Specifications

FOR PROVISION AND INSTALLATION OF SOLAR WATER HEATERS

This annexure presents the minimum requirement required to be met by the BIDDER, for the equipment to be procured under this RFQ. Before installation, bidder shall provide all relevant technical documents/ datasheets of the proposed solar water heater, ensuring that the technical specifications and characteristics are clearly specified in the documents and are compliant with specifications provided in this document. Product brochures, catalogues, manuals, and verifiable relevant certificates must be shared with UNHCR for approval prior to installation. **In case the awarded bidder fails to propose equipment meeting the below presented minimum technical requirements, within 2 working days following award notification, the subject contract with the awarded bidder will be terminated.**

Under the scope of this RFQ, VENDOR shall be responsible for supply and installation of all materials in line with the provided BoQs.

Solar Water Heater with Universal Mounting Structure

Parameter	Specification
General	
System Type	Thermosiphon
Application	Hot water uses for handwashing etc.
Ambient Conditions	4 to 6 peak sun hours/day and -10°C to 50°C ambient temperature
Installation	Roof-mounted/ ground mounted
Solar Collector	
Type	Evacuated Tube made of Borosilicate glass 3.3 or better with outer diameter of at least 50 mm and length of at least 1500 mm.
Configuration	Heat pipe with copper inner pipe and aluminum fin
Absorber Coating	Selective Coating ensuring high solar absorptivity ≥ 0.90 and low infrared emissivity ≤ 0.1 .
Number of Tubes	At least 15 for 200 Litre capacity and at least 20 for 300 Litre capacity
Structure	Double glass with vacuum between layers
Manifold Header	Casing: Aluminum alloy or stainless steel, powder-coated Insulation: High-density polyurethane or rock wool, thickness of at least 50 mm Header pipe material: Copper (At least 15 mm diameter)
Efficiency	At least 65% thermal efficiency
Hot Water Storage Tank	
Material	Corrosion-resistant stainless-steel grade 304/316 or better
Insulation	Polyurethane foam (Minimum 50 mm thickness)
Outer Casing	UV-resistant powder-coated steel or aluminum

Parameter	Specification
Electrical Backup	It should include a thermostat-controlled electrical backup with heating element of at least 1.5 kW rated power.
Tank Size	200 or 300 Liters as specified in the BoQs
Protection	<ul style="list-style-type: none">• Temperature and pressure safety valve• Thermostat control• Anti-freeze and overheat protection
Installation	
Mounting	Roof or ground
Piping and Accessories	As per the attached BoQs
Mounting Structure	Stainless steel or powder-coated mild steel
Frame Angle	25-30 degrees – adjustable frame would be preferred