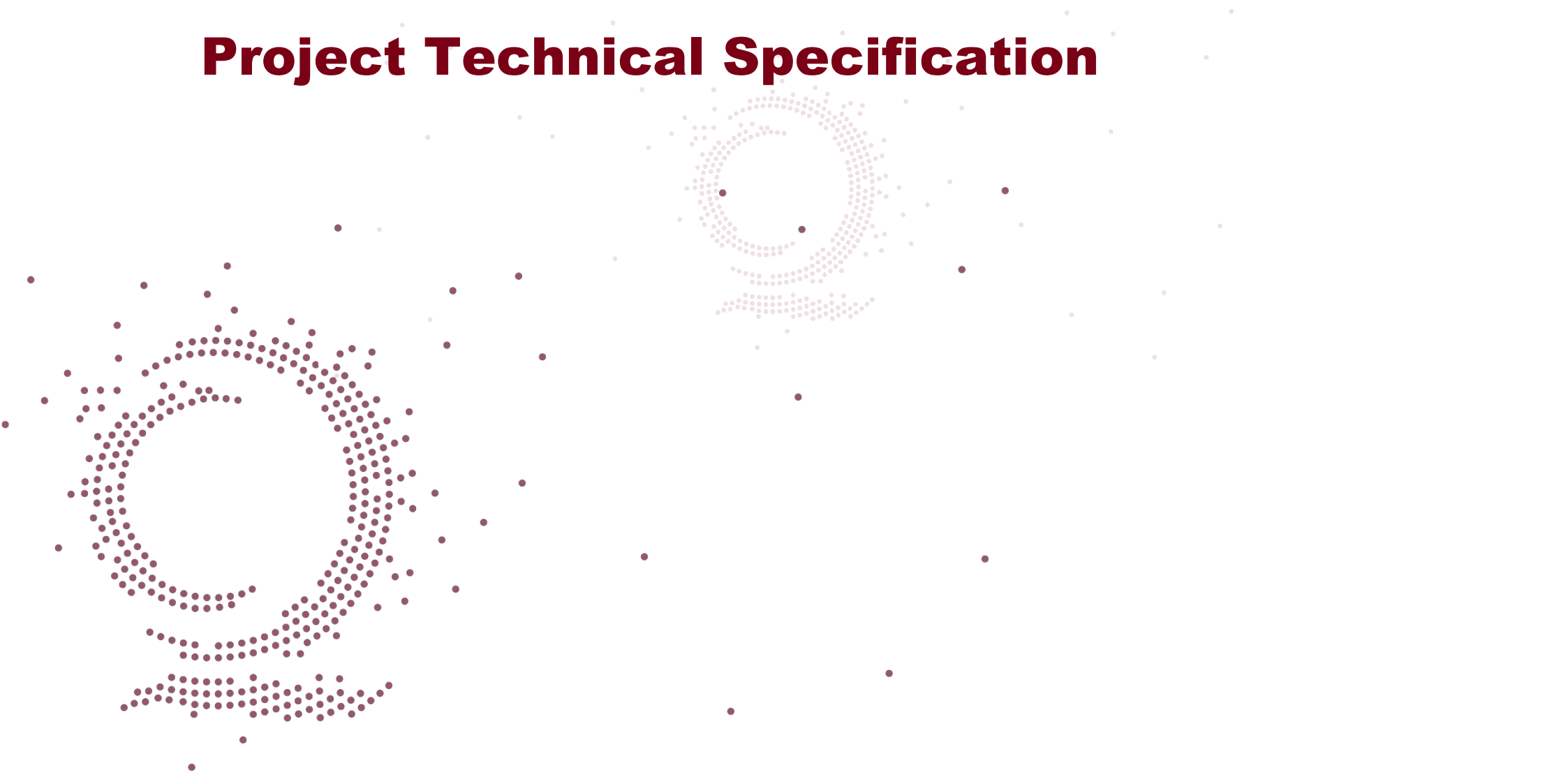


2025



قطر الخيرية
QATAR CHARITY
مكتب الصومال

Project Technical Specification






#	Construction Stage	Technical Specification
1)	Mobilization and Demobilization	<ol style="list-style-type: none"> Mobilization: shall include all activities and associated costs for transportation of Contractor's personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the Contractor's operations at the site. Demobilization: shall include all activities and costs for transportation of personnel, equipment, and supplies not required or included in the contract from the site; including the disassembly, removal, and site clean-up, of offices, buildings and other facilities assembled on the site specifically for this contract. Traffic: Conduct site clearing operations to ensure minimum interference with roads and other adjacent occupied or used facilities. Do not close or obstruct existing facilities without permission from authorities having jurisdiction. Protection of Existing Improvements: Provide protection as necessary to prevent damage to existing improvements indicated to remain in place. Protect improvements on adjoining properties. Restore damaged improvements to their original condition, as acceptable to parties having jurisdiction.
2)	Site Clearing	The Contractor shall be responsible to provide all material, equipment, and labor required to clear the construction site of unwanted trees, shrubs, and other vegetation. Also included in this section is clearing and grubbing, stripping, and stockpiling of topsoil, and proper disposal of all debris cleared from the site.
3)	Earthwork and Excavation	<p>Earthwork for construction Work shall include, but not be limited to the loosening, removing, loading, transporting, depositing and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work specified in the Contract Documents which shall include, but not be limited to, the furnishing, placing, and removing of sheeting and bracing necessary to safely support the sides of all excavation; all pumping, ditching, draining and other required measures for the removal or exclusion of water from the excavation if needed dewatering; the supporting of structures above and below the ground; all backfilling around structures and all backfilling of trenches and pits; the disposal of excess excavated materials; borrow of materials to make up deficiencies for fills; and all other incidental earthwork, all in accordance with the requirements of the Contract Documents.</p> <ol style="list-style-type: none"> Earthwork in excavation of Footings: Excavate in all types of soil depths not exceeding 2.0 m from the existing ground level but it should be subject to the recommendation from the geotechnical test as indicated by the Drawings or Directed by the Concerned Engineer.

		<ol style="list-style-type: none"> 2. Earthwork in excavation of trenches for foundation wall, in all kinds of soil and not exceeding 80cm depth and 50cm wide, including dressing of bottom and sides of trenches. As indicated by the Drawings or Directed by the Concerned Engineer. 3. Excavated soil clear from edges of Excavation and subsequent back filling around masonry in 15cm layers with compaction and including disposal of surplus soil out of site as directed by Engineer. 4. Supply and lay 60cm hardcore with gravel blinding, well compacted with 15cm layers to prepare for flooring. Ensure that the quality of hardcore and if it well laid or not.
4)	Concrete Works	<ol style="list-style-type: none"> 1. Supply and construct Reinforced cast in place concrete "ready mix concrete with compressive strength 210 kg/cm² at 28 days (for Foundation, Lintels and Grade Beams) and cast in place concrete "ready mix concrete with compressive strength 250 kg/cm² at 28 days (Slabs, Beams, Columns and Walls) ,with ordinary Portland cement including steel reinforcement grade 60 (420N/mm²) including bending, hooks, tying wires, spacers and concrete placing& casting, formwork & supports, propping, shuttering, vibration, curing, testing complete as per drawings and specifications. 2. Supply and construct Plain cast in place concrete "C15", 150 kg/cm² cube compressive strength at 28 days, with ordinary Portland cement below footing and Floor slab and the price include all necessary formwork, complete as per specifications & Thickness as shown on drawings.
5)	Masonry Works	<p>General: Concrete block masonry construction shall conform to Standard Specifications. Blocks shall be cut accurately to fit all plumbing ducts, openings, electrical work, and all voids slushed full. Where walls are to receive plaster, the joints should be struck flush.</p> <p>Joints: Where certain joints are to be concealed under paint, these joints shall be filled flush and then sacked to produce a dense surface without sheen. Vertical head joints shall be buttered well for a thickness equal to the face shell of the block and these joints shall be shoved tightly so that the mortar bonds well to both blocks. Joints shall be solidly filled from the face of the block to the depth of the face shell.</p> <p>Stone Construction: Construction wall in foundation, 40cm thickness bedded and jointed with cement sand mortar of 1:4 proportion (1 cement: 4 clean coarse sand) up to minimum 60cm above the G.L Depending on the level of the site. Face of wall should be in plumb. Corner stone should be good stones dressed to correct angles and laid as headers and stretchers. Bond stones shall be provided 100cm c/c vertically and horizontally. Wall should be laid in courses of 40cm</p>

		<p>height. All the gaps between stones shall be filled with cement mortar and wall should be kept moist for a period of at least 5 days and should be protected from sun.</p> <p>Construction of hollow concrete block wall as specified in the Drawings jointed with cement sand mortar of 1:4 proportion (1 cement: 4 clean coarse sand) as per drawing. Face of wall should be in plumb. Corner block should be proper placed to correct angles and laid as headers and stretchers. The wall should be kept moist for a period of at least 5 days and should be protected from sun.</p>
6)	Iron Sheet Roofing Works	<p>The roofing material are as per follow.</p> <ul style="list-style-type: none"> ❖ Stone coated galvanized iron sheets gauge 28. ❖ Timber 15x2.5cm –Bottom Cord ❖ Timber 8x4 cm – Top Cord ❖ Timber 5x2.5cm- Purlins. ❖ Panelled Ceiling (60cmx60cm) with Aluminium Rails Or as directed by the Engineer. ❖ the roof trusses should be anchored with 6 mm Dia bars in the concrete roof beam. flat metal sheet should be anchored where trusses and purlins meet. <p>Fixings/fasteners and sealing washers must be made of galvanized steel, with similar zinc coating thickness to avoid corrosion and breakage.</p>
7)	Plastering Works	<p>The Contractor shall all furnish all materials, Labor, Scaffolding equipment's, Tools, Plants, and Incidentals necessary and required for the completion of all plaster subject to approval by project Engineer.</p> <p>The primary requirement of plaster work shall be to provide watertight enclosure, dense, smooth, hard, and devoid of any crack on the interior and exterior. The contractor should do all that is necessary to ensure that this objective is achieved.</p> <p>All installation of conduits and boxes etc., should be completed before any plaster or other wall finish is commenced on the service.</p> <ul style="list-style-type: none"> ❖ Materials: <p>Cement: Ordinary Portland cement Sand: Washed fine sand Mix proportion: 1:5 Cement/Sand Water: Potable</p> <ul style="list-style-type: none"> ❖ Plaster to the internal and external walls should be 15mm thick comprising of one part of cement and five parts of sand. Except for ceiling and stair flight slabs which will be 12cm and 1:4 cement sand ratio.

		<ul style="list-style-type: none"> ❖ Finished plaster should kept moist for at least 7days after completion in hot weather, walls exposed to such should be screened with malting kept constantly wet or by any other approved means. ❖ Palster mesh of 24-gauge 12mm size shall be provided at junctions of block walls and concrete members.
8)	Painting Works	<p>General</p> <ul style="list-style-type: none"> ❖ Contractor shall provide all labor, material, and equipment and perform all operations necessary for all painting work specified including the painting of concrete block walls, reinforced concrete walls, concrete slab floors, and exposed iron and steel work including pumping units, electrical switchgear, piping, valves, and miscellaneous metal. ❖ Paint, and color wash shall, be factory made, delivered to Site in manufacturers' sealed drums in colors approved by the Project Manager or his representative and conform to the relevant Standards. ❖ Prior to beginning work, Contractor shall furnish the following: A material list for all painting materials to be used. Said list shall include manufacturer's name, designation, description, color charts and related data. ❖ New plaster shall be carefully rubbed smooth and thoroughly cleaned with fresh water to leave dry and smooth surfaces free from dirt. Surfaces shall not be primed or painted until they are completely dry and hard and have been approved by the Project Manager or his representative. <p>Workmanship:</p> <ul style="list-style-type: none"> ❖ All work shall be done by thoroughly qualified painters in a neat and workmanlike manner. All work which shows carelessness or lack of skill in execution or is defective due to any other cause will be rejected. Said work shall be redone to satisfaction of Owner prior to acceptance of work. <p>Application:</p> <ul style="list-style-type: none"> ❖ Unless specified otherwise, paint shall be applied by brush or spray. Paint system shall have a dry film thickness of five (5) mils minimum, unless specified otherwise. ❖ Priming coats shall be applied to surfaces by brush and allowed to dry properly, holes and depressions being filled with putty prepared with whitening and plastic emulsion paint and rubbed smooth and dry and touched up with plastic emulsion paint.

		<ul style="list-style-type: none"> ❖ Paint shall be applied only on thoroughly clean and dry surfaces, unless specified otherwise. Paint shall not be applied in extreme heat, cold, damp, or humid weather, or in dust- or smoke-laden air. <p>Coats:</p> <ul style="list-style-type: none"> ❖ For internal walls should have 2 coats of stucco filler (Putty) and 2 coats of emulsion paint unless specified in the plans. ❖ For external walls should have 2 coats of primer paint and two of acrylic paint (Shield paint) subjected to Consultant/ Engineer's approval.
9)	Tilling Works	<ul style="list-style-type: none"> ✚ Ceramic and Porcelain Tiles: The type, quality, size, thickness, and color of tiles for flooring, skirting and dados shall be of the best quality as described and approved by the Professional Team. The Contractor shall provide the Professional Team with samples for approval and only approved tiles, skirtings and dados shall be brought on to the Site. ❖ Before laying tiles, sub-surfaces shall be thoroughly cleaned and washed of all loose materials, dirt, laitance and the like and then well wetted without forming water pools on the surface. ❖ Tiles shall be laid on Cement mortar bedding not less than 7mm thick in the proportions of one part of cement, and six parts sand. ❖ Tiles shall be laid on mortar beds one after another, each tile being gently tapped with a wooden mallet until properly bedded and level with adjoining tiles. Joints shall be perfectly straight and uniform in thickness. Tiles shall be laid perfectly level unless otherwise specified or directed by the Professional Team. After laying joints of tiles shall be finished with cement-based grouts to match the color of the tile. ❖ Floor tiles laid adjoining walls shall project at least 7mm under plaster or render, skirtings, or dados. Half tiles and cut pieces shall be avoided as far as possible. ❖ For skirting vertical surfaces shall be thoroughly cleaned and wetted and evenly and uniformly covered with a 7mm thick coat of cement mortar (1:2). ❖ Tile Spacers: 3mm spacers made of PVC as per as per manufactures specifications.

		<p> Marble and Granite Flooring, Dado & Skirting</p> <p>The type, quality and thickness of marble and granite slabs for flooring, skirting shall be of the best quality as described and approved by the Project Manager or his representative and shall be hard, dense, uniform, homogenous in texture, have even crystallizing grains and be free from cracks and other defects. The Contractor shall provide the Project Manager or his representative with samples for approval and only approved slabs shall be brought on to the Site. Granite Slabs for Lift flooring shall have suitable Epoxy underlays & adhesives as per the detailed drawings 1 & manufacturers specifications.</p>
10)	Electrical works	<ul style="list-style-type: none"> ✓ The Work included in these Specifications is for the complete Electrical Services for the Project. The Work described and included in this Specification is for the manufacture works, testing, supply, delivery to site, erection, connection, site testing, demonstrating, commissioning, and maintaining for required duration, all equipment and installation as described in this Specifications and shown on Contract Drawings. Additionally, all equipment and installation shall conform to local authorities Specifications. ✓ Any Works whether or not shown on the Drawings and/or described in the Specifications but which can reasonably be inferred as necessary for the completion and proper operation of the works will also form part of the extent of the Contract. ✓ All Electrical Works complete in all respects shall be provided in accordance with the requirements of the Contract Documents. The scope of works shall include, but not be limited to the following: ✓ Electrical Works, General Provisions for Electrical Work, Conduits, Cables and Wires, Supporting Devices, Main Distribution Equipment, Lighting, Earthing, Lightning Protection system, Fire Detection and Alarm System, Public Address /Evacuation System, Audio Visual, Conference, Interpretation System, and Building Surveillance System (CCTV). <p> The following related service installations are specified in other divisions of the Specifications. The Contractor shall co-ordinate all his installation with the related works such as: - Plumbing - HVAC - Fire Fighting - Interior Finishes & Architectural Works - Any other sub-contractor engaged for the project.</p> <p> Quality shall be of the best grade for each type or class, even though such quality may not be stated specifically in the specifications. All materials and products shall be new and manufactured by well-known firms and shall be sound and uniform in quality, size, shape, color, and texture and shall be free from cracks, warpage, or their defects. Energy consuming equipment shall be of the energy saving type, wherever relevant and applicable.</p>

✚ Power supply to the site will be at 400 Volts, 3 phase, 50Hz. The interface with the utility company incoming supply is the KWH meter.

❖ **Cutting and Patching:**

- ✓ The Contractor shall provide chases, holes and openings for the installation purposes and carefully fit around, repair, patch and otherwise make his work acceptable.
- ✓ He shall furnish and install all sleeves and inserts required for this work. Cutting and patching of any part of the structure shall be done only after review by the Supervising Engineer.

❖ **Access panels:**

- ✓ Access panels shall be installed where indicated and as required for access to equipment and apparatus. Where, in the opinion of the Contractor access panels are required, but are not shown on the drawings, the Contractor shall provide same and relocate same on the as-built drawings.

❖ **Paint:**

- ✓ All shop fabricated and factory-built equipment not galvanized, plated, or provided with standard finish paint, shall be cleaned, and given one shop coat of lead-free primer paint, before delivery to the site. Under no circumstances, shall the nameplate, label or tag of any equipment be covered with field painting.
- ✓ The exterior of electrical panels, panel boards, cabinets, switchgear, transformers, and the like shall be finished in ANSI 61 gray. The interiors shall be finished in a light or white color.

❖ **Tests:**

- ✓ Prior to starting the electrical installation, the Contractor shall verify the correct voltage, phases, and current consumption of all utilization equipment to be voltage, phases, and current consumption of all utilization equipment to be connected. Branch circuit wiring, voltage and circuit breakers must be adequate in each case.
- ✓ The contractor shall provide any materials, equipment and labor required and make such tests as specified in the various sections of Division 16 and as deemed necessary to show proper execution of the work.

- ✓ Any defects or deficiencies discovered as a result of such tests shall be corrected without additional cost.
- ✓ After the installation is complete and properly adjusted, the Contractor shall conduct operating tests. The various equipment and systems shall be demonstrated to operate in accordance with the requirements of the Contract Document.
- ✓ The Contractor shall provide electric power, instruments, and personnel necessary for performing the various tests.
- ❖ **Electrical Identification:**
 - ✓ Electrical identification to identify all electrical items for easy operation and maintenance including, but not limited to the following:
 - Nameplates and labels.
 - Wire markers.
 - Color coding of raceways.
 - Circuit identification charts.
 - Cable identification tags.
 - Cable warning tapes.
 - Cable markers.
 - Equipment warning/danger signs.
 - ✓ Following color banding shall be used for the raceways of various electrical systems, however subject to final decision of the Engineer. Color bands for the electrical systems not described here shall be as agreed on site:
 - Lighting: gray.
 - Normal Power: brown.

		<ul style="list-style-type: none"> • Essential Power: black • Earthing: green. • Fire alarm: red. • Telephone: blue. • Sound: yellow. • Data: purple. • Television: rust.
11)	Mechanical Works	<ul style="list-style-type: none"> ✓ This Specification covers the supply, installation and testing of all necessary equipment required for the complete Mechanical and Ventilation Services as described in the attached Contract Documents and incorporates standard descriptions for equipment and the installation to be provided under this Contract. The clauses shall be read in conjunction with the accompanying General Conditions of Contract, Schedules, and Drawings. ✓ The extent of the work shall comprise the system engineering, the whole labor and materials required to form a complete installation, together with such tests, adjustments and commissioning as prescribed in subsequent clauses and otherwise as may be required to provide an effective working installation to the satisfaction of the Engineer. <p>❖ General</p> <ul style="list-style-type: none"> ✓ The Contractor shall allow in his Tender for all labor, materials, tools, plant and equipment required to supply, deliver and erect all equipment, pipework, fittings, etc., described in this Specification and indicated on the drawings to form a complete working facility including tests and commissioning. This shall mean not only the main items of plant and equipment but also all incidental sundry components with their labor charges necessary for the complete execution of the works. ✓ The Contractor shall ensure that his work is installed in the correct sequence.

- ✓ The Contractor shall be responsible for ensuring that all sections of the work and all materials are compatible with one another. The Contractor shall check and ensure that all of the equipment and works offered by him will fit into the space provided in the building(s) including the limited entry through doorways and into ducts.
- ❖ **Operating Conditions:**
- ✓ All equipment will be required to operate successfully in the climatic conditions prevailing in the locality. Equipment, even if normally operating in air-conditioned spaces, may be required to operate at times when the air conditioning system is not being used. Under such conditions all equipment must operate satisfactorily and still have a working life comparable with that expected from top quality equipment operating in more temperate conditions.
- ❖ **Workmanship and Materials**
- ✓ Materials and workmanship generally shall be of the highest standard and the Specification shall be closely adhered to. Materials shall be brand new bearing stamped ratings as required. Where materials or equipment are not described in detail, they shall be of the best quality available and shall comply with the appropriate Standards. The Contractor shall, if required, submit drawings or samples of such materials or equipment to the Engineer for his approval before use on the Contract works.
- ✓ The pipes used in this project will be PPR and UPVC.