

Detailed Specification for Fabrication and Supply of 10,000 Liters Diesel Fuel Tank in South Sudan

1. Introduction

This specification outlines the requirements for the fabrication, supply, and delivery of a 10,000 liters diesel fuel tank for use in South Sudan. The tank will be used for the safe storage and dispensing of diesel fuel, and must meet local and international standards for quality, safety, and environmental protection.

2. Scope of Work

- **Fabrication of Diesel Fuel Tank:** A 10,000 liters capacity tank fabricated from high-quality materials. (Add MS plate thickness, etc.)
 - **Supply:** The tank will be delivered to a designated location within South Sudan. (Maban, Thaker, Mankien & Maiwut)
 - **Installation:** Supply includes installation at the specified site.
 - **Testing and Inspection:** Ensure the tank is operational and meets all specified requirements.
 - **Training:** Provide training for staff on tank operation, safety measures, and maintenance.
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3. General Requirements

- **Capacity:** The tank must have a nominal capacity of 10,000 liters ($\pm 2\%$ tolerance), fully calibrated.
- **Design:** The tank must be designed for above-ground installation, with all structural and operational components suitable for storage of diesel fuel.
- **Standards:** The tank must comply with international standards (e.g., ISO 9001, API 650, UL 142) and local regulations.
- **Environmental Resistance:** The tank should be resistant to corrosion, UV exposure, and extreme temperature variations, which are common in the region.

4. Material Specifications

- **Tank Shell and Roof:**
 - Material: Carbon steel (or equivalent)/MS Plate (add thickness) with a thickness suitable for handling 10,000 liters of diesel fuel.
 - Coating: The tank should be coated with a rust-resistant primer and a topcoat to protect against environmental elements. Powder coating or epoxy finishes are preferred.
- **Lid/Manhole:**
 - A sealed manhole covers to provide easy access for tank inspection, cleaning, and maintenance.
 - Material: Same as the tank shell with gaskets to ensure an airtight seal.
- **Bottom Plate:**
 - Must be designed with a slight slope towards a drain point for fuel removal and cleaning.
- **Corrosion Protection:** The tank should include corrosion-resistant coatings and cathodic protection if required.

5. Structural Design

- **Shape:** Horizontal cylindrical.
- **Supports and Mounting:**

- The tank must be equipped with suitable supports to ensure stability. These may include reinforced steel legs or base frames.
- The tank must be mounted on a concrete foundation that will be prepared by supplier at the site.
- **Anti-Overflow Protection:** Design should include a proper overflow valve and a vent to prevent overpressure or contamination.

6. Safety Features

- **Emergency Venting:** Provide an emergency vent valve to handle pressure changes and ensure safety.
- **Flame Arrestor:** Install a flame arrestor at the vent outlet to prevent the ignition of vapors.
- **Level Gauging System:** The tank should be equipped with a manual and/or automatic fuel level gauge with an external visual indicator.
- **Grounding:** Grounding points must be included to prevent static discharge during fuel handling.
- **Fire Safety:** Include fire-resistant features and recommend the installation of fire extinguishers at the site.

7. Tank Accessories

- **Inlet/Outlet Valves:**
 - 1 inlet valve for fuel entry and 1 outlet valve for fuel dispensing.
 - Valve sizes: Should be compatible with standard dispensing equipment.
 - Material: Stainless steel or equivalent durable material.
- **Drain Valve:**
 - A drain valve at the lowest point of the tank to allow for easy removal of any water or debris.
- **Inspection Ports:**
 - Port for periodic inspection of tank interior and to ensure cleanliness and absence of water or contaminants.

8. Dimensions and Weight

- **Dimensions:**
 - Height and diameter should be determined based on volume of tank.
- **Weight:**
 - Weight should be within practical limits for transport and handling.

9. Environmental Considerations

- **Environmental Protection:**
 - The tank must be designed to contain any spillage, leaks, or fuel overflow.
 - Anti-leakage mechanisms to prevent environmental damage in case of system failure.

10. Installation

- **Foundation:** The supplier should build the foundation of the tank.
- **Site Preparation:** Installation will occur on a prepared and level concrete pad.
- **Connection:** The supplier will connect the tank to the fueling system, including necessary piping, valves, and fittings.

11. Inspection and Testing

- **Pressure Test:** The tank must be subjected to hydrostatic or pneumatic pressure testing to ensure it can handle the pressure exerted by 10,000 liters of diesel fuel.
- **Leak Test:** The tank must be inspected for leaks, particularly at welded seams, valves, and joints.
- **Visual Inspection:** Conduct a visual inspection to ensure correct design, welds, and coating.

12. Documentation and Certification

- **Material Certificates:** Provide material certificates for all primary materials used in the fabrication of the tank.
- **Quality Assurance Report:** A report documenting quality checks during fabrication, including pressure tests and weld inspections.
- **Installation Manual:** Detailed manual outlining the installation process, maintenance, and operational procedures.
- **Compliance Certification:** Provide certification that the tank meets relevant local and international standards (ISO 9001, API 650, etc.).
- **Environmental Certification:** Provide proof of compliance with environmental regulations, including spill containment and pollution prevention.

13. Maintenance and Warranty

- **Warranty:** Provide a warranty period of at least 1 year after the installation date, covering defects in material and workmanship.
- **Maintenance Services:** Include a maintenance plan, including periodic inspections and recommended service intervals.
- **Retention Fee:** 10% of final bill be retained for 3-month time.

14. Delivery and Lead Time

- **Lead Time:** The tank should be fabricated and delivered within 8 weeks after receiving the purchase order.
- **Delivery:** Delivery to South Sudan must be arranged with all necessary transport documentation, including customs clearance, if required.

15. Payment Terms

- Payment should be made according to the agreed schedule. Typically:
 - 30% upfront on order confirmation.
 - 40% upon completion of fabrication.
 - 30% minus 10% retention fee resulting 20% upon successful installation and testing.

16. Conclusion

The 10,000-liter diesel fuel tank must be fabricated with the highest quality materials and precision, ensuring its long-term reliability, safety, and compliance with both local and international standards. Proper installation, maintenance, and training will ensure optimal performance and minimize risks associated with fuel storage and dispensing in the region.