FUELMASTER®

Vehicle Fueling System Specification

SHORT FORM SPECIFICATION

The contractor shall provide FUELMASTER® aboveground vehicle fueling systems with factory installed equipment as shown on the drawings. The tank systems shall be manufactured and assembled by Fiber Glass Systems, L.P..

Tanks shall be installed according to current installation instructions provided with the tank.

Contractor shall be responsible for providing all associated equipment and necessary installation per local, state and federal codes and regulations to provide a complete and operational Vehicle Fueling System. This shall include but not be limited to the foundation pad, anchoring hardware, fully operational monitoring equipment and dispensing system.

LONG FORM SPECIFICATION

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Contractor shall be responsible for providing all associated equipment and necessary installation per local, state and federal codes and regulations to provide a complete and operational Vehicle Fueling System. This shall include but not be limited to the foundation pad, anchoring hardware, fully operational monitoring equipment and dispensing system.

1. FACTORY ASSEMBLED VEHICLE FUELING SYSTEM:

1.1. The Vehicle Fueling System shall be listed, designed and installed in accordance with PEI / RP200-08.

1.2. All components of the Vehicle Fueling system shall be Underwriters Laboratories listed or certified by Underwriters Laboratories Inc. as applicable for use in a vehicle fueling system.

1.3. The Vehicle Fueling system shall be designed to meet or exceed the minimum requirements of National Fire Protection Association Sections 30 & 30A, Uniform Fire Code 2000 Edition and the National Electrical Code.

1.4. Vehicle Fueling systems shall ship from the factory with all core components installed on the tank and tested per manufacturer's instructions. Limited field assembly of some components shall be allowed as detailed.

2. GENERAL TANK DESCRIPTION:

2.1. Fiber Glass Systems, L.P.., (FGS) Vault Tanks are constructed and listed in accordance with Underwriters Laboratories Inc. Standard 2085 for Insulated, Protected Secondary Containment Aboveground Tanks for Flammable and Combustible Liquids, Protected Type. This 2 Hour fire rating shall exceed all requirements of The National Fire Protection Association Sections 30 and 30A for "fire resistant" tanks and meet the requirements of The Uniform Fire Code Articles 52 and 79, Appendix II-F and Appendix Standard A-II-F-1 for "protected" aboveground tanks.

2.2. The standard model FGS Vault Tank is constructed as a UL 142 listed secondary containment tank, utilizing steel inner and outer tanks.

2.3. All Vault Tank designs are resistant to bullet penetration according to Appendix II-F of the Uniform Fire Code.

2.4. Lightweight concrete surrounds the primary storage tank and shall be UL listed to allow the detection of leaks from the primary tank.

2.5. The tanks shall have Certification from CARB for Phase I and II Vapor Recovery.

2.6. The anchoring tie downs shall be welded to the bottom of the secondary tank and meet Zone 4 Seismic requirements.

2.7. The tanks must be off-loaded on site with a crane.

2.8. All openings shall be from the top, with threaded NPT risers.

2.9. The Vault Tank to include a 30 year Limited Warranty (see warranty for details).

2.10. The tank manufacturer shall provide proof of a minimum 15 years of manufacturing Vault tanks.

3. PRIMARY STORAGE TANK:

3.1. The standard primary storage tank shall be rectangular in design. It shall be constructed of UL 142 specified steel thickness, with continuous welds. (Compartment Bulkheads are optional).

3.2. The primary storage tank shall be constructed of optional ASTM A-569 or A-36 carbon steel as required for compatibility of product being stored.

3.3. The primary storage tank shall be constructed and listed in accordance with UL 142 Standards.

3.4. The primary tank shall be fitted with: a 4" or 6" Fill Port, a 2" Normal Vent Port, either a 4", 6", 8", or 10" Emergency Vent Port, a 2" Liquid Gauging Port, a 2" Port for Dispensing Pump, a 4" Phase I Vapor Recovery Port, and an 18" manway (for tanks with capacities 5,000 gallons and greater).

3.5. The primary tank shall be pressure tested to UL 142 Standard (minimum 3 to maximum 5 psi) at the factory, and shall be field-tested by the contractor to a maximum 3-psi, according to the company's recommended testing procedure.

3.6. The primary steel tank shall be designed to store M85 (methanol), alcohol and petroleum blends.

4. FIRE PROTECTION:

4.1. The standard fire protection material shall be lightweight concrete and surround the primary tank. The tank design shall provide a minimum two (2) hour fire rating per UFC Appendix Standard A-II-F (formerly UFC 79-7), and UL 2085 Insulated, Protected Secondary Containment Tanks.

4.2. The fire protective material shall allow liquid leaking from the primary tank to penetrate the material and communicate with the leak detection tube according to UL 2085 requirements.

4.3. The fire protective material shall be of a monolithic pour, poured at the factory.

4.4. The fire protective material shall provide a minimum of an R-10 insulating factor.

5. BULLET RESISTANCE:

5.1. The fire protected primary tank shall be tested by a qualified engineering firm to meet UL 2085 requirements. The primary tank shall be resistant to penetration by a 150 grain, M 2 Bullet, traveling at a velocity of at least 2700 feet per second, when fired from a .30 caliber rifle, located a maximum of 100 feet from the target.

5.2. The fire-protected tank must be able to be repaired in the field by a factory representative, when impacted by a bullet.

5.3. The factory representative must be able to certify that the primary and secondary containment does not leak, and that the fire protective material regains its minimum two (2) hour protection.

6. SECONDARY LEAK CONTAINMENT TANK:

6.1. The secondary leak containment tank shall be rectangular in design and listed according to UL 2085 requirements for flammable and combustible liquids, protected type.

6.2. The secondary tank shall be tested liquid tight at the factory (minimum 3 to maximum 5 psi), and shall also be field-tested by the contractor to a maximum 3-psi according to the company's field testing procedure.

6.3. The secondary tank shall provide reinforcement for the lightweight concrete to remain in place around the primary tank.

6.4. The secondary tank shall provide true 360° Radius "pressure testable" for the primary tank.

6.5. The secondary tank shall be fitted with: a 2" Annular Space Monitoring Tube, a 2" Normal Vent Port and either a 4", 6", 8" or 10" Emergency Vent Port, in addition to openings for all ports in the primary tank.

6.6. The port openings in the top of the secondary tank shall be constructed with full welds to prevent moisture from seeping between the fire proofing material and secondary and primary tanks.

6.7. The top of the secondary tank shall be sloped so that water will not accumulate on top of the tank.

6.8. The secondary tank shall have a two (2) inch monitoring port including a tube, which provides a means to detect product leakage from the primary tank into fire protection material that directly surrounds the primary tank. This design shall be listed under UL 2085.

7. TANK COATING:

7.1. The exterior surface of the secondary tank shall be cleansed of foreign material and coated with a corrosion resistant industrial paint (3 to 5 mils dry film thickness).

7.2. The color shall be desert sand.

7.3. Optional FIBERVAULT® (FV-EMPT) finish can be applied to the exterior surface of the secondary tank to provide improved resistance in corrosive environments.

7.3.1. The total dry thickness shall be a minimum of 1/8 inch.

7.3.2. All threaded openings and flanges shall be protected during the coating process.

7.3.3. The coating shall be applied only when the work area and the secondary steel tank are between the temperatures of 32° and 103° F.

7.3.4. The color shall be desert sand.

7.3.5. The coating shall provide a 10-year limited warranty against external corrosion (see supplemental warranty for details).

8. TANK SYSTEM EQUIPMENT:

8.1. Dispensing packages for gasoline and diesel systems shall be Weights and Measures approved.

8.2. Tank sizes 250 and 500 gallons include 15 gallon Spill Containment Boxes with a Lockable Lid and Drain Port to the primary tank along with a Top Mounted dispenser.

8.3. Tanks 1,000 gallons to 20,000 gallons include Ground Level Fill Boxes and Side Mounted Dispenser Packages.

8.4. Phase I and II Vapor Recovery Packages as required to meet all applicable federal, state and local environmental regulations.

8.5. Electronic Gauging Systems as required.

9. FIELD INSPECTION SERVICES:

9.1. An optional Training Session and complete System Inspection shall be available at time of start-up by FGS trained technicians (see FGS inspection checklist for details).

9.2. An optional Maintenance and Service contract shall be made available by FGS trained technicians upon completion of an annual contract (see FGS contract for details).