

# PLASTEEL® ELUTRON®

## Double-Wall Fiberglass Jacketed Underground Tank Installation Instructions

### I. GENERAL

The Plasteel Elutron® underground tank is a U.L. listed jacketed steel tank providing corrosion protection and 360° secondary containment per U.L. 1746 and 58.

Elutron® underground tanks must be installed according to these installation instructions and located and installed according to the latest issue of the Flammable and Combustible Liquids Code, N.F.P.A. 30 for underground tanks, and all applicable state and local codes. Follow all applicable state, local, and O.S.H.A. safety requirements during installation.

For additional installation references, consult the current editions of:

- Petroleum Equipment Institute, RP-100. A copy of section 4 "Earthwork" is available from the tank fabricator.
- American Petroleum Institute, RP-1615.
- Any available site soil investigations or testing.

Plasteel Elutron tanks feature a 30-year limited warranty that is dependent upon proper installation per these instructions. Coverage under the warranty also requires completion of and return of Plasteel Elutron Certificate of Installation to the tank fabricator within 30 days of installation. A copy of this Certificate is included with the Installation documents.

### II. VISUAL INSPECTION

Prior to setting the tank in the excavation, inspect the tank exterior for damage, such as scratches, gouges, punctures, or the blue color of the FRP laminate is showing a white fractured pattern. If the tank exterior is damaged, do not proceed with installation testing or repairs and contact the tank fabricator immediately. If the tank was delivered with damage, attempt to notify the delivery driver of the damage prior to departure.

### III. EXCAVATION DEPTH-BEDDING AND BACKFILL

**Excavation:** Allow a minimum clearance of 24" between adjacent tanks and 24" between tanks and excavation walls to allow for proper placement and compaction of backfill materials. The bottom of the excavation should be flat with no large stones, organic material, or standing water. Place 6" of loosely placed and leveled backfill material in a layer beneath tanks. Place 12" of backfill material if using deadman anchors. Refer to Fig.1.0 and Fig 1.1 for recommended excavation dimensions. Refer to Figure 2.0 for the recommended minimum backfill cover over the tanks. If the proposed burial cover over the top of the tank exceeds five (5) feet from the top of the tank to the top of the driving surface, consult the tank fabricator.

Figure 1.0

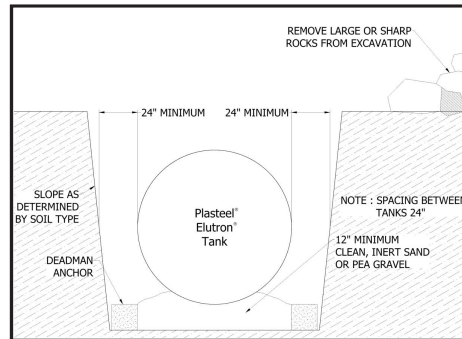
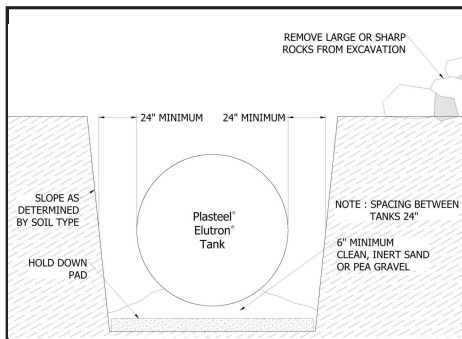
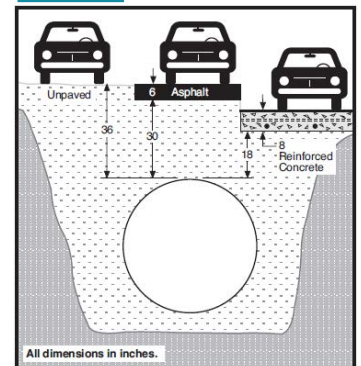


Figure 2.0

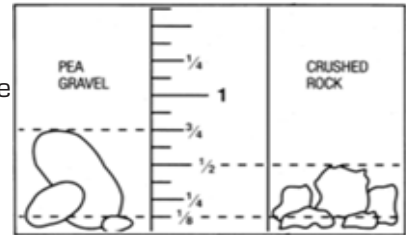


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**Backfill Material:** Clean sand or natural earthen materials shall be capable of passing 100% through a 1/2 inch sieve and no more than 12% by dry weight through a #200 sieve (0.0029 inch). Pea gravel shall be no larger than 3/4-inch. Crushed rock shall be no larger than 1/2-inch. Refer to Figure 3.0. Materials shall be free of all foreign and organic materials.

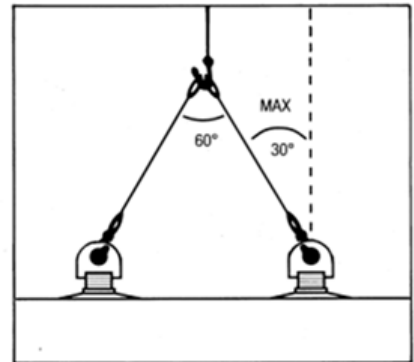
Figure 3.0



### IV. HANDLING TASKS

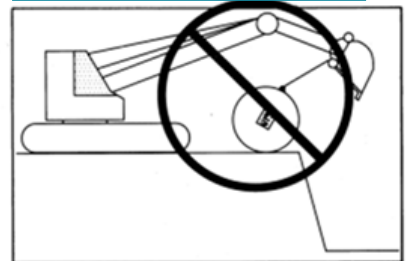
Planning ahead for tank installation and coordination with crane operators prior to unloading tanks is critical to a successful installation. The lifting lugs provided on the tank are the only allowable points of contact during lifting and placement. Use proper slings, chains, straps, hooks or clevises rated for tank weight. Unloading equipment must be of the type, size, capacity, and reach to lift and place the tanks without dragging or otherwise mishandling the tank. See Fig. 4.1. The preferred lifting sling angle is 60°. See Figures 4.0. A spreader bar is required when tanks feature 4 (2 sets) of lifting lugs. To confirm handling weights and dimensions, contact the tank fabricator.

Figure 4.0 - Proper Sling Angle



**Tank Storage:** If the tank is to be stored on site prior to installation, ensure the tank is placed in a secure area, safe from work site vehicle damage, and placed on a flat surface free of rocks and other debris. Cover the tank to prevent UV exposure if the length of storage will be longer than 30 days.

Figure 4.1-DO NOT DRAG TANK



### V. ANCHORING SYSTEMS

Underground tanks can be subject to buoyant forces in areas experiencing high water table or flooding. Consult an engineer if deemed necessary for recommendations. The decision not to use an anchoring system becomes the owner's responsibility. Damage to the tank or overlying surfaces and structures may occur if the tank is not properly secured from buoyant forces.

Consult the tank fabricator factory for the recommended number, size, and type of hold-down or "Deadmen" assemblies required when using a concrete pad under the tank. These materials may be supplied by the tank fabricator and delivered with tanks. Refer to figures 5.0 and 5.1.

Figure 5.0

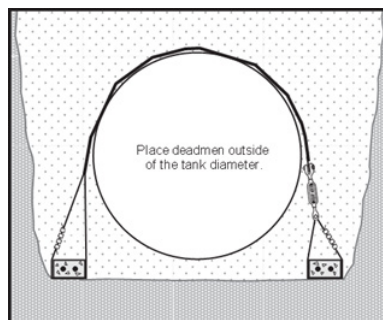
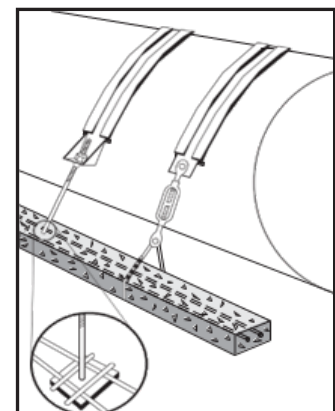


Figure 5.1



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If tanks are to be set upon a concrete slab, provide a minimum of 6" of backfill between the bottom of the tank and the slab surface, and 12" minimum if using deadman anchors. Set and securely anchor the tank directly on the backfill layer, and secure the tanks properly using appropriate straps. Take care not to over-tighten the straps; otherwise, damage to the tanks may occur.

- Place deadmen outside of tank diameter with tops level with tank bottom.
- Steel cables or round steel bar are not allowed.
- Steel straps require use of inert padding, non-degradable material.
- Tank owner or installer should specify polyester or steel straps at time of order.

### **PLASTEEL ELUTRON TANK WARRANTY ACTIVATION**

FOR PLASTEEL 30 YEAR LIMITED WARRANTY TO BE INITIATED, THE CERTIFICATE OF INSTALLATION MUST BE PROPERLY FILLED OUT, SIGNED BY RESPONSIBLE PARTY OF THE CUSTOMER, AND RETURNED TO THE PLASTEEL ELUTRON TANK FABRICATOR WITHIN 30 DAYS AFTER DATE OF INSTALLATION.

### **MAINTENANCE**

Maintenance of Underground Storage Tanks: Both the Environmental Protection Agency (EPA) and the American Petroleum Institute (API) recommend that periodic maintenance be performed on all underground fuel storage tanks. The Petroleum Equipment Institute (PEI) and the Steel Tank Institute (STI) require prompt removal of water in tanks regardless of coating and materials used for tank construction. The tank owner is solely responsible for the proper operation and maintenance of the storage tank system.

The primary tank should be inspected for the presence of water and sludge buildup on a regular basis. Lack of such maintenance and inspection control measures by the owner and operator may invalidate the PLASTEEL ELUTRON Limited Warranty. Maintenance type and scheduling must be performed as outlined and recommended in Steel Tank Institute "Recommended Practice for Storage Tank Maintenance R111 Revision, 2nd Edition, March 2016"; Clean Diesel Fuel Alliance, "Guidance for Underground Storage Tank Management at USLD Dispensing Facilities;" and/or the Coordinating Research Council (CRC) Report 672, July 2016, whichever is most applicable .

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### PLASTEEL® SEALING-FINISHING PROCEDURES

These procedures must be performed prior to completion of back-fill and AFTER TESTING. To ensure complete corrosion protection, the following instructions must be followed:

General instructions for working with fiberglass resin by carefully performing the following steps, your Elutron® tank will be fully protected from corrosion.

The kit includes materials for covering and protecting the unused tank connections, tank handling hooks, and each of the pipe connections on top of the tank.

The Plasteel® kit contains hazardous materials. **Read the enclosed material safety data sheets before proceeding to work with Plasteel kit materials.** The standard kit include the materials listed here. Additional material is supplied when tank configured with containment collars, special fittings, manholes or extension spools.

### **I. Preparation**

Do not mix the catalyst with the resin until all the pieces to be sealed have been fitted in place and the 1" strips of matting are laid out next to their corresponding pipe connections. Once the resin and catalyst are mixed, a chemical reaction begins that cannot be reversed.

Working time for a mixed batch is about 30 minutes at 70°F. Higher temperatures make it set up more quickly, shortening working time. The key things to remember are: (1) Be prepared and have all parts pre-fitted and in place before mixing the resin. (2) Mix only as much resin as can be used in 30 minutes and mix it thoroughly—stir for at least 1 minute. (3) Work quickly and efficiently. Lower temperatures increase resin set-up time and require additional catalyst.

### **II. Mixing the catalyst**

Resin and catalyst must be mixed in the proper proportions so that the resin will harden properly.

The following is a list of some various size batches that could be mixed:

<u>Resin</u>	<u>Catalyst</u>
1 quart.....	1/2 oz.
1 pint.....	1/4 oz.
1 cup .....	1/8 oz.

If unsure how fast it will set up, it is better to mix several small batches rather than one big one.

### The standard kit includes the following materials and tools:

#### BOX A

4 each 1 Qt. bottles Plasteel® resin

#### BOX B

1 each 1 Qt. bottle	Resin emulsifier or Acetone
4 each 1 Oz. bottles	Catalyst
6 each	Star mats
10 each	Mat strips
6 each	Plug mats
1 - 3 each	4" Flat pipe plugs
2 each	Paint stirring sticks
2 each	1-1/2" Paint brushes
3 each	Mixing cups
1 each sheet	60 grit sandpaper
4 each	Hook mats

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### III. Application

Using the paint brush provided, dab the resin mixture into the cloth rather than painting it on. The objective is to completely soak the matting with resin, not just cover it.

### IV. Pipe and Risers

For standard threaded fittings: Apply resin to the base of the pipe and top of tank and push down the matting circle as shown. Impregnate with resin. Impregnate the strips of matting and wrap like tape around the joint at the base and working upward. Apply any leftover resin to the outside of the joints when done wrapping. For special bolt-up flanges: Apply generous coating of resin to exposed metal edges of flange and wrap with resin impregnated matting strips. Apply leftover resin to nuts and bolts.

**Steel Plugs:** After fitting fiberglass matting, lift it up and apply mixed resin to the top of the tank surface where the matting will contact. Stick matting over plug into wet resin and totally impregnate matting with resin, dabbing in with paint brush as described above

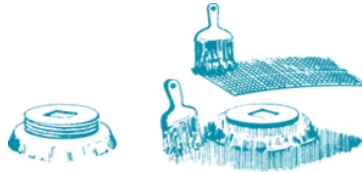
**Manhole, Extension Spool and Handling Hooks:** Apply generous coating of resin impregnated matting strips to exposed metal edges and to handling hooks (matting precut). Apply leftover resin to nuts and bolts except on access cover.

**Cleanup:** Hands and tools may be cleaned with resin emulsifier before the resin has hardened. No solvent will work once the resin has hardened.

Tank Pipes and Risers - Typical



Tank Steel Plugs - Typical



Note: The Elutron® tank installation is not complete until all exposed steel surfaces on the tank are sealed with the Plasteel® fiberglass resin.

For additional assistance or information, call your Plasteel Elutron tank fabricator.

### VACUUM TESTING PLASTEEL ELUTRON TANKS

Refer to Plasteel Elutron tank vacuum testing procedures;

- Tanks shipped and delivered with established vacuum
- Tanks subject to establishing vacuum on-site