



Inground Installation Guide

1. The purpose of this document is to provide owners and contractors with instructions for installing Nationwide Tank and Pipe LLC (NTP) underground fiberglass storage tanks. Proper installation is required to assure the long-term performance of NTP storage tanks. Failure to comply will void the limited warranty and may cause tank failure. It is the responsibility of the owner, installer and operator to understand and follow all installation requirements. In addition to these instructions, the installation must comply with all Federal, State and Local safety and environmental codes and regulations. Should an NTP representative be onsite, that does not relieve the contractor of the responsibility to follow these installation instructions.
2. First Step:
 - 2.1 Barricade the tank area until the installation is complete.
 - 2.2 Check with local authorities for applicable codes, underground utility locations and any testing requirements.
3. Offloading and Handling:
 - 3.1 The contractor is responsible for rigging, unloading and securing the tank.
 - 3.2 Tanks must be mechanically unloaded under the direction of a qualified rigger using lifting equipment rated to handle the tank size and weight.
 - 3.3 Visually inspect the tank exterior for shipping or handling damage.
 - 3.4 Before offloading the tank, make sure there is nothing capable of damaging the tank in the way.
 - 3.5 The contractor is responsible for making sure the tank is secure before removing shipping straps so the tank cannot roll off the trailer.
 - 3.6 Do not allow tank to rotate or swing during unloading.
 - 3.7 Do not use chains, cables or metal hardware around or to come in contact with the tank.
 - 3.8 Do not allow any fittings, manways, or other accessories to contact the ground during offload, and do not drop the tank.



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- 3.9 Use the lifting lugs affixed to the tank applying equal tension to all lugs.
4. Installing the Tank:
- 4.1 Place tank in excavation hole with lifting cables attached to lifting lugs and maintain control using guide ropes.
- 4.2 Set tank directly on backfill bed. Some sites locations may require the installation of a concrete anchor pad in place of a backfill bed. See 4.2.1-4.2.2
- 4.2.1 For unstable excavations, it is the responsibility of the tank owner or tank owner's representative to design the bottom pad thickness and reinforcement. Regardless of design, the anchor pad should extend to the excavation walls. Contact a soils consultant for specifications on soil conditions, pad thickness, reinforcement, seismic activity and local codes.
- 4.2.2 Anchor points need to be embedded into pad for proper anchoring and to accommodate working loads.
5. Anchoring the Tank
- 5.1 The tank owner or owner's representative is responsible for determining an appropriate anchoring system and design.
- 5.2 Prior to anchoring, the first deflection measurement should be taken after tank is lowered into hole. Take the second deflection measurement after anchoring is complete.
- 5.3 Each tank secured by a deadmen system requires deadmen on each side of the tank, running parallel the entire length of the tank. The bottom of the deadmen must be even with the bottom of the tank. A separate anchor point must be provided for each strap.
- 5.4 Anchor points must be aligned (± 1) with tank anchor ribs designated with $> <$ on the tank wall.
- 5.5 Crew members should be on each side of tank and position the strap over the tank so each member can reach the ends of the strap which should be entered on assigned anchor rib.
- 5.6 Take the loop end of the strap and attach it to a turnbuckle. Then take the turnbuckle and attach it to the deadman anchor point. Repeat the same steps with other end of strap on opposite side of tank with coordinating anchor point and deadman. Repeat steps for remaining straps.



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- 5.7 1" minimum of clearance should remain between anchoring hardware and the tank. Make sure metal is never touching the tank.
- 5.8 Straps must be uniformly tightened with turnbuckles. Straps should be snug but not cause tank deflection. Take second deflection measurement, if tank diameter has changed, loosen the straps.
- 5.9 All exposed metal and hardware on the anchor system must be coated or galvanized to help prevent corrosion.
6. Backfill
- 6.1 Proper backfill is required to provide the necessary support and stabilization of the tank.
- 6.2 Work the backfill (12" at a time) under the entire length of the tank and around ribs and endcaps. Make sure there are no voids so that the tank is fully supported.
- 6.3 Backfill to the top of the tank **PRIOR** to beginning to fill the tank.
- 6.4 After backfill is even with the top of the tank and compacted, it is recommended that the tank be slowly filled to minimize the chance of buoyancy.
- 6.5 Complete and compact backfill to grade.
7. Ballasting Tanks
- 7.1 A tank is not fully protected against flotation until there is backfill to subgrade and the top slab is in place.
- 7.2 Until top slab is in place, water can enter the excavation site and cause the tank to float unless the tank has been ballasted with fluid (water or heavier liquid) to offset buoyancy.
- 7.3 Make sure the ballast will not contaminate the product to be stored in the tank or clean the tank before adding product.
- 7.4 Adding ballast:
- IMPORTANT: Do not completely fill tank when adding ballast and keep tank vented to prevent pressurization. When tank is almost full, decrease the fill rate in order to prevent sudden pressurization or the tank will be damaged.***



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- 7.5.1 To avoid sudden pressurization of the tank when it is almost full, sufficient venting must be provided or remove the fill line and manually bring tank to full capacity.
 - 7.6 Dry Hole: backfill at least 75% of tank diameter before adding ballast
 - 7.7 Wet Hole: add enough ballast to cause tank to sink. Ballast level inside the tank and all compartments should be equal in order for tank to remain level and not more than 12" above the ground water level outside the tank.
8. Burial Depth:
- 8.1 6' – 10' tanks need a minimum cover of 24" of backfill, or 12" of backfill plus 4" of reinforced concrete.
 - 8.2 12' tanks need a minimum cover of 42" of backfill or 38" of backfill and 4" of reinforced concrete.
 - 8.3 Should the site need to accommodate traffic loads, consult with an engineer on backfill and tank protection requirements.