

BACKFILL REQUIREMENTS AND SPECIFICATIONS

The following specifications are what Franklin Fueling Systems requires for adding backfill during an installation. If you do not follow these requirements, the tank chambers and pipes can fail catastrophically as shown below. These kinds of failures can greatly increase costs and can result in significant delays in completing an installation.



Tank chamber failure



Pipe failure with seal and fitting contamination



Important: Make sure you use the correct backfill and that the backfill material fully supports UPP® pipes and tank chambers. Make sure backfill material is free from contaminants that can decay or dissolve and cause voids or ground movement (ice, silt, or peat, for example). For UPP® pipes, follow the instructions in *UPP® Piping Installation Guide Overview* (part number 408001016). For tank chambers, follow the instructions in *Polyethylene Tank Chamber/Sump Installation* (part number 408001028).

Important: Do not use mechanical compactors such as vibrating plates or road rollers around tank chambers and dispenser sumps. Use a manual compactor to compact the backfill around the base of the sump. Do not compact the backfill above the tank chamber base. To prevent the riser from deforming, make sure the tank lid is closed and secured before you back fill the area from the top of the tank chamber base to the top of the riser.

- Acceptable backfill materials for UPP® pipe systems are:
 - Well-rounded pea gravel from 3 mm (0.12 inches) to 20 mm (0.79 inches).
 - Crushed rock from 3 mm (0.12 inches) to 16 mm (0.63 inches).
 - Clean washed sand.
- Acceptable backfill materials for tank chambers are the following Class I and II materials, per ASTM d-2321:
 - **Class IA materials include angular, open-graded, clean, manufactured aggregate that contain little or no fines such as crushed stone or crushed cinders or shells.**
 - **Class IB materials include angular, dense-graded, clean, processed aggregate such as Class IA materials mixed with sand and gravel to minimize migration.**
 - **Class II materials include clean, coarse-grained soils that contain little or no fines such as gravel, gravel-sand mixtures, and well and poorly graded sands.**
- Shovel slicing (cutting the backfill with a shovel) is the recommended way to compact Class I and II materials. To improve compaction, slightly wet the backfill, but do not saturate the material or flood the trench.
- Before an installation, add a 15 cm (6 inch) bed of backfill under the pipes. Make sure the backfill is not contaminated and that there are no voids under or around the pipe.
- If the tank chamber overhangs the tank containment collar, add enough backfill around the underside of the chamber so that it is fully supported.
- If the UPP® pipe exceeds 12 m (39 ft), lay it in a series of large curves not straight lines. (Uncoiled pipe will settle into a natural curve.)
- Make sure pipes are separated from each other by at least the diameter of the largest pipe.
- If pipes cross each other, make sure they are separated by at least as much backfill material as the diameter of the largest pipe or are protected by at least 25 mm (1 inch) of expanded polystyrene.