



A common design feature of any secondary containment system is the use of posts or pilings to support the tank that will be providing the primary containment. However when this construction technique is utilized, an issue is how to best attach the geomembrane liner to any pilings that now penetrate the geomembrane liner.

Some geomembrane installers will simply pull excess geomembrane up and around the piling, and then clamp this material in place. This construction technique is not utilized by Contain as it is difficult or impossible to create a seal around the piling, as the material is “bunched up” with multiple thicknesses over top of each other, creating a leak path should the containment be called into duty. A more suitable design is the use of prefabricated pipe boots. Prefabricated pipe boots are manufactured by Contain in a variety of dimensions to suit most every style of round post or piling. A prefabricated pipe boot is manufactured to provide uniform thickness around the penetration, so that when properly installed with gasketing and a pipe clamp, a leak-proof seal is created ensuring full containment throughout.

Previous pipe boot designs were designed similar to a witch’s hat; the top was cut off and slid over the post. This style of boot addressed many installation issues; however it was vulnerable in applications that experienced settlement. When settlement occurs within the containment, the ground will sink downwards in relation to the piling which, if installed properly, will maintain its original elevation. The liner is pulled downwards and the interface between the piling and the geomembrane is put under tension. This original pipe boot design relied solely on the elongation properties of the geomembrane selected for that particular application, which for some of materials is quite insignificant.

This became a common maintenance issue so to address the short-coming Contain Enviro Services Ltd. developed the Settlement Detection Pipe Boots or “SD Boots”.

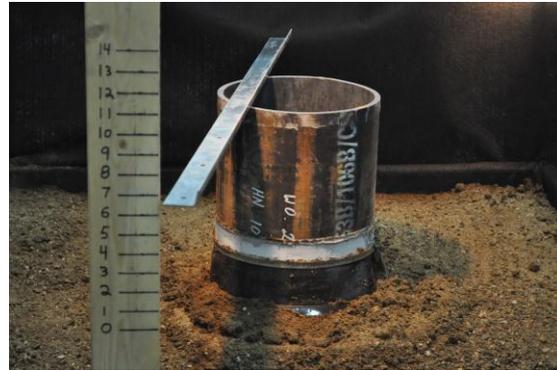


## Tech Note: Settlement Detection Pipe Boots

This style of boot has circular corrugations encompassing the main boot section, providing this area the appropriate amount of material to extend downwards should settlement occur. Contain Enviro Services Ltd uses this style of boot on all installations providing a higher level of assurance against unexpected settlement.



If settlement has occurred and the corrugations have been pulled up, we suggest that have our trained crews correct this deficiency. While the geomembrane in this area is still at its required thickness, this should not be viewed as a permanent solution to the issue.



The installation of pipe boots should be completed before the caps or any cross-members have been welded onto the tops of the metal pilings. However, once the liner and pipe boots have been installed, care must be taken to protect the liner, foot traffic should be minimized, and welding blankets should be placed beneath any areas where welding is required so that sparks or slag do not melt the exposed liner.

The geomembrane selection process can often be challenging. Contain Enviro Services Ltd. has over 15 years of geomembrane installation experience and can help guide you through the process. With access to the complete range of Geomembrane materials, Contain Enviro Services Ltd. will suggest the most cost-effective liner material while still meeting the timing, environmental, and safety requirements of your project.

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