Water Lance Method ASTM D7703

Geotest Pty Ltd
6 Jennifer Ave
Ridgehaven SA 5097

WATER LANCE TESTING METHOD

The most commonly used leak detection survey for new liner installations is the Water Lance Testing Method. This method is also useful when installation slopes are steeper than 2H:1V as it allows surveying on non-level surfaces. Water Lance testing ASTM D7703 is a preferred method for bare non-conductive geomembrane. Water Lance testing has a minimum sensitivity of 1mm diameter circular leak and can also be used on flat areas of geomembrane.

METHOD

The water lance method is carried out by spraying water with a specially designed lance system onto the geomembrane by an operator. A low voltage DC power source is applied to the water above the geomembrane and grounded to the subgrade underneath the geomembrane. The leak detection equipment features a mobile detection device with a electrical current measuring system that in real time analyses the applied potential circuit. The meter converts the increase in current to an audible signal in the presence of a leak.

SUMMARY

For the Water Lance method to be successful the geomembrane must be completely installed in the area that is being tested.

To prevent an electrical short the water sprayed onto the survey area must be fully isolated from any external earth source. Structures such as concrete sumps and batten strips cannot be tested as they will ground out the survey by giving a false positive signal.

In addition, unless a conductive backed geomembrane is used holes are unlikely to be detected on wrinkles.