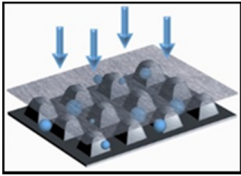


These instructions should be read in conjunction with the contract specification, datasheet and drawings. They are intended to provide guidance in normal installation situations and are addressed to the installer on site. They do not seek to address design matters; they do not seek to address unusual installation circumstances. Special instructions for particular products may be appended to the end of this document. If in doubt, consult ABG for further advice. Also request shipping and unloading instructions if required.

Description



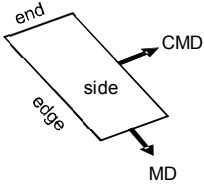
LEAKDRAIN is a thin, high strength, high performance pre-formed leak detection and recovery geosynthetic drainage layer consisting of an HDPE cusped core. **Leakdrain is usually supplied in rolls such that they can be unrolled with the drainage (dimpled) side uppermost. Leakdrain can also be used with the flat side uppermost and in this case, Leakdrain may have to be turned over after unrolling unless the Leakdrain has been ordered reverse wound (REV at end of code and BLUE tape on rolls).** Leakdrain is laid

between primary and secondary geomembrane liners to form a blanket (horizontal, sloping or vertical) to collect and transmit leakage through the primary liner into collection pipes and subsequently to recovery pumps. Leakdrain also assists in the protection of geomembrane liners from physical damage. Typical applications are as a leak detection, drainage and recovery layer in landfill basal containment, mine waste lagoons and leachate ponds, etc.

Caution

Special care should be taken when offloading the rolls not to damage the product when lifting with forks, poles or chains. Be careful not to drag or drop the rolls. Avoid storing or rolling over areas where there are sharp objects. Unloading with a machine bucket is likely to cause damage. Sliding forks under the side of rolls on the ground will damage the rolls.

Instructions



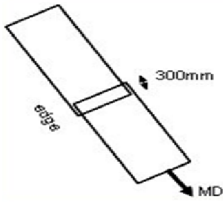
1. Leakdrain is supplied in rolls (wound onto a 76mm ID cardboard tube). Slings are rarely necessary but may be ordered at extra cost for the safe off-loading of rolls and are designed for single use to remove the rolls from the delivery vehicle to an appropriate site storage location. Store on a firm base and stack no more than 6 rolls high. **CHECK ROLLS FOR DAMAGE/DEFECTS UPON DELIVERY AND REPORT ANY DAMAGE TO ABG.**

2. Lift and carry the rolls with a spike/pole or spreader beam and pole through the centre tube or by means of lifting straps around the roll (using suitable lifting equipment that does not damage the Leakdrain) to the place of work. Do not drag the rolls. **AVOID CONTACT WITH MACHINE BUCKET.**

NOTE: Leakdrain rolls can weigh 250-500kg, are 2.2m wide and approx. 1m diameter.

3. The Leakdrain should be installed on top of the secondary geomembrane liner with the drainage (dimpled) side either uppermost or downwards as shown on the project drawings. Leakdrain will bend to follow stepped ground profiles.
4. In choosing the commencing point and direction of laying, consider the collection pipe positions, the prevailing wind direction, slope of the site and access point for materials. Generally, the same conditions apply to Leakdrain installation as for geomembrane installation, often starting at the lowest point and working up slope. Leakdrain is designed to be laid so that the major flow of water is along the roll length. Each roll has ID label and ID is marked on roll end.
5. Plan only to lay as much Leakdrain as can be covered that day, to avoid uplift in strong winds. Unused rolls may be used as ballast on flat areas.
6. Leakdrain can be installed in high ambient temperatures or cold conditions in the same way as the geomembrane liner.
7. On steep sloping sites the rolls of LEAKDRAIN **MUST BE LAID UP AND DOWN THE SLOPE**, not across the slope. It is easiest to lay from the top of the slope and use sheets pre-cut to length or to allow the roll to unfold gently down the slope. On steep slopes the rolls should be continuous from top to bottom.

ABG ZzLeakdrain Rev 1.00 INSTALL.docx



8. Unroll the first roll of Leakdrain into position (allowing enough material to fold into the anchor trench if required). Inspect the Leakdrain for integrity and reject the roll if it has been damaged. On windy or exposed sites the rolls may be held down by sandbags. What happens next depends upon whether the Leakdrain is required to be dimples up or down
9. Place the next roll so that the **edges** of each roll butt close up to each other or overlap (as specified). If the overlap is in line with the slope then place the adjacent rolls in roof tile manner so that the outflow from the top sheet discharges on the downslope side if dimples up and vice versa. This will ensure continuity of flow. Make extrusion weld spots at approx. 500mm intervals along the join.
10. Continue to lay rolls to create a continuous layer.
11. When applicable, the **ends** of the rolls should be overlapped min 300mm onto the next roll such that the liquid can flow out of the end of the top roll and onto the drainage side of the roll below.
12. Subject to safety procedures, rolls can be cut to length with a sharp knife or disc saw.
13. Keep the interface between the Leakdrain and the geomembrane free from contamination by mud and stones to prevent damage to the geomembrane.
14. Outfalls for the liquid collected by the Leakdrain consist of a perforated pipe laid in a gravel / filter stone trench. The trench is usually a shallow trapezoidal shape.



DIMPLES UP

15. The Leakdrain is laid down into and across the base of the trench, so that the water can escape out of the Leakdrain through the gravel into the pipe. A piece of Leakdrain is laid over the gravel to lap onto the Leakdrain either side of the trench.

DIMPLES DOWN

16. A piece of Leakdrain is laid into the trench to protect the geomembrane and the gravel and pipe are placed on top. The Leakdrain is laid across the top of the trench, so that the water can escape out of the Leakdrain through the gravel into the pipe.
17. Leakdrain has high long term strength and a short term usable compressive strength sufficient for wheeled vehicular traffic with low pressure tyres. As with all geosynthetic materials, traffic should be kept to a minimum.
18. Standard Leakdrain contains a UV stabiliser so that it can be exposed to sunlight for up to 28 days in temperate climates. In climates with extreme sun then exposure should be limited to 7 days.

Ancillaries

Sandbags for temporary ballast of joints. Extrusion welder and welding rod.

Tools/Equipment

Usual PPE, Cutting knives, lifting equipment of suitable safe working load.