**Product Description**
A composite product geotextile for use as a drainage enhancing, permeable capillary break to provide a barrier to salt.

**Construction**
Thermally bonded and performance enhanced nonwoven geotextiles thermally laminated either side to a drainage core.
- **Top**: T2000 UV Terram nonwoven geotextile (polypropylene / polyethylene)
- **Middle**: High density polyethylene drainage core
- **Bottom**: T2000 UV Brown, hydrophobic enhanced nonwoven geotextile

**Mechanical Properties**
- **Tensile strength EN ISO 10319**: kN/m 30
- **CBR puncture resistance EN ISO 12236**: N 5000

**Hydraulic Properties**
- **In plane water flow EN ISO 12958**
  - Surfaces: Hard / Hard
  - Hydraulic gradient = 1.0
    - 20 kPa: l/m.s (10⁻³ m²/s) 0.50
    - 200 kPa: l/m.s (10⁻³ m²/s) 0.25

**Physical Properties - typical**
- **Mass per unit area EN 965**: g/m² 930
- **Thickness EN 964**: mm 5.5
- **Roll width**: m 2.0
- **Roll length**: m 25
- **Roll weight (gross) approximate**: kg 46

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Specification for Installing Terram ‘Salt Barrier’ (SB) over Salty Soil:

1. **Handling:** Rolls of SB shall be handled in a manner which avoids damage to the wrapping. The SB shall remain wrapped until required for use in order to protect it from the damaging Ultra Violet rays in sunshine. The geotextile shall be covered by fill material as soon after laying as reasonably possible and within 3 days.

2. **Ground preparation:** Ruts and sharp undulations shall be levelled. The formation shall be cleared of any large angular objects or sharp projections such as stones or roots.

   **Laying:** The SB shall be rolled out so that it is in continuous contact with the formation and avoiding bridging over hollows or humps.

3. **White Face up:** Terram ‘Salt Barrier’ has one brown side and one white side. The white side shall be placed faced up.

4. **Trafficking:** Vehicles shall not be allowed to run directly on the SB. The ‘sweet’ soil can be bladed progressively forward onto uncovered SB by a machine running on the previously covered area. The covering layer shall be of sufficient thickness, depending upon fill type, to avoid damage to the SB by machinery and not less than 150mm.

5. **Cross fall:** The SB should be placed with a fall draining from higher areas towards drainage ditches lower down. ‘Hollows’, in the ground that would result in ‘ponding’ within the SB should be avoided because flooding of the SB by ‘ponding’ may allow salt in the water to pass up through the SB. The recommended profile when covering flat areas (as opposed to sloping areas) is similar to creating a ‘crown’ bowling green with the crown area draining the SB towards the perimeter ditches.

6. **Direction of working:** From the higher ground to the lower ground. When landscaping a ‘crown green’ area, a temporary access road over the SB to reach the crown with sweet soil will be required.

7. **Lapping:** Minimum laps between rolled out sheets of SB shall be 300mm. At roll edges the leading edge of the new roll shall be placed UNDER the preceding sheet to avoid the lap being ‘pushed up’ and damaged by the advancing fill. Under-lapping must be done carefully to avoid sweet soil above and ‘salty’ soil below the SB being allowed to connect through the lap joint. Such contact would damage the effectiveness of the SB.

8. **Roll direction:** Lap joints should as far as possible be made so that the SB on the higher ground over-laps the adjacent SB on the lower ground.

9. **Repairs:** Damaged areas of geotextile shall be repaired by covering with a second layer of SB providing a minimum of 300mm overlap beyond the damaged area.

10. **Free draining edge:** The flush outer edge of the SB can be exposed in the face of the perimeter ditch. This is to provide free outward drainage of any water held within the net of the SB. The flush edge of the SB should be a minimum of 20cm above the bottom of the ditch and above any flow that might occur in the ditch whichever is greater.

11. It should be noted that if the salt barrier is pierced during installation or by subsequent activities, then it may not keep out the capillary rise of salty water.
Specification for Planting Pits for Palms and Trees

Construction method:

1. Excavate square pit with stable sloping sides to a minimum depth of 1.5m for palms, and 1.2m for trees. (It is important that the base of the pit is a minimum of 25cm above the highest water table. If standing water or saturated sand is encountered in the pit then the landscape designers should be immediately notified.)

2. The dimensions of the base of the pit shall be 1.5m x 1.5m for palms and 1.2m x 1.2m for trees.

3. Prepare the Terram ‘Rootguard Plus’ (RGP) pit wall lining to the correct dimensions. A ‘lap’ of 500mm shall be allowed for when the RGP is in place wrapped around the perimeter of the pit. For palms, a rectangular piece of RGP 6.5m wide and 1.5m deep is required. For trees, a rectangular piece of RGP 5.3m wide and 1.2m deep is required.

4. The overlapping faces of RGP can be held together with adhesive tape for ease of installation if preferred.

5. A small ‘v’ channel shall be excavated around the base perimeter of the pit to a depth of 15cm ready to receive the RGP lining.

6. The RGP wall lining is placed in the pit and followed immediately by ‘pea’ gravel which is also placed in the ‘v’ channel. (This is important to prevent ‘salty’ soil being allowed to contact the ‘sweet’ soil through any gap in the ‘butt’ joint between the SB and RGP. If contact were to happen, then salt water could rise from the ‘salt’ soil into the ‘sweet’ soil by capillary action. The good quality and clean ‘pea’ gravel carefully placed will prevent this.

7. Cut a piece of Terram salt barrier to form a close fit, preferably 2cm oversize. Place the sheet of SB over the base of the pit within the RGP pit wall lining with any ‘edge curl’ of the SB pointing upwards.

8. Backfilling of the pit can now commence in shallow layers, at the same time filling inside of the RGP with ‘sweet’ soil mix, and outside of the RGP with ‘salty’ soil. The layers inside and outside the RGP need to be brought up together for stability of the RGP pit lining.

9. The palm or tree can be planted at the appropriate time as the pit is filled.

10. When fill reaches the top of the RGP, a small ‘v’ channel is filled with ‘pea’ gravel. (The important reason for this is similar to that described in step 6 above.)

11. Where the palm or tree pit is being constructed within an area of lawns/seasonal plants/ground cover, then the SB is placed next with a small overhang into the pit of 10cm. (This is important for reasons similar to described in step 6 above and will also direct any ‘surplus’ water draining from the landscaped area ‘sweet’ soil into the palm or tree pit.)

12. Alternatively if the palm or tree is not within a lawn area etc area, then the RGP shall be brought right to the ground surface.

13. The pea gravel shall be placed around the top 15cm of the RGP to the surface to prevent ‘salty’ soil spilling over the top of the RGP pit lining and contaminating the ‘sweet’ soil mix.
14. It should be noted that if the salt barrier or root barrier plus are pierced during installation then the products may not keep out the capillary rise of salty water.

15. If a tree is replaced for any reason, it is recommended that the complete palm/tree pit is reconstructed because of possible damage to the existing salt and root barriers.

16. It should be noted well that the Salt Barrier on the base of the pit is not intended to be a ‘root barrier’ so the depth of the pit should be deeper than anticipated root penetration.

See also the drawing: ‘Landscaping over salty soil.’

Terram Limited: Design Guidance is applicable to the installation instructions. All guidance given by Tony Jay of T. Jay (Geotechnics) Ltd is given as an agent of Terram Ltd. All guidance given on the use of Terram Ltd products for particular applications is given in good faith, free of charge. It does not add to or extend any warranties contained in the Terram Ltd Standard Conditions of Sale and, save as provided therein, the company (its agents and servants) accept no liability whatsoever in respect of advice given.