

G-SERIES DRAINAGE COMPOSITES

Prepared by:

TenCate™ Geosynthetics North America
365 South Holland Drive
Pendergrass, GA 30567
Tel. (706) 693 – 2226
Fax (706) 693 – 2044
www.tencate.com

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General

G-Series prefabricated drainage panels may be installed in a variety of construction applications. They may be installed against retaining walls, lagging systems, buttress/landfills, interceptor/edge drains and as sheet drains in reinforced soil structures. **G-Series Drainage Composites** can be cut with a utility knife or scissors. Slurries, shotcrete or concrete may be placed directly onto either side of the panels. Native soils can be used over **G-Series Drainage Composites**.

Vertical Applications

The **G-Series Drainage Composites** panel can be installed in rows or columns with the fabric side toward the soil. Each method has its advantages depending in the criteria of the project as to which method is best.

When installing the **G-Series Drainage Composites** in rows:

- Place the longitudinal edge of the core against the wall so that it is flush with the wall footing.
- Attach subsequent panels in shingle fashion. It is acceptable to:
 - (1) place the longitudinal edge of the upper panel over the flanged longitudinal edge of the lower panel;
 - (2) overlap the upper panel dimples onto the dimples of the lower panel by 50mm (2”).

When installing the **G-Series Drainage Composites** in columns:

- Start at the low point of the wall and attach the panel to the wall.
- Adjacent panels may be:
 - (1) joined together with the lateral edge of the connecting panel placed over the flanged edge of the previous panel;
 - (2) overlap the dimples of the preceding panel onto the dimples of the previous panel by 50mm (2”).

The geotextile from the adjacent panels should overlap the preceding panel. The fabric can be adhered with liquid adhesive or duct tape.

The top or terminal edge of the **G-Series Drainage Composites** should be sealed by applying a piece of filter geotextile sufficient in width to prevent soil or other foreign construction materials from intruding into or behind the **G-Series Drainage Composites** panels.

A “set back” or “ledge” condition may be encountered in some construction applications. Where this condition exists, **G-Series Drainage Composites** panels should be installed beginning at the bottom of the wall and ending at the ledge. Subsequent courses of **G-Series Drainage Composites** should be installed flat against the upper wall portion and over the lower edge. The overlapping **G-Series Drainage Composites** sections will be pushed flush against the wall during backfilling.

Attachment Method- no Waterproofing Membrane used

The **G-Series Drainage Composites** should be attached to non-waterproofed walls with contact adhesive, double sided tape or concrete nails. The **G-Series Drainage Composites** will be permanently secured upon completion of backfilling. Backfilling should be placed within two weeks. Backfill to at least 150mm (6") above the top edge of the **G-Series Drainage Composites**.

Attachment Method- Soldier Pile Supported Excavations

The **G-Series Drainage Composites** should be secured with the appropriate fasteners for the substrate, i.e. concrete, masonry, wood or soil. Prevent concrete from flowing behind the **G-Series Drainage Composites** core by sealing the backside of the panel with duct tape or wood furring strip. Voids in the soil or lagging that exceed 150mm (6") across and 125mm (5") deep must be filled to provide support for the **G-Series Drainage Composites**.

HORIZONTAL APPLICATIONS

Concrete Lined Channels

Proper preparation of the subgrade will require grading to a 2% minimum slope. The area of installation should be clear of rubble, rock, large soil clods, etc.

Place **G-Series Drainage Composites** with the fabric side toward the soil.

The flange of the second and subsequent panels should be placed over the backside of the preceding dimpled core and butted as close as possible to the preceding panel. The panel joints, longitudinal and transverse on the **G-Series Drainage Composites** core, should be sealed with duct tape. This will aid in preventing concrete or soil from intruding into the **G-Series Drainage Composites** core during subsequent construction phases.

Construction traffic should be minimized over the installed **G-Series Drainage Composites**. Sand and/or concrete may be poured directly over the **G-Series Drainage Composites** core.

Sheet Drains (Reinforced Soil Slopes and Walls)

Delivery, Storage and Handling

The contractor shall check the geosynthetic drainage composite upon delivery to ensure that the proper material has been received. During all periods of shipment and storage, the geosynthetic drainage composite shall be protected from temperatures greater than 60°, mud, dirt and debris.

Placement

The soil surface against which the geosynthetic drainage composite is to be placed shall be free of debris and inordinate irregularities that will prevent intimate contact between the soil surface and the drain.

Seams

Edge seams shall be formed by utilizing the flap of geotextile extending from the geocomposite's edge and lapping over the top of the geotextile of the adjacent course. The geotextile flap shall be securely fastened to the adjacent fabric by means of a non-water-soluble construction adhesive. Where vertical splices are necessary at the end of a geocomposite roll or panel, a 200-mm (8") continuous strip of geotextile may be placed, centered over the seam and continuously fastened on both sides with non water soluble construction adhesive. As an alternative, rolls of geocomposite drain material may be joined together by turning back the geotextile at the roll edges and interlocking the cuspidations approximately 50 mm (2"). For overlapping in this manner, the geotextile shall be lapped over and

tightly taped beyond the seam with tape or adhesive. Interlocking of the core shall always be made with the upstream edge on top in the direction of water flow. To prevent soil intrusion, all exposed edges of the geocomposite drainage core shall be covered by tucking the geotextile flap over and behind the core edge. Alternatively, a 300 mm (12") wide strip of geotextile may be used in the same manner, fastening it to the exposed fabric 200 mm (8") in from the edge and fold the remaining flap over the core edge. Alternatively, a 300 mm (12") wide strip of geotextile may be used in the same manner, fastening it to the exposed fabric 200 mm (8") in from the edge and fold the remaining flap over the core edge.

Repairs

Should the geocomposite be damaged during installation by tearing or puncturing, the damaged section shall be cut out and replaced completely or repaired by placing a piece of geotextile that is large enough to cover the damaged area and provide a sufficient overlap on all sides to fasten.

Soil Fill Placement

Structural backfill shall be placed immediately over the geocomposite drain. Care shall be taken during the backfill operation not to damage the geotextile surface of the drain. Care shall also be taken to avoid excessive settlement of the backfill material. The geocomposite drain, once installed, shall not be exposed for more than seven days prior to backfilling.

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