



GeoSpec™ Lightweight Fill

Landscape Applications

Landscaping over the upper floors of buildings or underground parking garages can be an attractive architectural feature. However, the weight of soil, especially where a variety grades are required, can add major load on the structure beneath.

Plasti-Fab GeoSpec lightweight fill material can be used to permit landscape architects the option to vary finished soil grade. Sufficient soil covering can be added over the GeoSpec lightweight fill material to permit the growth of trees, shrubs or grass.

GeoSpec lightweight fill material, having a density of approximately 16 kg/m^3 (1 lb/ft^3), replaces soil with a density of 1440 to 1765 kg/m^3 (90 to 110 lbs/ft^3). GeoSpec lightweight fill material is a closed cell foam so it absorbs limited amounts of water and a structural loading of 16 kg/m^3 (1 lb/ft^3) can be safely used.

For large permanent installations a concrete slab can be placed over GeoSpec lightweight fill material with allowances for different depths of soil for trees and shrubs. As an alternate a geotextile filter cloth can be placed over GeoSpec lightweight fill material to separate them from the soil. Soil can be placed directly over GeoSpec lightweight fill material where there is not a need to keep the soil out of the drainage system and where gardening activities will not disturb the GeoSpec lightweight fill material.

Where a concrete slab is placed over GeoSpec lightweight fill material, drainage should be arranged above the slab if it is required. Drainage at the waterproofing membrane would not be the prime method of draining the plantings. A geotextile fabric can be used or the soil placed directly over the GeoSpec lightweight fill material to allow drainage to occur through the joints between GeoSpec blocks to the drains located at waterproofed deck below.

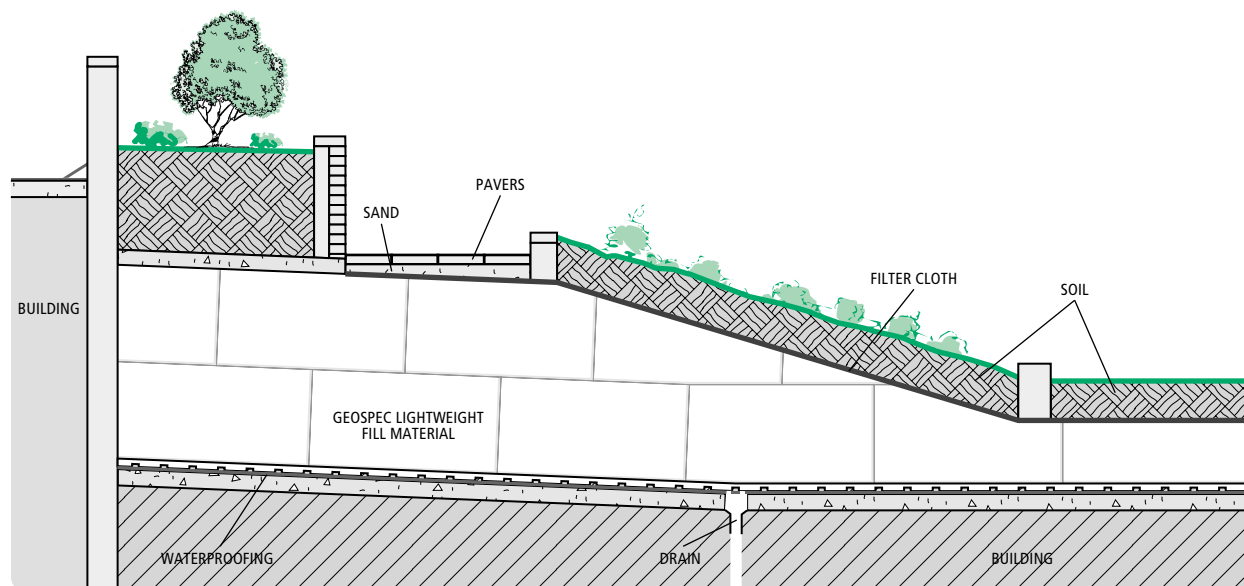
Where a rooftop garden is exposed to the weather it can have a more severe climate than at ground level. Winds are stronger, and exposure can be greater. Warm exhaust air, chimney exhaust, and heat reflected from walls may lead to drying of the plantings. The soil must be well insulated from the building so the plants will remain dormant in the winter.

Protect GeoSpec lightweight fill material from penetration by roots of trees or shrubs.

Recommended minimum soil depths would be from 300 mm (1 foot) under grass to 1.2 m (4 ft.) under large trees.

GeoSpec lightweight fill material must be restrained against lateral forces by retaining walls or other means.

GeoSpec lightweight fill material must not be left exposed to sunlight or weather for extended periods of time. Cover with soil, concrete, sand, pavers etc.



Application

Choose application instructions from the Plasti-Fab brochure "Geotechnical Engineered Applications: Selection, Application and Specification." The following instructions apply specifically to landscape applications:

Preparation

Waterproofing membrane to have a slope to adequately drain.

PlastiSpan sloped insulation can be used to create a slope to drains.

Drain tile to be installed if required.

Drainage

Lay PlastiSpan drainage board loose with drainage channels down.

OR

Lay protection board and 12 mm (1/2") gravel at minimum 50 mm (2") thick over roofing membrane to provide a drainage plane.

Lightweight Fill Material

Place lightweight fill material blocks at 1.2 x 4.8 m (4' x 16') x thickness required as indicated on plans. Where base for lightweight fill material blocks need to be leveled use Portland cement mortar pads approximately 1 ft. (300 mm) in diameter. Allow curing for 24 hours before working over blocks.

Finish

Place reinforcing mesh if required and pour concrete slab over lightweight fill material blocks as shown on plans;

OR

Lay geotextile cloth loosely over lightweight fill material blocks. Turn up and bond at walls or curbs using asphalt emulsion. Lap joints a minimum of 150 mm (6").

Place soil or sand (over concrete slab) (over geotextile cloth) directly over lightweight fill material blocks.

Specification

Choose specifications from the Plasti-Fab brochure "Geotechnical Engineered Applications: Selection, Application and Specification" with the following additions:

GeoSpec Lightweight Fill Material – manufactured by Plasti-Fab. Thicknesses as shown on plans (or specify).