

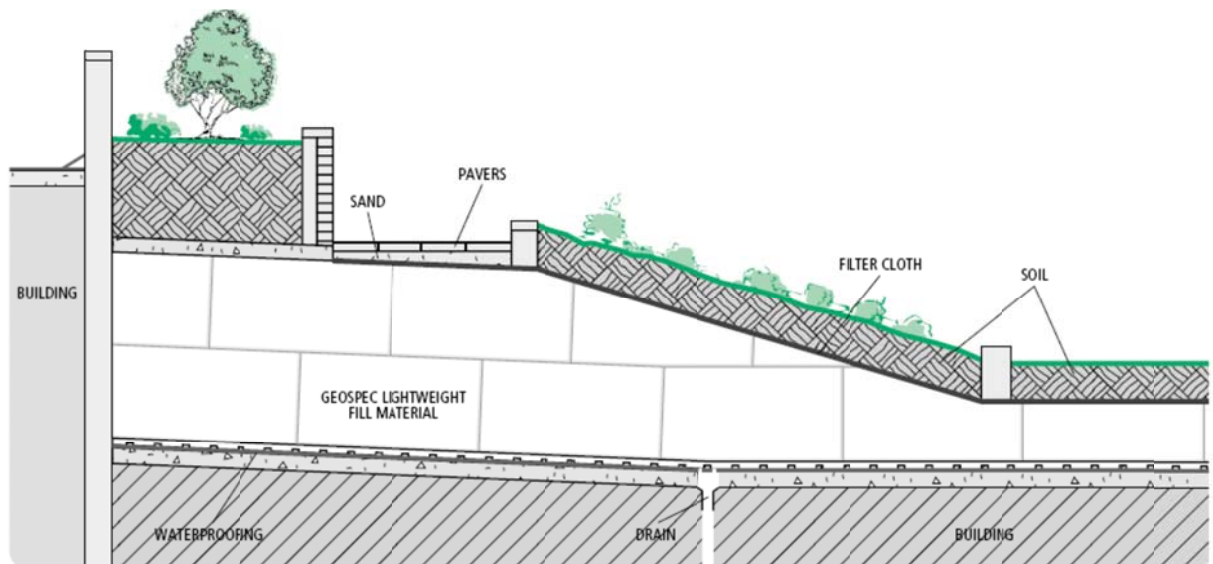
Product Information Bulletin

GeoSpec® Lightweight Fill Material for Landscaping Applications

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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.

GeoSpec® lightweight fill material meeting the requirements of ASTM D6817 (see Plasti-Fab® Product Information Bulletin 218 for product types and material properties) provides 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 with a density of approximately 12 to 40 kg/m³ (0.7 to 2.5 pcf) replaces soil with a density of 1440 to 1760 kg/m³ (90 to 110 pcf) to reduce loads on structures beneath. GeoSpec lightweight fill material is a closed cell foam plastic so it absorbs limited amounts of water.

Different depths of soil can be placed over GeoSpec lightweight fill material to provide allowance for trees and shrubs. Typically, a geotextile filter cloth is placed over GeoSpec lightweight fill material to separate it 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.



GeoSpec lightweight fill material was used over an underground parking garage as part of the renovation to the Calgary Court of Queens Bench building. The load induced on the underground parking structure due to surface landscaping needed be reduced. A portion of the soil fill material above the garage was replaced with GeoSpec lightweight fill material and the landscaping was completed.

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.

GeoSpec lightweight fill material must be protected from penetration by tree or shrub roots. Minimum soil depth would be determined by the landscape designer, but depths from 305 mm (1 foot) under grass to 1.22 m (4 ft.) under large trees are typical.

Installation

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.

See Plasti-Fab Product Information Bulletin 1002 for general GeoSpec lightweight fill material construction principles.