

Absorbent Landscape

Description: The Absorbent Landscape BMP mimics pre-development landscape functions such as rain fall interception, evapotranspiration, infiltration, and biological and physical filtration. Soils, plants and organic mulch are utilized to slow the flow of storm water runoff by evaporating and transpiring it back into the air, and helping to infiltrate runoff into the soil. Healthy loam soils can hold up to 20% of their volume as water and typically infiltrate far more.

Common Uses: Absorbent Landscapes are used in both lawn and shrub/tree planting areas. Runoff from impervious areas can be shed onto the absorbent landscape which then filters and infiltrates the water. This BMP will fit into most single family design scenarios.

Limitations: Absorbent Landscapes require gently sloping land (2-3% grade). They are not applicable on steep sites (>15%). This BMP supports a shallow soil profile and therefore it requires a large area of land to manage runoff relative to more concentrated BMPs (e.g. Rain Gardens). The Absorbent Landscape size factor is very large, so it is not practical for sites with limited landscape areas.

Size Factor: The size factor for the Absorbent Landscape BMP is 1.75 or (175%) based on the design specifications. In other words, an impervious area of 100 m² would require an Absorbent Landscape of 175 m² to manage the runoff.

General Specifications:

- 1) Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.
- 2) Design absorbent landscape areas with gentle slopes (2-5%) and preferably with shallow depression areas that can slow store stormwater, allowing it a chance to infiltrate.
- 3) Provide emergency flow paths for larger rain events.
- 4) Maximize vegetation cover over the site.
- 5) Use a mix of evergreen and deciduous vegetation (native and site adapted ornamental species).
- 6) Growing Medium Depths:
 - a) Lawn areas- 300 mm
 - b) Shrub and Tree planter areas- 450 mm
- 7) See Material Specifications for soil composition details
- 8) Ensure the sub-grade material is not over compacted which reduces infiltration rates and will reduce the performance of the BMP.
- 9) Scarify or till the sub-grade to a depth of 150 mm prior to placing growing medium.
- 10) Flow to the absorbent landscape should be distributed sheet flow.

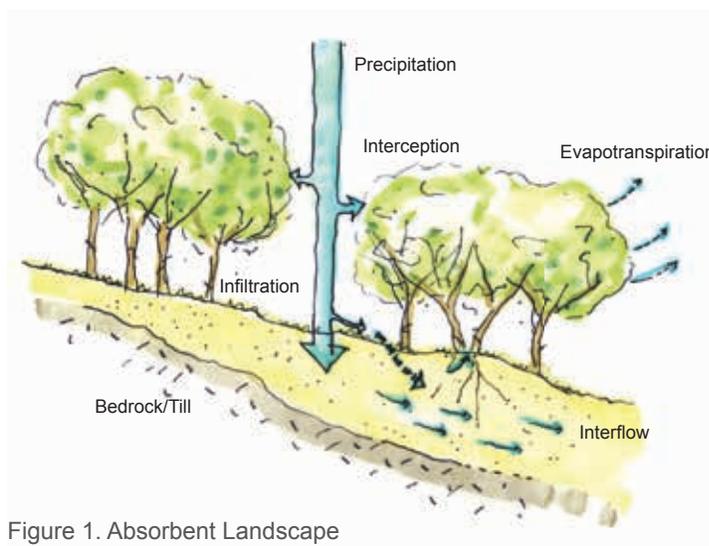


Figure 1. Absorbent Landscape

Absorbent Landscape Material Specifications

Growing Medium: Absorbent Landscape growing medium is an organic, sandy soil with minimal amounts of clays and silts. The growing medium must support plant life, infiltrate water, and also resist compaction in the case of lawn areas. The following table identifies growing medium properties for the Absorbent Landscape BMP.

	Absorbant Landscape Lawn Growing Medium	Absorbant Landscape Tree and Shrub Growing Medium
Particle size classes	Percent of dry weight mineral fraction	
Gravel (greater than 2.5 mm)	0	0
Sand (greater than 0.05 mm and less than 2.5 mm)	65-80	50-70
Silt (greater than 0.002 mm and less than 0.05 mm)	5-10	5-10
Clay (less than 0.002mm)	2-5	2-5
Organic Content (% Dry Weight)	5-10	15-20

Table 1. Growing medium specifications for Absorbent Landscape

As with bioretention materials, compaction of soils and mulch should be avoided to allow water to infiltrate properly and the BMP to function for absorption. No manual compaction should be necessary. Allow for natural settlement up to 20%.

Sand:

- 1) Sand to be hard, granular sharp sand well washed and free of impurities, chemicals or organic matter.
- 2) Particle size in sand to be:
 - a) 90-100% passing a 2.50 mm sieve
 - b) 0-65% passing a 0.500 mm sieve.
 - c) 0-5% passing a 0.050 mm sieve.

Mulch: Apply organic mulches at a depth of 50 mm. Use medium textured mulch that is not too large that it floats or too small that it reduces infiltration. In addition to BCSLA/BCLNA Landscape Standards (Current Ed.):

- Leaf mold, compost, shredded garden waste, well composted bark or mild, well composted manures can be used as mulches.
- Sawdust, fresh bark mulch and other pure wood products restrict soil development and deplete soil nutrients during decomposition. These are not suitable for use. Ensure mulches are weed free before application.