



# Cedar Grove Landscape & Construction Services

<http://www.cedar-grove.com/services.asp>

## Green roof & lightweight planting mixes

*Green Roofs can provide valuable environmental benefits and attractive landscapes. Lightweight, well-drained soil mixes are critical to successful green roofs—and compost is a vital component that helps provide nutrients, water storage, and soil life for successful plants.*

### Green Roofs provide a variety of benefits:

- Reduce stormwater runoff—by 70 to 90% !
- Filter stormwater runoff.
- Reduce building heating and cooling needs; and can allow equipment downsizing.
- Reduce reflected heat and glare.
- Provide recreational space and wildlife habitat.
- Can earn Stormwater Flow-Control Credits.
- Can help earn up to 7 LEED credits.



Optimal soil mixes and depths for green roofs depend on site-specific factors including planting type, microclimate and structural support. Green roof plantings are commonly divided into two types: “Extensive” and “Intensive”.

Examples of each are shown at right.

**Cedar Grove provides two green roof soil mixes, plus custom blends. Cedar Grove Green Roof Mix is frequently used for extensive green roofs. Cedar Grove Lightweight & Rooftop Planting Mix is often used for intensive planters on structures.**



Extensive Green Roofs are limited to low-growing, drought-tolerant plants. They typically use just 1 - 6 inches of soil, and often include a coarse drainage layer.



Intensive Green Roofs can include large shrubs and trees. Soil for intensive roofs may be 6 inches to over 2 feet deep.

# Cedar Grove Green Roof and Rooftop & Lightweight Soil Mix Performance

Soil mix components and depth for green roofs should be determined based on site-specific conditions and management goals, including:

- Planting type, density and ultimate size.
- Roof microclimate and rainfall intensity.
- Type and thickness of drainage layers.
- Roof structure and pitch.
- Roof microclimate and rain exposure.
- Outlet drain quantity and quality requirements.

*Cedar Grove Green Roof Mix* and *Cedar Grove Rooftop & Lightweight Planting Mix* are designed to meet the specifications of regional designers, and have been used on numerous successful projects. A Civil Engineer, Landscape Architect or green roof system vendor should be consulted to specify soil requirements for new and retrofitted structures. The local stormwater utility should also be consulted when planning new projects that drain to sewers or surface waters.

## Performance Parameters for Green Roofs and Planters on Structures

	Cedar Grove Rooftop & Lightweight Mix <sup>1</sup>	Cedar Grove Green Roof Mix <sup>1</sup>	Suggested Values <sup>2</sup> for Extensive Multi-course / Single-Coarse Roof	Suggested Values <sup>2</sup> for Intensive Roofs
Bulk Density (dry)	23 lbs/cu. ft.	30 lbs/cu. ft.		
Saturated Density	57 lbs/cu. ft.	48 lbs/cu. ft.		
Void Space (air at saturation)	21.7% (vol)	38.7% (vol)	>25 / >30%	>45%
Fines (silt+clay)	0.4	0.0	<15% / <7%	<20%
Saturated Water Holding Capacity	54.3% (vol)	28.3% (vol)	35-65% / 20-65%	45-65%
Total Porosity	59.5%	36.5%	>10%	>10%
Saturated Hydraulic Conductivity	33mm/min	185mm/min	>0.6 mm/min / >60mm/min	>0.3mm/min
C:N	20	15		
Maximum Saturated Weight	.91g/cc	.89g/cc		
Primary Nutrients				
- Nitrogen (NO <sub>3</sub> + NH <sub>4</sub> )	12 mg/l	15 mg/l		
- Phosphorous (P <sub>2</sub> O <sub>5</sub> )	42 mg/l	50 mg/l		
- Potassium (K <sub>2</sub> O)	278 mg/l	342 mg/l		
CEC	25 meq/100 g	13 meq/100 g		>5meq/100g
ph	6.9	7.8		
Conductivity	25 mmhos/cm	13 mmhos/cm		

1 - Based on April 2009 testing.

2 - From "Guidelines for the Planning, Execution and Upkeep of Green Roof Sites-2002 Edition". The Landscaping and Landscape Development Research Society E.V.