



ANALYSIS FOR:			ADDITIONAL COPY TO:		
John Smith Greenroof America 111 Plant Lane Sedum PA 11111					
LAB ID	SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	DATE RECEIVED	DATE COMPLETED
SMOTEST	TOP GROW 187.35	Drainage Media	4/1/2008	4/3/2008	4/10/2008

Green Roof Media Analysis

Results on dry weight basis unless specified otherwise

Analysis	Units	Result	FLL Guidelines for Multi Course Extensive Sites ¹
Particle Size Distribution (See accompanying report)			
≤ 0.05 mm (Fill reference value based on < 0.06 mm)	mass %		≤ 15
Denisty Measurements			
Bulk Density (dry weight basis)	g/cm ³	1.15	—
Bulk Density (dry weight basis)	lb/ft ³	71.77	—
Bulk Density (at max. water-holding capacity)	g/cm ³	1.35	—
Bulk Density (at max. water-holding capacity)	lb/ft ³	84.36	—
Water/Air Measurements			
Moisture	mass %	13.0	—
Total Pore Volume ²	Vol. %	35.4	—
Maximum water-holding Capacity	Vol. %	20.6	35 - 65
Air-Filled Porosity (at max water-holding capacity)	Vol. %	14.8	≥ 10
Water permeability (saturated hydraulic conductivity)	cm/s	0.016	0.001 - 0.12
Water permeability (saturated hydraulic conductivity)	in/min	0.375	0.024 - 2.83
pH and Salt Content			
pH (CaCl ₂)		7.7	6.0 - 8.5
Soluble salts (water, 1:10, m:v)	mmhos/cm	0.29	—
Soluble salts (water, 1:10, m:v)	g (KCl)/L	2.05	≤ 3.5
Organic Measurements			
Organic matter content	mass %	6.2	—
Organic matter content	g/L	71.1	≤ 65
Nutrients			
Phosphorus, P ₂ O ₅ (CAL)	mg/L	143.8	≤ 200
Potassium, K ₂ O (CAL)	mg/L	502.4	≤ 700
Magnesium, Mg (CaCl ₂)	mg/L	139.6	≤ 200
Nitrate + Ammonium (CaCl ₂)	mg/L	11.6	≤ 80

GROIA Multi Course Extensive

¹Forschungsgesellschaft Landschaftsentwicklung Landschaftsbau (FLL). 2008. Guidelines for the Planning Execution and Upkeep of Green-Roof Sites

²Total pore volume determined using measured particle density instead of assumed particle density as specified in FLL



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Green Roof Media Particle Size Distribution

Particle Size Analysis		Sum of particles less than size specified			
Diameter -mm-	%	Diameter -mm-	Diameter -in-	Sieve size	% sum of particles
< 0.002		< 0.002	---	---	
0.002-0.05		< 0.05	---	---	
0.05-0.25		< 0.25	0.0098	60 mesh	
0.25-1.0		< 1.0	0.0394	18 mesh	
1.0-2.0		< 2.0	0.0787	10 mesh	
2.0-3.2		< 3.2	0.125	1/8 inch	
3.2-6.3		< 6.3	0.250	1/4 inch	
6.3-9.5		< 9.5	0.375	3/8 inch	
9.5-12.5		< 12.5	0.500	1/2 inch	
> 12.5					

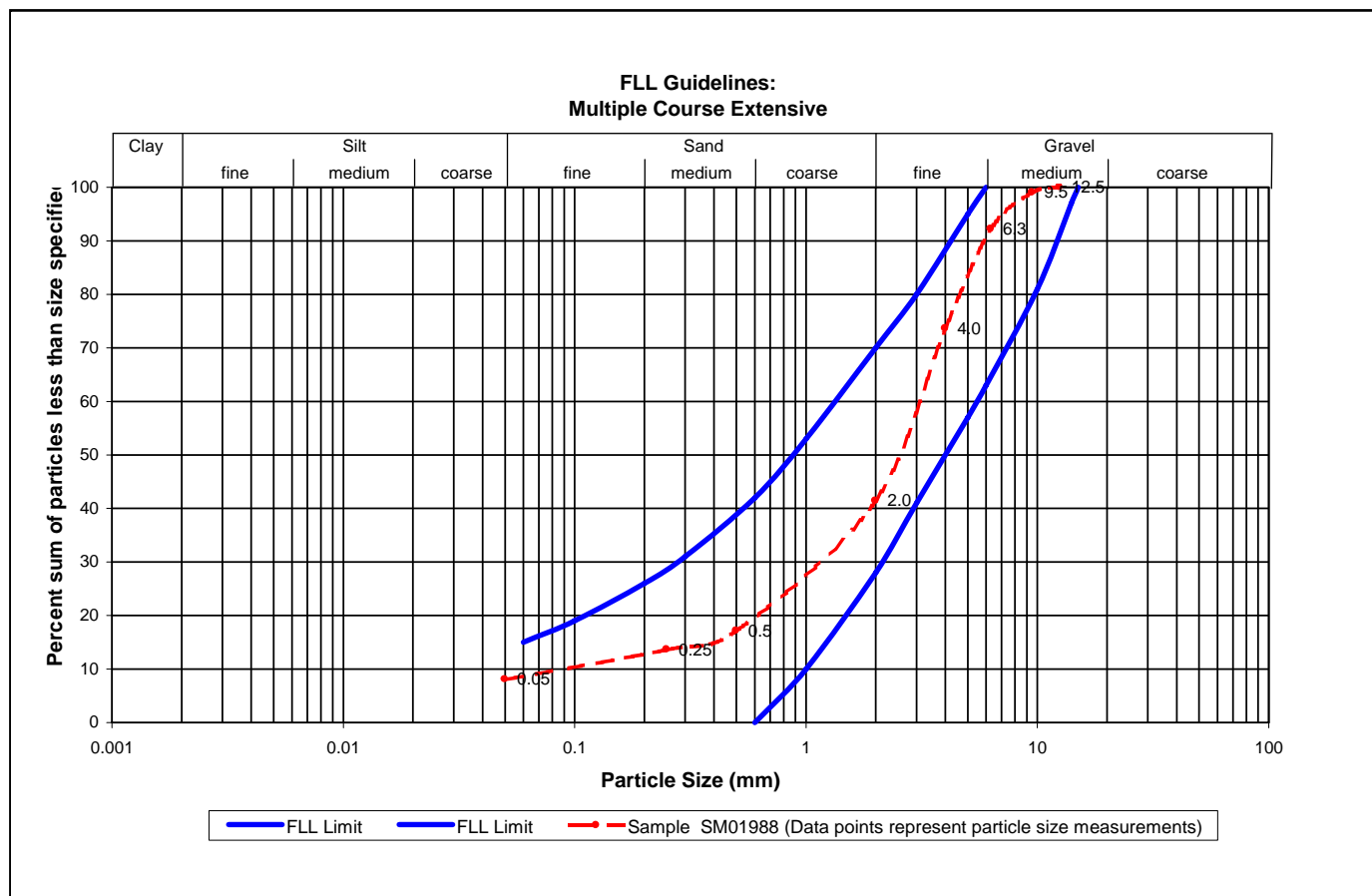


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Green Roof Media FLL¹ Particle Size Distribution Graph for Multiple Course Extensive Systems



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