



ANALYSIS FOR:			ADDITIONAL COPY TO:		
Todd Houser Norlite, LLC 628 S. Saratoga St. Cohoes NY 12047					
LAB ID	SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	DATE RECEIVED	DATE COMPLETED
SM07503	Norlite 3/8x No.8	Single-layer extensive	11/15/2018	11/20/2018	12/5/2018

Green Roof Media Analysis

Results on dry weight basis unless specified otherwise

Analysis	Units	Result	FLL Guidelines for Single Course Extensive Sites ¹
Particle Size Distribution (See accompanying report)²			
≤ 0.05 mm (Fll reference value based on < 0.06 mm)	mass %	1.6	≤ 10
Density Measurements³			
Bulk Density (dry weight basis)	g/cm ³	0.83	—
Bulk Density (dry weight basis)	lb/ft ³	51.99	—
Bulk Density (at max. water-holding capacity)	g/cm ³	0.98	—
Bulk Density (at max. water-holding capacity)	lb/ft ³	60.99	—
Water/Air Measurements³			
Moisture	mass %	11.9	—
Total Pore Volume	Vol. %	55.7	—
Maximum water-holding Capacity	Vol. %	14.6	20 - 65
Air-Filled Porosity (at max water-holding capacity)	Vol. %	41.1	≥ 10
Water permeability (saturated hydraulic conductivity)	cm/s	> 0.723	0.1 - 0.67
Water permeability (saturated hydraulic conductivity)	in/min	> 17.072	2.36 - 15.8
pH and Salt Content⁴			
pH (CaCl ₂)		9.0	6.0 - 8.5
Soluble salts (water, 1:10, m:v)	mmhos/cm	0.05	—
Soluble salts (water, 1:10, m:v)	g (KCl)/L	0.25	≤ 3.5
Organic Measurements⁵			
Organic matter content	mass %	0.0	—
Organic matter content	g/L	0.0	≤ 40

GR02: Single Course Extensive

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

²Particle size determined by ASTM D422-63

³Media density, total pore volume, water-holding capacity, air-filled porosity, & water permeability determined by ASTM E2399

⁴Media pH & salt content determined by methods of the Assoc. of German Ag. Analytic & Res. Inst. (VDLUFA) Methods Book vol I, Soil Analysis

⁵Organic matter content determined by loss on ignition (500 C), as described by SM 2540 G



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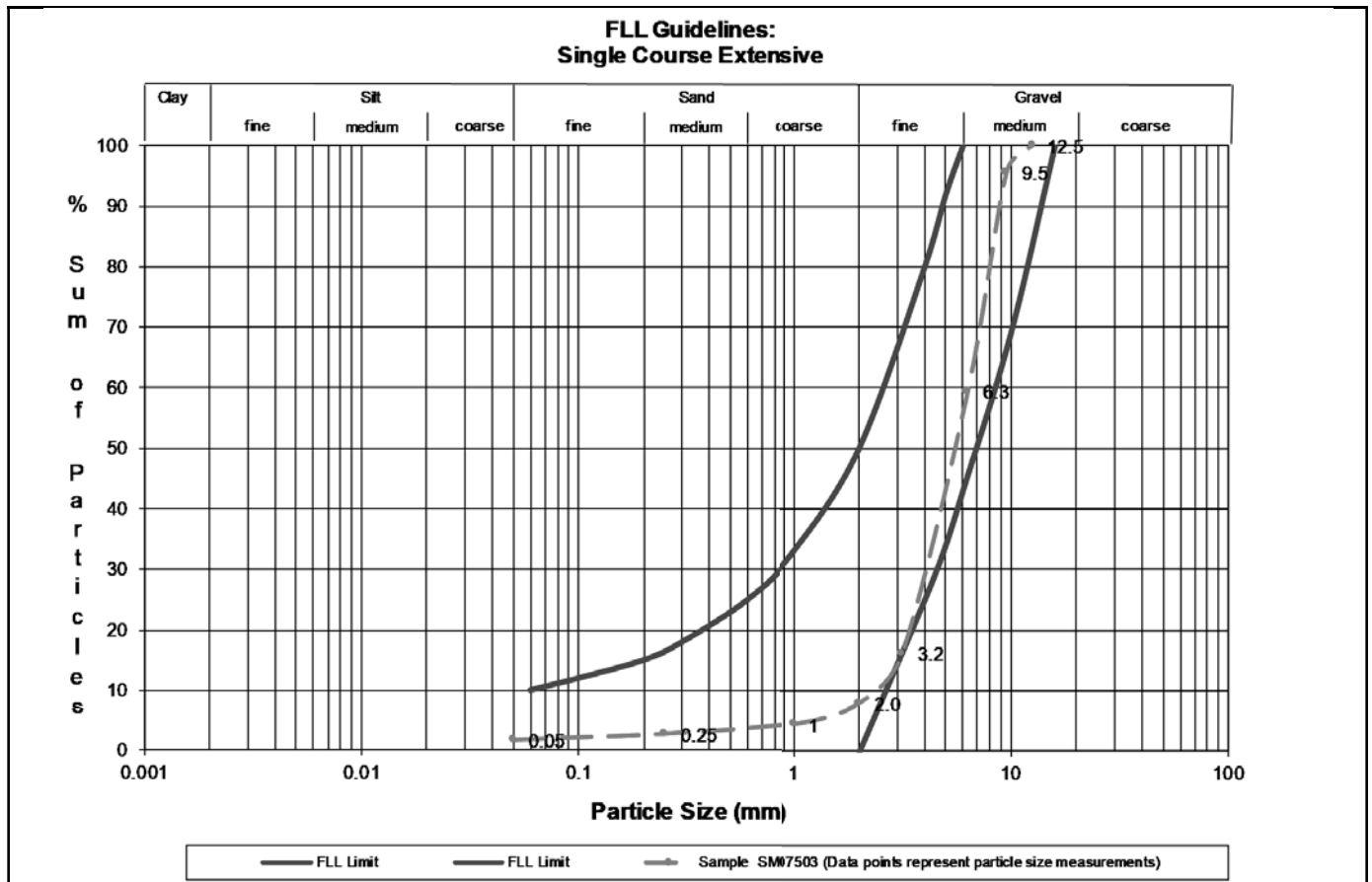
Green Roof Media Particle Size Distribution

Particle Size Analysis		Sum of particles less than size specified			
Diameter -mm-	%	Diameter -mm-	Diameter -in-	Sieve size	% sum of particles
< 0.002	0.4	< 0.002	---	---	0.4
0.002-0.05	1.1	< 0.05	---	---	1.6
0.05-0.25	1.0	< 0.25	0.0098	60 mesh	2.6
0.25-1.0	1.8	< 1.0	0.0394	18 mesh	4.4
1.0-2.0	3.5	< 2.0	0.0787	10 mesh	7.9
2.0-3.2	8.3	< 3.2	0.125	1/8 inch	16.2
3.2-6.3	43.3	< 6.3	0.250	1/4 inch	59.5
6.3-9.5	36.2	< 9.5	0.375	3/8 inch	95.7
9.5-12.5	4.3	< 12.5	0.500	1/2 inch	100.0
> 12.5	0.0				



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



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