



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
SM07597	Norlite No 4x0	Single-layer extensive	12/19/2018	1/2/2019	1/10/2019

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 %	9.8	≤ 10
Density Measurements³			
Bulk Density (dry weight basis)	g/cm ³	1.02	—
Bulk Density (dry weight basis)	lb/ft ³	63.94	—
Bulk Density (at max. water-holding capacity)	g/cm ³	1.43	—
Bulk Density (at max. water-holding capacity)	lb/ft ³	89.10	—
Water/Air Measurements³			
Moisture	mass %	12.7	—
Total Pore Volume	Vol. %	53.2	—
Maximum water-holding Capacity	Vol. %	40.4	20 - 65
Air-Filled Porosity (at max water-holding capacity)	Vol. %	12.8	≥ 10
Water permeability (saturated hydraulic conductivity)	cm/s	0.013	0.1 - 0.67
Water permeability (saturated hydraulic conductivity)	in/min	0.316	2.36 - 15.8
pH and Salt Content⁴			
pH (CaCl ₂)		8.5	6.0 - 8.5
Soluble salts (water, 1:10, m:v)	mmhos/cm	0.58	—
Soluble salts (water, 1:10, m:v)	g (KCl)/L	3.62	≤ 3.5
Organic Measurements⁵			
Organic matter content	mass %	0.3	—
Organic matter content	g/L	3.2	≤ 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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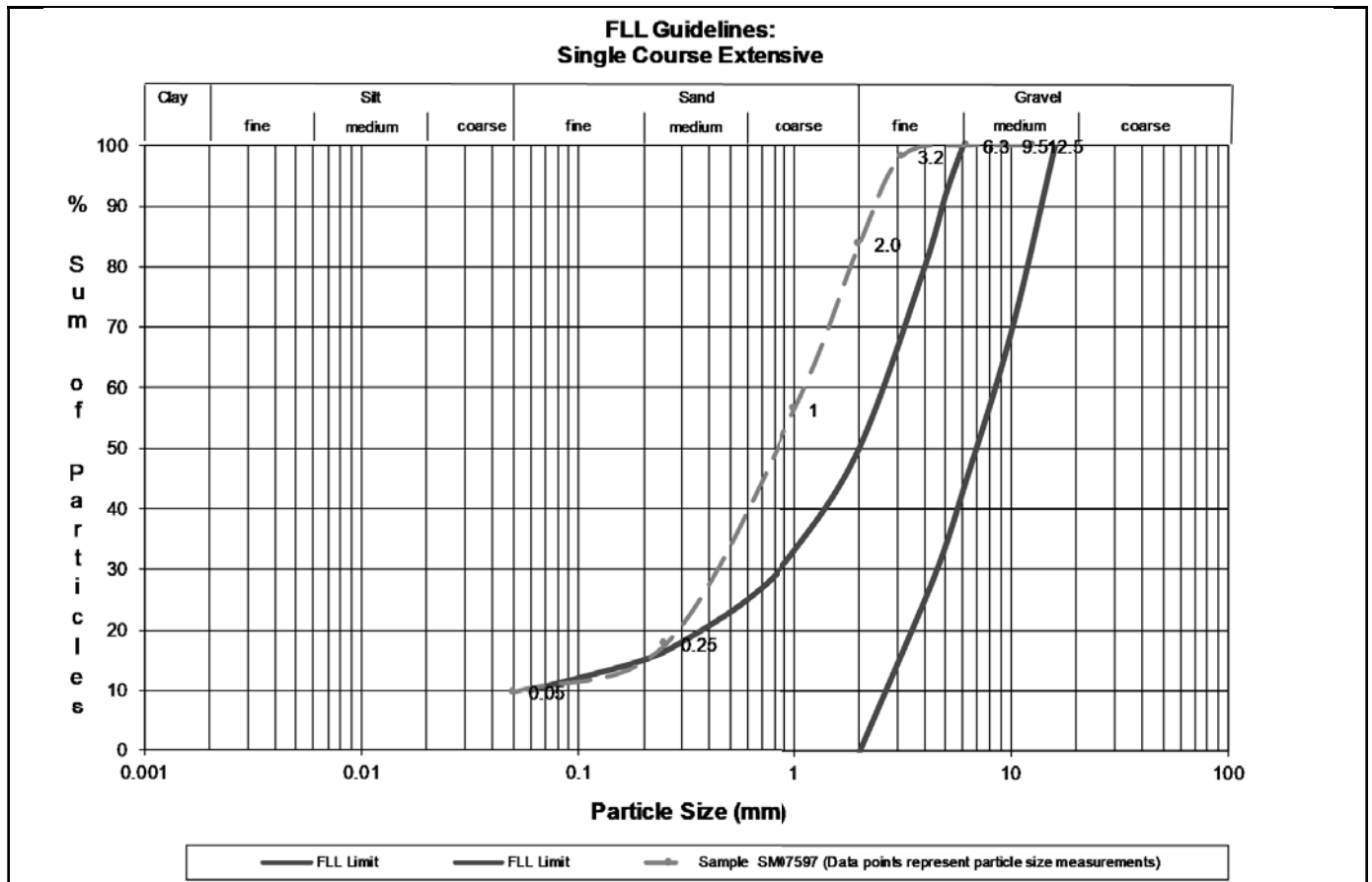
Green Roof Media Particle Size Distribution

Particle Size Analysis		Sum of particles less than size specified			
Diameter -mm-	%	Diameter -mm-	Diameter -in-	Sieve size	% sum of particles
< 0.002	2.9	< 0.002	---	---	2.9
0.002-0.05	6.9	< 0.05	---	---	9.8
0.05-0.25	8.0	< 0.25	0.0098	60 mesh	17.7
0.25-1.0	38.8	< 1.0	0.0394	18 mesh	56.5
1.0-2.0	27.3	< 2.0	0.0787	10 mesh	83.8
2.0-3.2	14.5	< 3.2	0.125	1/8 inch	98.3
3.2-6.3	1.7	< 6.3	0.250	1/4 inch	100.0
6.3-9.5	0.0	< 9.5	0.375	3/8 inch	100.0
9.5-12.5	0.0	< 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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