



ANALYSIS FOR:			ADDITIONAL COPY TO:		
Bill Wolfe Norlite 628 S. Saratoga St. Cohoes NY 12047					
LAB ID	SAMPLE ID	SAMPLE TYPE	DATE SAMPLED	DATE RECEIVED	DATE COMPLETED
SM06442	Norlite 3/4 x No. 4	Single-layer extensive	10/10/2016	10/17/2016	11/2/2016

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 %	0.8	≤ 10
Density Measurements³			
Bulk Density (dry weight basis)	g/cm ³	0.70	—
Bulk Density (dry weight basis)	lb/ft ³	44.00	—
Bulk Density (at max. water-holding capacity)	g/cm ³	0.80	—
Bulk Density (at max. water-holding capacity)	lb/ft ³	49.85	—
Water/Air Measurements³			
Moisture	mass %	5.3	—
Total Pore Volume	Vol. %	56.2	—
Maximum water-holding Capacity	Vol. %	9.7	20 - 65
Air-Filled Porosity (at max water-holding capacity)	Vol. %	46.5	≥ 10
Water permeability (saturated hydraulic conductivity)	cm/s	> 0.718	0.1 - 0.67
Water permeability (saturated hydraulic conductivity)	in/min	> 16.962	2.36 - 15.8
pH and Salt Content⁴			
pH (CaCl ₂)		8.6	6.0 - 8.5
Soluble salts (water, 1:10, m:v)	mmhos/cm	0.07	—
Soluble salts (water, 1:10, m:v)	g (KCl)/L	0.27	≤ 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. (VDL UFA) 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

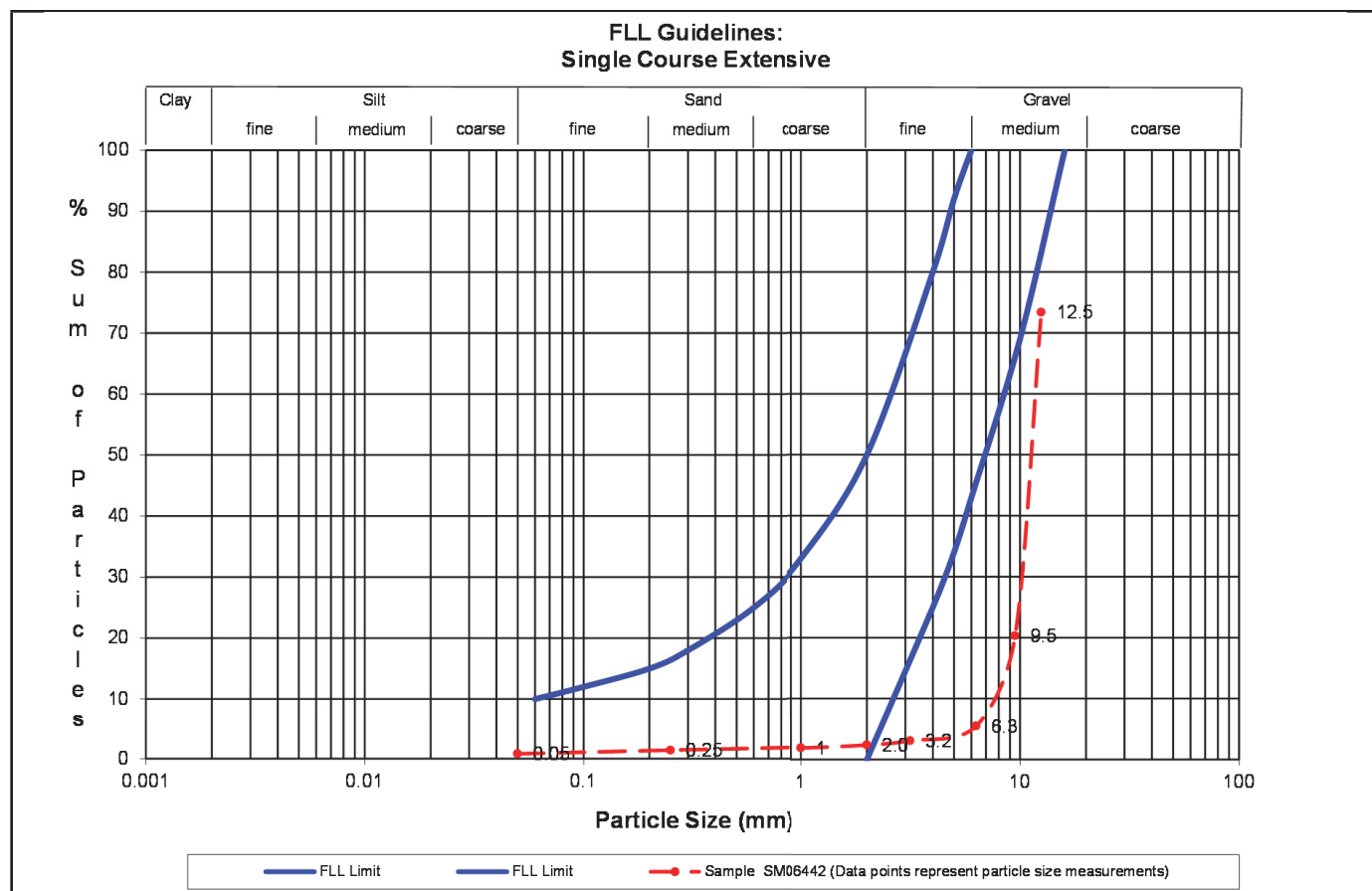
Particle Size Analysis		Sum of particles less than size specified			
Diameter -mm-	%	Diameter -mm-	Diameter -in-	Sieve size	% sum of particles
< 0.002	0.3	< 0.002	---	---	0.3
0.002-0.05	0.6	< 0.05	---	---	0.8
0.05-0.25	0.6	< 0.25	0.0098	60 mesh	1.4
0.25-1.0	0.5	< 1.0	0.0394	18 mesh	1.9
1.0-2.0	0.5	< 2.0	0.0787	10 mesh	2.4
2.0-3.2	0.7	< 3.2	0.125	1/8 inch	3.1
3.2-6.3	2.4	< 6.3	0.250	1/4 inch	5.5
6.3-9.5	14.8	< 9.5	0.375	3/8 inch	20.3
9.5-12.5	53.1	< 12.5	0.500	1/2 inch	73.4
> 12.5	26.6				



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FLL¹ Particle Size Distribution Graph for Single Course Extensive Systems



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