

## 2. XX Natural Granular Drainage Layer – Naturcycle® Drainage Aggregate

### A. Description:

A natural stone medium for extensive, semi-intensive and intensive green roof systems, planters and/or container applications, designed to retain stormwater. It provides horizontal drainage, which meets the requirements of ASTM E2777-14 Standard Guide for Vegetative Roof Systems. As detailed below, Naturcycle® Drainage Aggregate consists of all-natural mineral-based expanded aggregate with negligible organic content to enhance long term performance. It complies with the following technical and performance requirements:

### B. Physical and Chemical Properties:

Item	Results	Test Methods
1. Particle Size		
a. Proportion of Particles Passing $\leq 0.05$ mm	$\leq 5$ % by mass	by ASTM D422-63
b. Proportion of Particles Passing $< 9.50$ mm	$> 95$ % by mass	by ASTM D422-63
2. Bulk Density Measurements		
a. Bulk Density on Dry Weight Basis	30.0 - 40.0 lbs/ft <sup>3</sup>	by ASTM E2399
b. Bulk Density at Max Water Holding Capacity	45.0 - 55.0 lbs/ft <sup>3</sup>	by ASTM E2399
3. Water and Air Measurements		
a. Maximum Water Holding Capacity	$> 15.0$ %	by ASTM E2399
b. Air Filled Porosity	$> 45.0$ %	by ASTM E2399
c. Saturated Hydraulic Conductivity	$> 99.0$ in/min	by ASTM E2399
4. Chemical Measurements		
a. pH	6.5 - 8.0	by ASTM 4972 v CaCl <sub>2</sub>
b. Organic Matter Level	$< 0.5$ %	by ASTM F1647

### C. Standard of Quality shall be:

“Naturcycle® Drainage Aggregate” distributed by Naturcycle, LLC, [www.naturcycle.com](http://www.naturcycle.com) or (315) 707-8955, or architect/engineer approved equal with recent test results from an approved green roof media testing laboratory such as Turf & Soil Diagnostics or Penn State Agricultural Analytical Services Laboratory.

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*Please NOTE: Because soil-less media is a living system, Naturcycle, LLC can only guarantee their products to meet the specified properties at the time of delivery. Therefore, any claim of potential non-compliance must be at this time.*

*Please consult a Naturcycle representative before finalizing any specification as adjustment is sometimes needed based on unique project design requirements.*

*The details contained in these specifications correspond with the technical knowledge of Naturcycle, LLC at the time of publication. Naturcycle, LLC reserves the right to update and or adjust performance specifications periodically, in accordance with new insight and best practices, due to the availability of materials, or special project conditions related to plant selection, nutrient requirements, or environmental conditions.*

Naturcycle, LLC – October 2024