

# Tifton Soil Testing Lab, LLC

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TESTING CERT #1014.01

Date Received: June 21, 2021

Date Reported: June 23, 2021

Sample Number: L136B-21

Test Report For: Bulldog Field Equipment  
 4250 Longwood Avenue NW  
 Roanoke, VA 24017

RE: USGA Topdressing Sand Test

Attn: Chad Kropff

## PHYSICAL ANALYSIS<sup>1</sup>

MIXES ANALYZED (% by Volume)			SATURATED HYDRAULIC CONDUCTIVITY in/hr	POROSITY (%)			BULK DENSITY g/cm <sup>3</sup>	WATER RETENTION AT FIELD CAPACITY %	CHEMICAL	
SOIL	SAND	AMENDMENT		NON-CAPILLARY (air-filled)	CAPILLARY (water-filled)	TOTAL			pH <sup>2</sup>	EC <sup>3</sup> mmhos/cm
Bulldog Topdressing Sand			33.2	27.2	16.4	43.6	1.50	10.9	4.8	
General Recommendations for a Topdressing Sand:			≥ 20 in/hr.							

PARTICLE DENSITY<sup>4</sup> 2.64 g/cm<sup>3</sup>

## PARTICLE SIZE ANALYSIS

SAMPLES	GRAVEL 2 mm %	SAND FRACTIONS (% Retained) <sup>5</sup>					SAND <sup>6</sup> 0.05-2 mm %	SILT <sup>6</sup> 0.002-0.05 mm %	CLAY <sup>6</sup> <0.002 mm %	ORGANIC MATTER <sup>7</sup> % by wt.
		VERY COARSE 1 mm	COARSE 0.5 mm	MEDIUM 0.25 mm	FINE 0.15 mm	VERY FINE 0.05 mm				
Td Sand	0.9	3.6	21.6	60.2	9.9	2.0	97.3	1.3	0.5	
		← Topdressing Sand →								
USGA Recommendations for a Topdressing Sand:	≤ 10% (≤3% gravel)	60% minimum			≤ 20%	≤ 5%		≤ 5%	≤ 3%	

Note: Coarse Gravel (> 4 mm) should be 0%. Total "fines" (very fine sand, silt, and clay) should be less than (<) 10% in a rootzone mix.

1. Determined at 30 cm tension by USGA testing protocol (ASTM F1815)    2. ASTM D4972 Method A (water only)    3. SSSA Soluble Salts    4. ASTM D854-98    5. ASTM C136 and F1632    6. Bouyoucos, 1962    7. ASTM F1647    Topdressing Sand Form (Version 4) - Effective Date: 6/2/21

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RE: USGA Topdressing Sand Test

Recommendation Form (Version 2) - Effective Date: 6/2/21

## Recommendations:

The Bulldog Topdressing Sand from Bulldog Field Equipment was evaluated on June 22, 2021, to determine if it meets USGA recommendations for a topdressing sand. The condition of the sample as received was normal.

The Sand is a medium sand with 91.7% particles within the USGA range of 1.0 to 0.15 mm for a topdressing sand. This is a very high percentage of particles within this range with a majority of the particles (60.2%) in the medium sand fraction range. The USGA has recognized for many years that the medium sand fraction is the best sand fraction for a topdressing sand. This topdressing sand has only 4.5% particles larger than 1.0 mm and only 3.8% "fines" (2.0% very fine sand, 1.3% silt, and 0.5% clay). This Sand meets USGA particle size recommendations for a topdressing and rootzone mix (greensmix) sand.

The Sand is a silica sand with a soil water pH of 4.8.

The Sand had a water permeability rate of 33.2 in/hr. when compacted by the USGA procedure ASTM F1815 to simulate a compacted golf green. This is a very adequate rate for a topdressing sand. A topdressing sand should have a rate  $>20$  in/hr. to allow for adequate drainage.

**Conclusion:** According to USGA guidelines for selecting a topdressing sand, this is an excellent topdressing sand. This topdressing sand is very compatible with any green that meets USGA particle size recommendations and will greatly benefit those that do not. This is about as good as a topdressing sand gets.

*Hope Mullis*

Recommendations are based on the samples received. Results and comments relate to the samples tested. This report cannot be reproduced except in full, and not without written approval of the laboratory.