



Turf & Soil Diagnostics

MATERIALS TEST REPORT FOR Newfield Sand



REPORT TO: Newfield Sand
Matthew Pepin
59 Shaw Road
Sanford, ME 04073

DATE RECEIVED: Aug-07-2025
REPORT DATE: Aug-22-2025
CONDITION OF SAMPLE: Normal

Bunker Sand Evaluation*

Lab ID#	Sample Name	% Retained mm (US sieve)										
		% Sand 2.0 - 0.05 mm	Soil Separate % Silt 0.05-0.002mm	% Clay < 0.002mm	No. 5 Gravel 4.0 mm	No. 10 Gravel 2.0 mm	No. 18 V. Coarse 1.0 mm	No. 35 Coarse 0.50 mm	No. 60 Medium 0.25 mm	No. 100 Fine 0.15 mm	No. 140 V. Fine 0.10 mm	No. 270 V. Fine 0.05 mm
51613-1	Newfield Sand - Bunker Sand #2	98.8	< 1.0	< 1.0	0.0	0.1	3.7	32.6	39.2	13.9	5.3	4.2
Bunker Sand Guidelines ¹		-	≤ 3%		≤ 2%		≤ 15%		78 - 100%			≤ 5%
USGA Recommendations for Greens		≥ 92%	≤ 5% Silt	≤ 3% Clay	0%	≤ 3% Gravel ≤ 10% Combined		≥ 60% Combined		≤ 20%	≤ 5%***	

Lab ID#	Sample Name	Uniformity Coefficient Cu	D15 mm	D50 mm	D85 mm	Shape Angularity	Shape Sphericity	Acid Reaction	Infiltration Rate** in/hr	Infiltration Rate** cm/hr	Bulk Density g/cc
51613-1	Newfield Sand - Bunker Sand #2	3.3	0.18	0.39	0.79	Angular to Sub-Angular	Low to Medium	None	30.0	76.2	1.53
Bunker Sand Guidelines ¹		2.0 - 5.0	-	-	-	-	-		> 30	> 75	-

USGA Rootzone Coefficient of Uniformity Recommendations: 1.8 to 3.5 for Mixes with Peat; 2.0 to 3.5 for Mixes with Inorganic Amendment or Pure Sand.

**ASTM F1815 30 cm Tension

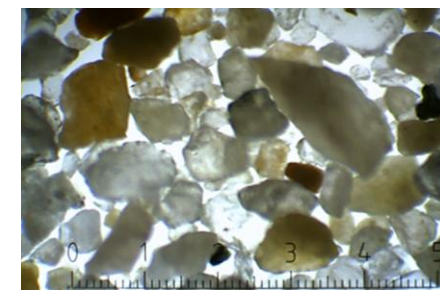
Lab ID#	Sample Name	Dry Color	Crusting	Penetrometer Value kg/cm ²
51613-1	Newfield Sand - Bunker Sand #2	2.5Y 6/2 Light Brownish Gray	None	2.1

*ASTM F1632 Method B, Determination of Size Factors SOP, & Bunker Sand SOP

***Maximum of 10% combined on Very Fine Sand, Silt, and Clay fractions.

¹ USGA Green Section Record Volume 58, Issue 11, June 2020

Samples were tested as received and comments pertain only to the samples shown.
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Photomicrograph of Lab ID 51613-1 Newfield Sand - Bunker Sand #2.

Reviewed by Duane K. Otto



Turf & Soil Diagnostics

August 22, 2025

Newfield Sand
Matthew Pepin

TSD File #51613

This report details the results of the Newfield Sand – Bunker Sand #2 sample, which was tested as received. The results are being compared to bunker sand guidelines published in 2020, which are included with the results for comparison purposes.

The particle size results indicate the sample is a clean sand with most of the particles in the coarse and medium sand size fractions. The gradation meets the bunker sand guidelines.

It is desirable for sand in green side bunkers to be compatible with the greens mix to reduce risks from sand splashed from bunkers onto nearby greens. The gradation suggests a potential risk of layering if a significant amount of sand is splashed onto USGA-style greens. The risk will depend on the amount of sand that builds up, which may be reduced through maintenance practices including topdressing and aerification.

To measure the potential of a sand to produce fried egg lies or buried balls, the resistance of the sand to ball penetration is measured using a penetrometer. The sample has a penetrometer reading of 2.1 kg/cm². Results above 1.8 kg/cm² are generally considered acceptable and values above 2.4 kg/cm² are considered more desirable as they suggest a potential for fewer instances of buried lies.

There is no crusting of the sand after wetting and drying, which suggests that bunkers with this sand in place may initially require only minimal raking after rainfall or irrigation events.

New bunker sands should initially drain well and a minimum infiltration rate of 30 in/hr is recommended, depending on climate and site conditions. The infiltration rate of this sample is 30.0 in/hr, which meets this minimum.

Despite this testing, bunker sand selection is highly subjective. Aside from playability, factors such as color and aesthetics are often weighed in the decision process. Visiting a club with the sand in use or building a test bunker to further evaluate the bunker sand may be beneficial. This would allow any interested parties to play into and out of it to see how they like it.

Please let us know if you have any questions or need further assistance. Samples are generally kept on the premises for 45 days after report date. Thank you for using Turf & Soil Diagnostics, Inc.

Duane K. Otto
President