

# Checking Your Sand — Quality Control Begins at Home

*A quick check of sand with your own testing equipment can help avoid problems later.*

by JAMES F. MOORE

**T**O EVALUATE the suitability of sands used in the construction of greens or bunkers, samples should be submitted to a physical soil testing lab for analysis. The laboratory has the very specialized equipment necessary to determine the amounts of

silt and clay in the sand, as well as other factors such as total porosity, water retention, etc. However, every superintendent should have a nest of soil sieves and an accurate scale to monitor the consistency of sizing of the sand being delivered for topdressing and

topping off bunkers. Sands can vary widely in their makeup, even from the same source. As a rule, sand size specifications for golf course use are much tighter than in other industries. A quick screening of sand as it is delivered will prove well worth the initial cost of the equipment.

Numerous companies sell soil sieves and scales, so be sure to check around for the best price. In this office, we acquired our equipment from the company listed below.

Thomas Scientific  
Box 99  
Swedesboro, NJ 08085-0099  
(609) 467-2000

Both 8-inch and 4-inch sieves are available. We use the 8-inch sieves since they are more accurate and we test materials regularly. The 4-inch sieves should be fine for golf course use if you want to save a few dollars. You should acquire the following sieves:

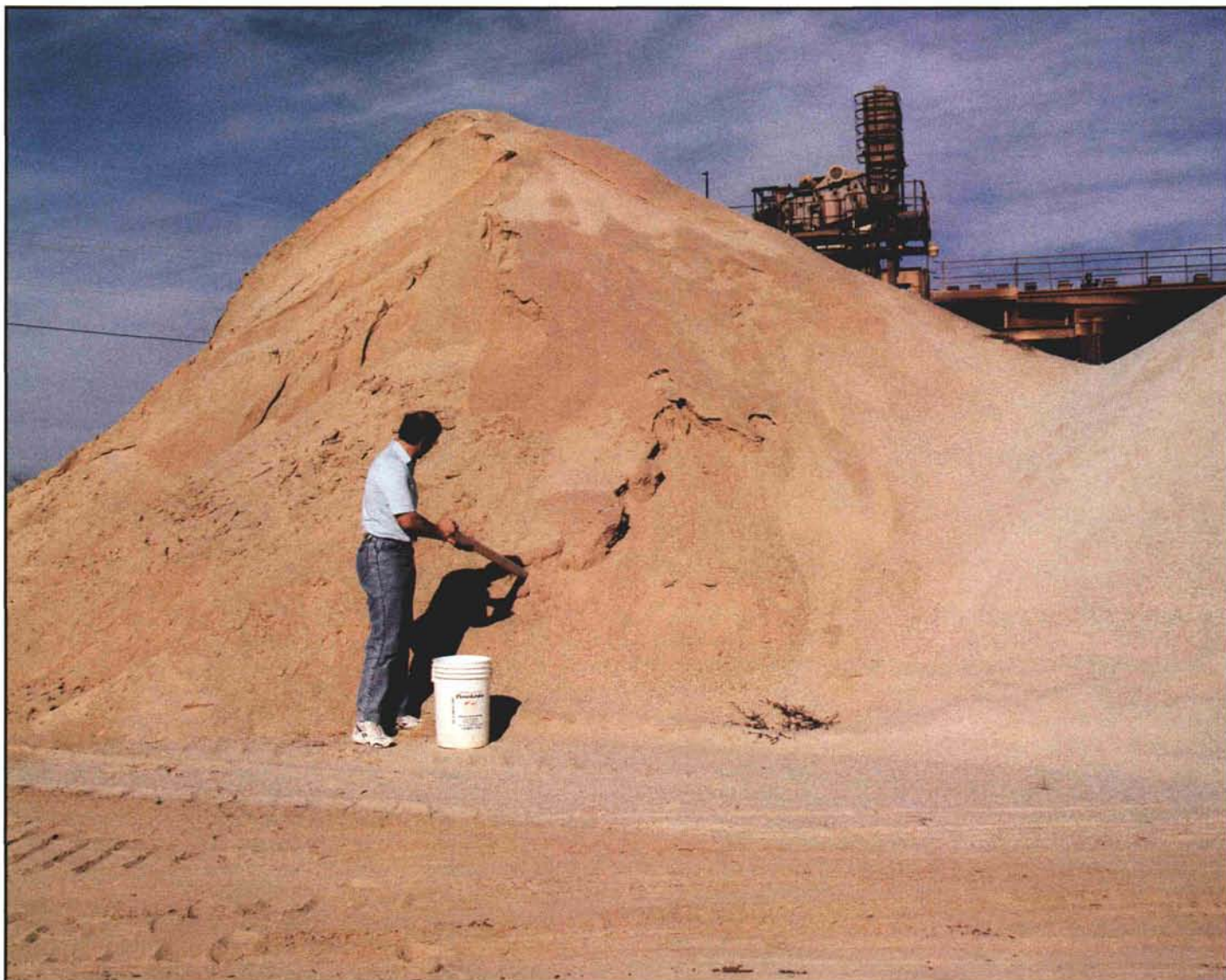
Mesh	Millimeters
10	2
18	1
35	0.5
60	0.25
100	0.15
140	0.1
270	0.05
Pan	
Cover	

You also need an accurate scale or balance capable of measuring to within 1 gram or 0.1 ounce. We use a scale called "Lume-O-Gram" (Model D1001-BA) from Ohaus that we also purchased from Thomas Scientific (catalog no. 1367-H32). The digital scale doubles as a letter scale if you like. The cost was \$89.00. Sieves vary in cost depending on the mesh. While most of our 8-inch sieves were about \$35.00 apiece, the 270 mesh was \$63.00.

There are many different methods of sieving. The procedure we use in this office is as follows. Keep in mind that



*A nest of sieves is mounted on a power shaker like that used by professional labs. This is a nice accessory if you can afford it. If not, manual shaking will suffice.*



When collecting sand for testing, be sure to remove samples from the inside of the pile rather than from the surface. This will ensure the sample is more representative of the entire pile.

your sand must be very dry for your numbers to be accurate.

1. Select a small container for the sand. We use the container that came with our scale. You need something that will hold about 3 cups of sand (700 to 800 grams). Place the container on the scale and adjust it to zero.

2. Put your sand in the container and record the weight. Let's assume you have 700 grams.

3. Build your nest of sieves by placing the largest screen (2.0mm) on top and getting progressively smaller as you go down, ending with the pan on the bottom.

4. Add the sand to the top sieve and cover. Shake the nest of sieves for five minutes.

5. Make sure the container is clean. Empty the sand from the top sieve into the container and record the weight.

6. Empty the container and clean. Empty the sand from the next sieve and record the weight. Repeat this procedure for each sieve and the pan.

7. Divide the weight retained on each screen by the total weight (700 grams in this case). This gives you the percentage of each fraction, as illustrated below.

Mesh	Retained on Screen (Grams)	Percentage (Retained Weight/ Total Weight)
10	0	0
18	21	3
35	175	25
60	385	55
100	49	7
140	35	5
270	21	3
Pan	14	2

Before you accept delivery of a load of sand, take the time to perform this simple test. It may not be practicable to test before the delivery is made. However, be sure you have an agreement with your supplier that you will not submit payment for any load that does not meet your specifications.

On many of today's courses, sand is used on greens in quantities second only to the amount of water applied. This simple equipment and test can help protect your course's most valuable physical asset — the greens. Although you might be discouraged with the inconsistency of your sand supply, in this case, what you do not know can definitely hurt you.

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