Racing Surfaces Testing Laboratory

2 Summer St. Unit 1
Orono, ME 04473
207.866.1046

LABORATORY TEST METHOD FOR FIBER SEPARATION (ADAPTED FROM ASTM D422 and D2974)

NOTE:
- Use this data sheet when you have fiber in a dirt track's material or when you want to remove fiber from dewaxed sand to determine the fiber mass percent.
- When Projects call for Fiber and Organic testing, complete this sheet for both (DO NOT complete the Organic data sheet in addition to this one.).

1. Place a clean, dry pan on Ohaus scale and press the “tare” button so the scale displays 0g.
2. Add desired amount of material to pan and weigh it. Record this number on the data sheet under “Weight of Dry Material (g).”
3. Weigh a No. 10 sieve to ±0.1g and record weight under “Weight of # 10 Sieve (g).”
4. Place No. 10 sieve directly on top of the pan from the sieve stack.
5. Place the rest of the sieves from the stack on top of the No. 10 sieve and cover with the sieve cap.
6. Place the stack in the sieve shaker, ensuring that the circular arm is sitting securely around the sieve cap. Press the red button to begin shaking. Wear ear protection or leave the room to prevent hearing loss.
7. When shaking is complete, the shaker will turn off by itself. Retrieve the sieve stack. Remove the No. 10 sieve and weigh it and its contents. Record this weight in “Weight of # 10 Sieve with Fiber & Rubber (g).”
8. Weigh a clean, dry container. Record this weight in “Weight of Container (g).”
9. Place the contents of the pan into the container, and weigh it. Record the weight in “Weight of Container + Sand & Remaining Fine Fiber (g).”
10. Bag the contents of the No. 10 sieve. Mark the bag “Fiber from” followed by the correct sample identifier.
11. Weigh a clean crucible and record the weight under “Weight of Crucibles (g).”

12. Transfer approximately 100g of material from the container to the crucible, weigh the filled crucible, and record this weight under “Weight of Crucibles and Unburned Sand (g).”

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13. Place crucible in muffle furnace. If more than one sample is being tested, make sure to record the location of each sample in the furnace.

14. Dial the muffle furnace to 8.0. Press the green **start** button on the timer. It will take approximately 45-60 minutes to reach 825°F, the target temperature.

15. When the furnace has heated to between 800°F and 850°F, turn the temperature setting to between 4.6 and 4.8, and press the **start** button again.

16. *Important notes* 1) Do not let the temperature inside the furnace exceed 900°F. This may cause the sand particles to crack. 2) DO NOT OPEN the muffle furnace while it is operating or the crucibles will undergo thermal shock.

17. The timer will turn off the muffle furnace automatically after 10 hours. It will then take 4 more hours to cool down. After the sample is cool, the furnace will be safe to open.

18. After the furnace has cooled, record the final mass of the crucible and sample under "Weight of Crucibles and Burned Sand (g)."