

Racing Surfaces Testing Laboratory

2 Summer Street
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207.866.1046

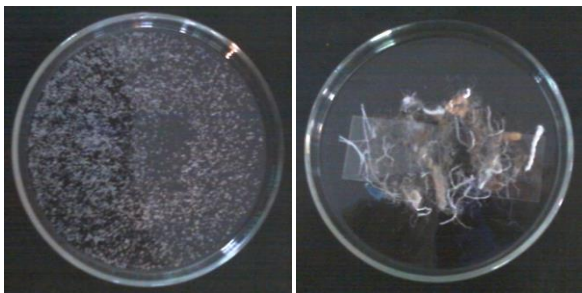


LABORATORY TEST METHOD FOR MICROSCOPY TO DETERMINE PARTICLE SHAPE OF RACING SURFACE MATERIALS

Note:

This procedure applies to both dirt and synthetic surfaces.

1) After performing a sieve separation, place a small sample of sand or fiber in a **glass plate** and place it under the **microscope**. Use sand from the **sieve** with the largest percent retained. If there are any sieves with a percent retained within three percentage points of highest percent retained, microscopy should be performed with the sand from those sieves as well (separate pictures). If using fiber, take a small amount of fiber from dewaxed material. It will be easiest to do this right after wax separation. Place a **glass slide** over the fiber to flatten it. This will make it easier to focus.



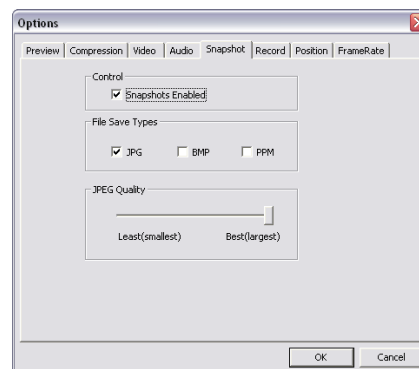
2) Verify that all microscope cords are plugged in: a) camera b) USB c) light.

3) Turn on the light on the microscope by turning the dial on the left of the microscope counterclockwise.



4) Start the “**Sensoray FrameGrabber**” application.

5) Go to Tools->Options. On the Snapshot tab, verify that “**Snapshots Enabled**” is checked, and that the “**JPEG Quality**” is set to “**Best (largest)**”.

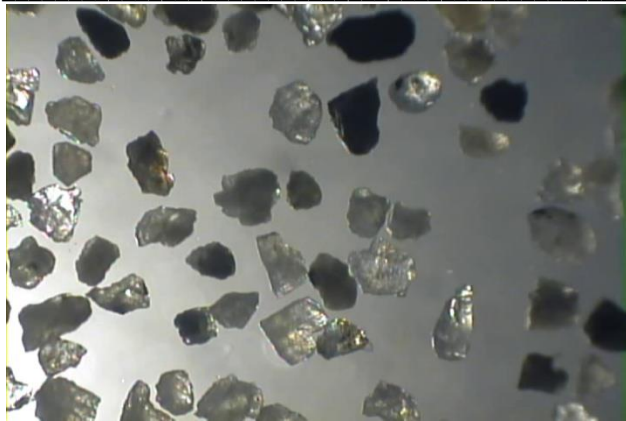


6) Go to Actions->Start Stream.

7) Using the image displayed on the screen, find a region in the sample with a large number of particles where the shape of each particle can be clearly determined.

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8) Bring the image into focus (as best as possible).

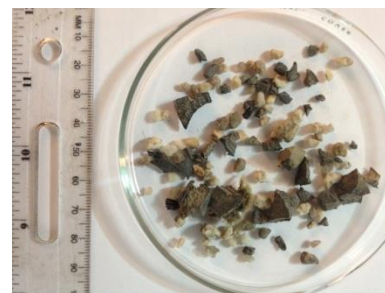


9) Take a snapshot using Actions->Snapshot. You will be directed to save the snapshot as an image. Save the snapshot in a folder named "Microscopy" in the project folder. If there is no "Microscopy" folder, make one. Name the snapshot with the following format:

MICsievenumber_ProjectIdentifier_SampleIdentifier_SAN
DorFiber_MagnificationX . Take a snapshot of 20X and 40X. A microscopy snapshot can be taken of a representative sample of previously sieved material (it would be a pinch from a bag of sand collected from the sieves after the test has been completed). If this is the case, the naming format becomes:

MICALL_ProjectIdentifier_SampleIdentifier_SANDorFiber
_MagnificationX.

10) If the sand particles are too large to view easily with the microscope (No. 10 sieve or larger), then a picture may be taken with a regular camera. Place the plate with sand on a piece of **blank white paper**. Place a **metric ruler** next to the plate. Take a picture of the sand and ruler from above using a camera. Save the picture in the microscopy folder in Dropbox under the name format: PICsievenumber_ProjectIdentifier_SampleIdentifier_SAN
DorFiber.



Revision No.	Date	Revision By	Description
1.0	15-May-2009	R. Beaumont	Created and issued procedure
1.1	26-Dec-2011	M. Segee	added fiber directions
1.2	22-June-2012	M. Segee	Add sieves
1.3	2-Jul_2013	M. Segee	Take a picture with camera if sand too large, added naming format.
1.4	8-Jul-2013	M. Segee	How many particles in picture, added pictures
1.5	9-Jul-2013	M. Segee	Take pictures from more than one sieve if <3% difference
1.6	11-Dec-2013	T. Thomson	Naming format for all of sieved material