

SOP No: SOP-MILL-006	SOP Description: Thickness Grading of Rough Rice
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### **SOP-MILL-006: Thickness Grading of Rough Rice**

Scope:

At harvest, rice kernels within a given crop naturally vary in dimension. Since kernels of varying sizes process differently, manufacturers often specify kernel size in order to ensure consistency during processing operations.

Principle:

This process separates rice kernels into small, medium and large classifications within their designated USDA-Defined type: long, medium, or short grain.

Equipment:

Precision Sizer, Carter-Day, Minneapolis, MN

Procedure:

1. Select the appropriate screens.
  - a. Long Grain Screen sizes: 5 ½ (2.03 mm), 4 ⅝ (1.84 mm), 4 ⅜ (1.74 mm)
  - b. Medium Grain Screen sizes: 5 ½ (2.18 mm), 5 ⅝ (2.03 mm), 4 ⅝ (1.84 mm)
  - c. Note: Screen sizes printed on the screens are measured in 64ths of an inch. Ex. screen size 5 ⅝ is actually 5 ⅝/64 inch. Screen size may also be measured in millimeters (mm).  
To convert the screen size to mm:
    - i. Convert fractions to decimals. Ex. screen size 5 ⅝ = 5.125 = 5.125/64 inch = 0.080 in.
    - ii. Convert in. to mm: 0.080 in. x 25.4 mm/inch = 2.03 mm.
2. Place the proper screens in the machine, with the largest screen size at the top.
  - a. Unplug the machine.
  - b. Open the door on the side of the machine.
  - c. Unscrew the nut on the bolt that will hold the screen in place.
  - d. Insert the screen, with the open end going in first.
  - e. Tighten the nut hand-tight back on the bolt.
  - f. Close and secure the door.
  - g. Place the collection pan underneath the screen.
3. Plug in the machine and set the speed on 30.
4. Turn on the machine and pour sample through the spout. Let it run until very few kernels are coming out in the pan. The kernels that stay inside the screen are larger than the screen size; the kernels that pass through the screen are smaller than the screen size.
5. Empty the pan and the screen into appropriately labeled storage vessels.

6. Change to the next smallest screen size and pour the sample that came out in the collection pan through that screen.
7. Continue this process until all sizing is complete.
8. When finished, clean out the screens and machine and store properly.