

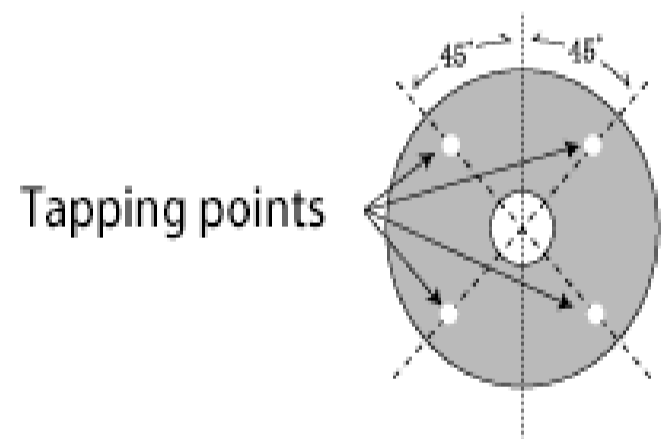
GRINDER (ABRASIVE) WHEEL TESTING

- Check the label on the wheel to make certain it is intended to be used on the type of material you will be grinding. There are general purpose grinding wheels, but some are intended to be used only on specific types of materials such as aluminum or stainless steel only. Use the proper wheel only for the materials for which it is intended or it could break or shatter.
- Check the diameter of the wheel, as well as its maximum rated speed, to make sure it is suitable for use with your grinder. The size and speed ratings of an abrasive wheel are usually expressed in revolutions per minute, or RPMs. Placing an over-sized or underrated abrasive wheel on a grinder that turns faster than the rated speed of the wheel can cause it to break apart and send small pieces of the wheel flying.
- Make sure the arbor size (center hole) of your wheel is the right size for your grinder. If the arbor hole is too small and force is needed to place it onto the shaft, the wheel could crack. If the arbor hole is too large, the wheel could become unbalanced when you turn on your grinder and break apart. Some wheel manufacturers provide bushings that can be used to adjust the size of the opening.
- Check the wheel to see if it has any visible damage or breaks. You must also check for hidden cracks by “sounding” the abrasive wheel. This is also called a “ring test”. See “How to Perform the Test” below for more information.
- Take care not to overtighten the retaining nut and flange that holds the wheel onto the grinder, as applying too much torque can cause the wheel to crack.
- Make certain the spindle guard that covers the spindle nut has been properly reinstalled on your grinder.
- Always stand to one side of the grinder when turning it on so if the wheel happens to shatter, the particles will be less likely to strike you.



How to Perform the Test

1. Balance the wheel on a metal object such as the shaft of a screwdriver. Heavier wheels may be allowed to rest in a vertical position on a clear hard floor.
2. Tap the flat side of the wheel with a light non-metallic implement, such as the handle of a screwdriver, at a point 45 degrees from the vertical center line on each side of the wheel AND one to two inches from the edge of the wheel. Large, thick wheels may be struck on the periphery rather than the side of the wheel.
3. Listen for a “ringing” noise, which indicates that portion of the wheel is not cracked. If you hear a dead “thud” sound, this means the wheel may be cracked and should not be used.
4. Rotate the wheel 45 degrees and repeat the test until the entire wheel has been checked.



How to Use the Results

The ring test depends on the fact that a crack in the wheel will normally change the sound emitted when the wheel is lightly tapped. An undamaged wheel will give a clear tone. If cracked, there will be a dead sound and not a clear ring. Comparison of the sound with other wheels of the same lot and specification will allow rejection of any wheel with a suspiciously different ring. Discard the wheel if the proper tone is not apparent.

If you have any questions about the grinding wheel, please contact Yale Environmental Health and Safety at ehs.yale.edu or 203-785-3550.