

**WAC 296-155-365 Abrasive wheels and tools.** (1) **Power.** You must supply all grinding machines with sufficient power to maintain the spindle speed at safe levels under all conditions of normal operation.

(2) **Guarding.**

(a) Grinding machines must be equipped with safety guards in conformance with the requirements of American National Standards Institute, B7.1-1978, Safety Code for the Use, Care and Protection of Abrasive Wheels.

(b) **Guard design.** The safety guard must cover the spindle end, nut, and flange projections. The safety guard must be mounted so as to maintain proper alignment with the wheel, and the strength of the fastenings must exceed the strength of the guard, except:

(i) Safety guards on all operations where the work provides a suitable measure of protection to the operator, may be so constructed that the spindle end, nut, and outer flange are exposed; and where the nature of the work is such as to entirely cover the side of the wheel, the side covers of the guard may be omitted; and

(ii) The spindle end, nut, and outer flange may be exposed on machines designed as portable saws.

(3) **Use of abrasive wheels.**

(a) Floor stand and bench mounted abrasive wheels, used for external grinding, must be provided with safety guards (protection hoods). The maximum angular exposure of the grinding wheel periphery and sides must be not more than 90°, except that when work requires contact with the wheel below the horizontal plane of the spindle, the angular exposure must not exceed 125°. In either case, the exposure must begin not more than 65° above the horizontal plane of the spindle. Safety guards must be strong enough to withstand the effect of a bursting wheel.

(b) Floor and bench-mounted grinders must be provided with work rests which are rigidly supported and readily adjustable. You must adjust such work rests to a distance not to exceed 1/8 inch from the surface of the wheel. The work rest may be omitted when contacts of the work piece with the grinding surface below the horizontal plane of the spindle are necessary and unavoidable, or where the size or shape of the work piece precludes use of the work rest.

(c) Cup type wheels used for external grinding must be protected by either a revolving cup guard or a band type guard in accordance with the provisions of the American National Standards Institute, B7.1-1978, Safety Requirements for the Use, Care, and Protection of Abrasive Wheels. Abrasive wheels must only be used on machines provided with safety guards, except the following:

(i) Wheels used for internal work while within the work being ground.

(ii) Mounted wheels, two inches and smaller in diameter used in portable operations.

(iii) Types 16, 17, 18, 18R and 19 cones and plugs, and threaded hole pot balls where the work offers protection or where the size does not exceed 3 inches in diameter by 5 inches in length.

(iv) Metal centered diamond lapidary wheels either notched, segmented or continuous rim used with a coolant deflector, when operated at speeds up to 3500 surface feet per minute (S.F.P.M.).

(v) Type 1 wheels not larger than two inches in diameter and not more than 1/2 inch thick, operating at peripheral speeds less than 1800 SFPM when mounted on mandrels driven by portable drills.

(vi) Type 1 reinforced wheels not more than 3 inches in diameter and 1/4 inch in thickness, operating at peripheral speeds not exceeding 9500 SFPM, provided that safety glasses and face shield are worn.

(vii) Valve seat grinding wheels.

(d) Portable abrasive wheels used for internal grinding must be provided with safety flanges (protection flanges) meeting the requirements of subdivision (f) of this subsection, except as follows:

(i) When wheels two inches or less in diameter which are securely mounted on the end of a steel mandrel are used;

(ii) If the wheel is entirely within the work being ground while in use.

(e) When safety guards are required, they must be so mounted as to maintain proper alignment with the wheel, and the guard and its fastenings must be of sufficient strength to retain fragments of the wheel in case of accidental breakage. The maximum angular exposure of the grinding wheel periphery and sides must not exceed 180°.

(f) When safety flanges are required, they must be used only with wheels designed to fit the flanges. Only safety flanges, of a type and design and properly assembled so as to ensure that the pieces of the wheel will be retained in case of accidental breakage, must be used.

(g) You must closely inspect all abrasive wheels and ring-tested before mounting to ensure that they are free from cracks or defects.

(h) Grinding wheels must fit freely on the spindle and must not be forced on. The spindle nut must be tightened only enough to hold the wheel in place.

(i) All employees using abrasive wheels must be protected by eye protection equipment in accordance with the requirements of Part C of this chapter, except when adequate eye protection is afforded by eye shields which are permanently attached to the bench or floor stand.

(4) **Other requirements.** All abrasive wheels and tools used by employees must meet other applicable requirements of American National Standards Institute, B7.1-1978, Safety Code for the Use, Care and Protection of Abrasive Wheels.

[Statutory Authority: RCW 49.17.010, 49.17.040, 49.17.050, 49.17.060. WSR 16-09-085, § 296-155-365, filed 4/19/16, effective 5/20/16. Statutory Authority: Chapter 49.17 RCW. WSR 94-15-096 (Order 94-07), § 296-155-365, filed 7/20/94, effective 9/20/94. Statutory Authority: RCW 49.17.040 and 49.17.050. WSR 86-03-074 (Order 86-14), § 296-155-365, filed 1/21/86; Order 74-26, § 296-155-365, filed 5/7/74, effective 6/6/74.]