

(2) BOND

The Bond used in producing abrasive product is what holds the abrasive grains together and has no cutting capabilities of its own. GRIER manufactures product using vitrified, resin, and latex bonds.

Vitrified bond is a glass or ceramic bond which is very hard and comparatively brittle. There are various vitrified bonds that are used to obtain certain desired results or to meet required standards. GRIER manufactures vitrified product in 11, 13, 22, 31, 41, 51, and 55 bonds.

Resin bond is a strong, tough, resilient material. It absorbs shock better than vitrified. It is used for fast stock removal and is popular with foundries with off-hand operations. It works well on stainless steel, brass, bronze, and aluminum.

Latex bond is the bond utilized by GRIER in its soft Griertex product.

(3) GRADE

Hardness Ranges:

F to I	Soft
P to R	Medium
T to V	Hard

The grade or hardness designation of an abrasive is controlled by the type of bond used and the ratio of bond to grain mix.

Soft grades are generally used on very hard materials, large areas of contact or rapid stock removal.

Hard grades are generally used for soft materials, small areas and longer wheel life.

(4) STRUCTURE

The concentration of abrasive grains for a specific area determines the structure of the product. Induced porosity is obtained by adding a material that will burn off in the firing process to produce a very open structure.

Density Ranges:

1 to 3	Closed
4 to 5	Normal-Points
6 to 9	Normal-Wheels
10 to 12	Open

(5) TREATMENT

When a bonded abrasive is treated, its pores are generally filled with a substance that will assist in its working capabilities. Treatments reduce loading, aid in cutting, improve wheel life, and lubricate cutting action. Sulfur, resin and wax are the primary treatments used.

Sulfur treating is used to improve cutting action and enable a cooler operation. Sulfur treated abrasives should be used with a flood coolant.

Resin treating hardens the abrasive product and adds lubrication to assist in cutting.

Wax treating is popular when grinding brass or aluminum, for it greatly reduces loading and it lubricates the cutting action.