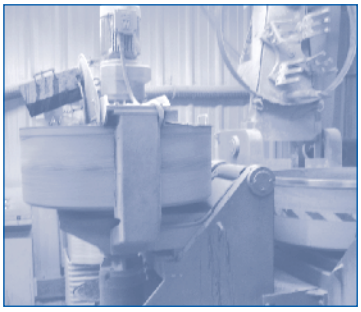
The Making of a Grinding Wheel

Bonded Abrasives

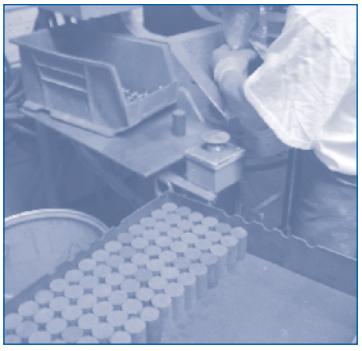
A resin bonded wheel is a grinding or cutting tool which is composed of abrasive grain held tightly together by a bonding agent and typically reinforced with a woven material. The bonded abrasives categories are grinding and cutting wheels, as well as, cups – cones – plugs that come in a variety of shapes and sizes.



Three Main Components of Resinoid Bonded Abrasives

1 Abrasive Grains

Abrasive grain is an important component of raw materials. Gulf States uses only high quality, virgin grain, we never use recycled abrasive. The physical properties (i.e., shape, sharpness, hardness, friability) of the grain is determined by the chemical structure. Common grain types used in making bonded abrasives include:



Aluminum Oxide
A general purpose abrasive generally used on all ferrous metals.

Silicon Carbide
A very hard abrasive used on non-metallic materials, soft metals and sandy castings.

Alumina Zirconium (also referred to as Zirconium)
A very tough premium abrasive for high pressure grinding of ferrous and exotic materials. Provides extended life.

Ceramic
The premium aluminum oxide, typically blended with other abrasives. Used on high tensile and high alloy metals where superior cut rate is critical.

2 Bonding Agent

The resistance of the wheel is determined by the bonding agent. Gulf States uses a resinoid bond that is formulated to meet the unique specifications of each product.

3 Reinforcement

The reinforcement material provides extra strength to use the wheel at maximum RPMs and withstand lateral pressure that is applied during use. Gulf States uses multiple layers of fiberglass which are woven to form an exceptionally strong reinforcement layer specific to the application.

Combining the 3 Components

During the manufacturing process these three components are combined to form a grinding wheel. The grain and bonding agents are measured, combined and pressed in a hydraulic press. When applicable Gulf States' labels are also incorporated into the manufacturing process and therefore remain intact throughout the life of the wheel.