

**FABRICATING A GRINDING WHEEL  
BY USING GARNET SAND IN  
SRI LANKA**

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## ABSTRACT

Mineral sand deposits can be mainly found in Eastern and Southern coastal areas in Sri Lanka. There are potential sources of garnet in Sri Lanka, such as Kirinda, Ussangoda and Tangalle areas. Garnet is one of the hardest minerals available in Sri Lanka. Therefore it can be used as a natural abrasive. When it comes to use garnet as an abrasive, there will be various applications for it. Such as wood polishing, metal polishing, tool sharpening and water jet cutting machines.

There are two types of abrasive materials which can be made out of garnet sand. They are coated abrasives and bonded abrasives. Bonded abrasives are mainly abrasive wheels which bind abrasives together, using a suitable bonding material. These abrasive wheels can be used for removing very fine quantities of material, from the work piece. There are several types of bonds for an abrasive wheel such as resin bond, metal bond, vitrified bond, rubber bond, shellac bond etc.

Resin bonded abrasive wheel was able to retain its shape and geometry under the suitable ratio. Resin bonded abrasive wheel can be used to polish the wooden surfaces and metal surfaces. It can be concluded that the most suitable bond type for this abrasive wheel, is resin bond and the resin bonded garnet wheel can be used for polishing the wooden surfaces and metal surfaces.

Key words; Resin bonded abrasive wheel, Tool sharpening, Water jet cutting