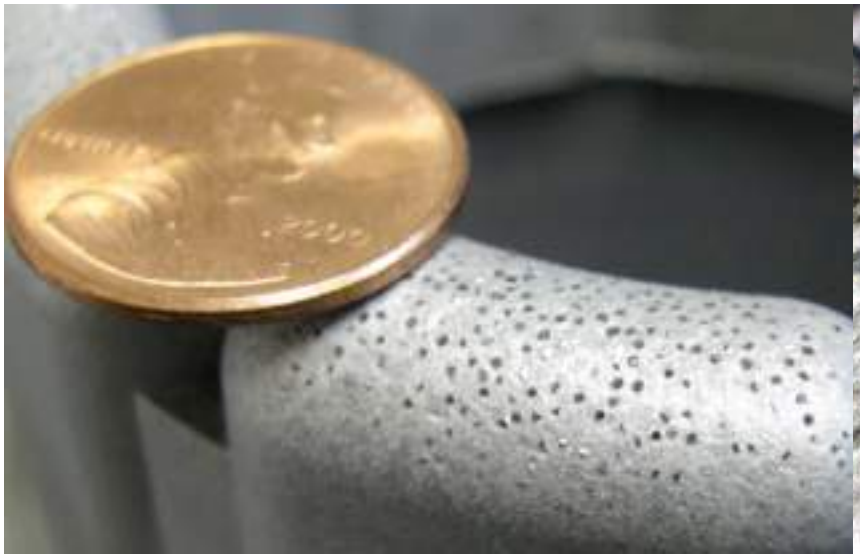
Too Much WOB
On Diamond-Impreg

Short Bit & Tool Co.
225 Gold St
Garland, Texas 75042
972-205-1011

Our MX mills and XDS shoes have diamond grit (30-40 mesh) that is blended with the tungsten/tungsten carbide matrix so that it constitutes about 25% by volume in the pads (blades). The other 75% of the volume is 65% powdered tungsten and then 35% that is the binder alloy which is a fancy bronze.

It is intended to transfer WOB and RPM to cause the diamond grit to cut the extreme targets. As the small diamonds are dulled (by heat or impact) they are sloughed out of the retaining matrix and then the target will wear away the surrounding matrix to expose fresh diamonds.



It should be noted that since the surrounding matrix is held together with binder alloy that is much like brass or bronze it can be caused to move if too much WOB is applied.

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An in-house test was done where excess WOB was run with low cooling to cause the retaining matrix to be displaced. This is what happens when excess WOB is run on shoes and mills with diamond-impreg matrix…the diamond grit can be sloughed out if the retaining matrix moves under excess pressure and rapid dulling can occur.