

The following section involves the actual test results of Heavy Metal Ion Implantation in tools used in turning and facing applications of various materials in specific machine setups.

The summarized results for each material tested are:

Steel- 2 to over 4.31 times original lifetime

Stainless Steel - 1.75 to 4.80 times original lifetime

Titanium - 1.8 to 2.4 times original lifetime

Inconel - 3 to 5.5 times original lifetime

G10 Fiberglass - 1.5 to 2 times original
lifetime

The following section involves the actual test results of Heavy Metal Ion Implantation in tools used in milling applications of various materials in specific machine setups.

The summarized results for each material tested are:

Aluminum - 3.75 times original lifetime
with 150% increased feedrate

Steel- 2.67 to 3.33 times original
lifetime

Titanium - 4 times original lifetime

Inconel - 2.67 times original lifetime

Kovar - 6.45 times original lifetime

The following section involves the actual test results of Heavy Metal Ion Implantation in tools used in threading applications of various materials in specific machine setups.

The summarized results for each material tested are:

Titanium - 2.07 to 2.84 times original lifetime with 10 fewer offsets

Inconel - at least 2.34 times original lifetime then exceeded job requirements

The following section involves the actual test results of Heavy Metal Ion Implantation in tools used in cutoff applications of various materials in specific machine setups.

The summarized results for each material tested are:

Steel- 1.5 times original lifetime

Inconel - at least 1.8 times original lifetime then exceeded job requirements

The following section involves the actual test results of Heavy Metal Ion Implantation in tools used in grooving applications of various materials in specific machine setups.

The summarized results for each material tested are:

Steel- 2 times original lifetime with 43%
-176%

Titanium - 2.29 times original lifetime
with 10 fewer offsets

Inconel 718 - at least 2.47 times
original lifetime then exceeded job
requirements

Phenolic - 4.5 times original lifetime
with 1/3 the offsets

The following section involves the actual test results of Heavy Metal Ion Implantation in tools used in drilling applications of various materials in specific machine setups.

The summarized results for each material tested are:

Aluminum - 9.67 times original lifetime

Steel- 2.67 times original lifetime

Titanium - 2.22 times original lifetime

Cr-Mo Weld - 5 times original lifetime
with 160% increase in feedrate