

# Coatings

## ALtima®

Aluminum Titanium Nitride (AlTiN). ALtima® is the original high performance coating. This coating allows tools to be run at higher speeds and feeds in a wide array of materials. Also, it allows the option of running tools dry due to the high oxidation temperature of the coating.

## ALtima® 52

Aluminum Titanium Nitride (AlTiN). ALtima® 52 is specially designed for milling hardened steels 52 Rc and above. It has very high hardness and the oxidation temperature of the coating makes this the absolute best choice for hardened steel milling. ALtima® 52 is designed to allow for dry machining.

## ALtima® Blaze

Aluminum Chromium Nitride (AlCrN). ALtima® Blaze is designed to allow higher material removal rates. This coating has a higher oxidation temperature than a typical TiAlN coating. It has shown very good results in nickel alloys, titanium, and other difficult to machine materials. Tools coated with ALtima® Blaze can be used in dry machining.

## Special Coatings

Upon request, M.A. Ford® can provide any commercially available coating. Any standard M.A. Ford® cutting tool can be provided with coating if requested.

## Fordlube

Titanium DiBoride (TiB<sub>2</sub>) is a unique coating with low Aluminum affinity, smooth surface finish and high hardness. It is ideal for Aluminum and Magnesium alloys as it prevents build-up on cutting edge, provides superior chip flow along with extended wear resistance.

## Gem Coat

Amorphous Diamond. Gem is M.A. Ford®'s answer to diamond coated tooling. It has the hardness of diamond, the smoothness of typical PVD coatings, and excellent thermal stability. It is excellent for milling graphite and aluminum.

## TiN

Titanium Nitride (TiN). TiN coating has shown good results in low carbon steels and many iron-based applications. It is a very popular coating used in the industry today.

## TiCN

Titanium Carbonitride (TiCN). TiCN is a multi-layer coating. Because of the multi-layer composition, TiCN is tougher than TiN, even though TiCN is harder. The added toughness of the TiCN coating makes it a good choice for mechanically stressed edges like in end mill applications. The higher hardness makes TiCN a good choice for abrasive applications where higher wear resistance is required.

## Coating Properties

MA Ford® Coating	MA Ford® Tool Number Designation	Microhardness (HV)	Maximum Service Temp.	Friction Coefficient
ALtima®	A	3100	1100° C / 2012° F	0.42
ALtima® 52	A	3600	1200° C / 2192° F	0.40
ALtima® Blaze	B	3200	1100° C / 2012° F	0.35
TiN	T	2300	600° C / 1112° F	0.40
TiCN	C	3000	400° C / 752° F	0.40
Fordlube	F	4000	700° C / 1292° F	0.30
Gem	G	8000	700° C / 1292° F	0.10