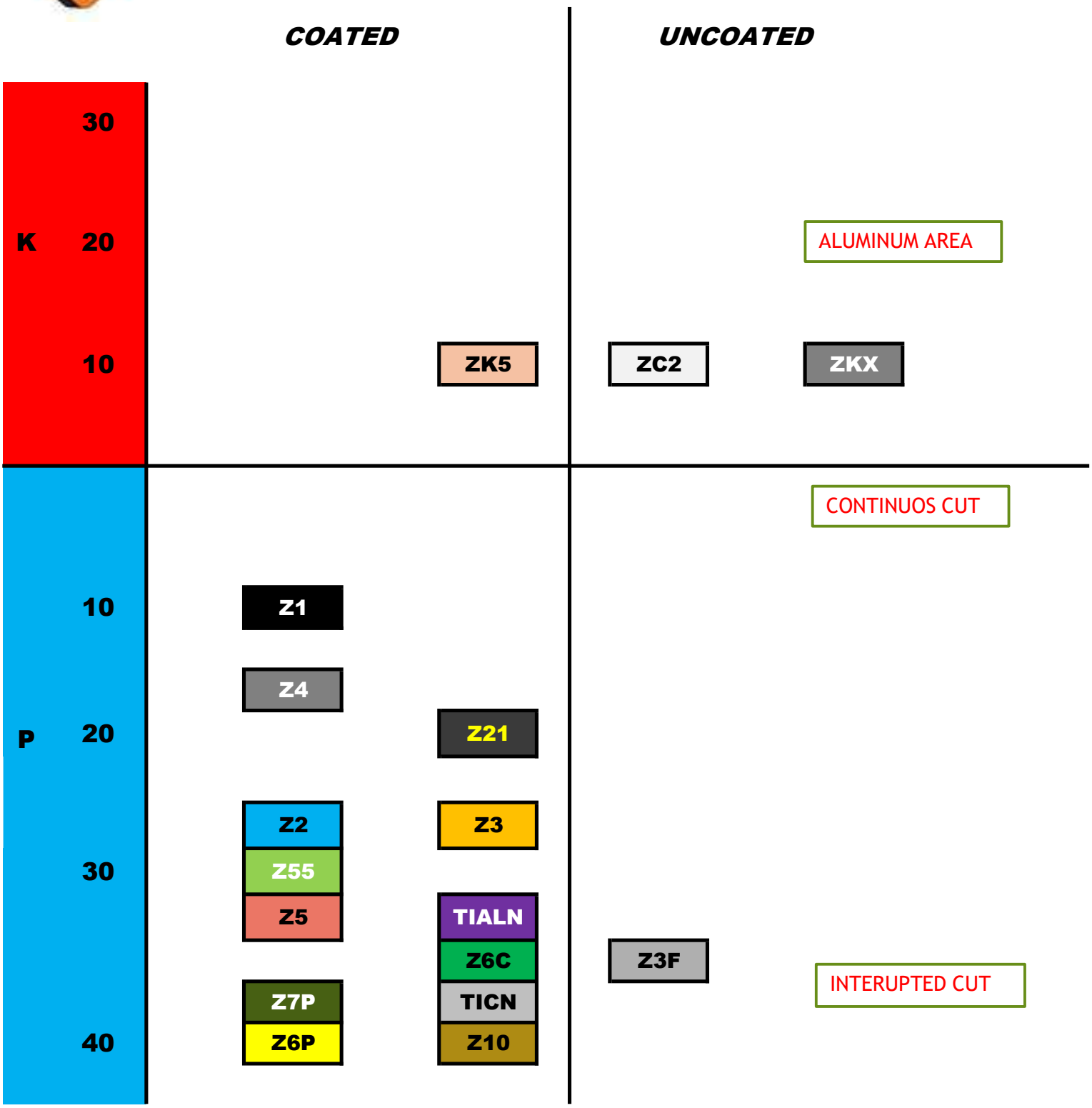
# MILLING GRADES



# MILLING GRADES description

**ZC2** A cermet is a cemented carbide with titanium based hard particles.
Cermet combines the words ceramic and metal.
In comparison to cemented carbide, cermet has improved wear resistance and reduced smearing tendencies.
On the other hand, it also has lower compressive strength and inferior thermal shock resistance.
In finishing operations, this enables a long tool life and close tolerances, and results in shiny surfaces.
SUGGESTED USAGE: SHINY FINISHING, HIGH SPEED AND LOW FEED

**ZKX** It is a submicron grade without cubical carbides with low content of cobalt. This grade is for general purpose applications for all groups of work material except P. This grade is suitable for small up to medium chip cross section with steady cutting conditions.
SUGGESTED USAGE: ALUMIMIUM AND PLASTIC

**ZK5** Coated grade which is primarily designed for machining non-ferrous metals;
but can also be used for other machined materials for long resistance
SUGGESTED USAGE: ALUMIMIUM AND STAINLESS STEEL

**Z1** This grade has a substrate with low content of cobalt and with AL2O3 applied by CVD method.
This grade is suitable for milling of materials group K, and in some conditions it could be used also for material group P. It is an important grade for medium chip cross section with steady cutting conditions.
SUGGESTED USAGE: CAST IRON AND HARD STEE

**Z21** This grade has a substrate with low content of cobalt and with AL2O3 applied by CVD method.
Suitable for milling of materials group K and could be used also for material group P.
It is an important grade for medium chip cross section with steady cutting conditions.
SUGGESTED USAGE: CAST IRON AND HARD STEEL

**Z4** This grade has a substrate with a multi-layered nanostructural coating with high content of Al applied by PVD method. This grade is suitable for milling of materials groups P, M, conditionally for K.
It is an exceptional grade for medium up to high feed and for medium up to high cutting speed with steady cutting conditions.
SUGGESTED USAGE: TOOL STEEL, HIGH SPEED AND HARD MATE

**Z2** This grade has a submicron substrate without cubical carbide with a triple layer coating applied by CVD method. This grade is suitable for milling of materials group P, K, conditionally for M.
It is an outstanding grade for medium chip cross section at medium cutting speed without cooling and for good cutting conditions.
SUGGESTED USAGE: GENERAL PURPOSE

**Z3** **This grade has a submicron substrate without cubical carbide with TIN coating applied by PVD method. This grade is suitable for milling of materials group P, K. It is an outstanding grade for medium chip cross section at medium cutting speed for good cutting conditions.**

**SUGGESTED USAGE: GENERAL PURPOSE**

**Z55** **This grade has a substrate without cubical carbides with a multi-layered nanostructural coating with high content of Al applied by PVD method. This superlative grade combines good wear resistance and good operation reliability. It is suggested for stainless steel. This grade is perfect for less favourable cutting conditions with medium cutting speed.**

**SUGGESTED USAGE: STAINLESS STEEL WITH AND WITHOUT COOLANT**

**Z6C** **This grade has a submicron substrate without cubical carbide with a triple layer coating applied by PVD method. This grade is suitable for milling steel, conditionally for M. It is an outstanding grade for medium chip cross section at medium cutting speed without cooling and for good cutting conditions.**

**SUGGESTED USAGE: GENERAL PURPOSE**

**Z5** **This grade has a substrate without cubical carbides with a multi-layered nanostructural coating with high content of Al applied by PVD method. This superlative grade combines good wear resistance and good operation reliability. It is a general purpose grade for all groups of works material. This grade is perfect for less favourable cutting conditions with medium cutting speed.**

**SUGGESTED USAGE: STEEL AND ALLOYED STEEL. WITH AND WITHOUT COOLANT**

**Z7P** This Tin PVD coating fine grained WC-Co carbide within ISO-grade ranges P20-P40 and K20-K40 for machining of steel and cast-iron with shoulder mills

**SUGGESTED USAGE: STAINLESS STEEL, STEEL AND CAST IRON**

**TIALN** **This grade has a substrate without cubical carbides with a multi-layered nanostructural coating with high content of Al applied by PVD method. This superlative grade combines good wear resistance and good operation reliability. It is a general purpose grade for all groups of works material.**

**SUGGESTED USAGE: GENERAL PURPOSE**

**TICN** Titanium Carbonitride, blue grey in color, has a hard, smooth finish which offers improved wear and built up edge resistance. TiCN has good adhesion, toughness, and resistance to chipping and performs well on shoulder milling where moderate temperatures are generated at the cuffing edge.

**SUGGESTED USAGE: ALUMINUM AND STAINLESS STEEL**

**Z10** **This grade has a substrate without cubical carbides with a multi-layered nanostructural coating with high content of Al applied by PVD method. This superlative grade combines good wear resistance and good operation reliability. It is a general purpose grade for all groups of works material.**

**SUGGESTED USAGE: GENERAL PURPOSE**

**Z6P** This is a tough grade, its substrate has a high content of cobalt without cubical carbides. The nanostructural coating applied by PVD method allows cutting conditions with mechanical stress of cutting edge. This grade is suitable for milling of materials groups P. M, S and it is applicable also for K. It is an excellent grade for unstable cutting conditions with low up to medium cutting speed

**SUGGESTED USAGE: STEEL, STAINLESS STEEL AND SUPER ALLOY**

**Z3F** This grade has a submicron substrate without cubical carbide. It is an outstanding grade for medium roughing as well as heavy roughing of materials group P and M, it is applicable also for group K and conditionally for S. This grade is suitable for unfavourable cutting conditions and interrupted cut with lower up to medium cutting speed.

**SUGGESTED USAGE: MANUAL MACHINE**