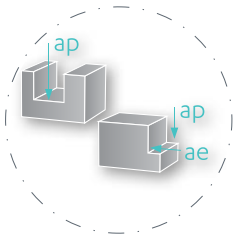


Index - Machining recommendation and technical infos

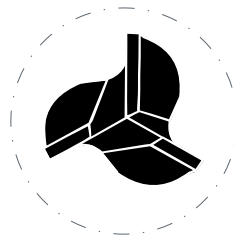
	Page
3. Machining recom. & technical infos	35
Coatings	61
Symbols	62
Formulas	63



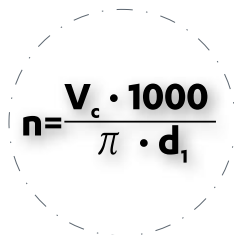
Machining recommendation per material
page 39



Coatings
page 61



Symbols
page 62



Formulas
page 63

Coatings

The coatings proposed by Louis Bélet come from leading suppliers on the market. We are able to provide many different coatings and we can recommend the most appropriate layer depending on your application.

Thanks to the high volume of coated tools, our **prices** are very **competitive**. **Delivery times** are **short** since our suppliers use dedicated shuttles to deliver the coated tools every day in our factory.

We have an **important stock** of coated tools with the most used coatings.

For standard applications, we have defined some reference coatings, that have been **tested**, and which we recommend :

Recommended coatings for standard applications

Material	1°	2°
Steel < 700 N/mm ²	Trio (PO)	Nemo (NO)
Steel > 700 N/mm ²	Nemo (NO)	Trio (PO)
Stainless steel	Nemo (NO)	Trio (PO)
Cast iron	Trio (PO)	Nemo (NO)
Copper	Solo (DA)	-
Brass - Bronze	-	Solo (DA)
Aluminium	Solo (DA)	-
Gold - Silver	Solo (DA)	-
Platinum - Palladium	Solo (DA)	-
Superalloys	Trio (PO)	-
Titanium	Rico (ZB)	-
Composite materials	Neo (FC)	-

These propositions of coatings apply to the majority of standard usages. They may not be adequate for particular materials, alloys or machining techniques. Don't hesitate to ask us for more specific advice !

Ordering coated tools

When ordering a standard tool, you can add a two letter suffix to the article code in order to identify the desired coating. This code is indicated in brackets in the above table.

For example, if you wish to order a coated tool REF 1510 diameter 1.0 mm :

The base article code (uncoated tool), visible on the product page, is the following : 1510 d1.00

The NEMO coated version of this tool has the code 1510d1.00**NO**

In case you want a specific coating not mentioned on the above table, just write it on your order. We can provide **any coating** available on the market !

Symbols



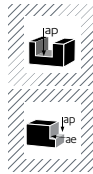
Helix angle



Rake angle



Staggered teeth



Slot milling



Contour milling



General machining



General machining & High Speed Cutting



High speed cutting



Micro-grain carbide Co 10%



Ultra-micro-grain carbide



Polycrystalline diamond



Radial machining



Radial and diagonal machining



Radial, diagonal and axial machining



2 teeth center cutting



3 teeth center cutting



4 teeth center cutting



Multiflutes



Tips sharpened



Coarse pitch



Fine pitch



Extra-fine pitch



Point angle 60°



Conical, small Ø in front



Conical, large Ø in front



Slitting saws 1 cut



Slitting saws 3 cuts



Biconical cutters



Angular cutters 1 cut



Angular cutters 2 cuts



Sharp corners



Beveled edge



Corner radius (toric)



End mills with ball end



Roughing profile



2 flutes, sharpening with facets



2 flutes progressive relief



2 flutes, progressive relief, left hand



3 flutes, sharpening with facets



Centering tip



Gundrills tip



Flat tip for engraving mills



Radius for engraving mills



Number of teeth

Formulas

V_c
[m/min] Cutting
speed

n Spindle
speed

a_p
[mm] Axial depth of cut

V_f
[mm/min] Feed
speed

Z Number of teeth

a_e
[mm] Radial depth of cut

f_z
[mm] Feed per
tooth

d_1
[mm] Tool diameter

f
[mm] Feed per rotation

$$n = \frac{V_c \cdot 1000}{\pi \cdot d_1}$$

$$V_c = \frac{\pi \cdot d_1 \cdot n}{1000}$$

$$f_z = \frac{V_f}{Z \cdot n}$$

$$f = f_z \cdot Z$$

$$V_f = f_z \cdot Z \cdot n$$

Tolerances table

Ø [mm]	[µm]			
	h5	e8	f8	k8
0-3	0	-14	-6	+14
	-4	-28	-20	0
3-6	0	-20	-10	+18
	-5	-38	-28	0
6-10	0	-25	-13	+22
	-6	-47	-35	0
10-18	0	-32	-16	+27
	-8	-59	-43	0
18-30	0	-40	-20	+33
	-9	-73	-53	0
30-40	0	-50	-25	+39
	-11	-89	-64	0

