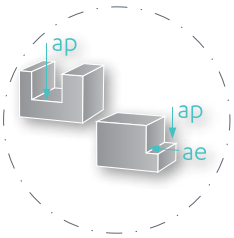
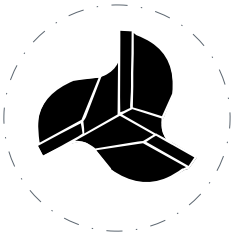
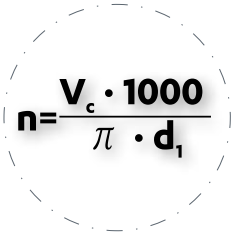
Index - Machining recommendation and technical infos







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/mm²	Trio (PO)	Nemo (NO)
Steel > 700 N/mm²	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

λ 30° — Helix angle

γ 8° — Rake angle

λ ALT — Staggered teeth

Slot milling

Contour milling

N — General machining

N HSC — General machining & High Speed Cutting

HSC — High speed cutting

MG10 — Micro-grain carbide Co 10%

SUB-CARFINE — Ultra-micro-grain carbide

PCD — Polycristalline 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

Z3 — Number of teeth

Formulas

V_c [m/min]	Cutting speed	n	Spindle speed	ap [mm]	Axial depth of cut
V_f [mm/min]	Feed speed	Z	Number of teeth	ae [mm]	Radial depth of cut
f_z [mm]	Feed per tooth	d_1 [mm]	Tool diameter	f [mm]	Feed per rotation

$$n = \frac{V_c \cdot 1000}{\pi \cdot d_1} \qquad V_c = \frac{\pi \cdot d_1 \cdot n}{1000} \qquad f_z = \frac{V_f}{Z \cdot n}$$

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

Tolerances table

	[µm]			
Ø [mm]	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