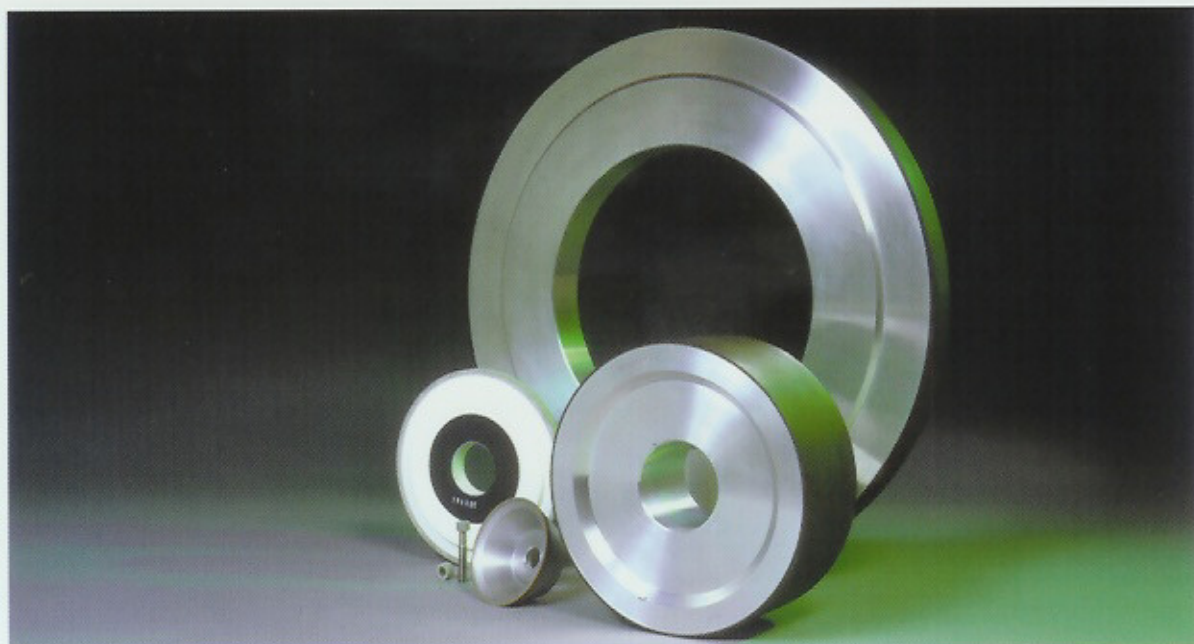


TECHNODIAMANT

Grinding wheels



Diamond grinding wheels

with resin binder,
metal binder,
ceramic binder.

for grinding:

- tungsten carbides
- flame-sprayed wear resistant alloys
- tungsten carbide/steel combinations
- glass
- ferrites

CBN grinding wheels

with resin binder,
metal binder,
ceramic binder.

for grinding:

- high speed steels
- hardened high speed steels
- hardened 12% chromium steel
- flame-sprayed wear resistant alloys

Enclosed you will find a sheet for each type of wheel.
The dimensions are not included in the tables because this catalogue offers you the facility of noting down the specifications of all the wheels you use.
We hope that the catalogue will thus become a useful reference document, specific to your requirements.

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Concentrations for diamond and CBN

Concentration	Percentage volume	Carats per cm ³	CBN incl. 60 per cent by weight nickel coating
25	6.25	1.1	B - 62.5
40	10	1.76	B - 100
50	12.5	2.2	B - 125
75	18.75	3.3	B - 188
100	25	4.4	B - 250
150	37.5	6.6	B - 375
175	43.75	7.7	B - 420

We use the same indication of concentration for both diamond and CBN, which corresponds to the internationally accepted standard for:

$$\text{concentration 100} = 4.4 \text{ crt/cm}^3 \text{ (1 Carat} = 0.2 \text{ g)}$$

This is used to express the weight of DIAMOND or CBN per cm³. Because there are also indications of concentration used for resinbond CBN grinding wheels which are based on the gross weight of nickel coated CBN grains (60% of the gross grain weight consisting of nickel), the last column of the table above also shows these concentrations, preceded by the letter B.

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The effect of concentration

Concentrations:

The content of diamond or CBN in the grinding rim is heavily dependent upon the application.

Generally, where rapid stockremoval of tungsten carbide or hardened steel is intended, a concentration of 75 to 125 is selected. When a good surface finish is demanded, lower concentrations in combination with finer diamond or CBN powder are required.

Concentrations of up to 150 are used for profile grinding wheels and cylindrical wheels which have a small contact area.

Needless to say that Technodiamant guarantees the specified concentrations.

Grit size:

Diamond and CBN grit are available in many sizes and types. The gritsize is dependent upon the desired surface finish. In addition, the gritsize also has an important effect on the grinding behaviour of the wheel.

As far as the gritsize is concerned, Technodiamant complies with the FEPA standard. You will find a comparison table for the various grit systems on page 6 in this catalogue.

Binders:

Technodiamant has a large number of in house developed binders available. The type of binder is often selected in combination with the type of grit and concentration. Binders are divided into metal, resin and ceramic binders. Solid metal binders are often applied to grind glass and ceramics, whereas resin binders, porous metal binders and ceramic binders are usually used for grinding tungsten carbides and hardened steel.

The following more or less "universal" binder codes are often used by Technodiamant:

XX	Wet grinding of carbide
X2	Dry grinding of carbide
C2	Dry and wet grinding of carbide and hardened steel.
T2	Dry and wet grinding of hardened steel with cylindrical wheels.
T3	Dry and wet grinding of hardened steel with cup wheels.
GS30 (GR)	Wet grinding of flat glass.
S149	Wet grinding of optical glass.

Ceramic binder:

V-number Wet grinding of tungsten carbide, HSS, etc.

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Cutting depth for diamond and CBN grinding wheels

The depth of cutting for oscillating grinding with forced feeding is associated with the grit size of the wheel and the fineness required for the surface. The depth of cut must always be less than the protrusion of the grit from the binder. For a sharp grinding wheel the protrusion will be 1/4 to 1/5 of the grit size at the most. However, the generation of heat must be held within certain limits as well. When dry grinding with a large contact area between the wheel and the work piece, the depth of cut

must be much less than when grinding with a small contact area. For creep feed grinding the grinding depth setting is not the same as the depth of cut, since the latter is limited by the speed of the table. Special metal and resin wear resistant binders have been developed for creep feed grinding. Because the contact area between the wheel and the work piece is usually large for this grinding method, proper cooling is of extreme importance.

Permissible cutting depth



See comparison table for grit systems on page 6