



Evolution in grinding.

Grinding wheels and bonded abrasives

_product range

The quality product range by THELEICO



Industrial users demand high quality grinding wheels and bonded abrasives for all kind of applications. Continuous development of our products, persistent quality control, detailed advice, tailor-made products and economical solutions for all grinding problems is offered to our clients. You can rely on THELEICO's experience of over 75 years in grinding wheel fabrication. THELEICO products are used in following industries:
Automotive, mechanical engineering, precision tool fabrication, rolling mills, iron-, steel- and non iron foundries, power engineering, spring industry, wood and paper production, plastics production and recycling.

Quality down to the detail

It is the detailed assessment of all parameters involved in the grinding process which leads to an optimum product when manufacturing grinding wheels. In this context, outstanding technological achievement is as important for THELEICO as economics and process safety. Consequently, a precise adjustment to the respective machines and continuous quality assurance are always carried out.

Extensive advice

THELEICO advises you in selecting the right grinding wheel for your application. Especially the dependency on technical requirements and an economical production have to be considered mostly under an individual aspect.

Optimum selection

Given our product range with all standard dimensions and qualities, an extensive stock and all possibilities for flexible and short-term manufacturing special productions, a best possible choice is ensured with a variety of alternatives.

Manufacture of grinding tools

THELEICO grinding wheels and abrasive products are manufactured from sintered aluminium oxide, regular aluminium oxide, high purity aluminium oxide (red and white), monocrystal aluminium oxide and silicon carbide. Depending on the surface finish required for the workpiece to be ground, these abrasive materials are produced in grain sizes ranging from very coarse to powder-fine held together in a vitrified or resinoid bond. Grinding wheels in a vitrified bond are fired in special furnaces at temperatures of 1000°C to 1400°C; wheels in resinoid bonding are hardened at about 180°C. The choice of abrasive and bond depend on many factors, such as surface finish, stock removal rate, wheel life etc.



THELEICO prime quality. Grinding wheels made of sintered aluminium oxide



Mixing

Shaping

Pressing

Firing



Evolution in grinding.



Cylindrical grinding



Snagging & Cut-off grinding

A convincing grinding wheel product range

- diameter from 10 mm to 1100 mm
- in all shapes according to DIN EN ISO or drawing
- manufactured from sintered aluminium oxide, high purity and monocrystal aluminium oxide and silicon carbide
- with vitrified bond up to a peripheral speed of 100 m^s
- with resin bond for 50, 63, 80 and 100 m^s
- fabric reinforced for cut-off grinding wheels and snagging wheels up to 80 and 100 m^s
- abrasive segments, rubbing stones and mounted wheels
- specially perforated grinding wheels, wheels for screwing on and bonded abrasives



Abrasive segments



CBN-Spring end grinding wheels



Spring end grinding wheels made of aluminium oxide



Different surface structures



Testing



Calibrating



Balancing

Quality marking of grinding wheels

Example:

Grinding wheel quality is determined by 5 components according to DIN EN ISO 12413.

40A

60-3

L

6

V

Abrasive

Crystalline material based on aluminium oxide (Al_2O_3) in different purities and silicon carbide (SiC).



Regular aluminium oxide
10 A - 19 A



Sintered aluminium oxide
20 A - 29 A
220 A - 229 A



Semi-pure aluminium oxide
30 A - 39 A



White and pink aluminium oxide
40 A, 42 A



Aluminium oxide combinations
45 A, 47 A



Ruby-red aluminium oxide
44 A, 48 A



Monocrystal aluminium oxide
46 A, 49 A

Aluminium oxide/zirconia combinations
50 A - 73 A



Dark silicon carbide
80 C - 84 C



Green silicon carbide
85 C - 89 C

Silicon carbide / aluminium oxide / zirconia combinations
90 C - 97 C

Grain size

Description of grit size.

very coarse
8, 10, 12

coarse
14, 16, 20, 24

medium
30, 36, 40, 46,
54, 60

fine
70, 80, 90, 100,
120

very fine
150, 180, 220,
240

powder-fine
280, 320, 360,
400, 500, 600,
800, 1000

Hardness

Grain resistance versus outbursting from structure.

very soft
D, E, F, G

soft
H, I, J, K

medium
L, M, N, O

hard
P, Q, R, S

very hard
T, U, V, W

extremely hard
X, Y, Z

Structure

Describes concentration of particles, distribution, bond and porosity.

very dense
0, 1

dense
2, 3

medium
4, 5

open
6, 7

very open
8, 9

porous
10, 11

highly porous
12, 13, 14, 15

Bond

The hold each grain inside wheel structure fixed.

V / VM
vitrified

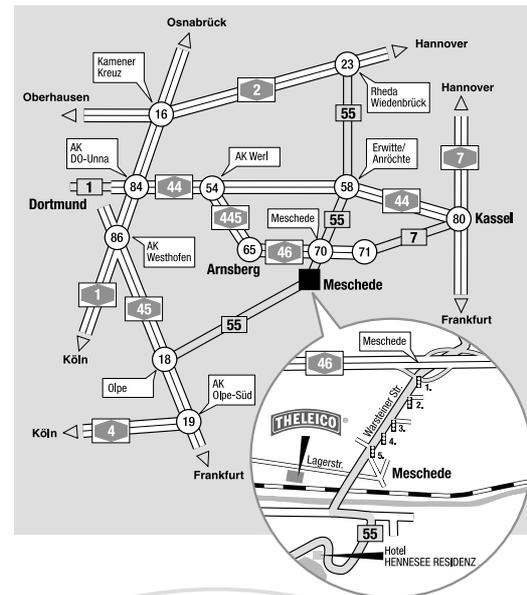
B / BF
resinoid

Mg
magnesite

Peripheral speed

Colour marking for different peripheral speeds is given by coloured diagonal strip on wheel and label:

up to 40 m ⁻⁵	–
up to 50 m ⁻⁵	blue
up to 63 m ⁻⁵	yellow
up to 80 m ⁻⁵	red
up to 100 m ⁻⁵	green



Please contact us!

Further information and product recommendations at www.leisse.org



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