



Evolution in grinding.

Surface grinding

_ Flat grinding
_ Profile-flat grinding

Precise flat and profile-flat grinding with optim

As part of manufacturing processes with surface grinding, the high quality of the finished product lowest tolerances regarding smoothness and surface finish are of crucial importance. Depending on the application and size of the grinding machine, workpiece sizes vary from only a few millimetres to several square metres. THELEICO's grinding wheels and bonded abrasives are used in the following branches of industry: tool manufacture and mould making, electrical and electronics industry, iron and steel industry, metal industry, engineering industry, hydraulics, automotive industry and supplying industry, aviation industry, medical technology, plastics technology, motor industry, drive technology and spring and wood industry. Workpiece geometries and envisaged result are decisive for the grinding wheel geometry and the grinding method.

Grinding methods

There are mainly two subtypes including swing frame grinding or full cut procedures:

Flat grinding

(e. g. circular saw blades, circular cutters, die-plates for punches, folding knives, scissor-type knives, finishing bar material to size or bar material working)

Profile-flat grinding

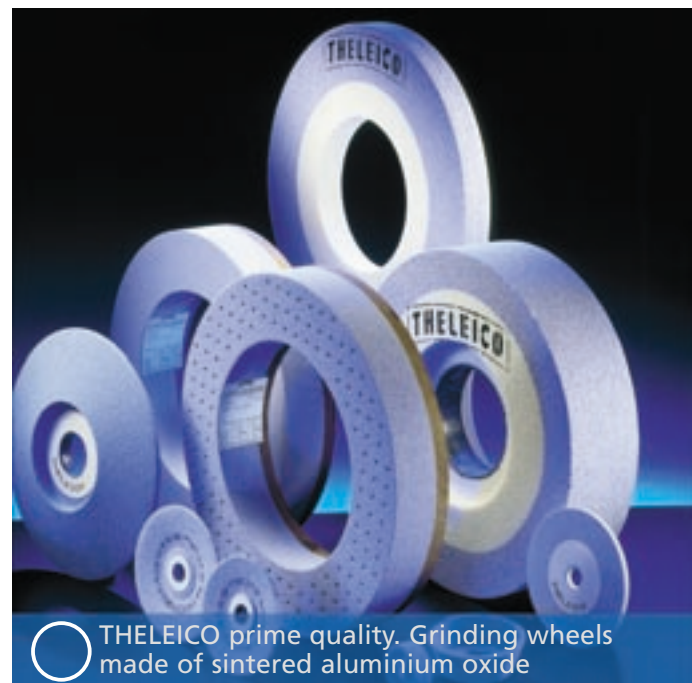
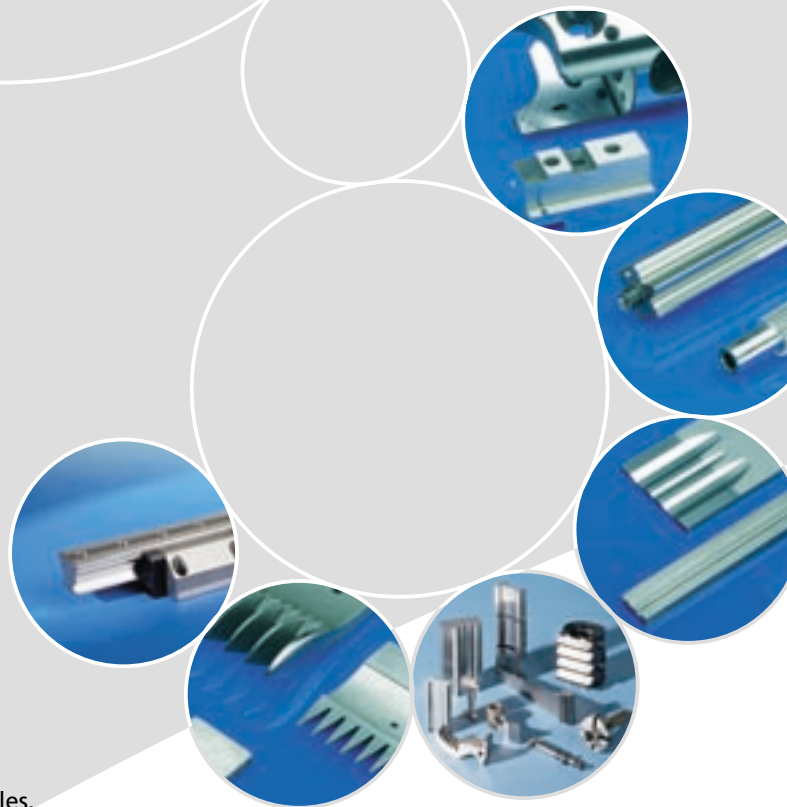
(e. g. linear guides, saw tooth profiles, toothed rack profiles, guides in adjusting elements, annular gears, toothed plates, compass saw blades, turbine blades, rocking levers for car construction, profiled clamping tools, broaching tools).

THELEICO grinding wheel variations

With a variety of parameters and characteristics, when manufacturing grinding wheels, it is already possible, by slightly modifying formulations and due to the resulting variations in moulding, pressing, firing and working parameters, to change grinding wheel characteristics significantly, thus indirectly influencing grinding performance and surface finish of work pieces. And it is especially here, where the technological advance of THELEICO grinding wheels becomes evident. Starting from a selection of standard wheel qualities having been optimised over many years as part of development work in technology and application, it is also possible to offer customer-tailored solutions.

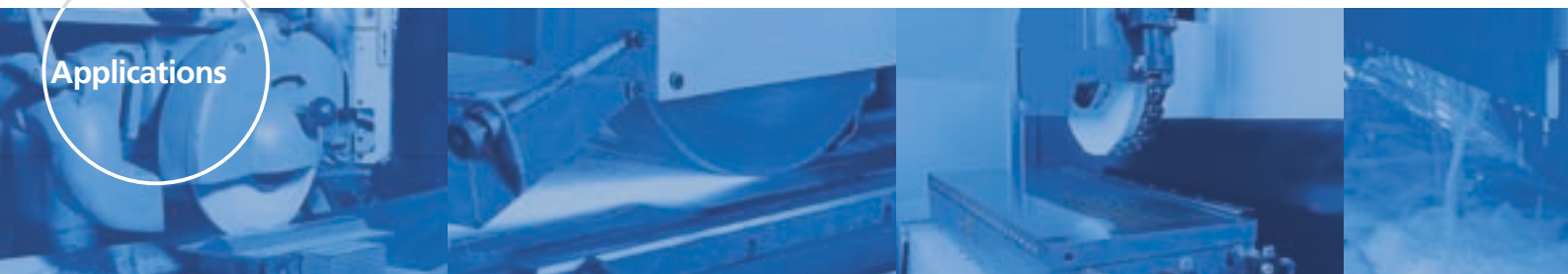
THELEICO quality criteria

- good profiling capacity and optimum dimensional accuracy of profiles
- high cutting performance
- low mechanical stress and deformation of work pieces
- long service life
- high manufacturing precision with respect to smoothness and surface roughness of workpieces



THELEICO prime quality. Grinding wheels made of sintered aluminium oxide

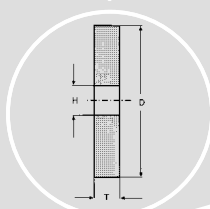
Applications



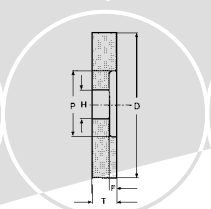


Evolution in grinding.

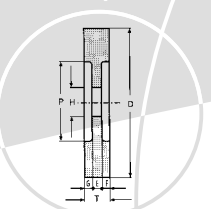
Shape 1



Shape 5



Shape 7



Traverse table



Circular table



Flat grinding DIN shape No. 1, 5, 7

Application			Grinding wheel specification	
Material	Alloy	Hardness	< ø 250 mm	> ø 250 mm
Steel	unalloyed and low-alloyed	unhardened	40A 46-3 J 7 V	33A 36-0 H11 V
		hardened	40A 46-3 I 7 V	40A 46-3 H11 V
	high-alloyed	unhardened	46A 46-2 H11 V	46A 46-1 G11 V 24A 46-1 G11 VM
		hardened	46A 46-1 G11 V	49A 46-2 F11 V
	HSS, HSS-E HSS-CO	hardened and unhardened	27A 46-1 G10 VM	27A 46-1 F12 VM
stainless and acid-resistant (VA)			85C 54-3 F11 V	89C 54-3 G12 V
Carbide metal			85C 54-3 F11 V	89C 54-4 F12 V
Aluminium alloys, brass, bronze, nickel			85C 54-3 H11 V	89C 54-0 H12 V

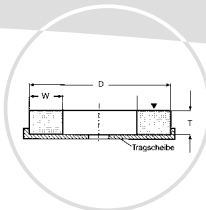
Profile-flat grinding DIN shape No. 1, 5, 7

Application			Grinding wheel specification	
Material	Alloy	Hardness	wide, flat profiles	narrow, steep profiles
Swing frame method				
Steel	unalloyed and low-alloyed	hardened	42A 80-0 H11 V	40A 80-0 I 10 V
	high-alloyed	hardened	46A 80-0 H10 V	46A 120-0 H10 VM
	HSS and HSS-E	hardened	27A 80-0 F11 VM	25A 120-2 F12 V
Full cut method (creep feed grinding)				
Steel	unalloyed and low-alloyed	unhardened	47A 60-9 H12 V	47A 120-1 F12 V
		hardened	47A 70-1 H12 V	
	low-alloyed and high-alloyed	hardened	47A 60-1 E12 V	47A 100-1 G12 V
Full cut method (CD process)				
Steel	low-alloyed and high-alloyed	hardened	27A 60-9 G13 VM	327A 60-9 F13 VM

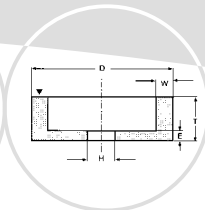


THELEICO quality product range

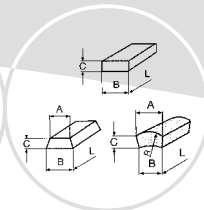
Shape 2



Shape 6



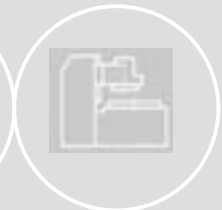
Shape 31..



Traverse table



Circular table



Flat grinding with cup wheels and grinding cylinders DIN shape No. 2, 6

Application			Grinding wheel specification	
Material	Alloy	Hardness	< ø 175 mm	> ø 200 mm
Steel and cast iron	unalloyed and low-alloyed	unhardened	40A 36-3 H 7 V	40A 46-3 I 7 V
		hardened	45A 46-9 F11 V	45A 46-9 F11 V
	high-alloyed and HSS, HSS-E	unhardened	49A 46-0 F 10 V	49A 46-0 F 10 V
		hardened	24A 36-0 G11 VM	25A 46-0 E12 VM
Grey cast iron, chilled cast iron			85C 36-3 G 7 V	85C 36-3 G 7 V
Aluminium alloys, bronze, brass, copper, magnetic material (magnetic clamping tables)			89C 54-9 F 12 V	89C 54-9 F 12 V

Flat grinding with grinding segments DIN shape No. 3101, 3102, 3103, 3104, 3105, 3108, 3109

Application			Grinding segment specification	
Material	Alloy	Hardness		
Steel	unalloyed and low-alloyed	unhardened	45A 24-1 L 5 B	
		hardened	45A 24-1 K 6 B	
	high-alloyed	unhardened	24A 30-1 G11 VM	
		hardened	24A 30-1 E12 VM	
	stainless and acid-resistant (VA)		24A 24-9 K11 B	
Grey cast iron, chilled cast iron			224A 36-2 N 7 B	
Aluminium alloys, bronze, brass, copper			89C 24-3 H12 V	

Please contact us!

Further information and product recommendations at www.leisse.org



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