



HERMES

SOLUTIONS FOR GEAR TECHNOLOGY

Product portfolio for grinding, honing,
and polishing of gears and shafts



for an
excellent finish

WE ARE DRIVEN BY PERFECTION

HERMES GRINDING SOLUTIONS
SET THE STANDARD
FOR THE HIGHEST-QUALITY
SURFACE PRODUCTION

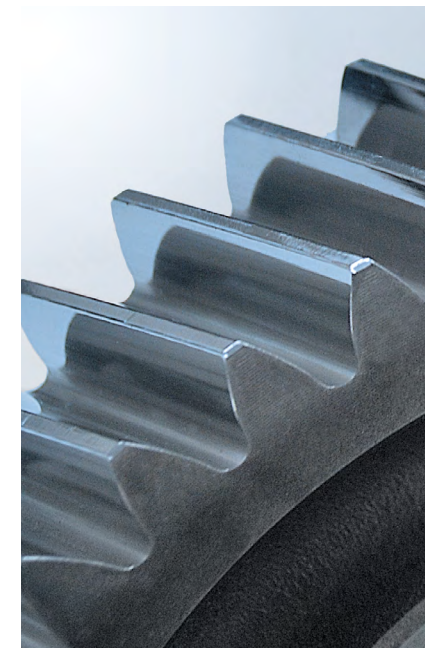
A PERFECT SURFACE FOR A SMOOTH FUNCTION

The grinding process plays a crucial role in the fulfillment of the precise requirements in shape and dimensional accuracy, topography, and optimal marginal zone properties. Only uncompromising accuracy in hard-fine grinding allows excellent surface quality. Furthermore, the time and cost-efficiency of processes can be optimized thanks to the extremely diverse possibilities of individual abrasive configuration.

IT ALL REVOLVES AROUND YOUR PRODUCT

Gears are the most crucial element in a transmission for transmitting or converting energy or force – whether in vehicles, aircraft, ships, wind turbines, or classic industrial transmissions. Together with drive shafts, gears set vehicles in motion and let machines work. Wherever an engine revolves, it revolves around your products – and therefore, around our solutions.

Constantly increasing requirements for transmission properties, especially in the automotive sector, means increasing requirements for individual parts. As more precision is applied to the manufacture of finished gears and shafts, the better the performance results: in fuel efficiency, exhaust emission, and noise reduction. To achieve this, we stand by your side as a reliable partner.



THE RIGHT ABRASIVE FOR EVERY PROCESS AND WORKPIECE

In gear technology, different abrasive tools, grain types, and bonding systems are used, dependent on the lot size and the required surface quality.

Medium and large series gear production: continuous generating gear grinding or gear honing for hard-fine grinding of hardened gear flanks

Small series or industrial gears: profile grinding

The bevel gear, consisting of the ring gear and pinion: bevel gear grinding with cup wheels

Gear bore, gear face, and bearing seats on gear shafts: inner diameter grinding, outer diameter grinding, or plane-parallel finishing

OUR SOLUTIONS FOR YOUR NEEDS

As specialists for the requirements of your industry, our passion is the development of grinding solutions, individually adapted to your requirements. The following pages provide you with a preview of the endless possibilities that our technologies and product range offer you.

Detailed information and material for download are available at **hermes-abrasives.com**.

To contact us directly, please go to "Contact Finder".

ABRASIVES MADE TO MATCH YOUR PROCESS

We apply our in-depth knowledge about your processes and applications in the transmission sector to meet your exact needs. To ensure perfect results, our industry management and application technology unit work with you in close exchange. If the task requires a completely new solution, then the Hermes research and development unit takes over. Using application-specific requirements, from the bond system to the cutting material combination, the final result is a customer-specific tool. We additionally offer some standard specifications.

PERFORMANCE CATEGORIES

For maximum efficiency, the process must match the requirements exactly. To do so, the performance specifications of the grinding wheels have to be determined with the desired result in mind. Therefore, for certain applications, we offer standard specifications with different performance classes from stock.

CLASSIC:	Cost effective solution for grinding small modules.
PERFORMANCE:	Powerful all-round specification.
PREMIUM:	Very good cutting performance coupled with very good profile stability.
PREMIUM+:	Highest performance class: solution with highest cutting performance and tool life.

HIGH-PERFORMANCE BONDS: VITRA AND VICON

For the highest performance and processes critical to grinding burn, we recommend our innovative bonding systems: VITRA for CERFINE tools, VICON for CERBON, and CERIA grinding tools (CBN or diamond).

ADVANTAGES:
Significant reduction of the bond ratio without loss of tool life, due to higher specific strength.
Optimized pore structure for increased absorption of coolant and improved chip removal
Significantly lower temperature load, shorter grinding times, and higher metal removal rates.

BONDS

CERAMIC – HERMES CER-PRODUCTS:
Hard bond system for high rates of stock removal and long tool life. Depending on the grain type, you can choose between the following variants: **CERFINE** (aluminum oxide or microcrystalline aluminum oxide), **CERMIC** (fine grain), **CERBON** (CBN), **CERIA** (diamond)

SYNTHETIC RESIN – HERMES PROFINE:
Elastic, for flexibility in case of variations in measurements and high-quality surfaces

POLYURETHANE – HERMES MICROLITE:
For the highest gloss and fineness of the surface

TALK TO US

Even in processes that seem to run smoothly the potential for further optimization exists. Let's work together to find out how you can benefit even more. Find your direct contact at hermes-abrasives.com under "Contact Finder"

INNOVATIVE
GRINDING TOOLS FOR
GEAR TECHNOLOGY

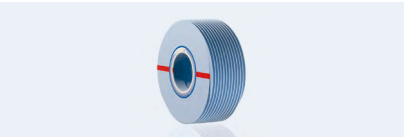
Our portfolio of products, specially designed for gear technology, is comprehensive. It is the basis for unlimited possibilities in the development of individual solutions. Below we detail some of our highlights.



CERFINE CG

for continuous generating
gear grinding

Description: Hermes CERFINE CG high-performance worm wheels for continuous generating gear grinding are specially adapted to the high requirements of gear grinding processes.



HERMES
CERFINE CG

COMPETITOR

Process data	v _c = 80 m/s Material: 20MnCr5 Machine: Kapp KX 300	
Performance	■ ■ ■	■ ■ ■
Life time	■ ■ ■	■ ■ ■
Cost per part	■ ■ ■	■ ■ ■
Specialities: Whenever you need more performance or have critical processes, we recommend the use of our high-performance bond VITRA with optimized bond strength and pore structure.		

CERFINE GH

HERMES
CERFINE GH

COMPETITOR

for gear honing

Description: Internally geared Hermes CERFINE GH high-performance abrasives for gear honing are specially adapted to the high requirements of gear honing.



Process data	Axis cross angle Σ = 13° Module = 3.25 mm Machine: Präwema Synchrofine	
Performance	■ ■ ■	■ ■ ■
Dressing interval	■ ■ ■	■ ■ ■
Cost per part	■ ■ ■	■ ■ ■
Specialities: Whenever you need more performance or have critical processes, we recommend the use of our high-performance bond VITRA with optimized bond strength and pore structure.		

CERBON OD

HERMES CERBON OD
PREMIUM PERFORMANCE

COMPETITOR

for outer diameter grinding

Description: Hermes CERBON OD are dressable high-performance CBN tools for outer diameter grinding or peel grinding of gear shafts.



Process data	v _c = 120 m/s Measurement = 0.5 mm Hardness: 60 HRC Machine: Junker		
Stock removal	■ ■ ■	■ ■ ■	■ ■ ■
Dressing feed	■ ■ ■	■ ■ ■	■ ■ ■
Life time	■ ■ ■	■ ■ ■	■ ■ ■
Cost per part	■ ■ ■	■ ■ ■	■ ■ ■
Whenever you need more performance or have critical processes, the use of our high-performance bond VICON is recommended. It is specially developed for hard to cut materials with optimized bonding strength and pore structure.			

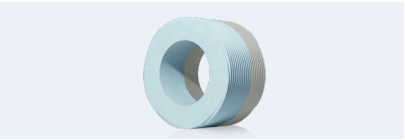
CERFINE/MICROLITE CG

HERMES
CERFINE/MICROLITE CG

COMPETITOR

for continuous generating gear
grinding and polishing of gears

Description: CERFINE / MICROLITE CG tools for continuous generating gear grinding and polishing of gears combine a high-performance vitrified part with a polishing part for highest surface qualities.



Process data	v _c = 63 m/s Material: 20MnCr5 Machine: Gleason Genesis GX	
Profile accuracy	■ ■ ■	■ ■ ■
Process stability	■ ■ ■	■ ■ ■
Surface quality	■ ■ ■	■ ■ ■
Grinding time	■ ■ ■	■ ■ ■
Specialities: Whenever you need even more power or have critical grinding processes, we recommend the use of our VITRA high-performance bond with optimized bond strength and pore structure in the high-performance area.		

The products listed below are also specially designed for gear technology. For detailed information on these and more, please visit our special topic page at hermes-abrasives.com

CERFINE PG for profile grinding of gears

CERFINE / CERMIC CG for continuous generating gear grinding and fine grinding of gears

CERFINE BG for bevel gear grinding

PROFINE GH for gear honing of gears

CERBON ID for inner diameter grinding

CERBON FG for plane-parallel finishing of gear faces

HERMES – YOUR PARTNER AND EXPERT FOR EXCELLENT SURFACES

WHO WE ARE

Our strength lies in the aesthetic and functional finish of surfaces. In this, we are the first choice for a large number of users from a wide variety of industries. Founded in Hamburg in 1927 and grown into a global player, our comprehensive portfolio of coated abrasives and precision bonded abrasives make us one of the world's most important manufacturers.

DRIVEN TO FIND YOUR PERFECT SOLUTION

At Hermes, we work passionately on tailor-made solutions that match your unique requirements perfectly. We are constantly expanding our in-depth knowledge of your processes, applications, and the challenges associated with them because we want to be more than your service provider. We want to be your partner.

DISTINGUISHED THROUGH OUR SERVICE

With local contacts at our many international locations: wherever and whenever you need our support, we are there for you. Our customers worldwide appreciate our flexibility and promptness.



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Safety first
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