LUMEI INDUSTRIAL TECHNOLOGY

Grinding Wheel & Cutting Disc Production Line Solutions

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Brown Fused Alumina



PRODUCT OVERVIEW

Made from bauxite, coke, and iron filings in a high-temperature electric arc furnace, with high hardness and good toughness.

PRODUCTION PROCESS

Batching, smelting at 2250°C, cooling, crushing, magnetic separation, screening, and packing.

APPLICATIONS

Blasting, rust removal, bonded and coated abrasives, precision casting, cutting discs, and refractory materials.

PHYSICAL PROPERTIES

Property	Value
Color	Dark brown; deep blue after calcination
Crystal system	Trigonal
Mohs hardness	≥9.0
Melting point	2250°C
Maximum operating temperature	≤1900°C
True density	≥3.90 g/cm³
Linear expansion coefficient	7–9 (0–1600°C)
Bulk density	1.6–1.99 g/cm³

CHEMICAL COMPOSITION

Grade	Al_2O_3	Other limits
F4–F80	≥96%	Fe_2O_3 ≤0.3% SiO_2 ≤1.5% TiO_2 ≤3.0%
F90–F150	≥95%	Fe_2O_3 ≤0.3% SiO_2 ≤1.5% TiO_2 ≤3.0%
F180–F240	≥93%	Fe_2O_3 ≤0.3% SiO_2 ≤1.5% TiO_2 ≤3.5%
P8–P80	≥95.0%	Fe_2O_3 ≤0.2% SiO_2 ≤1.2% TiO_2 ≤3.0%
P100–P150	≥94.0%	Fe_2O_3 ≤0.2% SiO_2 ≤1.2% TiO_2 ≤3.0%
Micropowder 1–63 μm	≥92.5%	Fe_2O_3 ≤0.5% SiO_2 ≤1.8% TiO_2 ≤4.0%

Black Fused Alumina



PRODUCT OVERVIEW

Smelted from bauxite in an electric arc furnace. Moderate hardness, strong toughness, and good thermal stability suit precision processing.

PRODUCTION PROCESS

Bauxite and auxiliary materials are smelted in a fixed or tilting furnace, cooled, crushed, magnetically separated, screened, and packed.

APPLICATIONS

Stainless-steel grinding, surface treatment, bonded and coated abrasives, optical glass, wood products, and cutting discs.

PHYSICAL PROPERTIES

Property	Value
Color	Black
Crystal system	Trigonal
Mohs hardness	8.0–9.0
Vickers hardness	2000–2200
Maximum operating temperature	≤1850°C
True density	≥3.5 g/cm³
Melting point	2050°C

CHEMICAL COMPOSITION

Grade	Al_2O_3	Other composition
0–5 mm lump	70–88%	Fe_2O_3 4–12% SiO_2 10–25% TiO_2 2–4%
F4–F360	65–88%	Fe_2O_3 6–12% SiO_2 12–25% TiO_2 2.5–4%
P12–P400	65–88%	Fe_2O_3 6–12% SiO_2 12–25% TiO_2 2.5–4%
F400–F1200	65–85%	Fe_2O_3 6–12% SiO_2 12–27% TiO_2 3–5%
P600–P2500	65–85%	Fe_2O_3 6–12% SiO_2 12–27% TiO_2 3–5%

White Fused Alumina



PRODUCT OVERVIEW

Made from industrial alumina by high-temperature smelting, with high purity, high hardness, strong cutting performance, and good chemical stability.

PRODUCTION PROCESS

Fixed-furnace smelting, cooling, crushing, magnetic separation, acid washing as needed, screening, and packing.

APPLICATIONS

Precision grinding, polishing, sandblasting, ceramic and resin-bonded abrasives, precision casting, and refractory materials.

PHYSICAL PROPERTIES

Property	Value
Color	Pure white
Crystal system	Trigonal
Mohs hardness	≥9.0
Melting point	2250°C
Maximum operating temperature	≤1900°C
True density	≥3.90 g/cm³
Bulk density	1.5–1.9 g/cm³
Microhardness	2000–2200 kg/mm²

CHEMICAL COMPOSITION

Grade	Al_2O_3	Other limits
F12–F80	≥99.7%	Na_2O ≤0.2% magnetic material ≤0.02% SiO_2 ≤0.03%
F90–F150	≥99.6%	Na_2O ≤0.22% magnetic material ≤0.03% SiO_2 ≤0.04%
F180–F320	≥99.4–99.5%	Na_2O ≤0.35% magnetic material ≤0.04% SiO_2 ≤0.05%
Refractory lump	≥99.7%	Na_2O ≤0.2% magnetic material ≤0.02% SiO_2 ≤0.03%
W2.5–W40	≥99.3%	Na_2O ≤0.4% magnetic material ≤0.04% SiO_2 ≤0.05%

Black Silicon Carbide



PRODUCT OVERVIEW

Made from petroleum coke and quartz sand in an electric resistance furnace, with high hardness, low thermal expansion, and good thermal conductivity.

PRODUCTION PROCESS

Blending, resistance-furnace smelting, cooling, crushing, screening, processing by grade, and packing.

APPLICATIONS

Refractory products, blasting, abrasive tools, automotive parts, ceramics, coatings, photovoltaic materials, and metallurgical deoxidation.

PHYSICAL PROPERTIES

Property	Value
Crystal system	Hexagonal
Maximum operating temperature	≤1900°C
Mohs hardness	9.2–9.5
Melting point	2250°C
Bulk density	3.2–3.45 g/cm³
Packing density	1.34–1.60 g/cm³
Specific gravity	3.20–3.25

CHEMICAL COMPOSITION

Grade	SiC	Fe_2O_3 / Free C
0–8 mm	99%	≤0.4% / ≤0.2%
F16–F90	99%	≤0.4% / ≤0.2%
F100–F180	98.5%	≤0.5% / ≤0.25%
F220–F240	98%	≤0.55% / ≤0.3%

Green Silicon Carbide



PRODUCT OVERVIEW

Made from quartz sand, petroleum coke, and salt in an electric resistance furnace, with higher purity and hardness than black silicon carbide.

PRODUCTION PROCESS

Blending, resistance-furnace smelting, cooling, crushing, screening, processing by grade, and packing.

APPLICATIONS

Silicon rods, blasting, brake pads, cutting discs, fiberglass pipes, welding materials, electronic materials, and precision grinding.

PHYSICAL PROPERTIES

Property	Value
Crystal system	Hexagonal
Maximum operating temperature	≤1900°C
Mohs hardness	9.5
Melting point	2250°C
Bulk density	3.2–3.45 g/cm³
Packing density	1.28–1.60 g/cm³
Specific gravity	3.20–3.25

CHEMICAL COMPOSITION

Grade	SiC	Fe_2O_3 / Free C
0–8 mm	99.5%	≤0.2% / ≤0.2%
F16–F90	99.5%	≤0.2% / ≤0.2%
F100–F180	99%	≤0.45% / ≤0.25%
F220–F240	98.5%	≤0.5% / ≤0.27%

Potassium Cryolite (Potassium Fluoroaluminate)







ENGLISH

Potassium cryolite melts at approximately 570°C, much lower than sodium cryolite. In resin-bonded cutting and grinding wheels it helps reduce interface temperature, lubricate the cutting surface, and improve strength, sharpness, and wear resistance. Recommended addition: 5–15% of abrasive weight (abrasive : cryolite = 100 : 5–15).

Frost Cryolite





ENGLISH

Frost cryolite has a composition similar to gray sodium cryolite and a relatively low melting point. Its color is slightly less bright, but its lower cost makes it an economical auxiliary material for grinding-wheel production.

Ultrafine Potassium Sulfate for Grinding Wheels





ENGLISH

Made from imported raw materials using an advanced process, this high-purity potassium sulfate features low acidity, low halogen content, and low moisture. It resists caking, disperses well, and can improve wear resistance, sharpness, and color appearance. Adequate moisture should be maintained during mixing to reduce warping risk.

Sodium Cryolite (White / Gray Grades)







ENGLISH

Sodium cryolite melts at approximately 1010°C and can improve sharpness and reinforcement in resin-bonded cutting wheels. The gray grade contains a small amount of impurities, giving it a slightly gray color; its performance is close to the white grade while offering a more economical and stable option.

Wear-Resistant Powders M1 / M2 / A11



ENGLISH

This series was developed for resin-bonded abrasive tools. M1 is designed for cutting wheels, M2 for grinding wheels, and A11 for both cutting and grinding applications, providing targeted performance support for different processes.

Sodium Fluoroaluminosilicate





ENGLISH

This fluorine-containing additive is described as stable, aging-resistant, sharp, and durable. Internal tests report consistent cutting performance in 107 mm cutting wheels under different cutting-cycle conditions.

Super Power Composite Additive





ENGLISH

A high-efficiency composite additive for grinding wheels with relatively high chemical activity. During use and storage, avoid water, steam, acids, alkalis, high temperatures, and high pressure; keep the product sealed and properly managed.

Low-Molecular-Weight Epoxy Resin & Jufeng Sharpening Agent





ENGLISH

The low-molecular-weight epoxy resin offers low viscosity, high activity, and rapid wetting of resin powder. It can co-cure with phenolic resin and help improve sharpness and surface appearance. The sharpening agent is intended for specialty abrasive tools requiring very high sharpness.

Fluorite Powder





ENGLISH

In resin-bonded grinding wheels, fluorite powder can improve strength and heat resistance and may replace part of the natural cryolite. Thermal decomposition during grinding can enhance self-sharpening, reduce workpiece burn, and improve efficiency. Recommended addition: 5–10% of abrasive weight.

Iron Sulfide (FeS_2)





ENGLISH

At about 400–475°C, FeS_2 absorbs oxygen and helps reduce oxidation of the resin and workpiece. Around 650°C it absorbs heat and decomposes, lowering wheel temperature; at higher temperatures it contributes lubrication and surface protection. Typical addition: 4–8% of abrasive weight, with mesh size selected to suit the wheel specification.

Barite, Gypsum & Other Sulfate Minerals



ENGLISH

These conventional mineral additives are selected through repeated trials, screening, and quantitative evaluation to identify economical and stable options suitable for abrasive-tool production.

Mixing Dispersants, Humectants & Anti-Caking Agents





ENGLISH

A range of dispersing, moisture-retaining, and anti-caking solutions is available for different mixing stages and process conditions. For example, a dry-mix dispersant can be added during dry mixing to help keep blended abrasive materials loose and delay caking.

Non-Stick Steel Separator Mesh Comparison



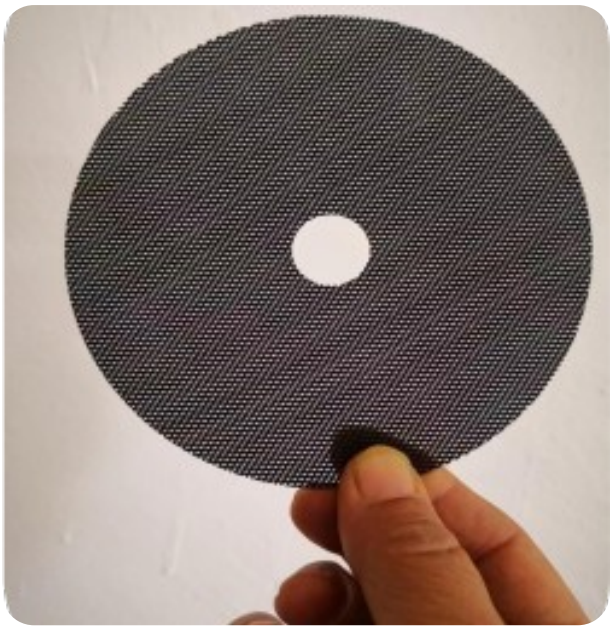


ENGLISH

The comparison shown illustrates advantages in coating coverage and coating quality. The mesh is designed for separation during cutting-disc curing and supports more efficient product release and automated handling.

Non-Stick Steel Separator Mesh





ENGLISH

Made from fine, flat, high-strength steel mesh with a heat-resistant, environmentally friendly non-stick coating. It offers good thermal conductivity and flatness, supports clean release and consistent wheel appearance, and reduces manual handling. When the coating wears, the mesh can be returned to our factory for maintenance and recoating.

Crystal-Ceramic Coating for Aluminum Supports





ENGLISH

A durable three-layer crystal-ceramic coating reduces adhesion between aluminum supports and grinding wheels or mesh covers, enabling easier separation and automated sorting. It can also extend support life, improve turnaround efficiency, and enhance product surface finish.

High-Temperature Separator Fabric





ENGLISH

Die-cut from coated high-temperature fiberglass fabric for use as a separator during cutting-wheel curing. It offers heat resistance, non-stick performance, and easy release, helping improve the appearance of the finished product.

Water-Based Release Agent & Release Wax

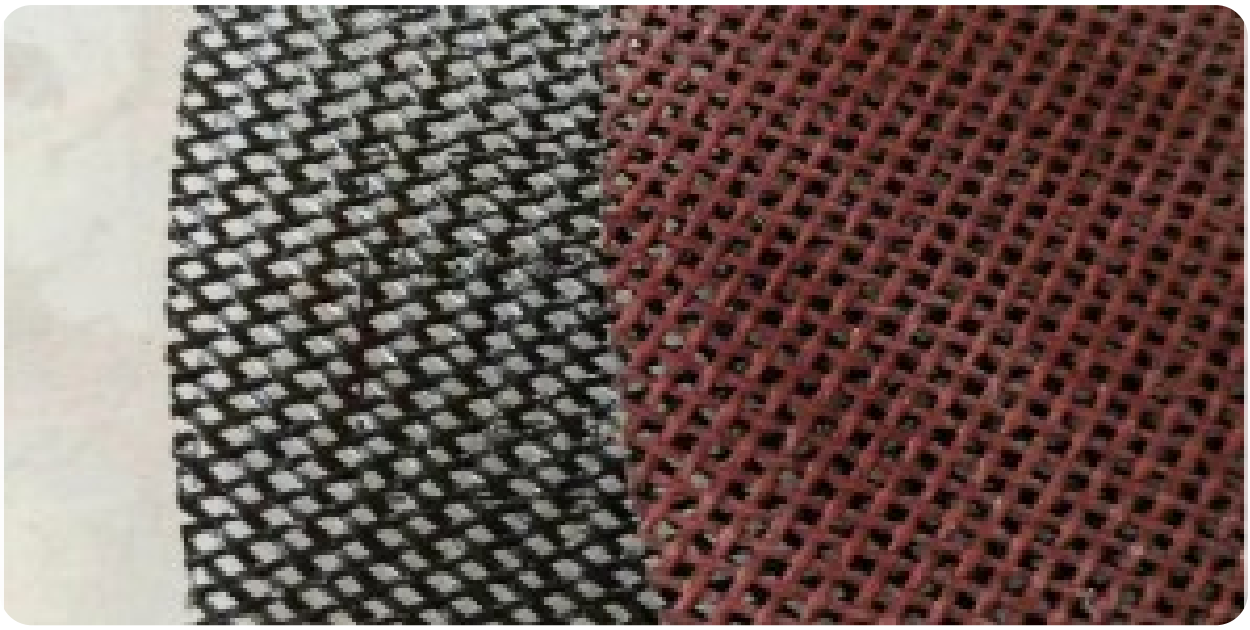




ENGLISH

Multiple water-based release agents and release-wax options have been evaluated for different production stages and operating conditions, helping customers match release performance, ease of use, and process compatibility.

PTFE-Coated Fiberglass Mesh



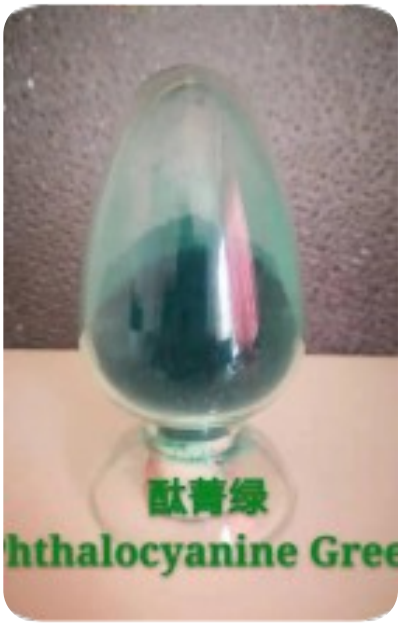
ENGLISH

Designed to reduce adhesion between fiberglass separator mesh and cutting wheels. Refurbishment and PTFE recoating services are also available for used fiberglass mesh to extend service life and improve release performance.

Colorants & Pigments for Abrasive Tools







ENGLISH

The range includes titanium dioxide, phthalocyanine green, phthalocyanine green paste, golden red, lightfast bright red, benzidine yellow, chrome yellow, pigment carbon black, oil-soluble black, and iron oxide red. The products emphasize high purity, vivid color, and batch consistency.

TR800C High-Pigment Ultrafine Carbon Black



ENGLISH

A high-pigment ultrafine carbon black for industrial applications such as abrasive-tool coloration.

One-Component Epoxy Adhesive





ENGLISH

Designed for applications including automatic flap-wheel assembly, outer-edge backing, and Korean-style flap-disc core filling. The formulation emphasizes environmental friendliness, low odor, rapid curing, bonding strength, weather resistance, and application-specific matching to materials and processes.

Single- / Two-Component Flap-Disc Backing Adhesives





ENGLISH

The one-component option is convenient and ready to use, while the two-component option supports longer storage and on-demand mixing. Both are intended for coated-abrasive and related bonding processes, with an emphasis on stability, environmental consideration, and reliability.

Single- / Two-Component Korean-Style Flap-Disc Adhesive





ENGLISH

Available in one-component and two-component versions. The finished adhesive offers good flow and stable curing, allowing selection according to the customer's process and product construction.

Two-Component Adhesives for Mounted Flap Wheels & Flap Wheels





ENGLISH

Solutions can be customized to customer requirements, with application follow-up to help achieve stable and dependable bonding performance in mounted flap wheels and flap wheels.

Black Paper for Abrasive Products





ENGLISH

Made from quality wood pulp with high-strength additives, this black paper offers a flat, smooth surface, strong blackness and brightness, and good resistance to adhesive penetration. Multiple basis weights and roll widths are available, with sheet cutting on request.

Weight and roll width

g / mm	900	950	1000	1100	1150	1180	1350
35g				Ordinary black	Ordinary black	Special black	Special black
45g		Ordinary black		Ordinary black	Ordinary black		
55g	Ordinary black	Special black	Ordinary black	Special black only	Special black only		

Blank cells: no grade listed in the supplied specification.

Nonwoven Fabric





ENGLISH

Used as a facing and separator layer in mesh-cover and grinding-wheel-mesh production. Its function is similar to black paper, helping improve appearance and support customized products. Basis weights such as 30 g and 50 g are available in different widths.

Coupling Agent (Adhesion Promoter)





ENGLISH

Helps improve water resistance, aging resistance, strength, and surface brightness in mesh-cover products. Multiple specifications are available, with customized solutions to suit different processes.

Urotropine (Phenolic Resin Curing Agent)



ENGLISH

A raw material used in phenolic-resin curing systems.

Polyvinyl Butyral & Non-Stick Additives for Mesh Fabric



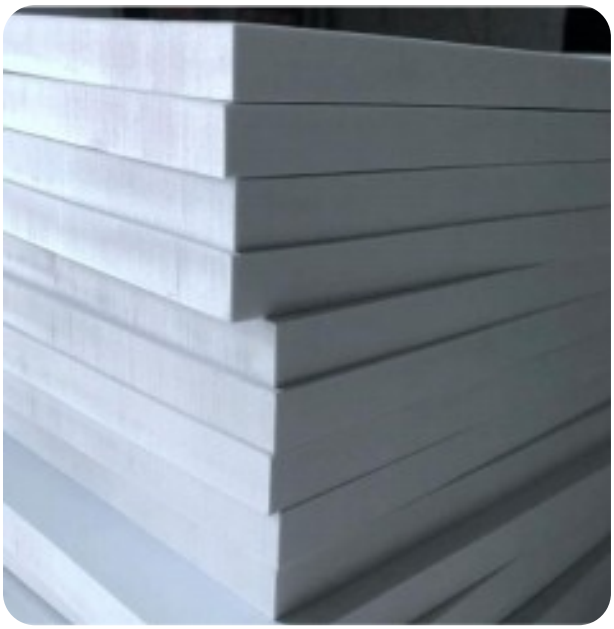




ENGLISH

The range includes polyvinyl butyral (PVB) and non-stick auxiliaries for mesh fabric, including epoxy resin, humectants, silicone oil, and epoxy fatty-acid esters. Product selection and samples are available according to process requirements.

Plastic Press Pads / Die-Cutting Cushion Pads





ENGLISH

The plastic press pads offer good hardness and impact resistance. Die-cutting cushion pads can be customized in different sizes, thicknesses, and hardness levels to suit various pressing and die-cutting processes.

405 mm Double-Mesh Cutting Disc





ENGLISH

The company's trial factory supports raw-material evaluation and formulation development, with capability for 355, 400, and 405 mm cutting discs. The 405 mm double-mesh disc emphasizes stable quality and consistent performance; sample testing and private-label cooperation are available.

Custom Grinding Disc Trial Production



ENGLISH

The trial factory combines process equipment with formulation-validation capability for both standard and custom grinding discs. The example shown is a custom 75 × 6 × 9 mm grinding disc; samples, trial pieces, and private-label cooperation are available.

Cutting Discs for Stainless Steel





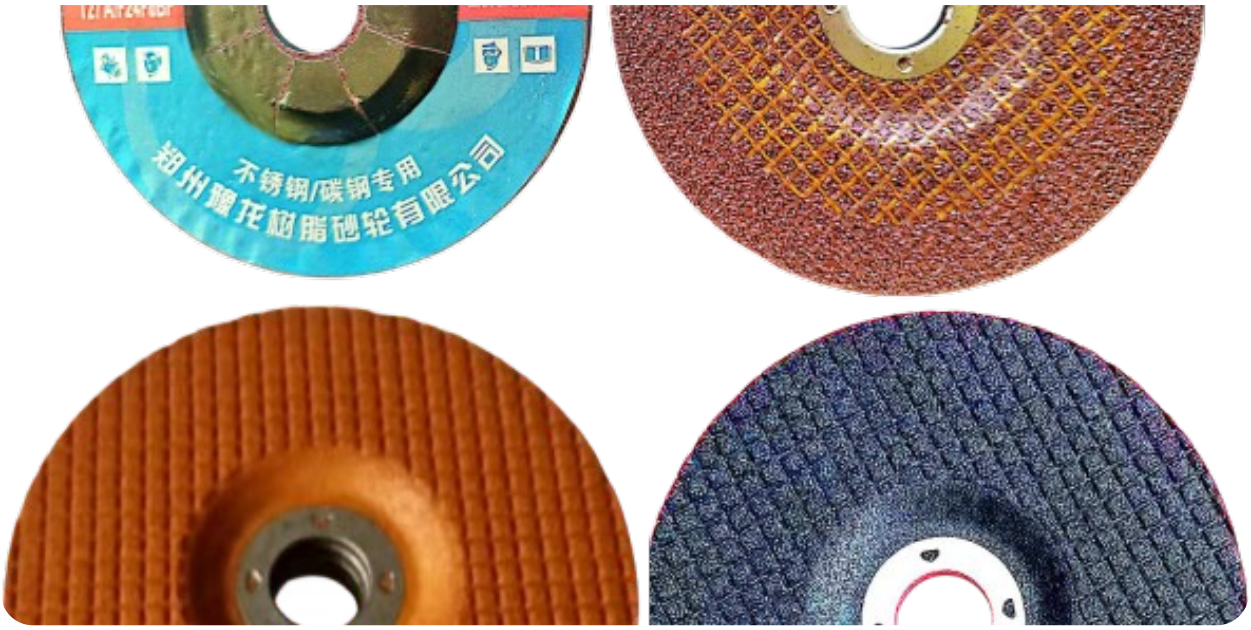


Shown: 107-series ultra-thin cutting discs and custom dental cutting discs.

ENGLISH

The trial factory supports small-batch production to national standards or customer requirements, including abrasive products with demanding technical, quality, or dimensional specifications. It also supports development validation and application troubleshooting.

Premium Benchmark Grinding Disc



ENGLISH

A standard 125 × 6 × 22 mm grinding disc for performance benchmarking and trial validation.

Solving Critical Pain Points in Abrasive Manufacturing

01 Heat-resistant non-stick steel separators reduce post-curing adhesion, improve release efficiency, and support automation.

02 Crystal-ceramic-coated aluminum supports reduce impact handling and downtime, extend service life, and improve surface finish.

03 PTFE-coated fiberglass separators reduce adhesion to cutting wheels and lower separator consumption.

04 In-house grinding and screening improve consistency for materials such as cryolite and potassium sulfate.

From Raw-Material Supply to Trial Validation

01 Composition-controlled stainless-steel test bars improve the comparability and long-term consistency of cutting data.

02 Chemical names, functions, and dosage guidance are standardized for dispersants, humectants, grinding aids, and related additives.

03 Consolidated purchasing and distribution help small and medium mesh-cover factories stabilize quality, pricing, and delivery.

04 The trial factory continuously tracks raw materials, formulations, and grinding performance and shares application data and experience with customers.

05 LUMEI serves domestic and international abrasive-tool customers with sincerity, commitment, innovation, quality, and responsibility.