

*Engineering Your
Competitive Edge*

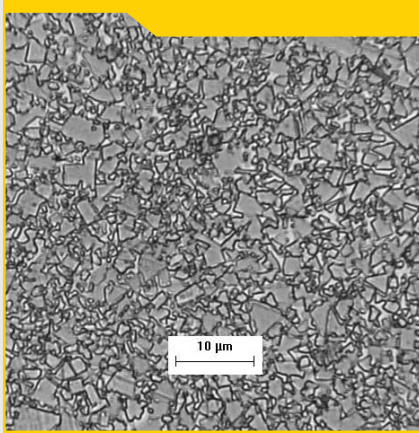


Carbide Engineered Products

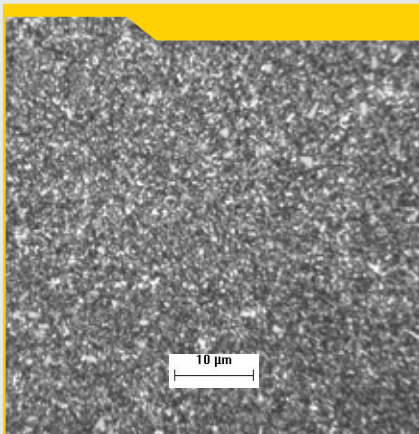


CD-KR Specialty Grades

*The Next Generation of Corrosion
Resistant Tungsten Carbide Preforms*



Typical Microstructure
CD-KR466



Typical Microstructure
CD-KR887

CD-KR Grades Offer:

- Better corrosion resistance — 100 times greater than standard tungsten carbide materials
- Superior mechanical properties
- Exceptional resistance to electrolytic attack during EDM
- Reduced EDM processing time
- Resistance to chemical leaching

From the Wear Parts Experts

Introducing the CD-KR tungsten carbide grade lineup from Carbide and Kennametal Engineered Products. These grades are specifically designed to resist corrosion in extreme environments while maintaining the mechanical properties you have come to expect from Carbide grades.

Kennametal R&D and Carbide have addressed the problems of corrosion, pitting and microcracking that have been frequently accepted in order to have the mechanical properties afforded by cobalt-binder tungsten carbide grades.

CD-KR grades have been developed with a proprietary binder composition which exhibits hardness and toughness properties comparable to standard tungsten carbide grades, but resists damage in corrosive environments.

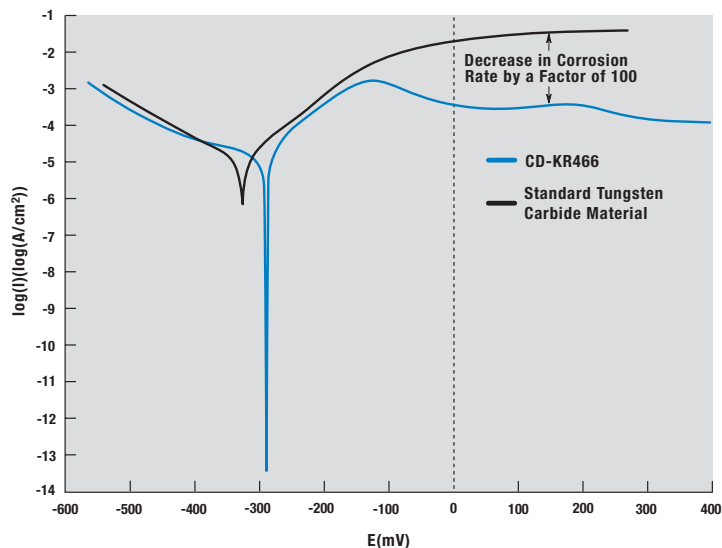
Engineered To Withstand Extensive EDM

CD-KR Grades are engineered to withstand the rigors of the EDM environment. When standard tungsten carbide materials are exposed to the EDM process for extended hours, corrosion, pitting, discoloration and microcracking will occur on all exposed surfaces. Those imperfections can result in a finished part strength reduction of up to 60 percent.

Under extreme EDM conditions, Carbide's CD-KR grades remain free of pitting, cracks and discoloration after 100 hours of EDM processing. They maintain superior strength throughout the EDM process and resist corrosion from grinding fluids, die lubricants and sour gas.

CD-KR grades provide this superior corrosion resistance while exhibiting the same EDM grade mechanical properties that have made Carbide the first choice for EDM blanks and preforms for years!

Potentiodynamic Corrosion Test



CD-KR Grades Save Time

When standard tungsten carbide preforms are first rough-cut by the wire EDM process, significant damage in the form of microcracks and pitting typically occur along the cut edge. Numerous trim/finish cuts are required to remove those surface imperfections.

The superior surface quality of the CD-KR grades reduces the need for remedial finish cutting, decreasing total EDM processing time.



Standard Tungsten Carbide
Standard tungsten carbide materials had multiple cracks on both rough and trim/finish cuts.

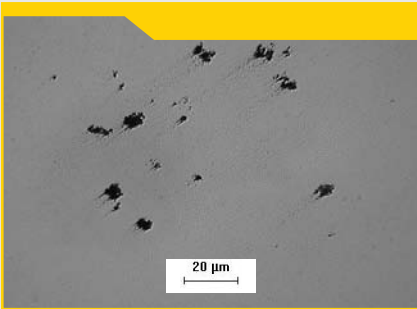


CD-KR Grade
CD-KR Grade was free of cracks.

Unmatched Performance in EDM

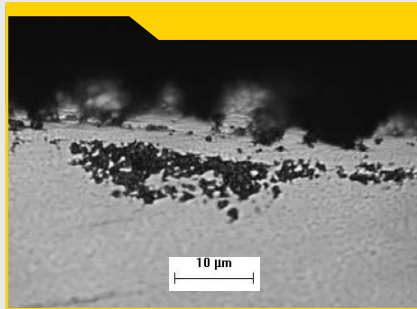
Comprehensive field testing proves that Carbide's CD-KR preforms provide unmatched performance in harsh EDM applications.

Standard Tungsten Carbide Surface Exposed to EDM*



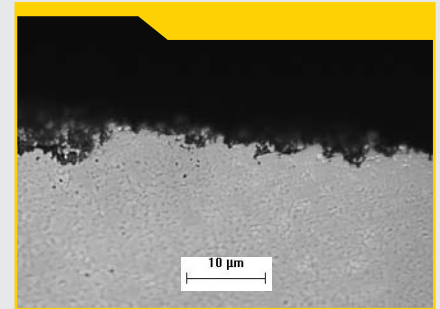
Standard tungsten carbide materials had pitting corrosion on all faces.

Standard Tungsten Carbide Materials Rough Cut



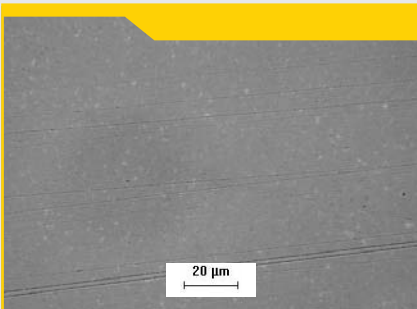
Corrosion under the EDMed face.

Standard Tungsten Carbide Materials Trim/Finish



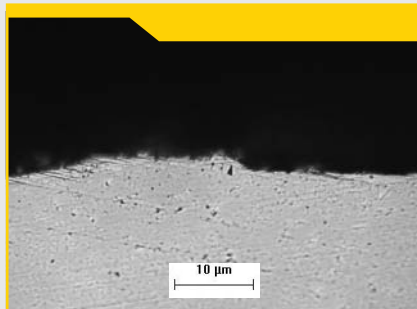
Standard tungsten carbide materials had corrosion originating from the surface layer of the EDMed face.

CD-KR Grade Surface Exposed to EDM*



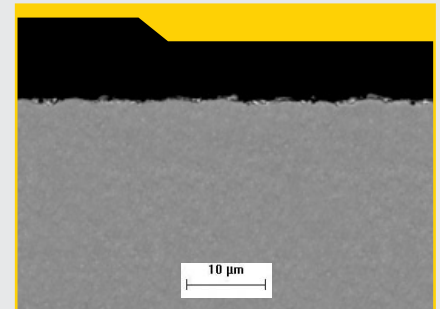
No pitting corrosion is seen on CD-KR grade faces after EDM.

CD-KR Grade Rough Cut



No corrosion under the EDMed face on CD-KR grade.

CD-KR Grade Trim/Finish Cut



No corrosion detected on the CD-KR grade EDMed surface.

*Field Tests (EDM for 36 hours)

Ready to Meet Your Specific Needs

Carbidie offers a variety of CD-KR grades. Each preform is carefully pressed, shaped and sintered to exact specifications. We also offer a variety of in-stock CD-KR887 rectangular blanks. Each blank is Sinter-HIP processed and stress relieved for EDM machining. Standard blank sizes [4.00" x 4.00" (101mm x 101mm)] in multiple thicknesses are in stock and can be shipped the same day.

Grade Specifications

Carbidie Grade	CD-KR466	CD-KR887	CD-KR855
Binder %	12	15	10
Average Grain Size	4	0.8	0.8
Rockwell "A"	89.6 - 90.4	89.7 - 90.7	91.3 - 92.3
Density g/cm ³	14.1 - 14.3	13.9 - 14.1	14.3 - 14.5
Average TRS (psi)	480,000	435,000	420,500
Compressive Strength (psi)	650,000	700,000	800,000

Engineered Wear Parts for a World of Extremes

Customers around the world have made Carbidie the supplier of choice for over 50 years. Every component is engineered to provide exceptional levels of performance and durability. Our uncompromising commitment to customer service means that our applications specialists are always on hand to assure that you get the right grade for the right job.

Let us show you how our commitment to fast delivery and performance-engineered products can give you the Competitive Edge. Contact us today and let one of our applications specialists show you how Carbidie can help increase your productivity, lower overall costs and improve quality in your operation.



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