

WINTER

Fixed-Diamond Wire

**Delivers Wafer
Sawing Breakthroughs
on Hard Materials**

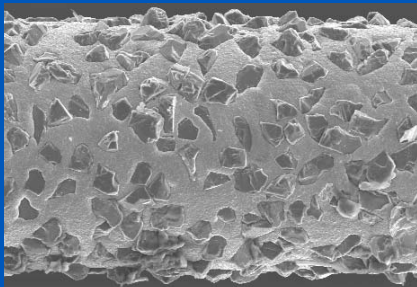


Proven Performance

WINTER

- Proven performance on sapphire, silicon, SiC.
- 3 to 5 times the cut rate of bare wire and slurry technology.
- Excellent wafer accuracy and surface finish.
- Highly uniform grain distribution around and along wire ensures consistent cutting action.
- Fixed-diamond technology eliminates slurry recycling and disposal concerns.
- Robust manufacturing process backed up by world-class Winter quality and worldwide engineering support.
- Compatible with broad range of single and multi-wire saws.
- Can be spooled directly onto customer reels.

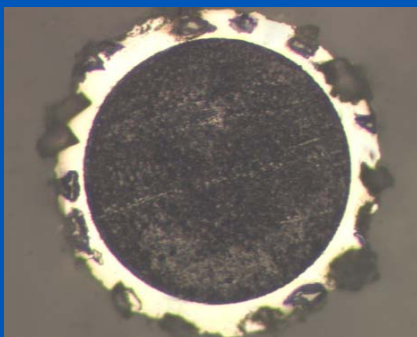
SEM SHOT
SHOWING
EXCELLENT
GRAIN
DISTRIBUTION
ALONG WIRE



SEM SHOT
SHOWING
STRONG GRIT
RETENTION



SEM SHOT
OF WIRE
CROSS-SECTION,
SHOWING
EXCELLENT
GRAIN
DISTRIBUTION
AROUND CORE



Fixed-Diamond Wire

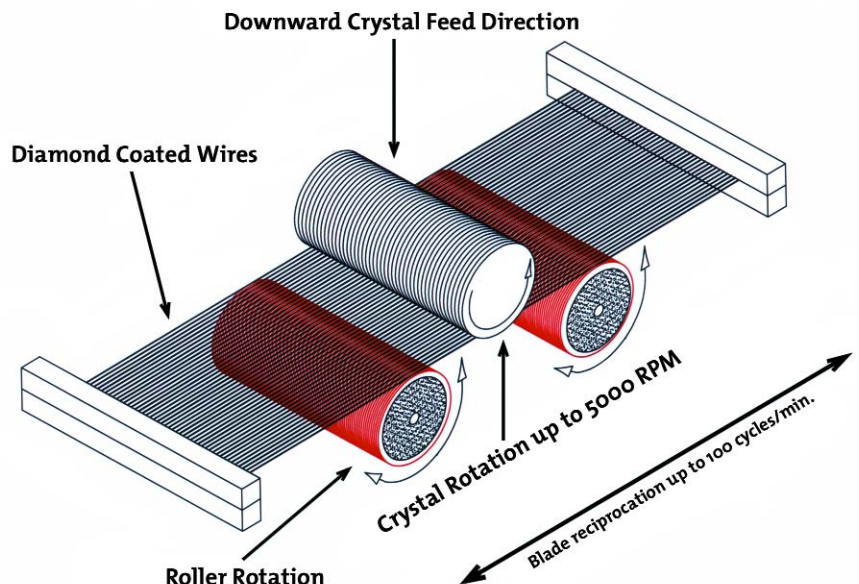
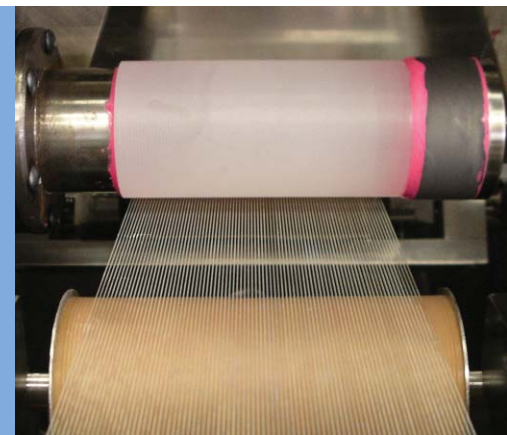
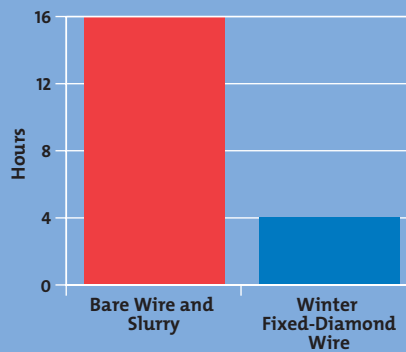
Case Study

Two-Inch Sapphire Wafer Sawing for LED Production

Diamond wire	DW0001 S18B-0.34-0.25 D25 G820 S33 A EF
Material	2" (50.8mm) C-plane sapphire
Sawn wafer thickness	620µm
Sawing time	4 to 8 hours *
TTV	<20µm (<15µm on SiC)
Bow	<20µm (<20µm on SiC)
Surface finish (Ra)	<1µm (<0.7µm on SiC)
Edge chipping	<10µm

* DEPENDING ON MACHINE PLATFORM

Sawing Time



Wafer Sawing Breakthroughs



Standard Availability

Core Material

Spring steel, 180µm to 400µm
[0.0071" to 0.0157"] diameter.

Grain Type

Synthetic diamond, D20B to D76

Concentration

High and continuous, around & along
wire.

Bond

Nickel-electroplated on steel, single layer
(no copper sheath for maximum heat and
wear resistance).

Custom Availability

- 1 150 to 500µm (0.006"-0.020") core
diameters available upon request.
- 2 D7 to D91 diamond available upon
request.

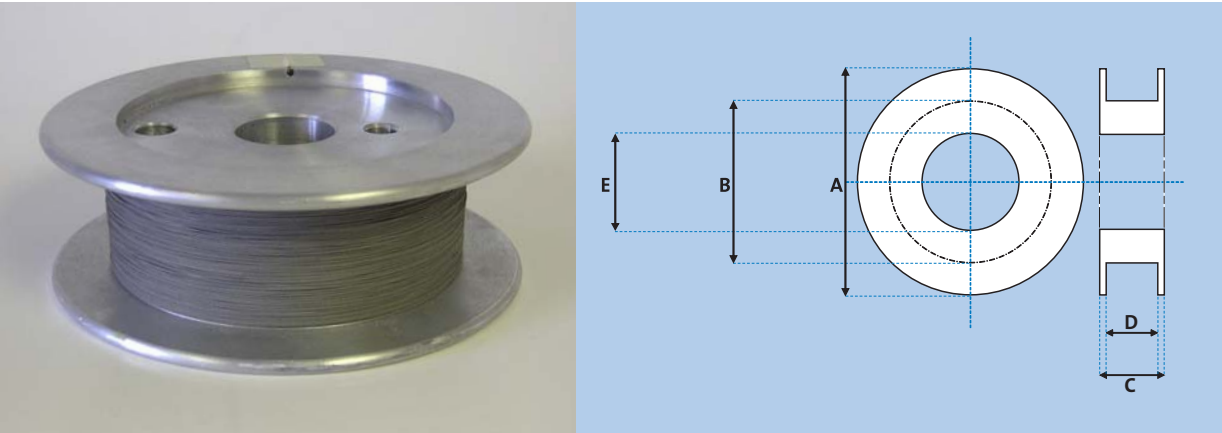
PART NO.	SPECIFICATION	CORE Ø 1	GRAIN SIZE 2	~ CUTTING WIDTH
BASILINE				
DW0007 82299839	S18B-0.43-0.3 D76 G820 S33 A EF	300µm (0.0118")	D76	430µm (0.0169")
DW0010	S18B-0.36-0.25 D64 G820 S33 A EF	250µm (0.0098")	D64	364µm (0.0143")
DW0006 82285891	S18B-0.35-0.25 EO4X50 G820 S33 A EF	250µm (0.0098")	X50	350µm (0.0138")
DW0001 82173376	S18B-0.34-0.25 D25 G820 S33 A EF	250µm (0.0098")	D25	340µm (0.0134")
DW0004 82266256	S18B-0.31-0.25 D20B G820 S33 A EF	250µm (0.0098")	D20B	310µm (0.0122")
DW0005 82285893	S18B-0.28-0.18 EO4X50 G820 S33 A EF	180µm (0.0071")	X50	280µm (0.0110")
DW0002 82173795	S18B-0.27-0.18 D25 G820 S33 A EF	180µm (0.0071")	D25	270µm (0.0106")
DW0003 82173628	S18B-0.24-0.18 D20B G820 S33 A EF	180µm (0.0071")	D20B	240µm (0.0094")
HIGH-SPEED				
DW0008 82300662	S18B-0.34-0.25 D25 G820 S33 A EF HS	250µm (0.0098")	D25	340µm (0.0134")
DW0009 82302395	S18B-0.27-0.18 D25 G820 S33 A EF HS	180µm (0.0071")	D25	270µm (0.0106")



on Hard Materials

Fixed-Diamond Wire

Spool Availability



SPOOL TYPE	MILLIMETERS				
	(A) FLANGE DIAMETER	(B) BARREL DIAMETER	(C) OVERALL WIDTH	(D) BARREL WIDTH	(E) INNER DIAMETER
001A	160.00	118.00	55.00	45.00	33.00
001B	160.00	118.00	166.00	152.00	33.00
001C	260.00	118.00	55.00	45.00	33.00
002	149.86	101.60	30.48	20.32	63.50
003	88.90	63.50	25.40	20.32	38.10
B60	255.00	117.00	270.00	158.00	32.00
B80	254.00	121.00	329.00	315.00	33.00
T610	215.00	164.00	270.00	250.00	50.00
Y01	180.00	84.00	243.00	216.00	30.60

Custom Availability

We can provide wire on spools above, or any custom reel upon request.



Worldwide Sales & Engineering Support

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