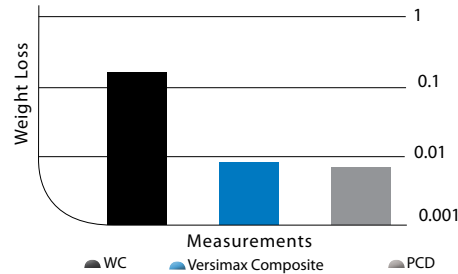


VERSIMAX™ COMPOSITE DIE BLANKS

Our Versimax family of products includes die blanks (nibs) for wire stranding, bunching and compacting applications. Versimax is a ceramic-bonded diamond composite with exceptional wear resistance, mechanical strength and high temperature performance. Versimax die blanks are free standing cylinders, which are electrically conductive and can be easily pierced using EDM technology. Versimax die blanks are thermally stable up to 1,200°C.

Ferrous & Non-ferrous wire applications

- extrusion
- bunching
- stranding
- compacting



Property	Units	Typical Value
Diamond content	% vol	80
Diamond grain size	µm	20
3 pt bend strength	MPa	800
Knoop hardness	kg/mm ²	4,000
Density	g/cm ³	3.4
Fracture toughness	MPa√m	9.5
Thermal conductivity	W/mK	360
EDM cut rate	mm ² /min	1,000

Standard Product Offering

Diameter (mm)		Thickness (mm)		⊥	∥
23	± 0.64	15	± 0.50	0.10	0.38
25	± 0.64	20	± 0.50	0.10	0.51
30	± 0.64	22	± 0.50	0.10	0.56
35	± 0.64	25	± 0.50	0.10	0.64

Special sizes are available upon request. Shrink fit or high temperature, high strength metal setting powder mounting technology recommended for Versimax Die Blanks. Please contact your sales representative for EDM, mounting and fabrication support. Versimax is a trademark of Diamond Innovations, Inc., U.S.A.

SUB-MICRON DIE BLANKS

Diamond Innovations® is the leading global supplier of manufactured superabrasives products required for drawing cord and wires in industrial applications. Sub-micron die blanks belong to our Compax® die blanks family of products and are one of many premium products available for the wire drawing industry. Sub-micron die blanks are a well-sintered polycrystalline (PCD) product with an ultra-fine grain microstructure. The unique material properties provide very good abrasion resistance and the ability to achieve a high quality surface finish. The fine-grain structure also provides the ability to maintain a sharp tool edge.

Target applications

- brass-plated wire
- welding wire
- fine finishing applications
- glass scribing

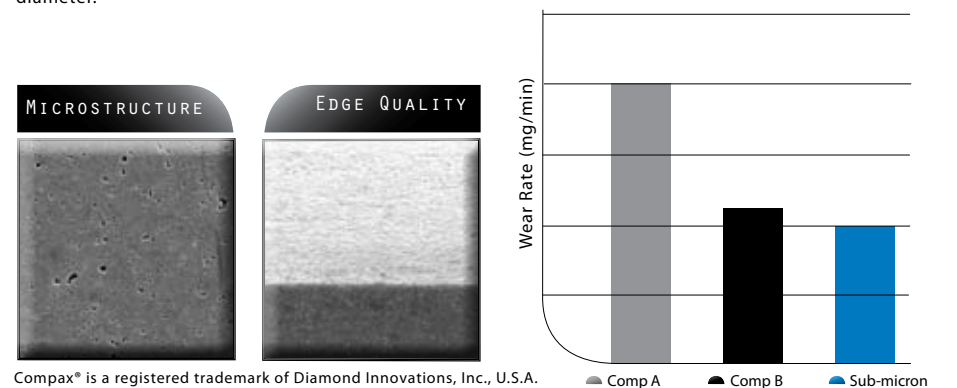
Property	Units	Typical Value
Diamond content	% vol	91
Diamond grain size	µm	0.9

Standard Product Offering

ADDMA	Diameter (mm)	Thickness (mm)	Metal Filled	Thermally Stable	Maximum Recommend Hole Size (µm)*
D6	3.1	1.0	5010-MFU	5010-TSU	0.5
D12	3.1	1.5	5015-MFU	5015-TSU	1.0




*Maximum recommended die size for non-ferrous wire. Hard-ferrous wire die size normally should not exceed 65% of this diameter.

Abrasion Test Results







Compax® is a registered trademark of Diamond Innovations, Inc., U.S.A.

Product Dimensions & Availability Chart

Self-Supported Die Blanks												
ADDMA	Nominal Diamond Diameter x Thickness					Product Dimensions [mm]						
		Sub μm		5 μm		Diamond Diameter	Diamond Thickness				Recommended Die Size (μm)*	
D6	3.1 x 1.0	5010-MFU	5010-TSU	5010-MF	5010-TS	3.1 \pm 0.38	1.0 \pm 0.13	0.08	(within diameter limits)	0.13	0.5	
D12	3.1 x 1.5	5015-MFU	5015-TSU	5015-MF	5015-TS	3.1 \pm 0.38	1.5 \pm 0.13	0.08		0.13	1.0	
D15	5.2 x 2.5			5025-MF	5025-TS	5.2 \pm 0.64	2.5 \pm 0.13	0.08		0.25	1.5	
D18	5.2 x 3.5			5035-MF	5035-TS	5.2 \pm 0.64	3.5 \pm 0.13	0.08		0.25	2.0	

(25 μm (course) self-supported dies are available. MF = metal filled TS = thermally stable)

Tungsten Carbide-Supported Die Blanks														
							Product Dimensions [mm]							
		3 μm	5 μm	12 μm	25 μm	50 μm	Tool Blank Diameter	Diamond Diameter	Diamond Thickness					Recommended Die Size (μm)*
D12	1.5 x 1.5				5235		3.99 \pm 0.013	1.4	1.5 \pm 0.10	0.05	0.010	0.05	0.20	0.8
D15	4.0 x 2.3	5823		5123	5223	5430	8.12 \pm 0.013	3.8	2.24 \pm 0.05	0.05	0.010	0.08	0.40	1.8
D18	4.0 x 2.9	5829		5129	5229	5435	8.12 \pm 0.013	3.8	2.84 \pm 0.05	0.05	0.010	0.10	0.40	2.3
D21	7.0 x 4.0		5840		5240	5530	13.65 \pm 0.013	6.8	3.86 \pm 0.05	0.05	0.010	0.14	0.50	3.5
D24	7.0 x 5.3		5853		5253	5535	13.65 \pm 0.013	6.8	5.13 \pm 0.05	0.05	0.010	0.18	0.50	4.6
	13.0 x 7.0			5225	5725	24.13 \pm 0.025	12.7	6.98 \pm 0.25	0.05	0.050	0.30	0.60	5.2	
D27	13.0 x 8.7			5108	5208	5730	24.13 \pm 0.025	12.7	8.70 \pm 0.25	0.10	0.050	0.30	0.60	5.8
D30	13.0 x 11.6			5111	5211	5735	24.13 \pm 0.025	12.7	11.60 \pm 0.25	0.10	0.050	0.40	0.60	7.6
	18.6 x 13.5				5913	34.00 \pm 0.025	18.2	13.5 \pm 0.50	0.10	0.050	0.45	0.75	11.2	
D33	18.6 x 15.5				5915		34.00 \pm 0.025	18.2	15.50 \pm 0.50	0.10	0.050	0.52	0.75	12.0
	18.6 x 17.5				5917		34.00 \pm 0.025	18.2	17.5 \pm 0.50	0.10	0.050	0.59	0.75	12.5
D36	18.6 x 18.5				5918		34.00 \pm 0.025	18.2	18.50 \pm 0.50	0.10	0.050	0.62	0.75	12.7

*Maximum recommended die size for non-ferrous wire.
Hard-ferrous wire die size normally should not exceed 65% of this diameter.