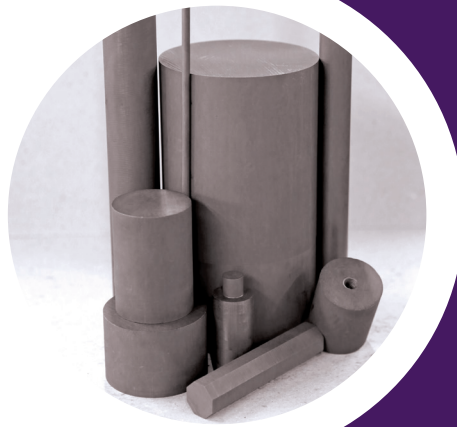


3D



GRAPHITE

Material Specifications & Applications



Quality is standard – Delivery is everything

3D has been family owned and operated since 1971 and we are one of the Midwest’s largest, full service graphite machine shops. This gives us the ability to provide our customers with a wide variety of services.

Our machining department can cut, grind and machine the electrode material that best suits your application and our quick turn-around times keep your business competitive. We also provide full billets, saw cut or ground pieces & plates, precision ground blanks, turned or ground rounds, time-saver blanks, metallic electrodes, EDM tubing and more.

Our state of the art 3, 4 & 5 axis high speed milling centers coupled with highly experienced programmers/operators can provide your company with high-quality custom electrodes.

3D utilizes the Zeiss Contura G2 CNC CMM for inspection of all our manufactured electrodes.

MATERIAL SPECIFICATIONS

Material	Density (g/cm3)	Average Grain Size (Microns)	Flexural Strength (psi)	Compressive Strength (psi)	Shore Hardness	Specific Resistance (ohm-in)
3D Graphite's Grades						
3D-65	1.78	13	6,500	14,300	60	.00052
3D-68	1.80	11	7,500	15,000	65	.00049
3D-70	1.82	9	8,000	17,300	65	.00048
3D-200	1.78	7	8,700	18,000	60	.00050
3D-1000	1.86	5	11,000	22,400	75	.00050
3D-2000	1.87	5	12,600	18,700	70	.00050
3D-3	1.88	4	13,500	20,000	72	.00052
3D-200C	2.85	10	12,100	23,200	62	.00011
3D-3C	2.85	5	19,000	28,000	75	.00011
Poco Grades						
EDM-200	1.82	10	8,100	14,000	68	.00058
EDM-1	1.66	5	9,700	14,200	69	.00076
EDM-3	1.81	5	13,300	18,100	73	.00062
EDM-AF5	1.80	1	14,500	22,100	83	.00085
EDM-C3	3.05	5	20,300	28,350	66	.00013

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MATERIAL APPLICATIONS

Guides & Sizes	General Description	Typical Applications
3D-65 Billet Size: 12 x 24 x 40	3D-65 is an isomolded, fine grain, high-density graphite formulated for EDM applications requiring medium surface finishes and high metal removal rates.	<ul style="list-style-type: none"> • High metal removal electrode burning • Medium surface finish applications • Burning forging dies • Burning low detail molding areas
3D-68 Billet Size: 12 x 24 x 40	3D-68 is an isomolded, very fine grain, high-density graphite formulated for medium metal removal rates and a good surface finish. 3D-68 has a relatively low wear rate in finishing.	<ul style="list-style-type: none"> • General-purpose electrode burning • Good surface finish applications • Burning forging dies • Burning molding areas
3D-70 Billet Size: 12 x 24 x 40	3D-70 is an isomolded, very fine grain, high-strength isotropic graphite with both good metal removal rates and electrode wear characteristics. 3D-70 produces excellent surface finishes.	<ul style="list-style-type: none"> • Universal electrode material • Excellent surface finish applications • Large electrode detailed burning • Burning detailed molding areas
3D-200 Billet Size: 12 x 24 x 36	3D-200 is an isomolded, very fine grain, high-strength isotropic graphite which yields good metal removal rates, excellent electrode wear characteristics and excellent surface finishes.	<ul style="list-style-type: none"> • Superb detail electrode burning • Excellent surface finish applications • Burning high detail molding areas • Thin rib electrodes
3D-1000 Billet Size: 12 x 12 x 36	3D-1000 is an isomolded, ultra-fine grain, isotropic graphite, which allows exceptional surface finishes. 3D-1000 has an extremely low electrode wear and good metal removal rates.	<ul style="list-style-type: none"> • Great wire burning characteristics • Exceptional surface finish applications • Burning very high detail molding areas • Burning shut-off area
3D-2000 Billet Size: 4 x 12 x 24	3D-2000 is an ultra-fine-grained isotropic graphite, that's structural integrity produces a great combination of strength, wear resistance and superior surface finishes. 3D-2000 can be easily machined for those intricate electrodes and is considered the best preforming EDM graphite in its class.	<ul style="list-style-type: none"> • Excellent surface finishes • Low corner wear • Ideal for deep ribs • Good choice for sub-gate electrodes • Excellent machinability
3D-3 Billet Size: 4 x 12 x 12 Billet Size: 4 x 12 x 24	3D-3 is an isomolded, very fine micro-grain, high-strength isotropic graphite that has magnificent wear characteristics. 3D-3 has the ability to achieve superior surface finishes along with an exceptional ease of machining. This is the best choice for fine detail and intricate electrodes.	<ul style="list-style-type: none"> • High-detailed electrode burning • Superior surface finish applications • Mold and shut-off areas • Thin rib electrodes • Intricate 3D electrodes
3D-200C Billet Size: 4 x 8 x 12	3D-200C is an isomolded, very fine grain, high-strength isotropic graphite. 3D-200C offers very good metal removal rates and wear characteristics, while producing an excellent surface finish.	<ul style="list-style-type: none"> • Tall thin rib manufacturing • Poor flushing conditions • Burning copper and aerospace alloys • Extremely fragile detailed electrodes
3D-3C Billet Size: 2 x 6 x 12 Billet Size: 2 x 8 x 12	3D-3C is an isomolded, very fine micro-grain, high-strength isotropic graphite impregnated with high quality copper. 3D-3C offers very good metal removal rates and magnificent wear characteristics, while producing a superior surface finish.	<ul style="list-style-type: none"> • Tall thin rib manufacturing • Very poor flushing conditions • Burning copper and aerospace alloys • Extremely fragile detailed electrodes • Exceptional surface finish applications



All of our graphite grades are manufactured in the United States of America!



3D provides state of the art electrode design and machining, plus...

- Backside Machining
- 3R, EROWA and Custom Patterns
- Precision Ground Blanks
- 3, 4, and 5 Axis Machining
- CNC Turning
- Center less Grinding
- Ground Plates
- Sanded Plate
- Diamond-Coated End Mills
- Hard Milling Tools



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