



GLOBAL SINTER PRODUCTS PVT LTD

WHERE YOU MEET ALL YOUR GRAPHITE NEEDS



WHO WE ARE?

GLOBAL SINTER PRODUCTS PVT LTD is into the business of Machining and manufacturer of various types of Carbon graphite products, Dealing carbone fiber to serve its valued customers with material conforming to highest standards of processing tolerances. Our manufacturing facilities is located in Hyderabad, INDIA.

WHAT WE DEAL?

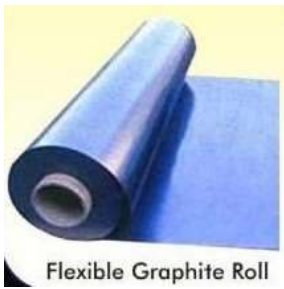
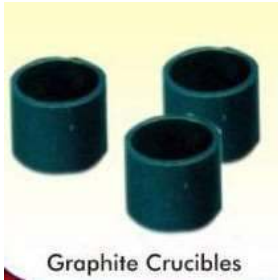
1. Graphite for Dies of Continuous Casting
2. Graphite for Diamond Tool Manufacturing
3. Electro Discharge Machining (EDM) Graphite

1. GRAPHITE FOR DIES OF CONTINUOUS CASTING.

Global Sinter Products Pvt Ltd produces the world class graphite dies using top class Japanese isotactic graphite with high thermal conductivity that allows to offer best quality products for continuous castings.

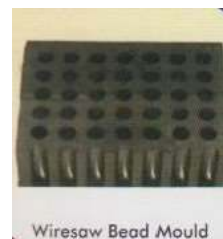
- Die for strip casting
- Die for wire casting
- Die for rod casting
- Die for tube casting
- Die for billet casting
- Die for custom section
- Graphite crucibles
- Graphite stopper rod
- Graphite Nozzle
- Graphite Blocks
- Graphite rods
- Graphite tubes
- Graphite Flexible sheets

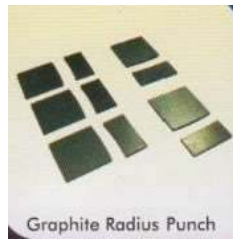
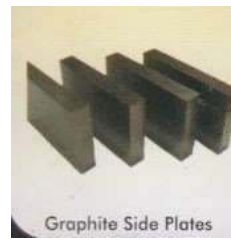




2. DIE FOR DIAMOND TOOL MANUFACTURING

- Mould for circular saw
- Mould for gangsaw
- Mould for wiresaw bead
- Mould for blade segment
- Sintering electrode
- Single segment mould
- Graphite ground plates
- Graphite round punches
- Graphite radius punch
- Graphite taper punch
- Graphite plain punch
- Graphite side plates
- Graphite separates
- Graphite blocks
- Graphite flexible sheets







SALIENT FEATURES OF ISOTROPIC GRAPHITE FOR SINTERING

- Isotopic Graphite: allows excellent wear resistance and longer mould life.
- High Hardness : Maximum hardness up to 90 HD available to give more strength
- High Flexural Strength: prevents the graphite moulds from either cracking or breaking under high pressure during sintering process.
- High Electrical Resistivity: High operating temp. Can be achieved in shorter times.
- High Thermal Conductivity: allows to heat the graphite mold quickly reducing heat cycle time.
- High Compressive strength : allows excellent wear resistance and gives strength,
- High Thermal shock resistance: makes it resistance to temp. Change allowing rapid cooling and heating.
- High Oxidation Resistant: makes it capable of reducing wear and tear properties of the end product.
- Withstand High Temperature: our moulds can withstand more than 2500°C and have good strength even when red hot



3. EDM GRAPHITE

GLOBAL SINTER PRODUCTS PVT LTD IS INVOLVED IN MACHINING OF VARIOUS GRAPHITE ELECTRODES FOR EDM MACHINE MANUFACTURES AND USERS

Graphite plays an essential role today in Electrical Discharge Machining.

Electrical Discharge Machining is used to produce metal parts used across a wide range of industries including automotive, aerospace, defence and technology.

In place of copper, graphite has proven to be an excellent electrode material. This is because of the following traits:

- Higher processing speeds
- Good machinability
- Lower specific gravity
- Cohesiveness
- High Temp. resistance
- Lower electrode consumption loss
- Easy surface treatment

GSPL have developed our TDX™ Range of graphites for EDM, enabling you to make an informed decision on the ideal grade for your processes.

The range includes grades to meet the needs of many different applications.

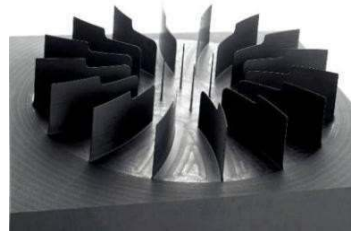
If you aren't sure which grade is right for you, simply contact us and have a chat with our friendly, informed team. We are fully equipped to help you find the right material for you, at a cost level that works for you.

Why graphite is the ideal material

- Consistent Quality
- Accurate Machining
- Unbeatable pricing
- On time delivery
- Reliable Packaging
- Sincere Service

Type of Product and application

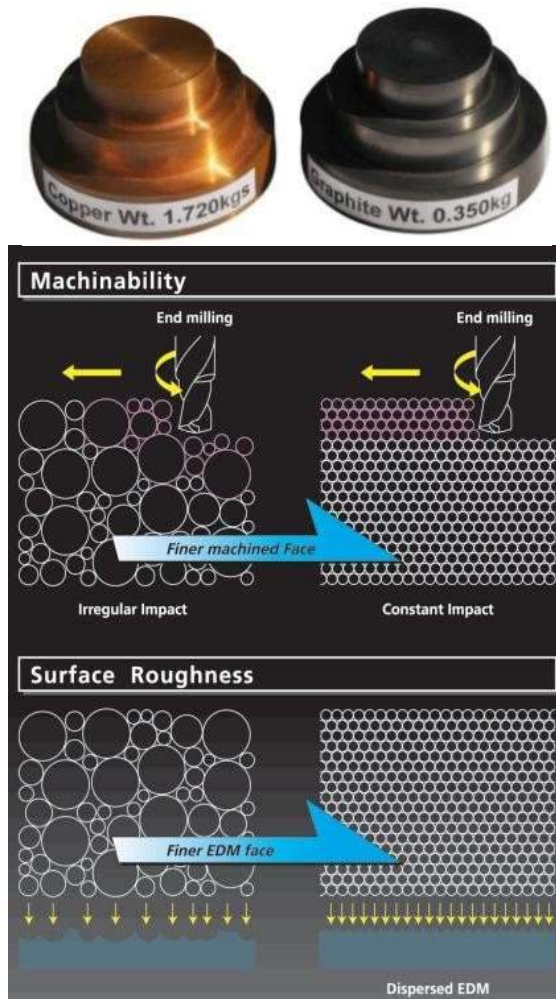
- Rupture discs
- Roughing electrodes
- Carbon bricks
- Chemically resistant linings
- Heating elements
- Susceptors
- Insulation felts



Grade Selection of EDM Graphite		
Rough Machining SPARK-1	FINISH & PRECISION SPARK-2 SPARK-3 SPARK-4	ULTRA PRECISION SPARK-5
Used where details and surface finish are not critical Application Can be used in large plastic moulds, forging dies, die castings dies ets.	Used in moulds where precision is maintained and wear is an important criteria Application Can be used in precision plastic moulds rubber and glass moulds, stamping dies, ribs engraving work, deep hole, etc	Used where extremely fine details are required Application Used in very fine engraving, lettering, Critical Machining

Advantages of EDM Graphite	
QUICKER EDMING SPEED	2 to 3 times quicker than copper due to high material removal rate
LOWER ELECTRODE WEAR	Extremely low wear rates results in sharp corners and edges
LOWER C.T.E.	No warping and deforming in super small ribs machining due to low CTE
LIGHTER WEIGHT HIGHER HEAT RESISTANCE	Graphite does not melt at high temp. as copper does, so reduces wear
EASY TO MACHINE	Realize high speed machine by low cutting resistance. 1/10 of copper
NO BURR	No burr to remove in secondary operation

Weight and Machining impact of EDM and Conventional Process:



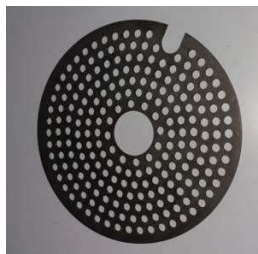
Recommended Electrical Conditions for EDM:

Machining Process	Peak current (A)	Pulse on time (MS)	Electrode Wear Ratio (%)	Machining Speed (:/min)	Surface Roughness (vmR max)
Finish Machining	<10	5~40	15~20	.02~0.08	5~20
Rough Machining	>100	150~300	<0.5	1~10	10~40

Specialty Graphite:

Specialty graphites are materials whose matrix consists of carbon graphite components. They feature good dry running properties when used in tribological systems. Their graphite lattice structure comprises carbon atoms arranged in planar hexagonal rings with an interlayer distance of 0.335 nm. Owing to the weakness of the van der Waals attractive forces, these planes can be quite easily displaced relative to one another. The physical parameters of carbon materials are governed by the production processes illustrated on page 4. The shaping process depends mainly on the output number to be manufactured: Large batches are pressed to size or injection molded (depending on the tool dimensions), whereas small batches are machined from larger semi-finished products.

Graphite Moulds

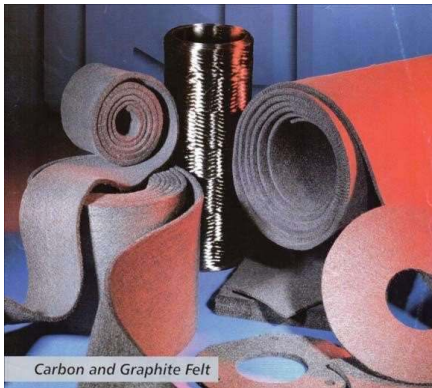


Fuel Cell:

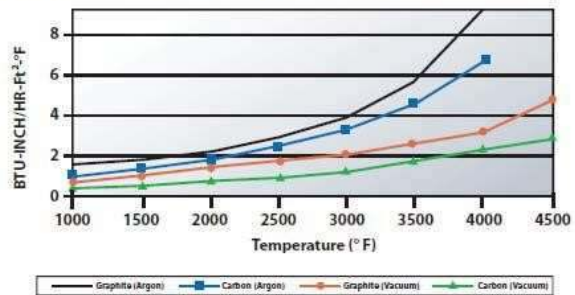


Hi -Temperature Insulation

ACPL Graphite felt insulation products are designed for resistance and induction furnaces. That operate under either vacuum or inert gas conditions. Furnaces that incorporate our insulation can achieved service temperature up to 350 degree Centigrade in Oxidizing environments or 3000 degree centigrade under inert or vacuum environments.



Thermal Conductivity of Felt



Felt Insulation Typical Physical Properties:

Property	Units	Measurement Temp. (°C)	Grade
Density	g/cc	20	0.08
Linear Shrinkage ¹	%	20	negligible
Water Absorption	Weight %	20	negligible
Min. Carbon Assembly	%	-	99.9
Ash	%	-	0.02
Specific heat	J/g/°C	20	0.71
Mean Specific Heat	J/g/°C	1400	1.67
Emissivity		-	0.99
Sublimation Temp.	°C	-	3600
Surface Area (Nitrogen)	m ² /g	20	0.7
Thermal Conductivity ²	W/m/K	1000	
		1400	0.43
Vapour Pressure	microns	2270	1
		2440	10
		2620	100
Min. Process Temp.	°C	-	2500

¹ Measuring after heating to 3000 °C

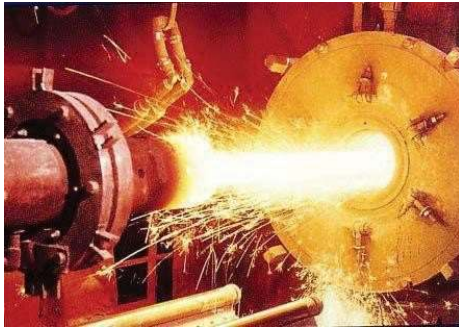
² Measured in Nitrogen

Heating Elements:
Properties

- High electrical loading capacity.
- High thermal shock resistance.
- High mechanical strength.
- Good oxidation resistance.
- Resistivity is very high in heating elements and very low in contacts.

Forms Supplied and Applications

- Graphite heating elements in all standard diameters and lengths to suit the plant concerned, supplied with matching precision-machined graphite contacts.
- For high-performance operation in vacuum steel degassing plants for hydrogen degassing, deoxidation, decarburization and alloying.
- For melting metals and holding them at high temperatures.



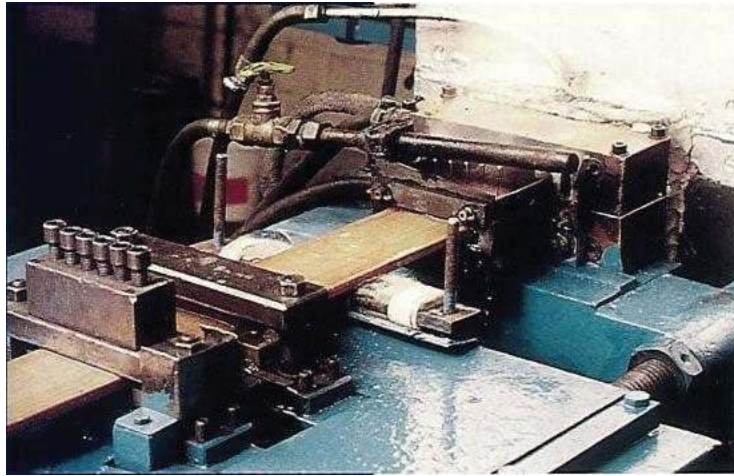
Continuous Casting Dies:

Properties

- High Density
- Good Thermal Conductivity
- High Chemical Resistance
- Minimal wettability by molten metal
- High Resistance to wear

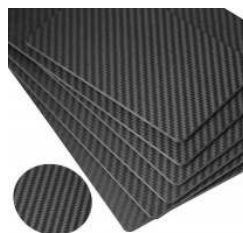
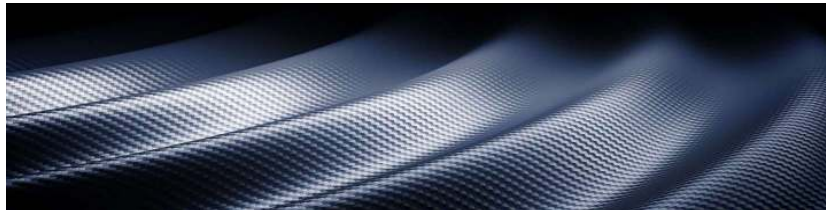
Forms Supplied and Applications

- Semifinished products in cylindrical and rectangular formats with specific property combinations.
- Ready-made dies, precision-machined with optimum surface finish, for the continuous casting of precious metals.



CARBON FIBER TECHNICAL PROPERTIES

SL.NO	PROPERTY	DESCRIPTION
1	Type of Carbon Fibre	T700 or equivalent
2	Tensile Strength	4.4 GPa (Min) (Impregnation, tow test)
3	Tensile Modules	200 GPa (Min) Impregnation, tow test with extensometer
4	% Elongation	1.8% Minimum
5	Tow Size	12 K (No twist / never twisted yarn)
6	Tex	800 g/km (nominal)
7	Density	1.72 to 1.85 g/cc
8	Filament Diameter	6 to 8 Microns
9	Carbon Content	93% (Minimum)
10	Sizing	Epoxy Compatible (0.8% by weight min)
11	Spool Size	4 Kg (preferable) or 2 Kg





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