

ZX GRAPHITE TECH

ZX NEW MATERIALS · SHENZHEN, CHINA

TECHNICAL DATA SHEET

Graphite Grade & Material Specifications

Indicative properties for graphite grades, electrodes and carbon materials, with machining tolerances and quality inspection.

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GRAPHITE GRADES

Material Grade Comparison

PROPERTY	FINE-GRAIN	ISOSTATIC	HIGH-PURITY	EXTRUDED
Bulk density (g/cm³)	1.78	1.80	1.82	1.65
Grain size	≤ 0.8 mm	≤ 0.02 mm	≤ 0.01 mm	≤ 4 mm
Flexural strength (MPa)	35	50	55	12
Compressive strength (MPa)	70	100	110	30
Resistivity (μΩ·m)	11	13	12	8
Shore hardness	50	65	70	35
Ash content (%)	≤ 0.1	≤ 0.05	≤ 0.0005	≤ 0.3

GRAPHITE ELECTRODES

RP / HP / UHP Properties

PROPERTY	RP	HP	UHP
Bulk density (g/cm³)	1.55	1.62	1.70
Resistivity (μΩ·m)	7.5–9.0	5.8–7.0	4.5–6.0
Flexural strength (MPa)	8.0	10.5	13.0
Elastic modulus (GPa)	8	11	14
CTE (×10 ⁻⁶ /°C)	2.4	2.0	1.6
Current density (A/cm²)	17–20	22–25	25–30

CARBON MATERIALS

Calcined Petroleum Coke — Typical Spec

PROPERTY	TYPICAL
Fixed carbon	≥ 98.5%
Sulfur	≤ 0.5% (low-S ≤ 0.05%)
Ash	≤ 0.5%
Volatile matter	≤ 0.7%
Moisture	≤ 0.5%
Particle size	Customized (0–1, 1–5 mm, powder/mesh)

MANUFACTURING

Machining & Tolerances

Machining tolerance	Down to ±0.05 mm (grade-dependent)
Machining	CNC turning, milling, drilling, threading
Profiles	Standard & special-shaped to drawing
Part size	Small precision pieces to large furnace parts

QUALITY

Quality & Inspection

Material verification	Density, resistivity & ash on incoming material
Dimensional inspection	Each part inspected before shipment
Certificates	Mill Test Certificate / Certificate of Conformance on request
Packaging	Secure export packaging for international shipment

Indicative values only. Properties vary by specific grade and lot. We confirm the exact specification — density, strength, resistivity, ash and purity — against your selected material and drawing. Contact sales@graphiteproductsupplier.com for a full data sheet.