Graphite Packing— Technical Data Sheet / Datasheet / TDS

A — Graphite Packing — Properties / Attributes (by construction)

Material / Construction	Typical composition	Key properties & notes
1. Flexible / Expanded Graphite — braided (unreinforced)	Braided yarn made from expanded (exfoliated) high-purity graphite foil; usually no binders; sometimes lightly impregnated with lubricants/oxidation inhibitors.	Very high chemical resistance, excellent thermal conductivity, self-lubricating, low friction, very conformable. Typical continuous service up to several hundred ° C in protected/non-oxidizing conditions; oxidation risk in air increases at elevated T (check grade). Excellent for valves, pumps, and general process service where heat + chemical resistance required. Low dust and good break-in behaviour for impregnated types.
2. Graphite braided — metal-reinforced (wire/Inconel/SS filament wrapped)	Graphite braid with incorporated metal filament (stainless steel, Inconel) or wire-reinforced carrier yarn.	Adds mechanical strength, blow-out resistance, and extrusion control. Used where higher bolt loads, cyclic service or strong shaft wear/resistance required (steam valves, high-pressure valves, heavy pumps). Metal choice (Inconel/SS) selected for corrosion/temperature environment.

Material / Construction	Typical composition	Key properties & notes
3. Graphite braided with fiberglass/aramid cores or synthetic backing	Graphite yarn braided with strengthening cores (glass, aramid or ceramic yarns) or corner yarns for abrasion resistance.	Improves structural integrity and abrasion resistance without full metal reinforcement; suitable for higher-speed shafts, vacuum or where shaft scoring risk is concern.
4. Molded / Graphite rings (pre-formed rings)	Molded rings produced from compressed/molded flexible graphite (sometimes with oxidation inhibitor).	Precise dimensions and density for high-integrity sealing rings (mechanical seals, flanges, gland rings). Good where uniform compression and defined thickness are important; often used as gasket rings and packing rings.
5. Graphite + PTFE / hybrid braids	Graphite braid blended with PTFE or PTFE-impregnated graphite yarn.	Combines chemical inertness and low friction of PTFE with graphite’s high-T and thermal dissipation; useful for aggressive chemical service that also requires reduced shaft wear.
6. Graphite rope with external jackets (metal / mesh)	Graphite core with metal mesh or Inconel jacket.	For extreme abrasion / extrusion resistance (mining, slurry duties), jackets prevent rapid erosion of braid and protect shaft. Specialty / made-to-order.