sgl carbon

Carbon Brushes

Reliable power transmission in electrical machines

SGL GELTER, we are a joint venture of SGL Carbon, a leader in the development and manufacture of products based on carbon, graphite, carbon fibers, and fiber-reinforced composites.

We offer high-quality carbon and metal-graphite brushes worldwide – even for challenging applications, for example automotive, traction, industrial, mining, and wind energy. Our combination of in-depth production and material knowledge with short production and delivery times enables us to be a reliable supplier for power transmission in electrical machines.

Our carbon products are notable for their exceptional properties and meet stringent requirements for reliability, robustness, and service life. Our portfolio ranges from carbon brushes and brush holders to brush rockers and slip rings.

We offer tailored solutions that comply with high quality and environmental standards ISO 9001, ISO 14001, IATF 16949 and ISO 50001 and so meet the demanding requirements of wind generators and turbine manufacturers, wind farm owners, and maintenance providers.

Carbon brushes for wind energy generators

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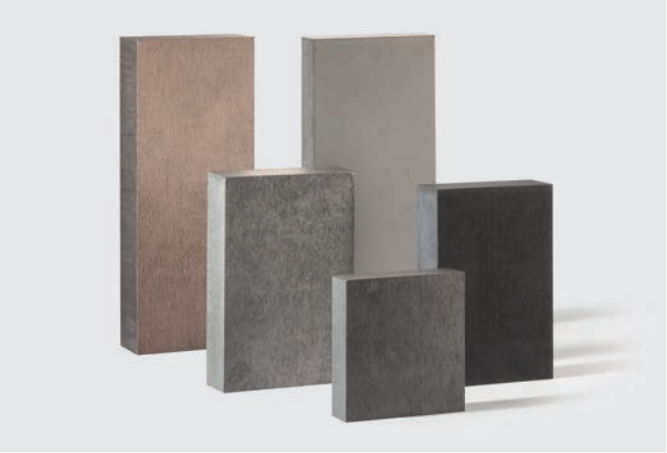
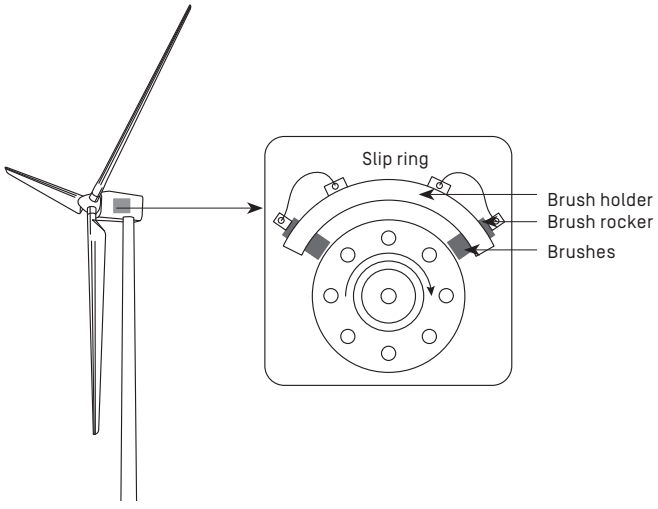
Renewable energies are becoming increasingly important in worldwide energy generation. Wind energy is the most rapidly growing form of renewable energy. In both onshore and offshore areas, giant wind farms are springing up.

Carbon brushes are very important functional components of wind energy generators. They are used as electrical contacts for power transmission. Our expertise in materials and applications makes us a sought-after partner in the wind energy industry.



↑ Brush plates made of metal-graphite and electro-graphite

Application-specific products for wind energy generators:
- Grounding and power brushes
- Special brushes for low- and high-humidity climates
- Lightning protection brushes
- Silver- and copper-containing carbon brushes
- Custom-designed products and shapes



A wide range of metal-graphite grades to meet your special requirements

↑ Carbon brushes for wind energy generators

As raw material producer, SGL has a a wide range of carbon and metal-graphite grades to cover all market needs, allows to develop grades tailored to customer requirements. With our state-of-the-art production site in Madrid/Spain, we manufacture high-quality brushes in a short time and supply our customers worldwide.

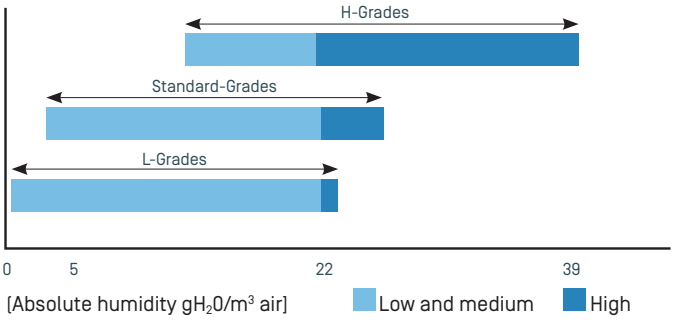
Material data on our metal-graphite grades for carbon brushes in wind energy applications[1]

Typical properties	Units	RC27	RC42	RC42L	RC42H	RC53	RC67	RC55	RC54	RS65	RS70	RE54
Current density	A/cm²	12	10 - 20	10 - 20	10 - 20	12 - 24	19	19	12-24	25	28	10
Peripheral speed	m/s	40	40	40	40	35	30	35	40	20	20	40
Density	g/cm³	2.4	2.8	2.8	2.8	3.2	3.8	3.19	3.1	3.5	4.3	1.6
Hardness rockwell B	HR 10/60	70	80	75	70	78	83	80	70	85	90	65
Flexural strength	N/mm²	20	24	23	19	25	35	26.5	24	54	30	28
Resistivity	µΩm	14	2	2	2	0.9	0.4	0.95	1.1	0.25	0.78	16
Grade designation[2]		Cu	Cu	Cu	Cu	Cu	Cu	Cu	Cu	Ag	Ag	E

[1] Brush pressure: 2.2 n/cm² [2] Cu: Metal-graphite with mainly Cu content; Ag: Metal-graphite with mainly Ag content; E: Electro graphite

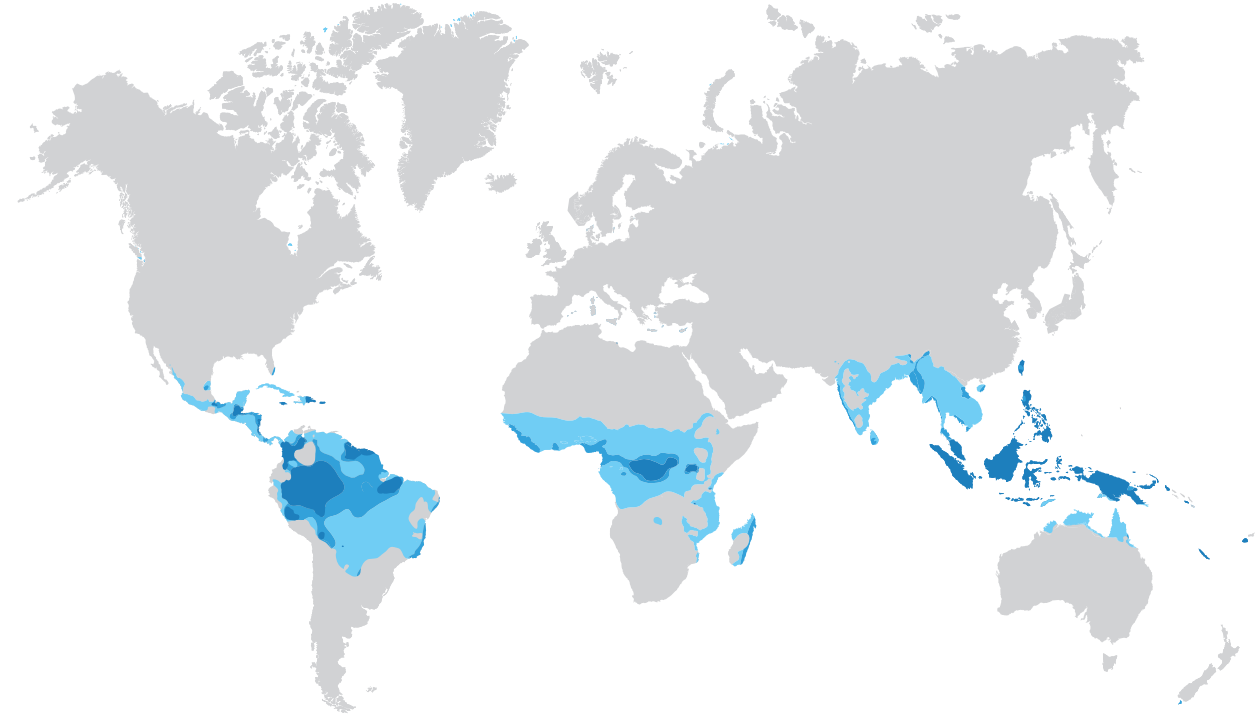
A combination of the finest-grade raw materials and unique production processes allows our carbon brushes to offer outstanding performance, with excellent conductivity and uniform wear, even under extreme weather conditions.

Range of materials for different absolute humidity conditions



Carbon brushes: outstanding performance, excellent conductivity and uniform wear, even under extreme weather conditions.

Regions with long periods of extreme absolute humidity values through the year



Low absolute humidity:
0.5 - 5.0 [gH_2O/m^2 air]

Medium absolute humidity:
5.0 - 22.0 [gH_2O/m^2 air]

High absolute humidity:
> 22.0 [gH_2O/m^2 air]

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