

Carbonized rayon fabric

Extremely temperature resistant, high-quality carbon fabric

SGL Carbon produces carbon fabric since 1976 and played a major role in the US Space Shuttle Program with NASA. At our Valencia/CA, USA site 100 % rayon based, continuous filament satin weave cloth is processed into carbonized fabric via a strongly monitored carbonization process at temperatures above 1200 °C.

Properties

- Resilient to extreme temperatures
- Outstanding ablative behavior
- Insulative
- Excellent mechanical properties
- High quality and purity
- Lightweight

Carbon fabric is used to produce carbon cloth composite materials like phenolic resin materials. The composites are key for protecting structural components from heat by functioning as ablative materials and are therefore critical to their safe operation.

Applications

SGL Carbon carbonized rayon fabric is suitable for the most demanding and extreme high-temperature applications like

- Rocket nozzles
- Combustion chambers
- Solid rocket booster
- Very high temperature heat shielding

Material data of carbonized fabric

Properties	Test methods [ASTM]	Units	Typical values of fabric grade	
			CSA-5	CSA-8
Satin weave			5-harness weave	8-harness weave
Carbon content	D5373	%	98.0	97.0
Ash content	C561	%	0.2	1.0
Weight	D3776	g/m ²	275	270
		oz/yd ²	8.1	8.0
Thread count	Warp direction		47	50
	Fill direction	D3775	tpi	46
Specific gravity	D3800		1.84	1.85
Break strength	Warp direction		25 [55]	9 [20]
	Fill direction	D5034	kg [lb]	22 [48]
Moisture	C562	%	< 1.0	< 1.0
pH	D2165		6.9	6.9
Electrical resistivity	Multimeter	ohm-in ²	0.83	0.63



↑ Carbonized fabric

Other grades are available on request. Please contact us.

Unless stated otherwise, all values are measured in accordance with referenced test methods, non-binding and nominal. They may be subject to change and do not constitute an actual specification value.



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