

SIGRAFLEX® stretch broken graphite PAN yarns

High-quality graphite yarns for enhanced chemical and oxidation resistant compression packings

SGL Carbon offers various SIGRAFLEX stretch broken graphite PAN yarns with different weights, twists, coatings and coating contents.

Available coatings include graphite, PTFE and graphite/PTFE mixes. For high-temperature applications SGL Carbon provides yarns with a proprietary coating based on the proven SIGRAFLEX APX2® anti-oxidation technology which comply with the requirements of Shell specification MESC SPE 85/204 for graphite.

Applications

End users in the chemical and petrochemical industries and in power generation benefit from using high-quality valve compression packings made from SIGRAFLEX stretch broken graphite PAN yarns.

Properties

The yarns allow the braider to produce a high-performance compression packing with the following properties:

- Superior oxidation resistance
- High flexibility
- High tensile strength
- Low modulus
- Enhanced heat conductivity
- Improved crystallinity
- Improved coating/impregnation
- Low coefficient of friction
- Outstanding chemical resistance, suitable for pH range 1–14
- High degree of purity



↑ SIGRAFLEX stretch broken graphite PAN yarn

Material data of SIGRAFLEX® twisted stretch broken graphite PAN yarns with graphite, PTFE or graphite/PTFE coating¹⁾

Typical values of yarn grade

Properties	Test methods	Units	GPS15S03XX15	GPS10S06TF20	GPS14S09TF05	GPS07S04TG15	GPS14S09TG20
			GPS15Z03XX15	GPS10Z06TF20	GPS14Z09TF05	GPS07Z04TG15	GPS14Z09TG20
Coating			Oxidation resistant graphite	PTFE	PTFE	Graphite/PTFE	Graphite/PTFE
Coating content	ASTM D1907	%	15	20	5	15	20
Carbon content ²⁾	ASTM D5373	%	99.5	99	99	99	99
Ash content ²⁾	ASTM C561	%	0.15	0.3	0.3	0.3	0.3
Moisture content	ASTM C562	%	0.1	0.5	0.5	0.5	0.5
Break strength	ASTM D2256	kg [lb]	45 [100]	23 [50]	41 [90]	18 [40]	41 [90]
Density	ASTM D3800	g/cm ³	1.6	1.7	1.6	1.7	1.6
Linear weight	ASTM D1907	g/m	1.6	1.2	1.6	0.8	1.8
Base yarn weight	ASTM D1907	g/m	1.5	1.0	1.4	0.7	1.4
Twist	ASTM D1423	TPI (TPM)	1.75 [69]	1.2 [47]	1.3 [51]	1.3 [51]	1.3 [51]
Available twists			S, Z	S, Z	S, Z	S, Z	S, Z
# of plies			3	6	9	4	9

¹⁾ Each twisted yarn grade is available in both S (clockwise) and Z (counter-clockwise) twist.

²⁾ Base yarn without coating.

Other yarn weights/sizes and coating contents are available on request. Please contact us.

Unless stated otherwise, all values are measured in accordance with referenced test methods, typical, non-binding and nominal. They may be subject to change and do not constitute an actual specification value. For engineering or design purposes please contact our technical sales team.



Additional information on our SIGRAFLEX sealing materials can be found in the "Download Center" on our homepage.

www.sigraflex.com/downloads



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