

SIGRAFLEX® continuous filament graphite PAN yarns

High-strength graphite yarns for oxidation resistant compression packings

The SIGRAFLEX continuous filament graphite PAN yarn portfolio offered by SGL Carbon is very comprehensive. It ranges from yarns with different weights and twists to various coatings and coating contents.

Available coatings include graphite, PTFE, and graphite/PTFE mixes and high purity coatings fulfilling military, nuclear or other specific requirements¹⁾. SGL Carbon's coating based on the proven SIGRAFLEX APX2® technology was specially designed for high-temperature applications. SIGRAFLEX graphite PAN yarns supplied with this coating also meet the requirements of Shell specification MESC SPE 85/204 for graphite.

Applications

End users in the refining, petrochemical, chemical, and pulp and paper industries as well as in power generation benefit from the unique properties of SIGRAFLEX graphite PAN yarns.

Properties

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

- Enhanced oxidation resistance
- Outstanding chemical resistance, suitable for pH range 0 – 14
- Excellent thermal stability
- Low coefficient of friction
- Good crystalline structure
- High thermal conductivity
- High degree of purity

¹⁾ For technical data of our SIGRAFLEX yarn grades suitable for nuclear or military applications please refer to our separate technical data sheets covering those grades in our SIGRAFLEX Download Center or contact us directly.



↑ SIGRAFLEX continuous filament graphite PAN yarn

Material data of SIGRAFLEX® twisted continuous filament graphite PAN yarns with graphite or graphite/PTFE coating¹⁾

			Typical values of yarn grade			
Properties	Test methods	Units	GPC15S02GR10	GPC04S01TG15	GPC08S01TG15	GPC15S01TG15
			GPC15Z02GR10	GPC04Z01TG15	GPC08Z01TG15	GPC15Z01TG15
Coating			Graphite	Graphite/PTFE	Graphite/PTFE	Graphite/PTFE
Coating content	ASTM D1907	%	10	15	15	15
Carbon content ²⁾	ASTM D5373	%	99.5	99.5	99.5	99.5
Ash content ²⁾	ASTM C561	%	0.1	0.1	0.1	0.1
Moisture content	ASTM C562	%	0.3	0.3	0.3	0.3
Break strength	ASTM D2256	kg [lb]	68 [150]	23 [50]	45 [100]	68 [150]
Density	ASTM D3800	g/cm ³	1.6	1.6	1.7	1.7
Linear weight	ASTM D1907	g/m	1.8	0.4	0.9	1.8
Base yarn weight	ASTM D1907	g/m	1.6	0.4	0.8	1.5
Twist	ASTM D1423	TPI [TPM]	2.5 [98]	1.5 [99]	1.2 [47]	1.2 [47]
Available twists			S, Z	S, Z	S, Z	S, Z
# of plies			2	1	1	1

Material data of SIGRAFLEX® twisted continuous filament graphite PAN yarns with PTFE coating¹⁾

			Typical values of yarn grade		
Properties	Test methods	Units	GPC08S01TF15	GPC08S01TF20	GPC15S01TF05
			GPC08Z01TF15	GPC08Z01TF20	GPC15Z01TF05
Coating			PTFE	PTFE	PTFE
Coating content	ASTM D1907	%	15	20	5
Carbon content ²⁾	ASTM D5373	%	99.5	99.5	99.5
Ash content ²⁾	ASTM C561	%	0.1	0.1	0.1
Moisture content	ASTM C562	%	0.3	0.3	0.3
Break strength	ASTM D2256	kg [lb]	45 [100]	45 [100]	68 [150]
Density	ASTM D3800	g/cm ³	1.7	1.7	1.6
Linear weight	ASTM D1907	g/m	0.9	1.0	1.6
Base yarn weight	ASTM D1907	g/m	0.8	0.8	1.5
Twist	ASTM D1423	TPI [TPM]	1.3 [51]	1.3 [51]	1.2 [47]
Available twists			S, Z	S, Z	S, Z
# of plies			1	1	1

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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TDS continuous graphite PAN yarns.00

12 2020/0 Printed in Germany

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