SIGRAFLEX® stretch broken carbon PAN yarns

High-quality carbon yarns for temperature and oxidation resistant compression packings

The products in SGL Carbon's SIGRAFLEX stretch broken carbon PAN yarn portfolio are very diverse We offer yarns with different weights and twists, various coatings and coating contents. Available coatings include graphite, PTFE, and graphite/PTFE mixes.

Applications
Compression packings manufactured from SIGRAFLEX stretch broken carbon PAN yarns have proven to be an effective solution to various established sealing applications in the chemical and petrochemical industries, in refineries, power generation and pulp and paper mills.

Properties
SIGRAFLEX stretch broken carbon PAN yarns allow the braider to produce a high-performance compression packing with the following properties:

- Very good chemical resistance, suitable for pH ranges 2 – 12
- Enhanced oxidation resistance
- Excellent heat resistance
- High tensile strength
- Good heat conductivity
- Low modulus
- Low coefficient of friction
- High resistance to abrasive media
- Improved coating and impregnation characteristics

↑ SIGRAFLEX stretch broken carbon PAN yarn

Material data of SIGRAFLEX® twisted stretch broken carbon PAN yarns with PTFE coating [1]

Typical values of yarn grade

Properties	Test methods	Units	CPS10S02TF05 CPS10Z02TF05	CPS10S06TF05 CPS10Z06TF05	CPS15S09TF05 CPS15Z09TF05	CPS15S03TF10 CPS15Z03TF10	CPS10S02TF20 CPS10Z02TF20
Coating			PTFE	PTFE	PTFE	PTFE	PTFE
Coating content	ASTM D1907	%	5	5	5	10	20
Carbon content [2]	ASTM D5373	%	94	94	94	94	94
Moisture content	ASTM C562	%	0.2	0.2	0.2	0.2	0.2
Break strength	ASTM D2256	kg (lb)	27 (60)	27 (60)	41 (90)	41 (90)	27 (60)
Density	ASTM D3800	g/cm³	1.8	1.8	1.8	1.8	1.8
Linear weight	ASTM D1907	g/m	1.1	1.1	1.6	1.6	1.3
Base yarn weight	ASTM D1907	g/m	1.0	1.0	1.5	1.5	1.0
Twist	ASTM D1423	TPI (TPM)	1.7 (67)	1.2 (47)	1.2 (47)	1.7 (67)	1.7 (67)
Available twists			S, Z	S, Z	S, Z	S, Z	S, Z
# of plies			2	6	9	3	2

Typical values of yarn grade

Properties	Test methods	Units	CPS10S06TF20 CPS10Z06TF20	CPS10S02TF30 CPS10Z02TF30	CPS10S06TF30 CPS10Z06TF30	CPS10S02TF45 CPS10Z02TF45
Coating			PTFE	PTFE	PTFE	PTFE
Coating content	ASTM D1907	%	20	30	30	45
Carbon content [2]	ASTM D5373	%	94	94	94	94
Moisture content	ASTM C562	%	0.2	0.2	0.2	0.2
Break strength	ASTM D2256	kg (lb)	27 (60)	27 (60)	27 (60)	27 (60)
Density	ASTM D3800	g/cm³	1.9	1.9	1.9	1.9
Linear weight	ASTM D1907	g/m	1.3	1.4	1.4	1.8
Base yarn weight	ASTM D1907	g/m	1.0	1.0	1.0	1.0
Twist	ASTM D1423	TPI (TPM)	1.2 (47)	1.7 (67)	1.2 (47)	1.7 (67)
Available twists			S, Z	S, Z	S, Z	S, Z
# of plies			6	2	6	2

Material data of SIGRAFLEX® twisted stretch broken carbon PAN yarns with with graphite/PTFE coating [1]

Typical values of yarn grade

Properties	Test methods	Units	CPS10S02TG20 CPS10Z02TG20	CPS10S06TG20 CPS10Z06TG20	CPS15S03TG20 CPS15Z03TG20	CPS15S09TG20 CPS15Z09TG20
Coating			Graphite/PTFE	Graphite/PTFE	Graphite/PTFE	Graphite/PTFE
Coating content	ASTM D1907	%	20	20	20	20
Carbon content [2]	ASTM D5373	%	94	94	94	94
Moisture content	ASTM C562	%	0.2	0.2	0.2	0.2
Break strength	ASTM D2256	kg (lb)	27 (60)	27 (60)	41 (90)	41 (90)
Density	ASTM D3800	g/cm³	1.9	1.8	1.8	1.8
Linear weight	ASTM D1907	g/m	1.2	1.2	1.9	1.9
Base yarn weight	ASTM D1907	g/m	1.0	1.0	1.5	1.5
Twist	ASTM D1423	TPI (TPM)	1.7 (67)	1.2 (47)	1.5 (59)	1.2 (47)
Available twists			S, Z	S, Z	S, Z	S, Z
# of plies			2	6	3	9

[1] Each twisted yarn grade is available in both S (clockwise) and Z (counter-clockwise) twist.
[2] Base yarn without coating.

Material data of SIGRAFLEX® twisted stretch broken carbon PAN yarns with with graphite/PTFE coating [1]

Typical values of yarn grade

Properties	Test methods	Units	CPS10S06TG30 CPS10Z06TG30	CPS10S06TG60 CPS10Z06TG60	CPS15S03TG60 CPS15Z03TG60	CPS15S09TG60 CPS15Z09TG60
Coating			Graphite/PTFE	Graphite/PTFE	Graphite/PTFE	Graphite/PTFE
Coating content	ASTM D1907	%	30	60	60	60
Carbon content [2]	ASTM D5373	%	94	94	94	94
Moisture content	ASTM C562	%	0.2	0.2	0.2	0.2
Break strength	ASTM D2256	kg (lb)	27 (60)	27 (60)	41 (90)	41 (90)
Density	ASTM D3800	g/cm³	1.9	1.9	1.8	1.8
Linear weight	ASTM D1907	g/m	1.4	2.5	3.8	3.8
Base yarn weight	ASTM D1907	g/m	1.0	1.0	1.5	1.5
Twist	ASTM D1423	TPI (TPM)	1.2 (47)	1.2 (47)	1.2 (47)	1.2 (47)
Available twists			S, Z	S, Z	S, Z	S, Z
# of plies			6	6	3	9

Material data of SIGRAFLEX® twisted stretch broken carbon PAN yarns with graphite coating [1]

Typical values of yarn grade

Properties	Test methods	Units	CPS02S01GR25 CPS02Z01GR25
Coating			Graphite
Coating content	ASTM D1907	%	25
Carbon content [2]	ASTM D5373	%	94
Moisture content	ASTM C562	%	0.2
Break strength	ASTM D2256	kg (lb)	14 (30)
Density	ASTM D3800	g/cm³	1.6
Linear weight	ASTM D1907	g/m	0.2
Base yarn weight	ASTM D1907	g/m	0.2
Twist	ASTM D1423	TPI (TPM)	4.5 (177)
Available twists			S, Z
# of plies			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

Graphite Solutions | SGL CARBON GmbH | SGL Carbon LLC
Sales Europe/Middle East/Africa | sigraflex-europe@sglcarbon.com
Sales Americas | sigraflex-americas@sglcarbon.com
Sales Asia/Pacific | sigraflex-asia@sglcarbon.com
www.sigraflex.com | www.sglcarbon.com

TDS SB carbon PAN yarns.01
07 2023/0 Printed in Germany