

# SIGRAFLEX® foil yarns

## Reinforced graphite foil yarns for high temperature, oxidation and corrosion resistant compression packings

SIGRAFLEX foil yarns are based on SIGRAFLEX flexible graphite foil maintaining the excellent characteristics of the base materials. The foil manufactured from expanded natural graphite is a homogeneous material free of adhesives and binders. It is overknitted with a corrosion resistant Inconel® wire providing superior strength and pliability as well as pressure and extrusion resistance. Therefore, SIGRAFLEX foil yarns meet today's stringent performance requirements.

### Properties

- High temperature and oxidation resistance
- Excellent chemical resistance
- High purity
- Superior strength and pliability
- High flexibility and resilience

### Material data of SIGRAFLEX reinforced flexible graphite foil yarns

Typical properties	Test methods	Units	GFK03-01UC00-APX2 + Inconel	GFK05-01UC00-APX2 + Inconel	GFK03-01UC00-Z + Inconel
			SIGRAFLEX APX2 yarn	SIGRAFLEX APX2 foil	SIGRAFLEX Z yarn
Base material			SIGRAFLEX APX2 foil	SIGRAFLEX APX2 foil	SIGRAFLEX Z foil
Reinforcement <sup>1)</sup>			Inconel 601	Inconel 601	Inconel 601
Carbon content <sup>2)</sup>	ASTM D5373	%	≥ 98	≥ 99.85	≥ 99.85
Ash content <sup>2)</sup>	ASTM C561	%	≤ 2	≤ 0.15	≤ 0.15
Moisture content <sup>1)</sup>	ASTM C562	%	< 0.5	< 1	< 1
Sulfur content <sup>2)</sup>	ASTM D4239	ppm	< 300	< 300	< 300
Chloride content <sup>2)</sup>	ASTM D4327	ppm	≤ 25	≤ 10	≤ 10
Fluoride content <sup>2)</sup>	ASTM D4327	ppm	≤ 10	≤ 10	≤ 10
Halogen content <sup>2)</sup>	ASTM D4327	ppm	≤ 70	≤ 40	≤ 40
Linear weight <sup>2)</sup>	ASTM D1907	g/m	3 or 5	3	3
Bulk density <sup>3)</sup>	ASTM C559	g/cm <sup>3</sup> (lb/ft <sup>3</sup> )	1.12 [70]	1.00 [62.4]	1.00 [62.4]
Break strength	ASTM D2256	kg (lb)	8 [18]	8 [18]	8 [18]
Weight loss in air [4 h at 670 °C] <sup>3)</sup>	ASTM D7582 LECO TGA	%/h	≤ 1	≤ 1	≤ 4

Other grades available, please contact us.

<sup>1)</sup> Reinforcement diameter: 100 µm, content: 3 g/m yarn 35 %, 5 g/m 26 %

<sup>2)</sup> Graphite only

<sup>3)</sup> Property of graphite precursor material

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