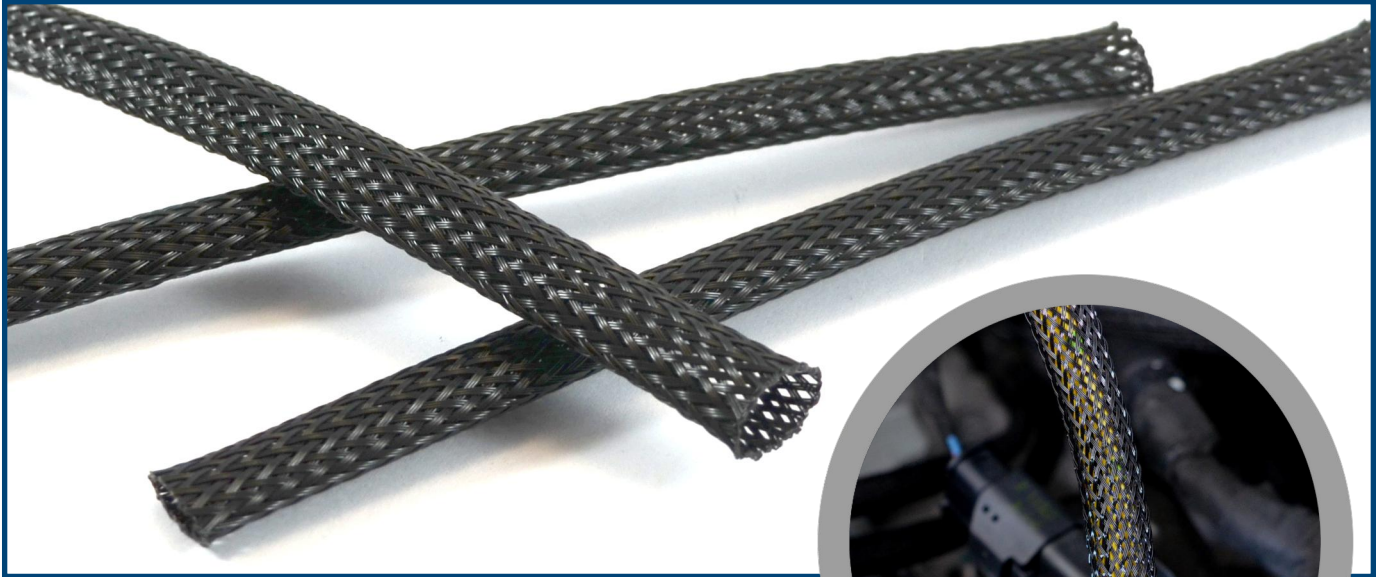
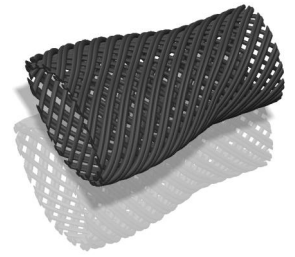


Expandable Sleeve



LANGOFLEX PET

LANGOFLEX PET is a tough, lightweight expandable sleeving made of PET .010" (0.25mm) monofilaments braided into a cylindrical sleeve.

LANGOFLEX PET provides excellent abrasion and good mechanical properties. The flexible open braid construction allows each size to expand up to three times its original diameter for easy installation over irregular shapes. This construction also provides complete drainage preventing heat, condensation and moisture.

LANGOFLEX PET is also available in a dense (**LANGOFLEX PET-D**) and high-density (**LANGOFLEX PET-HD**) construction, offering a good choice for every application need.

LANGOFLEX PET is designed to protect tubes, hoses, wires, wire bundles, wire harnesses, cable assemblies and flat ribbon cables without adding critical weight, bulk and extra cost.

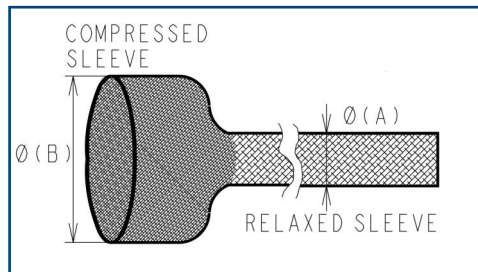
The good chemical resistance of the polyester material makes it ideal for harsh environments, it is then well suited for automotive applications.



Characteristics

- **Colors:** standard color is black. Other colors upon request.

Dimensions



Diameter is measured over a mandrel.
Length for cut pieces is measured in a relaxed position.

Designation	Nominal A \varnothing (mm)	Maximum B \varnothing (mm)	Coverage (%)
LANGOFLEX PET 04*	4	6	77
LANGOFLEX PET 06	6	9	83
LANGOFLEX PET 07	7	11	81
LANGOFLEX PET 10	10	16	76
LANGOFLEX PET 12	12	18	80
LANGOFLEX PET 14	14	21	71
LANGOFLEX PET 16	16	25	79
LANGOFLEX PET 18	18	35	77
LANGOFLEX PET 25	25	38	69
LANGOFLEX PET 30	30	45	70
LANGOFLEX PET 40	40	55	82
LANGOFLEX PET 50	50	70	72
LANGOFLEX PET 60	60	80	75

*Use of Langoflex PET-D 04 (European market only)

Approvals

- Direct: Daimler, Fiat Chrysler Automobiles, General Motors, Opel, Volkswagen Group.
- Via Tier-1: Porsche.

Packaging

LANGOFLEX PET is delivered in coils or in cut lengths upon request.

Physical properties	Specification	Value	
Abrasion resistance	LV 312-3 6.5.4	Class D (coverage >70%)	
Continuous temp. of use (3000h)	LV 312-3 6.7.2	-40°C – +150°C -40°F – +302°F	
Short-term Heat Ageing (240h)	LV 312-3 6.7.3 (175°C /347°F)	No visual change. No tears, breaks, brittleness or other damages.	
Flammability	FMVSS 302	Class B (self-extinguishing)	
Tensile Properties	LV 312-3 6.3.3	Tensile strength	28,2 N
		Tensile strain at break	34,6%
Emissions	VDA 277	Mean value	max. 14,9 µg C/g
Thermodesorption	VDA 278	VOC	1 ppm
		FOG	41 ppm
Fogging	DIN 75201-B	Mean value	0,31 mg
Odor test	VDA 270 V 1-2-3	Mean value	A 1 –2,5 A 2 –2,5 A 3.1 –3,5 A 3.2 –3,0
Chemical resistance	VW 80000 10	Visually no change when exposed to <ul style="list-style-type: none"> • Diesel / FAME (22 h / 150°C / 302°F) • Gasoline, unleaded (10 min / 23°C / 73°F) • Engine / Gearbox / Differential oil (22 h / 150°C / 302°F) • Hydraulic fluid (22 h / 150°C / 302°F) • Brake fluid (22 h / 150°C / 302°F) • Urea (22 h / 150°C / 302°F) • Road salt solution (22 h / 23°C / 73°F) 	

Industry / Railway

Physical properties	Specification	Value	
Flammability	DIN 5510-2	Flammability Class	S4
		Smoke Generation Class	SR2
		Dripping Class	ST2
Smoke Toxicity	DIN 5510-2	FED (t _{zul} = 30 min)	0,06
Toxicity-Index	NF X 70-100 : 2001	I.T.C. = 10,96	
Smoke Toxicity	CEN/TS 45545-2 (07/2009)	CIT _{NLP} = 0,12	Hazard Level HL3
Smoke Density	CEN/TS 45545-2 (07/2009)	Max(D _g) = 171	Hazard Level HL2
Oxygen Index	CEN/TS 45545-2 (07/2009)	39 Vol-%	Hazard Level HL3

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