

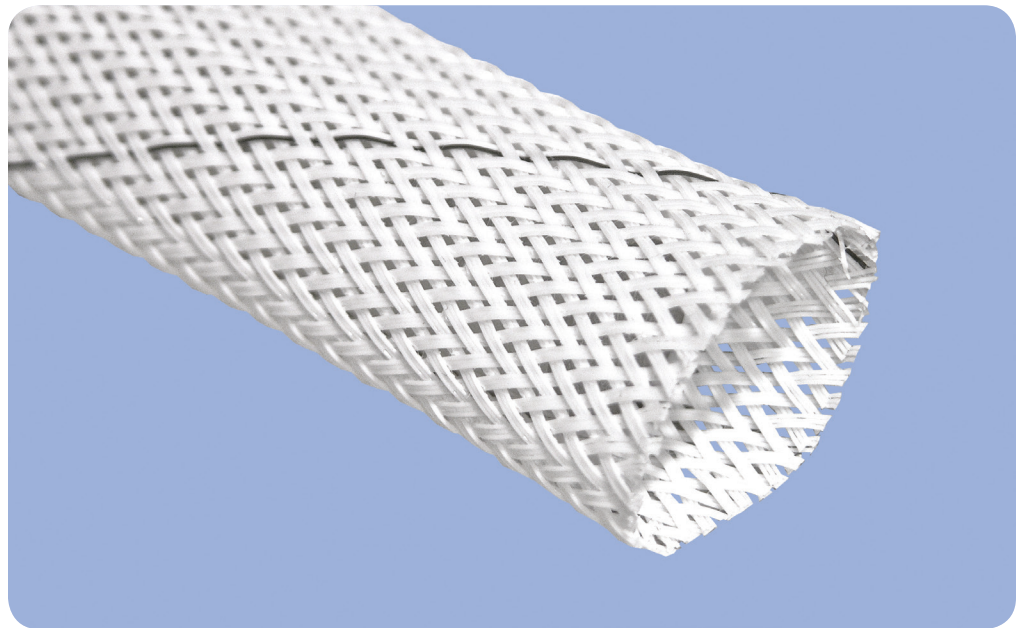


ABRASION/MECHANICAL

Expando® HR Plus

Product Highlights

- Operating temperature from -70°C to +150°C (-94°F to +302°F)
- VW-1 according to UL 1441
- FAR 25 § 853
- UL Recognized Component
- Does not trap heat or humidity
- Rot-free
- Expandable design accommodates a variety of sizes



Expando® HR Plus is an expandable sleeve constructed of Halar® (E-CTFE) fluoropolymer that is designed for applications up to +150°C (+302°F). Inherently flame-retardant, it is a UL Recognized Component which meets VW-1 requirements, and will not melt and drip on direct exposure to flame. Expando HR Plus is a special purpose, highly reliable solution for military and aerospace applications. It offers good mechanical properties, performs well in both high and low temperature environments, and has outstanding chemical resistance.

The patented Bentley-Harris Plus treatment makes end termination neater and easier. The Plus treatment creates a webbing between the filaments of the sleeving to reduce end fray during installation, allowing Expando HR Plus to be cut with ordinary scissors. This reduces assembly time and eliminates the need for proper ventilation equipment required for hot-knife cutting.

Expando HR Plus protective oversleeve has many uses in the aerospace, marine, electronic, military, nuclear and general manufacturing industries.

Expando products are tough, lightweight oversleeves used to protect cable assemblies, hoses and wire harnesses from chafing, cutting and abrading. The open-weave construction of Expando products enables each size to expand to fit several application shapes and sizes. This open-weave construction also makes them highly flexible and resistant to trapping water, heat and humidity.

Halar is a registered trademark of Solvay Solexis.



Our manufacturing sites are certified ISO 9001, ISO/TS 16949, or AS/EN 9100, and ISO 14001

EXPHRPLUS_12082011

BentleyHarris®
Protection Products

Performance Data – Expando® HR Plus

Property	Test Method	Result
Operating Temperature Range		-70°C to +150°C (-94°F to +302°F)
Low Temperature Flexibility	MIL-DTL-23053D	-70°C
Flammability	UL 1441 FAR 25 § 853	VW-1 Pass
Smoke Density	ASTM E-662 Flaming Mode Non-Flaming Mode	Dmax <50 Dmax <50
Abrasion resistance	EN 6059 Part 403	Pass

Product Specifications

Longitudinal shrinkage should be taken into account when utilizing expansion properties of the sleeve

Commercial Part Number	Recommended Application Range mm (in)		Maximum Weight g/m (lb/ft)	Standard Packaging m (ft)
	Min Ø	Max Ø		
Expando HR Plus 3-X/X	2 (3/32")	6 (1/4")	4.42 (0.00297)	610 (2,000')
Expando HR Plus 6-X/X	3 (1/8")	11 (7/16")	6.55 (0.00440)	305 (1,000')
Expando HR Plus 13-X/X	6 (1/4")	19 (3/4")	19.64 (0.0132)	152 (500')
Expando HR Plus 19-X/X	13 (1/2")	32 (1-1/4")	29.47 (0.0198)	152 (500')
Expando HR Plus 32-X/X	19 (3/4")	45 (1-3/4")	37.65 (0.0253)	76 (250')
Expando HR Plus 45-X/X	32 (1-1/4")	70 (2-3/4")	62.21 (0.0418)	76 (250')

X/X = Color Code: 0/9 for black with white tracer

9/0 for white with black tracer

*Expando sleeving products made with the patented "Plus" treatment should not be used in hard vacuum environments nor immersed in solvents or liquids where Plus particulates could contaminate the system environment. Consult Federal-Mogul Systems Protection for information on protection products for these applications.

Part Numbering System

Example	Product Name	Size	Color	Quantity
	Expando HR Plus	3	9/0 (white with black tracer)	610m

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USA: (1) 800 926 2472
 Europe: (33) 3 44 39 06 06
 Japan: (81) 45 479 0201
 China: (86) 21 6182 7688

www.federalmogul.com/sp