



## 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** 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 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.

Expando HR 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.



Our manufacturing sites are certified ISO 9001, IATF 16949, or AS/EN 9100, ISO 14001 and ISO 45001 (Selected Sites)

# Performance Data – Expando® HR

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
Hard Vacuum	ASTM E-595	Meets industry limits:
TML		1.0% max
CVCM		0.1% max
Abrasion resistance	EN 6059 Part 403	Pass

All numeric performance data shows average or typical values. Please consult your sales representative for product drawings, test reports and OEM approvals.

## 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 3-XX	2 (3/32")	6 (1/4")	4.42 (0.00297)	610 (2,000')
Expando HR 6-XX	3 (1/8")	11 (7/16")	6.06 (0.00407)	305 (1,000')
Expando HR 13-XX	6 (1/4")	19 (3/4")	19.64 (0.0132)	152 (500')
Expando HR 19-XX	13 (1/2")	32 (1-1/4")	27.83 (0.0187)	152 (500')
Expando HR 32-XX	19 (3/4")	45 (1-3/4")	37.65 (0.0253)	76 (250')
Expando HR 45-XX	32 (1-1/4")	70 (2-3/4")	62.21 (0.0418)	76 (250')
Expando HR 51-XX	38 (1-1/2")	89 (3-1/2")	73.66 (0.0495)	76 (250')

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

## Part Numbering System

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



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