

Product Highlights

- Working temperature
-70°C to +150°C
- 1:3 expansion ratio
- Flame resistant
 - VW-1
 - F.A.R Part 25
(Expando HR Plus)
- Homologation UL
- Homologation CSA
(n° #LR52852)
- Excellent abrasion resistance
- Low vacuum outgassing
- Self-fitting over many shapes and sizes
- "Plus" version can be cold cut



Expando® HR Expando® HR Plus

Bentley-Harris® Expando HR and HR Plus products are tough, light-weight 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.

Expando HR and HR Plus is a braided Halar* (E-CTFE) fluoropolymer sleeving designed for applications up to 150°C. 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 and HR Plus is a special purpose, highly reliable sleeving for military and aerospace oriented applications. It offers good mechanical properties, performs well in both high and low temperature environments, and has outstanding chemical resistance.

Because of the fray-resistant properties of Expando HR Plus, it can be cut with ordinary scissors.

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

*Halar is a registered trademark of Allied Chemical

BentleyHarris®
Protection Products

Performance Data

Properties	Test	Result	
Operating temperature range		-70°C +150°C	
Melt Temperature ASTM D-2117		240°C	
Low Temperature Flexibility	MIL-DTL-23053E	-70°C	
Flammability	UL 1441	VW-1 classified	
Copper Corrosivity	MIL-I-23053	No Effect	
		Expando HR	Expando HR Plus
Flammability	F.A.R Part 25 UL 1441	VW-1	Pass VW-1 classified
Smoke Density	ASTM E-1354	D _{mc} =0.30	D _{mc} =0.30
Hard Vacuum	ASTM E-595		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 us for information on protection products for these applications
• TML		0.14%	
• CVCM		0.02%	
• WVR		0.01%	
Fluid Resistance	MIL-I-23053	Tensile Retention:	
• JP4 Jet Fuel (MIL-T-5624)		97%	
• Hydraulic Fluid (MIL-H-5606)		100%	
• Lube Oil (MIL-I-7808)		99%	
• De-Icing Fluid (MIL-A-8243)		98%	
• Salt Water (O-S-1926)		98%	

Product Specifications - Expando HR

Description	Recommended diameter range (mm)		Part number	Weight (g/100m)	Packaging (m)
	Min. Ø	Max.Ø			
Expando HR 3	2	6	50110003xxS	402	600
Expando HR 6	3	11	50110006xxS	596	300
Expando HR 13	6	19	50110013xxS	1790	150
Expando HR 19	12	32	50110019xxS	2685	150
Expando HR 32	19	45	50110032xxS	3431	75
Expando HR 45	32	70	50110045xxS	5669	75

Product Specifications - Expando HR Plus

Description	Recommended diameter range (mm)		Part number	Weight (g/100m)	Packaging (m)
	Min. Ø	Max.Ø			
Expando HR + 3	2	6	51110003xxS	402	600
Expando HR + 6	3	11	51110006xxS	596	300
Expando HR + 13	6	19	51110013xxS	1790	150
Expando HR + 19	12	32	51110019xxS	2685	150
Expando HR + 32	19	45	51110032xxS	3431	75
Expando HR + 45	32	70	51110045xxS	5669	75

Part Numbering System

Example :	Description	Size	Color	Quantity
	Expando HR	32	0 (black)	75 m

Availability

Bentley-Harris® Expando HR and HR Plus is available in sizes from 3 mm to 45 mm.

Standard colours are black with a white tracer and white with a black tracer.

(xx = colour code)
32 = black with white tracer
23 = white with black tracer

Expando HR and HR Plus is supplied on cardboard spools or cut to length according to your specifications.

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

All numeric data shows average or typical values.



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