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HEAT SHRINKABLE BOOT SHELF LIFE

Glenair offers a number of heat-shrinkable boot materials in the Series 77 Shrink Boot range. The shelf life of the boots (without adhesive pre-coating, see document on "Heat Shrink Boot Adhesive Shelf Life") is described below for each type. The shelf life is determined by there being no degradation of the materials properties from original specification and the dimensions both expanded and recovered being to the specification control drawing. The specified times depend on the storage being under normal ambient which means below 35°C and not in direct sunlight. Attention should be made as to transport because it is known that containers in direct sunlight can reach temperatures of 50°C. This will not affect the properties of the materials but may cause a limited amount of recovery to occur depending on the length of time the boots are exposed to high temperatures. This is especially relevant to type 2, 7 and 9 materials and small size boots.

MATERIALS

Type 1 & 2: 5 years

The shelf life of these boots, when stored under ambient conditions (below 35°C), is part of the qualification to the German VG 95343 qualification for 2025 Type 1 material and 2010 Type 2 material. Material in this specification has to meet 100% of the specified values for strength and performance after 5 years.

Type 3 & 7: 4 years

The shelf life under the same storage conditions for 2040 Type 3 material and 2071 Type 7 materials are given in MIL-I-81765 and is 4 years.

Type 5 & 6: 4 years

The shelf life for 2050 Type 5 material and 2051 Type 6 materials are not specified in any military specification. Accelerated aging tests carried out by Glenair give a shelf life of greater than 4 years.

Type 8: 4 years

This material is not qualified to any International Specification and Glenair accelerated ageing shows the material will meet at least 5 years shelf life and we have therefore given it a 4-year life.

Type 9: 2 years

This material has a very low shrink temperature and will start to show recovery at 35°C and because of this the shelf life is restricted to 2 years.

The times given for each material are from when the customer receives the parts. The parts may have other codes on the packaging indicating dates when the parts were either packed or manufactured. However, this does not change the shelf life specified by Glenair which applies from when the parts are shipped. During any holding time the parts are held, the storage conditions are strictly controlled.

Coral Proctor

Product Manager, Shrink Products

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Identifying Material and Adhesive Options in the Part Number Development

Standard Boot Part Number

How to Order							
Sample Part Number	770	-003	S	1	03	W1	-PP
Product Series	770 = Series 77 shrink boot						
Basic Number	003 = lipped boot						
Angular Function	S = straight						
Material	See material and adhesives table						
Boot Size	005, 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12; see shell size cross reference in dimensions table						
Adhesive Lined	Omit for no adhesive; see material and adhesives table						
Potting Ports or Drain Holes	PP = potting port DH = drain hole Omit for none						

Material and Adhesive Compatibility							
Material Code	Material Description (Compound No.)	Hot Melt Adhesives			High Performance Epoxy Adhesives		
		W1	W2	W3 (TACOM approved)	R	U	
		High Temperature -55°C to 125°C	Standard -55°C to 70°C	Elastomeric -55°C to 125°C	Pre-Coat -75°C to 150°C	Two-Part -75°C to 155°C	
1	High-Performance Semi-Rigid Elastomer (2025)	●	●		●	Type U epoxy adhesive is compatible with all boot materials. Ordered separately, user-installed (779-001). Order boot with no adhesive lining.	
2	Zero Halogen Semi-Rigid Polyolefin (2010)	●	●		●		
3	General Purpose Flexible Polyolefin (2040)		●				
5	Viton Fluoroelastomer Blend (2050)	●		●	●		
6	High Performance Elastomer Alloy (2051)	●		●			
7	Semi-Rigid Polyolefin (2071)	●	●				
8	Low Outgassing Fluoropolymer Alloy (2008)	Material Type 8 not available with pre-coat adhesive. Use Type U two-part epoxy					
9	Low Temp Flexible Polyolefin (2013)		●				

Might Mouse Boot Part Number

How to Order							
Sample Part Number	809	S	060	-4	H	U	-PP
Product Series	809 = Series 80 shrink boot						
Angular Function	S = straight						
Basic Number	060 = lipped boot						
Dash Number	1, 2, 3, 4, 5, 6; See dimensions table						
Material	Omit for type 1 H = type 2 L = type 9 S = type 8 see material and adhesive table						
Adhesive Options	Omit for recommended adhesive OR U = no adhesive R = epoxy pre-coat adhesive see material and adhesive table for availability						
Potting Port	PP = potting port Omit for none						

Material and Adhesive				
Material Code (Type)	Compound	Material Description	Recommended Adhesive	Adhesive Option
Omit (Type 1; Standard)	2025	Fluid Resistant Semi-Rigid Elastomer	W1: -55°C to +125°C pre-coat hot melt; high performance	R or U
H (Type 2)	2010	NAVSEA 5617649 ZH/LS Fire Hazard Material	W1: -55°C to +125° pre-coat hot melt; high performance	R or U
L (Type 9)	2013	Low Temp Flexible Polyolefin	W2: -55°C to +70°C pre-coat hot melt; low temperature	U
S (Type 8)	2008	Low Outgassing Fluoropolymer	U: -75°C to +150°C two part epoxy 779-001 two part epoxy, sold separately	None