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MILITARY STANDARDIZATION HANDBOOK
A GUIDE TO THE SPECIFICATIONS FOR
FLEXIBLE RUBBER PRODUCTS



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DEPARTMENT OF DEFENSE

WASHINGTON, D.C.

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A Guide to the Specifications
for Flexible Rubber Products

1. This standardization handbook was developed by the Department of Defense in accordance with established procedures.
2. This publication was approved on 28 February 1989 for printing and inclusion in the Military Standardization Handbook series.
3. This handbook provides information concerning all known Federal, Military and nationally recognized technical society specifications and standards for those flexible rubber products considered to be of interest to the Department of Defense. The handbook is not intended to be referenced in purchase specifications or other contractual documents nor shall it supersede any specification requirements.
4. Every effort has been made to reflect the latest information on specifications for flexible rubber products. It is the intent to review this handbook periodically to insure its completeness and currency. Users of this document are encouraged to report any errors discovered and any recommendations for changes to U.S. Army Materials Technology Laboratory, ATTN: SLCMT-MEE, Watertown, MA 02172-0001.

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FOREWORD

The purpose of this handbook is to provide information concerning all known Federal, Military and nationally recognized technical society specifications for flexible rubber products. Specifications from the following technical societies are included:

ASTM (American Society For Testing and Materials)
1916 Race Street, Philadelphia, PA 19103

American National Standards Institute (ANSI)
1430 Broadway, New York City, NY 10018

Society of Automotive Engineers (SAE and AMS)
400 Commonwealth Drive, Warrendale, PA 15096

The following types of information are furnished for each specification:

1. Specification number, title, and where applicable, the Federal Supply Classification (FSC) code number.
2. Whether or not a Qualified Products List (QPL) has been issued.
3. The type of rubber (natural, neoprene, butyl, etc.) from which the product is usually fabricated.
4. A brief description of the rubber product in terms of the specification requirements (tensile strength, resistance to high and low temperatures, resistance to fluids, etc.)
5. A brief description of the construction characteristics of those products which are composites of rubber and other materials. For example, the type, number and weight of the fabric plies in rubber coated fabrics.

The information provided by this handbook is designed to assist the user in answering questions similar to these:

1. Does a specification exist which described rubber O-rings suitable for use at 500°F?
2. Is there a specification for rubber hose suitable for use with gasoline and flexible at -40°F?
3. Which specification(s) describes closed cell silicone rubber sponge?
4. Is there a specification for neoprene jacketed electrical cable and does this specification provide a list of suppliers (QPL)?

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The handbook describes seven types of specifications, as shown in Table I. Particular products are covered in the following sections of the handbook: Cellular materials, Clothing and protective equipment, Coated fabrics, Hose, duct and tubing, Mats and floor covering, O-Rings, Packings and gaskets, Tires and tubes, Wire and cable and Miscellaneous.

The general product specifications are covered in the "Multipurpose Rubbers" section of the handbook. As the word "multipurpose" implies, any one of these specifications may be used for the procurement of a variety of products. For example, under Specification MIL-R-3065, one may procure molded products, extruded shapes, calendered goods and sheet packings. The handbook lists about 60 multipurpose rubber specifications, encompassing approximately 100 different grades of rubber. Because of their broad coverage of rubber grades and product types, the multipurpose rubber specifications should prove to be very helpful to users of this handbook, especially when a search of a particular product section has failed to reveal a specification having a desired set of requirements. For example, suppose that a specification is sought for an O-ring which will be non-brittle at -40°F, which will show good strength retention after exposure in air at 212°F and which need not be oil resistant. The O-ring section of the handbook does not list such a specification. However, the multipurpose rubber section does list the desired specification, namely, MIL-R-3065 (and its accompanying document (MIL-STD-417), for Class RN or Class RS rubber. Thus, the O-ring having the desired characteristics may be procured by furnishing the supplier a dimensional drawing which cites a material reference to an appropriate rubber (class and code number) under MIL-R-3065.

It should be noted that the handbook descriptions of the specification requirements are incomplete, since in very few instances have all of the requirements of a specification been listed. The information given in the handbook is intended to guide the user to the specification(s) which best meets his needs, however, to verify the validity of his choice, the user should always obtain the selected specification(s) in order to ascertain its complete scope.

The chief criterion for determining whether or not a specification for a rubber product was to be included in the handbook was the flexibility of the product. Specifications were included only for those products which were believed to be capable of being hand flexed.

The majority of the listed specifications are for vulcanized products, however, unvulcanized products such as inner tube repair patches, retread rubber and room temperature vulcanizing (RTV) potting and encapsulating compounds are included.

Some specifications for products fabricated from materials which are commonly considered to be plastic (polyvinyl chloride), but which exhibit rubber-like properties, are included.

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Excluded from the handbook are specifications for hard rubber (ebonite) products, adhesives, coatings, sealers and tapes. Also excluded are composites in which rubber is in admixture with other ingredients, as in rubber-asbestos packings or rubber-cork gaskets. Complex items are assemblies, such as certain oxygen masks and fuel tanks have also been omitted. A large number of specifications for rubber products which were deemed to be of no interest to the Department of Defense, such as surgical operating pads, rubber bands and ice bags, were excluded.

Unless otherwise noted, the specification requirements given in the tabular sections of the handbook pertain to tests performed on the complete product.

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TABLE I - Types of government and technical society specifications for rubber.

- I. Broad Multipolymer - A large number of grades of rubber compounds based on a wide variety of polymers (MIL-STD-417, ASTM D2000)
- II. Limited Multipolymer - Several grades of rubber compounds based on a few types of polymers (MIL-R-6855)
- III. Broad Single Polymer - Several grades of rubber compositions based on one polymer family (ZZ-R-765)
- IV. Single Composition - One grade having specific properties (MIL-R-43109, AMS 3000 series)
- V. Composition and Product - One or two grades of rubber compounds based on one polymer plus an item made from that compound (MIL-R-7362, MIL-R-25897)
- VI. Single Product - One item (MIL-P-5315, AMS 7000 series)
- VII. Multi Product - Several classes of items (MIL-C-20696, MIL-C-13777)

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SPECIFICATION TEST CONDITIONS			ELASTOMER SPECIFIED OR COMMONLY USED			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP OF	TIME, HRS	SPECIFICATION REQUIREMENTS	QPL ISSUED CLASS	FSC		
Air, original properties	Ambient	-	1, 500-1500 psi, E, 100-200%, H, 40-80	Polyacrylate	9320	Rubber Composition, Vulcanized	MIL-STD-4171
Air, oven aging	347	70	Max. change T, -30%, E, -50%, H + 10			General Purpose, Solid (Symbols and Tests)	Type I, Class IB
Air, compression set	302	70	60% max				
ASTM #3 petroleum oil	302	70	Volume change, 0 to +20%				
(All Grades Covered by this Document are also Covered Under MIL-STD-417 and ASTM D2000)							
Air, original properties	Ambient	-	T, 700-500 psi, E, 250-125%, H, 40-80	Silicone	9320	Rubber, Silicone	44-R-765 Classes 1a and 1b
Cooling medium, ASTM D746	-103	0.05	No cracks				
Air, oven aging	437	70	T change, -30% max, E change, -50% max				
ASTM #1 petroleum oil	212	70	Volume change, +10 to +15				
Air, original properties	Ambient	-	T, 700-650 psi, E, 400-60%, H, 40-80	Silicone	9320	Rubber, Silicone	44-R-765 Classes 2a and 2b
Cooling medium, ASTM D746	-80	0.05	No cracks				
Air, oven aging	437	70	T change, -20% max, E change, -40% max				
ASTM #1 petroleum oil	302	70	Volume change, +15% max				
Air, original properties	Ambient	-	T, 800-1200 psi, E, 500-400%, H, 25-80	Silicone	9320	Rubber, Silicone	24-R-765 Class 3a and 3b
Cooling medium, ASTM D746	-103	0.05	No cracks (for grades 25, 50 and 60)				
Cooling medium, ASTM D746	-80	0.05	No cracks (for grade 60)				
ASTM #1 petroleum oil	302	70	Volume change, +5% max				
(Many grades available Following is a typical example)							
Air, original properties	Ambient	-	1, 2000 psi min, E, 500% min, H, 45+ 5	Natural		Latex Dipped Goods and Coatings for Automotive Applications	ASTM D1746/ (SAE J19) Type LR
Air, oven aging	158	70	Min values: T, 1500 psi, E, 400%				
(Many grades available Following is a typical example)							
Air, original properties	Ambient	-	1, 1500 psi min, E, 400% min; H, 55+ 5	Chloroprene		Latex Dipped Goods and Coatings for Automotive Applications	ASTM D1764 (SAE J19) Type LS, Class LSC
Air, oven aging	212	70	Min values: T, 1200 psi, E, 300%				
ASTM #2 petroleum oil	212	22	Volume change % max, Basic compd, 80, E ₂ suffix, 50				
Air, original properties	Ambient	-	1, 500-3500 psi, E, 75-600%, H, 30-90	Natural Rubber, SBR or Butyl		Elastomeric Materials for Automotive Applications	ASTM D2000/ (SAE J200) Material AA
Cooling medium, ASTM D746	-40	-	F17 suffix, pass				
Air, oven aging	158	70	Max change T, + 30%, E, -50%, H, + 15				
Air, compression set	158	22	Basic compd, 50% max, B13 suffix, 25% max				
Invalid for replenishment shares only New designs should use ASTM D2000							
Document cancelled Use ASTM D2000							

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SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE		SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED			FSC	ISSUED CLASS	
Air, original properties	Ambient	-	- 1, 1000-2500 psi, E, 100-400%; H, 30-90 - F17 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 22 50% max.	SBR or Butyl	Elastomeric Materials for Automotive Applications Material BA			ASTM D2000 (SAE J200) Material BA
Cooling medium, ASTM D746	-40	-						
Air, oven aging	212	70						
Air, compression set	158	22						
Air, original properties	Ambient	-	- 1, 500-3400 psi; E, 50-500%; H, 30-90 - F17 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 22 Basic compd, 80% max, B14 suffix, 35% max. 70 Volume change, +120% max.	Chloroprene	Elastomeric Materials For Automotive Applications Material BC			ASTM D2000 (SAE J200) Material BC
Cooling medium, ASTM D746	-40	-						
Air, oven aging	212	70						
Air, compression set	212	22						
ASTM #3 petroleum oil	212	70						
Air, original properties	Ambient	-	- 1, 500-2500 psi, E, 100-500%; H, 40-90 - F15 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 22 Basic compd, 40-50%, B14 suffix, 25% max. 70 Volume change, + 80% max.	Chloroprene	Elastomeric Materials For Automotive Applications Material BE			ASTM D2000 (SAE J200) Material BE
Cooling medium, ASTM D746	-13	-						
Air, oven aging	212	70						
Air, compression set	212	22						
ASTM #3 petroleum oil	212	70						
Air, original properties	Ambient	-	- 1, 500-2500 psi, E, 100-350%; H, 60-80 - F19 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 22 50% max. 70 Volume change, +60% max.	Nitrile	Elastomeric Materials For Automotive Applications Material BF			ASTM D2000 (SAE J200) Material BF
Cooling medium, ASTM D746	-67	-						
Air, oven aging	212	70						
Air, compression set	212	22						
ASTM #3 petroleum oil	212	70						
Air, original properties	Ambient	-	- 1, 500-4000 psi; E, 50-450%; H, 40-90 - F17 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 22 Basic compd, 50% max; B14 suffix, 25 or 50% max. 70 Volume change, +40% max	Polyurethane	Elastomeric Materials For Automotive Applications Material BG			ASTM D2000 (SAE J200) Material BG
Cooling medium, ASTM D746	-40	-						
Air, oven aging	212	70						
Air, compression set	212	22						
ASTM #3 petroleum oil	212	70						
Air, original properties	Ambient	-	- 1, 500-2500 psi; E, 54-400%; H, 40-90 - F17 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 70 Volume change, 10% max. 70 Volume change, E51 suffix, + 5%	Polysulfide	Elastomeric Materials For Automotive Applications Material BK			ASTM D2000 (SAE J200) Material BK
Cooling medium, ASTM D746	-40	-						
Air, oven aging	212	70						
ASTM #3 petroleum oil	212	70						
Isooctane	Ambient	70						
Air, original properties	Ambient	-	- 1, 1000-2500 psi, E, 200-400%; H, 50-80 - F19 suffix, pass 70 Max change T, + 30%; E, -50%; H, + 15 70 Volume change; 80% max.	Hypalon	Elastomeric Materials For Automotive Applications Material CE			ASTM D2000 (SAE J200) Material CE
Cooling medium, ASTM D746	-67	-						
Air, oven aging	257	70						
ASTM #3 petroleum oil	257	70						

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SPECIFICATION TEST CONDITIONS		SPECIFICATION REQUIREMENTS		ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.						
Air, original properties	Ambient	-	T, 500-2500 psi, E, 50-350%, H, 60-90	Nitrile			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material CH
Cooling medium, ASTM D746	-40	-	F17 suffix, pass					
Air, oven aging	257	70	Max change, T, + 30%; E, -50%; H, + 15					
ASTM #3 petroleum oil	257	70	Volume change, +50% max					
Air, original properties	Ambient	-	T, 800-1200 psi, E, 100-225%; H, 40-90	Polyacrylate			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material DF
Cooling medium, ASTM D746	0	-	F14 suffix, pass					
Air, oven aging	302	70	Max change, T, + 30%; E, -50%; H, + 15					
ASTM #3 petroleum oil	302	70	Volume change, +60% max.					
Air, original properties	Ambient	-	T, 800-1500 psi, E, 100-300%; H, 40-90	Polyacrylate			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material DH
Cooling medium, ASTM D746	+14	-	F13 suffix, pass					
Air, oven aging	302	70	Max. change, T, + 30%; E, -50%; H, + 15					
ASTM #3 petroleum oil	302	70	% max. vol. chg. basic compd, +30; F36 suffix, +25					
Air, original properties	Ambient	-	T, 500-1200 psi; E, 200-500%; H, 30-70	Silicone			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material FC
Cooling medium, ASTM D746	-103	-	F1-11 suffix, pass					
Air, oven aging	392	70	Max change T, + 30%; E, -50%; H, + 15					
ASTM #3 petroleum oil	302	70	Volume change, +120% max					
Air, original properties	Ambient	-	T, 400 psi min; E, 400% min; H, 30 + 5	Silicone			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material FB
Cooling medium, ASTM D746	-67	-	F19 suffix, pass					
Air, oven aging	392	70	Max change T, + 30%; E, -50%; H, + 15					
ASTM #3 petroleum oil	302	70	Volume change, +80% max.					
Air, original properties	Ambient	-	T, 800 psi min; E, 150% min; H, 60 + 5	Fluorosilicone			Elastomeric Materials For Automotive Applications	ASTM D2000/ (SAE J2000) Material FK
Cooling medium, ASTM D746	-67	-	F19 suffix, pass					
Air, oven aging	392	70	Max change, T, + 30%; E, -50%; H, + 15					
ASTM #3 petroleum oil	302	70	Volume change, +10% max.					
Air, original properties	Ambient	-	T, 500-700 psi; E, 50-400% H, 30-80	Silicone			Elastomeric Materials For Automotive Applications	ASTM D2000/ (SAE J200) Material GE
Cooling medium, ASTM D746	-67	-	F19 suffix, pass					
Air, oven aging	437	70	Max change, T, + 30%; E, -50%; H, + 5					
ASTM #3 petroleum oil	302	70	Volume change, +80%					
Air, original properties	Ambient	-	T, 1000-2000 psi, E, 100-200%, H, 60-80	Fluorocarbon			Elastomeric Materials For Automotive Applications	ASTM D2000/ (SAE J200) Material HK
Cooling medium, ASTM D746	-13	-	F15 suffix, pass					
Air, oven aging	482	70	Max change T, + 30%; E, -50%; H + 15					
ASTM #3 petroleum oil	302	70	Volume change, +10% max					
70/30 Isooctane/toluene	Ambient	70	E61 suffix, volume change, 0 to + 10%					

(For description of grades covered see MIL-STD-41/ and ASTM D2000)

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SPECIFICATION TEST CONDITIONS				ELASTOMER SPECIFIED OR COMMONLY USED	FSC ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS				
Air, original properties	Ambient	-	T, 1400 psi min, E, 250% min, H, 60 + 5	Nitrile		Synthetic Rubber, Hydraulic Fluid (Petroleum Base)	AMS 3200
Cooling medium, ASTM D746	-40	-	No cracks			Resistant (55-65)	
Air, oven aging	212	70	Max change: T, -10%, E, -45%; H, 0 to +15				
ASTM #3 petroleum oil	212	70	Volume change, 0 to +25%				
Air, original properties	Ambient	-	T, 1000 psi min, E, 300% min, H, 30 + 5	Nitrile		Synthetic Rubber Dry Heat Resistant (35-45)	ASM 3201
Air, ASTM D736 bent loop	-40	5	No cracks				
Air, test tube aging	300	70	Max change: T, -60%; E, -70%; H, 0 to +20				
Air, compression set	212	70	75% max				
ASTM #3 petroleum oil	212	70	Volume change, -10 to +50%				
Air, original properties	Ambient	-	T, 1500 psi min, E, 250% min; H, 60 + 5	Nitrile		Synthetic Rubber, Dry Heat Resistant (55-65)	AMS 3202
Air, ASTM D736 bent loop	-40	5	No cracks				
Air, test tube aging	300	70	Max change: T, -60%; E, -70%, H, 0 to + 20				
Air compression set	212	70	50% max.				
ASTM #3 petroleum oil	212	70	Volume change, -10 to +50%				
Air, original properties	Ambient	-	T, 1000 psi. min; E, 350% min; H, 30 + 5	Nitrile		Synthetic Rubber, Low Temperature Resistant (25 to 35)	AMS 3204
Cooling medium, ASTM D746	-60	-	No cracks				
Air, oven aging	212	70	Max change: T, -35%; E, -35%; H, 0 to +15				
ASTM #3 petroleum oil	158	70	Volume change, 0 to +75%				
Air, original properties	Ambient	-	T, 1200 psi. min; E, 300% min; H, 70 + 5	Nitrile		Synthetic Rubber, Low Temperature Resistant (45-55)	AMS 3205
Cooling medium, ASTM D746	-55	-	No cracks				
Air, oven aging	212	70	Max change: T, -20%; E, -40%; H, 0 to +15				
ASTM #3 petroleum oil	158	70	Volume change, 0 to +80%				
Air, original products	Ambient	-	T, 500 psi. min; E, 400% min; H, 30 + 5	Chloroprene		Synthetic Rubber, Weather Resistant, Chloroprene Type (25 -35)	AMS 3207
Cooling medium, ASTM D746	-40	-	No cracks				
Air, oven aging	212	70	Max change: T, -25%; E, -30%; H, 0 to +15				
ASTM #3 petroleum oil	212	70	Volume change, +90 to +150%				
Air, original properties	Ambient	-	T, 1200 psi min; E, 300% min; H, 50 + 5	Chloroprene		Synthetic Rubber, Weather Resistant, Chloroprene Type (45-55)	AMS 3208
Cooling medium, ASTM #746	-40	-	No cracks				
Air, oven aging	212	70	Max change: T, -25%; E, -40%; H, 0 to +15				
ASTM #3 petroleum oil	212	70	Volume change, +50 to +110%				
Air, original properties	Ambient	-	T, 1700 psi. min; E, 200% min; H, 70 + 5	Chloroprene		Synthetic Rubber, Weather Resistant, Chloroprene Type (65-75)	AMS 3209
Cooling medium, ASTM #746	-40	-	No cracks				
Air, oven aging	212	70	Max change: T, -20%; E, -50%; H, 0 to +10				
ASTM #3 petroleum oil	212	70	Volume change, +40 to +100%				

SPECIFICATION TEST CONDITIONS			ELASTOMER		SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
SPECIFICATION REQUIREMENTS						
Air, original properties Cooling medium, ASTM #746 Air, oven aging Electricity	Ambient	-	T, 1000 psi. min; E, 400% min; H, 70 + 5	Chloroprene	Synthetic Rubber, Electrical Resistant, Chloroprene Type (65-75)	AMS 3210
	-30	-	No cracks			
	212	70	Max change: T, -35%; E, -50%; H, 0 to +10			
	Ambient	-	Dielectric value, 300 volts/ml., min.			
Air original properties Cooling medium, ASTM D746 Air, oven aging Isooctane	Ambient	-	T, 1700 psi. min; E, 300%; H, 60 + 5	Nitrile	Synthetic Rubber, Aromatic Fuel Resistant (55-65)	AMS 3212
	-10	-	No cracks			
	212	70	Max change T, -20%; E, -50%; H, 0 to +10			
	80	24	Volume change, -5% max.			
Air, original properties Cooling medium, ASTM D746 Air, compression set Isooctane	Ambient	-	T, 1500 psi. min; E, 150% min; H, 80 + 5	Nitrile	Synthetic Rubber, Aromatic Fuel Resistant (75-85)	AMS 3213
	-10	-	No cracks			
	212	70	50% max.			
	80	24	Volume change, -5% max.			
Air, original properties Cooling medium, ASTM D746 Air, oven aging Isooctane	Ambient	-	T, 1000 psi. min; E, 400% min; H, 40+ 5	Nitrile	Synthetic Rubber, Aromatic Fuel Resistant (35-45)	AMS 3214
	-20	-	No cracks			
	212	70	Max change. T, -20%; E, -50%; H, 0 to +15			
	80	24	Volume change, -5% max.			
Air, original properties Cooling medium ASTM D746 Air, oven aging Isooctane	Ambient	-	T, 1500 psi. min; E, 250% min; H, 70+ 5	Nitrile	Synthetic Rubber Aromatic Fuel Resistant (65-75)	AMS 3215
	-10	-	No cracks			
	212	70	Max change. T, -20%, E, -40%; H, 0 to +10			
	80	24	Volume change, -5% max.			
Air, original properties Air, oven aging ASTM #1 petroleum oil Isooctane	Ambient	-	E, 200% min; H, 60+ 5	Chloroprene	Synthetic Rubber (55-65)	AMS 3220
	212	15	E, 150% min, H, 70 max.			
	300	5	E, 150% min. H, 70 max.			
	80	5	Volume change, 0 to +30%			
Air, original properties Air, ASTM D736 bent loop Air, oven aging ASTM #1 petroleum oil	Ambient	-	T, 1500 psi. min; E, 400% min; H, 50+ 5	Chloroprene	Synthetic Rubber, Hot Oil Resistant, High Swell (45-55)	AMS 3222
	-40	5	No cracks			
	212	70	Max change. T, -40%; E, -50%; H, 0 to +10			
	300	70	Volume change, +15 to +40%			
Air, original properties Air, ASTM D736 bent loop Air, oven aging ASTM #3 petroleum oil Ethylene glycol	Ambient	-	T, 1200 psi. min, E, 350% min; H, 50+ 5	Nitrile	Nitrile Rubber, Hot Oil and Coolant Resistant Low Swell (45-55)	AMS 3226
	-40	5	No cracks			
	212	70	Max change. T, -40%, E, -50%; H, 0 to +10			
	300	70	Volume change, 0 to +50%			
	300	70	Volume change, 0 to +25%			

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ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS					
Air, original properties	Ambient	-	T, 1500 psi, min; E, 300% min; H, 60+ 5	Nitrile			Nitrile Rubber, Hot Oil and Coolant Resistant Low Swell (55-65)	AMS 3227
Air, ASTM D736 bent loop	-40	5	No cracks					
Air, oven aging	212	70	Max change: T, -25%; E, -40%; H, 0 to +10					
ASTM #3 petroleum oil	300	70	Volume change, 0 to +45%					
Ethylene glycol	300	70	Volume change, 0 to +25%					
Air, original properties	Ambient	-	T, 1000 psi, min; E, 250% min; H, 70 + 5	Nitrile			Nitrile Rubber, Hot Oil and Coolant Resistant (65-75)	AMS 3228
Air, ASTM D736 bent loop	-40	5	No cracks					
Air, oven aging	212	70	Max change: T, -25%; E, -40%; H, 0 to +10					
ASTM #3 petroleum oil	300	70	Volume change, 0 to +45%					
Ethylene glycol	300	70	Volume change, 0 to +20%					
Air, original properties	Ambient	-	T, 1000 psi, min; E, 150% min; H, 80 + 5	Nitrile			Nitrile Rubber Hot Oil Resistant, Low Swell (75-85)	AMS 3229
Air, ASTM D736	-40	5	No cracks					
Air, compression set	250	70	50% max.					
ASTM #3 petroleum oil	300	70	Volume change, 0 to +45%					
Air, original properties	Ambient	-	T, 1100 psi, in; E, 550% min; H, 40+ 5	Butyl			Synthetic Rubber, Phosphate Ester Resistant, Butyl Type (35-45)	AMS 3237
Cooling medium, ASTM #746	-40	.2	No cracks					
Air, oven aging	212	70	Max change: T, -25%; E, -50%; H, 0 to +15					
Tri-n-butyl phosphate	212	70	Volume change, 0 to +35%					
Air, original properties	Ambient	-	T, 1500 psi, min; E, 300% min; H, 70 + 5	Butyl			Synthetic Rubber, Phosphate Ester Resistant, Butyl Type	AMS 3238
Cooling medium, ASTM #746	-40	.2	No cracks					
Air, oven aging	212	70	Max change: T, -20%; E, -40%; H, 0 to +10					
Tri-n-butyl phosphate	212	70	Volume change, 0 to +30%					
Air, original properties	Ambient	-	T, 1500 psi, min, E, 200% min; H, 90 + 5	Butyl			Synthetic Rubber, Phosphate Ester Resistant, Butyl Type (85-95)	AMS 3239
Cooling medium, ASTM D746	-35	.2	No cracks					
Air, oven aging	212	70	Max change: T, -15%; E, -35%; H, 0 to +5					
Tri-n-butyl phosphate	212	70	Volume change, 0 to +30%					
Air, original properties	Ambient	-	T, 900 psi, min; E, 350% min; H, 40 + 5	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type (35-45)	AMS 3240
Cooling medium, ASTM D746	-40	-	No cracks					
Air, oven aging	212	70	Max change: T, -25%; E, -50%; H, 0 to +15					
ASTM #3 petroleum oil	212	70	Volume change, +60 to +120%					
Air, original properties	Ambient	-	T, 1500 psi, min; E, 250% min; H, 60 + 5	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type	AMS 3241
Cooling medium, ASTM D746	-40	-	No cracks					
Air, oven aging	212	70	Max change: T, -25%; E, -40%; H, 0 to +10					
ASTM #3 petroleum oil	212	70	Volume change, +40 to +100%					

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SPECIFICATION TEST CONDITIONS			ELASTOMER		SPECIFICATION REQUIREMENTS		SPECIFICATION TITLE		SPECIFICATION NUMBER																		
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC																						
Air, original properties	Ambient	-	T, 1900 psi. min; E, 150% min; H, 80 \pm 5	Chloroprene	Synthetic Rubber, Weather Resistant, Chloroprene Type (75-85)	AMS 3242																					
Cooling medium, ASTM D746	-40	-	No cracks																								
Air, oven aging	212	70	Max change: T, -20%; E, -50%; H, 0 to +10																								
ASTM #3 petroleum oil	212	70	Volume change, +30 to +90%																								
Air, original properties	Ambient	-	T, 900 psi. min, E, 200% min, H, 60 \pm 5				Chloroprene	Synthetic Rubber, Flame Resistant, Chloroprene Type (75-85)	AMS 3243																		
Cooling medium, ASTM D746	-40	-	No cracks																								
Air, oven aging	250	70	Max change: T, -20%; E, -50%; H, 0 to +10																								
ASTM #3 petroleum oil	212	70	Volume change, +30 to +90%																								
ASTM #3 petroleum oil	212	70	Volume change, +30 to +90%																								
70/30 Isooctane/toluene	80	24	Volume change, 0 to +80%																								
Air, original properties	Ambient	-	T, 1000 psi. min; E, 200%; H, 70 \pm 5							Chloroprene	Synthetic Rubber, Flame Resistant, Chloroprene Type (65-75)	AMS 3244															
Cooling medium, ASTM D746	-40	-	No cracks																								
Air, oven aging	250	70	Max change: T, -30%; E, -50%; H, 0 to +20																								
ASTM #3 petroleum oil	212	24	Volume change, +30 to +90%																								
70/30 Isooctane/toluene	80	24	Volume change, 0 to +80%																								
Air, original properties	Ambient	-	T, 500 psi. min; E, 250%; H, 40 \pm 5										Silicone	Silicone Rubber, General Purpose (35-45)	AMS 3301												
Cooling medium, ASTM D746	-85	-	No cracks																								
Air, oven aging	450	24	Max change: T, -15%; E, -25%; H, -5 to +10																								
ASTM #1 petroleum oil	350	70	Volume change, 0 to +20%																								
Air, original properties	Ambient	-	T, 700 psi. min, E, 200% min; H, 50 \pm 5													Silicone	Silicone Rubber, General Purpose (45-55)	AMS 3302									
Cooling medium, ASTM D746	-85	-	No cracks																								
Air, oven aging	450	24	Max change: T, -10%; E, -25%; H, -5 to +10																								
ASTM #1 petroleum oil	350	70	Volume change, 0 to +15%																								
Air, original properties	Ambient	-	T, 600 psi. min; E, 100% min; H, 60 \pm 5																Silicone	Silicone Rubber, General Purpose (55-65)	AMS 3303						
Cooling medium, ASTM D746	-65	-	No cracks																								
Air, oven aging	450	24	Max change: T, -20%; E, -35%; H, -5 to +10																								
ASTM #1 petroleum oil	350	70	Volume change, 0 to +10%																								
Air, original properties	Ambient	-	T, 500 psi. min, E, 60% min, H, 70 \pm 5																			Silicone	Silicone Rubber General Purpose (65-75)	AMS 3304			
Cooling medium, ASTM D746	-65	-	No cracks																								
Air, oven aging	450	24	Max change: T, -10%; E, -30%; H, -5 to +10																								
ASTM #1 petroleum oil	350	70	Volume change, 0 to +10%																								
Air, original properties	Ambient	-	T, 500 psi. min; E, 60% min; H, 80 \pm 5																						Silicone	Silicone Rubber, General Purpose (75-85)	AMS 3305
Cooling medium, ASTM D746	-65	-	No cracks																								
Air, oven aging	450	24	Max change: T, -15%; E, -35%; H, -5 to +10																								
ASTM #1 petroleum oil	350	70	Volume change, 0 to +10%																								

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SPECIFICATION TEST CONDITIONS			ELASTOMER SPECIFIED OR COMMONLY USED			SPECIFICATION TITLE		SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS			QPL ISSUED CLASS	FSC	
Air, original properties	Ambient	-	T, 750 psi. min; E, 150% min; H, 60 \pm 5	Silicone				AMS 3325
Cooling medium, ASTM D746	-80	.2	No cracks					
Air, oven aging	450	24	Change: T, \pm 30%; E, \pm 25%; H, -5 to \pm 10					
Di-2-ethylhexyl sebacate	300	48	Volume change, \pm 15% max.					
Air, original properties	Ambient	-	T, 800 psi. min; E, 130% min; H, 50 to 65	Silicone				AMS 3326
Cooling medium, ASTM D746	-80	.2	No cracks					
Air, oven aging	450	24	Max change: T, -25%; E, -15%; H, \pm 5					
SAE phosphate ester fluid 1A	158	48						
Air, original properties	Ambient	-	T, 400 psi min; E, 350% min; H, 15 to 30	Silicone				AMS 3332
Cooling medium, ASTM D746	-110	1	No cracks					
Air, oven aging	450	24	Max change: T, -15%; E, -20%; H, -5 to \pm 10					
ASTM #1 petroleum oil	350	70	Volume change, 0 to \pm 25%					
Air, original properties	Ambient	-	T, 500 psi. min; E, 250% min; H, 40 \pm 5	Silicone				AMS 3334
Cooling medium, ASTM D746	-100	-	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to \pm 5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to \pm 15%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 175% min; H, 50 \pm 5	Silicone				AMS 3335
Cooling medium, ASTM D746	-100	-	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to \pm 5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to \pm 10%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 150% min; H, 60 \pm 5	Silicone				AMS 3336
Cooling medium, ASTM D746	-100	-	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to \pm 5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to \pm 10%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 150% min; H, 70 \pm 5	Silicone				AMS 3337
Cooling medium, ASTM D746	-110	.2	No cracks					
Air, oven aging	450	24	Max change: T, -15%; E, -20%; H, -5 to \pm 10					
ASTM #1 petroleum oil	350	70	Volume change, 0 to 25%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 60% min; H, 80 \pm 5	Silicone				AMS 3338
Cooling medium, ASTM D746	-100	.2	No cracks					
Air, oven aging	212	24	Max. change: T, -10%, E, -15%; H, 0 to \pm 5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to \pm 10%					

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SPECIFICATION TEST CONDITIONS			ELASTOMER SPECIFIED OR COMMONLY USED	QPL	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.					
Air, original properties	Ambient	-	T, 1800 psi. min; E, 500% min; H, 50 + 5 Silicone			Silicone Rubber - 1800 psi. (45-55)	AMS 3344*
Cooling medium, ASTM D746	-105	2	No cracks				
Air, oven aging	400	70	Max change: T, -30%; E, -30%; H, 0 to +10				
ASTM #1 petroleum oil	300	70	Volume change, 0 to +15%				
Air, original properties	Ambient	-	T, 1000 psi. min, E, 450% min; H, 50 +5 Silicone			Silicone Rubber, 1000 psi. (45-55)	AMS 3345
Cooling medium, ASTM D746	-105	2	No cracks				
Air, oven aging	400	70	Max change. T, -40%; E, -50%; H, 0 to +15				
ASTM #1 petroleum oil	300	70	Volume change, 0 to +15%				
Air, original properties	Ambient	-	T, 1000 psi. min; E, 400% min; H, 60 +5 Silicone			Silicone Rubber, 1000 psi. (55-65)	AMS 3346
Cooling medium, ASTM D746	-105	-	No cracks				
Air, oven aging	400	70	Max change. T, -40%; E, -50%; H, 0 to +20				
ASTM #1 petroleum oil	300	70	Volume change, 0 to +15%				
Air, original properties	Ambient	-	T, 600 psi. min, E, 175% min, H, 60 + 5 Silicone			Silicone Rubber, Lubricating Oil and Compression Set	AMS3356
Cooling medium, ASTM D746	-65	-	No cracks			Resistant, Electrical Grade (55-65)	
Air, oven aging	450	24	Max change: T, -15%; E, -20%; H, 0 to +10				
ASTM #1 petroleum oil	350	70	Volume change, 0 to +15%				
Electricity	Ambient	-	Dielectric value, 350 volts/ml., min.				
Air, original properties	Ambient	-	T, 600 psi. min; E, 150% min; H, 70 + 5 Silicone			Silicone Rubber, Lubricating Oil and Compression Set	AMS 3357
Cooling medium, ASTM D746	-65	-	No cracks			Resistant, (65-75)	
Air, oven aging	450	24	Max change: T, -15%; E, -20%; H, -5 to +10				
ASTM #1 petroleum oil	350	70	Volume change, 0 to +25%				
Air, original properties	Ambient	-	T, 100 psi min, E, 100% min; H, 30-45 Silicone			Silicone Rubber Compound	AMS 3363
Cooling medium, ASTM D746	-67	2	No cracks			Room Temperature Vulcanizing -50,000 Centipoises	
Air, oven aging	450	24	Max change: T, -40%; E, -10%; H, -25 to +10			Viscosity (30-45)	
Air, compression set	212	22	35% max.				
Air, original properties	Ambient	-	T, 350 psi. min; E, 100% min; H, 40-50 Silicone			Silicone Rubber Compound	AMS 3365
Cooling medium, ASTM D746	-67	2	No cracks			Room Temperature Vulcanizing -35,000 Centipoises	
Air, oven aging	450	24	Max change: T, -35%; E, -25%; H, + 10			Viscosity (40-55)	
Air, compression set	212	22	60% max.				
Air, original properties	Ambient	-	T, 450 psi. min, E, 70% min, H, 55-70 Silicone			Silicone Rubber Compound- Room Temperature Vulcanizing -55,000 Centipoises	AMS 3366
Cooling medium, ASTM D746	-67	2	No cracks			Viscosity (55-70)	
Air, oven aging	450	24	Max change: T, 35%; E, -25%; H + 10				
Air, compression set	212	22	60% max.				

*Non-current

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SPECIFICATION TEST CONDITIONS				ELASTOMER		FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., of	TIME, HRS	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS			
Air, original properties Cooling medium, ASTM D746	Ambient -103	-	T, 700-500 psi; E, 250-125% H, 35-85	Silicone	9320	Rubber, Silicone; Low - and High - Temperature - and Tear Resistant	ZZ-R-765 Class 1a	
Air, compression set	212	22	35 to 45%					
ASTM #1 petroleum oil	212	70	Volume change, +10 and +15%					
Air, original products Cooling medium, ASTM D746	Ambient -103	-	T, 700-500 psi; E, 250-125% H, 35-85	Silicone	9320	Rubber, Silicone; Low - and High - Temperature - and Tear Resistant	ZZ-R-765 Class 1b	
Air, compression set	302	70	35 to 45%					
ASTM #1 petroleum oil	212	70	Volume change, +10 to +15%					
Air, original properties Cooling medium, ASTM D746	Ambient -80	-	T, 700-650 psi; E, 240-100% H, 35-85	Silicone	9320	Rubber, Silicone; Low - and High - Temperature - and Tear Resistant	ZZ-R-765 Class 2a	
Air, compression set	302	70	35 to 45%					
ASTM #1 petroleum oil	302	70	Volume change, +15% max.					
Air, original properties Cooling medium, ASTM D746	Ambient -80	-	T, 700-650 psi; E, 240-60% H, 35-85	Silicone	9320	Rubber, Silicone; Low - and High - Temperature - and Tear Resistant	ZZ-R-765 Class 2b	
Air, compression set	302	70	25 to 40%					
ASTM #1 petroleum oil	302	70	Volume change, +15% max.					
Air, original properties Cooling medium, ASTM D746	Ambient -67	-	T, 800-1200 psi; E, 500-200% H, 20-85	Silicone	9320	Rubber, Silicone; Low - and High - Temperature - and Tear Resistant	ZZ-R-765 Class 3b	
Air, compression set	212	70	40% max.					
ASTM #1 petroleum oil	302	70	Volume change, +15% to +20%					
Air, original properties Air, ASTM D736 bent loop	Ambient -67	-	T, 1000-1600 psi; E, 500-200% H, 30-80	Nitrile	9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855 Class 1	
Air, compression set	212	5	No cracks					
70/30 Isooctane/toluene	Ambient	168	Volume change, +25 to +40%					
Air, original properties Air, ASTM D736 bent loop	Ambient -67	-	T, 1500-1600 psi; E, 500-150% H, 30-80	Chloroprene	9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855 Class 2	
Air, compression set	212	5	No cracks					
ASTM #1 petroleum oil	212	70	40 to 50%					
		70	Volume change, +10%					
Air, original properties Air, ASTM D736 bent loop	Ambient -67	-	T, 1000-1500 psi; E, 450-150% H, 30-80	SBR	9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855 Class 3	
Air, compression set	212	5	No cracks					
Water	212	70	Volume change, 0 to +25%					

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SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE		SPECIFICATION NUMBER	
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC				
Air, original properties	Ambient	-	T, 1100-1500 psi; E, 450-150%; H, 30-80	Nitrile	9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855		Class 4	
Air, ASTM D736 bent loop	-67	5	No cracks							
Air, compression set	212	70	50% max.							
ASTM #1 petroleum oil	212	70	Volume change, + 10%							
Air, original properties	Ambient	-	T, 1000-1300 psi; E, 450-150%; H, 30-80	SBR	9320	Rubber, Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855		Class 5	
Air, ASTM D736 bent loop	-67	5	No cracks							
Air, compression set	212	70	40% max.							
Water	212	70	Volume change, 0 to +25%							
Air, original properties	Ambient	-	T, 1500 psi. min. E, 250% min. H, 70 +5	Nitrile	9320	Rubber Sheet, Solid, Molded and Extruded Shapes, Synthetic Oil Resistant	MIL-R-7362		Type II, Comp. A	
Cool. med, ASTM D1329	-40	-	10% recovery @ 50% elongation							
Air, oven aging	275	70	Max change: T, -20%; E, -80%							
Di-2-ethylhexyl sebacate	257	70	Volume change, +2 to +15%							
Air, original properties	Ambient	-	T, 1475 psi min. E, 400% min; H, 55 +3	SBR	9320	Synthetic Rubber Compound, Butadiene-Styrene Type, Ozone Resistant, For Low Temperature Service	MIL-S-21923			
Air, ball drop test	-65	4	No breaks, cracks or ruptures							
Air, oven aging	212	70	Max change: T, + 15%; E, -20%, H, 60							
Water	212	70	Volume change, +5%							
Ozone, 50 ppm	100	168	Crack free @ 20X magnification							
Air, original properties	Ambient	-	T, 1600 psi min; E, 125% min; H, 75 +5	Fluorocarbon	9320	Rubber, Fluorocarbon Elastomer, High Temperature, Fluid, and Compression Set Resistant	MIL-R-83248		Type II Class 1	
Air, oven aging	528	70	Max. change T -35%; E, -15, H, +10-5							
70/30 Isooctane/toluene	Ambient	70	Vol. change. 1 to +10%							
Air, original properties	Ambient	-	T, 1600 psi. min; E, 100% min; H, 90 +5	Fluorocarbon	9320	Rubber, Fluorocarbon Elastomer, High Temperature, Fluid and Compression Set Resistant	MIL-R-83248		Type II Class 2	
Air, oven aging	528	70	Max change: T, -45%; E, -20; H, +10-5							
70/30 Isooctane/toluene	Ambient	70	Vol. change: 1 to +10%							

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CELLULAR MATERIALS

SPECIFICATION TEST CONDITIONS			ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP, OF	TIME, HRS				
Air, indent defl @ 25% defl.	73	0 02	Available in defl range 2 to 205 lb/50 sq in		Flexible Foams Made From Polymers or Co-polymers of Vinyl Chloride	SAE J151
Air, oven aging	158	22	Deflection change, $\pm 20\%$			
Air, compression set	212	22	15% max			
Air, indent defl @ 25% defl	73	-	Available in defl range 2 to 205 lb/50 Nat and/or re-claimed and/or synthetic		Latex Foam Rubbers	SAE J17
Air, compression deflection	-40	5	Fl suffix, defl change, 75% max			
Air, oven aging	212	22	Deflection change, $\pm 20\%$			
Air, comp defl @ 25% defl	Ambient	-	Available in defl range 1/2 to 24 psi		Sponge and Expanded Cellular - Rubber Products	SAE J18 Type R Grade RO
Air, compression deflection	-40	5	Fl suffix, defl. change, 25% max			
Air, oven aging	158	168	Deflection change, $\pm 20\%$			
Air, comp. defl. @ 25% defl	Ambient	-	Available in defl range 2 to 24 psi		Sponge and Expanded Cellular - Rubber Products	SAE J18 Type R Grade RE
Water	80	0 05	Volume change, $\pm 1\%$ max			
Air, comp defl @ 25% defl.	Ambient	-	Available in defl range 1/2 to 24 psi		Sponge and Expanded Cellular - Rubber Products	SAE J18 Type S Class SB Grade SBO
Air compression deflection	-40	5	Fl suffix, defl change, 50% max.			
Air, oven aging	158	168	Deflection change, $\pm 20\%$			
ASTM #3 petroleum oil	158	22	Volume change, -25 to $+10\%$			
Air, comp defl @ 25% defl	Ambient	-	Available in defl range 2 to 24 psi		Sponge or Expanded Cellular - Rubber Products	SAE J18 Type S Class SB Grade SBE
Water	80	0 05	Volume change, $+1\%$ max			
Air, comp. defl @ 25% defl	Ambient	-	Available in defl. range 1/2 to 24 psi.		Sponge or Expanded Cellular - Rubber Products	SAE J18 Type S Class SC Grade SCO
Air, compression deflection	-40	5	Fl suffix, defl. change, 50% max.			
Air, oven aging	158	168	Deflection change, $\pm 20\%$			
ASTM #3 petroleum oil	158	22	Volume change, $+10$ to $+60\%$			
Air, comp defl @ 25% defl	Ambient	-	Available in defl. range 2 to 24 psi		Sponge and Expanded Cellular - Rubber Products	SAE J18 Type S Class SC Grade SCE
Water	80	0 05	Volume change, $+1\%$ max			
(Covered in ASTM D1752)						
5330- Filler, Expansion 3610 Joint, Bituminous, (Asphalt and Tar) and Nonbituminous (Performed for concrete)						

Document cancelled without replacement
 2 Document cancelled Use ASTM D1752 for Type II

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SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
Air, original properties	Ambient	-	Min: D, 1.5 lb/cu ft, T, 12 psi, E, 250%	Water or fluorocarbon blown	9330	Plastic Material, Cellular, Urethane	L-P-00386 Class 1
Air, indent. defl @ 25% defl	Ambient	-	Deflection, 10 to 20 lb/50 sq. in				
Steam, autoclave Flame	220	-	Deflection change, -20% max. Self burning, 30 sec. max.				
Air, original properties	Ambient	-	Min: D, 1.5 lb/cu ft; T, 12 psi; E, 250%	Water or fluorocarbon blown	9330	Plastic Material, Cellular, Urethane	L-P-00386 Class 2
Air, indent. defl @ 25% defl	Ambient	-	Deflection, 20 to 35 lb/50 sq in				
Steam, autoclave Flame	220	-	Deflection change, -20% max Self burning, 30 sec max				
Air, original properties	Ambient	-	Min D, 1.5 lb/cu ft, T, 12 psi, E, 250%	Water or fluorocarbon blown	9330	Plastic Material, Cellular, Urethane	L-P-00386 Class 3
Air, indent defl @ 25% defl	Ambient	-	Deflection, 35 to 55 lb/50 sq. in.				
Steam, autoclave Flame	220	-	Deflection change, -20% max Self burning, 30 sec. max				
Air, original properties	Ambient	-	Density 5 to 8 5 lb/cu ft	Synthetic	5640	Insulation Thermal, Flexible Unicellular (Sheet & Pipe Covering)	HH-I-005731
Air, thermal conductivity	-	-	K=0.30 BTU/hr/Ft ² /in max				
Water	Ambient	-	Volume change, +5% max.				
Air, indent defl @ 25% defl	Ambient	-	Available in defl. range 2 to 205 lb/50 sq. in	Natural or SBR, open cell, latex foam	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type R Grades RC & RU
Air, compression deflection	-40	5	F1 suffix, defl change, 75% max				
Air, oven aging	212	22	Deflection change, \pm 20%				
Air, comp. set @ 50% defl	158	22	20% max				
Air, comp. set @ 50% defl	Ambient	-	Available in defl range 1/2 to 23 psi	Natural or SBR, open cell, sponge	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type R Grade RO
Air, comp defl @ 25% defl	-67	5	F2 suffix, defl change, 25% max.				
Air, oven aging	158	168	Deflection change, \pm 20%				
Air, comp set @ 50% defl	158	22	15% max				
Air, comp. defl @ 25% defl	Ambient	-	Available in defl. range 2-1/2 to 23 psi	Natural or SBR, closed cell	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type R Grade RE
Water	Ambient 0 05	L	Suffix, weight change, +1% max				
Air, comp defl @ 25% defl	Ambient	-	Available in defl range 1/2 to 23-1/2 psi	Nitrile, open cell, sponge and foam	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type S Class SB Grade SBO
Air, compression deflection	-40	5	F1 suffix, defl change, 50% max				
Air, oven aging	158	168	Deflection change, \pm 20%				
ASTM #3 petroleum oil	158	22	Volume change, -25 to +10%				
Air, comp. defl @ 25% defl	Ambient	-	Available in defl range 1-1/2 to 23-1/2 psi	Nitrile, closed cell	9320	Classification System and Tests for cellular Elastomeric Materials	MIL-STD-670 Type S Class SB Grade SBE
Water	Ambient 0 05	L	Suffix, weight change, +1% max				

1 Document cancelled Use ASTM C534

MIL-HDK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP, OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC CLASS		
Air, comp. defl @ 25% defl.	Ambient	-	Available in defl range 1/2 to 23-1/2 psi	Chloroprene, open cell, sponge and foam	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type S Class SC Grade SCO
Air compression deflection	-40	5	F1 suffix, defl change, 50% max					
Air, oven aging	158	168	Deflection change, + 20%					
ASTM #3 petroleum oil	158	22	Volume change, +10 to +60%					
Air, comp. defl. @ 25% defl.	Ambient	-	Available in defl range 1-1/2 to 23-1/2 psi.	Chloroprene, closed cell	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type S Class SC Grade SCE
Water	Ambient	0.05	L suffix, weight change, +1% max					
Air, comp defl at 25% defl	Ambient	-	Available in defl. range 1-1/2 to 23-1/2 psi.	Silicone, closed cell, sponge	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type T Grade TE
Air, compression deflection	-102	5	F3 suffix, defl. change, 25% max.					
Air, heat aging	347	22	A4 suffix, defl. change, + 25%					
Water	Ambient	0.05	L suffix, weight change, +2% max.					
Air, comp. defl. @ 25% defl	Ambient	-	Available in defl. range 1-1/2 to 23-1/2 psi	Silicone, open cell, sponge	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type T Grade TO
Air, compression deflection	-67	5	Deflection change, + 5%					
Air, heat aging	302	22	Deflection change, + 5%					
Air, indent, defl @ 25% defl	Ambient	-	Available in defl range 7-36 lb/50 sq. in	Urethane, open cell, foam	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type U Grades UC & UU
Air, compression deflection	-40	5	F1 suffix, defl change, 100% max.					
Air, compression deflection	220	3	Deflection change, 20% max.					
Air, heat aging	257	22	A2 suffix, defl. change, + 20%					
Air, indent defl @ 25% defl.	Ambient	-	Available in defl range 2-205 lb/50 sq. in	PVC, open cell, foam	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type V Grades VC & VU
Air, compression deflection	-40	5	F1 suffix, defl. change, 100% max					
Air, oven aging	212	22	Deflection change, + 20%					
ASTM #3 petroleum oil	158	22	E suffix, Vol change, +10 to +60%					
Plane	-	-	Self extinguishing					
Air, comp. defl @ 25% defl	Ambient	-	Available in defl range 1-1/2 to 17 psi.	PVC, open cell foam	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type V Grade VO
Air, compression deflection	-40	5	F1 suffix, defl change, 100% max.					
Air, indent. defl. ASTM #3 petroleum oil	212	22	Defl change, + 20%					
Plane	158	22	E suffix, Vol. change, +10 to +60%					
	-	-	Self extinguishing					
Air, comp. defl. @ 25% defl.	Ambient	-	Available in defl. range 1/2 to 23-1/2 psi.	PVC, closed cell, foam	9320	9320	Classification System and Tests for Cellular Elastomeric Materials	
Air, compression deflection	-	-	Self extinguishing					

MIL-HDK-699b(14R)

SPECIFICATION TEST CONDITIONS			ELASTOMER		SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
Air, original properties	Ambient	-	Natural or Syn., open cell	7210	Cushions, Chair, Sponge-Rubber and Synthetic Rubber	ZZ-C-00766 Class 1
Air, comp. defl.	Ambient	-				
Oxygen, aging	158	120				
Air, original properties	Ambient	-	Natural or Syn., closed cell	7210	Cushions, Chair, Sponge-Rubber and Synthetic Rubber	ZZ-C-00766 Class 2
Air, comp. defl.	Ambient	-				
Oxygen, aging	158	120				
(Test on Elastometer only)						
Air, compression deflection	158	70	Natural or Syn.	7220	Cushion (Under lay) Carpet and Rug, Cellular Rubber	ZZ-C-00811 Types I and II Class 1
Aging, oven	158	166				
Compression set	158	22				
Air, compression deflection	158	70	Natural or Syn.	7220	Cushion (Under lay) Carpet and Rug, Cellular Rubber	ZZ-C-00811 Types I and II Class 2
Aging, oven	158	166				
Compression set	158	22				
Air, compression deflection	158	70	Natural or Syn.	7220	Cushion (Under lay) Carpet and Rug, Cellular Rubber	ZZ-C-00811 Types I and II Class 3
Aging, oven	158	166				
Compression set	158	22				
Air, compression stiffness	Ambient	-	Strain @ 40 psi., 0.75 in/in	8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Packaging Uses)	PPP-C-850 Class 1 Types I and II
Air, mandrel bend	-65	24				
Air, shrinkage	165	24				
Water	Ambient	24	Strain @ 40 psi., 0.71 in/in	8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Packaging Uses)	PPP-C-850 Class 2 Types I and II
Air, compression stiffness	Ambient	-				
Air, mandrel bend	-65	24				
Air, shrinkage	165	24	Strain @ 40 psi., 0.62 in/in	8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Packaging Uses)	PPP-C-850 Class 3 Types I and II
Water	Ambient	24				
Air, compression stiffness	Ambient	-				
Air, mandrel bend	-65	24	Strain @ 40 psi., 0.64 in/in	8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Packaging Uses)	PPP-C-850 Class 4 Types I and II
Air, shrinkage	165	24				
Water	Ambient	24				

MIL-HDK-699B(MR)

SPECIFICATION TEST CONDITIONS			ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.					
(All Grades Covered in MIL-STD-670, Type R, Grades RC and RU)						Latex Foam Rubbers	ASTM D 1055
(All Grades Covered in MIL-STD-670, Type R, Grades RO, RE, and Type S)						Sponge and Expanded Cellular Rubber Products	ASTM D 1056
(All Grades Covered in MIL-STD-670, Type U)						Flexible Urethane Foam	ASTM D 1564 ¹
(All Grades Covered in MIL-STD-670, Under Grades VC, VU and VO)						Flexible Foams Made From Polymers or Copolymers of Vinyl Chloride	ASTM D 1565
(All Grades Covered in MIL-STD-670, Under Grade VE)						Sponge Made From Closed Cell Poly (Vinyl Chloride) or Copolymers Thereof	ASTM D 1667
Air, original properties Air, comp.defl. @ 50% defl.	Ambient Ambient	- 0.17	Density, 40 lb/cu. ft. min. Available in Defl. range 50 to 1500 psi natural sponge	Synthetic or		Performed Expansion Joint Fillers For Concrete Paving and Structural Construction	ASTM D 1752 Type I
(All Grades Covered in MIL-STD-670)					9320	Cellular Elastomeric Materials, Fabricated Parts	MIL-C-3133
Air, original properties Air, comp. defl. @ 25% defl. Air, ASTM D736 Air, comp. set @ 50% defl.	Ambient 78 -130 212	- - 5 22	Density, 0.020 lb/cu. in. max. Deflection, 6 to 14 psi. No cracks 60% max.	Closed cell		Silicone Rubber Sponge, Medium Low Temperature	AMS 3193
Air, original properties Air, comp. defl. @ 25% defl. Air, ASTM D736 Air, comp. set @ 50% defl.	Ambient 78 -130 212	- - 5 22	Density, 0.030 lb/cu. in. max. Deflection, 12-30 psi. No cracks 60% max.	Closed cell		Silicone Rubber Sponge, Closed Cell, Firm, Extreme Low Temperature	AMS 3194
Air, original properties Air, comp. defl. @ 25% defl. Air, ASTM D736 Air, comp. set @ 50% defl.	Ambient 78 -100 212	- - 5 22	Density, 0.020 lb/cu. in. max. Deflection, 6 to 14 psi. No cracks 60% max.	Closed cell		Silicone Rubber Sponge, Closed Cell - Medium	AMS 3195

¹ Document cancelled. Use ASTM D3574.

¹ Document cancelled. Use ASTM D3574.

MIL-HDK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS					
Air, original properties	Ambient	-	Density 0.030 lb/cu. in. max.	Closed cell			Silicone Rubber Sponge, Closed Cell - Firm	AMS 3196
Air, comp. defl. @ 25% defl.	78	-	Deflection, 12 to 20 psi.					
Air, ASTM D736	-100	5	No cracks					
Air, comp. set @ 50 defl.	212	22	60% max.	Open cell			Sponge, Chloroprene Rubber, Soft	AMS 3197
Air, comp. defl. @ 25% defl.	78	-	Deflection, 1 to 4 psi.					
Air, oven aging	212	22	Deflection change, -5 to +30%					
Air, comp. defl. @ 25% defl.	78	-	Deflection, 6 to 13 psi.	Open cell			Sponge, Chloroprene Rubber, Medium	AMS 3198
Air, oven aging	212	22	Deflection change, -5 to +30%					
Air, comp. defl. @ 25% defl.	78	-	Deflection, 15 to 22 psi.	Open cell			Sponge, Chloroprene Rubber, Firm	AMS 3199
Air, oven aging	212	22	Deflection change, -5 to +30%					
Air, indent. defl. @ 25% defl.	Ambient	-	Deflection, 50 to 80 lb/50 sq. in.				Flexible Polyurethane Foam, Open Cell, Medium Flexibility 2.5 lb/cu. ft.	AMS 3570
Air, compression deflection	-40	5	Thickness change, -20% max.					
Air, comp. defl. @ 25% defl.	212	48	Thickness change, -12% max.					
Flame	-	-	Self extinguishing in 3 sec.					
Air, original properties	Ambient	-	Density, 8.5 lb/cu. ft.					
Air, comp. defl. @ 25% defl.	77	-	Deflection, 5 psi.	Natural or SBR sponge	5340		Plastic Sheet - Cellular, Shock Absorbing, (Closed Cell, Foamed Modified Vinyl Sheet)	AMS 3635
Air, oven aging	160	168	No loss of properties					
Flame	-	-	Self burning 5 sec. max.					
(All Grades Covered in MIL-R-6130 Type II, Grade A Med.)								
Air, original properties	Ambient	-	Available in density range 0.0050 to 0.0069 lb/cu. in./in.	Chloroprene	5340		Bumpers, Rubber, Duplex Round	MIL-B-4792 Type II
Air, indent. defl.	Ambient	-	Available in defl. range to 10 to 55 psi.					
Air, oven aging	212	70	Deflection change, + 15%					
Flame	-	-	Self burning, 50 sec. max.	Chloroprene, open cell	9320	Yes	Rubber; Latex Foam Sponge	MIL-R-5001 Type I Grade A
Air, original properties	Ambient	-	Available in density range 0.0039 to 0.0058 lb/cu. in./in.					
Air, indent. defl. @ 25% defl.	Ambient	-	Available in defl. range 10 to 55 psi.					
Air, oven aging	212	70	Deflection change, + 15%	SBR, open cell	9320	Yes	Rubber, Latex Foam Sponge	MIL-R-5001 Type I Grade B
Flame	-	-						

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SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION			SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS		COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	
Air, original properties	Ambient	-	Available in density range 0.0039 to 0.0058 lb/cu in./in.		Natural, open cell	Yes	9320	Rubber, Latex Foam Sponge	MIL-R-5001 Type I Grade C
Air, indent. defl @ 25% defl	Ambient	-	Available in defl range 10 to 55 psi.						
Air, oven aging	212	70	Deflection change, $\pm 15\%$						
Air, original properties	Ambient	-	Available in density range 0.0060 to 0.0120 lb/cu in		Chloroprene, open cell	Yes	9320	Rubber, Latex Foam Sponge	MIL-R-5001 Type II Grade A
Air, indent defl @ 25% defl	Ambient	-	Available in defl. range 0.20 to 1/70 psi.						
Air, indentation deflection	-40	5	Deflection change, -70% max						
Air, oven aging	212	70	Deflection change, $\pm 15\%$						
Flame	-	-	Self burning, 50 sec. max.						
Air, original properties	Ambient	-	Available in density range 0.0045 to 0.0075 lb/cu. in		SBR, open cell	Yes	9320	Rubber, Latex Foam Sponge	MIL-R-5001 Type II Grade B
Air, indent. defl. @ 25% defl.	Ambient	-	Available in defl. range 0.20 to 1.70 psi.						
Air, indentation deflection	-40	5	Deflection change, -60% max.						
Air, oven aging	212	70	Deflection change, $\pm 15\%$						
Air, original properties	Ambient	-	Available in density range 0.0045 to 0.0075 lb/cu. in		Natural, open cell	Yes	9320	Rubber, Latex Foam Sponge	MIL-R-5001 Type II Grade C
Air, indent defl. @ 25% defl.	Ambient	-	Available in defl. range 0.20 to 1.70 psi.						
Air, indentation deflection	-40	5	Deflection change, -25% max						
Air, oven aging	212	70	Deflection change, $\pm 15\%$						
Air, comp defl @ 25% defl	Ambient	-	Available in defl. range 2 to 21 psi.		Chloroprene, open cell	Yes	9320	Rubber, Cellular, Chemically Blown	MIL-R-6130 Type I Grade A
Air, compression deflection	-42	5	Deflection change, -70% max						
Air, oven aging	212	70	Deflection change, -45 to +45% Volume change, -15 to +30%						
Air, comp defl @ 25% defl	Ambient	-	Available in defl range 2 to 21 psi.		SBR, open cell	Yes	9320	Rubber, Cellular, Chemically Blown	MIL-R-6130 Type I Grade B
Air, compression deflection	-42	5	Deflection change, -70% max						
Air, oven aging	212	70	Deflection change, -45 to +45%						
Air, compl defl @ 25% defl	Ambient	-	Available in defl range 2 to 21 psi		Natural, open cell	Yes	9320	Rubber, Cellular, Chemically brown	MIL-R-6130 Type I Grade C
Air, compression deflection	-67	5	Deflection change, -55% max.						
Air, oven aging	212	70	Deflection change, -45 to +45%						
Air, compl. defl. @ 25% defl	Ambient	-	Available in defl range 2 to 21 psi.		Chloroprene, closed cell	Yes	9320	Rubber, Cellular, Chemically brown	MIL-R-6130 Type II Grade A
Air, compression deflection	-24	5	Deflection change, -70% max						
Air, oven aging	212	70	Deflection change, -30 to +30% LASTM #2 petroleum oil			158	70	Volume change, -15 to +30%	
Water	75	22	Weight change, +5% max.						

MIL-HDK-6998(NR)

SPECIFICATION TEST CONDITIONS			ELASTOMER		SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED		
Air, compl. defl. @ 25% defl.	Ambient	-	Available in defl. range 2 to 21 psi.	SBR, closed cell	Rubber, Cellular, Chemically brown	MIL-R-6130 Type II Grade B
Air, compression deflection	-24	5	Deflection change, -70% max.	closed cell		
Air, oven aging	212	70	Deflection change, -30 to +30%			
Water	75	22	Weight change, +5% max.			
Air, compl. defl. @ 25% defl	Ambient	-	Available in defl. range 2 to 21 psi.	Natural, closed cell	Rubber, Cellular, Chemically brown	MIL-R-6130 Type II Grade C
Air, compression deflection	-67	5	Deflection change, -55% max.			
Air, oven aging	212	70	Deflection change, -30 to +30%			
Water	75	22	Weight change, +5% max.			
Air, original properties	Ambient	-	Tensile, 185 to 450 psi	Urethane	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type I Class 1
Air, oven aging	165	0.5	Tensile change, -30% max.			
Electricity	Ambient	-	Dielectric constant, 1.26 to 1.51			
Air, 100% relative humidity	100	240	Weight change, +1.8 to +6.5%			
Air, original properties	Ambient	-	Tensile, 185 to 450 psi.	Urethane	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type I Class 2
Air, oven aging	165	0.5	Tensile change, -30% max.			
Air, 100% relative humidity	100	240	Weight change, +1.8 to +6.5%			
Air, original properties	Ambient	-	Tensile, 130 to 330 psi.	Urethane	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type II Class 1
Air, oven aging	350	0.5	Tensile change, -30% max.			
Electricity	Ambient	-	Dielectric constant, 1.26 to 1.51			
Air, 100% relative humidity	100	240	Weight change, +1.8 to +6.5%			
Air, original properties	Ambient	-	Tensile, 130 to 330 psi	Urethane	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type II Class 2
Air, oven aging	350	0.5	Tensile change, -30% max			
Air, 100% relative humidity	100	240	Weight change, +1.8 to +6.5%			
(All Grades Covered in MIL-STD-670, Grades RE or RO)						
Air, original properties	Ambient	-	T, 60 psi. min, E, 50% min, D, 7 lb/cu ft.	Natural or SBR, closed cell	Fenders, Marine, Rubber-Filled	MIL-F-11435
Air, compression set	Ambient	22	12% max.			
Air, oven aging	200	96	T, 60 psi. min; E, 50% min			
Water	Ambient	48	Weight change, 50% max.			
Air, original properties	Ambient	-	T, 80 psi. min; E, 100% min, D, 7 lb/ft. ³	Vinyl, Nitrile or other rubber	Plastic Material	MIL-P-12420 Type I Class 1
Air, compression set	Ambient	22	20% max.			
Air, oven aging	200	96	T, 80 psi. min; E, 100% min.			
Water	Ambient	48	Weight change, 50% max.			
Air, original properties	Ambient	-	T, 80 psi. min; E, 100% min, D, 7 lb/ft. ³	Vinyl, Nitrile or other rubber	Plastic Material Cellular, Elastomeric	MIL-P-12420 Type I Class 2
Air, compression set	Ambient	22	20% max.			
Air, oven aging	200	96	T, 80 psi. min; E, 100% min.			
Water	Ambient	48	Weight change, 50% max.			

MIL-HDK-699B(NR)

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS		
Air, original properties	Ambient	-	Vinyl, Nitrile or other rubber	9330	9330	Plastic Material Cellular, Elastomeric	MIL-P-12420 Type I Class 3
Air, compression set	Ambient	22					
Air, oven aging	Ambient	96					
Water	Ambient	48	Vinyl, Nitrile or other rubber	9330	9330	Plastic Material Cellular Elastomeric	MIL-P-12420 Type II Class 4
Air, original properties	Ambient	-					
Air, mandrel bend	-40	-					
Air, oven aging	Ambient	96	Vinyl, Nitrile or other rubber	9330	9330	Plastic Material Cellular Elastomeric	MIL-P-12420 Type II Class 5
Water	Ambient	48					
Air, original properties	Ambient	-					
Air, mandrel bend	-40	-	Vinyl, Nitrile or other rubber	9330	9330	Plastic Material Cellular Elastomeric	MIL-P-12420 Type III
Air, oven aging	Ambient	96					
Water	Ambient	48					
Air, original properties	Ambient	-	SBR closed cell	2590	2590	Pads Cushioning; Personnel - Protection, Vehicular	MIL-P-14401 Class CS
Air, oven aging	Ambient	96					
Water	Ambient	48					
(Covered in MIL-STD-670 RE)			PVC closed cell	2590	2590	Pads Cushioning; Personnel - Protection, Vehicular	MIL-P-14401 Class VS
(Covered in MIL-STD-670 RE)							
(Covered in MIL-STD-670 RE)							
Air, comp. defl. @ 25% defl.	Ambient	-	Natural or chloroprene	2590	2590	Pads Cushioning; Personnel - Protection, Vehicular	MIL-P-14401 Class FR
Air, 180° bend	-65	-					
Water	-	24					
Flame	-	-	Closed cell	5970	5970	Insulation Sheet, Cellular Plastic; Thermal	MIL-I-4511
Air, comp. defl. @ 25% defl.	Ambient	-					
Air, oven aging	180	168					
Fuel oil	Ambient	70	9330	9330	9330	Plastic Material, Unicellular (sheet & tube)	MIL-P-15280 Form Y
Compression set	Ambient	70					
	Ambient	70					

MIL-HDK-699B (MR)

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION REQUIREMENTS		SPECIFIED OR COMMONLY USED		QPL ISSUED CLASS		SPECIFICATION TITLE		SPECIFICATION NUMBER	
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.													
Air, comp. defl. @ 25% defl	Ambient	-	Deflection, 3 to 6 psi							9330		Plastic Material, Unicellular (sheet & tube)		MIL-PI5280 Form S	
Air, mandrel bend	28	4	No cracking												
Fuel oil	Ambient	70	No softening or swelling												
Compression set	Ambient	-	24% max.												
Air, comp. defl. @ 25% defl.	70	-	Deflection, 2 psi.					Closed cell		5640		Insulation, Synthetic, Rubber-Like, Chemically Expanded, Cellular (Sheet Form)		MIL-I-16562	
Air, 180° bend	-50	-	No cracking												
Air, oven aging	140	168	Volume change, + 5% max.												
Petroleum oil	212	70	No swelling or softening												
Flame	-	-	Self burning, 2 sec. max.												
Air, comp. defl. @ 25% defl.	80	-	Available in defl. range 0.10 to 1.70 psi.					Natural, open cell		9320		Rubber, Cellular (Bonded Shredded)		MIL-R-172521 Class 1 Types I & II	
Air, compression deflection	-20	5	Deflection change, -70% max.												
Air, heat aging @ 60 psi.	260	2	No hardening or softening												
Flame	-	-	Self burning, 30 sec. max.												
Air, comp. defl. @ 25% defl	80	-	Available in defl. range 0.10 to 1.70 psi.					Natural, open cell		9320		Rubber, Cellular (Bonded Shredded)		MIL-R-172521 Class 2 Types I & II	
Air, compression deflection	-20	5	Deflection change, -70% max.												
Air, heat aging @ 60 psi.	260	2	No hardening or softening												
Air, original properties	Ambient	-	Density, 5.5 lb/cu. ft. max.					Polychloroprene		7210		Mattresses, Berth, Synthetic Sponge		MIL-M-18351	
Air, oven aging	212	70	Deflection change 20% max												
Flame	-	-	Rubber, Naval Shipboard												
Air, original properties	80	-	Available in density range 5.5 to 8.1 PCF					Chloroprene		9320		Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex)		MIL-R-20092 Type 1 Class 1	
Air, comp. defl. @ 25% defl.	70	-	Available in defl. range 5 to 55 psi.												
Air, oven aging	212	70	Deflection change, 15% max.												
Flame	-	-	Self burning, 30 sec. max.												
Air, original properties	80	-	Available in density range 5.5 to 8.1 PCF					Chloroprene		9320		Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex)		MIL-R-20092 Type 1 Class 4	
Air, comp. defl. @ 25% defl	70	-	Available in defl range 5 to 55 psi.												
Air, oven aging	212	70	Deflection change, 15% max												
Fire resistance	-	2	Flame 10 sec. max												
Air, original properties	Ambient	-	Available in density range 10-4 to 19.0 PCF					Chloroprene		9320		Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex)		MIL-R-20092 Type II Class 1	
Air, comp. defl.	70	-	Available in defl. range 0 to 20 to 1.70 psi												
Air, compression deflection	-20	5	Deflection range, -70% max												
Air, oven aging	212	70	Deflection Change, 15% max.												

1 Document cancelled. No replacement

MIL-HDK-699B (MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC CLASS		
Air, comp. defl. @ 25% defl.	70	-	Available in defl. range 0.20 to 1.70 psi.	Chloroprene	9320	9320	Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex)	MIL-R-20092 Type II Class 4
Air, compression deflection	-20	5	Deflection change, -70% max.					
Air, oven aging	212	70	Deflection change, 15% max.					
Fire resistance	-	2	Flame 10 sec. max.					
Air, 95% rel. humid. @ 60% strain	120	336	Stress change, \pm 10%	Urethane	8135	8135	Polyurethane Foam, Rigid or Flexible, For Packaging	MIL-P-26514 Class 1
Air, comp. set @ 20% strain	Ambient	4	+10% max.	Urethane	8135	8135	Polyurethane Foam, Rigid or Flexible, For Packaging	MIL-P-26514 Class 2
Air, 180° bend	-65	4	No cracks, tears or separations					
Air, 95% rel. humid	120	336	Stress change, \pm 10% max.					
Air, original properties	Ambient	-	Available in density range 2 to 12 lb/cu. ft.	Not known	8135	8135	Cushioning Material, Elastic Type, General	MIL-C-26861
Air, compression set	Ambient	4	15% max.					
Air, 95% rel. humid	120	336	Stress change, \pm 10%					
Air, original properties	Ambient	-	T, 15 psi, E, 200%; D, 2 lb/ft. ³	Polyether polyurethane, open cell	1660	1660	Seat Cushion Insert, Polyurethane Foam, Plastic, General Specification For	MIL-S-27332
Air, compression set	158	22	15% max.					
Air, oven aging	212	3	Weight change, 2% max.					
Autoclave humidity	220	3	Thickness change, -15% max.					
Air, original properties	Ambient	-	T, 800 to 1150 psi; E, 100 to 350%	Fluorosilicone	5330	5330	Rubber Fluorosilicone Elastomer, Oil & Fuel Resistant, Sheets, Strips & Molded Parts & Extruded Shapes	MIL-R-25988 Type II
Air, compression set	75	70	15% max.					
(Covered in MIL-R-5001)								
Air, original properties	Ambient	-	Density, 2.0 lb/cu. ft.	Natural, open cell	7210	7210	Mattress, Bed: Foam - Rubber, Ambulance Stretcher	MIL-M-40024
Water	Ambient	24	Weight change, 0.06 lb/cu. ft.					
Flame	-	-	Self extinguishing	Closed cell	9330	9330	Plastic Foam Insulation, Thermal	MIL-P-43110 ¹ Class 1

¹ Document cancelled. Use MIL-P-21929 or HH-I-530

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SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS		
Air, original properties	Ambient	-	Closed cell		9330	Plastic Foam Insulation, Thermal	MIL-P-431101 Class 2
Water	Ambient	-					
Flame	-	-					
Air, tensile strength	Ambient	-	Closed cell silicone		9320	Rubber, Sponge, Silicone Closed Cell	MIL-R-46089
Air, ASTM D736	-100	-					
Water	Ambient	24					
Air, density	Ambient	-	Silicone		9320	Silicone, Foam, Low- Density, Room Tempera- ture Vulcanizing	MIL-S-460902
Air, load deflection @ 3 psi.	Ambient	-					

1 Document cancelled. Use MIL-P-21929 or HH-I-530.
2 Document cancelled. No replacement.

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CLOTHING AND PROTECTIVE EQUIPMENT

SPECIFICATION TEST CONDITIONS			ELASTOMER		SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED	FSC CLASS		
Air, original properties	Ambient	-	T, 2500 psi min; E, 600% min.	Type of rubber	Rubber Insulating	ASTM D120
Air, oven aging	158	168	Change in T and E, -25% max.	not specified	Gloves	
Air, breakdown voltage	Ambient	-	20,000 to 30,000 volts, depending on class			
Air, hardness	Ambient	-	Cl, 1, 2&3, 60 to 75; Cl 5&6, 45 to 60	Natural or synthetic	8335 Heels; Rubber	ZZ-H-141
Air, oven aging	212	24	Hardness increase, 10 points max.			Classes 1, 2, 3, 5, and 6
Air, tensile strength	Ambient	-	Body, 1600 psi min; cuff, 1700 psi min	Type of rubber	Gloves, Rubber, Industrial	ZZ-G-381
Air, 3/4 ft. lb. impact	-20	-	No cracks	not specified		Type I
Oxygen, bomb aging	158	70	Tensile strength, 1500 psi min			
Sulfuric acid (15%)	75	46	Tensile strength, 1500 psi min			
Air, tensile strength	Ambient	-	Body, 1600 psi min; cuff, 1700 psi min	Type of rubber	Gloves, Rubber, Industrial	ZZ-G-381
Oxygen, bomb aging	158	70	Tensile strength, 1500 psi min	not specified		Type II
Isocetane/toluene, 70/30	Ambient	70	Tensile strength, 1000 psi min			
Air, tensile strength	Ambient	-	Body, 1600 psi min; cuff, 1700 psi min	Type of rubber	Gloves, Rubber, Industrial	ZZ-G-381
Oxygen, bomb aging	158	70	Tensile strength, 1500 psi min	not specified		Type III
Organic solvent mixture	Ambient	16	Tensile strength, 1500 psi min			
Air, original properties	Ambient	-	T, 2500 psi min; E, 700% min	Natural	Gloves; Rubber (For) Electrical Workers	ZZ-G-401
Air, oven aging	158	168	T and E change, -20% max		(For Use in Connection With Apparatus or Circuits Not Exceeding 3000 Volts to Ground)	
Air, tensile strength	Ambient	-	Gr A, 4000 psi min; Gr B, 3000 psi min	Natural	Gloves, Rubber: Surgeons'	ZZ-G-421
Oxygen, bomb aging @ 300 psi	158	96	Grade A, change in T, -25% max			
Oxygen, bomb aging @ 300 psi	158	06	Grade B, change in T, -25% max			
(Tests on rubber only)						
Air, original properties	Ambient	-	T, 1450 psi min, E, 350% min	Natural or synthetic rubber, cotton cloth	Overshoe, Rubber (Man's 5 Buckle Type)	MIL-O-836
Air, oven aging	212	16	Change in T and E, -25% max			
Air, original properties	Ambient	-	T, 1600 psi min; E, 350% min	Natural or synthetic	Rubber Insulator	ASTM #1049
Air, tension set	Ambient	-	7% max		Hoods (Proof Test	
Air, dielectric breakdown	Ambient	0.05	No breakdown @ 20,000 volts		20,000 Volts, 3 minutes)	

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SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION REQUIREMENTS		SPECIFICATION TITLE		SPECIFICATION NUMBER	
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	COMMONLY USED	QPL ISSUED CLASS	FSC						
Air, original properties	Ambient	-	Natural	4240	4240	Faceblanks, Field Protective Mask, Natural Rubber; General Specification				MIL-F-10135	
Air, tear strength	Ambient	-									
Air, oven aging	158	168									
Air, original properties	Ambient	-	Natural	4240	4240	Faceblanks, Field Protective Mask				MIL-F-0010135 (MU)	
Air, tear strength	Ambient	-									
Air, oven aging	158	168									
Air, original properties	Ambient	-	Butyl	8415	8415	Gloves Toxicological Agents, Protective				MIL-G-12223	
Air, 0.75 ft. lb. impact	-20	1									
Air, oven aging	212	48									
Liquid mustard, penetration	100	-									
Air, original properties	Ambient	-	Type of rubber not specified	1660	1660	Mask, Oxygen and Smoke, Full Face				MIL-M-19417	
Air, oven aging	212	72									
Air, compression set	212	72									
Ozone, 1000 pphm	100	1									
(Tests on rubber only)											
Air, original properties	Ambient	-	Silicone	Yes	1660	Mask, Oxygen, MBU-5/p				MIL-M-27274	
Air, oven aging	212	24									
Air, original properties	Ambient	-	Natural or synthetic	8335	8335	Soles, Rubber, Shoe				MIL-S-40043 Classes 1, 2 and 5	
Air, oven aging	212	24									
Air, original properties	Ambient	-	Synthetic rubber	8335	8335	Soles, Rubber, Shoe				MIL-S-40043 Classes 3, 4 and 6	
Air, oven aging	212	24									
Isooctane/toluene, 70/30	74	46									
(Tests on rubber only)											
Air, original properties	Ambient	-	Type of rubber not specified	8430	8430	Boots, Insulated, Cold Weather, Rubber (Wet-Cold, Dry-Cold)				MIL-B-41816	
Air, oven aging	212	0.08									
Air, original properties	Ambient	-	Natural	4240	4240	Faceblank, CI7				MIL-F-50070	
Air, oven aging	158	168									
Air, original properties	Ambient	-	Natural	4240	4240	Faceblank, Protective Mask, CI2R4				MIL-F-51109	
Air, oven aging	158	168									

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SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS		
Air, original properties	Ambient	-	T, 1500 psi min, E, 400% min, H, 55 + 5	EPDM Silicone, Tube and gaskets		4240	Rubber Fabricated Products for M171A1 Mask	MIL-R-51283
Compression set	155	22	25% max					
Low temp impact	-67		pass					
Air, original properties	Ambient	-	T, 3500 psi min; E, 750% min	Natural		8415	Gloves, Radioactive Contaminants Protective	MIL-G-82242
Air, oven aging	158	72	T, 2800 psi min, E, 600% min					
Water	158	46	T, 2100 psi min; E, 600% max					
Water	158	46	Volume change, +15% max					
(Tests on rubber only)								
Air, original properties	Ambient	-	T, 1200 psi min; E, 600% min	Flannel coated with chloroprene		8415	Gloves, Cloth, Vinyl Dipped, General Purpose	MIL-G-82253 Type I
Air, oven aged	194	22	T, 1000 psi min; E, 500% min					
Water	194	22	Max change: T, -25%; E, -15%					
(Tests on PVC only)								
Air, original properties	Ambient	-	T, 700 psi min; E, 350% min	Flannel coated with PVC		8415	Gloves, Cloth, Vinyl Dipped, General Purpose	MIL-G-82253 Type II
Air, oven aged	194	22	T, 600 psi min; E, 300% min					
Water	194	22	Max change: T, -25%; E, -15%					

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COATED FABRICS

SPECIFICATION TEST CONDITIONS				CONSTRUCTION			SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER WEIGHT THICK, OF COMPONENTS OZ/YD ² INCH	FSC	SPECIFICATION TITLE	
Air, original properties	Ambient	-	Permanent set, 8% max	Cotton yarn and	8305	Webbing, Textile, (Cotton, Elastic)	JJ-W-155
Air, low temperature set	-25	72	Permanent set, 35% max	natural or synthetic rubber			
Air, low temperature elong.	-40	2	Elongation, 10% min	strands			
Air, oven aging	300	2	Permanent set, 20% max				
Air, inflation @ 3 psi	Ambient	0.08	No leakage	Cotton sheet	7210	Pillows; Air, Rubber and Synthetic Rubber	22-P-351 ¹
Air, breaking strength	Ambient	-	55 to 65 pounds, min	coated with natural, SBR, chloroprene or butyl			
Oxygen, bomb aging @ 300 psi	158	240	No softening or stiffening	Natural, synthetic or PVC	7210	Blankets; Rubber and Synthetic-Resin	22-B-426 ¹
Ethyl alcohol	Ambient	2	No stickiness or hardening	coated fabric			
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Nat. or syn.	8305	Cloth, Coated (Rubber and Plastic) and Plastic Sheetting for Hospital Use	22-C-450 Type I
Air, oven aging	158	166	No deterioration	Cotton or syn.			
Steam, sterilization	250	0.3	No deterioration	Nat. or syn. Composite	0.015		
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	PVC	8305	Cloth, Coated (Rubber and Plastic) and Plastic Sheetting for Hospital Use	22-C-450 Type II
Steam, sterilization	250	0.3	No deterioration	Cotton or syn. PVC Composite	0.015		
Air, tearing strength (For other properties see I-P-375)	Ambient	-	200 lbs/inch of thickness, min	PVC sheeting	8305	Cloth, Coated (Rubber and Plastic) and Plastic Sheetting Per Hospital Use	22-C-450 Type III
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 40 lbs	Cotton		Cloth, Coated: Pyroxylin Coated	CCC-C-501 ¹ Type I, Class 1
Air, breaking strength	Ambient	-	Warp, 40 lbs; Fill, 35 lbs	Cotton	8305	Cloth, Coated: Pyroxylin Coated	CCC-C-501 ¹ Type I Class 2
Air, breaking strength	Ambient	-	Warp, 85 lbs; Fill, 75 lbs	Cotton	8305	Cloth, Coated. Pyroxylin Coated	CCC-C-501 ¹ Type I, Class 3

¹ Document cancelled without replacement

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD ²	THICK, INCH	QPL ISSUED CLASS		
Air, breaking strength	Ambient	-	Warp, 110 lbs; Fill, 100 lbs	Cell, nitrate	3.65		8305	Cloth, Coated:	CCC-C-5011
				Cotton	8.20			Pyroxylin Coated	Type II, Class I
				Cell, nitrate Composite	3.65				
				Composite	15.50				
MIL-F-16884, Diesel Oil	73	22	No delamination	Cotton	8.0		8305	Cloth, Duck, Cotton,	MIL-C-882
MIL-F-16884, Diesel Oil	73	46	Volume change, 25% Max.	Chloroprene				Synthetic Rubber	Class I
Culture, mildew resistant	84	336	No fungus growth	Multilayer Laminate		1/4- 1		Impregnated and Laminated, Oil Resistant	
MIL-F-16884, Diesel Oil	73	22	No delamination	Cotton	8.0		8305	Cloth, Duck, Cotton,	MIL-C-882
MIL-F-16884, Diesel Oil	73	46	Volume change, 25% Max.	Nitrile				Synthetic Rubber	Class II
Culture, mildew resistant	84	336	No fungus growth	Multilayer Laminate		1/4- 1		Impregnated and Laminated, Oil Resistant	
Air, breaking through	Ambient	-	Warp, 70 lbs	Silicone Glass	1.43	0.002		Fully Cured Silicone Rubber-Coated Glass	ASTM D 1931
				Silicone	4.80	0.005		Fabric and Tapes for Electrical Insulation	
Air, breaking strength	Ambient	-	Warp, 125 lbs	Silicone Glass	3.16	0.004		Fully Cured Silicone Rubber-Coated Glass	ASTM D 1931
				Silicone Composite	7.68	0.007		Fabric and Tapes for Electrical Insulation	
Air, breaking strength	Ambient	-	Warp, 125 lbs	Silicone Glass	3.16	0.004		Fully Cured Silicone Rubber-Coated Glass	ASTM D 1931
				Silicone Composite	10.88	0.010		Fabric and Tapes for Electrical Insulation	
Air, breaking strength	Ambient	-	Warp, 250 lbs	Silicone Glass	6.00			Fully Cured Silicone Rubber-Coated Glass	ASTM D 1931
				Silicone Composite	14.40	0.015		Fabric and Tapes for Electrical Insulation	
Air, breaking strength	Ambient	-	Warp, 55 lbs min; Fill, 45 lbs min	Cotton cloth coated with synthetic rubber			8340	Tarpaulins, Waterproof, Special Purpose, 10 Feet Long By 8 Feet Wide	MIL-T-1956
Air, burst test	Ambient	-	25 psi min						
Air, burst test	-20	0.5	25 psi min						
Air, breaking strength	Ambient	-	Warp, 40 lbs; Fill, 40 lbs	Chloroprene				Synthetic Rubber Sheet, Cotton Fabric Reinforced. Weather Resistant - Chloroprene Type	AMS 3270
Air, ASTM D746	-20	0.167	No cracks	Cotton					
Air, oven aging	212	70	Flexible, no deterioration	Chloroprene					
Isooctane	80	70	Vol. change, +20% Max.	Composite	8.0	0.008			
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						

1 Document cancelled without replacement

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION				SPECIFICATION	NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER WEIGHT OF COMPONENTS	THICK, INCH	QPL ISSUED CLASS	FSC		
Air, breaking strength	Ambient	-	Warp, 37 lbs; Fill, 19 lbs	Chloroprene	1.87			Synthetic Rubber Sheet,	AMS 3270
Air, ASTM D746	-20	0.167	No cracks	Cotton	6.25			Cotton Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	Flexible, no deterioration	Chloroprene	1.87				
Isooctane	80	70	Vol. change, +20% Max.	Composite	9.99	0.010			
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 90 lbs; Fill, 90 lbs	Chloroprene				Synthetic Rubber Sheet,	AMS 3270
Air, ASTM D746	-20	0.167	No cracks	Cotton				Cotton Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	Flexible, no deterioration	Chloroprene	27.0	0.025			
Isooctane	80	70	Vol. change, +20% Max.	Composite					
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 250 lbs; Fill, 170 lbs	Chloroprene				Synthetic Rubber Sheet,	AMS 3270
Air, ASTM D746	-20	0.167	No cracks	Cotton				Cotton Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	Flexible, no deterioration	Chloroprene	35.0	0.035			
Isooctane	80	70	Vol. change, +20% Max.	Composite					
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 250 lbs; Fill, 170 lbs	Chloroprene				Synthetic Rubber Sheet,	AMS 3270
Air, ASTM D746	-20	0.167	No cracks	Cotton				Cotton Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	Flexible, no deterioration	Chloroprene	54.0	0.050			
Isooctane	80	70	Vol. change, +20% Max.	Composite					
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 35 lbs; Fill, 35 lbs	Chloroprene				Synthetic Rubber Sheet,	AMS 3273
Air, ASTM D746	-65	0.167	No cracks	Nylon				Nylon Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	No deterioration	Chloroprene		0.008			
Isooctane	80	70	Vol. change, -5% to +20%	Composite					
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 65 lbs; Fill, 60 lbs	Chloroprene				Synthetic Rubber Sheet,	AMS 3273
Air, ASTM D746	-65	0.167	No cracks	Nylon				Nylon Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	No deterioration	Chloroprene		0.010-0.025			
Isooctane	80	70	Vol. change, -5% to +20%	Composite					
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 300 lbs	Chloroprene				Synthetic Rubber Sheets,	AMS 3273
Air, ASTM D746	-65	0.167	No cracks	Nylon				Nylon Fabric Reinforced. Weather Resistant - Chloroprene Type	
Air, oven aging	212	70	No deterioration	Chloroprene		0.030-0.050			
Isooctane	80	70	Vol. change, -5% to +20%	Composite					
ASTM #3 petroleum oil	212	70	Vol. change, +20% to +65%						
Air, breaking strength	Ambient	-	Warp, 35 lbs; Fill, 35 lbs	Nitrile				Synthetic Rubber Sheet,	AMS 3274
Air, ASTM D746	-65	0.167	No cracks	Nylon				Nylon Fabric Reinforced. Aromatic Fuel Resistant	
Air, oven aging	212	70	No deterioration	Nitrile		0.008			
Isooctane	80	24	Vol. change, -20% to +10%	Composite					
70/30 isooctane/toluene	80	24	Vol. change, +35% Max						

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER WEIGHT OF COMPONENTS	THICK, INCH	QPL ISSUED CLASS	FSC		
Air, breaking strength Air, ASTM D746	Ambient -65	- 0.167	Warp, 65 lbs, Fill, 60 lbs No cracks	Nitrile				Synthetic Rubber Sheet, Nylon Fabric Rein- forced. Aromatic Fuel Resistant	AMS 3274
Air, oven aging	212	70	No deterioration	Nylon					
Isooctane	80	24	Vol change, -25 to 0%	Nitrile					
70/30 isooctane/toluene	80	24	Vol change, +35% Max.	Composite	0.010-				
					0.017				
Air, breaking strength Air, ASTM D746	Ambient -65	- 0.167	Warp, 65 lbs; Fill, 60 lbs No cracks	Nitrile				Synthetic Rubber Sheet, Nylon Fabric Rein- forced. Aromatic Fuel Resistant	AMS 3274
Air, oven aging	212	70	No deterioration	Nylon					
Isooctane	80	24	Vol. change, -25 to 0%	Nitrile					
70/30 isooctane/toluene	80	24	Vol. change, +40% Max	Composite	0.020+				
					0.030				
Air, breaking strength Air, ASTM D746	Ambient -65	- 0.167	Warp, 300 lbs, Fill, 300 lbs No cracks	Nitrile				Synthetic Rubber Sheet, Nylon Fabric Rein- forced. Aromatic Fuel Resistant	AMS 3274
Air, oven aging	212	70	No deterioration	Nylon					
Isooctane	80	24	Vol change, -25 to 0%	Nitrile					
70/30 isooctane/toluene	80	24	Vol. change, +40% Max.	Composite	0.025+				
					0.050				
Air, breaking strength Air, ASTM D736	Ambient -70	- 5	Warp, 70 lbs; Fill, 70 lbs No cracks	Silicone				Silicone Rubber Sheet, Glass Fabric Rein- forced	AMS 3315
Air, oven aging	450	24	No deterioration	Glass	3.16	0.004			
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Silicone					
				Composite	0.010				
Air, breaking strength Air, ASTM D736	Ambient -70	- 5	Warp, 200 lbs, Fill, 150 lbs No cracks	Silicone				Silicone Rubber Sheet, Glass Fabric Rein- forced	AMS 3315
Air, oven aging	450	24	No deterioration	Glass	6.00	0.007			
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Silicone					
				Composite	0.017				
Air, breaking strength Air, ASTM D736	Ambient -70	- 5	Warp, 400 lbs; Fill, 300 lbs No cracks	Silicone				Silicone Rubber Sheet, Glass Fabric Rein- forced	AMS 3315
Air, oven aging	450	24	No deterioration	Glass	12.4	0.015			
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Silicone					
				Composite	0.032				
Air, breaking strength Air, ASTM D736	Ambient -70	- 5	Warp, 800 lbs; Fill, 600 lbs No cracks	Silicone				Silicone Rubber Sheet, Glass Fabric Rein- forced	AMS 3315
Air, oven aging	450	24	No deterioration	Glass	25.9	0.027			
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Silicone					
				Composite	0.050				
Air, breaking strength Air, ASTM D736	Ambient -70	- 5	Warp, 300 lbs; Fill, 300 lbs No cracks	Silicone				Silicone Rubber Sheet, Glass Fabric Rein- forced. Heat and Weather Resistant (60-80)	AMS 3320
Air, oven aging	450	24	180° bend, no cracks	Glass	25.9	0.027			
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Silicone					
				Composite	1/16-				
					1/8				

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION				FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ./YD ²	THICK, INCH	QPL ISSUED			
Air, breaking strength	Ambient	-	Warp, 125 lbs; Fill, 100 lbs	PVC	0.85				Fabric, Glass, Vinyl Coated, Porous	AMS 3663
Air, mandrel bend	-65	5	No cracks or delamination	Glass	2.80					
Air, oven aging	200	24	No deterioration	PVC	0.85					
Flame	-	-	Flame, 1 sec. Max.	Composite	4.50	0.004				
Air, breaking strength	Ambient	-	Warp, 160 lbs; Fill, 150 lbs	PVC	1.03				Fabric, Glass, Vinyl Coated, Porous	AMS 3663
Air, mandrel bend	-65	5	No cracks or delamination	Glass	3.93	0.005				
Air, oven aging	200	24	No deterioration	PVC	1.03					
Flame	-	-	Flame, 1 sec. Max.	Composite	5.99	0.006				
Air, breaking strength	Ambient	-	Warp, 225 lbs; Fill, 150 lbs	PVC	0.81				Fabric, Glass, Vinyl Coated, Porous	AMS 3663
Air, mandrel bend	-65	5	No cracks or delamination	Glass	5.37	0.006				
Air, oven aging	200	24	No deterioration	PVC	0.81					
Flame	-	-	Flame, 1 sec. Max.	Composite	6.99	0.008				
Air, breaking strength	Ambient	-	Warp, 70 lbs; Fill, 40 lbs	PVC	1.53				Fabric, Glass, Vinyl Coated	AMS 3664
Air, mandrel bend	-65	5	No cracks or delamination	Glass	1.43	0.0020				
Air, oven aging	200	24	No deterioration	PVC	1.53					
Flame	-	-	Flame, 1 sec. Max.	Composite	4.49	0.0045				
Air, breaking strength	Ambient	-	Warp, 125 lbs; Fill, 100 lbs	PVC	1.10				Fabric, Glass, Vinyl Coated	AMS 3664
Air, mandrel bend	-65	5	No cracks or delamination	Glass	2.80	0.004				
Air, oven aging	200	24	No deterioration	PVC	1.10					
Flame	-	-	Flame, 1 sec. Max.	Composite	5.00	0.005				
Air, breaking strength	Ambient	-	Warp, 190 lbs; Fill, 140 lbs	PVC	1.97				Fabric, Glass, Vinyl Coated	AMS 3664
Air, mandrel bend	-65	5	No cracks or delamination	Glass	4.06	0.005				
Air, oven aging	200	24	No deterioration	PVC	1.97					
Flame	-	-	Flame, 1 sec. Max.	Composite	8.00	0.007				
Air, breaking strength	Ambient	-	Warp, 225 lbs; Fill, 195 lbs	PVC	2.81				Fabric, Glass, Vinyl Coated	AMS 3664
Air, mandrel bend	-65	5	No cracks or delamination	Glass	5.37	0.0065				
Air, oven aging	200	24	No deterioration	PVC	2.81					
Flame	-	-	Flame, 1 sec. Max.	Composite	10.99	0.011				
Air, breaking strength	Ambient	-	Warp, 215 lbs; Fill, 120 lbs	Chloroprene	21.5				8305 Cloth, Coated, Asbestos MIL-C-7637 Type I	
Air, creased 180°	-20	0.5	No cracks or flaking	Asbestos	29.0					
Air, mandrel bend	260	24	No cracks	Chloroprene	21.5					
Flame	-	-	No flame, no glow	Composite	72.0	0.070				

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION				FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT OZ/YD ²	THICK, INCH	QPL ISSUED			
Air, breaking strength	Ambient	-	Warp, 165 lbs; Fill, 150 lbs	Chloroprene	23.0			8305	Cloth, Coated, Asbestos	MIL-C-7637
Air, creased 180°	-20	0.5	No cracks or flaking	Asb. and wire	30.0					Type II
Air, mandrel bend	260	24	No cracks	Chloroprene	23.0					
Flame	-	-	No flame, no glow	Composite	76.0	0.070				
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Nylon	1.1	0.0032	Yes	8305	Cloth, Coated, Rubber	MIL-C-7966
Air, creased 180°	-65	0.5	No cracking or flaking	Nat. or syn.	1.9				Nylon Base	Variety S
Air, blocking	200	0.5	No blocking	Composite	3.0					
Air, breaking strength	Ambient	-	Warp, 200 lbs; Fill, 150 lbs	Nylon	3.50		Yes	8305	Cloth, Coated, Rubber	MIL-C-7966
Air, creased 180°	-65	0.5	No cracking or flaking	Nat. or syn.	3.25				Nylon Base	Variety P
Air, blocking	200	0.5	No blocking	Composite	6.75					
Air, Mullen burst	Ambient	-	125 points	Syn. rubber				8305	Cloth, Coated, Nylon	MIL-C-8068
Air, mandrel bend	-67	24	Flexible	Nylon	1.6	0.0042			Rubber Coated, Fuel-Resistant	Type I
Air, oven aging	212	70	No deterioration	Syn. Rubber						
Isocetane	75	70	Mullen burst, 125 pts.	Composite		0.010-				
70/30 isocetane/toluene	75	70	Mullen burst, 125 pts.			0.020				
Air, Mullen burst	Ambient	-	500 points	Syn. rubber				8305	Cloth, Coated, Nylon	MIL-C-8068
70/30 isocetane/toluene	-65	24	Flexible	Nylon	5.5	0.013			Rubber Coated, Fuel-Resistant	Type II
Air, oven aging	212	70	No deterioration	Syn. Rubber						
Isocetane	75	70	Mullen burst, 500 pts.	Composite		0.025+				
70/30 isocetane/toluene	75	70	Mullen burst, 500 pts.							
Air, Mullen burst	Ambient	-	125 points	Syn. rubber				8305	Cloth, Coated, Nylon	MIL-C-8068
Air, mandrel bend	-67	24	Flexible	Nylon	1.6	0.0042			Rubber Coated, Fuel-Resistant	Type III (uncured)
Air, oven aging	212	70	No deterioration	Syn. Rubber						
Isocetane	75	70	Mullen burst, 125 pts.	Composite		0.012-				
70/30 isocetane/toluene	75	70	Mullen burst, 125 pts.			0.018				
Air, breaking strength	Ambient	-	Warp, 190 lbs; Fill, 140 lbs	Cotton	6.5			8305	Cloth, laminated, Sateen, Rubberized	MIL-C-9074
Air, creased 180°	-40	0.5	No cracks	Nat. or syn.	10.5					
Oxygen, accelerated aging	158	192	Brk. strength, 15% loss Max.	Cotton Composite	6.5					
Air, breaking strength	Ambient	-	Warp, 90 lbs; Fill, 90 lbs	Nat. or syn.	1.6			8305	Cloth, laminated and Coated for Waterproof Containers	MIL-C-10351
Air, cantilever stiffness	-65	0.5	Flexible	Nylon						Type I
Air, blocking	180	0.5	No blocking	Nat. or syn.						
Weatherometer, break, strength	135	100	Warp, 70 lbs; Fill, 70 lbs	Nylon	1.6					
				Nat. or syn. Composite	9.3					

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SPECIFICATION TEST CONDITIONS			CONSTRUCTION			FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT THICK, INCH			
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 170 lbs	Nat. or syn	3.0	8305	Cloth, laminated and Coated for Waterproof Containers	MIL-C-10351 Type II
Air, cantilever stiffness	-65	0.5	Flexible	Nylon				
Air, blocking	180	0.5	No blocking	Nat. or syn.	3.0			
Weatherometer, break, strength	135	100	Warp, 160 lbs, Fill, 150 lbs	Nylon				
				Nat. or syn.	12.5			
				Composite				
(Tests on coated fabric)								
Air, breaking strength	Ambient	-	Warp, 72 lbs min; Fill,	Nylon cloth		8465	Mattress, Pneumatic	MIL-M-107471
Air, 180° crease	-70	5	52 lbs	coated with				
Air, burst test @ 40 psi	Ambient	-	No cracks	natural or				
			No leakage	synthetic rubber				
Air, breaking strength	Ambient	-	Warp, 140 lbs; Fill, 120 lbs	Silicone	6.0	8305	Cloth, Coated, Glass, Silicone Rubber Coated	MIL-C-10797
Air, cantilever stiffness	-60	4	Flexible	Glass	6.0			
Air, cantilever stiffness	600	4	Flexible	Silicone	6.0			
Flame	-	-	Flame, 13 sec Max.	Composite	18.0			
Air, breaking strength	Ambient	-	Warp, 80 lbs; Fill, 80 lbs	PVC	4.5	8305	Cloth, Coated, Cotton Vinyl Coated, Fire and Mildew Resistant	MIL-C-10799 Type I, Class 1
Air, mandrel bend	-40	4	No cracking or flaking	Cotton				
Air, blocking	180	0.5	No blocking	PVC	7.8			
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite				
Air, breaking strength	Ambient	-	Warp, 130 lbs; Fill, 75 lbs	PVC	4.5	8305	Cloth, Coated, Cotton Vinyl Coated, Fire and Mildew Resistant	MIL-C-10799 Type I, Class 3
Air, mandrel bend	-40	4	No cracking or flaking	Cotton				
Air, blocking	180	0.5	No blocking	PVC	10.0			
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite				
Air, breaking strength	Ambient	-	Warp, 160 lbs; Fill, 110 lbs	PVC	9.85	8305	Cloth, Coated, Cotton Vinyl Coated, Fire and Mildew Resistant	MIL-C-10799 Type II, Class 1
Air, mandrel bend	-40	4	No cracking or flaking	Cotton				
Air, blocking	180	0.5	Slight blocking	PVC	14.50			
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite				
Air, breaking strength	Ambient	-	Warp, 125 lbs; Fill, 120 lbs	PVC	8.25	8305	Cloth, Coated, Cotton Vinyl Coated, Fire and Mildew Resistant	MIL-C-10799 Type II, Class 3
Air, mandrel bend	-40	4	No cracking or flaking	Cotton				
Air, blocking	180	0.5	Slight blocking	PVC	12.00			
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite				
Air, breaking strength	Ambient	-	Warp, 210 lbs; Fill, 130 lbs	PVC	12.29	8305	Cloth, Coated, Cotton Vinyl Coated, Fire and Mildew Resistant	MIL-C-10799 Type II, Class 4
Air, mandrel bend	-40	4	No cracking or flaking	Cotton				
Air, blocking	180	0.5	Slight blocking	PVC	18.00			
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite				

1 Document cancelled Use MIL-M-43968

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION				FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD ²	THICK, INCH	QPL ISSUED			
Air, breaking strength	Ambient	-	Warp, 235 lbs; Fill, 175 lbs	PVC				8305	Cloth, Coated, Cotton	MIL-C-10799
Air, mandrel bend	-40	4	No cracking or flaking	Cotton	14.77				Vinyl Coated, Fire and	Type II
Air, blocking	180	0.5	Slight blocking	PVC					Mildew Resistant	Class 5
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite	22.00					
Air, breaking strength	Ambient	-	Warp, 80 lbs, Fill, 75 lbs	Chloroprene	2.5			8305	Cloth, Laminated:	MIL-C-11390
Weatherometer, break. strength	135	200	Loss 10% Max	Cotton	2.0				Cotton Balloon, 3 Ply,	
				Chloroprene	3.5				Air Retaining, Chloro-	
				Cotton bias	2.0				prene	
				Chloroprene	3.5					
				Cotton	2.0					
				Chloroprene	3.0					
				Composite	18.5					
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 170 lbs	Butyl	11.0			8305	Cloth, Coated, Butyl	MIL-C-12189
Air, creased 180°	-40	4	Flexible	Cotton	4.25				Coated, Toxicological	
Air, blocking	180	0.5	No blocking	Butyl	2.80				Agents, Protective	
Weatherometer, break, strength	155	100	Warp, 170 lbs, Fill, 160 lbs	Composite	12.25					
Mustard gas (liquid)	100	-	100 M to indicator change							
Air, breaking strength	Ambient	-	Warp, 225 lbs; Fill, 195 lbs	PVC	2.75			8305	Cloth, Glass, Vinyl	MIL-C-125261
Air, creased 180°	-40	4	No cracking or flaking	Glass	5.37	0.0065			Coated, Acid and	
Air, blocking	180	0.5	Slight blocking	PVC	8.00				Fuel Resistant	
Red fuming nitric acid	Ambient	0.05	No cracking or stiffening	Composite	16.12					
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Nylon	1.5			8305	Cloth, Coated, Nylon,	MIL-C-14366
Air, cantilever stiffness	30	4	Flexible	Butyral	2.0					
Air, blocking	200	0.5	No blocking	Composite	3.5					
Air, breaking strength	Ambient	-	Warp, 153 lbs; Fill, 135 lbs	Chloroprene	1.20			8305	Cloth, Nylon, Poly-	MIL-C-14505
Air, creased 180°	-20	96	No cracks	Nylon	3.15				chloroprene Coated (For	Class 3
Air, oven aging	158	96	Break. strength, 15% loss Max.	Chloroprene	1.20				Pneumatic Floating	Schedule B
				Composite	5.55				Equipment)	(vulcanized)
Air, breaking strength	Ambient	-	Warp, 350 lbs; Fill, 335 lbs	Chloroprene		0.010		8305	Cloth, Nylon, Poly-	MIL-C-14505
Air, creased 180°	-20	96	No cracks	Nylon	5.8				chloroprene Coated (For	Class 4
Air, oven aging	158	96	Break. strength, 15% loss Max.	Chloroprene		0.010			Pneumatic Floating	(vulcanized)
									Equipment)	
Air, breaking strength	Ambient	-	Warp, 400 lbs; Fill, 400 lbs	Chloroprene		0.014		8305	Cloth, Nylon, Poly-	MIL-C-14505
Air, creased 180°	-20	96	No cracks	Nylon	8.5	0.020			chloroprene Coated (For	Class 6
Air, oven aging	158	96	Break. strength, 15% loss Max	Chloroprene		0.014			Pneumatic Floating	(vulcanized)
				Composite		0.048			Equipment)	
Air, breaking strength	Ambient	-	Warp, 650 lbs, Fill, 650 lbs	Chloroprene		0.020		8305	Cloth, Nylon, Poly-	MIL-C-14505
Air, creased 180°	-20	96	No cracks	Nylon	13.3	0.029			chloroprene Coated (For	Class 7
Air, oven aging	158	96	Brk. strength, 15% loss Max.	Chloroprene		0.020			Pneumatic Floating	(vulcanized)
				Composite		0.069			Equipment)	

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SPECIFICATION TEST CONDITIONS				CONSTRUCTION			FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER	WEIGHT THICK, OZ/YD ² INCH	ISSUED CLASS			
Air, breaking strength	Ambient	-	Warp, 140 lbs; Fill, 120 lbs	Not known			8305	Cloth, Coated, Fire Resistant, Berth and Bedding Cover	MIL-C-15104 Type I
Air, creased 180°	0	2	No cracks	Cotton					
Air, oven aging	158	168	Brk. strength, 25% loss Max.	Not known Composite	25.0				
Air, breaking strength	Ambient	-	Warp, 135 lbs; Fill, 100 lbs	Not known			8305	Cloth, Coated, Fire Resistant, Berth and Bedding Cover	MIL-C-15104 Type II
Air, creased 180°	0	2	No cracks	Cotton					
Air, oven aging	158	168	Brk. strength, 25% loss Max.	Not known Composite	16.9				
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Chloroprene	1.5		8305	Cloth, Coated, and Webbing, Inflatable Boat, and Miscellaneous Use	MIL-C-17415 Type 1
Air, creased 180°	-20	94	No cracks	Nylon	1.0				
Air, blocking	180	0.5	No blocking	Chloroprene	2.5				
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	5.0				
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 165 lbs	Chloroprene	3.0		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 2, Class A
Air, creased 180°	-20	94	No cracks	Nylon	2.5				
Air, blocking	180	0.5	No blocking	Chloroprene	3.0				
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	8.5				
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 165 lbs	Chloroprene	1.5		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 2, Class B
Air, creased 180°	-20	94	No cracks	Nylon	2.5				
Air, blocking	180	0.5	No blocking	Chloroprene	2.8				
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	6.8				
Air, breaking strength	Ambient	-	Warp, 45 lbs; Fill, 45 lbs	Chloroprene	1.0		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 3
Air, creased 180°	-20	94	No cracks	Cotton bias	2.1				
Air, blocking	180	0.5	No blocking	Chloroprene	4.5				
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	7.6				
Air, creased 180°	-20	94	No cracks	Natural	2.1		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 4, Class A
Air, blocking	180	0.5	No blocking	Cotton	4.5				
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Natural Composite	8.5 15.0				
Air, creased 180°	-20	94	No cracks	Chloroprene	2.0		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 4, Class B
Air, blocking	180	0.5	No blocking	Cotton bias	4.5				
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Chloroprene Composite	3.5 10.0				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Chloroprene	1.5		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 5
Air, creased 180°	-20	94	No cracks	Nylon	5.4				
Air, blocking	180	0.5	No blocking	Chloroprene	16.5				
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	23.4				

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SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.		TYPE AND ORDER WEIGHT OF COMPONENTS	THICK, INCH				
Air, creased 180°	-20	94	No cracks	Chloroprene	6.0		8305	Cloth, Coated, and	MIL-C-17415
Air, blocking	180	0.5	No blocking	Nylon	9.5	2 1/4-3		Webbing, Inflatable	Type 6
				Nylon pile				Boat	
				Nylon					
Oxygen, accelerated aging	158	96	Brk strength, 15% loss Max.	Chloroprene Composite	6.0				
				Composite	21.5				
Air, breaking strength	Ambient	-	Warp, 165 lbs; Fill, 160 lbs	Natural	11.5		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Cotton	7.0			Webbing, Inflatable	Type 7,
Air, blocking	180	0.5	No blocking	Natural	11.5			Boat	Class A
Oxygen, accelerated aging	158	96	Brk strength, 15% loss Max.	Composite	30.0				
Air, breaking strength	Ambient	-	Warp, 165 lbs; Fill, 160 lbs	Chloroprene	12.5		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Cotton	7.0			Webbing, Inflatable	Type 7,
Air, blocking	180	0.5	No blocking	Chloroprene	12.5			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	32.0				
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Natural	2.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon bias	1.0			Webbing, Inflatable	Type 8,
Air, blocking	180	0.5	No blocking	Natural	3.5			Boat	Class A
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	6.5				
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Chloroprene	2.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon bias	1.0			Webbing, Inflatable	Type 8,
Air, blocking	180	0.5	No blocking	Chloroprene	3.5			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	6.5				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Chloroprene	12.5		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Chloroprene	12.5			Boat	Class A
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	30.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max.	Composite	33.4				
Air, breaking strength	Ambient	-	Warp, 360 lbs; Fill, 360 lbs	Natural	14.0		8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	5.4			Webbing, Inflatable	Type 9,
Air, blocking	180	0.5	No blocking	Natural	14.0			Boat	Class B
Oxygen, accelerated aging	158	96	Brk. strength, 15% loss Max						

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS			CONSTRUCTION			FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER	WEIGHT THICK, OZ/YD ² INCH			
Air, creased 180°	-20	94	No cracks	Chloroprene	5.0	8305	Cloth, Coated, and	MIL-C-17415
Air, blocking	180	0.5	No blocking	Nylon	2.0		Webbing, Inflatable	Type 11
				Chloroprene	6.0		Boat	
				Nylon	9.5			
				Nylon pile	2 1/4-3			
				Nylon				
				Chloroprene	6.0			
				Nylon	2.0			
				Chloroprene	5.0			
				Composite	35.5			
Air, creased 180°	-20	94	No cracks	Chloroprene	16.8	8305	Cloth, Coated, and	MIL-C-17415
Air, blocking	180	0.5	No blocking	Nylon	1.0		Webbing, Inflatable	Type 12
				Chloroprene	8.3		Boat	
				Nylon				
				Nylon pile	8.2			
				Nylon	2-2 1/4			
				Chloroprene	8.3			
				Nylon	1.0			
				Chloroprene	1.5			
				Composite	45.1			
Air, breaking strength	Ambient	-	Warp, 225 lbs, Fill, 225 lbs	Chloroprene	4.5	8305	Cloth, Coated, and	MIL-C-17415
Air, creased 180°	-20	94	No cracks	Nylon	3.1		Webbing, Inflatable	Type 13
Air, blocking	180	0.5	No blocking	Chloroprene	4.5		Boat	
Oxygen, accelerated aging	158	96	Brk. strength, 10% loss Max.	Composite	12.1			
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 170 lbs	Nylon	3.1	8305	Cloth, Coated; and	MIL-C-19002
Air, creased 180°	-40	96	No cracks	Chloroprene	4.2		Tape, Coated Cloth -	Type I
Air, blocking	200	0.5	No blocking	Composite	7.3		Chloroprene on Nylon,	
							Pneumatic Life Preserver	
Air, tearing strength	Ambient	-	Warp, 1600 gm; Fill, 1600 gm	Cotton	5.9	8305	Cloth, Coated, Vapor	MIL-C-192081
Air, blocking	200	0.5	No blocking	Chloroprene	4.9		Permeable, Water Im-	
				Composite	10.8		permeable	
Air, breaking strength	Ambient	-	65 lbs. minimum	Polyethylene		8305	Cloth, Coated	MIL-C-195241
Air, creased 180°	-40	96	No cracks	Nat. or syn. Composite	6.5		(For Aircraft Pro-	
							tectors)	

1 Document cancelled without replacement.

MIL-HDBK-G99B(MR)

SPECIFICATION TEST CONDITIONS				CONSTRUCTION				FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD ²	THICK, INCH	QPL ISSUED			
Air, breaking strength	Ambient	-	Warp, 225 lbs, Fill, 210 lbs	Chloroprene	1.70			8305	Cloth, Laminated, ZS2G-1 Type Airship Envelope	MIL-C-19555
Air, blocking	200	0.5	No blocking	Polyester	4.35					
Air, oven aging	158	96	Warp, 210 lbs, Fill, 190 lbs	Chloroprene	3.50					
Weatherometer, break, strength	135	500	Warp, 210 lbs; Fill, 190 lbs	Polyester	3.50					
				Chloroprene	1.00					
				Hypalon	1.50					
				Composite	15.40					
Air, breaking strength	Ambient	-	Warp, 110 lbs, Fill, 95 lbs	Nylon	2.0			8305	Cloth, Coated (Nylon Taffeta)	MIL-C-19699
Air, cantilever bending	-40	1	Flexible	Chloroprene	2.7					
Air, oven aging	160	200	Flexible	Composite	4.7					
Air, breaking strength	Ambient	-	Warp, 225 lbs; Fill, 210 lbs	Nylon	3.5			8305	Cloth, Coated Nylon Twill, (Low Count)	MIL-C-19699 Type I
Air, cantilever bending	-40	1	Flexible	Chloroprene	4.0					
Air, oven aging	160	120	Flexible, no tackiness	Composite	7.5					
Air, breaking strength	Ambient	-	Warp, 225 lbs; Fill, 210 lbs	Chloroprene	1.5			8305	Cloth, Coated Nylon Twill, (Low Count)	MIL-C-19699 Type II
Air, cantilever bending	-40	1	Flexible	Nylon	3.5					
Air, oven aging	160	120	Flexible, no tackiness	Chloroprene	4.0					
				Composite	9.0					
Air, breaking strength	Ambient	-	Warp, 120 lbs; Fill, 100 lbs	Chloroprene	2.3	0.007		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type I, Class 1
Air, cantilever bending	-40	4	Flexible	Nylon	2.3					
Oxygen, accelerated aging	158	168	Not stiff, brittle or tacky	Chloroprene	8.0					
MIL-L-6082, petroleum oil	Ambient	1	No leakage	Composite						
TT-S-735, 40% aromatic	Ambient	0.08	Shall not crack on creasing							
Air, breaking strength	Ambient	-	Warp, 120 lbs; Fill, 100 lbs	PVC	2.3	0.007		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type 1, Class 2
Air, cantilever stiffness	10	4	Flexible	Nylon	2.3					
MIL-L-6082, petroleum oil	Ambient	1	No leakage	PVC	9.0					
TT-S-735, 40% aromatic	Ambient	0.08	Shall not crack on creasing	Composite						
Air breaking strength	Ambient	-	Warp, 120 lbs; Fill, 100 lbs	Chloroprene	2.3	0.007		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type 1 Class 3
Air, cantilever stiffness	-40	4	Flexible	Nylon	2.3					
Oxygen, accelerated aging	158	168	Not stiff, brittle or tacky	Chloroprene	10.5					
MIL-L-6082	Ambient	1	No leakage	Composite						
TT-S-735, 40% aromatic	Ambient	0.08	Shall not crack on creasing							
Flame			Flame, 10 sec., Max; Char 3.5 in Max.							

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS				CONSTRUCTION				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT THICK, OZ/YD ² INCH	QPL ISSUED CLASS	FSC		
Air, breaking strength	Ambient	-	Warp, 325 lbs; Fill, 260 lbs	Chloroprene					
Air, cantilever stiffness	-40	4	Flexible	Nylon	5.5	0.015	8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type II, Class 1
Oxygen, accelerated aging	168	168	Not stiff, brittle or tacky	Chloroprene					
MIL-L-6082, petroleum oil	Ambient	1	No leakage	Composite	16.0				
TT-S-735, 40% aromatic	Ambient	0.08	shall not crack on creasing						
Air, breaking strength	Ambient	-	Warp, 325 lbs; Fill, 260 lbs	PVC					
Air, cantilever stiffness	10	4	Flexible	Nylon	5.5	0.015	8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type II, Class 2
MIL-L-6082, petroleum oil	Ambient	1	No leakage	PVC					
TT-S-735, 40% aromatic	Ambient	0.08	shall not crack on creasing	Composite	18.0				
Air, breaking strength	Ambient	-	Warp, 325 lbs; Fill, 260 lbs	Chloroprene					
Air, cantilever stiffness	-40	4	Flexible	Nylon	5.5	0.015	8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type II, Class 3
Oxygen, accelerated aging	158	168	Not stiff, brittle or tacky	Chloroprene					
MIL-L-6082, petroleum oil	Ambient	1	No leakage	Composite	18.0				
TT-S-735, 40% aromatic	Ambient	0.08	shall not crack on creasing						
Flame	-	-	Flame, 10 sec. Max; Char 3.5						
Air, breaking strength	Ambient	-	Warp 325 lbs; Fill 275 lbs	Nitrile/Butadiene	7.25				
Air, creased 180°	-65	4	No cracks	Natural	2.0		8305	Cloth, Coated Nylon Waterproof	MIL-C-20696 Type III Class 5
Air, blocking	200	0.5	No blocking	Composite	6.7				
Air, oven aging	200	168	Not stiff, brittle or tacky						
Air, breaking strength	Ambient	-	Warp 300 lbs; Fill 300 lbs	Natural	4.2				
Air, creased 180°	-65	4	No cracks	Nylon	6.0		8305	Cloth, Coated, Raft Bottom	MIL-C-21109 Type II
Air, blocking	200	0.5	No blocking	Natural	4.2				
Air, oven aging	200	168	Not stiff, brittle or tacky	Composite	14.4				
Air, tearing strength	Ambient	-	Warp, 130 lbs	Chloroprene					
Air, blocking	200	0.5	No blocking	Polyester					
Air, oven aging	158	96	Tear strength, 5% loss Max.	Chloroprene					
Weatherometer, tear strength	135	500	5% loss, Max.	Polyester					
				Chloroprene					
				Hypalon					
				Composite	16.5				
Air, breaking strength	Ambient	-	Warp, 90 lbs; Fill, 70 lbs	Aluminum	3.0				
Air, creased 180°	-20	1	No cracks	Glass	11.8		8305	Cloth, Coated (Neoprene, Asbestos, Glass, Cotton, Aluminized)	MIL-C-21890 ¹
Air, blocking	180	0.5	No blocking	Chloroprene	4.2				
Flame	-	-	Flame, 2.0 sec. Max; Char 1 5 in Max.	Composite	19.0				

¹ Document cancelled. Use MIL-C-82278

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				CONSTRUCTION				PSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT THICK, OZ/YD ² INCH	QPL ISSUED	CLASS			
Air, creased 180°	-65	4	No cracks	Natural	1.5		8305		Cloth, Laminated, Rubber on Nylon, Inflatable Floor	MIL-C-224271
Air, blocking	200	0.5	No blocking	Nylon	1.0					
Air, oven aging	158	168	Not stiff, brittle or tacky	Natural	9.5					
				Nylon	7.0	1.0				
				Nylon pile						
				Nylon	9.5					
				Natural	1.0					
				Nylon	1.5					
				Natural	31.0					
				Composite						
Air, breaking strength	Ambient	-	Warp, 180 lbs, Fill, 160 lbs	Hypalon	4.9		8305		Cloth, Coated, Fire, Water, Mildew and Weather Resistant	MIL-C-225242 Class 1
Air, creased 180°	-20	4	No cracks	Nylon	2.3					
Air, blocking	180	0.5	No blocking	Hypalon	4.8					
Ozone, 100 PPM	77	50	No cracks	Composite	12.0					
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 260 lbs	Hypalon	5.5		8305		Cloth, Coated, Fire, Water, Mildew and Weather Resistant	MIL-C-225242 Class 2
Air, creased 180°	-20	4	No cracks	Nylon	3.9					
Air, blocking	180	0.5	No blocking	Hypalon	5.6					
Ozone, 100 PPM	77	50	No cracks	Composite	15.0					
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 300 lbs	Hypalon	6.5		8305		Cloth, Coated, Fire, Water, Mildew and Weather Resistant	MIL-C-225242 Class 3
Air, creased 180°	-20	4	No cracks	Nylon	5.0					
Air, blocking	180	0.5	No blocking	Hypalon	6.5					
Ozone, 100 PPM	77	50	No cracks	Composite	18.0					
Air, breaking strength	Ambient	-	Warp, 130 lbs; Fill, 110 lbs	Glass	6.50		8305		Cloth, Coated, Fuel and Flame Resistant	MIL-C-22787 Type I
Air, blocking scale rating	-	-	3	Vinyl						
Air, breaking strength	Ambient	-	Warp, 130 lbs; Fill, 110 lbs	Vinyl	6.50		8305		Cloth, Coated, Fuel and Flame Resistant	MIL-C-22787 Type II
Air, blocking scale rating	-	-	3	Modacrylic						
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 175 lbs	Glass	5.10		8305		Cloth, Coated, Fuel and Flame Resistant	MIL-C-22787 Type III
Air, blocking scale rating	-	-	3	Vinyl						
Air, breaking strength	Ambient	-	Warp, 130 lbs; Fill, 110 lbs	Nylon	12.50		8305		Cloth, Coated, Fuel and Flame Resistant	MIL-C-22787 Type IV
Air, blocking scale rating	-	-	3	Vinyl						
Air, breaking strength	Ambient	-	Warp 185-300 lbs, Fill 110-250 lbs	Glass	7.0		8305		Cloth, Coated, Fuel and Flame Resistant	MIL-C-22787 Types V, VI, VII
Air Blocking Scale Rating	-	-	3	Vinyl	20.5					

1 Document cancelled without replacement.

2 Document cancelled. Use MIL-C-43006.

MIL-HDBK-699B (NR)

SPECIFICATION TEST CONDITIONS				CONSTRUCTION				FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT THICK, INCH	QPL ISSUED	CLASS			
Air breaking strength	Ambient	-	Warp 300 lbs; Fill, 250 lbs	Natural Nylon	1.5		8305		Cloth, Laminated, and Tape, Coated Cloth, Polyisoprene, Natural or Synthetic Rubber on Nylon	MIL-C-23070 Variety C
Air, creased 180°	-65	4	No cracks	Natural	3.0					
Air, blocking	212	0.5	No blocking	Natural	4.0					
Air, oven aging	200	168	Break, strength, 10% loss Max.	Nylon bias	1.6					
Weatherometer, break. strength	135	300	25% loss Max.	Natural Composite	1.5					
(Inner liner covered by Grade SB615A1E5 of MIL-R-3065 and MIL-STD-417)										
(Outer cover covered by Grade SC615A1E5 of MIL-R-3065 and MIL-STD-417)										
(Rubber covered by Grade RS-15L of MIL-H-3065 and MIL-STD-417)										
Air, breaking strength	Ambient	-	Wales 90 lbs; Courses 45 lbs	Nylon	19.0		8305		Cloth, Coated and Laminated, Polychloroprene on Nylon, and Tape, Polychloroprene, Unsupported	MIL-C-239262 Type I
Air, Elongation	Ambient	-	Wales 100%; Courses 250%	Polychloroprene						
Air, breaking strength	Ambient	-	Wales 90 lbs; Courses 45 lbs	Nylon	24.0		8305		Cloth, Coated and Laminated, Polychloroprene on Nylon, and Tape, Polychloroprene, Unsupported	MIL-C-239262 Type II
Air, Elongation	Ambient	-	Wales 100%; Courses 250%	Polychloroprene						
Air, breaking strength	Ambient	-	Wales 90 lbs; Courses 45 lbs	Nylon	23.0		8305		Cloth, Coated and Laminated, Polychloroprene on Nylon, and Tape, Polychloroprene, Unsupported	MIL-C-239262 Type IV
Air, Elongation	Ambient	-	Wales 100%; Courses 250%	Nylon						
Air breaking strength	Ambient	-	Warp 575 lbs; Fill, 525 lbs	Chloroprene	16.2		8305		Cloth, Coated, Nylon Chloroprene Coated,	MIL-C-26712 Variety C
Air, mandrel bend	-67	24	No cracks	Nylon	8.5					
Air, blocking	180	0.5	No blocking	Chloroprene	16 3					
Air, oven aging	158	240	Break, strength, 10% loss Max.	Composite	41 0	0.045				
Air breaking strength	Ambient	-	Warp 150 lbs; Fill, 150 lbs	Aluminum	6.7		8305	Yes	Cloth, Coated, Glass, Aluminum Face, Silicone Rubber Back	MIL-C-27347
Air, mandrel bend	-65	4	No cracks	Glass	0.008					
Air, blocking	180	2	No blocking	Silicone	16 0	0.015				
Flame	-	-	Flame, 10 sec. Max	Composite						

1 Document cancelled Use MIL-T-52943(ME).

2 Document cancelled without replacement

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				CONSTRUCTION				FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD ²	THICK, INCH	QPL ISSUED			
Air, breaking strength	Ambient	-	Warp, 185 lbs; Fill, 185 lbs	Butyl	6.3	0.003		8305	Cloth, Coated, Butyl, Polyamide, Nonmelt, Fuel and Oxidizer Resistant	MIL-C-38149
Air, creased 180°	-40	4	No cracks	Nylon	3.5	0.009				
Air, blocking	180	0.5	Slight blocking	Butyl	6.2	0.004				
Nitrogen tetroxide fumes	80	1	Leakage, 0.01 m ³ /in ² Max.	Composite	16.0	0.017				
Air, breaking strength	Ambient	-	Warp, 90 lbs; Fill, 80 lbs	PVC	1.0			8305	Cloth, Coated, Nylon, Vinyl Coated	MIL-C-40039
Air, creased 180°	0	6	No cracks	Nylon	1.6					
Air, blocking	180	0.5	No blocking	PVC	4.1					
				Composite	6.7					
Air, breaking strength	Ambient	-	Warp, 125 lbs; Fill, 150 lbs	Chloroprene	0.5			8305	Cloth, Laminated, Fabric, Air-Retaining Mattress	MIL-C-400561
Air, creased 180°	-20	96	No cracks	Nylon	0.9					
				Chloroprene	6.0					
				Nylon	8.6	1/4-4				
				Nylon pile						
				Nylon	6.0					
				Chloroprene	0.9					
				Nylon	0.5					
				Chloroprene	23.4					
				Composite						
Air breaking strength	Ambient	-	Warp 295 lbs; Fill, 295 lbs	PVC				8305	Cloth and Strip Laminated, Vinyl-Nylon, High-Strength Flexible	MIL-C-43006 Type I
Air, mandrel bend	-42	4	No cracks	Nylon						
Air, blocking	180	0.5	Slight blocking	PVC						
				Composite	18.4					
Air breaking strength	Ambient	-	Warp 90 lbs; Fill, 90 lbs	PVC				8305	Cloth and Strip Laminated, Vinyl-Nylon, High-Strength Flexible	MIL-C-43006 Type II
Air, mandrel bend	-42	4	No cracks	Nylon						
Air, blocking	180	0.5	No blocking	PVC						
				Composite	10.0					
Air breaking strength	Ambient	-	Warp 75 lbs; Fill, 75 lbs	PVC				8305	Cloth and Strip Laminated, Vinyl-Nylon, High-Strength Flexible	MIL-C-43006 Type III
Air, mandrel bend	-42	4	No cracks	Nylon						
Air, blocking	180	0.5	No blocking	PVC						
				Composite	6.0					
Air, breaking strength	Ambient	-	Warp 80 lbs; Fill, 80 lbs	Butyl	1.6			8305	Cloth, Coated, Cotton Resin Modified Butyl Coated, Acid and Fuel Resistant	MIL-C-43062 (unvulcanized)
Air, Cantilever stiffness	-20	4	Flexible	Cotton	4.3					
Air, blocking	180	0.5	No blocking	Butyl	4.6					
JP-4 fuel	Ambient	0.25	Shall not crack or stiffen	Composite	10.5					
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 300 lbs	PVC	8.5			8305	Cloth, Coated, Nylon, Vinyl Coated (For Air-Supported Shelters)	MIL-C-43086
Air, creased 180°	-10	0.5	No cracks	Nylon	5.9	0.009				
Air, blocking	170	2	Slight blocking	PVC	5.5					

1 Document cancelled without replacement.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS			CONSTRUCTION			FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., Of	TIME, HRS.	SPECIFICATION REQUIREMENTS	TYPE AND ORDER OF COMPONENTS	WEIGHT THICK, OZ/YD ² INCH			
Air, breaking strength Air, blocking	Ambient 200	- 0.5	Warp, 160 lbs; Fill 160 lbs Slight blocking	Polyester Chloroprene Composite	13.0	8305	Cloth, Coated Chloro- prene Base Coated, Chlorosulphonated Polyethylene Top Coated	MIL-C-43285 Type I
Air, breaking strength Air, blocking	Ambient 200	- 0.5	Warp, 275 lbs; Fill 275 lbs Slight blocking	Nylon Chloroprene Composite	13.0	8305	Cloth, Coated Chloro- prene Base Coated, Chlorosulphonated Polyethylene Top Coated	MIL-C-43285 Type II
Air, breaking strength Air, Blocking Water absorption	Ambient 180 70	- 0.5 1%	Warp, 50 lbs; Fill, 50 lbs Slight blocking	Cotton PVC Chloroprene Composite	12.0	8305	Cloth, Coated Cotton Vinyl Chloride or Chloroprene Coated	MIL-C-43410
Air breaking strength Air, Blocking JP-4 Fuel	Ambient -85 Ambient	- 4 -	Warp, 160 lbs; Fill, 160 lbs Flexible Shall not crack or stiffen	Cotton Polyester Silicone Composite	10.0	8305	Cloth, Coated, Poly- ester, Silicone Rubber Coated	MIL-C-43656
(Tests on rubber only) Air, original properties (Test on coated fabric) Air, 180° crease	Ambient -20	- 96	T, 1800 psi min; E, 500% min No cracks	Chloroprene coated nylon fabric		5430	Cases: Nylon Neoprene- Coated	MIL-C-52186 ¹
Air, breaking strength Air, blocking	Ambient 180	- 0.5	Warp, 245 lbs; Fill, 160 lbs Moderate blocking	Cotton Chloroprene Composite	55.0	8305	Cloth, Coated, Synthetic Rubber (Nitrile and Poly- chloroprene)	MIL-C-82255 Type II
Air, tensile strength Air, blocking	Ambient 180	- 0.5	Warp, 245 lbs; Fill, 160 lbs Moderate blocking	Cotton Nitrile Composite	43.0	8305	Cloth, Coated Synthetic Rubber (Nitrile & Poly- chloroprene)	MIL-C-82255 Type II
Air, tensile strength Air, blocking	Ambient 180	- 0.5	Warp, 90 lbs; Fill, 90 lbs Moderate blocking	Cotton Chloroprene Composite	29.5	8305	Cloth, Coated Synthetic Rubber (Nitrile & Poly- chloroprene)	MIL-C-82255
Air, breaking strength Air, blocking scale rating Water transmission	Ambient Ambient Ambient	- - -	Warp, 70 lbs; Fill, 65 lbs 2 20 grams/sq. Meter/hr. min	Urethane	6.3	8305	Cloth, Coated, Cotton and Nylon, Polyurethane (Microporous) Coated	MIL-C-83008 ¹ Type I
Air, breaking strength Air, blocking scale rating Water transmission	Ambient Ambient Ambient	- - -	Warp, 175 lbs; Fill, 175 lbs 2 9 grams/sq Meter/hr. min	Urethane	5.0	8305	Cloth, Coated, Cotton and Nylon, Polyurethane (Microporous) Coated	MIL-C-83008 ¹ Type II

1 Document cancelled without replacement.

MIL-HDBK-699B (MR)

HOSE, DUCT AND TUBING

SPECIFICATION TEST CONDITIONS		ELASTOMER		SPECIFICATION REQUIREMENTS	QPL	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED					
Air, tensile strength	Ambient	-	Tube 1250 psi min; cover 1000 psi min No cracking Tube & cover max T change: -20% Tube & cover vol change: -5 to +25%	Nitrile tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part I Class SB		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						
Air, tensile strength	Ambient	-	Tube 1250 psi min, cover 1000 psi min No cracking Tube & cover max T change: -15% Tube & cover vol change: +100%	Chloroprene tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part I Class SC		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						
Air, tensile strength	Ambient	-	800 psi min No cracking Max % T chg. tube -15; cover -20 Tube & cover max vol change: +100%	Chloroprene tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part II Class SC		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						
Air, tensile strength	Ambient	-	800 to 500 psi No cracking Tube & cover % T chg: -25 to -40	Nat. or SBR tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part III Class R Grades 1, 1A & 2		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						
Air, burst test	Ambient	-	3/8" to 3/4" ID, 200 to 125 psi No cracking Max % T chg. tube -15; cover -20 Tube & cover max vol change: +100%	Chloroprene tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part III Class SC		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						
Air, burst test	Ambient	-	3/8" to 3/4" ID; 200 to 125 psi No cracking Tube & cover max T chg: -25%	Nat. or SBR tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part III Class R Grade 1 & 2		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						
Air, burst test	Ambient	-	3/8" to 3/4" ID; 200 to 125 psi No cracking Tube & cover max T chg: -40%	Nat. or SBR tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part III Class R Grade 1A		
Air, 50% compression	-40	5						
Air, oven aging	250	70						
ASTM #3 petroleum oil	212	70						
Air, burst test	Ambient	-	3/8" to 2-1/4" ID; 90 to 60 psi No cracking Max % T chg: tube -15; cover -20 Tube & cover max vol change: +100%	Chloroprene tube & cover, fiber reinforcement	Coolant-System Hoses	SAE J20 Part IV Class SC		
Air, 50% compression	-40	5						
Air, oven aging	158	96						
ASTM #3 petroleum oil	212	70						

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SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.					
Air, burst test	Ambient	-	3/8" to 2-1/4" ID; 90 to 60 psi	Nat. or SBR tube & cover, fiber reinforcement		Coolant-System Hoses	SAE J20
Air, 50% compression	-40	5	No cracking				Part IV
Air, oven aging	158	96	Tube & cover max T chg: -25%				Class R
							Grades 1 & 2
Air, burst test	Ambient	-	3/8" to 2-1/4" ID; 90 to 60 psi	Nat. or SBR tube & cover, fiber reinforcement		Coolant-System Hoses	SAE J40
Air, 50% compression	-40	5	No cracking				Part IV
Air, oven aging	250	70	Tube & cover max T chg: -40%				Class R
							Grade 1A
Air, burst test	Ambient	-	175 psi min	Nitrile tube, synthetic cover, fabric reinforcement		Fuel and Oil Hoses	SAE J30
Air, flexibility	-40	5	No cracking				R 1
Air, oven aging	212	70	Tube & cover max T chg: -20%				
ASTM #3 petroleum oil	212	70	% V chg. tube -5 + 25, cover + 100 max				
Ozone, 50 ppm	100	72	No cracking				
Air, burst test	Ambient	-	0.115" to 0.773" ID; 700 to 500 psi	Nitrile tube, synthetic cover, fabric reinforcement		Fuel and Oil Hoses	SAE J30
Air, ASTM D736	-40	5	No cracking				R 2
Air, oven aging	212	70	Tube & cover max T chg: -20%				Type 1
ASTM #3 petroleum oil	212	70	% V chg. tube -5 + 25; cover + 100 max				
Ozone, 50 ppm	100	72	No cracking				
Air, burst test	Ambient	-	0.115" to 2.039" ID; 700 to 250 psi	Nitrile tube, synthetic cover, fabric reinforcement		Fuel and Oil Hoses	SAE J30
Air, ASTM D736	-40	5	No cracking				R 2
Air, oven aging	212	70	Tube & cover max T chg. -20%				Type 2
ASTM #3 petroleum oil	212	70	% V chg. tube -5 + 25; cover + 100 max				
Ozone, 50 ppm	100	72	No cracking				
Air, burst test	Ambient	-	0.172" to 0.773" ID, 2000 to 1200 psi	Nitrile tube, synthetic cover, fabric reinforcement		Fuel and Oil Hoses	SAE J30
Air, ASTM D736	-40	5	No cracking				R 2
Air, oven aging	212	70	Tube & cover max T chg: -20%				Type 3
ASTM #3 petroleum oil	212	70	% V chg. tube -5 + 25, cover + 100 max				
Ozone, 50 ppm	100	72	No cracking				
Air, burst test	Ambient	-	0.172" to 0.391" ID, 2000 to 900 psi	Nitrile tube, synthetic cover, fabric reinforcement		Fuel and Oil Hoses	SAE J30
Air, flexibility	-40	5	No cracking				R 3
Air, oven aging	212	70	Tube & cover max T chg: -20%				
ASTM #3 petroleum oil	212	70	Tube vol chg. -5% to 25%				
Ozone, 50 ppm	100	72	No cracking				

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE		SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst test	Ambient	-	0 172" to 0.531" ID; 1200 to 850 psi	Wire reinforced			Fuel and Oil Hoses	SAE J30
Air, flexibility	-40	5	No cracking	nitrile tube				R 4
Air, oven aging	212	70	Tube & cover max T chg -20%					Type 1
ASTM #3 petroleum oil	212	70	Tube max vol change: -40%					
Ozone, 50 ppm	100	72	No cracks					
Air, burst test	Ambient	-	0.172" to 0.531" ID, 2000 to 850 psi	Nitrile tube, synthetic cover, fabric reinforcement			Fuel and Oil Hoses	SAE J30
Air, flexibility	-40	5	No cracking					R 4
Air, oven aging	212	70	Tube & cover max T chg -20%					Type 2
ASTM #3 petroleum oil	212	70	Tube max vol change: -40%					
Ozone, 50 ppm	100	72	No cracks					
Air, burst test	Ambient	-	250 psi min	Rubber tube & cover, fabric reinforced			Windshield Wiper Hose	SAE J50
Air, flexibility	-20	5	No cracks					
Air, flexibility	158	70	No cracks					
Air, burst test	Ambient	-	1750 psi min	Nitrile tube & cover fabric reinforced			Automotive Air Conditioning Hose	SAE J51
Air, flexibility	-20	5	No cracks					Type A
Air, flexibility	250	168	No cracks					
ASTM #3 petroleum oil	212	70	Max vol chg. tube -5 to +20%					
Air, burst test	Ambient	-	2500 psi min	Nitrile tube & cover wire reinforced			Automotive Air Conditioning Hose	SAE J51
Air, flexibility	-20	5	No cracks					Type B
Air, flexibility	250	168	No cracks					
ASTM #3 petroleum oil	212	70	Max vol chg. tube -5 to +20%					
Air, burst test	Ambient	-	1750 psi min	Nitrile tube & cover fabric reinforced			Automotive Air Conditioning Hose	SAE J51
Air, flexibility	-20	5	No cracks					Type A
Air, flexibility	250	168	No cracks					
ASTM #3 petroleum oil	212	70	Max vol chg. tube -5 to +20%					
Air, burst test	Ambient	-	2500 psi min	Nitrile tube & cover wire reinforced			Automotive Air Conditioning Hose	SAE J51
Air, flexibility	-20	5	No cracks					Type B
Air, flexibility	250	168	No cracks					
ASTM #3 petroleum oil	212	70	Max vol chg. tube -5 to +20%					
Air, burst test	Ambient	-	1200 psi min	Rubber-lined woven jackets			Woven Jacketed Rubber-Lined Fire Hose For Public and Private Fire Department Use	ASTM D 2961
Air, flexibility	-20	5	No cracks					
Air, flexibility	250	168	No cracks					
ASTM #3 petroleum oil	212	70	Max vol chg. tube -5 to +20%					
Air, tensile strength	Ambient	-	1200 psi min					
Oxygen, @ 300 psi	158	96	Max T change. -40%					

1 Document cancelled without replacement.

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.						
Air, tensile strength	Ambient	-	Tube 1250 psi; cover 1500 psi	Cotton or syn. fiber reinforced, static wire wound	4720		Hose & Hose Assembly, Rubber, Liquid Fuel Noncollapsible	MIL-H-370 Type I Tube
Air, 180° bend	-42	24	No cracking	tube NR and chloroprene cover				Type I Cover
Oxygen, aging @ 300 psi	158	48	Tensile strength: -25% max					
70/30 isooctane/toluene	70	46	Volume change: +60% max					
Ozone, 50 ppm	104	72	No cracks					
Air, tensile strength	Ambient	-	Tube 1250 psi min	Nitrile tube, cotton or syn. fiber reinforced, static wire wound; CR	4720		Hose & Hose Assembly, Rubber, Liquid Fuel Noncollapsible	MIL-H-370 Type II Tube
Air, 180° bend	-42	24	No cracking					Type I Cover
Oxygen, aging @ 300 psi	158	48	Tensile strength: -25%					
70/30 isooctane/toluene	70	46	Volume change: +60% max					
Ozone, 50 ppm	104	72	No cracks					
Air, proof @ 400 psi	Ambient	-	No leakage	Nat. and/or syn. tube & cover, cotton reinforced	4210		Hose & Hose Assembly, Chemical (Industrial Fire)	22-H-421 ¹
Oxygen, aging @ 300 psi	158	46	Tube & cover max T chg: -40%					Types I & II
Air, kinking @ 250 psi	Ambient	-	No weakness					
Air, tensile strength	Ambient	-	Tube 1000 psi min; cover 1000 psi min	Tube & cover, fabric reinforced chloroprene	4720		Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	22-H-428 Type I Grade A Class 2
Air, flexibility	-65	5	No cracks or breaks					
Air, heat aging	212	70	Tube & cover max T change: -15%					
Ozone, 50 ppm	100	168	No cracks					
ASTM #3 petroleum oil	212	70	Tube & cover max vol chg: +100%					
Fungus resistance	84	90	Proof pressure = 1/2 orig burst press.					
Air, tensile strength	Ambient	-	Tube 1000 psi min; cover 1000 psi min	Tube & cover, fabric reinforced nitrile	4720		Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	22-H-428 Type I Grade B Class 1
Air, flexibility	-40	5	No cracks or breaks					
Air, heat aging	212	70	Tube & cover max T change: -20%					
ASTM #3 petroleum oil	212	70	Tube & cover vol change: -5 to +25%					
Air, tensile strength	Ambient	-	Tube 1000 psi min; cover 1000 psi min	Tube & cover, fabric reinforced chloroprene	4720		Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	22-H-428 Types I & II Grade B Class 2
Air, flexibility	-40	5	No cracks or breaks					
Air, heat aging	212	70	Tube & cover max T change: -15%					
Ozone, 50 ppm	100	168	No cracks					
ASTM #3 petroleum oil	212	70	Tube & cover max vol chg: +100%					

¹ Document cancelled without replacement.

MIL-HDBK-6 99B (NR.)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.							
Air, tensile strength	Ambient	-	Tube & cover; 1000 psi min	Tube & cover, fabric reinforced chloroprene	4720	Hose, Non-Metallic & Hose Performed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Types III, IV Grade A Class 2		
Air, flexibility	-65	5	No cracks or breaks						
Air, heat aging	212	70	Max % T chg: tube -15, cover -20						
Ozone, 50 ppm	100	168	No cracks						
ASTM #3 petroleum oil	212	70	Tube & cover max vol. chg: +100%						
Fungus resistance	84	90	Proof pressure = 1/2 orig burst press.						
Air, tensile strength	Ambient	-	Tube & cover; 1000 psi min	Tube & cover, fabric reinforced butyl	4720	Hose, Non-Metallic & Hose Performed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Types III, IV Grade A Class 4		
Air, flexibility	-65	5	No cracks or breaks						
Air, heat aging	250	70	Tube & cover max T change: -40%						
Ozone, 50 ppm	100	168	No cracks						
Fungus resistance	84	90	Proof pressure = 1/2 orig burst press.						
Air, tensile strength	Ambient	-	Tube & cover; 1000 psi min	Tube & cover, fabric reinforced chloroprene	4720	Hose, Non-Metallic & Hose Performed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Types III, IV Grade B Class 2		
Air, flexibility	-40	5	No cracks or breaks						
Air, heat aging	212	70	Max % T chg: Tube -15; Cover -20						
Ozone, 50 ppm	100	168	No cracks						
ASTM #3 petroleum oil	212	70	Tube & cover max vol change: +100%						
Air, tensile strength	Ambient	-	Tube & cover; 1000 psi min	Tube & cover, fabric reinforced natural	4720	Hose, Non-Metallic & Hose Performed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Types III, IV Grade B Class 3		
Air, flexibility	-40	5	No cracks or breaks						
Air, heat aging	212	70	Tube & cover max T change: -25%						
Air, tensile strength	Ambient	-	Tube & cover; 1000 psi min	Tube & cover, fabric reinforced butyl	4720	Hose, Non-Metallic & Hose Performed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Types III, IV Grade B Class 4		
Air, flexibility	-40	5	No cracks or breaks						
Air, heat aging	250	70	Tube & cover max T change: -40%						
Ozone, 50 ppm	100	168	No cracks						
Air, tensile strength	Ambient	-	Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced chloroprene	4720	Hose, Non-Metallic & Hose Performed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Type V Grade A Class 2		
Air, flexibility	-65	5	No cracks or breaks						
Air, heat aging	212	70	Tube & cover max T change: -15%						
ASTM #3 petroleum oil	212	70	Max % vol chg: tube +43; cover +74						
Ozone, 50 ppm	100	168	No cracks						
Fungus resistance	84	90	Proof pressure = 1/2 orig burst press.						

MIL-HDBK-6 99B (MR)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.						
Air, tensile strength	Ambient	-		Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced	4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Type V
Air, flexibility	-65	5		No cracks or breaks	natural			Grade A
Air, heat aging	212	70		Tube & cover max T change: -25%				Class 3
Fungus resistance	84	90		Proof pressure = 1/2 orig burst press.				
Air, tensile strength	Ambient	-		Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced	4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Type V
Air, flexibility	-40	5		No cracks or breaks	nitrile			Grade B
Air, heat aging	212	70		Tube & cover max T change: -15%				Class 1
ASTM #3 petroleum oil	212	70		Max % vol chg: tube +43; cover +74				
Air, tensile strength	Ambient	-		Tube 800 psi min, cover 800 psi min	Tube & cover, wire reinforced	4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Type V
Air, flexibility	-40	5		No cracks or breaks	chloroprene			Grade B
Air, heat aging	212	70		Tube & cover max T change: -15%				Class 2
Ozone, 50 pphm	100	168		No cracks				
ASTM #3 petroleum oil	212	70		Max % vol chg: tube +43; cover +74				
Air, tensile strength	Ambient	-		Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced	4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Type V
Air, flexibility	-40	5		No cracks or breaks	natural			Grade B
Air, heat aging	212	70		Tube & cover max T change: -25%				Class 3
Air, tensile strength	Ambient	-		Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced	4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428 Type V
Air, flexibility	-40	5		No cracks or breaks	butyl			Grade B
Air, heat aging	212	70		Tube & cover max T change: -40%				Class 4
Ozone, 50 pphm	100	168		No cracks				
(Tests on rubber lining only)								
Air, tensile strength	Ambient	-		1200 psi min	Three ply cotton reinforced syn. rubber lining	4210	Hose, Fire; Cotton, Rubber-Lined	ZZ-H-451
Air, elongation	Ambient	-		400% min				
Air, set @ 300% elong	Ambient	0.17		25% max				
Oxygen, aging @ 300 psi	158	96		Tensile change: -40% max				
Air, tensile strength	Ambient	-		Tube and cover, 2200 psi min	Cotton duck coated with natural or syn rubber	4720	Sleeves; Dredging	ZZ-S-451
Air, elongation	Ambient	-		Tube 650% min; cover, 500% min				

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SPECIFICATION TEST CONDITIONS				ELASTOMER		SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
Air, burst test	Ambient	-	Tube & cover: 600 to 700 psi min	Fabric reinforced	4720	Hose; Gas (Acetylene-Hydrogen, Air, and Oxygen)	22-H-461
Air, ASTM D736	-40	5	No cracks or breaks	natural and/or syn. tube & cover			
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -25%				
Air, tensile strength	Ambient	-	Rubber tube: 700 psi min	Nat., nitrile, or	4720	Hose; Gasoline, Rubber-Metal	22-H-466
Gasoline	75	48	Max wt. change: -20%	chloroprene tube over metal tube, cotton jacket			
Air, burst test	Ambient	-	3/4" to 3" ID; 500 to 325 psi	Cotton or nylon	4720	Hose, Gasoline, Synthetic-Rubber Wire-Stiffened	22-H-471 ¹
Air, 180° bend	-40	24	No cracking	reinforced chloroprene tube w/chloroprene cover			Class 1
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -35%				
60/40 isooctane/aromatic	75	46	Max volume change: +100%				
Air, burst test	Ambient	-	3/4" to 3" ID; 500 to 325 psi	Polysulfide tube w/chloroprene cover, cotton or nylon reinforced	4720	Hose; Gasoline, Synthetic-Rubber Wire-Stiffened	22-H-471 ¹
Air, 180° bend	-40	24	No cracking				Class 2
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -35%				
60/40 isooctane/aromatic	75	46	Max volume change: +20%				
Air, burst test	Ambient	-	3/4" to 3" ID; 500 to 325 psi	Nitrile tube w/chloroprene cover, cotton or nylon reinforced	4720	Hose; Gasoline, Synthetic-Rubber Wire-Stiffened	22-H-471 ¹
Air, 180° bend	-40	24	No cracking				Class 3
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -35%				
60/40 isooctane/aromatic	75	46	Max volume change: +60%				
Air, tensile strength	Ambient	-	Tube & cover: 1250 psi min	1) Wire	4720	Hose; Oil & Gasoline, Suction and Discharge, Synthetic-Rubber, Wire Stiffened	22-H-481
Oxygen, aging @ 300 psi	158	46	Max tensile change: -35%	2) Frictioned cotton			Class 1
60/40 diisobutylene/aromatic	135	48	Max volume change: +110%	3) Chloroprene			
				4) Frictioned cotton			
				5) Embedded wire			
				6) Frictioned cotton			
				7) Chloroprene			
Air, tensile strength	Ambient	-	Tube, 750 psi; Cover, 1200 psi min	Tube & cover	4720	Hose, Rubber, and Hose Assemblies, Rubber Pneumatic (Yarn or Fabric Reinforced)	22-H-500
Air, burst pressure	Ambient	-	1/4" to 2", 1000 psi to 600 psi min	synthetic rubber reinforced fabric			Class 1
Ozone, 50 ppm	212	72	No cracks				

¹ Document cancelled without replacement

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, tensile strength	Ambient	-	Tube, 750 psi; Cover, 1200 psi min	Tube & cover	4720		Hose, Rubber, and Hose Assemblies, Rubber Pneumatic (Yarn or Fabric Reinforced)	22-H-500 Class II
Air, burst pressure	Ambient	-	1/4" to 2", 1000 psi to 600 psi min	synthetic rubber reinforced fabric				
Air, tensile strength	Ambient	-	Tube & cover, 2,000 psi min	Tube & cover	4720		Hose, Rubber (Sleeves; Dredging)	22-H-5151
Aging, oxygen	212	48	Tensile strength, -25% change max	synthetic rubber yarn reinforcement				
Air, burst test	Ambient	-	3/16" to 2" ID; 12000 to 1500 psi	Syn. rubber tube & cover, high tensile steel wire reinforced			Hydraulic Hose	SAE J517 100 R1
Air, burst test	Ambient	-	3/16" to 2" ID; 20000 to 4500 psi	Syn. rubber tube & cover, plies of steel wire reinforced			Hydraulic Hose	SAE J517 100 R2
Air, burst test	Ambient	-	3/16" to 1-1/4" ID; 6000 to 1500 psi	Syn. rubber tube & cover, 2 plies of rayon reinforced			Hydraulic Hose	SAE J517 100 R3
Air, burst test	Ambient	-	3/4" to 3" ID; 1200 to 225 psi	Syn. rubber tube & cover, ply or plies of syn. fiber reinforced			Hydraulic Hose	SAE J517 100 R 4
Air, burst test	Ambient	-	3/16" to 1-13/16" ID; 12000 to 1400 psi	Syn. rubber tube, syn-rubber impregnated cotton & wire reinforcement			Hydraulic Hose	SAE J517 100 R5
Air, burst test	Ambient	-	3/16" to 5/8" ID; 2000 to 1400 psi	Syn. rubber tube & cover, rayon reinforced			Hydraulic Hose	SAE J517 100 R6
Air, burst test	Ambient	-	800 psi min	Nat. or syn. rubber tube & cover, cotton or syn. fiber reinforced			Hose & Hose Assembly Nonmetallic, Spray	42-H-521 Grade A Wrapped
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -35%					
Ethylacetate or acetone	75	48	Max vol change: tube +30%					
60/40 isooctane/aromatic	75	48	Max vol change: cover, +100%					

1 Document cancelled without replacement.

MIL-HDBK-6 99B (NR)

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
Air, burst test	Ambient	-	800 psi min	Nat. and/or syn. rubber tube & cover w/cotton or syn. fiber reinforcement	4720	Hose & Hose Assembly Nonmetallic, Spray	ZZ-H-521 Grade B Braided
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -35%				
Ethylacetate or acetone	75	48	Max vol change tube +30%				
60/40 isooctane/aromatic	75	48	Max vol change: cover, +100%				
Air, tensile strength	Ambient	-	Tube 1000 psi min, cover 1200 psi min	Chloroprene cover w/syn. tube, wire & fiber reinforced	4720	Hose Rubber and Hose Assembly; Rubber Smooth Bore, Water Suction & Discharge	ZZ-H-561 Grade A Class 1
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -25%				
ASTM #3 oil	212	70	Cover, T.S. max change: -40%				
Ozone, 100 ppm	212	70	Cover, no cracks				
Air, tensile strength	Ambient	-	Tube 1000 psi min; cover 1200 psi min	Syn. rubber tube and cover, wire & fiber reinforced	4720	Hose Rubber and Hose Assembly; Rubber Smooth Bore, Water Suction & Discharge	ZZ-H-561 Grade B Class 1
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -25%				
Air, tensile strength	Ambient	-	Tube 1000 psi min; cover 1000 psi min	Chloroprene cover w/syn. tube, wire & fiber reinforced	4720	Hose Rubber and Hose Assembly; Rubber Smooth Bore, Water Suction & Discharge	ZZ-H-561 Grade A Class 2
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -25%				
ASTM #3 oil	212	70	Cover, T.S. max change: -40%				
Ozone, 100 ppm	212	70	Cover, no cracks				
Water extraction	212	21	21 milligrams per sq. inch; tube only				
		hrs					
Air, tensile strength	Ambient	-	Tube & cover: 600 psi min	Nat. and/or syn. tube & cover, wire & fiber reinforced	2240	Hose; Tender (Locomotive), Corrugated	ZZ-H-581
Air, 180° bend	Ambient	-	No kinking				
Water	212	8	Tube max T change: -50%				
Air, burst test	Ambient	-	1/2" to 1-1/2" ID, 600 to 450 psi	Syn. rubber tube & cover	4720	Hose & Hose Assemblies, Rubber (Yarn & Fabric Reinforced)	ZZ-H-601 Grade 1
Oxygen, aging @ 300 psi	158	94	Tube & cover max T change: -25%				
Water	73	22	Tube & cover max vol change: +20%				
Air, burst test	Ambient	-	1/4" to 4" ID, 600 to 400 psi	Chloroprene cover w/syn. rubber tube, yarn reinforced	4720	Hose, Rubber, Water (Yarn-Reinforced)	ZZ-H-601 Grade 3
Oxygen, aging @ 300 psi	158	94	Tube & cover max T change: -25%				
Water	73	22	Tube & cover max vol change: +20%				
Air, burst test	Ambient	-	1300 psi	Syn. tube & cover, cotton or syn. fiber reinforced	4720	Hose, Rubber; Windshield Wiper	ZZ-H-617
Air, mandrel bend	-67	5	No breaks or cracks				
Air, oven aging	212	70	Max tensile change. -25%				
Ozone, 50 ppm	100	168	Cover, no cracks				

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SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION REQUIREMENTS			SPECIFICATION TITLE			SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION REQUIREMENTS			SPECIFICATION TITLE			
Air, tensile strength Air, oven aging	Ambient 158	- 168	Nat. and/or syn. rubber	4720		2400 psi min Max tensile change: -25%			Tubing, Rubber and Plastic			22-T-831 Type I
Air, tensile strength Air, oven aging	Ambient 158	- 168	Syn. rubber	4720		1100 psi min Max tensile change: -25%			Tubing, Rubber and Plastic			22-T-831 Type II
Air, tensile strength Air, oven aging	Ambient 158	- 168	Natural rubber	4720		1200 psi min Max tensile change: -25%			Tubing, Rubber and Plastic			22-T-831 Type III
Air, tensile strength Air, oven aging	Ambient 158	- 168	Liquid latex, dipped	4720		3500 psi min Max tensile change: -25%			Tubing, Rubber and Plastic			22-T-831 Type IV
Air, tensile strength Air, oven aging	Ambient 158	- 168	Natural rubber	4720		3000 psi min Max tensile change: -25%			Tubing, Rubber and Plastic			22-T-831 Type V
Air, vibration Air, vibration Flame	-65 275 -	6 72 -	Chloroprene impregnated fabric			No deterioration No deterioration Self burning: 15 sec max			Duct, Air, Flexible and Semi-Rigid			NAS 1369 Type A
Air, vibration Air, vibration Flame	-75 500 -	6 72 -	Silicone impregnated fabric			No deterioration No deterioration Self burning: 15 sec max			Duct, Air, Flexible and Semi-Rigid			NAS 1369 Type B
Air, tensile strength Oxygen, aging @ 300 psi Isooctane	Ambient 158 73	- 48 46	Chloroprene cover syn. tube wire and fabric reinforcements	Yes		Tube 1600 psi min; cover 1800 psi min Tube & cover max T change: -25% Cover max vol change: +50%			Hose Assemblies, Wire-reinforced Synthetic Rubber, Submarine Rescue Chamber			MIL-H-2217
Air, burst test Oxygen, aging @ 300 psi	Ambient 158	- 48	Neoprene cover w/neoprene, or SBR or nitrile tube cotton or syn fiber reinforced	4720		1/4" to 1-1/2" ID, 1000 to 550 psi Tube & cover max T change: -25%			Hose, Pneumatic (Braided or Wrapped)			MIL-H-2699 ¹ Classes 1, 2 & 3
Air, burst test Oxygen, aging @ 300 psi Isooctane	Ambient 158 73	- 46 46	Chloroprene cover w/SBR or chloroprene tube, cotton reinforced	Yes		2400 psi min Tube & cover max T change: -25% Cover max vol change: +50%			Hose Assemblies, Rubber, Diver's Breathing Air and Gas Supply			MIL-H-2815
Air, hardness Air, mandrel bend	Ambient Ambient	- -	SBR	4710		90 to 95 No cracks			Lining, Rubber (Synthetic), For Salt-Water Lines			MIL-L-28242

¹ Document cancelled. Use 22-H-500.
² Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst test	Ambient	-	1/8" to 1-3/8" ID, 6000 to 4000 psi	Teflon tube wire reinforcement			Hose, Polytetrafluoroethylene, TFE fluorocarbon Resin Wire Braid Reinforced	AMS 3380
Air, flexibility	-65	24	No cracking or breaking					
Air, burst test	Ambient	-	500 psi min	Syn. tube, fabric reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Textile Reinforced, Collapsing	AMS 3386
70/30 isooctane/toluene	80	22	Max % vol chg. tube +50; cover +100					
Air, burst test	Ambient	-	1-1/2" to 3" ID; 800 to 650 psi	Syn. tube, fabric reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Textile Reinforced, Noncollapsing	AMS 3388
70/30 isooctane/toluene	80	22	Max % vol chg. tube +50; cover +100					
Air, burst test	Ambient	-	2" to 3" ID, 1000 to 750 psi	Syn. tube, wire reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Single Wire Braid Reinforced, Noncollapsing	AMS 3389
70/30 isooctane/toluene	80	22	Max % vol chg. tube +50; cover +100					
Air, original properties	Ambient	-	T, 3500 psi min; E, 800% min	Natural		6515	Tubes, Rubber, Penrose, Drainage	MIL-T-36092
Air, oven aging	158	166	Change in T and E, -25% max					
Air, tensile strength	Ambient	-	1250 psi min	PVC		4720	Hose, Sulfuric Acid Resistant (Thermoplastic)	MIL-H-37261
Air, tensile strength	5	4	Tensile strength: 3000 psi min					
Air, oven aging	221	96	Tensile change: -80% max					
Sulfuric acid (Sp gr 1.27)	151	24	Tensile change: -80% max					
Air, burst test	Ambient	-	3/16" to 1/2" ID; 20000 to 14000 psi	Syn rubber tube w/ chloroprene cover, steel double-wire braid reinforced		4930	Hose Assemblies, Grease Gun High and Low Pressure	MIL-H-3868 Type I Grade A
Air, mandrel bend	-65	24	No cracks or breaks					
Air, oven aging	158	24	No deterioration					
ASTM #3 petroleum oil	73	46	Max % vol chg: Tube +35; cover +75					
Air, burst test	Ambient	-	3/16" to 1/2" ID; 20000 to 14000 psi	Syn. rubber tube w/ chloroprene cover, steel double-wire braid reinforced		4930	Hose Assemblies, Grease Gun High and Low Pressure	MIL-H-3868 Type I Grade B
Air, mandrel bend	-40	24	No cracks or breaks					
Air, oven aging	158	24	No deterioration					
ASTM #3 petroleum oil	73	46	Max vol chg: tube +35; cover +75%					

1 Document cancelled without replacement.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE		SPECIFICATION NUMBER	
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC				
Air, burst test	Ambient	-	3/16" to 3/4" ID; 1200 to 5000 psi	Syn. rubber tube w/ chloroprene cover, steel wire braid reinforced	4930		Hose Assemblies, Grease Gun High and Low Pressure		MIL-H-3868 Type II Grade A	
Air, mandrel bend	-65	24	No cracks or breaks							
ASTM #3 petroleum oil	73	46	Max % vol chg: tube +35; cover +75							
Air, burst test	Ambient	-	3/16" to 3/4" ID; 1200 to 5000 psi	Syn. rubber tube w/ chloroprene cover, steel wire braid reinforced	4930		Hose Assemblies, Grease Gun High and Low Pressure		MIL-H-3868 Type II Grade B	
Air, mandrel bend	-40	24	No cracks or breaks							
ASTM #3 petroleum oil	73	46	Max % vol chg: tube +35; cover +75							
Air, burst test	Ambient	-	900 psi min	Syn. rubber tube	Yes	2530	Hose and Hose Assembly, Rubber; Air and Vacuum Brake, Automotive		MIL-H-3992 Type I Class 1 & 2	
Air, mandrel bend	-65	72	No breaks or cracks	rubber cover, cotton or syn. yarn reinforced						
Air, oven aging	212	70	No deterioration							
Ozone, 50 ppm	100	168	Cover, no cracking							
Isooctane	Ambient	46	Max % vol chg: tube +35; cover +50							
Air, burst test	Ambient	-	3/16" to 5/8" ID; 10000 to 6000 psi	Syn. rubber tube and rubber cover, steel wire reinforced	Yes	2530	Hose and Hose Assembly, Rubber; Air and Vacuum Brake, Automotive		MIL-H-3992 Type I Class 3	
Air, mandrel bend	-65	72	No breaks or cracks							
Air, oven aging	212	70	No deterioration							
Ozone, 50 ppm	100	168	Cover, no cracking							
Isooctane	Ambient	46	Max % vol chg: tube +35; cover +50							
Air, burst test	Ambient	-	3/15" to 5/8" ID; 1000 to 6000 psi	Syn. rubber tube and rubberized cotton cover, steel wire & cotton yarn reinforced	Yes	2530	Hose and Hose Assembly, Rubber; Air and Vacuum Brake, Automotive		MIL-H-3992 Type I Class 4	
Air, mandrel bend	-65	72	No breaks or cracks							
Air, oven aging	212	70	No deterioration							
Isooctane	Ambient	46	Tube max vol change: +35%							
Air, mandrel bend	-65	72	No breaks or cracks	Syn. rubber tube	Yes	2530	Hose and Hose Assembly, Rubber; Air and Vacuum Brake, Automotive		MIL-H-3992 Type II Styles a & b	
Air, oven aging	212	70	No deterioration	and rubber cover, cotton and/or steel wire reinforcement						
Ozone, 50 ppm	100	168	Cover, no cracks							
Isooctane	Ambient	48	No sep. of tube or cover from plies							
Air, burst test	Ambient	-	1-1/4" to 3" ID; 500 to 375 psi	Nitrile tube, chloroprene cover, wire reinforcement	4720		Hose, Rubber, Gasoline, Lightweight		MIL-H-44411	
Air, 180° bend	-67	72	No cracking							
70/30 isooctane/toluene	75	24	Max % vol chg: tube +35; cover +75							
Air, drum wrap	-65	24	No cracking	1) Tube, syn. rubber	4720		Hose Assembly, Rubber, Aerial Refueling		MIL-H-4495	
70/30 isooctane/toluene	75	72	Max % vol chg: tube +35; cover +60	2) Fabric 3) Wire 4) Syn. rubber layer 5) Wire braid 6) Cover, syn. rubber						

1 Document cancelled. Use MIL-H-27516.

MIL-HDBK-6 99B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS		
Air, burst test	Ambient	-	3/4" to 1-1/4" ID; 2500 to 1200 psi	Rubber tube & cover,		4210	Hose, Cotton, Rubber Lined	MIL-H-4497
Air, mandrel bend	-67	72	No cracks or breaks	cotton or syn. fiber			Water, Braided Construction,	
Air, oven aging	158	168	Tube & cover max T change: -25%	reinforcement			with Couplings	
Air, burst test	Ambient	-	1800 psi min	Syn. rubber tube & Yes		4210	Hose, Rubber, Bromochloro-	MIL-H-45361
Air, mandrel bend	-67	72	No cracks or breaks	cover, cotton or			methane Resistant	
Bromochloromethane	Ambient	24	Tube max vol change: +60%	syn. fiber				
				reinforcement				
Air, burst test	Ambient	-	15000 psi min	Wire reinforced	Yes	1660	Hose Assembly, High	MIL-H-47221
Air, mandrel bend	-65	48	No cracks or breaks	rubber tube, rubber			Pressure, Breathing	
Oxygen, aging @ 300 psi	160	96	No change in tensile strength	cover, wire braid			Oxygen	
				reinforced				
Air, burst test	Ambient	-	60 psi min	Nat. or syn. rubber	Yes	8415	Hose, Rubber, Anti-G	MIL-H-55812
Air, mandrel bend	-67	24	No cracking	tube & cover, wire			Suit, Altitude Suit	
Air, oven aging	158	168	Tube & cover max T change: -20%	& fabric reinforced				
Air, burst test	Ambient	-	1/8" to 5/8" ID; 2000 to 700 psi	Rubber tube & cover Yes		4720	Hose; Aircraft, Low-	MIL-H-5593
Air, mandrel bend	-67	72	No cracking	w/fabric reinforcement			Pressure, Flexible	
Air, mandrel bend	158	3	No deterioration					
MIL-H-5606 mineral oil	158	168	Tube, vol change: ± 10%					
Air, burst test	Ambient	-	1/4" to 4" ID; 1000 to 300 psi	Syn. rubber tube,		4720	Hose; Rubber (Fuel, Oil,	MIL-H-6000
ASTM D736	-40	5	No cracks or breaks	chloroprene cover,			Coolant, Water and	
ASTM #1 petroleum oil	252	70	Tube, no decrease in volume	frictioning rein-			Alcohol)	
Ethylene glycol	293	70	Tube, max vol change: -10%	forcement				
Isooctane and toluene	75	24	Max vol change: +85%					
Air, burst test	Ambient	-	2200 psi min	Innertube, rein-	Yes	1660	Hose Assemblies, Low-	MIL-H-60173
Air, mandrel bend	-65	48	No breaks or cracks	forcing material,			Pressure, For Breathing	
Oxygen, aging @ 300 psi	160	96	Tube max T change: -40%	braided outer sur-			Oxygen	
				face				
Air, burst test	Ambient	-	50 psi min	Syn. rubber tube,		4720	Hose, Rubber, Wire-Wound	MIL-H-6399
Air, mandrel bend	-40	24	No cracks	chloroprene cover,			Synthetic, Ice Eliminating	
				wire reinforced			System	
Air, burst test	Ambient	-	500 psi min	Rubber tube &		4720	Hose, Rubber, Aircraft	MIL-H-6439
Air, mandrel bend	-55	5	No cracks or breaks	cover, reinforced			Paint Finish Remover	
Paint remover	75	72	Tube & cover max vol change: + 45%					

¹ Document cancelled without replacement² Document cancelled. For AF use MIL-H-26385.³ Document cancelled. Use MIL-H-26626.

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SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst test	Ambient	-	1-1/4" to 4" ID; 800 to 500 psi	Syn. rubber tube, chloroprene cover, fabric & static wire reinforcement	Yes	4720	Hose Assemblies, Rubber, Fuel and Water with Reattachable Couplings, Low Temperature	MIL-H-6615
Air, U bend	-67	72	No cracks or breaks or straightening					
70/30 isooctane/toluene	75	24	Max % vol chg. tube +50; cover +100					
Air, burst test	Ambient	-	150 psi min	Compounded tube, chloroprene cover, fabric reinforced	Yes	4720	Hose, Aircraft, Self-Sealing, Aromatic Fuel	MIL-H-7061
60/40 isooctane/aromatic	Ambient	24	Tube & cover max vol change: +90%					
Isooctane, gunfire @ 16 psi	-20	-	Self sealing, 5 minutes					
Air, tensile load	Ambient	-	No damage under 250 lb load	Retractable hose, metal helical stiffener core		4720	Hose, Air Duct, For Ground Heaters	MIL-H-7365
Air, extension & retraction	-65	24	No deterioration					
Flame	-	-	Self burning, 3 sec max					
91 octane gasoline	Ambient	48	Max volume change: +24%					
SAF #10 engine oil	Ambient	48	Max volume change: +22%					
Air, burst test	Ambient	-	3/16" to 2" ID; 600 to 350 psi	Nitrile tube, chloroprene cover asbestos reinforced		4720	Hose, Rubber, Flame-Resistant	MIL-H-7938
Air, mandrel bend	-40	5	No cracking					
Isooctane	Ambient	48	Max volume change: +35%					
Air, burst test	Ambient	-	3" to 9-5/8" ID; 16000 to 10000 psi	Syn. rubber tube, chloroprene cover wire reinforced	Yes	4720	Hose, Hydraulic, High Pressure	MIL-H-8788
Air, mandrel bend	-65	24	No cracks or leakage					
MIL-H-5606 mineral oil	158	168	Max ID change: -10%					
(Hose covered in MIL-H-8788)								
Air, burst test	Ambient	-	3" to 33" ID, 12000 to 800 psi	Rubber tube, cotton braid reinforced	Yes	4720	Hose Assemblies, Rubber, Hydraulic, High Pressure (3000 psi)	MIL-H-8790
Air, 180° bend	-65	24	Flexible					
MIL-H-5606 mineral oil	158	168	Max ID change: -10%					
50/50 water/alcohol	158	24	Tube max T change: -35%					
70/30 isooctane/toluene	Ambient	72	Tensile strength: 900 psi min	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted		4720	Hose Assemblies, Rubber, Hydraulic, Fuel and Oil Resistant	MIL-H-8795
(Hose covered in MIL-H-8794)								
Air, flexibility	-65	12	No cracking					
Air, cyclic vibration	160	12	No deterioration					
Flame	-	-	Self burning, 30 sec max					
Isooctane	Ambient	8	No softening or tackiness					
MIL-J-5624 jet fuel	Ambient	8	No softening or tackiness					

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.							
Air, flexibility	-65	12	No cracking	No softening or tackiness No softening or tackiness No cracking No deterioration Self burning, 30 sec max	Syn. rubber w/cotton, linen, fortisan or glass fibers	1660	Hose, Aircraft	Flexible, Aircraft	MIL-H-8796 Class 2
Air, cyclic vibration	300	12	No deterioration						
Flame	-	-	Self burning, 30 sec max						
Isocetane	Ambient	8	No softening or tackiness	No softening or tackiness No softening or tackiness No cracking No deterioration Self burning, 30 sec max No softening or tackiness	w/wo wire reinforcement, convoluted Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted	1660	Hose, Aircraft	Flexible, Aircraft	MIL-H-8796 Class 3
MIL-J-5624 jet fuel	Ambient	8	No softening or tackiness						
Air, flexibility	-65	12	No cracking						
Air, cyclic vibration	300	12	No deterioration	No softening or tackiness No softening or tackiness No cracking No deterioration Self burning, 30 sec max No softening or tackiness	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted	1660	Hose, Aircraft	Flexible, Aircraft	MIL-H-8796 Class 4
Flame	-	-	Self burning, 30 sec max						
MIL-J-5624 jet fuel	Ambient	8	No softening or tackiness						
Air, flexibility	-75	12	No cracking	No softening or tackiness No softening or tackiness No cracking No deterioration Self burning, 30 sec max No softening or tackiness	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted	1660	Hose, Aircraft	Flexible, Aircraft	MIL-H-8796 Class 4
Air, cyclic vibration	600	12	No deterioration						
Flame	-	-	Self burning, 30 sec max						
MIL-J-5624 jet fuel	Ambient	8	No softening or tackiness	400 psi min Cover, max 5 fold increase in mod. Cover max T change: -40% Cover, self burning, 60 sec max Max % vol chg tube +30; cover +65	Nitrile tube, chloroprene cover, braided reinforcement	4720	Hose Assembly, Rubber, Utility, Gasoline (1/4-inch Inside Diameter)		MIL-H-10868
Air, burst test	Ambient	-	400 psi min						
Low temp. flexibility	-40	0.08	Cover, max 5 fold increase in mod.						
Air, oven aging	212	70	Cover max T change: -40%	200 psig min Tube, max 5 fold increase in mod. Cover, max 5 fold increase in mod. Tube max vol change: +40%	Nitrile tube, chloroprene cover, cotton or syn. fiber reinforced static wire wound	4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	Type I	MIL-H-11588
Flame	-	-	Cover, self burning, 60 sec max						
70/30 isooctane/toluene	75	46	Max % vol chg tube +30; cover +65						
Air, burst test	Ambient	-	200 psig min	350 psig min Tube, max 5 fold increase in mod. Cover, max 5 fold increase in mod. Tube, max 5 fold increase in mod.	Nitrile tube, chloroprene cover, cotton or syn. fiber reinforced static wire wound	4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	Type II	MIL-H-11588
Low temp. flexibility	-13	0.08	Tube, max 5 fold increase in mod.						
Low temp. flexibility	-40	0.08	Cover, max 5 fold increase in mod.						
60/40 isooctane/aromatic	75	46	Tube max vol change: +40%	1" to 4" ID; 400 to 600 psi Tube, max 5 fold increase in mod. Cover, max 5 fold increase in mod. Tube, max vol change: +40%	Nitrile tube, chloroprene cover, syn. rubber embedded fiber reinforced static wire wound	4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	Types III & IV	MIL-H-11588
Air, burst test	Ambient	-	1" to 4" ID; 400 to 600 psi						
Low temp. flexibility	-13	0.08	Tube, max 5 fold increase in mod.						
Low temp. flexibility	-40	0.08	Cover, max 5 fold increase in mod.	1" to 4" ID; 400 to 600 psi Tube, max 5 fold increase in mod. Cover, max 5 fold increase in mod. Tube, max vol change: +40%	Nitrile tube, chloroprene cover, syn. rubber embedded fiber reinforced static wire wound	4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	Types III & IV	MIL-H-11588
60/40 isooctane/aromatic	75	46	Tube, max vol change: +40%						
Air, burst test	Ambient	-	1" to 4" ID; 400 to 600 psi						

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst test	Ambient	-	1/8" to 3/4" ID; 2000 to 500 psi	Nitrile tube, chloroprene cover fabric reinforced	Yes	4720	Hose, Rubber: Fuel and Oil	MIL-H-13444 Type I
Air, mandrel bend	-67	70	No cracks or breaks					
Ozone, 50 ppm	100	168	No breaks or cracks					
60/40 isooctane/aromatic	80	48	Max % vol chg: tube +60; cover +110					
Air, burst test	Ambient	-	1/8" to 3/4" ID; 2000 to 500 psi	Nitrile tube material & gasoline & oil cover, cotton & steel wire reinforced	Yes	4720	Hose, Rubber: Fuel and Oil	MIL-H-13444 Type II
Air, mandrel bend	-67	70	No cracks or breaks					
Ozone, 50 ppm	100	168	No breaks or cracks					
Air, burst test	Ambient	-	3/16" to 2" ID; 12000 to 1500 psi	Nitrile tube, chloroprene cover, 1 braid wire reinforcement	Yes	4720	Hose, Rubber and Hose Assembly, Rubber (Hydraulic, Flexible)	MIL-H-13531 Type I
Air, mandrel bend	-67	70	Cover, no cracks					
MIL-H-6083 petroleum oil	158	168	Max % vol chg: tube +30; cover +100					
Ozone, 50 ppm	100	168	No cracks					
Air, burst test	Ambient	-	3/26" to 2" ID; 20000 to 4000 psi	Nitrile tube, chloroprene cover, wire braids or braid & spiral plies of wire reinforcement	Yes	4720	Hose, Rubber and Hose Assembly, Rubber (Hydraulic, Flexible)	MIL-H-13531 Types II & III
Air, mandrel bend	-67	70	Cover, no cracks					
MIL-H-6083 petroleum oil	158	168	Max % vol chg: tube +30; cover +100					
Ozone, 50 ppm	100	168	No cracks					
Air, burst test	Ambient	-	1/8" to 1/4" ID; 5000 to 4500 psi	SBR or chloroprene tube, chloroprene cover, unbedded cotton reinforcement	Yes	2530	Hose Assembly, Rubber; Hydraulic Brake	MIL-H-13719
Air, mandrel bend	-65	72	No cracks, breaks or leakage					
VV-H-910 brake fluid	121	70	Tube vol change: +8% to -3%					
Ozone, 50 ppm	100	168	Cover, no cracks or breaks					
Air, burst test	Ambient	-	900 psi min	Rubber tube, fabric reinforcement, chloroprene cover			Air Brake Hose	SAE J1402 Types A & B
Aging, 212	70		No cracks					
Ozone, 50 ppm	104	70	No cracks					
ASTM #3 oil	212	70	Tube & cover, vol change, max 100%					
Air, burst test	Ambient	-	1/4" to 1/2" hose; 10000 to 7000 psi	Rubber tube, fabric reinforcement, chloroprene cover			Air Brake Hose	SAE J1402 Type C
Aging, 212	70		No cracks					
Ozone, 50 ppm	104	70	No cracks					
ASTM #3 oil	212	70	Tube & cover, vol change, max 100%					
Air, burst test	Ambient	-	3/16" to 5/8" hose; 2000 to 1800 psi	Rubber tube, wire w/wo fabric reinforcement chloroprene cover			Air Brake Hose	SAE J1402 Type D
Aging, 212	70		No cracks					
Ozone, 50 ppm	104	70	No cracks					
ASTM #3 oil	212	70	Tube & cover, vol change, max 100%					
Air, burst test	Ambient	-	3/16" to 5/8" hose; 6000 to 3000 psi	Rubber tube, wire w/wo fabric reinforcement chloroprene cover			Air Brake Hose	SAE J1402 Type E
Aging, 212	70		No cracks					
Ozone, 50 ppm	104	70	No cracks					
ASTM #3 oil	212	70	Tube & cover, vol change, max 100%					

MIL-HDBK-6 99B (MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst test	Ambient	-	1000 psi	Rubber tube, wire fabric reinforced chloroprene cover	Air	4720	Hose, Rubber, Wire- Reinforced (Oil-and- Gasoline, Suction and Discharge Smooth-Bore)	SAE J1402 Type F
Aging, 50 ppm	212	70	No cracks					
ASTM #3 oil	104	70	No cracks					
Air, burst test	Ambient	-	600 psi min	1) Chloroprene tube 2) Frictioned fabric 3) Syn. rubber/wire 4) Frictioned fabric 5) Chloroprene cover	4720	4720	Hose, Rubber, Wire- Reinforced (Oil-and- Gasoline, Suction and Discharge Smooth-Bore)	MIL-H-0015100 ¹ Class I
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: + 25%					
Isooctane	73	46	Tube max vol change: +100%					
Air, burst test	Ambient	-	600 psi min	1) Nitrile tube 2) Frictioned fabric 3) Syn. rubber/wire 4) Frictioned fabric 5) Chloroprene cover	4720	4720	Hose, Rubber, Wire- Reinforced (Oil-and- Gasoline, Suction and Discharge Smooth-Bore)	MIL-H-0015100 ¹ Class II
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: + 25%					
Isooctane	73	46	Tube max vol change: +50%					
Air, burst test	Ambient	-	500 psi min	Chloroprene or nat. rubber tube, chloro- prene cover, syn. rubberized fabric reinforcement	4720	4720	Hose, Rubber, Sand- blast	MIL-H-15217
Oxygen, aging @ 300 psi	158	48	Max % T Chg: Tube (nat) 40, (syn) 20					
Oxygen, aging @ 300 psi	158	48	Max T change: cover, 25%					
Air, burst test	Ambient	-	600 psi min	1) CR or NBR tube 2) Frictioned fabric 3) Chloroprene cover	4720	4720	Hose and Hose Assem- blies, Rubber, Oil-and- Gasoline-Discharge, Smooth-Bore, Light Weight	MIL-H-155232 Types A & B
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: +25%					
70/30 isooctane/toluene	75	46	Max % vol chg: tube (NBR) 50, (CR) 100					
70/30 isooctane/toluene	75	46	Max vol change: cover, 100%					
Air, burst test	Ambient	-	1/4" to 4" ID, 600 to 300 psi	Chloroprene or SBR tube chloroprene cover fabric reinforced	4720	4720	Hose and Hose Assemblies, Rubber, Wrapped and Braided, Water Service	MIL-H-159233
Air, oven aging	158	48	Tube & cover max T change: +25%					
Water	Ambient	24	Tube & cover max vol change: +20%					
Air, burst test	Ambient	-	8000 psi min	SBR, nitrile or chloroprene tube & cover wire, w/wo syn. frictioning reinforcement	4210	4210	Hose, Fire-Extinguisher (Portable, 15-pound Carbon-Dioxide)	MIL-H-162364
Air, oven aging	194	48	Tube & cover max T change: + 25%					
Air, burst test	Ambient	-	2000 psi min	1) Chloroprene tube 2) Glass yarn 3) Chloroprene/cloth 4) Glass yarn 5) Chloroprene cover	4940	4940	Hose Assembly, Plastic Paint Spraying, Electric- Heating	MIL-H-167111
Air, oven aging	212	70	Tube & cover max T change: +15%					

1 Document cancelled without replacement.

2 Document cancelled. Use MIL-H-22240.

3 Document cancelled. Use ZZ-H-601.

4 Document cancelled. Use SAE J517.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., of	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst pressure Oxygen, aging @ 300 psi 60/40 diisobutylene/ aromatic	Ambient 158 140	- 46 48	600 psi Tube & cover max T change: +35% Tube & cover max vol change: +110%	1) Chloroprene tube 2) Syn. rubber/fabric 3) Syn. rubber/duck 4) Syn. rubber/wire 5) Syn. rubber/fabric 6) Chloroprene cover	4720		Hose, and Hose Assembly, Rubber, Oil & Gasoline Suction & Discharge	MIL-H-17505 Class I
Air, burst test Oxygen, aging @ 300 psi 60/40 isooctane/aromatic 60/40 isooctane/aromatic	Ambient 158 75 75	- 46 46 46	600 psi min Tube & cover max T change: +25% Tube max & vol chg: (CR) +100 Cover max vol change: +100%	Chloroprene or nitrile (NBR) tube, chloro- prene (CR) cover, syn. frictionized fabric reinforced	4720		Hose Assemblies, Rubber, Aircraft, Fueling, Col- lapsible Type	MIL-H-17902
Air, burst test Isooctane and aromatic 60/40 isooctane/aromatic	Ambient Ambient 75	- 24 -	150 psi min Tube & cover max vol change: +90% Gun fire, self sealing, 2 min max	Reinforced inner tube chloroprene	4720		Hose and Hose Assemblies, Aircraft, Self Fueling, Aromatic Fuel	MIL-H-182881
Air, burst test Oxygen, aging @ 300 psi 60/40 isooctane/aromatic 60/40 isooctane/aromatic	Ambient 158 73 73	- 46 46 46	600 psi min Tube & cover max T change: +25% Max & vol chg. Tube (CR) 100; (NBR) 5 Max vol chg: Cover +100	Chloroprene (CR) or nitrile (NBR) tube syn., frictioned fabric reinforce- ment, chloroprene cover	4720		Hose, Rubber (Oil-and- Gasoline Discharge), Smooth-Bore, Light Weight, Bouyant Type; 6 Inch Size	MIL-H-190912
Air, burst test Oxygen, aging @ 300 psi	Ambient 158	- 48	1/2" ID; 800 psi Max tensile change: -25%	Chloroprene, nitrile or butyl tube, chloroprene cover, syn.-rubber- ized fabric rein- forcement	4720		Hose Assemblies, Rubber, Paint Spray Equipment	MIL-H-196393
Air, burst test MIL-H-5606 mineral oil	Ambient 158	- 168	1/4" to 1" ID, 16000 to 7500 No leakage @ 7000 psi	Chloroprene cover fabric backing, wire reinforcement	4720		Hose Assemblies, Flexible (Pneumatic), High Pressure Oil Resistant	MIL-H-199924
Tensile Strength ASTM #3 oil Ozone, 100 ppbm Flexibility	Ambient 212 Ambient 212 -67	- 70 70 72	Tube & Cover, min 1400 psi Tube & Cover max -30% T.S change 500 psi min Cover, no cracks No cracks after bending to V-shape	Chloroprene Cover & synthetic tube fiber reinforcement	4720		Hose and Hose Assembly Rubber, Smooth Bore Light-Weight, Sewage Discharge and Oily Waste Discharge	MIL-H-20176 Type I & Type II

1 Document cancelled. Use MIL-H-7061.

2 Document cancelled. Use MIL-H-22240

3 Document cancelled Use ZZ-H-521

4 Document cancelled without replacement

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, burst test	Ambient	-	1-1/2" to 2-1/2" ID, 600 to 500 psi	Nitrile or chloroprene tube, chloroprene cover fabric braid & wire helix reinforcement	4720	4720	Hose Assemblies for Noncollapsible Aviation Fuel	MIL-H-21291
Air, 180° bend	-22	24	No cracking or failure					
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: +25%					
60/40 isooctane/aromatic	73	46	Cover, max vol change: +100%					
60/40 isooctane/aromatic	73	46	(NBR) tube max vol change: +50%	Chloroprene cover & or tube, nitrile tube syn.-frictioned, fabric reinforcement	4720	4720	Hose and Hose Assemblies Rubber, Oil-and-Gasoline Gasoline Discharge, Smooth-Bore, Light Weight, Bouyant Type	MIL-H-22240
Air, burst test	Ambient	-	6" to 7" ID, 600 to 500 psi					
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: +25%					
60/40 isooctane/aromatic	73	46	Cover (CR) max vol change: 100%					
60/40 isooctane/aromatic	73	46	Tube, (NBR), max vol change: 50%	Chloroprene tube fabric reinforcement, chloroprene cover, static wire wound	4720	4720	Hose Assemblies, Rubber, Aircraft Fueling Collapsible, By Negative Pressure	MIL-H-222791
air, mandrel bend	-20	24	No cracking or failure					
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: +25%					
60/40 isooctane/aromatic	73	46	Tube & cover max vol change: +100%					
Air, burst test	Ambient	-	600 psi min	Nitrile tube frictioned fabric & wire helix reinforcement, chloroprene cover	4720	4720	Hose-Line Assembly: 4-inch Fueling, Quick-Coupling Type	MIL-H-222972
Air, 90° bend	-40	24	No cracking or separation					
Air, 90° bend	150	24	No cracking or separation					
ASTM #3 petroleum oil	212	70	Max vol change: tube 40%, cover 120%					
Air, pressure test, 200 psia	Ambient	-	No failure	Tube, synthetic Polyester reinforced cloth Cover, Synthetic	4720	4720	Duct, Pneumatic Start, Flexible	MIL-D-22706
Air, bend test	-65	10	No damage					
Air, even aging	130	10	No damage					
Air, Burst Pressure	Ambient	-	Sizes 1/4 to 2 inches, 20,000 psi to 4,500 psi					
Oil immersion, MIL-L-17331	158	76	No leakage	Tube w/wire braid reinforcement	4720	4720	Hose, Reinforced, Water and Oil Resistant, And End Fittings, Reusable, For Flexible Hose Connections	MIL-H-24135 Classes I, II, III, & IV
Flexibility	-40	24	No cracks					
ASTM D746	-80	-	No cracking					
Air, oven aging	300	24	Max T change: -20%					
Water	212	70	Max vol change +5%	Hose Assembly, Tetrafluoroethylene, High Temperature, Medium Pressure	4720	4720	Tubing, Rubber, Silicone, For In Flight Feeding	MIL-T-254583
Air, burst test	Ambient	-	0.110" to 1.406" ID; 12000 to 4000 psi					
Air, mandrel bend	-67	24	No cracks					
60/40 isooctane/aromatic	450	24	No leakage at room temp					

1 Document cancelled. Use API 1529 and NFPA 407.

2 Document cancelled. Use MIL-H-370 and MIL-C-27487

3 Document cancelled without replacement.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER		SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED		
Air, burst test Air, bend test Ozone	Ambient -65 100	- 48 1	400 psig min No damage No cracks	Tube w/wo dacron jacket		4720 Duct, Pneumatic, Flexible	MIL-D-26124
Air, bend test air, oven aging Ozone 120 ppm	-65 158 Ambient	48 48 1	No leakage after exposure No leakage after exposure No leakage after exposure	Rubber tube & cover fabric and wire reinforced		1660 Hose, Oxygen Pressurization, Ozone Resistant	MIL-T-26385 Resistant
Air, burst test Air, 180° bend 70/30 isooctane/toluene	Ambient -67 75	- 72 24	1-1/4" to 4"; 1000 to 700 psi Max force to unbend: 40 lbs Max & vol chg. tube +30; cover +60	syn. tube, chloro-prene cover fabric reinforcement	Yes	4930 Hose Assembly, Rubber, Fuel, Collapsible, Low Temperature, With Reattachable Couplings	MIL-H-26521
Air, burst test Air, 180° bend Air, oven aging @ 500 psig	Ambient -297 260	- 0.25 48	2200 psig min No loss of strength No loss of strength	Teflon tube wire braid reinforcement	Yes	1660 Hose Assembly, Tetrafluoroethylene, Oxygen	MIL-H-26626
Air, burst test Air, 180° bend	Ambient -65	- 24	12000 psig min No cracking or splitting	Teflon tube, chloroprene or teflon cover wire reinforcement	Yes	1730 Hose Assembly, Polytetrafluoroethylene, Oxygen	MIL-H-26633
Air, burst test Air, 180° bend	Ambient -65	- 24	16000 psig min No cracking or splitting	Polyethylene tube chloroprene cover wire reinforced		1730 Hose Assembly, Pneumatic, High pressure	MIL-H-26666
Air, burst test Air, U bend 70/30 isooctane/toluene	Ambient -67 75	- 72 24	700 psi min No cracking Max & vol chg. tube 30; cover 60	Syn. tube, chloro-prene cover fabric & wire helix reinforcement		4930 Hose Assembly, Rubber, Gasoline, Refueling Low Temperature	MIL-H-26894
Air, burst test Air, mandrel bend Air, burst test	Ambient -67 450	- 24 1	0.12" to 1.41" ID, 12000 to 4080 psi No cracking No leakage @ 1000 psi	Teflon tube, wire braid reinforcement	Yes	4720 Hose, Tetrafluoroethylene, High Temperature, Medium Pressure	MIL-H-27267
Air, burst test Air, U bend 60/40 isooctane/aromatic	Ambient -67 75	- 72 24	1-1/2" to 6" ID; 600 to 400 psi No cracks Max & vol chg tube 50; cover 100	Nitrile tube, chloroprene cover, braided reinforcement		4930 Hose Assembly, Rubber GRK-6/E32R-1	MIL-H-27508 ¹
Air, burst test Air, U bend 60/40 isooctane/aromatic	Ambient -67 75	- 72 24	1-1/2" to 6" ID; 400 to 240 psi No cracks Max & vol chg. tube 50; cover 100	Nitrile tube, chloroprene cover, wire stiffened woven jacket reinforcement		4930 Hose Assembly, Rubber GRK-7/E32R-1	MIL-H-27516

¹ Document cancelled. Use MIL-H-26521.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL FSC ISSUED CLASS		
Air, Burst Pressure	Ambient	-	1600 psi minimum	Tube & Cover, Synthetic Rubber	4720	Hose Assembly, Rubber, Hydraulic & Pneumatic Jetting (400 psi working pressure)	MIL-H-28523
Air, Tensile Strength	Ambient	-	Tube 1000 psi min, cover 1800 psi min	Synthetic Rubber fabric reinforced			
ASTM #3 oil	212	70	Tube T.S. 800 psi min				
ozone 50 pphm	212	70	Cover, No Cracks				
Air, Burst Pressure	Ambient	-	2000 psi minimum	Tube, & Cover	4720	Hose Assemblies, Rubber, Wire Reinforced 200 psig Saturated Steam Service (3/4" to 2" I.D.)	MIL-H-28596
ozone resistance 50 pphm	212	70	Cover, No Cracks	Synthetic Rubber Wirebraid & Fabric reinforcement			
Air Tensile Strength	Ambient	-	1200 psi minimum	Natural Rubber	4720	Tubing, Rubber	MIL-T-36966
Air Aging	212	168	Tensile strength change max - 35%				
Air, Burst Pressure	Ambient	-	16,000 to 12,000 psi	Tube, Synthetic Reinforced, two or more layers stain-less steel braid	4720	Hose Assembly Tetrafluoroethylene, High Temperature High Pressure, Hydraulic and Pneumatic	MIL-H-38360 ¹
Air, Burst Pressure	Ambient	-	16,000 psig minimum	Tube, Tetrafluoroethylene, two or more layers of stainless steel braid	4720	Hose Assembly, Tetrafluoroethylene, Pneumatic, High Pressure	MIL-H-38390
Flexibility 180° Bend	-65	-	No Cracking	Cover-Chloroprene			
Air, @ 25 psi	Ambient	0.05	No deformation or damage		1450	Hose Assembly, Propellant Transfer Oxidizer and Fuel	MIL-H-45704 Types I & III
Air, @ 60 psi	Ambient	0.02	No deformation or damage		1450	Hose Assembly, Propellant Transfer Oxidizer and Fuel	MIL-H-45704 Types II & IV
Air, Tensile strength	Ambient	-	3000 psi minimum	Tubing-polyurethane	4720	Tubing, Rubber, Urethane, High Strength and Abrasion Resistant	MIL-T-47046 ²
Hardness, Shore A	Ambient	-	85+5 points				
Dielectric strength	Ambient	-	400 volts per mil thickness				

¹ Document cancelled. Use AS604A.² Document cancelled without replacement.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.					
Air, Burst Pressure Bend Test 7 inch Radius	Ambient - -65	- 24	2000 psig, min No cracks	Cover, chloroprene Reinforcement, wire braid	4720	Hose, Fuel, Flame, Thrower M8	MIL-H-51059
Resistance to 80/20 isooctane-Benzene	Ambient 168		-10% max decrease in I.D.				
Air, Burst Test	Ambient - -65	- 24	75 psi min No cracks	Chloroprene	Yes	Hose, Performed: Semi- Flexible, Reinforced	MIL-H-52079
Air, Mandrel Bend Fungus	82	2160	Resistant				
Air, Burst Test	Ambient - -15	- 24	500 psi min No cracking	Nitrile tube, chloroprene cover	4720	Hose, Assembly, Rubber: Lightweight, Collapsible 4 Inch	MIL-H-52262
Air, 5 Bend 70/30 Isooctane/toluene Flexibility 180° Bend	74 -40	46	Max % vol chg: tube +40; cover +120 No cracks	syn. fabric rein- forcement			
Air, Burst Pressure	Ambient -		1/4" to 2" 1,500 to 11,000 psi min	Tube-chloroprene	Yes	Hose and Hose Assembly, Hydraulic Pressure - Type	MIL-H-54471
ASTM #3 Oil Ozone, 50 ppm	212 122	70 168	Vol change + 100% max No cracks	Reinforcement-steel Wirebraid Cover-chloroprene			
Air, Burst Pressure	Ambient		3/4" to 4" 300 to 1,200 psi min		4720	Hose, Rubber: Oil Suction, Wire-Reinforced	MIL-H-54544
ASTM #3 Oil Ozone, 50 ppm	250 122	70 168	Vol change cover + 100% max Tube +60% max No cracks	Tube & Cover Synthetic Rubber Reinforcement-steel wirebraid			
Air, Burst Pressure	Ambient -		3/8" to 1-1/8", 425 to 375 psi min	Tube, Silicone	4720	Hose, Non-Metallic Silicone, Polyester Reinforced (For Coolant and Heating Systems of Diesel and gasoline Powered Engines	MIL-H-62217
Air, Tensile Strength ASTM #3 Oil	Ambient - 212	- 70	1000 minimum T.S, -40% max	Reinforcement - Polyester fiber			
Hardness, Shore A Ozone, 50 ppm	Ambient 122	- 168	50 to 70 No cracking	Tube & Cover synthetic elastomer Reinforcement, poly- ester braid	1660	Hose Assemblies, Breathing Oxygen and Air, General Specification for	MIL-H-81581

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.						
Air, Burst Pressure	Ambient	-	400 psi minimum	Tube 4 to 10, 16,000 psi to 12,000 psi, min	Tube: Butadiene-acrylonitrile Reinforcement-two layers of synthetic fabric Cover: Nitrile or chloroprene	4720	Hose Assembly, Rubber (Synthetic) Fuel Discharge charge, Lightweight	MIL-H-82127
Air, Tensile Strength	Ambient	-	Tube 1500 psi min					
ASTM #3 Oil	75	48	Cover: 1800 psi min					
Ozone, 50 ppm	212	72	T.S. Tube - 40% max No Cracks in cover					
Air, Burst Pressure	Ambient	-	Size 4 to 10, 16,000 psi to 12,000 psi, min	Tube 12 microamperes, min	Tube. Tetrafluoroethylene Reinforcement - corrosion resistant steel	4720	Hose, Tetrafluoroethylene, High Temperature, High Pressure (3000 psi), Hydraulic and Pneumatic	MIL-H-832891
Conductivity, at 1,000 volts	Ambient	-						
Air, Burst Pressure	Ambient	-	3" 800 psi min: 4" - 700 psi min	Tube & Cover 1400 psi min Tube 75 + 5 Tube & Cover T.S. 1200 psi min	Tube: Fluoro-elastomer Reinforcement: Nylon Cloth and Steelwire Helix Cover: Chloroprene	4720	Hose Assembly, Fluoro-elastomer Tube, With Reattachable Couplings for JP-7 Service	MIL-H-83373 Type I
Air, Tensile Strength	Ambient	-	Tube & Cover 1400 psi min					
Hardness, Shore A	Ambient	-	Tube 75 + 5					
Fuel JP-7	70	168	Tube & Cover T.S. 1200 psi min					
Air, Burst Pressure	Ambient	-	Hose Size 3 to 32: 6,000 psi to 1,200 psi min			4720	Hose Assembly, Rubber, Lightweight, Medium Pressure, General Specification	MIL-H-83796

1 Document cancelled without replacement.

MIL-HDBK-699B (MR)

MATS AND FLOOR COVERINGS

SPECIFICATION TEST CONDITIONS		CONSTRUCTION			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	AND ELASTOMER COMMONLY USED		
Oxygen, aging	158	166	No deterioration	Nat. and/or syn. rubber links	7220 Mat, Floor (Link-Type)	22-M-46 Classes 1 & 4
Oxygen, aging	158	166	No deterioration	Piled rubber - fabric links	7220 Mat, Floor (Link-Type)	22-M-46 Class 2
Oxygen, aging	158	166	No deterioration	Metal reinforced rubber links	7220 Mat, Floor (Link-Type)	22-M-46 Class 3
Oxygen, aging	158	166	No deterioration	PVC Links	7220 Mat, Floor (Link-Type)	22-M-46 Class 5
Air, original properties Air, oven aging Air, flexibility	Ambient 212 Ambient 0.08	- 166 Ambient 0.08	T, 400 psi. min; H, 65-90 Tensile change, -25% max No breaks or cracks	Fabric reinforced nat. or syn. rubber corrugated	7220 Mats; Floor, (Vehicular, Rubber)	KKK-M-0050 ¹
Air, original properties Air, flexibility	Ambient Ambient 0.08	- 0.08	T, 700 psi. min; elong, 250% min No breaks or cracks	Syn. or reclaimed rubber, corrugated	7220 Matting; Rubber and Vinyl	22-M-71
Air, original properties Air, oven aging	Ambient 158	- 70	T, 400-900 psi; elong, 100-250% Max. change: T, -25%, elong, -35%	Not specified	Automotive Rubber Mats	SAE J801
Air, original properties Air, figure 8 bend Flame Sulfuric acid, 20% 15,000 volts	Ambient 32 - 158 Ambient 0.02	- - - 46 Ambient 0.02	T, 1200 psi. min; elong, 250% min No breaks or cracks Slight flame or flash Max. loss. T, 30%, elong, 25% No puncture, warming or weakness	Fabric reinforced syn. with/without reclaimed rubber; corrugated	7220 Matting; Rubber and Plastic (Special, Dielectric)	22-M-81 Class 1
Air, original properties Air, figure 8 bend Sulfuric acid, 20% 15,000 volts	Ambient 32 158 Ambient 0.02	- - 46 Ambient 0.02	T, 700 psi. min; elong, 250% min No breaks or cracks Max. loss. T, 30%; elong, 25% No puncture, warming or weakness	Fabric reinforced syn. with/without reclaimed rubber corrugated	7220 Matting; Rubber and Plastic (Special Dielectric)	22-M-81 Class 2
Air, original properties Air, figure 8 bend Air, oven volatilization 15,000 volts	Ambient 32 225 Ambient 0.02	- - 5 Ambient 0.02	T, 1600 psi. min, elong, 150% min No breaks or cracks Volatile matter loss; 0.5% max No puncture, warming or weakness	Vinyl chloride vinylidene chloride or vinyl acetate knurled back	7220 Matting; Rubber and Plastic (Special Dielectric)	22-M-81 Class 3
Air, original properties 15,000 volts	Ambient Ambient -	- -	T, 700 psi min, elong, 250% min No puncture, warming or weakness	Fabric reinforced rubber	Rubber Matting For Use Around Electrical Apparatus	ASTM D178

¹ Document cancelled without replacement.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS			CONSTRUCTION AND ELASTOMER COMMONLY USED			SPECIFICATION REQUIREMENTS		QPL ISSUED CLASS		SPECIFICATION TITLE		SPECIFICATION NUMBER
ENVIRONMENT AND TEST		TEMP., OF	TIME, HRS.									
Water absorption		70	24	10% max. wt. change			Top layer - synthetic rubber Bottom layer - sponge rubber (chloroprene)		7220	Matting, Floor, Rubber, Sponge Base, Anti-Fatigue		ZZ-M-0085
Air, original properties		Ambient	-	Modulus @ 10%E, 150 psi. min Hardness, 90 min.			Nat. and/or syn. and/or reclaimed rubber; with/without fabric		7220	Floor-Covering; Rubber, Sheet		ZZ-F-4611
Air, original properties		Ambient	-	T, 1500 psi. min; elong, 200% min			Plastic and/or syn. and/or reclaimed rubber; cellular base & solid cover		7220	Mats, Floor, Standing		MIL-M-910
Air, oven aging		194	46	Change: T, +20%; elong, +30%								
Isooctane		74	46	Volume change, 10% max								
Water, absorption		74	22	Wt. change; 10% max								
Air, original properties		Ambient	-	T.S. 1300 psi. min; elong, 300% min			Synthetic rubber		7220	Matting, Floor, Rubber Aperture Surface		ZZ-M-001033
Hardness, Shore A		Ambient	-	65 ± 5 points								
Water absorption		70	24	8% max. wt. increase								
Air, original properties		Ambient	-	T, 1200 psi. min; elong, 300% min			Fabric reinforced		7220	Matting; Floor, Rubber Insulating For High Voltage Application		MIL-M-15562 Application
Flame		-	-	Slight flame or flash			syn. and/or reclaimed rubber					
Oxygen, aging		158	46	Tensile change, -20% max								
Sulfuric acid, 20%		158	46	Tensile change, -30% max								
15,000 volts		Ambient	0.02	No puncture, warming or weakness								
Air, original properties		Ambient	-	T, 500 psi. min; elong, 200% min			Fabric reinforced synthetic rubber		7220	Mats, Floor, Synthetic Rubber, Shower Stall Light Gray		MIL-M-19018
Air, bend test		Ambient	0.08	No cracking								

1 Document cancelled without replacement.

MIL-STD-699B (MR)

O-RINGS

SPECIFICATION TEST CONDITIONS				PERFORMANCE		ELASTOMER		FSC		SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TEST'S REQUIRED	QPL ISSUED	COMMONLY USED	CLASS	SPECIFICATION TITLE		
Air, original properties Rubber "O" Rings	Ambient SAE J120, -20	-	Hardness, 70 \pm 5; Elong 200-400%	Flexing @ 15% stretch @ room temperature for 24 hrs.	Fatigue	No	Nitrile	For Automotive Seal	Class I	
Air, figure 8 bend	250	70	No cracks							
Air, oven aging	300	70	Elong. change, -50% max							
ASTM #1 petroleum oil	300	70	Vol. change, +5%							
ASTM #3 petroleum oil	300	70	Vol change, +20% max							
Air, original properties Rubber "O" Rings	Ambient SAE J120, -40	-	Hardness, 70 \pm 5; Elong 150-300%	Flexing @ 15% stretch @ room temperature for 24 hrs.	Fatigue	No	Nitrile	For Automotive Seal	Class II	
Air, figure 8 bend	212	70	No cracks							
Air, oven aging	212	70	Elong. change, -50% max							
Isooctane	Ambient 70		Vol. change, -3 to +5%							
70/30 isooctane/toluene	Ambient 70		Vol. change, +30% max							
Air, original properties "O" Ring	Ambient SAE J515, -30	-	Hardness, 90 \pm 5; Elong. 100% min		None	No	Nitrile	Type 1	Hydraulic	
Air, ASTM D2137 Method A	212	22	No cracks							
Air, compression set	212	70	25% max							
ASTM #3 petroleum oil	212	70	Vol. change, -10 to +5%							
Air, original properties	Ambient -	-	Hardness, 88 \pm 5; Elong. 100% min		None	No	Butyl	Hydraulic "O" Ring Type 2	SAE J515,	
Air, original properties Phosphate ester lubricant	Ambient 158	70	Hardness, 70 \pm 10 Vol. change, \pm 10% max	Leakage and breakout @ -65°F and +160°F @ 2 and 3000 psig. Chew, abrasion and endurance	No	Butyl	Packing, O-Ring, Phosphate Ester Resistant		NAS 1613, ¹ Class I	
Air, original properties Air, figure 8 bend Phosphate ester lubricant	Ambient -65 158	72 70	Hardness, 88 \pm 5 No breaks Vol. change, +10% max	Installation stretch @ -20°F Crush extrusion and impulse.	No	Butyl	Packing, O-Ring, Phosphate Ester Resistant		NAS 1613, ¹ Class II	
Air, original properties Cooling medium, temp retraction Air, oven aging ASTM #1 petroleum oil	Ambient -10 158 158	- 168 168	Hardness, 80 \pm 5; Elong. 200% Min 10% recovery @ 50% elong. elong 175% min Vol change, \pm 8%	Crush (5600 lb. load, 80% recovery)	No	Nitrile 5330	Rubber, Synthetic Sheet, Strip and Molded		MIL-R-3533 Grade A	

¹ Document cancelled without replacement

¹ Document cancelled without replacement

MIL-STD-69 9B (MR)

SPECIFICATION TEST CONDITIONS				PERFORMANCE TESTS		ELASTOMER COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP, °F	TIME, HRS	SPECIFICATION REQUIREMENTS	REQUIRED	QPL ISSUED				
Air, original properties	Ambient	-	Hardness, 70 + 5, Elong. 300% min	Crush (5600 lb. load, 80% recovery)	No	Nitrile	5330	Rubber, Synthetic. Sheet, Strip and Molded	MIL-R-3533 Grade B
Cooling medium, temp retraction	-20	-	10% recovery @ 50% elong.						
Air, oven aging	158	168	Elong. 275% min						
ASTM #1 petroleum oil	158	168	Vol. change, + 8%						
Air, original properties	Ambient	-	Permanent set, 50% max	Leakage @ 650F cyclic endurance	Yes	Nitrile	5330	Packing, "O" Ring, Hydrocarbon Fuel Resistant	MIL-P-5315
70/30 isooctane/toluene	Ambient	72	Vol. change, +50% max						
Air, original properties	Ambient	-	Hardness, 88 min; Elong. 100% min	Installation stretch -200F	Yes	Nitrile	5330	Packing, Preformed Straight Thread Tube Fitting Boss	MIL-P-5510
Air, figure 8 bend	-65	72	No breaks	Crush (5600 lb load, 75% recovery) Extrusion. Impulse					
Air, oven aged	158	166	Elong. change, -20% max						
MIL-H-5606 hydraulic fluid	158	166	Vol. change, 0 to +6%						
Air, original properties	Ambient	-	Hardness, 88 min	Leakage and breakout @ 1600F and 1500 psi. Leakage @ -650F. Cycling. Corrosion	Yes	Nitrile	5330	Packing, Preformed Petroleum Hydraulic Fluid Resistant 1600F	MIL-P-5516 Class A
MIL-H-5606 hydraulic fluid	158	168	Vol. change, 0 to +5						
Air, original properties	Ambient	-	Hardness, 68 min	Leakage, breakout, crush, fatigue cycling and corrosion	Yes	Nitrile	5330	Packing, Preformed Petroleum Hydraulic Fluid Resistant 1600F	MIL-P-5516 Class B
Cooling medium, temp retraction	-45	-	10% recovery @ 50% elong.						
MIL-H-5606 hydraulic fluid	158	168	Vol. change, 0 to +10						
Air, original properties	Ambient	-	Hardness, 75 + 5; Elong. 100% min	None	No	Nitrile		Rings, Packing Synthetic Rubber Fuel and Low Temperature (70-80)	AMS 7260
Air, hammer bend	-50	5	No cracking						
Air, compression set	257	70	75% max (85% for small rings)						
70/30 isooctane/toluene	Ambient	96	Vol. change, +30 to +50						
Isooctane	Ambient	96	Positive swell						
Air, original properties	Ambient	-	Hardness, 85-95; Elong. 150% min	None	No	Butyl		Rings, Sealing, Butyl Rubber Phosphate Ester, Hydraulic Fluid Resistant (85-95)	AMS 72631
Synthetic ester lubricant	-65	5	No cracking						
Air, oven aging	158	168	Elong. change, -35% max						
Phosphate ester lubricant	158	168	Vol. change, 0 to +10%						
Air, original properties	Ambient	-	Hardness, 75 + 5; Elong. 125% min	None	No	Silicone		Rings, Sealing, Silicone Heat Resistant-Low Compression Set (70-80)	AMS 7267
Air, ASTM D746	-85	10	No cracks						
Air, oven aging	500	70	Elong. change, -55% max						
ASTM #1 petroleum oil	350	70	Vol change, 0 to +15%						

1 Document cancelled. Use AMS 7262

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS		PERFORMANCE TESTS REQUIRED		ELASTOMER COMMONLY USED		FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.	Op	SPECIFICATION REQUIREMENTS		PERFORMANCE TESTS REQUIRED		ELASTOMER COMMONLY USED				
Air, original properties	Ambient	-		Hardness, 70 ± 5, Elong. 150% min	None	No	None	Nitrile			Rings, Sealing, Synthetic Rubber-Fuel Resistant (65-75)	AMS 7270
Isocetane, bend test	-40	5		No cracking								
Air, oven aging	212	70		Elong. change, -40% max								
70/30 isocetane/toluene	Ambient	168		Vol. change, 0 to +40%								
ASTM #3 petroleum oil	302	70		Vol. change, +15 to +35%								
Air, original properties	Ambient	-		Hardness, 65 ± 5; Elong. 200% min	Simulated component leakage test	No		Nitrile			Rings, Sealing, Synthetic Rubber-Fuel and Low Temperature Resistant (60-70)	AMS 7271
Air, hammer bend	-60	5		No cracking								
Air, oven aging	257	70		Elong. change, -50% max								
70/30 isocetane/toluene	Ambient	70		Vol. change, +40 to +70%								
Isocetane	Ambient	70		Positive swell								
Air, original properties	Ambient	-		Hardness, 70 ± 5; Elong. 250% min	None	No		Nitrile			Rings, Sealing, Synthetic Rubber-Synthetic Lubricant Resistant NBR Type (65-75)	AMS 7272
Air, temp retraction	-15	-		10% recovery @ 50% elong.								
Air, oven aging	250	70		Elong. change, -50% max								
Synthetic ester lubricant	302	70		Vol. change, 0 to +15%								
70/30 isocetane/toluene	Ambient	70		Vol. change, 0 to 35%								
Air, original properties	Ambient	-		Hardness, 70 ± 5; Elong. 150% min	None	No		Nitrile			Rings, Sealing, Synthetic Rubber-Oil Resistant (65-75)	AMS 7274
Lubricating oil, bend test	-40	5		No cracking								
Air, oven aging	212	70		Elong. change, -40% max								
ASTM #1 petroleum oil	302	96		Vol. change, 0 to 10%								
ASTM #3 petroleum oil	302	70		Vol. change, +25 to 45%								
Air, original properties	Ambient	-		Hardness, 70-85; Elong. 200% min	Low and high pressure cycling, break-out and leakage. Fatigue, chew & endurance	No		Butyl			Rings, Sealing, Synthetic Rubber-Phosphate Ester Hydraulic Fluid Resistant (70-85) (Butyl type)	AMS 7277 ¹
Phosphate ester, bend test	-65	5		No cracking								
Air, oven aging	158	168		Elong. change, -35% max								
Phosphate ester lubricant	158	168		Vol. change, 0 to 15%								
Air, original properties	Ambient	-		Hardness, 75 ± 5, Elong. 125% min	None	No		Fluorocarbon			Rings, Sealing, Fluorocarbon Rubber, High-Temperature-Fluid Resistant (70-80)	AMS 7279 ²
Cooling medium, temp retraction	+5	-		10% recovery @ 50% elong.								
Air, oven aging	500	70		Elong. change, -50% max								
70/30 isocetane/toluene	Ambient	70		Vol. change, 0 to +10%								
Synthetic ester lubricant	400	70		Vol. change, 0 to +20%								
Air, original properties	Ambient	-		Hardness, 90 ± 5, Elong. 100% min	None	No		Fluorocarbon			Rings, Sealing, Fluorocarbon Rubber, High-Temperature-Fluid Resistant (85-95) Fluorocarbon Type	AMS 7279 ²
Cooling medium, temp retraction	+5	-		10% recovery @ 50% elong.								
Air, oven aging	500	70		Elong. change, -30% max								
70/30 isocetane/toluene	Ambient	70		Vol. change, 0 to +10%								
Synthetic ester lubricant	400	70		Vol. change, 0 to +15%								

¹ Document cancelled without replacement.

² Document cancelled. Use AMS 7259.

MIL-STD-699B (NR)

SPECIFICATION TEST CONDITIONS			PERFORMANCE TESTS		ELASTOMER		SPECIFICATION		SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP. OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	TESTS REQUIRED	QPL ISSUED	COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	
Air, original properties	Ambient	-	Hardness, 70 + 5; Elong. 250% min	None	No	Nitrile	9320	Rubber Sheet, Solid	MIL-R-7362
Cooling medium, temp retraction	-40	-	10% recovery @ 50% elong.					Molded, & Extruded	Type I
Air, oven aging	275	70	Elong. change, -70% max					Shapes, Synthetic	
Synthetic ester lubricant	275	70	Vol. change, +2 to +15%					Oil Resistant	
Air, original properties	Ambient	-	Hardness, 75 + 5; Elong. 150% min	None	No	SBR	5330	Gaskets, "O" Rings, For Rockets	MIL-G-17553
Cooling medium, comp. set	-20	96	Set, 70% max						
Air, oven aging	158	96	Elong. change, -15% max						
Water	158	96	Vol. change, +8% max						
Air, original properties	Ambient	-	Hardness, 65 + 10; Elong 250% min	None	No	Nitrile	5330	Gaskets, Cylinder	MIL-G-21569
Air, oven aging	194	336	Tensile retention, 75% min					Liner Seal O-Ring,	Class I
ASTM #2 petroleum oil	194	336	Vol. change, 0 to +10%					Synthetic Rubber	
Water	194	336	Tensile retention, 75% min						
Air, original properties	Ambient	-	Hardness, 65 + 10; Elong 120% min	None	No	Silicone	5330	Gaskets, Cylinder	MIL-G-21569
Air, oven aging	194	336	Tensile retention, 75% min					Liner Seal O-Ring,	Class II
ASTM #2 petroleum oil	194	336	Vol. change, 0 to +15%					Synthetic Rubber	
Water	194	336	Tensile retention, 65% min						
Air, original properties	Ambient	-	Hardness, 60-75; Elong. 300% min	None	No	Nitrile	5330	Gaskets, Heat Ex-	MIL-G-21610
Air, oven aging	212	168	Elong. change, -40% max					changer, Various	Type I
ASTM #1 petroleum oil	230	168	Vol. change, +5% max					Cross Section Rings,	
ASTM #3 petroleum oil	230	168	Vol. change, +25% max					Synthetic Rubber	
Water	212	168	Vol. change, +10% max						
Steam, 50 psig	-	24	Vol. change, +10% max						
Air, original properties	Ambient	-	Hardness, 60-75, Elong. 150% min	None	No	Silicone	5330	Gaskets, Heat Ex-	MIL-G-21610
Air, oven aging	300	168	Elong. change, -20% max					changer, Various	Type II
ASTM #1 petroleum oil	300	168	Vol. change, +15% max					Cross Section Rings,	
								Synthetic Rubber	
Air, original properties	Ambient	-	Hardness, 70 + 5; Elong. 150% min	None	No	Fluorocarbon	5330	Gasket and Packing	MIL-G-236521
Air, oven aging	212	70	Elong. change, -15% max					Material Petroleum	Type I
ASTM #3 petroleum oil	212	70	Vol. change, -0 to +5%					and Phosphate Ester	
Synthetic ester lubricant	212	70	Vol. change, -0 to +8%					Fluid Resistant	
Air, original properties	Ambient	-	Hardness, 90 + 5; Elong. 100% min	None	No	Fluorocarbon	5330	Gasket and Packing	MIL-G-236521
Air, oven aging	212	70	Elong. change, -15% max					Material Petroleum	Type II
ASTM #3 petroleum oil	212	70	Vol. change, -0 to +5%					and Phosphate Ester	
Synthetic ester lubricant	212	70	Vol. change, -0 to +8%					Fluid Resistant	

1 Document cancelled. Use MIL-R-83248.

MIL-STD-699B(MR)

SPECIFICATION TEST CONDITIONS				PERFORMANCE TESTS		ELASTOMER COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	REQUIRED	UPL ISSUED				
Air, original properties	Ambient	-	Hardness, 65 \pm 5; Elong. 300% min	None	No	Not known	5330	Gasket and Packing Material, Oil Resistant Rubber Access Hull Applications	MIL-G-23983
Air, oven aged	194	46	Elong. change, -20% max						
ASTM #1 petroleum oil	212	70	Vol. change, 0 to +5%						
Water	212	168	Vol. change, 0 to +10%						
Ozone, 100 pphm	100	168	No cracks						
Air, original properties	Ambient	-	Hardness, 68 min; Elong. 180% min	Leakage, 10% recovery @ 50% elong	Yes	Nitrile	5330	Packing, Preformed, Petroleum Hydraulic Fluid Resistant, 2750F	MIL-P-25732
Cooling medium, temp retraction	-49	-	Vol. change, 0 to +15%	breakout, cycling fatigue and crush					
MIL-H-5606 hydraulic fluid	275	72							
Air, original properties	Ambient	-	Hardness, 75 \pm 5; Elong. 175% min	None	No	Fluorocarbon	5330-9320	Rubber, Fluorocarbon Elastomer, High-Temperature, Fluid-Resistant	MIL-R-258971 Type I Class 1
Air, oven aging	600	70	Elong. change, -45% max						
Stauffer Blend 770	400	72	Vol. change, +1 to +10%						
Synthetic ester lubricant	392	72	Vol. change, +1 to +15%						
70/30 isooctane/toluene	Ambient	72	Vol. change, 0 to +5%						
Air, original properties	Ambient	-	Hardness, 90 \pm 5; Elong. 120% min	None	No	Fluorocarbon	5330-9320	Rubber, Fluorocarbon Elastomer, High-Temperature, Fluid-Resistant	MIL-R-258971 Type I Class 2
Air, oven aging	600	70	Elong. change, -50% max						
Stauffer Blend 770	400	72	Vol. change, +1 to +10%						
Synthetic ester lubricant	392	72	Vol. change, +1 to +15%						
70/30 isooctane/toluene	Ambient	70	Vol. change, 0 to +5%						
Air, original properties	Ambient	-	T.S. 1400 psi min; Elg. 125% min			Fluorocarbon	5330	Rubber, Fluorocarbon Elastomer, High-Temperature Fluid and Compression Set Resistant	MIL-R-83248 Type I Class 1
Air, Hardness Shore A	Ambient	70	T.S. - 35% max						
Air, oven aging	528	70	T.S. - 30% max, Elong. -20% max						
Stauffer Blend 7700	357		Vol. change, +20% max						
Air, original properties	Ambient	-	Hardness 75 \pm 3; Elong. 125% min			Nitrile	5330	Packing Preformed, Petroleum Hydraulic Fluid Resistant, Improved Performance of 2750	MIL-P-83461
Air, oven aging	275	70	Compression 60% max						
Hydraulic Fluid MIL-H-5606	275	70	Vol. change, 10 to 20%						

1 Document cancelled Use MIL-R-83248.

MIL-HDBK-699B (MR)

PACKINGS AND GASKETS

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS						
Air, 180° bend Steam	Ambient 417	- 24	No cracks No cracks, distortion or hardening	Nat. or syn. rubber 13%; brass wire- asbestos cloth, 50%	5330	Packing Material, Asbestos, Metallic Cloth and Tape	HH-P-31 Type II	
Air, tensile	212	1	1/32" or over, 3500 psi. min, 1/64", 1200 psi min	70% asbestos, 10% nat or syn. rubber	5330	Packing; Asbestos, Sheet, Compressed	HH-P-46	
Air, 180° bend Steam	Ambient 410	- 24	No cracks No cracks, distortion or hardening	Nat. or syn. rubber 15%, brass wire- asbestos cloth, 50%	5330	Gaskets, Asbestos, Metallic Cloth	HH-G-76 Types I & II	
Air, compressibility ASTM #3 petroleum oil 70/30 Isooctane/toluene	212 330 80	1 5 5	Recovery, 15 to 40% Thickness increase, 0 to 70% Thickness increase, 0 to 45%	Nat. or syn. rubber and asbestos or other mineral (15 grades) fibers		Nonmetallic Gaskets for General Automotive Purposes	SAE J90 Type I	
Air, compressibility ASTM #3 petroleum oil Isooctane	Ambient 212 80	- 70 22	Recovery, 70 to 75% Vol. change, -2 to +50% Vol. change, -5 to +35%	Nat. or syn. rubber and cork (11 grades)		Nonmetallic Gaskets for General Automotive Purposes	SAE J90 Type II	
Air, compressibility ASTM #3 petroleum oil 70/30 Isooctane/toluene Water	212 330 80 80	1 5 5 22	Recovery, 15 to 40% Thickness increase, 0 to 70% Thickness increase, 0 to 45% Thickness increase, 15 to 50%	Nat. or syn. rubber and cellulose or other organic fibers (24 grades)		Nonmetallic Gaskets for General Automotive Purposes	SAE J90 Type III	
Air, original properties Air, 180° bend Air, compression set Air, oven aging	Ambient -13 158 158	- - 22 22 166	Elong. 400% min, hardness 50 No cracks 25% max Elongation change, -30% max	Nat. or syn. rubber	5330	Gasket; Rubber, Molded or Extruded, for Concrete Non-Pressure Sewer Pipe	HH-G-160 ¹	
Air, original properties Air, compression set Air, oven aging Water	Ambient 158 158 158	- 22 96 158	Tensile, 1200 psi min; elong. 350% min 25% max Elongation change, -20% max Weight increase, 10% max	Nat. or syn. rubber		Joints for Circular Concrete Sewer and Culvert Pipe, Using Flexible, Watertight Rubber Type Gaskets	ASTM C443/	
Air, original properties	Ambient	-	Hardness, 50-80	Nitrile or poly- acrylate		Lathe Cut Seals	SAE J654	
Air, original properties Air, compression set Air, compression set Air, oven aging Ozone, 100 ppm	Ambient -35 194 194 104	- 94 46 46 70	Tensile, 1000 psi min; elong. 300% min 75% max 30% max Elongation change, -30% max No cracks	Syn. rubber	5330	Rubber Material, 45 Durometer Hardness	MIL-R-900	

¹ Document cancelled. No replacement.

MIL-HDBK-6 99B(MR)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.							
Air, ASTM D746	-20	94	No cracks	Syn. rubber	5330	Gasket Material, Synthetic Rubber (For Bolted Steel Tanks)	MIL-G-1086 Type I		
Air, compression set	-20	94	60% max						
Air, compression set	194	46	40% max						
Isocetane	74	46	Volume change, 10 min						
70/30/Isocetane/toluene	74	46	Volume change, 70% max						
Air, ASTM D746	-20	94	No cracks	Syn. rubber	5330	Gasket Material, Synthetic Rubber (For Bolted Steel Tanks)	MIL-G-1086 Type II		
Air, compression set	-20	94	60% max						
Air, compression set	194	46	50% max						
Isocetane	74	46	Volume change, 10 min						
70/30/Isocetane/toluene	74	46	Volume change, 70% max						
Air, original properties	Ambient	-	Tensile, 1000 psi. min; elong, 300% min	Chloroprene, SBR, Butyl or Nitrile	5330	Gasket Materials, Synthetic Rubber, 50 & 60 Durometer Hardness	MIL-G-1149 Type I		
Air, flexibility	-20	16	Flexible						
Air, compression set	158	94	75% max						
Air, oven aging	158	94	Elongation change, -35% max						
Air, original properties	Ambient	-	Tensile, 1000 psi. min; elong, 250% min	Chloroprene, SBR, Butyl or Nitrile	5330 9320	Gasket Materials, Synthetic Rubber, 50 & 60 Durometer Hardness	MIL-G-1149 Type II		
Air, flexibility	-20	16	Flexible						
Air, compression set	158	94	75% max						
Air, oven aging	158	94	Elongation change, -35% max						
Air, compressibility	Ambient	-	Recovery, 15 to 40%	Nat. or syn rubber and asbestos or other mineral fibers (16 grades)		Nonmetallic Gasket Material for General Automotive and Aero-nautical purposes	ASTM F104 Type I		
ASTM #3 petroleum oil	300	5	Thickness increase, 0 to 70%						
70/30 Isocetane/toluene	80	5	Thickness increase, 0 to 45%						
Air, compressibility	Ambient	-	Recover, 70 to 75%					Nonmetallic Gasket Material for General Automotive and Aero-nautical purposes	ASTM F104 Type 2
Air, mandrel bend	212	70	No cracks						
ASTM #3 petroleum oil	212	70	Volume change, -2 to +50%						
Isocetane	80	22	Volume change, -5 to +35%						
Air, compressibility	Ambient	-	Recovery, 75% min	Nat. or syn. rubber and cork (11 grades)		Nonmetallic Gasket Material for General Automotive and Aero-nautical purposes	ASTM F104 Type 2		
Air, mandrel bend	212	70	No cracks						
ASTM #3 petroleum oil	212	70	Volume change, -2 to +50%						
Isocetane	80	22	Volume change, -10 to +25%						
Air, compressibility	Ambient	-	Recovery, 20 to 55%	Nat. or syn. rubber and cellulose or other organic fibers (18 grades)		Nonmetallic Gasket Material for General Automotive and Aero-nautical purposes	ASTM F104 Type 3		
ASTM #3 petroleum oil	80	22	Thickness increase, 5 to 30%						
70/30 Isocetane/toluene	80	22	Thickness increase, 5 to 30%						
Water	90	22	Thickness increase, 15 to 90%						

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SPECIFICATION TEST CONDITIONS													
ENVIRONMENT AND TEST		TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS				COMPOSITION	QPL ISSUED CLASS	SPECIFICATION TITLE		SPECIFICATION NUMBER	
Air, original properties Air, oven aging Air, compression set		Ambient	-	Tensile, 700 psi min; elong. 150% min				Nat. or syn. rubber		Sheet Rubber Packing		ASTM D1330/ Grade I	
		158	94	Tensile change, -25% max									
		158	22	75% max									
Air, original properties Air, oven aging Air, compression set		Ambient	-	Tensile, 400 psi min; elong. 150% min				Nat. or syn. rubber		Sheet Rubber Packing		ASTM D1330/ Grade II	
		158	94	Tensile change, -25% max									
		158	22	75% max									
Air, compression set Cooling medium, ASTM D746 Water		158	22	16% max				Nat. or syn. rubber		Rubber Ring for Asbestos- Cement Pipe		ASTM D1869/ Grade I	
		-13	-	No cracks									
		212	480	Volume change, 12% max									
ASTM #3 petroleum oil		212	70	Volume change, -1 to +15%				Syn. rubber		5330	Rubber Sheet, Strip Extruded, and Molded Shapes, Synthetic, Oil Resistant	MIL-R-2765	
		194	46	40% max									
		-20	94	35% max									
Air, compression set ASTM #3 petroleum oil Benzene		158	94	Volume change, 25% max				40% Syn rubber, 30% graphite		5330	Rubber Sheet, Solid, Unvulcanized, High Graphite, Gasket Use, Symbol 2352	MIL-R-2778	
		74	22	No delamination									
		Ambient	-	Hardness, 80 max									
Air, original properties (Test performed on rubber compound only) TT-S-735 40% aromatic		Ambient	-	Volume change, 100% max				Syn. rubber cotton sheeting		5330	Joining Sealing Packing	MIL-J-28291	
		74	24										
		210	1000	Satisfactory performance @ 1650 psi									
MIL-L-15017 lubricating oil		210	1000	Satisfactory performance @ 1650 psi				12% syn rubber, 40% cotton fabric	Yes	5330	Packing Assembly Hydraulic Concial and V Types	MIL-P-2911 Type I	
		210	1000	Satisfactory performance @ 1650 psi									
		210	1000	Satisfactory performance @ 1650 psi									
Air, original property Air, impact dropping weight		Ambient	-	T.S. 1500 psi min				Syn. rubber		5345	Grommets-Rubber, Hot-Oil and Coolant Resistant	MIL-G-3036	
		-40	24	No cracks or deformation									
		212	70	Breaking strength, 100 lbs. min									
Air, oven aging Lubricating Oil Ethylene glycol		300	72	Volume change, 0 to 15%				12% syn rubber, 40% cotton, asbes- tos or wire asbes- tos fabric	Yes	5330	Packing Assembly Hydraulic Concial and V Types	MIL-P-2911 Type II	
		300	72	Volume change, 0 to 25%									
		200	15	Mandrel bend, no cracks									
Air, oven aging Lubricating Oil Gasoline		250	5	Thickness increase, 40% max				Nat. or syn. rubber or asbestos fibers			Gasket, Oil Resisting	AMS 32301	
		Ambient	5	Thickness increase, 40% max									
		Ambient	5	Thickness increase, 40% max									

1 Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.							
Air, oven aging Lubricating Oil Gasoline	212 300 80	15 5 5		Mandrel bend, no cracks Thickness increase, 20% max Thickness increase, 25% max	Syn. rubber and asbestos fibers			Gasket, Oil Resisting	AMS 32311
Air, compressibility	Ambient	-		25% max					
Air, oven aging	212	16		Mandrel bend, no cracks					
ASTM #1 petroleum oil	300	5		Thickness increase, 0 to 10%	Syn. rubber and asbestos fibers			Asbestos and Synthetic Rubber Sheet, Hot Oil Resistant	AMS 3232
Isocetane	80	5		Thickness increase, 0 to 10%					
Air, compression set	158	22		70% max					
Cooling medium, ASTM D746	-40	-		No cracks					
Air, oven aging	212	70		Mandrel bend, no cracks					
ASTM #1 petroleum oil	212	24		Volume change, $\pm 15\%$	Syn. rubber and cork			Synthetic Rubber and Cork Composition. General Purpose Soft	AMS 3250
Isocetane	80	24		Volume change, -5 to 25%					
Air, compression set	158	22		80% max					
Cooling medium, ASTM D746	-40	-		No cracks					
Air, oven aging	212	70		Mandrel bend, no cracks					
ASTM #1 petroleum oil	212	24		Volume change, $\pm 10\%$	Syn. rubber and cork			Synthetic Rubber and Cork Composition General Purpose Medium	AMS 3251
Isocetane	80	24		Volume change, -5 to 25%					
Air, compression set	158	22		80% max					
Cooling medium, ASTM D746	-40	-		No cracks					
Air, oven aging	212	70		Mandrel bend, no cracks					
ASTM #1 petroleum oil	212	24		Volume change, $\pm 10\%$	Syn. rubber and cork			Synthetic Rubber and Cork Composition General Purpose Firm	AMS 3252
Isocetane	80	24		Volume change, -5 to 25%					
Air, hydrostatic pressure	Ambient	-		180 psi min					
Air, oven aging	158	96		Hydrostatic pressure, 180 psi min	Syn. rubber	Yes	1355	Diaphragms, Synthetic-Rubber Type I	MIL-D-3377 Type I
SAE #30 paraffin oil	80	24		Weight change, $\pm 1\%$					
Air, hydrostatic pressure	Ambient	-		300 psi min					
Air, oven aging	158	96		Hydrostatic pressure, 210 psi min	Syn rubber	Yes	1355	Diaphragms, Synthetic-Rubber Type II	MIL-D-3377 Type II
SAE #30 paraffin oil	80	24		Weight change, 1 to +3%					
Air, compression set	158	22		10% max					
Air, ASTM D736 bent loop	-17	5		No cracks					
ASTM #1 petroleum oil	168	70		Volume change, $\pm 10\%$	Syn. rubber		5330	Rubber, Synthetic; Sheet, Strip and Molded	MIL-R-3533 Type II
(Tests performed on rubber compound only)									
Air, compressed set	158	22		40% max					
ASTM #1 petroleum oil	215	70		Volume change, -20 to +10%	Syn. rubber with or without fabric		1560	Fittings, Tank, Power- plant Fluid, Removable General Specification For	MIL-F-5577 Type I
Ozone, 100 PPM	100	1/2		No cracks					

1 Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS					SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.								
(Tests performed on rubber compound only)										
Air, compressed set	212	22	70% max		Syn. rubber with or without fabric	1560	Fittings, Tank, Power- plant Fluid, Removable General Specification For	MIL-F-5577 Type II		
ASTM #1 petroleum oil	275	70	Volume change, -20 to +10%							
Ozone, 100 PPM	100	1/2	No cracks							
Air, compression set	158	22	80% max		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type I, Cl. 1, Gr. A (40-55) Gr. B (55-70)		
Air, compressibility	140	5	10% min							
ASTM #1 petroleum oil	212	70	Volume change, +15%							
TT-S-735 40% aromatic	74	24	Volume change, +20% max		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type I, Cl. 1 Gr. C (70-85)		
Air, compression set	158	22	55% max							
Air, compressibility	140	5	25% min							
ASTM #1 petroleum oil	212	70	Volume change, +15%		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type I, Cl.2 Gr. A (40-55) Gr. B (55-70)		
TT-S-735 40% aromatic	74	24	Volume change, +20% max							
Air, compression set	158	22	80% max							
Air, compressibility	140	5	25% min		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type I, Cl.1 Gr. A (40-55) Gr. B (55-70)		
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%							
TT-S-735 40% aromatic	74	24	Volume change, +60% max							
Air, compression set	158	22	55% max		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.1 Gr. A (40-55) Gr. B (55-70)		
Air, compressibility	140	5	25% min							
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%							
TT-S-735 40% aromatic	74	24	Volume change, +60% max		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.1 Gr. C (70-85)		
Air, compression set	158	22	80% max							
Air, compressibility	140	5	15% min							
ASTM #1 petroleum oil	212	70	Volume change, +15%		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.1 Gr. A (40-55) Gr. B (55-70)		
TT-S-735 40% aromatic	74	24	Volume change, +25% max							
Air, compression set	158	22	55% max							
Air, compressibility	140	5	15% min		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.1 Gr. C (70-85)		
ASTM #1 petroleum oil	212	70	Volume change, +15%							
TT-S-735 40% aromatic	74	24	Volume change, +25% max							
Air, compression set	158	22	80% max		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.2 Gr. A (40-55) Gr. B (55-70)		
Air, compressibility	140	5	30% min							
ASTM #1 petroleum oil	212	70	Volume change, - to +10%							
TT-S-735 40% aromatic	74	24	Volume change, +60% max		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.2 Gr. A (40-55) Gr. B (55-70)		
Air, compression set	158	22	55% max							
Air, compressibility	140	5	30% min							
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.2 Gr. C (70-85)		
TT-S-735 40% aromatic	74	24	Volume change, +60% max							
Air, compression set	158	22	55% max							
Air, compressibility	140	5	30% min		Syn. rubber and cork	5330	Cork and Rubber Compo- sition Sheet; for Aromatic Fuel and Oil Resistant Gaskets	MIL-C-6183 Type II, Cl.2 Gr. C (70-85)		
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%							
TT-S-735 40% aromatic	74	24	Volume change, +60% max							

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.						
Air, compressibility	Ambient	-	-	12 ± 5%	Nat. or syn. rubber, asbestos	5330	Asbestos Sheet, Compressed, For Fuel, Lubricant, Coolant, Water, and High-Temperature Resistant Gaskets	MIL-A-7021 Class I
Air, compressibility	Ambient	-	-	Recovery, 45% min				
70/30 Isooctane/toluene	74	22	-	Thickness change, 0 to 20%				
Air, compressibility	Ambient	-	-	12 ± 5%	Nat. or syn. rubber asbestos fibers	5330	Asbestos Sheet, Compressed, For Fuel, Lubricant, Coolant Water and High Temperature Resistant Gaskets	MIL-A-7021 Class 2
Air, compressibility	Ambient	-	-	Recovery, 45% min				
Water	212	70	-	Thickness change, 0 to 10%				
Air, compression set	Ambient	-	-	15% max	18 cr-8 Ni screen between rubber like gasket		Gaskets, Type XX Engine Accessory Drive. Corrosion Resistant Steel Screen Reinforced Controlled Performance	AMS 7283
Air, compression set	212	70	-	10% max				
Isooctane	80	5	-	Compression set, 20% max				
ASTM #1 petroleum oil	212	70	-	Thickness change, 0 to 10%	Synthetic rubber	5330	Rubber Synthetic Solid Sheet Strip and Fabricated Parts Synthetic Oil	MIL-R-7362 Type II
Isooctane	80	5	-	Thickness change, 0 to 15%				
Air, original properties	Ambient	-	-	T.S. 1200 psi min, elong. 150% min				
MIL-H-5606 Hydraulic Fluid and nitrogen, endurance	-65 to 200	-	-	10% max air leakage after cycling	Nat. or syn. rubber	5330	Packings, Gaskets, and Fillers, Performed Rubber or Synthetic Rubber (for Recoil Mechanism)	MIL-P-115011
Air, original properties	Ambient	-	-	Tensile, 500 psi, min; elong. 75% min				
Air, oven aging	437	70	-	Elongation change, 30% max				
Cooling medium, ASTM D1053	-40	-	-	Flexible	Nat. or syn rubber asbestos or other mineral fibers (15 grades)	5330	Packaging, Performed; Pneumatic Hose Couplings, Universal	MIL-P-11719
Air, compressibility	Ambient	-	-	Recovery, 15 to 40%				
Air, mandrel bend	-40	6	-	No breaks or cracks				
ASTM #3 petroleum oil	302	5	-	Thickness increase 0 to +70%	Nat. or syn. rubber and cork (9 grades)	5330	Gasket Material, Non-Metallic	MIL-G-12803 Type I
70/30 Isooctane/toluene	78	5	-	Thickness increase 0 to +45%				
Air, compressibility	Ambient	-	-	Recovery, 76% min				
Air, mandrel bend	-40	6	-	No breaks or cracks	Nat. or syn. rubber cellulose or other organic fabric (24 grades)	5330	Gasket Material, Non-Metallic	MIL-G-12803 Type II
ASTM #3 petroleum oil	212	70	-	Volume change, -2 to +50%				
Isooctane	78	22	-	Volume change, -5 to +15%				
Air compressibility	Ambient	-	-	Recovery, 20 to 55%	ASTM #3 petroleum oil	5330	Gasket Material, Non-Metallic	MIL-G-12803 Type III
ASTM #3 petroleum oil	78	22	-	Thickness increase, +5 to +30%				
70/30 Isooctane/toluene	78	22	-	Thickness increase, +5 to 30%				
Water	78	22	-	Thickness increase, +15 to 90%				

1. Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.						
Air, original properties	Ambient	-		Tensile, 1000 psi min; elong, 400% min	Nat. or syn. rubber	4240	Gaskets, Rubber	MIL-G-13210
Air, compression set	158	22		25% max				
Air, original properties	Ambient	-		Tensile, 1200 psi, min, elong, 300% min	Syn. rubber	5330	Rubber Sheet: Synthetic Medium Soft General - Purpose Gasket Material (For Extreme Climatic Conditions)	MIL-R-14328
Air, compression set	-65	94		60% max				
Air, compression set	194	46		40% max				
Water	74	24		Volume change, -2 to 5%				
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-		Tensile, 1500 psi min; elong 300% min	Syn. rubber with 6 to 10 piles of cotton duck	5330	Packing (Wiper Ring).	MIL-P-14574
Air, compression set	158	22		50% max			Synthetic Rubber, Cloth Insertion	
ASTM #3 petroleum oil	212	70		Volume change, 0 to 120%				
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-		Tensile, 1800 psi min; elong, 300% min	Chloroprene	5330	Rubber, Shaft Covering Material, (For Marine Propeller Shafts)	MIL-R-150581 Type II
Air, oven aging	158	96		Tensile change, +20%				
Water	212	96		Volume change, 15% max				
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-		Tensile, 1200 psi min; elong, 250% min	SBR	5330 8030	Rubber, Shaft Covering Material, (For Marine Propeller Shafts)	MIL-R-150581 Type III
Air, oven aging	158	96		Tensile change, +20%				
Water	212	96		Volume change, 15% max				
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-		Tensile, 1200 psi min; elong, 250% min	Nitrile	5330 8030	Rubber, Shaft Covering Material, (For Marine Propeller Shafts)	MIL-R-150581 Type IV
Air, oven aging	158	96		Tensile change, +20%				
Water	212	96		Volume change, 15% max				
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-		Tensile, 1500 psi min; elong, 400% min	Class I, Chloroprene; Class III, Nitrile	5330	Rubber Gasket Material 50 Durometer Hardness (Maximum)	MIL-R-15624 Class I, Class III
Air, flexibility	-20	16		Flexible				
Air, compression set	194	46		30% max				
Air, oven aging	194	46		Elongation change, -30% max				
Water	74	24		Volume change, 5% max				
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-		Tensile, 1000 psi min; elong, 300% min	SBR	5330	Rubber Gasket Material 50 Durometer Hardness (Maximum)	MIL-R-15624 Class II
Air, flexibility	-20	16		Flexible				
Air, compression set	194	46		30% max				
Air, oven aging	194	46		Elongation change, -30% max				
Water	74	24		Volume change, 5% max				

1 Document cancelled without replacement.

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.							
Air, original properties	Ambient	-		Tensile, 1200 psi min; elong, 300% min	Syn. rubber		9320	Parts, Synthetic Rubber, for Use with Batteries or in Battery Compartments of Submarines	DOD-P-15817
Air, compression set	194	46		40% max					
Air, oven aging	194	46		Elongation change, -30% max					
Sulfuric acid, 60%	158	168		Volume change, 0 to +8%					
Flame	-	-		No burning after flame is removed	Syn. rubber asbestos cloth (2 ply)		5330	Gaskets, Asbestos Metallic Cover, Rubber Core	MIL-G-17927
(Tests performed on rubber compound only)									
Air, original properties	Ambient	-		Tensile, 1000 psi min; elong, 300% min					
Air, compression set	194	46		40% max					
ASTM #3 petroleum oil	158	70		Volume change, -1 to +7%	Syn. rubber	Yes	5330	Packings, Hydraulic High Pressure (For Hydropneumatic Systems)	MIL-P-19152
Mineral oil	-	-		Cycling test, satisfactory performance					
Air, original properties	Ambient	-		Tensile, 2500 psi min; elong, 250% min	Nitrile		9330	Gaskets, Synthetic Rubber, Oil Resistant, Slide Valve (For 21-inch Submerged Torpedo Tubes)	MIL-G-19769
Air, compression set	194	46		40% max					
ASTM #3 petroleum oil	158	94		Volume change, +3% max					
Hardness, Shore A	Ambient	-		75 ± 5					
Air, compressibility	Ambient	-		Recovery, 50% min	Syn. rubber		5330	Packing, V Ring	MIL-P-19918 V packing (85-95)
ASTM #3 petroleum oil	212	70		Volume change, +45% to +65%					
Air, compression set	212	70		30% max	Syn. rubber		5330	Packing, V Ring	MIL-P-19918 Filler Ring (55-65)
ASTM #3 petroleum oil	212	70		Volume change, +30 to +40%					
(Tests performed on rubber compound only)									
Air, original properties	Ambient	-		Tensile, 1000 psi min; elong, 300% min	Syn. rubber		5330	Gaskets, Metal Inserted Rubber, Armored Hatch	MIL-G-20078
Air, compression set	-35	94		40% max					
Air, compression set	194	46		30% max					
Benzene	74	22		No delamination					
Air, compression set	212	70		60% max	Syn rubber		5330	Packing, Vulcanized Asbestos-Metallic (For Small Arms)	MIL-P-20099
ASTM #3 petroleum oil	212	70		Volume change, 0 to +40%					
MIL-H-19457 hydraulic fluid	180	1000		Satisfactory performance @ 3000 psi	Syn rubber with cotton, leather or asbestos	Yes	5330	Packing Assemblies, Hydraulic Conical and V Types, Fire Resistant Type Hydraulic Fluid	MIL-P-21099

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	OF	TIME, HRS.						
Air, original properties	Ambient	-		Tensile, 1600 psi min, elong, 70% min	SBR		Rubber Sheet, Solid, Synthetic, Shipboard Water Evaporator Gasketing	MIL-R-21252
Air, compression set	212	70		65% max				
Water	194	70		Volume change, +25% max				
(Tests performed on rubber compound only)								
MIL-F-17111 hydraulic fluid	150	70		Volume change, -1 to +10%	Syn. rubber		Seals, Plain or Plain Encased, Oil	MIL-S-21558 Grades A & B Class 1
(Tests performed on rubber compound only)								
MIL-F-17111 hydraulic fluid	200	70		Volume change, -1 to +10%	Syn. rubber		Seals, Plain or Plain Encased, Oil	MIL-S-21558 Grades A & B Class 2
Air, original properties	Ambient	-		T.S. 1800 psi min; elong, 250% min Hardness 60 + 10	Syn. rubber		Gasket, Cylinder	MIL-G-21569 Class I
Air, oven aging	194	336		T.S. -25% max change Compression set 50% max change				
Oil immersion #2 Oil	194	94		T.S. -25% max change Volume change +10% max				
Air, original properties	Ambient	-		T.S. 500 psi min Elong 120% min Hardness 65 + 10	Syn. rubber		Gasket Cylinder	MIL-G-21569 Class II
Air, oven aging	194	336		T.S. -25% max change Compression set 50% max change				
Oil immersion #2 Oil	194	94		T.S. -35% max change Volume change +15% max				
Air, original properties	Ambient	-		Tensile, 1200 psi min; elong, 300% min	Nitrile	Yes	Gaskets, Heat Exchanger, Various Cross Section Ring, Synthetic Rubber	MIL-G-21610 Type I
Air, compression set	158	22		35% max				
ASTM #3 petroleum oil	230	168		Volume change, +20% max				
Steam	280	24		Volume change, 10% max				
Air, original properties	Ambient	-		Tensile, 600 psi min; elong, 150% min	Silicone	Yes	Gaskets, Heat Exchanger, Various Cross Section Ring, Synthetic Rubber	MIL-G-21610 Type II
Air, compression set	158	22		40% max				
ASTM #1 petroleum oil	230	168		Volume change, 15% max				
Air, original properties	Ambient	-		T.S. 2400 psi min, elong, 25% min Hardness 65 + 5	Ethylene-Propylene	9320	Gasket & Packing Material Rubber for Use with Polar Fluids, Steam and Air at Moderately High Temperatures	MIL-G-22050 Grade 1
Air, aging	280	166		T.S. -30% max, elong, -30% max				
MIL-H-19457 Hydraulic Fluid	212	166		Volume change 0- 10%				
Steam	330	166		Volume change +5% max				

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS			COMPOSITION	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.									
Air, original properties	Ambient	-		T.S. 2400 psi min; elong 150% min	Ethylene	9320	Gasket & Packing Material Rubber for Use with Polar Fluids, Steam and Air at Moderately High Temperatures		MIL-G-22050 Grade 2		
Air, aging	280	166		Hardness 80 + 5	Propylene						
MIL-H-19457 Hydraulic fluid	212	166		T.S. -30% max; elong, -30% max							
Steam	330	166		Volume change 0 - 10%							
				Volume change +5% max							
Air, original properties	Ambient	-		Tensile, 1600 psi min; elong, 150% min	Syn. rubber	5330	Gasket and Packing Material Petroleum and Phosphate Ester Fluid Resistant		MIL-G-236521 Type I		
Air, compression set	212	70		25% max							
ASTM #3 petroleum oil	212	70		Volume change, 0 to +5%							
MIL-H-19457 hydraulic fluid	212	70		Volume change, 0 to +8%							
Air, original properties	Ambient	-		Tensile, 1700 psi min; elong, 100% min	Syn. rubber	5330	Gasket and Packing Material Petroleum and Phosphate Ester Fluid Resistant		MIL-G-236521 Type II		
Air, compression set	212	70		40% max							
ASTM #3 petroleum oil	212	70		Volume change, 0 to +5%							
MIL-H-19457 hydraulic	212	70		Volume change, 0 to +8%							
Air, original properties	Ambient	-		Tensile, 1500 psi min; elong, 300% min	Syn. rubber	5330	Gasket and Packing Material, Oil Resistant Rubber, Access Hull Applications		MIL-G-23983		
Air, compression set	194	46		30% max							
ASTM #1 petroleum oil	212	70		Volume change, 9 to +5%							
Ozone, 100 ppm	100	168		No cracks							
Air, original properties	Ambient	-		Specific gravity 2.15	Polytetra-	5330	Packing Material, Braided TPE (Poly- tetrafluoroethylene		MIL-P-24396		
Lubricant content	Ambient	-		Melting Point 327°C	Fluoroethylene						
				15% petroleum oil							
Rubber conforms to MIL-H-5606					Synthetic rubber						
Air, original properties	Ambient	-		T.S. 200 psi min, elong, 200% min	Tetrafluoroethylene	5330	Gasket Material, Tetrafluoroethylene Resin, Glass-Filled Cryogenic Application		MIL-G-384262		
Water absorption	Ambient	336		Hardness 50 to 70							
				Wt increase 0.5% max							
MIL-L-10295, lubricating oil	-65	16		Sealing test, no leak during shutdown	Syn. rubber	5330	Seal, Plain, and Seal Plain, Encased: Fluid Radial, Single and Multiple Lip Sealing Member		MIL-S-45005 Class 1		
MIL-L-15015, lubricating oil	170	192			chrome leather						
MIL-L-10295, lubricating oil	-65	16		Sealing test, no leak during shutdown	Syn. rubber	5330	Seal, Plain, and Seal Plain, Encased Fluid Radial, Single and Multiple Lip Sealing Member		MIL-S-45005 Class 2		
MIL-L-15015, lubricating oil	200	192									

1 Document cancelled. Use MIL-R-83248.

2 Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS				QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS									
MIL-L-10295, lubricating oil	-65	16	Sealing test, no leak during shutdown	Syn. rubber	Yes	5330	Seal, Plain, and Seal Plain, Encased: Fluid Radial, Single and Multiple Lip Sealing Member	MIL-S-45005 Class 3			
MIL-L-15015, lubricating oil	300	192									
Rubber conforms to AMS 3242				Chloroprene rubber		5330	Gasket, RF and Pressure	MIL-G-46898			
Rubber conforms to ZZ-R-765, Class III, Grade 25				Silicone rubber		5330	Gasket shielding, Electronic-oriented Wires Embedded in Silicone Rubber, Pressure Seal	MIL-G-47197			
Air, original properties	Ambient	-	T.S. 100 psi; elong, 500% Hardness 30 to 80	Synthetic rubber		5330	Rubber Synthetic Sheets Strips Molded or Extruded Shapes	MIL-R-6855 Class 1			
Air, oven aging	212	70	T.S. -20% max, elong. -50% max								
Oil immersion	212	70	Volume change -30 to +10%								
Air, original properties	Ambient	-	T.S. 1200 to 1500 psi; elong, 300 to 500%; Hardness 30 to 60	Synthetic rubber		5330	Rubber Synthetic Sheets Strips Molded or Extruded Shapes	MIL-R-6855 Class 2			
Air, oven aging	212	70	T.S. -20% max; elong. 40% max								
Oil immersion	212	70	Volume change +10%								
Air, original properties	Ambient	-	T.S. 1600 psi min Elongation 100% min Hardness 85 + 5	Ethylene-Propylene		5330	Rubber, Ethylene-Propylene, Hydrazine Resistant	MIL-R-83412 Type I			
Air, oven aging	2 257	70	T.S. -35% max Elongation -30% max Hardness +5 points								
Oil immersion, Hydrazine	160	96	T.S. -20% max Vol. change +3% max								
Air, original properties	Ambient	-	T.S. 1350 psi min Elongation 125% min Hardness 75 + 3	Synthetic		5330	Packings, Rubber, Synthetic, Solid Sheet, Strip and Fabrication Parts Synthetic Oil Resistant	MIL-P-83461			
Oil immersion Conforming to MIL-H-5606	275	70	T.S. -50% max change Elongation -35% max change Volume Change +20%								

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TIRES, TUBES AND RELATED ITEMS

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP OF	TIME, HRS.						
(Tests on cured patch)	Ambient	-		T, 2000 psi min; E, 600% min	Natural rubber	2640	Patch, Repair, for Inner Tubes and Tubeless Tire Liners	22-P-112
Air, original properties	Ambient	-		T, psi min, tread 1800; sidewall 1000	Natural or synthetic rubber, Rayon or nylon cord	2610	Tires, Pneumatic, Vehicular (Highway)	22-T-381 Type I
Air, original properties	Ambient	-		T, psi min, tread 1700, sidewall 900	Natural or synthetic rubber, Rayon or nylon cord	2610	Tires, Pneumatic, Vehicle and Portable Equipment	22-T-381 Type II
Air, original properties Air, oven aging	Ambient 158	- 70		T, 2000 psi min; E, 200% min; H, 65+10 Max change, T, -15%; E, -25%, H, +5	Type of rubber not specified	2630	Tire, Solid Rubber, and Wheel, Solid Rubber Tire, (Industrial)	22-T-391 Type I
Air, original properties Air, oven aging Ozone, 50 pphm	Ambient 158 100	- 70 168		T, 2000 psi min; E, 200% min; H, 65+10 Max change, T, -15%, E, -25%, H, +5 No cracks under 7X magnification	Type of rubber not specified	2630	Tire, Solid Rubber, and Wheel, Solid Rubber Tire, (Industrial)	22-T-391 Type II
Air, original properties Methanol, ASTM D746 Air, oven aging	Ambient -65 158	- 0.05 70		T, 3800 psi min; E, 400% min, h, 75+20 No cracks Max change; T, -15%, E, -25%, H, +5	Type of rubber not specified	2630	Tire, Solid Rubber, and Wheel, Solid Rubber Tire (Industrial)	22-T-391 Type III
Air, road service test Air, road service test	Ambient Ambient	- -		Class A; No failure after 1500 miles Class B, No failure after 2500 miles	Tires; natural Tires; natural	2610	Tire, Pneumatic; Inner Tube, Pneumatic Tire; (Bicycle)	22-T-401 ¹
Air, original properties	Ambient	-		Tread; T, 1700 psi min; E, 400% min Sidewalls, T, 900 psi min	Tires, natural or synthetic	2610	Tire Pneumatic, Industrial	22-T-410
(Tests on cured materials) Air, tensile strength Cooling medium, ASTM D746	Ambient -65	- 0.05		2000 to 3300 psi, varying with type No cracks	Natural, SBR, butyl or polybutadiene	2640	Tire, Pneumatic: Retread and Repair Materials	22-T-416
(Repair and retread materials covered in 22-T-416 Curing bags and tubes covered in MIL-C-14625)						2640	Tire, Pneumatic: Re-treaded and Repaired	22-T-441

¹ Document cancelled without replacement

MIL-HDBK-699B (NR)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS				QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS								
Air, tensile strength	Ambient	-		Psi min; Butyl, 1200, Natural, 2100	Butyl or natural	2610	Inner Tube, Pneumatic Tire	2610	Inner Tube, Pneumatic Tire	42-I-550
Air, elongation	Ambient	-		% min, Butyl, 450, Natural 550						
Air, endurance test (C1 B)	-64	168		No cracks or leaks						
Air, tension set	225	5		% max; Butyl 35; Natural, 25						
Air, original properties	Ambient	-		Hardness, Type A, 85 to 95	Type A: Natural or Synthetic. Type B: PVC	5670	Treads, Metallic and Nonmetallic, Nonskid	5670	Treads, Metallic and Nonmetallic, Nonskid	RR-T-650
Air, tensile strength	Ambient	-		Psi min, Butyl, 1400, Natural 2300	Natural or butyl	2610	Tubes, Inner, Vehicle Puncture-Sealing	2610	Tubes, Inner, Vehicle Puncture-Sealing	42-T-766 ¹
Air, elongation	Ambient	-		% min; Butyl, 500, Natural, 600						
Air, tension set	225	5		% max, Butyl, 30, Natural, 25						
Air, original properties	Ambient	-		T, 1900 psi min, E, 200% min; H, 70+10	Synthetic rubber	2630	Wheels, Solid Elastomer Tired, for Track Laying Vehicles	2630	Wheels, Solid Elastomer Tired, for Track Laying Vehicles	MIL-W-3100
Air, oven aging	158	166		T change, 25% max; E change, 35% max	type not specified					
Ozone, 50 ppm	100	168		No cracks under 7X magnification						
Air, original properties	Ambient	-		T, 2100 psi min, E, 550% min	type of rubber	2620	Inner Tube, Pneumatic Tire Aircraft	2620	Inner Tube, Pneumatic Tire Aircraft	MIL-I-5014
Air, cooling medium, ASTM D746	-65	0.05		No cracks	not specified					
Air, air retention	Ambient	24		Air pressure loss, 5% max	type of rubber	2620	Tires, Pneumatic, Aircraft	2620	Tires, Pneumatic, Aircraft	MIL-T-5041
Air, cooling medium, ASTM D746	-65	0.05		No cracks	not specified					
Air, original properties	Ambient	-		Camelback; T, 3300 psi min; E, 475% min	Natural	2640	Repair and Treading Materials, Aircraft Pneumatic Tire	2640	Repair and Treading Materials, Aircraft Pneumatic Tire	MIL-R-7725 ²
Air, original properties	Ambient	-		Cushion, T, 2500 psi min; E, 550% min						
Air, original properties	Ambient	-		Padding; T, 2500 psi min, E, 550% min						
Air, original properties	Ambient	-		Tread repair; T, 2200 psi min; E, 500% min						
Air, original properties	Ambient	-		T.S. Tread 1700 psi min; Sidewall, 900 psi min	Natural or syn- thetic rubber	2610	Tires, Pneumatic, Low Speed, Off Highway	2610	Tires, Pneumatic, Low Speed, Off Highway	24-T-1083
Air, cooling medium, ASTM D746	-40	0.05		Elongation 400% sidewall, 300% sidewall						
Air, original properties	Ambient	-		Bushings, 3500 psi min, Shoes, 2900 psi min	Type of rubber	2530	Track Shoe Assemblies Track Shoe Pads, and Track Shoe Sets, Vehicular: Rubberized	2530	Track Shoe Assemblies Track Shoe Pads, and Track Shoe Sets, Vehicular: Rubberized	MIL-T-11891
Air, tensile strength	Ambient	-		Bushings, 500% min, Shoes 400% min	not specified					
Air, elongation	Ambient	-		No cracks (bushings, shoes & pads)						
Air, cooling medium, ASTM D746	-40	0.05		Change in elong. bushings, -15%, shoes, -25%						
Air, oven aging	158	70		No cracks under 7X magnification						
Ozone, 50 ppm	100	168								

1 Document cancelled without replacement.

2 Document cancelled. Use 22-T-416.

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS			ELASTOMER	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP. OF	TIME, HRS.									
Air, tensile strength	Ambient	-		Tread, 1700 psi min; sidewall, 900 psi min			Natural or synthetic	Yes	2610	Tire, Pneumatic: For Military Ground Vehicles	MIL-T-12459
Air, elongation	Ambient	-		Tread, 400% min; sidewall, 300% min							
Air, test wheel performance	-64	168		No cracks or breaks							
Ozone, 50 ppm	100	720		Cracking no greater than for control							
Air, curing @ 85 psig	310	6		Type I, class 1; no damage			Natural or butyl		4910	Curing Bags and Curing Tubes Tire Repair, Recapping & Retreading	MIL-C-14625
Air, curing @ 85 psig	310	3		Type I, class 2; no damage							
Air, curing @ 130 to 180 psig	310	6		Type II, classes 1 and 2; no damage							
Air, original properties	Ambient	-		Tread T.S. 1300 psi min, Sidewall TS 900 psi min			Natural or synthetic		2610	Tire, Pneumatic, Agricultural	ZZ-T-1619
				Elongation, tread 400% min; sidewall 300% min							
Air, original properties	Ambient	-		T, 2000 psi min (nat); 1500 psi min (syn)			Natural or synthetic		2530	Wheels, - Cushion Tread (Semi-Pneumatic) For Mobile Ground Support Equipment	MIL-W-21985
Air, original properties	Ambient	-		H, 70 + 3 (outer shell); 55 + 3 (core)							
Air, compression set	158	24		20% max							
Air, original properties	Ambient	-		T, E & H, as per approved value			SBR (unvulcanized)		2640	Tread Rubber, Solid Rubber Tire for Track Laying Vehicles	MIL-T-45301
Air, blowout resistance	100	6		No cracking, chunking or blowout							
Rubber properties conforms to MIL-T-3100							Synthetic rubber		2630	Wheels, Solid Rubber Tired, Rebuilt	MIL-W-467591
(Tests on vulcanized bushings)											
Air, original properties	Ambient	-		T, 3500 psi min; E, 500% min; H, 55-68			Pin bushing.		2530	Rubber Stock Unvulcanized: For Track Shoes, Pads, and Pin Bushings	MIL-R-46762 Style 11
Cooling medium, ASTM D746	-67	0.05		No cracks			Natural or nat/syn blend				
Air, oven aging	158	70		T, 3000 psi min, E, 425% min							
(Tests on vulcanized shoes and pads)											
Air, original properties	Ambient	-		T, 2900 psi min; 400% min; H, 63-73			Block Stock SBR		2530	Rubber Stock Unvulcanized: For Track Shoes, Pads, and Pin Bushings	MIL-R-46762 Style I
Cooling medium, ASTM D746	440	0.05		No cracks							
Air, oven aging	212	70		T, 2500 psi min; E, 300% min							
Ozone, 50 ppm	100	168		No cracks under 7X magnification							
1 Document cancelled. Use MIL-T-3100											

1 Document cancelled. Use MIL-T-3100

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SPECIFICATION TEST CONDITIONS		TEMP, TIME, OF HRS.		SPECIFICATION REQUIREMENTS		ELASTOMER	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST										
No specific properties listed						Natural or synthetic rubber	2610		Tire, Pneumatic: Large Size, Off-the-Road, General Specification For	MIL-T-5258J2
Air, original properties	Ambient	-		T.S. 2500 psi min, Elongation 475% min Hardness 62 + 5		Natural or synthetic rubber	2640		Tread Rubber: Strip Form Stock, for Retreading Pneumatic Tires	MIL-T-621183
Air, original properties	Ambient	-		T.S. 2500 psi min Elongation 500% min		Natural or synthetic natural	2610		Tire, Pneumatic: For Truck, Logistical Goer Type, (Tubeless)	MIL-T-62129
Air, original properties	Ambient	-		Tread T.S. 1700 psi min; sidewall T.S. 1300 psi min Elongation 400% min		Natural or synthetic rubber	2610		Tire: Pneumatic; with Flap, 14.00-20, Run Flat	MIL-T-62157

2 Document cancelled without replacement.

3 Document cancelled. Use 22-T-416.

MIL-STD-699B(MR)

WIRE, CABLE AND RELATED ELECTRICAL ITEMS

SPECIFICATION TEST CONDITIONS			ELASTOMER COMMONLY USED				QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, elongation	Ambient	-	Jkt min %. PVC, 100; CR, 300	Chloroprene or PVC	Chloroprene	6145	Cable and Wire, Power, Electrical, Non-metallic Sheathed	J-C-941 Types NM, NMC, and UF	
Air, mandrel bend	14	5	No cracks, Type NM		(CR) or PVC				
Air, mandrel bend	-4	5	No cracks; Types NNC & UF						
Air, mandrel bend	-40	20	No cracking of elastomer	SBR	Chloroprene	6145	Cable, Telephone, (W-108-B)	J-C-96	
Oxygen, @ 300 psi	160	240	Min T: Jacket, 1000 psi						
Ozone, 50 ppm	100	168	No cracking of jacket						
Air, tensile strength	Ambient	-	Min psi: ins 500; jkt 1800	Nat and/or SBR	Chloroprene	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Types R & RW	
Oxygen, aging @ 300 psi	158	96	Max % T chg: ins -25; jkt 1800						
ASTM #2 petroleum oil	250	18	Max % T chg: Jacket -40						
Air, tensile strength	Ambient	-	Min psi: ins 1500, jkt 1800	Chlorosulfonated	Chloroprene	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Type RHW-1	
Oxygen, aging @ 300 psi	176	168	Max % T chg: ins -25; jkt -50	polyethylene					
ASTM #2 petroleum oil	250	18	Max % T chg: Jacket -40						
Air, tensile strength	Ambient	-	Min psi: ins 1500, jkt 1800	Nat and/or SBR	Chloroprene	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Type RH & RHW-2	
Oxygen, aging @ 300 psi	176	168	Max % T chg. ins -50; jkt -50	and/or butyl					
ASTM #2 petroleum oil	250	18	Max % T chg. Jacket -40						
Air, tensile strength	Ambient	-	Min psi: ins 700, jkt 1800	Nat and/or SBR	Chloroprene	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Type RHH	
Air, oven aging	260	168	Max % T chg ins -40, jkt -50	and/or butyl					
ASTM #2 petroleum oil	250	18	Max % T chg: Jacket -40						
Air, tensile strength	Ambient	-	Min psi ins 3000; jkt 1800	Natural	Chloroprene	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Type RU, & RUW	
Oxygen, aging @ 300 psi	158	96	Max % T chg ins -15; jkt -30						
ASTM #2 petroleum oil	250	18	Max % T chg Jacket -40						
Air, tensile strength	Ambient	-	Min psi: ins 3000, jkt 1800	Natural	Chloroprene	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Type RUH	
Oxygen, aging @ 300 psi	176	168	Max % T chg ins -20						
Oxygen, aging @ 300 psi	158	96	Max % T chg jkt -30						
ASTM #2 petroleum oil	250	18	Max % T chg. jkt -40						
Air, original properties	Ambient	-	Min T. 800 psi, E 250%	Silicone	Asbestos or glass braid	6145	Cable, Power, Electrical and Wire, Electrical	J-C-1031 Type SA	
Air, oven aging	277	1440	Max % E chg: -35						
Air, mandrel bend	14	5	No cracks	Rubber or plastic	Natural or chloroprene				
Flame	-	-	Self burning 1 min max			6145	Cable and Wire, Power, Electrical, (Service-Entrance and Service-Drop)	J-C-1151 Types SE & USE	

1 Document cancelled Use J-C-30

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, mandrel bend	14	1	No cracks	Thermoplastic	None	6145	Cable and Wire; Thermo- plastic-Insulated, General Purpose, (0 to 600 Volt Service)	J-C-1291	
Air, mandrel bend	250	1	No cracks					Type IW & THW	
(Tests on rubber only)									
Air, original properties	Ambient	-	Min T: 1400 psi; E 250%	Chloroprene		6145	Cable, Power, Electrical and Wire, Electrical, (Weather-Resistant)	J-C-1452	
Oxygen, aging @ 300 psi	158	96	Max % chg: T -25; E -35					Type I	
ASTM #2 petroleum oil	250	18	Max % chg: T -40, E -40						
(Type I covered by Series S or SJ of J-C-580 Type II covered by MIL-C-3432)									
Air, tensile strength	Ambient	-	1500 psi min	Natural, SBR, PVC	Natural, SBR, PVC or chloroprene	6150	Cable Assembly, Power, Electrical, for 125 Volt Equipment	J-C-175	
Air, mandrel bend	-65	5	No cracks						
Air, aging @ 1/3 psi	160	48	Not soft or tacky	Natural	Not applicable		Natural Rubber Performance Insulation For Wire and Cable, 60C Operation	ASTM D353	
(Tests on rubber only)									
Air, tensile strength	Ambient	-	1200 psi min	PVC	None	6145	Cable (Wire), Two-Conduc- tor, Parallel	MIL-C-442	
Air, mandrel bend	-40	5	No cracks					Types I, II & III Class 1	
Air, aging @ 1/3 psi	160	48	Not soft or tacky	PVC	None	6145	Cable (Wire), Two-Conduc- tor, Parallel	MIL-C-442	
(Tests on rubber only)									
Air, tensile strength	Ambient	-	3000 psi min	SBR	None	6145	Cable (Wire), Two-Conduc- tor, Parallel	MIL-C-442	
Air, mandrel bend	-65	5	No cracks					Types I, II & III Class 3	
Oxygen, aging @ 300 psi	158	94	Tensile strength: 900 psi min						
(Tests on rubber only)									
Air, tensile strength	Ambient	-	1200 psi min	SBR	None	6145	Cable (Wire), Two-Conduc- tor, Parallel	MIL-C-442	
Air, mandrel bend	-40	5	No cracks					Types IV, V & VI Class 2	
Air, aging @ 300 psi	158	94	Tensile strength: 900 psi min						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min T: 1500 psi; E 400%	Natural	Not applicable		Natural Rubber Heat-Resis- tance Insulation For Wire and Cable, 75C Operation	ASTM D469	
Air, oven aging @ 80 psi	260	20	Max E chg. -50%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min T: 3500 psi, E 500%	Not applicable	Natural		Natural Rubber Jacket For Wire and Cable	ASTM D532	
Oxygen, aging @ 300 psi	158	96	Min T: 2500 psi; E 400%						

- 1 Document cancelled. Use J-C-30.
2 Document cancelled. Use ANSI C8 35.

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET	FSC			
Air, mandrel bend Air, oven aging Kerosene SAE #30 oil	-30 250 Ambient 250	24 48 18 -40	No cracking of jkt No cracking of jkt No damage to ins No cracking of jkt	Natural	Synthetic		High Tension Ignition Cable	SAE J557 Types HTLR, HTHR & HHS	
Air, corona 20000 volts	Ambient	2	No failure	Natural	Braid		High Tension Ignition Cable	SAE J557 Type HTB	
Air, mandrel bend Air, oven aging Kerosene	-30 250 Ambient	24 48 18	No cracking of jkt No cracking of jkt No damage to insulation	PVC	None		High Tension Ignition Cable	SAE J557 Types HTT	
Air, original properties Kerosene & SAE 10 W oil	Ambient 122	- 20	Min T: 2300 psi; E 125% Max OD chg: +15%	PVC	None		Low Tension Cable	SAE J5581 Types GPT, HDT & SGT	
SAE 30 and gasoline Kerosene & SAE 10 W oil	Ambient 122	24 20	Max OD chg: +15% (Natural) Max OD chg: +15% (PVC)	Natural or PVC	Braid		Low Tension Cable	SAE J5581 Types GPH, HDB & HDB-X	
Gasoline and SAE 30 oil	Ambient	24	Max OD chg: +15%	Natural or syn- thetic	None		Low Tension Cable	SAE J5581 Type SGR	
Air, elongation Air, mandrel bend Oxygen, aging @ 300 psi ASTM #2 petroleum oil	Ambient -20 158 250	- 4 96 18	Min. ins 250%; jkt 300% No cracking of jkt Max E chg. ins & jkt -30% Max E chg. jkt -40%	Not specified	Not specified		Seven Conductor Jacketed Cable For Truck and Trailer Connections	SAE J559	
(Tests on rubber only) Air, original properties Air, oven aging Ozone, 10000 to 15000 ppm	Ambient 158	- 168 3	Min T. 450 psi, E 250% Min T. 400 psi; E 200% No cracks	Natural or synthetic	Not applicable		Ozone-Resisting Insulation For Wire and Cable	ASTM D574	
Air, original properties Air, original properties Air, original properties Oxygen, aging @ 300 psi Air, oven aging Air, oven aging	Ambient Ambient Ambient 158 212 158	- - - 96 168 168	Min: Cl 2; T 500 psi, E 200% Min. Cl 11; T 1600 psi, E 200% Min: Cl 13; T 1200 psi, E 250% Cl 2, Max E chg. -35% Cl 11, Max E chg: -50% Cl 13, Max E chg: -40%	Natural or SBR (Cl 2), PVC (Cl 11), Chloroprene (Cl 13)	Braid or none	6145	Cord, Flexible, and Wire, Fixture, (Electrical 0 to 600 Volt Service)	J-C-580 Types C, K, P, P-2, PD, PO, PO-2, PW & PW-2	

1 Document cancelled. Use SAE J1127 and J1128.

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED				QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER	
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET						
Air, original properties	Ambient	-	Min: Cl 2, T 500 psi, E 200%	Natural or SBR	Braid or none	6145	Cord, Flexible, and Wire, Fixture, (Electrical 0 to 600 Volt Service)	J-C-580 Types ET, SP-1- 2, TF, TFF, SPT-3, HC & HPD			
Air, original properties	Ambient	-	Min: Cl 11; T 1600 psi, E 200%	(Cl 2), PVC (Cl 11), PVC (Cl 12)							
Air, original properties	Ambient	-	Min: Cl 12; T 1500 psi, E 100%								
Oxygen, aging @ 300 psi	158	96	Cl 2; Max E chg: -35%								
Air, oven aging	212	168	Cl 11; Max E chg: -50%								
Air, oven aging	178	1440	Cl 12; Max E chg: -30%								
Air, original properties	Ambient	-	Min: Cl 2, T 500 psi, E 200%	Natural or SBR	None or braid	6145	Cord, Flexible, and Wire, Fixture, (Electrical 0 to 600 Volt Service)	J-C-580 Types RF-2, FF-2, RFH-2 & FFH-2			
Air, original properties	Ambient	-	Min: Cl 5; T 3000 psi, E 650%	(Cl 2, 7), Nat- ural (Cl 5, 9)							
Air, original properties	Ambient	-	Min: Cl 7; T 700 psi, E 300%								
Air, original properties	Ambient	-	Min: Cl 9, T 3000 psi, E 650%								
Oxygen, aging @ 300 psi	158	96	Cl 2; Max E chg: -35%								
Oxygen, aging @ 300 psi	158	96	Cl 5; Max E chg: -25%								
Oxygen, aging @ 300 psi	178	168	Cl 7, 9; Max E chg: -50%								
Air, original properties	Ambient	-	Min T: 500 psi; E 100%	Silicone (Cl 22)	Braid	6145	Cord, Flexible, and Wire, Fixture, (Electri- cal 0 to 600 Volt Service)	J-C-580 Types SF-2 & SFF-2			
Air, oven aging	410	1440	Max E chg: -75%								
Air, original properties	Ambient	-	Min: Cl 3, T 600 psi, E 250%	Nat or SBR (Cl	Braid or none				6145	Cord, Flexible, and Wire, Fixture, (Electri- cal 0 to 600 Volt Service)	J-C-580 Types HPN, SP-3, E
Air, original properties	Ambient	-	Min: Cl 4; T 1500 psi, E 350%	3, 4) chloro- prene (Cl 17)							
Air, original properties	Ambient	-	Min: Cl 17; T 1200 psi, E 250%								
Oxygen, aging @ 300 psi	158	96	Cl 3; Max E chg: -35%								
Oxygen, aging @ 300 psi	158	96	Cl 4; Max E chg: -30%								
Air, oven aging	248	240	Cl 17; Max E chg: -40%								
Air, original properties	Ambient	-	Min: Cl 3; T 600 psi, E 250%	Nat or SBR (Cl	PVC (Cl 11, 12)	6145	Cord, Flexible, and Wire, Fixture, (Electri- cal 0 to 600 Volt Service)	J-C-580 Types SVT, SRDT & SJT			
Air, original properties	Ambient	-	Min: Cl 11; T 1600 psi, E 200%	3) PVC (Cl 11)							
Air, original properties	Ambient	-	Min: Cl 12; T 1500 psi, E 100%								
Oxygen, aging @ 300 psi	158	96	Cl 3; Max E chg: -35%								
Air, oven aging	212	168	Cl 11; Max E chg: -50%								
Air, oven aging	178	1440	Cl 12; Max E chg: -30%								
Air, original properties	Ambient	-	Min: Cl 3; T 600 psi, E 250%	Nat or SBR (Cl	Nat or SBR	6145	Cord, Flexible, and Wire, Fixture, (Electri- cal 0 to 600 Volt Service)	J-C-580 Types EO, SRD, S, SO, SV			
Air, original properties	Ambient	-	Min: Cl 5; T 3000 psi, E 650%	3) Nat (Cl 5)	(Cl 6) chloroprene (Cl 15)						
Air, original properties	Ambient	-	Min: Cl 6; T 1500 psi, E 300%								
Air, original properties	Ambient	-	Min: Cl 15; T 15000 psi, E 300%								
Oxygen, aging @ 300 psi	158	96	Cl 3; Max E chg: -35%								
Oxygen, aging @ 300 psi	158	96	Cl 5; Max E chg: -25%								
Oxygen, aging @ 300 psi	158	96	Cl 6; Max E chg: -30%								

SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, original properties	Ambient	-	Min. Cl 2; T 500 psi, E 200%	Nat or SBR (Cl 1)	Nat or SBR (Cl 6, 10) Chloroprene (Cl 16)	6145	Cord, Flexible, and Wire, Fixtures, Electrical 0 to 600 Volt Service)	J-C-580 Types AFs, HS, HSJ	
Air, original properties	Ambient	-	Min. Cl 6; T 1500 psi, E 300%	FVC (Cl 11)					
Air, original properties	Ambient	-	Min: C 1 10; T 1500 psi, E 300%						
Air, original properties	Ambient	-	Min: C 1 11, T 1600 psi, E 200%						
Air, original properties	Ambient	-	Min: Cl 16, T 1500 psi, E 300%						
Oxygen, aging @ 300 psi	158	96	Cl 2; Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	Cl 6, 16, Max E chg: -30%						
Oxygen, aging @ 300 psi	178	168	Cl 10, Max E chg: -50%						
Air, oven aging	212	168	Cl 11; Max E chg: -50%						
Air, original properties	Ambient	-	Min. Cl 3, 8; T 600 psi, E 250%	Nat or SBR (Cl 3, 8) Nat (Cl 5, 9)	Nat or SBR (Cl 6, 10) Chloroprene (Cl 15, 16)	6145	Cord, Flexible, and Wire, Fixtures, Electrical 0 to 600 Volt Service)	J-C-580 Types SJ and SJO	
Air, original properties	Ambient	-	Min: Cl 5, 9; T 3000 psi, E 650%						
Air, original properties	Ambient	-	Min: Cl 6, 10, 15, 16; T 1500 psi						
Air, original properties	Ambient	-	Min: Cl 6, 10, 15, 16; E 300%						
Oxygen, aging @ 300 psi	158	96	Cl 3, Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	Cl 5, Max E chg: -25%						
Oxygen, aging @ 300 psi	158	96	Cl 6, 15, 16, Max E chg: -30%						
Oxygen, aging @ 300 psi	178	168	Cl 9, 10; Max E chg: -50%						
Air, original properties	Ambient	-	Min: Cl 4; T 1500 psi, E 350%	Nat or SBR (Cl 4) Chloroprene (Cl 14)	Nat or SBR (Cl 4) Chloroprene (Cl 14)				6145
Air, original properties	Ambient	-	Min: Cl 14, T 1500 psi, E 300%						
Oxygen, aging @ 300 psi	158	96	Cl 4, Max E chg: -25%						
Oxygen, aging @ 300 psi	158	168	Cl 14, Max E chg: -30%						
Air, tensile strength	Ambient	-	Min psi: 1800	PVC Tubing	PVC Tubing	5970	Insulation, Electrical, Synthetic - Resin Composition	MIL-I-631 Form U Type F, Grade A	
Air, ASTM D746	-30	1	No failure						
Air, mandrel bend	212	200	No cracking						
ASTM #3 petroleum oil	122	200	Max vol chg. +15%						
Air, tensile strength	Ambient	-	Min psi. 1450	PVC Tubing	PVC Tubing	5970	Insulation, Electrical, Synthetic - Resin Composition Nonrigid	MIL-I-631 Form U Type F, Grade B	
Air, ASTM D746	-46	1	No failure						
Air, mandrel bend	212	200	No cracking						
ASTM #3 petroleum oil	122	200	Max vol chg. +15%						
Air, tensile strength	Ambient	-	Min psi. 1800	PVC Tubing	PVC Tubing	5970	Insulation, Electrical, Synthetic - Resin Composition Nonrigid	MIL-I-631 Form U Type F, Grade C	
Air, ASTM D746	-10	1	No failure						
Air, mandrel bend	212	200	No cracking						
ASTM #3 petroleum oil	122	200	Max vol chg. +15%						

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP, OF	TIME, HRS	SPECIFICATION REQUIREMENTS	INSULATION	JACKET	FSC			
Air, original properties	Ambient	-	Min ins T 1800 psi, E 150%	PVC	Nylon w/wo braid		Wire, Electrical, Insulated, Copper Hook-Up and General Purpose (For 1050C Service)	NAS 702	
Air, mandrel bend	-67	4	No cracking						
Air, oven aging	235	1440	Max ins chg: T & E -30%						
MIL-O-6081 Jet oil	Ambient	20	No cracking						
(Covered in MIL-I-3930, Type IS-L Insulation and Type JS-L Jacket)				SBR	SBR or natural		Leads, Electrical, Arc-Welding	MIL-L-741	
(Tests on rubber only)									
Air, original properties	Ambient	-	Min. T 1800 psi; E 300%	Not applicable	Chloroprene		Heavy-Duty Black Polychloroprene Jacket For Wire and Cable	ASTM D752	
Air, aging @ 80 psi	260	20	Max chg. T & E -50%						
ASTM #2 petroleum oil	250	18	Max chg: T & E -40%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 1500 psi; E 250%	Not applicable	Chloroprene		General Purpose Polychloroprene Jacket For Wire and Cables	ASTM D753	
Air, aging @ 80 psi	260	20	Max chg: T & E -50%						
ASTM #2 petroleum oil	250	18	Max chg. T & E -40%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 700 psi; E 300%	Not known	Not applicable		Synthetic Rubber Insulation For Wire and Cable, 75C Operation	ASTM D754	
Air, aging @ 80 psi	260	20	Max chg: T & E -50%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 700 psi; E 300%	Not known	Not applicable		Synthetic Rubber Insulation For Wire and Cable, 60C Operation	ASTM D755	
Oxygen, aging @ 300 psi	158	96	Max chg: T -25%, E -35%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min T 1800 psi; E 300%	Not applicable	SBR		Styrene-Butadiene (SBR) Synthetic Rubber Jacket For Wire and Cable	ASTM D866	
Oxygen, aging @ 300 psi	158	48	Min: T 1400 psi; E 200%						
(Tests on rubber only)									
Air, tensile strength	Ambient	-	Min T psi: ins 600; jkt 1800	Synthetic	Chloroprene		Cable, Cord and Wire Electrical (Shipboard Use)	MIL-C-915	
Oxygen, aging @ 300 psi	176	168	Max % T chg. ins -50					Types: DSS, TSS, SSF, FSS, MSS, CVSF, MCSC, MQCC, DCOP, TCOB, TRF	
Navy Symbol 3100 oil	240	18	Max % T chg: jkt -35						

SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET	QPL ISSUED	FSC CLASS		
Air, tensile strength	Ambient	-	Min T psi: ins 600; jkt 1800	Butyl	Chloroprene	Yes	6145	Cable, Cord and Wire Electrical (Shipboard Use)	MIL-C-915 Types: DSS, JAS, TSS, FSS, MSS, FCSF, SDU, SHOF, DHOF, THOF, PHOF, TRF, CVSF, T3P
Air, aging @ 80 psi	296	20	Max % T chg: ins -30; jkt -35						
Navy Symbol 3100 oil	240	18	Max % T chg: jkt -35						
Air, tensile strength	Ambient	-	Min T psi: jkt 1800	Non-elastomeric	Chloroprene	Yes	6145	Cable, Cord and Wire Electrical (Shipboard Use)	MIL-C-915 Types: TRXF, MNOP, MCOS, FCOFF-4
Air, heat aging @ 80 psi	295	20	Max % T chg: jkt -35						
Navy Symbol 3100 lub. oil	240	18	Max % T chg: jkt -35						
Water, @ 75 psi		4	Impervious	Non-elastomeric	PVC	Yes	6145	Cable, Cord and Wire Electrical (Shipboard Use)	MIL-C-915 Types: TSP, MHFF, TIOP, MCOS, TIRS
Air, @ 75 psi		4	Impervious						
Lubricating oil	240	18	Max % + chg: jkt -35	Natural	Chloroprene	Yes	6145	Cable, Cord and Wire Electrical (Shipboard Use)	MIL-C-915 Type DLT
Air, tensile strength	Ambient	-	Min T psi: ins 600	Not known	Non-elastomeric	Yes	6145	Cable, Cord and Wire, Electrical (Shipboard Use)	MIL-C-915 Types: DBSP, TBSP, FBSP
Oxygen, aging @ 300 psi	176	168	Max % T chg: ins -50						
Air, tensile strength	Ambient	-	Min T psi: ins 600	Butyl	Non-elastomeric	Yes	6145	Cable, Cord, and Wire, Electrical (Shipboard Use)	MIL-C-915 Types: DBSP, TBSP, FBSP
Air, heat aging @ 80 psi	296	20	Max % T chg: ins -30						
Air, original properties	Ambient	-	Min: T 2000 psi, E 200%	PVC tubing				Non-Rigid Vinyl Chloride Polymer Tubing	ASTM D922 Grade A
Air, brittleness	-22	0.05	No failure						
ASTM #3 petroleum oil	158	4	E chg: -20% + 5%						
Air, original properties	Ambient	-	Min: T 2000 psi, E 200%	FVC	None			Non-Rigid Vinyl Chloride Polymer Tubing	ASTM D922 Grade C
Air, brittleness	14	0.05	No failure						
ASTM #3 petroleum oil	221	4	E chg: -20% + 5%						
(Tests on rubber only)				Not applicable	PVC			Poly (Vinylchloride) Jacket for Wire and Cable	ASTM D1047
Air, original properties	Ambient	-	Min: T 1500 psi, E 100%						
Air, oven aging	212	100	Max chg: T -20%; E -40%						
SAE 20 oil	158	4	Max chg: T -20%; E -40%						
Air, original properties	Ambient	-	Min: T 1600 psi; E 350%	Synthetic hose				Rubber Insulating Line Hose	ASTM D1050

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
(Tests on rubber only)									
Air, original properties	Ambient	-	Min. T 600 psi; E 350%	Butyl	Not applicable			Ozone-Resisting Butyl Rubber Insulation For Wire and Cable	ASTM D1352
Air, aging @ 80 psi	260	40	Max chg: T & E -50%						
Ozone, 25000 to 30000 ppm	Ambient	3	No cracking						
Air, original properties	Ambient	-	Min ins: T 1800 psi; E 150%	PVC	Nylon			Wire, Electrical, Insu- lated, Copper Solid Con- ductor, Hook-Up and General Purpose (For 105°C Service)	NAS 1391
Air, mandrel bend	-67	4	No cracking						
Air, oven aging	235	1440	Max ins chg: T & E -30%						
MIL-O-6081 jet oil	Ambient	20	No cracking						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min. T 700 psi; E 300%	Not known	Not applicable			Synthetic Rubber Heat-or Moisture-Resisting Insula- tion For Wire and Cable	ASTM D1520 ¹
Air, aging @ 80 psi	260	20	Max chg: T & E -50%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 700 psi; E 300%	Not known	Not applicable			Synthetic Rubber Perfor- mance, Moisture-Resisting Insulation For Wire and Cable	ASTM D1521 ²
Oxygen, aging @ 300 psi	158	96	Max chg: T -25%; E -35%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 700 psi; E 300%	Not known	Not applicable			Synthetic Rubber Insula- tion For Wire and Cable, 90C Operation	ASTM D1523
Air, oven aging	250	168	Max chg: T & E -40%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 700 psi; E 300%	Not known	Not applicable			Synthetic Rubber Heat- and Moisture-Resisting Insulation For Wire and Cable, 75C Operation	ASTM D1679
Oxygen, aging @ 300 psi	176	168	Max chg: T & E -50%						
(Tests on rubber only)									
Air, original properties	Ambient	-	T, 900 psi min; E 250%	Chloroprene Hypolon	SBR Hypolon		1075	Cable and Cable Assem- blies, Special Purpose, Electrical, Magnetic Mine Sweeping (Quad Cable)	MIL-C-17694
Air, tensile strength	Ambient	-	Min T psi: jacket, 800	None	SBR			Cable, 1-Conductor Submarine Mine, M6	MIL-C-1892 ²
Oxygen, aging @ 300 psi	158	48	Max % T chg: jacket, -25						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min: T 1500 psi; E 100%	PVC	None		1390	Wire, Insulated, Sub- marine Mine Wiring Device	MIL-W-1904 ² Type TM
Air, mandrel bend	14	1	No cracks						
Air, oven aging	212	168	Max % T & E chg: -35						

¹ Document cancelled. Use ASTM D1679.² Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, original properties	Ambient	-	Min: T 1500 psi; E 100%	PVC	Not applicable	1390	Vinyl Chloride Plastic Insulation For Wire and Cable, 60C Operation	ASTM D2219	
Air, mandrel bend	14	1	No cracking						
Air, oven aging	212	168	Max % chg. T & E -35%						
ASTM #2 petroleum oil	158	4	Max % chg: T -20; E -40						
Air, original properties	Ambient	-	Min: T 2000 psi; E 150%	PVC	Not applicable		Vinyl Chloride Plastic Insulation For Wire and Cable, 75C Operation	ASTM D2220	
Air, mandrel bend	-32	1	No cracks						
Air, oven aging	250	168	Max % chg: T -20; E -25						
ASTM #2 petroleum oil	158	4	Max % chg: T -20; E -40						
(Covered in MIL-I-3930, Type IL, IS-L and JS-L, except that low temperature tests do not apply)									
Air, mandrel bend	-40	20	Ins & jkt; no cracking	SBR	SBR	6145	Cable, Special Purpose, Electrical WM-46/U	MIL-C-2486	
Air, mandrel bend	-65	4	No cracking						
Air, oven aging, 180° bend	250	120	No damage	Nat or syn	Non-elasto- meric	6145	Cable, Electric, Insulated Low-Tension, Single- Conductor	MIL-C-30781	
Air, tensile strength	Ambient	-	Min T psi; ins 1500	PVC	None	6145	Cable, Telephone Inside Distribution Wiring	MIL-C-3093	
Air, oven aging	212	120	Max % T chg: ins -15				(WD-15/U, WF-9/U, and WT-3/U)		
Flame	-	0	Max self burning: ins 1 min						
(Covered in MIL-I-3930 ins IS, jkt JS)				SBR	SBR	6145	Cable and Wire, Electrical (Power and Control; Flexi- ble and Extra Flexible, 300 and 600 volts)	MIL-C-3432	
(Covered in MIL-I-3930 ins IS; jkt JN)				SBR	Chloroprene	6145	Cable and Wire, Electrical (Power and Control; Flexi- ble and Extra Flexible, 300 and 600 volts)	MIL-C-3432	
(Covered in MIL-I-3930 ins IS; jkt JS-L)				SBR	SBR	6145	Cable and Wire, Electrical (Power and Control; Flexi- ble and Extra Flexible, 300 to 600 volts)	MIL-C-3432	
(Covered in MIL-I-3930 ins IS; jkt JN-L)				SBR	Chloroprene	6145	Cable and Wire, Electrical (Power and Control; Flexi- ble and Extra Flexible, 300 to 600 volts)	MIL-C-3432	

1 Document cancelled. Use MIL-C-13486, MIL-W-8777 or MIL-W-7139.

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET					
Air, original properties	Ambient	-	Min: T 2000 psi; E 250-450%	PVC sleeving					Polyvinyl Chloride Tubing, Extruded, High Temperature (Electrical Insulation)	AMS 3629
Air, mandrel bend	-13	4	No cracking							
Air, oven aging	265	400	Max chg. E + 35%							
Flame	-	-	Self burning 15 sec max							
Air, mandrel bend	-65	24	No cracking or breaking	Silicone	Silicone	Yes	6145		Cable, Power, Electrical. Ignition, High-Tension	MIL-C-3702 Grade B
Air, oven aging	450	125	No breakdown							
MIL-L-6082 petroleum oil	195	40	No cracking or decomposing							
Air, mandrel bend	-65	24	No cracking or breaking	Chlorosulfonated polyethylene	Hypalon	Yes	6145		Cable, Power, Electrical Ignition, High-Tension	MIL-C-3702 Grade C
Air, oven aging	250	125	No breakdown							
MIL-L-6082 petroleum oil	195	40	No cracking or decomposing							
Air, mandrel bend	-65	24	No cracking or breaking	Silicone	Silicone	Yes	6145		Cable, Power, Electrical: Ignition, High-Tension	MIL-C-3702 Grade D
Air, oven aging	600	50	No breakdown							
MIL-L-6082 petroleum oil	195	40	No cracking or decomposition							
(Covered in MIL-I-3930)				Elastomeric	Elastomeric		6145		Cord, Electrical (Tinsel)	MIL-C-3849
(Covered in MIL-I-3930)				Elastomeric	Nat, syn or PVC		5995		Cable Assemblies and Cord Assemblies, Electrical (Power, Control, and Audio- Frequency); General Specifi- cation for	MIL-C-3885
Air, original properties	Ambient	-	Min: ins, T 1800 psi; E 125%	PVC	Not applicable		5970		Insulating and Jacketing Compounds, Electrical (For Type IP	MIL-I-3930
Air, oven aging	212	96	Max % E chg. ins -20						Cables, Cords and Wires)	
Air, tensile strength	Ambient	-	Min T psi: ins 450 to 600	SHR	Not applicable		5970		Insulating and Jacketing Compounds, Electrical (For Type IS	MIL-I-3930
Oxygen, aging @ 300 psi	158	95	Max % T chg: ins -25						Cables, Cords and Wires)	
Air, tensile strength	Ambient	-	Min T psi: ins 450 to 600	SHR	Not applicable		5970		Insulating and Jacketing Compounds, Electrical (For Type IS-L	MIL-I-3930
Oxygen, aging @ 300 psi	176	168	Max % T chg. ins -50						Cables, Cords and Wires)	
Air, ASTM D746	-67	0.08	No cracking							
Air, tensile strength	Ambient	-	Min T psi: ins 800 to 1200	Natural	Not applicable		5970		Insulating and Jacketing Compounds, Electrical (For Type IR	MIL-I-3930
Oxygen, aging @ 300 psi	158	95	Max % T chg ins -25						Cables, Cords and Wires)	

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET	QPL ISSUED CLASS	FSC		
Air, tensile strength Oxygen, aging @ 300 psi	Ambient 158	- 95	Min T psi: ins 1000 Max % E chg: ins -25	SBR	Not applicable	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type IU-S Cables, Cords and Wires)	MIL-I-3930
Air, original properties Oxygen, aging @ 300 psi	Ambient 178	- 168	Min: ins, T 2500 psi, E 600% Max % E chg: ins -50	Natural	Not applicable	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type IL-N Cables, Cords and Wires)	MIL-I-3930
Air, original properties Oxygen, aging @ 300 psi	Ambient 158	- 168	Min: ins, T 2500 psi, E 650% Max % E chg: ins -30	Natural	Not applicable	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type IL-RN Cables, Cords and Wires)	MIL-I-3930
Air, original properties Air, oven aging ASTM #2 petroleum oil	Ambient 212 158	- 95 18	Min: jkt, T 1500 psi, E 100% Max % E chg: jkt -40 Max % T chg: jkt -20	Not applicable	PVC	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type JP Cables, Cords and Wires)	MIL-I-3930
Air, original properties Oxygen, aging @ 300 psi Ozone, @ 50 ppm	Ambient 158 100	- 95 168	Min: jkt, T 1600 psi, E 300% Max % E chg: jkt -35 No cracking	Not applicable	SBR	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type JS Cables, Cords and Wires)	MIL-I-3930
Air, original properties Oxygen, aging @ 300 psi Ozone, @ 50 ppm	Ambient 158 100	- 95 168	Min: jkt, T 1500 psi, E 300% Max % E chg: jkt -35 No cracking	Not applicable	SBR	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type JS-L Cables, Cords and Wires)	MIL-I-3930
Air, original properties Oxygen, aging @ 300 psi Ozone, @ 50 ppm	Ambient 158 100	- 95 168	Min: jkt, T 2000 psi, E 350% Max % E chg: jkt -35 No cracking	Not applicable	Natural	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type JR Cables, Cords and Wires)	MIL-I-3930
Air, original properties Oxygen, aging @ 300 psi ASTM #2 petroleum oil Ozone, @ 50 ppm	Ambient 158 158 100	- 95 18 168	Min: jkt, T 1800 psi, E 300% Max % E chg: jkt -25 Max % T chg: -40 No cracking	Not applicable	Chloroprene	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type JN Cables, Cords and Wires)	MIL-I-3930
Air, original properties Air, oven aging ASTM #2 petroleum oil Ozone, @ 50 ppm	Ambient 158 158 100	- 168 18 168	Min: jkt, T 1500 psi, E 300% Max % E chg: -20 Max % T chg: -40 No cracking	Not applicable	Chloroprene	5970	5970	Insulating and Jacketing Compounds, Electrical (For Type JN-L Cables, Cords and Wires)	MIL-I-3930

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, elongation	Ambient	-	Min elong. ins 75%	PVC	Non-elasto-	Yes	6145	Wire, Electric, Polyvinyl Chloride Insulated, Copper Types I, II, or Copper Alloy	MIL-W-5086
Air, mandrel bend	-67	1	Ins: no cracks						
Air, oven aging	239	1440	Max % elong chg. ins -30						
MIL-H-5606 hydraulic oil	122	20	No cracks after mandrel bend	SBR	Chloroprene		6145	Cable, Power, Electrical, Polychloroprene Sheathed, Buna Compound Insulated	MIL-C-5136
(Covered in MIL-I-3930, Types IS & JN)									
Air, mandrel bend	-67	48	No cracking	Syn or nat	Syn or nat	Yes	6145	Cable and Wire, Power, Electric, Portable	MIL-C-5756
Air, tensile strength	Ambient	-	Min T psi: ins 800; jkt 1200	Nat or syn	Nat or syn	Yes	5995	Cord: Headset-Microphone CX-1301/AR	MIL-C-6166
Air, mandrel bend	-40	-	No cracking						
Oxygen, aging @ 300 psi	158	94	Jkt: no tackiness						
Air, mandrel bend	-67	4	No cracking	PVC	Non-elasto-meric	Yes	6145	Wire, Electric, 600-Volt, Aluminum, Aircraft, General Specification For	MIL-W-7072
Flame	-	-	Self burning 30 sec max						
Air, mandrel bend	-67	4	No cracking	Braid, plastic	PVC	Yes	6145	Cable, Electric, Aerospace Vehicle, General Specification For	MIL-W-7072
Air, oven aging	248	96	No cracking	or wire					
Air, tensile strength	Ambient	-	Min psi: 1800	PVC tubing		Yes	5970	Insulation Sleeveing, Electrical, Flexible	MIL-I-7444
Air, ASTM D746	-90	-	No failure						
(Cables covered in MIL-C-5756) (Plugs covered in MIL-I-3930)									
(Tests on receptacle only)									
Air, ball impact	-67	24	No cracking	None	Syn	Yes	5935-	Cable Assemblies and Attachable Plugs, External Electrical Power, Aircraft	MIL-C-7974
Air, aging	392	-	No cracking				6150		
Air, tensile strength	Ambient	-	Min psi: ins 800	Silicone	Silicone	Yes	6145	Wire, Electrical, Silicone-Insulated, Copper, 600-Volt, 2000C	MIL-W-8777
Air, cold bend	-67	4	No cracking						
Air, oven aging	450	6	Min T psi: ins 600						
MIL-H-5606 hydraulic oil	Ambient	20	No exudation of insulation	SBR	SBR		6145-	Cables, Special Purpose, Electrical (Multipair Audio Frequency)	MIL-C-10065
(Covered in MIL-I-3930)									

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET					
(Covered in MIL-I-3930, Types IS & JS)										
(Covered in MIL-I-3930)				SBR	SBR		6145	6145	Cables, Special Purpose, Electrical (Miniature)	MIL-C-10392
(Covered in MIL-I-3930)				SBR	SBR		6145	6145	Power and Control Cables, Heavy Duty, Buna S Insulated and Jacketed	MIL-P-105821
(Covered in MIL-I-3930)				SBR	SBR		6145	6145	Cables, Power and Control, Electrical, Shielded, Heavy Duty, Buna S insula- ted and Jacketed	MIL-C-107692
Air, mandrel bend Ozone, @ 50 ppbm	-40 100	20 168	No cracking Jkt: no cracking	SBR	Chloroprene		6145	6145	Cable, Telephone (W-50-A)	MIL-C-11097
Air, original properties Oxygen, aging @ 300 psi	Ambient 158	- 96	Min: jkt; T 1200 psi, E 175% Ins, no cracking; jkt, E 100%	Natural	Natural and/or SBR		5995	5995	Cord Assembly, Electrical CX-2151 ()/U	MIL-C-11997
Air, compression Air, mandrel bend Ozone, 50 ppbm	Ambient -40 100	- 20 168	800 lbs min crush load No cracking Jkt: no cracks	SBR	Chloroprene		6145	6145	Cable, Telephone WD-33/U	MIL-C-12423
(Covered in MIL-I-3930)				SBR	Braid		6145	6145	Wire, Electrical (Wire W-124, W-125, and W-128)	MIL-W-13075
(Covered in MIL-I-3930 Types IS & JS)				SBR	SBR		6145	6145	Cable, Special Purpose, Electrical (Cordage CO-212 and Cable, Special Purpose, Electrical WD-32/U)	MIL-C-13077
Air, tensile strength Air, mandrel bend Oxygen, aging @ 300 psi	Ambient - -40 158	- 168 94	Ins; 1000 psi min No cracking Max % T chg. ins -25	SBR	None		6145	6145	Wire, Electrical (For Instrument Test Leads)	MIL-W-13169
Air, tensile strength Air, @ 400% extension Oxygen, aging @ 300 psi	Ambient - -40 158	- 20 96	Min psi: ins 600; jkt 1200 No cracking Min T psi: ins 450; jkt 1000	SBR or natural	SBR and/or nat		6145- 5995	6145- 5995	Cord, Electrical (Re- tractile, 2, 3 and 4 Con- ductor, WD-9/U, WT-2/U, WF-4/U)	MIL-C-13273
Air, mandrel bend Air, oven aging ASTM #3 petroleum oil	-65 250 160	24 120 20	No cracking Ins. no breakdown Volume change, 20% max	Elastomeric	Chloroprene	Yes	6145	6145	Cable, Special Purpose, Electrical: Low-Tension, Heavy Duty Single conduc- tor and Multiconductor	MIL-C-13486 Types I and II

- 1 Document cancelled. Use MIL-C-3432.
- 2 Document cancelled without replacement

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, tensile strength	Ambient	-	Min psi: ins 2500, jkt 1800	Natural (60%)	Chloroprene	Yes	6145	Cable, Special Purpose, Electrical: General Specification For	MIL-C-13777 Comp A
Air, mandrel bend	-65	48	No cracking						
Oxygen, aging @ 300 psi	158	94	Min T psi: ins 2000; jkt 1600						
ASTM #2 petroleum oil	250	18	Max % T chg. jkt -40						
Ozone, 50 pphm	120	168	Jkt; no cracks						
Air, tensile strength	Ambient	-	Min psi: ins 3000, jkt 1800	Natural (Latex)	Chloroprene	Yes	6145	Cable, Special Purpose, Electrical: General Specification For	MIL-C-13777 Comp B
Air, mandrel bend	-65	48	No cracking						
Oxygen, aging @ 300 psi	158	94	Min T psi: ins 2500; jkt 1600						
ASTM #2 petroleum oil	250	18	Max % T chg: jkt -40						
Ozone, 50 pphm	120	168	Jkt; no cracks						
Air, tensile strength	Ambient	-	Min psi: ins 600, jkt 1800	SBR	Chloroprene	Yes	6145	Cable, Special Purpose, Electrical: General Specification For	MIL-C-13777 Comp D
Air, mandrel bend	-65	48	No cracking						
Oxygen, aging @ 300 psi	158	94	Min T psi: ins 480; jkt 1600						
ASTM #2 petroleum oil	250	18	Max % T chg. jkt -40						
Ozone, 50 pphm	120	168	Jkt; no cracks						
Air, tensile strength	Ambient	-	Min psi: ins 2000; jkt 1800	Natural rubber (40%)	Chloroprene	Yes	6145	Cable, Special Purpose, Electrical: General Specification For	MIL-C-13777 Comp E
Air, mandrel bend	-65	48	No cracking						
Oxygen, aging @ 300 psi	158	94	Min T psi: ins 1800; jkt 1600						
ASTM #2 petroleum oil	250	18	Max % T chg: jkt -40						
Ozone, 50 pphm	120	168	Jkt; no cracks						
Air, tensile strength	Ambient	-	Min psi: jkt 1800	Polyethylene, teflon & fluori- nated ethylene propylene	Chloroprene	Yes	6145	Cable, Special Purpose, Electrical: General Specification For	MIL-C-13777 Comps F, G and H
Air, mandrel bend	-65	48	No cracking						
Oxygen, aging @ 300 psi	158	94	Min T psi: jkt 1600						
ASTM #2 petroleum oil	250	18	Max % T chg: jkt -40						
Ozone, 50 pphm	120	168	Jkt; no cracks						
Air, tensile strength	Ambient	-	Min psi: ins SBR 450, Nat 3000	SBR or natural	SBR		6145	Cable, Telephone (Flexi- ble) (Cords and Cordage, Multipair)	MIL-C-13892
Air, mandrel bend	-40	20	Min psi: jkt 1600						
Oxygen, aging @ 300 psi	158	48	Max % T chg. ins SBR -25						
Oxygen, aging @ 300 psi	158	48	Max % T chg. jkt -20						
Oxygen, aging @ 300 psi	158	96	Max % T chg. ins nat -25						
Air, tensile strength	Ambient	-	Min psi: ins 600	SBR	SBR of chloro- prene		5935	Cable Assemblies, Power, Electrical, and Extension Lights, Connectors, Adapters, and Dummies	MIL-C-13940
Air, tensile strength	Ambient	-	Min psi. jkt SBR 1500, CR 1800						
Air, ASTM D746	-65	-	No cracking						
Oxygen, aging @ 300 psi	178	168	Max % T chg: ins -50						
Oxygen, aging @ 300 psi	158	96	Max % T chg: jkt SBR 25 CR 10						
ASTM #2 petroleum oil	250	18	Max % T chg. jkt CR -40						

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
Air, breaking strength	Ambient	-	6400 to 7000 lbs	Polyethylene	PVC	6145	Cable, Special Purpose, (TOM), Electrical, Coaxial, Lead Wrapped, Nylon Covered	MIL-C-15452	
(Covered in MIL-C-17 Type I jkt)									
Air, tensile strength Oxygen, aging @ 300 psi	Ambient 158	- 48	Ins 2500 psi; jkt 3500 psi Min psi T: ins 2000; jkt 2800	Natural	Natural	6145	Cable, Special Purpose, Electrical (Underwater Use)	MIL-C-16839 Types DMU, DNU	
(Covered in MIL-C-915)									
(See individual specification sheets for tests and requirements)									
Air, mandrel bend	5	20	No cracking	PVC	None	6145	Wire, Electrical, Radio Antenna, 7/12, 7/14, 7/16, 7/18, 7/20, 7/22	MIL-W-17211	
Air, crush Flame	482 Ambient	168 96	No cracking of silicone Max self burning 45 sec	Glass fiber sleeving, silicone rubber coated		5970	Insulation Sleeving, Electrical, Flexible Glass Fiber, Silicone Rubber Treated	MIL-I-180571	
Air, original properties Oxygen, aging @ 300 psi	Ambient 158	- 168	T, 450 psi min; E, 250% min T, 400 psi min; E, 200% min	Syn rubber	Lead	6145	Cable, Power, Electrical, Rubber Insulated, Lead Sheathed, High Voltage	MIL-C-188692	
Air, original properties Air, oven aging	Ambient 500	- 24	Min; jkt; T 800 psi, E 250% No exudation at elastomer	Asbestos	Silicone	6145	Cables, Special Purpose, Electrical, (Nuclear Plant)	MIL-C-193813	

1 Document cancelled. Use MIL-I-3190 and MIL-I-3190/6.

2 Document cancelled. Use MIL-C-28661.

3 Document cancelled without replacement.

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
(Jacket covered in MIL-C-17 Type I)									
Air, tensile strength	Ambient	-	Min: ins 850 psi; jkt 2000 psi	Polyethylene	PVC	6145	Cables, Power, Electrical Submarine, Navy Harbor Defense	MIL-C-196381	
Air, oven aging	158	96	Max & T chg: ins -30; jkt -25	SBR of syn	Chloroprene	6145	Cable, Telephone; Submarine	MIL-C-19654	
Water	Ambient	168	& wt chg: + 20						
Air, elongation	Ambient	-	Min E: ins 650%; jkt 350%	Natural w/wo chloroprene	Chloroprene	6145	Cable, Electric, Torpedo 65 Conductor (For Torpedo Control, Electric Setting)	MIL-C-19787	
Oxygen, aging @ 300 psi	158	96	Min E: ins 600%; jkt 300%						
MIL-L-15016 mineral oil	248	18	Max & E chg: jkt -40						
(Insulation covered in ASTM D734)									
Air, mandrel bend	-32	20	No damage	PVC	Polyethylene	6145	Cables, Special Purpose, Electrical, For Remote Control Radar Set AN/FPN-28 ()	MIL-C-198831 Types 4, 5, 6	
Steam, aging @ 115 psig	325	0.17	No damage	None	Not known	1440	Cable Assemblies, Electrical	MIL-C-21529	
Fungus	-	-	Resistant						
Air, ASTM D746	5	0.08	No cracking	Glass fiber sleeving, PVC coated	Yes	5970	Insulation Sleeving Electrical, Flexible, Glass Fiber, Vinyl Treated	MIL-I-215572	
ASTM #3 petroleum oil	Ambient	24	No cracking						
Air, elongation	Ambient	-	Min: jkt 250% (PVC)	Polyamide	PVC & Polyamide	6145	Cable, Electrical, Shielded, 600-Volt (For Nonflexing Service)	MIL-C-21609	
Air, mandrel bend	-40	1	Jkt; no cracks (PVC)						
Air, oven aging	212	120	Max & E chg: jkt -20% (PVC)	PVC tubing	Yes	5970	Insulation Tubing, Electrical Nonrigid, Vinyl, Very Low Temperature Grade	MIL-I-22076	
Air, tensile strength	Ambient	-	Min psi: 1800						
Air, ASTM D746	-67	0.08	No cracking						
ASTM #3 petroleum oil	Ambient	24	No cracks	Synthetic rubber	5995	Cable Assembly, Special Purpose, Electrical CX4832/AR	MIL-C-22442		
Requirements in accordance with MIL-R-6855									

- 1 Document cancelled without replacement.
2 Document cancelled. Use MIL-I-003190.

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET	FSC			
Air, tensile strength	Ambient	-	Min psi: ins 800; jkt 1500	SBR	PVC	1350	Cables, Controlled Mine	MIL-C-227311	
Air, oven aging	212	96	Max % chg: jkt -20					Types SUR, MU	
Air, oven aging	158	166	Max % T chg. ins -25					A-7 and SUA	
SAE 20 oil	158	4	Max % T chg. jkt -20						
Water, dielectric strength	-	-	Ins: no failure at 3000 volts Polyethylene	PVC		6145	Cable, Electrical, Under- water, Seadrome Lighting	MIL-C-229291	
(Covered in MIL-C-17, Type VIII)				Teflon or none	Chloroprene	6145	Cable, Coaxial (For Sub- marine Use)	MIL-C-23020 Types: RG-29 3/U, RG-29 4/U, RG-29 5/U, RG-31 7/U	
(Covered in MIL-C-17, Type IIA)				None	PVC	6145	Cable, Coaxial (For Submarine Use)	MIL-C-23020 Types: RG-14A/U, RG-17A/U	
Air, tensile strength	Ambient	-	Min psi: ins 2000, jkt 15000	PVC	PVC	6145	Cable, Electrical, Shielded Pairs	MIL-C-23437	
(Covered in MIL-W-76 or MIL-W-16878)				PVC	PVC	1190	Cable Assemblies, Special Weapons, Electrical, General Requirements For	MIL-C-25200	
(PVC covered in MIL-I-631, Type F, Grade B)				Polyamide (See individual specification sheets for acceptable construc- tion)	PVC	6145	Cable, Special Purpose Electrical Multiconductor Style 1	MIL-C-27072	
Air, elongation	Ambient	-	Min. jkt 300%	Polyamide	Chloroprene	6145	Cable, Special Purpose Electrical Multiconductor Style 3	MIL-C-27072	
Oxygen, aging @ 300 psi	158	94	Min: jkt 250%	(See individual specification sheets for acceptable construction)					
ASTM #2 petroleum oil	250	18	Max % E change: JKT-40	Natural or PVC	PVC or chloroprene	6145	Cable, Power, Electrical, Airport Lighting Control	MIL-C-27212	
(Insulation covered in MIL-I-3930, Type IP or IL Jacket covered in MIL-I-3930, Type JP or JN)				Not specified	PVC	6145	Cable Electrical, Shielded and Unshielded, Aerospace Symbol 1	MIL-C-27500	
Air, mandrel bend	-67	4	jkt. no cracking						
Air, oven aging	322	96	jkt. no cracking						

1 Document cancelled without replacement

1 Document cancelled without replacement

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SPECIFICATION TEST CONDITIONS				ELASTOMER COMMONLY USED			QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	INSULATION	JACKET				
(Insulation covered in MIL-W-8777)									
(Covered in MIL-C-12064)				Silicone	Not Specified		6145	Cable Electrical, Shielded and Unshielded, Aerospace	MIL-C-27500 Symbol H & F
(Covered in MIL-C-13486)				SBR	Chloroprene		4940	Cable Assemblies, Electrical	MIL-C-45820 Types I & II
(Covered in MIL-C-13486)				Elastomeric	Syn		4940	Cable Assemblies, Electrical	MIL-C-45820 Type III
(Covered in MIL-C-12064)				SBR	Syn		4940	Cable Assemblies, Electrical	MIL-C-45820 Type IV
(Covered in MIL-C-3432)				SBR	SBR or chloroprene		6150	Cable Assemblies Power, Electrical (With Molded on Terminations)	MIL-C-52286
(Insulation covered in MIL-W-76)				PVC	PVC		6145	Cables; Twisted Pairs and Triples, Internal Hookup, Shielded and Unshielded	MIL-C-55021 Symbol P & SP
Air, elongation	Ambient	-	Min: jkt 100%						
Air, mandrel bend	-40	4	No cracking						
Air, oven aging	212	96	Max E chg: jkt-35%						
Air, elongation	Ambient	-	Min: jkt 250%				6145	Cable, Telephone, WM-130 ()/G	MIL-C-55036
Air, mandrel bend	-67	24	No cracking						
Air, oven aging	212	96	Max E chg: jkt-10%						
(Jacket covered in MIL-I-3930 Type JN-L)									
Air, elongation	Ambient	-	Min: ins 250%; jkt 150%				6145	Cable, Telephone,	MIL-C-55036
Air, mandrel bend	-40	20	No cracking						
Oxygen, aging @ 300 psi	158	96	Min E: ins 175%; jkt 100%						
Air, tensile strength	Ambient	-	Min psi: jkt 2000				6145	Cables, Telephone (Inside)	MIL-C-55134
Air, oven aging	178	336	Max % T chg: jkt -10						
Air, mandrel bend	-65	48	No cracking						
				Butadiene or Chloroprene	Chloroprene		6145	Cable, Power, Electrical WI-26()/U	MIL-C-55483
Air, elongation	Ambient	-	Min. (jkt) 175%				6145	Cord, Electrical, Audio, Subminiature (Retractable & Straight)	MIL-C-55668
Air, tension, Low Temp	-55		20% min recovery (jkt)						
Ozone resistance	70	168	No cracks (jkt)						

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MISCELLANEOUS RUBBER ITEMS

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
Air, hardness	Ambient		C1 A, 95-100; C1 b, 70-80; C1 C, 60-65	Natural or synthetic	4510	Valves, Pump, Rubber	ZZ-V-511
Air, oven aging	270	0.5	No disintegration or blistering				
Steam	400	3	No disintegration (Class A only)				
Air, 90° bend	-40	120	No cracks	Natural or SBR		Rubber Cups for Hydraulic Actuating Cylinders	SAEJ602
Air, oven aging	158	70	Hardness increase, 0 to +5				
Air, original properties	Ambient		T, 3000 psi min; E, 800% min	Natural	6510	Bandages; Rubber	ZZ-B-1011
Air, oven aging	158	168	Tensile change, -25% max				
Steam, 15 psi		2	T, 2000 psi min				
Air, breaking strength	Ambient		Warp, 20 lbs min; Filling, 45 lbs min	Cotton yarn and rubber strands.	6510	Bandages; Cotton, Elastic (Washable)	JJ-B-1021
Air, elasticity	Ambient		Elongation, 120% min	Type rubber not specified			Type II
Air, original properties	Ambient		T, 1400 psi min; E, 250% min	Natural, SBR, chloroprene or butyl	3030	Belting; Conveyor (Rubber and Synthetic Rubber)	ZZ-B-2063
Air, oven aging	158	168	Tensile change; -25% max				Types, A, B, & D
Preproduction sample must meet procuring activity requirements							
Air, original properties	Ambient		T, 600 psi min; E, 300% min	Type I - cotton duck and natural	3030	Belting, V, Link, Impregnated Cotton Duck and Metal Studs	ZZ-B-2201
Air, oven aging	158	168	T and E change, -25% max	Type II - cotton duck and synthetic rubber			
Air, original properties	Ambient		T, 1400 psi min; E, 600% min	Natural and synthetic	8125	Rings; Jar, Rubber and Synthetic Rubber	ZZ-R-3511
Air, oven aging	212	70	T change, -30% max; E change, -40% max	Natural	1670	Rings; Parachute Vent, Molded Rubber	ZZ-R-3711
Air, original properties	Ambient		T, 2000 to 2300 psi; E, 50 to 200%	PVC	8135	Plastic Film, Flexible, Vinyl Chloride	L-P-375
Air, 180° crease	0	1	No cracks				Type I
Air, original properties	Ambient		T, 1600 psi min; E, 50 to 225%	PVC	8135	Plastic Film, Flexible, Vinyl Chloride	L-P-375
Air, 180° crease	-40	1	No cracks				Type II
Air, original properties	Ambient		T, 2500 psi min; E, 750% min	Natural, butyl, SBR or chloroprene	6515	Tourniquets; Rubber and Synthetic Rubber, Tubular	ZZ-T-6061
Air, oven aging	158	168	Tensile strength; 2000 psi min				

1 Document cancelled without replacement

2 Document cancelled. Use SAE J1600 series.

3 Document cancelled. Use MIL-B-52761.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER	
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.							
Air, hardness	Ambient			10 to 95, depending on type	Natural or synthetic	7510	Erasers, Rubber and Rubber Substitute	ZZ-E-661 ¹	
Air, 90° bend	-42	120		No cracks	Natural	2530	Cups, Hydraulic-Brake, Natural Rubber	ZZ-C-746 ²	
Air, oven aging	158	70		Hardness change, 0 to +5					
Brake fluid, WV-H-910	158	120		Volume change, 0 to +20%					
Air, original properties	Ambient			T, 1800 psi min; E, 300%; H, 55+ 5	Acrylics	9320	Rubber for Mounting (Unbonded-Spool & Compression Types)	ZZ-R-768	
Air, oven aging	194	96		T, 1440 psi min, E, 225%					
Oil immersion, ASTM #3 oil	122	96		Vol. change \pm 10%					
Compression set @ 40% defl	194	96		45% max set					
No physical property requirements									
Air, inflation @ 3 psi	Ambient			No leakage	Natural	6640	Bulb, Dropping, Pipet	NNN-B-788	
Air, original properties	Ambient				Fabric coated with SBR, butyl or chloroprene	6530	Cushions; Ring, Cloth-Inserted	ZZ-C-791 ²	
Air, oven aging	158	166		T change, -20% max; E change, -25% max					
Air, inflation @ 3 psi	Ambient			No leakage		6530	Cushions; Ring, Rubber		ZZ-C-796
Air, original properties	Ambient			T, 2500 psi min; E, 500% min	Natural or synthetic		Rubber Insulating Blankets (Without Fabric Reinforcement)	ASTM D1048	
Air, oven aging	158	168		Change in T and E, -20% max					
Air, alternating current	Ambient	0.05		No breakdown under 20,000 volts					
Air, original properties	Ambient			T, 2500 psi min; E, 600% min	Natural or synthetic		Rubber Insulating Sleeves	ASTM D1051	
Air, oven aging	158	168		Change in T and E, -25% max					
Air, alternating current	Ambient	0.05		No breakdown under 10,000 volts					
Air, original properties	Ambient			Breaking force, 45 lbs min; E, 700% min	Natural latex	1670	Rubber Band, Parachute Suspension Line	MIL-R-1832 Type I	
Air, oven aging	158	168		Change in breaking force and E, -25% max					
Air, original properties	Ambient			Breaking force, 50 lbs min; E, 700% min	Chloroprene	1670	Rubber Band, Parachute Suspension Line	MIL-R-1832 Type II	
Air, oven aging	158	168		Change in breaking force and E, -25% max					
Air, original properties	Ambient			T, 1400 psi min; E, 250% min	Synthetic rubber	9320	Synthetic Rubber Compound, Acid and Oil Resistant (For Lining Battery Compartments on Submarines)	MIL-S-2912	
Oxygen, bomb aging	158	46		Change in T and E, -25% max					
ASTM #3 petroleum oil	Ambient	46		Volume change, +15% max					

1 Document cancelled. Use A-A-132.

2 Document cancelled without replacement.

MIL-HDBK-699B (NR)

SPECIFICATION TEST CONDITIONS				ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS					
Air, original properties	Ambient		T, 250 psi, min; E, 100% min	Silicone			Silicone Rubber Compound, Room Temperature Vulcanizing, 15,000 Centipoises Viscosity (Durometer 35-55)	AMS 33621
Cooling medium, ASTM D746	-67		No cracks					
Air, oven aging	450	24	Change in T and E, -25% max					
Air, compression set	212	22	60% max					
Air, original properties	Ambient		T, 300 psi min; E, 100% min	Silicone			Silicone, Rubber Compound, Room Temperature Vulcanizing, 50,000 Centipoises Viscosity, Short Pot Life (Durometer 35-55)	AMS 33641
Cooling medium, ASTM D746	-67		No cracks					
Air, oven aging	-50	24	Elongation change, -15% max					
Air, compression set	212	22	35% max					
Air, original properties	Ambient		T, 500 psi min, E, 100% min	Silicone			Silicone Rubber Compound, Room Temperature Vulcanizing, 1,200,000 Centipoises Viscosity (Durometer 55-70)	AMS 33671
Cooling medium, ASTM D746	-67		No cracks					
Air, oven aging	450	24	Change in T and E, -25% max					
Air, compression set	212	22	70% max					
Air, original properties	Ambient		T, 2000 psi min; E, 250% min; H, 70-85	PVC	Yes	9330	Plastic Sheet, Polyvinyl Chloride, Plasticized, Elastomeric	MIL-P-35841
Cooling medium, hand bend	0	0.5	No cracks					
Air, oven aging	158	96	Change in T, E and H, 0% max					
SAE 20 paraffin oil	Ambient	24	Change in T, E and H, 0% max					
Air, original properties	Ambient		T, 1800 psi min, E, 300% min	PVC			Plastic Extrusions, Flexible Polyvinyl Chloride	AMS 3630
Cooling medium, ASTM D746	-40		No cracks					
Air, oven aging	250	2	Lengthwise shrinkage, 10% max					
ASTM #3 petroleum oil	212	8	Lengthwise shrinkage, 10% max					
Air, original properties	Ambient		T, 1800 psi min, E, 250% min	PVC			Plastic Extrusions, Flexible, High Temperature Polyvinyl Chloride	AMS 3631
Cooling medium, ASTM D746	-25		No cracks					
Air, oven aging	265	2	Lengthwise shrinkage, 10% max					
ASTM #3, petroleum oil	212	8	Lengthwise shrinkage, 10% max					
(Rubber covered by Grades 25, 50 or 60, Class III of (22-R-765)				Silicone	Yes	5930	Boots, Dust and Water Seal (For Toggle and Push-button Switches and Rotary-Actuated Parts), General Specification for	MIL-B-5423
(Tests on separator material only)								
Air, mandrel bend	-65	72	No cracks					
Air, oven aging	158	168	T change, -20% max, E change, -30% max					
petroleum oil, MIL-H-5606	158	168	Volume change, 0 to ±15%	Nitrile rubber separator		1650	Accumulators, Aircraft Hydropneumatic Pressure Type I	MIL-A-5498

1 Document cancelled without replacement.

MIL-HDBK-699B (NR)

SPECIFICATION TEST CONDITIONS				SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP. OF	TIME, HRS						
(Tests on 1/2 inch diameter cord)								
Air, breaking strength	Ambient		400 lbs min	Cotton yarn and natural or cis-1,4 polyisoprene rubber strands	8305	Cord; Elastic, Exerciser and Shock Absorber for Aeronautical Use	MIL-C-5651 Type I	
Air, elongation	Ambient		140% min					
Air, load to stretch 100%	-40	5	50% increase, max, over ambient load					
Air, oven aging	158	168	Change in breaking strength, -40% max					
Air, original properties	Ambient		T, 700 psi min, E, 200% H, 50 + 5	Silicone	5975	Nipple; Electrical Terminal	MIL-N-6748	
Air, oven aging	212	70	T, 560 psi min, E, 120% H, + 10 max change					
Oil immersion, ASTM #3 oil	212	22	Volume change + 15%					
Water immersion,	212	70	Volume change +5%					
Air, original properties	Ambient		T, 3800 psi min, E, 850% min	Natural	5977	Rubber, Anodic	MIL-R-68911	
Air, low temp. hardness	-40	4	Increase over orig. hardness, 33% max					
Air, oven aging	158	168	T, 3200 psi min; E, 800% min					
(Rubber covered in AMS 3215)								
(Rubber covered in AMS 3209)				Nitrile	5340	Clamps, Tube Support, Loop Type	MIL-C-8603 Type II	
Air, original properties	Ambient	500	H, 45-75; T, 400 psi min					
Air, oven aging		24	H change, +20 max; T change, -5% max	Chloroprene	5340	Clamps, Tube Support, Loop Type	MIL-C-8603 Type III	
Air, original properties	Ambient	160	T, 3000 psi min; E, 700% min	Silicone	5340	Clamps, Tube Support, Loop Type	MIL-C-8603 Type IV	
Air, oven aging		72	Change in T, -25% max					
Air, original properties	Ambient		T, 5lbs/inch width; E, 15% min	Type of material not specified	9330	Film, Elastomeric, Pigmented, For Use in The Manufacture of Aircraft Decalcomanias	MIL-F-87992	
Air, impact loading	-20	5	No cracks under 10 ft-lb load					
85/15,paint thinner/xylene	Ambient		No visible deterioration	Nitrile	8465	Bladder, Pneumatic B-5 Life Preserver	MIL-B-87431	
Air, original properties	Ambient		T, 1000 psi min; E, 300% min	Nitrile	4920	Repair Material, For Sealing Fuel Tanks	MIL-S-9208	
70/30 isooctane/toluene	Ambient	72	Volume change, +20% max					
Air, flex test	-65	96	No cracks	Fabric and natural or synthetic rubber	3030	Belt, V; Engine Accessory Drive	MIL-B-11040	
Air, resilience	Ambient		65% min	Natural or chloroprene	5340	Shock Mounts, M-447, M-448, M-449 and Bracket FT-512	MIL-S-12100	
Cooling medium, ASTM D746	-60		No cracks					

1 Document cancelled without replacement.

2 Document cancelled. Use MIL-M-43719.

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS			ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS		
Air, hardness	Ambient	75 ± 5	Change in hardness, +10 max	Natural	7510	Eraser, Rubber-Pumice (For Testing Coated Optical Elements)	MIL-E-12397
Air, oven aging	158	168					
Air, resilience	122	100	Impact resilience of 65-75% 300% max increase in stiffness	Natural or chloroprene	5340	Mounts, Vibration	MIL-M-12863
Air, load deflection	-40						
Air, hardness	Ambient	50 to 75	Hardness change, 0 to +5 Volume change, +5 to +20%	SBR	2530	Cup, Hydraulic Brake Cylinder: Synthetic Rubber (For Master, Wheel and Slave Cylinders)	MIL-C-14055
Air, 90° bend	-40	22					
Air, oven aging	212	70					
Brake fluid, VW-H-910	250	70					
(Tests on rubber only)							
Air, original properties	Ambient	T, 1500 psi min; E, 300%	Change in elongation, -35% max	SBR coated nylon	5430	Tanks, Fabric, Collapsible. Water, Nylon, Rubber-Coated	MIL-T-14398
Air, ASTM D746	-40	No cracks					
Air, oven aging	158	166					
(Rubber covered by Grade RS510F ₂ of MIL-R-3065)							
Air, hardness	Ambient	70 ± 5	No permanent set or cutting No cutting	SBR, glass cloth laminate	1055	Guard, Bellows, Rocket Launcher M21	MIL-G-14524 ¹
Air, compression @ 75 psi	Ambient	0.05					
Air, 300-350 ft. lb. impacts	Ambient	2/min					
Air, original properties	Ambient	T, 1800 psi min; E, 300% min	T change, -20% max; E change, -25% max 70% max	Nitrile	9320	Rubber Special-Shaped Section; For Mountings	MIL-R-17006 ²
Air, compression set	30	15% max					
Air, oven aging	194	96					
Air, resilience	80						
Air, original properties	Ambient	T, 2200 psi min; E, 650% min; H, 38+ 5	Volume change, +15% max	Chloroprene or nitrile	5340	Mounts, Resilient; Portsmouth Bonded Spool Type	MIL-M-17191 Class A
Air, compression set	30	40% max					
Air, oven aging	194	46					
ASTM #3 petroleum oil	Ambient	46					
Air, original properties	Ambient	T, 2500 psi min; E, 600% min; H, 43+ 5	Volume change, +15% max	Chloroprene or nitrile	5340	Mounts, Resilient; Portsmouth Bonded Spool Type	MIL-M-17191 Class B
Air, compression set	30	37% max					
Air, oven aging	194	46					
ASTM #3 petroleum oil	Ambient	46					

1 Document cancelled without replacement.

2 Document cancelled. Use ZZ-R-768.

MIL-HDBK-699B(MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER			SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC		
Air, original properties	Ambient		T, 2800 psi min; E, 575% min; H, 48 + 5	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Spool Type	MIL-M-17191 Class C
Air, compression set	30	94	34% max					
Air, oven aging	194	46	T, 2400 psi min; E, 550% min					
ASTM #3 petroleum oil	Ambient	46	Volume change, +15% max					
Air, original properties	Ambient		T, 2900 psi min; E, 550% min; H, 57 + 5	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Portsmouth Bonded Spool Type	MIL-M-17191 Class D
Air, compression set	30	94	30% max					
Air, oven aging	194	46	T, 2800 psi min; E, 500% min					
ASTM #3 petroleum oil	Ambient	46	Volume change, +15% max					
Air, original properties	Ambient		T, 2200 psi min; E, 550% min; H, 35 + 5	Natural	Yes	5340	Mounts, Resilient; Naval Engineering Station Types 6E2000, 6E900, 7E450, 6E150, and 6E100	MIL-M-17508 Type 6E100
Air, compression set	30	94	20% max					
Air, oven aging	194	46	T, 2100 psi min; E, 500% min					
Air, compression set	194	46	30% max					
Air, original properties	Ambient		T, 3200 psi min; E, 500% min; H, 42 + 5	Natural	Yes	5340	Mounts, Resilient; Naval Engineering Station Types 6E2000, 6E900, 7E450, 6E150, and 6E100	MIL-M-17508 Type 6E150
Air, compression set	30	94	20% max					
Air, oven aging	194	46	T, 2600 psi min; E, 450% min					
Air, compression set	194	46	35% max					
Air, original properties	Ambient		T, 2200 psi min; E, 600% min; H, 38 + 5	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Naval Engineering Station Types 6E2000, 6E900, 7E450, 6E150, and 6E100	MIL-M-17508 Type 7E450
Air, compression set	30	94	50% max					
Air, oven aging	194	46	T, 2100 psi min; E, 550% min					
ASTM #3 petroleum oil	158	94	Volume change, +15% max					
Air, original properties	Ambient		T, 2500 psi min; E, 600% min; H, 43 + 5	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Naval Engineering Station Types 6E2000, 6E900, 7E450, 6E150, and 6E100	MIL-M-17508 Type 6E2000 and 6E900
Air, compression set	30	94	60% max					
Air, oven aging	194	46	T, 2400 psi min; E, 550% min					
ASTM #3 petroleum oil	158	94	Volume change, +15% max					
Air, original properties	Ambient		T, 2000 psi min; E, 75% min; H, 80-90	Type or rubber not known	4820		Disk, Valve, Non-Metallic (Synthetic Rubber): Insert Type	MIL-D-17650
Air, compression set	212	70	T, 1600 psi min; E, 55% min					
Air, oven aging	212	70	Volume change, 0 to +15%					
(Tests on rubber only)								
Air, original properties	Ambient		T, 1500 psi; E, 150% min; H, 65-90	Type of rubber not known	Yes	3130	Bearing Components Bonded Synthetic Rubber, Water Lubricated	MIL-B-17901
Air, oven aging	158	96	T and E change, + 25% max					
Water	Ambient	168	Volume change, +5% max					

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC			
(Tests on rubber only)									
Air, oven aging	158	168	Set no greater than that of std. sample	Nylon yarn and natural rubber thread		8305	Webbing, Nylon, Elastic		MIL-W-17965
Air, oven aging	158	168	E no less than that of std. sample						
Air, original properties	Ambient		T, 1000 psi min; E, 400%; H, 40 + 5	Type or rubber not known		6650	Eye Guards, Rubber, For Optical Instruments		MIL-E-186481
Air, compressed under 25 psi	-25	3	No cracks						
Air, oven aging	158	48	T change, -20% max; H change, +20 max						
(Covered in ASTM D1048)				Natural or synthetic		5970	Insulation Blanket, Electrical		MIL-I-192542
Air, original properties	Ambient		T, 2200 psi min; E, 650%; H, 38 + 5	Chloroprene or nitrile		5340	Mounts, Resilient, Mare Island Types 11M15, 11M25 and 10M50		MIL-M-19379 Types 11M15 and 11M25
Air, compression set	30	94	50% max						
Air, oven aging	194	46	T, 2100 psi min; E, 650% min						
ASTM #3 petroleum oil	Ambient	46	Volume change, +15% max						
Air, original properties	Ambient		T, 2800 psi min; E, 575%; H, 48 + 5	Chloroprene or nitrile		5340	Mounts, Resilient, Mare Island Types 11M15, 11M25 and 10M50		MIL-M-19379 Type 10M10
Air, compression set	30	94	60% max						
Air, oven aging	194	46	T, 2700 psi min; E, 525% min						
ASTM #3 petroleum oil	Ambient	46	Volume change, +15% max						
Air, original properties	Ambient		T, 2800 psi min; E, 500% min; H, 50 + 5	Natural	Yes	5340	Mount Resilient; Type 5B5000-H		MIL-M-19863
Air, compression set	30	94	25% max						
Air, oven aging	194	46	T, 2200 psi min; E, 450% min						
Air, breaking strength	Ambient		Warp, 76.5 lbs min; Filling, 78 lbs min	Natural or synthetic rubber coated fabric		8465	Bladders, Flotation		MIL-B-20278
Air, breaking strength	Ambient		269 lbs min	Chloroprene coated nylon cloth		8465	Bladder, Flotation, MK2 Mod 0 and MK2 Mod 1		MIL-B-21160
Air, leakage	28	48	No leakage when bladder inflated						
Air, original properties	Ambient		T, 3000 psi min; E, 500% min; H, 45 + 5	Natural	Yes	5340	Mount, Resilient, Type 5M10, 000-H		MIL-M-21649
Air, compression set	30	94	20% max						
Air, oven aging	194	46	T, 2500 psi min; E, 450% min						
Air, original properties	Ambient		T, 1800 psi min; E, 400% min	Natural or synthetic		5340	Mount, Resilient, Shear (For Use in Shipping Containers)		MIL-M-223221 Class A
Air, compression set	194	48	30% max						
Air, oven aging	194	48	T and E change, -20% max						

1 Document cancelled without replacement.

2 Document cancelled Use ASTM D1048.

MIL-HDBK-699B (MR)

SPECIFICATION TEST CONDITIONS				ELASTOMER				SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP. OF	TIME, HRS.	SPECIFICATION REQUIREMENTS	SPECIFIED OR COMMONLY USED	QPL ISSUED CLASS	FSC			
Air, original properties	Ambient		T, 1200 psi min; E 400% min	Natural or synthetic	5340			Mounts, Resilient Shear (For Use in Shipping Containers)	MIL-M-223221 Classes B & C
Air, compression set	194	48	30% max						
Air, oven aging	194	48	T and E change, -20% max						
Air, original properties	Ambient		T, 1400 psi min; E, 350% min; H, 47-57	Chloroprene	9320			Rubber Tile, Rubber-Air-Air-Lead-Type (RAL)	MIL-R-23074
Air, oven aging	158	166	T and E change, -20% max						
Water	Ambient	46	Volume change, 0 to +12%						
Air, original properties	Ambient		T, 1000 psi min; E, 200% min	Natural or	2540			Guards, Splash, Wheel	MIL-G-23621
Ozone resistance	104	168	No cracks						
Air, oven aging	212	16	T, 700 psi min						
Low temp	-40		No cracks						
Air, hardness	Ambient		50 to 75	SBR	2530			Boot, Dust and Moisture Seal; Hydraulic Brake Cylinder, Synthetic Rubber	MIL-B-45326
Hydraulic fluid, MIL-H-13910	-65	70	No leakage						
Air, oven aging, 180° bend	250	24	No cracks; hardness change, -5 to +10						
Ozone, 50 ppm	100	168	No cracks						
Air, shock attenuation	-39	16	Registered shock of 250, max	Natural	5340			Mount, Shipping Container, Resilient; Shock and Vibration Lamping	MIL-M-45907
Air, shock attenuation	159	4	Registered shock of 120, max						
(No physical property requirements)				Natural				Bulb, Aspirator	MIL-B-50015

1 Document cancelled without replacement.

MIL-HDBK-699B(MR)

ABBREVIATIONS

Break	breaking	min	minimum
Brk	breaking	mm	millimeters
Cell	cellulose	mod	modulus
Chg	change	Nat	natural
Cl	class	NBR	nitrile
comp	compression	Ni	nickel
Cot	cotton	Orig	original
Cr	chromium	pphm	parts per hundred million
CR	chloroprene	ppm	parts per million
D	density	press	pressure
defl	deflection	psi	pounds per square inch
E	elongation	psig	pounds per square inch gage
elong	elongation	PVC	polyvinyl chloride
GR	grade	Rel	relative
H	hardness, Shore A	sec	seconds
humid	humidity	sep	separation
in	inch	Syn	synthetic
indent	indentation	T	tensile strength
ins	insulation	temp	temperature
jkt	jacket	V	volume
lub	lubricating	Vol	volume
M	minutes	W	weight
max	maximum	wt	weight
Mg	milligrams		

METRIC UNITS

<u>ENGLISH</u>	<u>MILITARY</u>	<u>EQUAL</u>	<u>METRIC SI UNITS</u>
OF	$t_{OC} = (t_{OF} - 32)/1.8$	=	OC
PSI	6894.757	=	PASCAL
lbs	0.453924	=	Kg
in ²	$6.4516 \times E^{-04}$	=	M ₂
16/ft ³	16.01846	=	Kg/M ₃

Custodian:
Army - MR

Preparing activity:
Army - MR

Review:
ME, AR, GL

Project 9320-A002

(KBWP# ID-0398A, 0393A, 0400A, 0401A, 0402A, 0403A, 0404A, 0405A, 0406A, 0407A, 0397A, 0399A/DISK 0127A, 0128A. FOR MTL USE ONLY)