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



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DEPARTMENT OF DEFENSE

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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 25 February 1977 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 Army Materials and Mechanics Research Center, ATTN: DRXMR-LS, Watertown, MA. 02172

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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:

American Society for Testing and Materials (ASTM)  
1916 Race Street, Philadelphia, Pa. 19103

American National Standards Institute (ANSI)  
1430 Broadway, New York, New York 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 describes 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)?

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.

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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.

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.

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)

# MULTIPURPOSE RUBBERS<sup>1</sup>

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 1000-3500 psi; E, 100-600%; H, 30-90	Natural rubber		9320	Rubber Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417
Cooling medium, ASTM D746	-67	-	F <sub>2</sub> suffix, no cracks					Type R, Class RN
Cooling medium, ASTM D746	-40	-	F <sub>1</sub> suffix, no cracks					
Air, compression set	158	22	Basic compd., 50% max; B suffix, 25% max.					
Air, original properties	Ambient	-	T, 1000-2500 psi; E, 100-400%; H, 30-90	SBR or Butyl		9320	Rubber Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417
Cooling medium, ASTM D746	-67	-	F <sub>2</sub> suffix, no cracks					Type R, Class RS
Cooling medium, ASTM D746	-40	-	F <sub>1</sub> suffix, no cracks					
Air, oven aging	212	70	A <sub>1</sub> suffix, max. change: T, -25%; E, -35%					
Air, original properties	Ambient	-	T, 500-2000 psi; E, 100-400%; H, 40-90	Polysulfide		9320	Rubber Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417
Cooling medium, ASTM D746	-67	-	F <sub>2</sub> suffix with H, 40-60, no cracks					Type S, Class SA
Cooling medium, ASTM D746	-40	-	F <sub>1</sub> suffix, no cracks					
Air, oven aging	212	70	A <sub>1</sub> suffix, max. change: T, -10%; E, -30%					
ASTM #3 petroleum oil	212	70	Volume change, 0 to +10%					
Air, original properties	Ambient	-	T, 500-2000 psi; E, 100-450%; H, 40-90	Nitrile		9320	Rubber, Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417
Cooling medium, ASTM D746	-67	-	F <sub>2</sub> suffix, no cracks					Type S, Class SB
Cooling medium, ASTM D746	-40	-	F <sub>1</sub> suffix, no cracks					
Air, compression set	212	70	Basic compd., 60% max; B <sub>1</sub> suffix, 35% max.					
ASTM #3 petroleum oil	212	70	Volume change, 0 to +40%					
Air, original properties	Ambient	-	T, 500-2500 psi; E, 200-400%; H, 30-90	Chloroprene		9320	Rubber Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417
Cooling medium, ASTM D746	-67	-	F <sub>2</sub> suffix with H, 30-60, no cracks					Type S, Class SC
Cooling medium, ASTM D746	-40	-	F <sub>1</sub> suffix, no cracks					
Air, compression set	158	22	50% max.					
ASTM #3 petroleum oil	212	70	Volume change, 0 to +120%					
Air, original properties	Ambient	-	T, 500-1200 psi; E, 50-500%; H, 40-80	Silicone		9320	Rubber, Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417
Cooling medium, ASTM D746	-67	-	No cracks					Type T, Class TA
Cooling medium, ASTM D746	-103	-	F <sub>2</sub> suffix, no cracks					
Air, oven aging	437	70	Max. change: T, -50%; E, -50%; H, +15					
ASTM #1 petroleum oil	302	70	E <sub>1</sub> suffix, volume change, 0 to +20%					

<sup>1</sup>For those entries which cover more than one grade of rubber (for example, Class RN, MIL-STD-417, a range of property values is given (tensile strength 1000-3500 psi)).

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 500-1500 psi; E, 100-200%; H, 40-80	Polyacrylate		9320	Rubber Composition, Vulcanized General Purpose, Solid (Symbols and Tests)	MIL-STD-417  Type T, Class TB
Air, oven aging	347	70	Max. change: T, -30%; E, -50%; H, +10					
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	Elastomer Compounds for Automotive Applications  Rubber, Silicone	ASTM D735/ (SAE J14)  ZZ-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	ZZ-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	ZZ-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	-	T, 2000 psi. min; E, 500% min; H, 45 ± 5	Natural			Latex Dipped Goods and Coatings for Automotive Applications	ASTM D1764/ (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	-	T, 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 <sub>2</sub> suffix, 50					
Air, original properties	Ambient	-	T, 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.					

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

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient -40 257 257	- - 70 70	T, 500-2500 psi; E, 50-350%; H, 60-90 F17 suffix, pass Max. change: T, ± 30%; E, -50%; H, ± 15 Volume change, +50% max.	Nitrile			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material CH
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient 0 302 302	- - 70 70	T, 800-1200 psi; E, 100-225%; H, 40-90 F14 suffix, pass Max change: T, ± 30%; E, -50%; H, ± 15 Volume change, +60% max.	Polyacrylate			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material DF
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient +14 302 302	- - 70 70	T, 800-1500 psi; E, 100-300%; H, 40-90 F13 suffix, pass Max. change: T, ± 30%; E, -50%; H, ± 15 % max. vol. chg: basic compd, +30; F36 suffix, +25	Polyacrylate			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material DH
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient -103 392 302	- - 70 70	T, 500-1200 psi; E, 200-500%; H, 30-70 F1-11 suffix, pass Max change: T, ± 30%; E, -50%; H, ± 15 Volume change, +120% max.	Silicone			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material FC
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient -67 392 302	- - 70 70	T, 400 psi min; E, 400% min; H, 30 ± 5 F19 suffix, pass Max change: T, ± 30%; E, -50%; H, ± 15 Volume change, +80% max.	Silicone			Elastomeric Materials For Automotive Applications	ASTM D2000 (SAE J200) Material FE
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient -67 392 302	- - 70 70	T, 800 psi min; E, 150% min; H, 60 ± 5 F19 suffix, pass Max change: T, ± 30%; E, -50%; H, ± 15 Volume change, +10% max.	Fluorosilicone			Elastomeric Materials For Automotive Applications	ASTM D2000/ (SAE J200) Material FK
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient -67 437 302	- - 70 70	T, 500-700 psi; E, 50-400%. H, 30-80 F19 suffix, pass Max change: T, ± 30%; E, -50%; H, ± 15 Volume change, +80%	Silicone			Elastomeric Materials For Automotive Applications	ASTM D2000/ (SAE J200) Material GE
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil 70/30 Isooctane/toluene	Ambient -13 482 302 Ambient	- - 70 70 70	T, 1000-2000 psi; E, 100-200%; H, 60-80 F15 suffix, pass Max change: T, ± 30%, E, -50%; H, ± 15 Volume change, +10% max. E61 suffix, volume change, 0 to ± 10%	Fluorocarbon			Elastomeric Materials For Automotive Applications	ASTM D2000/ (SAE J200) Material HK
(For description of grades covered see MIL-STD-417 and ASTM D2000)							Rubber, Fabricated Parts	MIL-R-3065

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 1400 psi. min; E, 250% min; H, 60 ± 5	Nitrile			Synthetic Rubber, Hydraulic Fluid (Petroleum Base) Resistant (55-65)	AMS 3200
Cooling medium, ASTM D746	-40	-	No cracks					
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%	Nitrile			Synthetic Rubber Dry Heat Resistant (35-45)	ASM 3201
Air, original properties	Ambient	-	T, 1000 psi. min; E, 300% min; H, 40 ± 5					
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%	Nitrile			Synthetic Rubber, Dry Heat Resistant (55-65)	AMS 3202
Air, original properties	Ambient	-	T, 1500 psi. min; E, 250% min; H, 60 ± 5					
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%	Nitrile			Synthetic Rubber, Low Temperature Resistant (25-35)	AMS 3204
Air, original properties	Ambient	-	T, 1000 psi. min; E, 350% min; H, 30 ± 5					
Cooling medium, ASTM D746	-60	.2	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%	Nitrile			Synthetic Rubber, Low Temperature Resistant (45-55)	AMS 3205
Air, original properties	Ambient	-	T, 1200 psi. min; E, 300% min; H, 70 ± 5					
Cooling medium, ASTM D746	-55	.2	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%	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type (25-35)	AMS 3207
Air, original properties	Ambient	-	T, 500 psi. min; E, 400% min; H, 30 ± 5					
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%	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type (45-55)	AMS 3208
Air, original properties	Ambient	-	T, 1200 psi. min; E, 300% min; H, 50 ± 5					
Cooling medium, ASTM D746	-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%	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type (65-75)	AMS 3209
Air, original properties	Ambient	-	T, 1700 psi. min; E, 200% min; H, 70 ± 5					
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, +40 to +100%					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Cooling medium, ASTM D746 Air, oven aging Electricity	Ambient -30 212 Ambient	- - 70 -	T, 1000 psi. min; E, 400% min; H, 70 ± 5 No cracks Max change: T, -35%; E, -50%; H, 0 to +10 Dielectric value, 300 volts/mil., min.	Chloroprene			Synthetic Rubber, Electrical Resistance, Chloroprene Type (65-75)	AMS 3210
Air, original properties Cooling medium, ASTM D746 Air, oven aging Isooctane	Ambient -10 212 80	- .2 70 24	T, 1700 psi. min; E, 300% min; H, 60 ± 5 No cracks Max change: T, -20%; E, -50%; H, 0 to +10 Volume change, -5% max.	Nitrile			Synthetic Rubber, Aromatic Fuel Resistant (55-65)	AMS 3212
Air, original properties Cooling medium, ASTM D746 Air, compression set Isooctane	Ambient -10 212 80	- .2 70 24	T, 1500 psi. min; E, 150% min; H, 80 ± 5 No cracks 50% max. Volume change, -5% max.	Nitrile			Synthetic Rubber, Aromatic Fuel Resistant (75-85)	AMS 3213
Air, original properties Cooling medium, ASTM D746 Air, oven aging Isooctane	Ambient -20 212 80	- .2 70 24	T, 1000 psi. min; E, 400% min; H, 40 ± 5 No cracks Max change: T, -20%; E, -50%; H, 0 to +15 Volume change, -5% max.	Nitrile			Synthetic Rubber, Aromatic Fuel Resistant (35-45)	AMS 3214
Air, original properties Cooling medium, ASTM D746 Air, oven aging Isooctane	Ambient -10 212 80	- .2 70 24	T, 1500 psi. min; E, 250% min; H, 70 ± 5 No cracks Max change: T, -20%; E, -40%; H, 0 to +10 Volume change, -5% max.	Nitrile			Synthetic Rubber Aromatic Fuel Resistant (65-75)	AMS 3215
Air, original properties Air, oven aging ASTM #1 petroleum oil Isooctane	Ambient 212 300 80	- 15 5 5	E, 200% min; H, 60 ± 5 E, 150% min; H, 70 max. E, 150% min. H, 70 max. Volume change, 0 to +30%	Chloroprene			Synthetic Rubber (55-65)	AMS 3220
Air, original properties Air, ASTM D736 bent loop Air, oven aging ASMT #1 petroleum oil	Ambient -40 212 300	- 5 70 70	T, 1500 psi. min; E, 400% min; H, 50 ± 5 No cracks Max change: T, -40%; E, -50%; H, 0 to +10 Volume change, +15 to +40%	Chloroprene			Synthetic Rubber, Hot Oil Resistant, High Swell (45-55)	AMS 3222
Air, original properties Air, ASTM D736 bent loop Air, oven aging ASTM #3 petroleum oil Ethylene glycol	Ambient -40 212 300 300	- 5 70 70 70	T, 1200 psi. min; E, 350% min; H, 50 ± 5 No cracks Max change: T, -25%; E, -50%; H, 0 to +10 Volume change, 0 to +50% Volume change, 0 to +25%	Nitrile			Nitrile Rubber, Hot Oil and Coolant Resistant, Low Swell (45-55)	AMS 3226

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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%	Nitrile			Nitrile Rubber, Hot Oil and Coolant Resistant (65-75)	AMS 3228
Air, original properties	Ambient	-	T, 1000 psi. min; E, 250% min; H, 70 ± 5					
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%	Nitrile			Nitrile Rubber Hot Oil Resistant, Low Swell (75-85)	AMS 3229
Air, original properties	Ambient	-	T, 1000 psi. min; E, 150% min; H, 80 ± 5					
Air, ASTM D736 bent loop	-40	5	No cracks					
Air, compression set	250	70	50% max.					
ASTM #3 petroleum oil	300	70	Volume change, 0 to +45%	Butyl			Synthetic Rubber, Phosphate Ester Resistant, Butyl Type (35-45)	AMS 3237
Air, original properties	Ambient	-	T, 1100 psi. min; E, 550% min; H, 40 ± 5					
Cooling medium, ASTM D746	-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%	Butyl			Synthetic Rubber, Phosphate Ester Resistant, Butyl Type (65-75)	AMS 3238
Air, original properties	Ambient	-	T, 1500 psi. min; E, 300% min; H, 70 ± 5					
Cooling medium, ASTM D746	-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%	Butyl			Synthetic Rubber, Phosphate Ester Resistant, Butyl Type (85-95)	AMS 3239
Air, original properties	Ambient	-	T, 1500 psi. min; E, 200% min; H, 90 ± 5					
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%	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type (35-45)	AMS 3240
Air, original properties	Ambient	-	T, 900 psi. min; E, 350% min; H, 40 ± 5					
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%	Chloroprene			Synthetic Rubber, Weather Resistant, Chloroprene Type (55-65)	AMS 3241
Air, original properties	Ambient	-	T, 1500 psi. min; E, 250% min; H, 60 ± 5					
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%					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 1900 psi. min; E, 150% min; H, 80 ± 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 ± 5	Chloroprene			Synthetic Rubber, Flame Resistant, Chloroprene Type (55-65)	AMS 3243
Cooling medium, ASTM D746	-40	.2	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, +40 to +100%					
70/30 Isooctane/toluene	80	24	Volume change, 0 to +80%					
Air, original properties	Ambient	-	T, 1000 psi. min; E, 200% min; H, 70 ± 5	Chloroprene			Synthetic Rubber, Flame Resistant, Chloroprene Type (65-75)	AMS 3244
Cooling medium, ASTM D746	-40	.2	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% min; H, 40 ± 5	Silicone			Silicone Rubber, General Purpose (35-45)	AMS 3301
Cooling medium, ASTM D746	-85	.2	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 ± 5	Silicone			Silicone Rubber, General Purpose (45-55)	AMS 3302
Cooling medium, ASTM D746	-85	.2	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 ± 5	Silicone			Silicone Rubber, General Purpose (55-65)	AMS 3303
Cooling medium, ASTM D746	-65	.2	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 ± 5	Silicone			Silicone Rubber General Purpose (65-75)	AMS 3304
Cooling medium, ASTM D746	-65	.2	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 ± 5	Silicone			Silicone Rubber, General Purpose (75-85)	AMS 3305
Cooling medium, ASTM D746	-65	.2	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%					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 750 psi. min; E, 150% min; H, 60 ± 5	Silicone			Silicone Rubber, Fuel and Oil Resistant (55-65)	AMS 3325
Cooling medium, ASTM D746	-80	.2	No cracks					
Air, oven aging	450	24	Change: T, ±30%; E, ±25%; H, -5 to +10					
Di-2-ethylhexyl sebacate	300	48	Volume change, +15% max.					
Air, original properties	Ambient	-	T, 800 psi. min; E, 130% min; H, 50 to 65	Silicone			Silicone Rubber, Fuel and Oil Resistant (50-65)	AMS 3326
Cooling medium, ASTM D746	-80	.2	No cracks					
Air, oven aging	450	24	Max change: T, -25%; E, -15%; H, ± 5					
SAE phosphate ester fluid 1A	158	48	Volume change, 0 to +30%					
Air, original properties	Ambient	-	T, 400 psi. min; E, 350% min; H, 15 to 30	Silicone			Silicone Rubber, Extreme Low Temperature Resistant (15-30)	AMS 3332
Cooling medium, ASTM D746	-110	-	No cracks					
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, 500 psi. min; E, 250% min; H, 40 ± 5	Silicone			Silicone Rubber, Extreme Low Temperature Resistant (35-45)	AMS 3334
Cooling medium, ASTM D746	-100	-	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to +5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to +15%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 175% min; H, 50 ± 5	Silicone			Silicone Rubber, Extreme Low Temperature Resistant (45-55)	AMS 3335
Cooling medium, ASTM D746	-100	-	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to +5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 150% min; H, 60 ± 5	Silicone			Silicone Rubber, Extreme Low Temperature Resistant (55-65)	AMS 3336
Cooling medium, ASTM D746	-100	-	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to +5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%					
Air, original properties	Ambient	-	T, 600 psi. min; E, 150% min; H, 70 ± 5	Silicone			Silicone Rubber, High and Extreme Low Temperature Resistant (65-75)	AMS 3337
Cooling medium, ASTM D746	-110	.2	No cracks					
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, 600 psi. min; E, 60% min; H, 80 ± 5	Silicone			Silicone Rubber, Extreme Low Temperature Resistant (75-85)	AMS 3338
Cooling medium, ASTM D746	-100	.2	No cracks					
Air, oven aging	212	24	Max change: T, -10%; E, -15%; H, 0 to +5					
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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 Resistant, Electrical Grade (55-65)	AMS 3356
Cooling medium, ASTM D746	-65	-	No cracks					
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/mil., min.					
Air, original properties	Ambient	-	T, 600 psi. min; E, 150% min; H, 70 ± 5	Silicone			Silicone Rubber, Lubricating Oil and Compression Set Resistant (65-75)	AMS 3357
Cooling medium, ASTM D746	-65	.2	No cracks					
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 - Room Temperature Vulcanizing - 50,000 Centipoises Viscosity (30-45)	AMS 3363
Cooling medium, ASTM D746	-67	.2	No cracks					
Air, oven aging	450	24	Max change: T, -40%; E, -10%; H, -25 to +10					
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 - Room Temperature Vulcanizing - 35,000 Centipoises Viscosity (40-55)	AMS 3365
Cooling medium, ASTM D746	-67	.2	No cracks					
Air, oven aging	450	24	Max change: T, -35%; E, -25%; H, ± 10					
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 Viscosity (55-70)	AMS 3366
Cooling medium, ASTM D746	-67	.2	No cracks					
Air, oven aging	450	24	Max change: T, -35%; E, -25%; H, ± 10					
Air, compression set	212	22	60% max.					

\*Non-current

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	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
Cooling medium, ASTM D746	-103	-	No cracks					
Air, compression set	212	22	35 to 45%					
ASTM #1 petroleum oil	212	70	Volume change, +10 to +15%					
Air, original properties	Ambient	-	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
Cooling medium, ASTM D746	-103	-	No cracks					
Air, compression set	302	70	35 to 45%					
ASTM #1 petroleum oil	212	70	Volume change, +10 to +15%					
Air, original properties	Ambient	-	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
Cooling medium, ASTM D746	-80	-	No cracks					
Air, compression set	302	70	35 to 45%					
ASTM #1 petroleum oil	302	70	Volume change, +15% max.					
Air, original properties	Ambient	-	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
Cooling medium, ASTM D746	-80	-	No cracks					
Air, compression set	302	70	25 to 30%					
ASTM #1 petroleum oil	302	70	Volume change, +15% max.					
Air, original properties	Ambient	-	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
Cooling medium, ASTM D746	-103	-	(Applicable for H. range 20-65) No cracks					
Cooling medium, ASTM D746	-80	-	(Applicable for H. Range 80±5) No cracks					
Air, compression set	212	70	40% max.					
ASTM #1 petroleum oil	302	70	Volume change, +15 to +20%					
Air, original properties	Ambient	-	T, 1000-1600 psi; E, 500-200%; H, 30-80	Nitrile		9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855 Class 1
Air, ASTM D736 bent loop	-67	5	No cracks					
Air, compression set	212	70	40% max.					
70/30 Isooctane/toluene	Ambient	168	Volume change, +25 to +40%					
Air, original properties	Ambient	-	T, 1500-1600 psi; E, 500-150%; H, 30-80	Chloroprene		9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855 Class 2
Air, ASTM D736 bent loop	-67	5	No cracks					
Air, compression set	212	70	40 to 50%					
ASTM #1 petroleum oil	212	70	Volume change, ±10%					
Air, original properties	Ambient	-	T, 1000-1500 psi; E, 450-150%; H, 30-80	SBR		9320	Rubber; Synthetic, Sheeted, Molded, and Extruded	MIL-R-6855 Class 3
Air, ASTM D736 bent loop	-67	5	No cracks					
Air, compression set	212	70	40% max.					
Water	212	70	Volume change, 0 to +25%					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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, $\pm 10\%$					
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 $\pm$ 5	Nitrile	Yes	9320	Rubber Sheet, Solid, Molded, and Extruded Shapes, Synthetic Oil Resistant	MIL-R-7362 Type II, Comp. A
Cool. med, ASTM D1329 TR-10	-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 $\pm$ 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, $\pm 15\%$ ; E, -20%; H, 60					
Water	212	70	Volume change, +5% max.					
Ozone, 50 ppm	100	168	Crack free @ 20X magnification					
Air, original properties	Ambient	-	T, 1600 psi. min; E, 125% min; H, 75 $\pm$ 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 $\pm$ 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			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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 Copolymers of Vinyl Chloride	SAE J15
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 sq. in.	Nat. and/or reclaimed 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.	Nat., reclaimed or synthetic			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.	Nat., reclaimed or synthetic			Sponge and Expanded Cellular - Rubber Products	SAE J18 Type R Grade RE
Water	80	0.05	Volume change, +1% max.					
Air, comp. defl. @25% defl.	Ambient	-	Available in defl. range 1/2 to 24 psi.	Nat., reclaimed or synthetic			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.	Nat., reclaimed or synthetic			Sponge and 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.	Nat., reclaimed or synthetic			Sponge and 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.	Nat., reclaimed or synthetic			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)						5330-5610	Filler, Expansion Joint, Bituminous; (Asphalt and Tar) and Nonbituminous (Preformed for Concrete)	HH-F-341 Type II Class A

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	Min: D, 1.5 lb/cu ft; T, 12 psi; E, 250%	Water or fluoro-hydrocarbon 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	220	3	Deflection change, -20% max.					
Flame	-	-	Self burning, 30 sec. max.	Water or fluoro-hydrocarbon blown		9330	Plastic Material, Cellular, Urethane	L-P-00386 Class 2
Air, original properties	Ambient	-	Min: D, 1.5 lb/cu ft; T, 12 psi; E, 250%					
Air, indent. defl. @25% defl.	Ambient	-	Deflection, 20 to 35 lb/50 sq. in.					
Steam, autoclave	220	3	Deflection change, -20% max.	Water or fluoro-hydrocarbon blown		9330	Plastic Material, Cellular, Urethane	L-P-00386 Class 3
Flame	-	-	Self burning, 30 sec. max.					
Air, original properties	Ambient	-	Min: D, 1.5 lb/cu ft; T, 12 psi; E, 250%	Synthetic		5640	Insulation Thermal, Flexible Unicellular (Sheet & Pipe Covering)	HH-I-00573
Air, thermal conductivity	-	-	K=0.30 BTU/hr/ft <sup>2</sup> /°F/in max.					
Water	Ambient	168	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, ± 20%					
Air, comp. set @50% defl.	158	22	20% max.	Natural or SBR, open cell, sponge		9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type R Grade RO
Air, comp. set @50% defl.	Ambient	-	Available in defl. range 1/2 to 23 psi.					
Air, comp. defl.	-67	5	F2 suffix, defl. change, 25% max.					
Air, oven aging	158	168	Deflection change, ± 20%	Natural or SBR, closed cell		9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type R Grade RE
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.					
Water	Ambient	0.05	L suffix, weight change, +1% max.	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, comp. defl. @25% defl.	Ambient	-	Available in defl. range 1/2 to 23-1/2 psi.					
Air, compression deflection	-40	5	F1 suffix, defl. change, 50% max.					
Air, oven aging	158	168	Deflection change, ± 20%	Nitrile, closed cell		9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type S Class SB Grade SBE
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.					
Water	Ambient	0.05	L suffix, weight change, +1% max.					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, comp. defl. @25% defl.	Ambient	-	Available in defl. range 1/2 to 23-1/2 psi.	Chloroprene, open cell, sponge and foam		9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type S Class SC Grade SCO
Air, compression deflection	-40	5	FI 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	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. @25% defl.	Ambient	-	Available in defl. range 1-1/2 to 23-1/2 psi.	Silicone, closed cell, sponge		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	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	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type U Grades UC & UU
Air, compression deflection	-40	5	FI 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	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type V Grades VC & VU
Air, compression deflection	-40	5	FI 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%					
Flame	-	-	Self extinguishing					
Air, comp. defl. @25% defl.	Ambient	-	Available in defl. range 1-1/2 to 17 psi.	PVC, open, cell foam		9320	Classification System and Tests for Cellular Elastomeric Materials	MIL-STD-670 Type V Grade VO
Air, compression deflection	-40	5	FI suffix, defl. change, 100% max.					
Air, indent. defl.	212	22	Defl. change, ± 20%					
ASTM #3 petroleum oil	158	22	E suffix, Vol. change, +10 to +60%					
Flame	-	-	Self extinguishing					
Air, comp. defl. @25% defl.	Ambient	-	Available in defl. range 1/2 to 23-1/2 psi.	PVC, closed cell, foam		9320	Classification S and Tests for C Elastomeric Ma	
Flame			Self extinguishing					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	Density, 0.006 to 0.015 lb/cu. in.	Natural or Syn., open cell		7210	Cushions, Chair; Sponge-Rubber and Synthetic Rubber	ZZ-C-00766 Class 1
Air, comp. defl. @25% defl.	Ambient	-	Deflection, 5 psi. max.					
Oxygen, aging	158	120	No cracks or loss of properties					
Air, original properties	Ambient	-	Density, 0.006 to 0.020 lb/cu. in.	Natural or Syn., closed cell		7210	Cushions, Chair; Sponge Rubber and Synthetic Rubber	ZZ-C-00766 Class 2
Air, comp. defl. @25% defl.	Ambient	-	Deflection, 5 to 9 psi.					
Oxygen, aging	158	120	No cracks or loss of properties					
(Test on Elastomer only)				Natural or Syn.		7220	Cushion (Under lay) Carpet and Rug, Cellular Rubber	ZZ-C-00811 Types I and II Class 1
Air, compression deflection	158	70	Thickness change 5-9 lb/in. <sup>2</sup>					
Aging, oven	158	166	-20% max. deflection change					
Compression set	158	22	-15% max.	Natural or Syn.		7220	Cushion (Under lay) Carpet and Rug, Cellular Rubber	ZZ-C-00811 Types I and II Class 2
Air, compression deflection	158	70	Thickness change 2.5 - 5 lb/in. <sup>2</sup>					
Aging, oven	158	166	-20% max. deflection change					
Compression set	158	22	-17.5% max.	Natural or Syn.		7220	Cushion (Under lay) Carpet and Rug, Cellular Rubber	ZZ-C-00811 Types I & II Class 3
Air, compression deflection	158	70	Thickness change 1-2.5 lb/in. <sup>2</sup>					
Aging, oven	158	166	-20% max. def. change					
Compression set	158	22	-20% max. def. change			8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Pack-aging Uses)	PPP-C-850 Class 1 Types I & II
Air, compressive stiffness	Ambient	-	Strain @ 40 psi., 0.75 in/in					
Air, mandrel bend	-65	-	No cracks, tears or separation					
Air, shrinkage	165	24	Linear change, -0.5% max.			8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Pack-aging Uses)	PPP-C-850 Class 2 Types I & II
Water	Ambient	24	Volume change, +5% max.					
Air, compressive stiffness	Ambient	-	Strain @ 40 psi., 0.71 in/in					
Air, mandrel bend	-65	-	No cracks, tears or separation			8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Pack-aging Uses)	PPP-C-850 Class 3 Types I & II
Air, shrinkage	165	24	Linear change, -1.0% max.					
Water	Ambient	24	Volume change, +5% max.					
Air, compressive stiffness	Ambient	-	Strain @ 40 psi., 0.62 in/in			8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Pack-aging Uses)	PPP-C-850 Class 4 Types I & II
Air, mandrel bend	-65	-	No cracks, tears or separation					
Air, shrinkage	165	24	Linear change, -1.5% max.					
Water	Ambient	24	Volume change, +5% max.			8135	Cushioning Material, Polystyrene, Expanded, Resilient (For Pack-aging Uses)	PPP-C-850 Class 4 Types I & II
Air, compressive stiffness	Ambient	-	Strain @ 40 psi., 0.64 in/in					
Air, mandrel bend	-65	-	No cracks, tears or separation					
Air, shrinkage	165	24	Linear change, -1.5% max.					
Water	Ambient	24	Volume change, +5% max.					

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ENVIRONMENT AND TEST	TEMP., °F	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
(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.	Synthetic or natural sponge			Preformed 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, 12-20 psi. No cracks 60% max.	Closed cell			Silicon 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

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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.					
Air, comp. defl. @25% defl.	78	-	Deflection, 1 to 4 psi.	Open cell			Sponge, Chloroprene Rubber, Soft	AMS 3197
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	AMS 3570
Air, compression deflection	-40	5	Thickness change, -20% max.				Flexibility 2.5 lb/cu. ft.	
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.				Plastic Sheet - Cellular, Shock Absorbing, (Closed Cell, Foamed Modified Vinyl Sheet)	AMS 3635
Air, comp. defl. @ 25% defl.	77	-	Deflection, 5 psi.					
Air, oven aging	160	168	No loss of properties					
Flame	-	-	Self burning 5 sec. max.					
(All Grades Covered in MIL-STD-670)				Natural or SBR sponge		5340	Bumpers, Rubber, Duplex Round	MIL-B-4792 Type I
(All Grades Covered in, MIL-R-6130 Type II, Grade A Med.)				Chloroprene		5340	Bumpers, Rubber, Duplex Round	MIL-B-4792 Type II
Air, original properties	Ambient	-	Available in density range 0.0050 to 0.0069 lb/cu. in./in.	Chloroprene, open cell	Yes	9320	Rubber; Latex Foam Sponge	MIL-R-5001 Type I Grade A
Air, indent. defl. @ 25% 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.					
Air, original properties	Ambient	-	Available in density range 0.0039 to 0.0058 lb/cu. in./in.	SBR, open cell	Yes	9320	Rubber; Latex Foam Sponge	MIL-R-5001 Type I Grade B
Air, indent. defl. @ 25% defl.	Ambient	-	Available in defl. range 10 to 55 psi.					
Air, oven aging	212	70	Deflection change, ± 15%					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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, ± 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, ± 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, ± 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, ± 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%					
ASTM #2 petroleum oil	158	70	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, comp. defl. @ 25% defl.	Ambient	-	Available in defl. range 2 to 21 psi.	Natural, open cell	Yes	9320	Rubber, Cellular, Chemically Blown	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, comp. defl. @ 25% defl.	Ambient	-	Available in defl. range 2 to 21 psi.	Chloroprene, closed cell	Yes	9320	Rubber, Cellular, Chemically Blown	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%					
ASTM #2 petroleum oil	158	70	Volume change, -15 to +30%					
Water	75	22	Weight change, +5% max.					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, comp. defl. @ 25% defl. Air, compression deflection Air, oven aging Water	Ambient - 24 212 75	- 5 70 22	Available in defl. range 2 to 21 psi. Deflection change, -70% max. Deflection change, -30 to +30% Weight change, +5% max.	SBR, closed cell	Yes	9320	Rubber, Cellular, Chemically Blown	MIL-R-6130 Type II Grade B
Air, comp. defl. @ 25% defl. Air, compression deflection Air, oven aging Water	Ambient - 67 212 75	- 5 70 22	Available in defl. range 2 to 21 psi. Deflection change, -55% max. Deflection change, -30% to +30% Weight change, +5% max.	Natural, closed cell	Yes	9320	Rubber, Cellular, Chemically Blown	MIL-R-6130 Type II Grade C
Air, original properties Air, oven aging Electricity Air, 100% relative humidity	Ambient 165 Ambient 100	- 0.5 - 240	Tensile, 185 to 450 psi. Tensile change, -30% max. Dielectric constant, 1.26 to 1.51 Weight change, +1.8 to +6.5%	Urethane	Yes	9330	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type I Class 1
Air, original properties Air, oven aging Air, 100% relative humidity	Ambient 165 100	- 0.5 240	Tensile, 185 to 450 psi. Tensile change, -30% max. Weight change, +1.8 to +6.5%	Urethane	Yes	9330	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type I Class 2
Air, original properties Air, oven aging Electricity Air, 100% relative humidity	Ambient 350 Ambient 100	- 0.5 - 240	Tensile, 130 to 330 psi. Tensile change, -30% max. Dielectric constant, 1.26 to 1.51 Weight change, +1.8 to +6.5%	Urethane	Yes	9330	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type II Class I
Air, original properties Air, oven aging Air, 100% relative humidity	Ambient 350 100	- 0.5 240	Tensile, 130 - 330 psi. Tensile change, -30% max. Weight change, +1.8 to +6.5%	Urethane	Yes	9330	Core Material, Foamed - In-Place, Urethane	MIL-C-8087 Type II Class 2
(All Grades Covered in MIL-STD-670, Grades RE or RO)				Natural or SBR, closed cell		2040	Fenders, Marine, Rubber-Filled	MIL-F-11435
Air, original properties Air, compression set Air, oven aging Water	Ambient Ambient 200 Ambient	- 22 96 48	T, 60 psi. min; E, 50% min; D, 7 lb/cu. ft. 12% max. T, 60 psi. min; E, 50% min. Weight change, 50% max.	Vinyl, Nitrile or other rubber		9330	Plastic Material	MIL-P-12420 Type I Class 1
Air, original properties Air, compression set Air, oven aging Water	Ambient Ambient 200 Ambient	- 22 96 48	T, 80 psi. min; E, 100% min; D, 7 lb/ft <sup>3</sup> 20% max. T, 80 psi. min; E, 100% min. Weight change, 50% max.	Vinyl, nitrile or other rubber		9330	Plastic Material Cellular, Elastomeric	MIL-P-12420 Type I Class 2

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 90 psi. min; E, 100% min; D, 7 lb/ft <sup>3</sup>	Vinyl, nitrile or other rubber		9330	Plastic Material Cellular, Elastomeric	MIL-P-12420 Type I Class 3
Air, compression set	Ambient	22	30% max.					
Air, oven aging	200	96	T, 90 psi. min; E, 100% min.					
Water	Ambient	48	Weight change, 50% max.					
Air, original properties	Ambient	-	T, 30 psi. min; E, 150% min; D, 5 lb/ft <sup>3</sup>	Vinyl, nitrile or other rubber		9330	Plastic Material Cellular Elastomeric	MIL-P-12420 Type II Class 4
Air, mandrel bend	-40	-	No breaking, cracking or bending					
Air, oven aging	200	96	T, 30 psi. min; E, 150% min.					
Water	Ambient	48	Weight change, 60% max.					
Air, original properties	Ambient	-	T, 50 psi. min; E, 200% min; D, 6 lb/ft <sup>3</sup>	Vinyl, nitrile or other rubber		9330	Plastic Material Cellular, Elastomeric	MIL-P-12420 Type II Class 5
Air, mandrel bend	-40	-	No breaking, cracking or bending					
Air, oven aging	200	96	T, 50 psi. min; E, 150% min.					
Water	Ambient	48	Weight change, 50% max.					
Air, original properties	Ambient	-	T, 100 psi. min; E, 200% min; D, 10 lb/ft <sup>3</sup>	Vinyl, nitrile or other rubber		9330	Plastic Material Cellular, Elastomeric	MIL-P-12420 Type III
Air, oven aging	200	96	T, 100 psi. min; E, 150% min.					
Water	Ambient	48	Weight change, 50% max.					
(Covered in MIL-STD-670 RE)				SBR closed cell		2590	Pads Cushioning; Personnel - Protection, Vehicular	MIL-P-14401 Class CS
(Covered in MIL-STD-670 RE)				PVC closed cell		2590	Pads Cushioning; Personnel - Protection, Vehicular	MIL-P-14401 Class VS
(Covered in MIL-R-17252, Type II, Class 1)				Natural or chloroprene		2590	Pads Cushioning; Personnel - Protection, Vehicular	MIL-P-14401 Class FR
Air, comp. defl. @ 25% defl.	Ambient	-	Deflection, 2.0 to 3.5 psi.	Closed cell		5970	Insulation Sheet, Cellular, Plastic; Thermal	MIL-I-4511
Air, 180° bend	-65	-	No cracks					
Water	-	24	Weight change, +2% max.					
Flame	-	-	Self extinguishing					
Air, comp. defl. @ 25% defl.	Ambient	-	Deflection, 2.0 to 6.0 psi			9330	Plastic Material, Unicellular (sheet & tube)	MIL-P-15280 Form T
Air, oven aging	180	168	No cracking					
Fuel oil	Ambient	70	No softening or swelling					
Compression set			24% max.					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, comp. defl. @ 25% defl. Air, mandrel bend Fuel oil Compression set	Ambient 28 Ambient Ambient	- 4 70 -	Deflection, 3 to 6 psi. No cracking No softening or swelling 24% max.			9330	Plastic Material, Unicellular (sheet & tube)	MIL-P-15280 Form S
Air, comp. defl. @ 25% defl. Air, 180° bend Air, oven aging Petroleum oil Flame	70 -50 140 212 -	- - 168 70 -	Deflection, 2 psi. No cracking Volume change, ± 5% max. No swelling or softening Self burning, 2 sec. max.	Closed cell		5640	Insulation, Synthetic, Rubber-Like, Chemically Expanded, Cellular (Sheet Form)	MIL-I-16562
Air, comp. defl. @ 25% defl. Air, compression deflection Air, heat aging @ 60 psi. Flame	80 -20 260 -	- 5 2 -	Available in defl. range 0.10 to 1.70 psi. Deflection change, -70% max. No hardening or softening Self burning, 30 sec. max.	Natural, open cell		9320	Rubber, Cellular (Bonded Shredded)	MIL-R-17252 Class 1 Types I & II
Air, comp. defl. @ 25% defl. Air, compression deflection Air, heat aging @ 60 psi.	80 -20 260	- 5 2	Available in defl. range 0.10 to 1.70 psi. Deflection change, -70% max. No hardening or softening	Natural, open cell		9320	Rubber, Cellular (Bonded Shredded)	MIL-R-17252 Class 2 Types I & II
Air, original properties Air, oven aging	Ambient 212	- 70	Density, 5.5 lb/cu. ft. max. Deflection change 20% max.	Polychloroprene		7210	Mattresses, Berth, Synthetic Sponge Rubber, Naval Shipboard	MIL-M-18351
Air, original properties Air, comp. defl. @ 25% defl. Air, oven aging Flame	Ambient 70 212 -	- - 70 -	Available in density range 5.5 to 8.1 PCF Available in defl. range 5 to 55 psi. Deflection change, 15% max. Self burning, 30 sec. max.	Chloroprene		9320	Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex)	MIL-R-20092 Type I Class 1
Air, original properties Air, comp. defl. @ 25% defl. Air, oven aging Fire resistance	Ambient 70 212 -	- - 70 2	Available in density range 5.5 to 8.1 PCF Available in defl. range 5 to 55 psi. Deflection change, 15% max. Flame 10 sec. max.	Chloroprene		9320	Rubber Sheets and Molded Shapes, Cellular, Synthetic, Open Cell (Foamed Latex)	MIL-R-20092 Type I Class 4
Air, original properties Air, comp. defl. @ 25% defl. Air, compression deflection Air, oven aging	Ambient 70 -20 212	- - 5 70	Available in density range 10.4 to 19.0 PCF Available in defl. range 0.20 to 1.70 psi. Deflection change, -70% max. Deflection change, 15% max.	Chloroprene		9320	Rubber Sheets and Molded Shapes Cellular, Synthetic, Open Cell (Foamed Latex)	MIL-R-20092 Type II Class 1

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, comp. defl. @ 25% defl.	70	-	Available in defl. range 0.20 to 1.70 psi.	Chloroprene		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	Polyurethane Foam, Rigid or Flexible, For Packaging	MIL-P-26514 Class 1
Air, comp. set @ 20% strain	Ambient	4	+10% max.	Urethane		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. @ 60% strain	120	336	Stress change, $\pm 10\%$ max.					
Air, original properties	Ambient	-	Available in density range 2 to 12 lb/cu. ft.	Not known		8135	Cushioning Material, Elastic Type, General	MIL-C-26861
Air, compression set	Ambient	4	15% max.					
Air, 95% rel. humid. @ 50% strain	120	336	Stress change, $\pm 10\%$					
Air, original properties	Ambient	-	T, 15 psi.; E, 200%; D, 2 lb/ft <sup>3</sup>	Polyether polyurethane, open cell		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	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)				Natural, open cell		7210	Mattress, Bed: Foam - Rubber, Ambulance Stretcher	MIL-M-40024
Air, original properties	Ambient	-	Density, 2.0 lb/cu. ft.	Closed cell		9330	Plastic Foam Insulation, Thermal	MIL-P-43110 Class 1
Water	Ambient	24	Weight change, 0.06 lb/cu. ft.					
Flame	-	-	Self extinguishing					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Water Flame	Ambient Ambient -	- 24 -	Density, 4 to 10 lb/cu. ft. Weight change, 0.06 lb/cu. ft. Self extinguishing	Closed cell		9330	Plastic Foam Insulation, Thermal	MIL-P-43110 Class 2
Air, tensile strength Air, ASTM D736 Water	Ambient -100 Ambient	- 2 24	40 psi min No cracks 5% absorption, max	Closed cell silicone		9320	Rubber, Sponge, Silicone, Closed Cell	MIL-R-46089
Air, density Air, load deflection @ 3 psi.	Ambient Ambient	- -	10 ± 1 pounds per cubic foot 0.043 max.	Silicone		9320	Silicone, Foam, Low-Density, Room Temperature Vulcanizing	MIL-S-46090

## CLOTHING AND PROTECTIVE EQUIPMENT

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 2500 psi min; E, 600% min Change in T and E, -25% max 20,000 to 30,000 volts, depending on class	Type of rubber not specified			Rubber Insulating Gloves	ASTM D120
Air, oven aging	158	168						
Air, breakdown voltage	Ambient	-						
Air, hardness	Ambient	-	C1 1,2,&3, 60 to 75; C1 5&6, 45 to 60 Hardness increase, 10 points max.	Natural or synthetic		8335	Heels; Rubber	ZZ-H-141 Classes 1, 2, 3, 5 and 6
Air, oven aging	212	24						
Air, tensile strength	Ambient	-	Body, 1600 psi min; cuff, 1700 psi min No cracks Tensile strength, 1500 psi min Tensile strength, 1500 psi min	Type of rubber not specified		8415	Gloves, Rubber, Industrial	ZZ-G-381 Type I
Air, 3/4 ft. lb. impact	-20	1						
Oxygen, bomb aging	158	70						
Sulfuric acid (15%)	75	46						
Air, tensile strength	Ambient	-	Body, 1600 psi min; cuff, 1700 psi min Tensile strength, 1500 psi min Tensile strength, 1000 psi min	Type of rubber not specified		8415	Gloves, Rubber, Industrial	ZZ-G-381 Type II
Oxygen, bomb aging	158	70						
Isooctane/toluene, 70/30	Ambient	70						
Air, tensile strength	Ambient	-	Body, 1600 psi min; cuff, 1700 psi min Tensile strength, 1500 psi min Tensile strength, 1500 psi min	Type of rubber not specified		8415	Gloves, Rubber, Industrial	ZZ-G-381 Type III
Oxygen, bomb aging	158	70						
Organic solvent mixture	Ambient	16						
Air, original properties	Ambient	-	T, 2500 psi min; E, 700% min T and E change, -20% max	Natural		8415	Gloves; Rubber (For) Electrical Workers (For Use in Connection With Apparatus or Circuits Not Exceeding 3000 Volts to Ground)	ZZ-G-401
Air, oven aging	158	168						
Air, tensile strength	Ambient	-	Gr A, 4000 psi min; Gr B, 3000 psi min Grade A, change in T, -25% max Grade B, change in T, -25% max	Natural		6515	Gloves, Rubber; Surgeons'	ZZ-G-421
Oxygen, bomb aging @ 300 psi	158	96						
Oxygen, bomb aging @ 300 psi	158	48						
(Tests on rubber only)								
Air, original properties	Ambient	-	T, 1450 psi min; E, 350% min Change in T and E, -25% max	Natural or synthetic rubber, cotton cloth		8430	Overshoe, Rubber (Man's 5 Buckle Type)	MIL-O-836
Air, oven aging	212	16						
Air, original properties	Ambient	-	T, 1600 psi min; E, 350% min 7% max No breakdown @ 20,000 volts	Natural or synthetic			Rubber Insulator Hoods (Proof Test 20,000 Volts, 3 minutes)	ASTM D1049
Air, tension set	Ambient	-						
Air, dielectric breakdown	Ambient	0.05						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Air, tear strength Air, oven aging	Ambient Ambient 158	- - 168	T, 2600 psi min; E, 650% min 165 pounds per inch, min Max change: T, -15%; E, -25%	Natural		4240	Faceblanks, Field Protective Mask, Natural Rubber; General Specification	MIL-F-10135
Air, original properties Air, tear strength Air, oven aging	Ambient Ambient 158	- - 168	T, 3000 psi min; E 600% min 300 pounds per inch, min Max change T-32%, E-30%	Natural		4240	Faceblanks, Field Protective Mask	MIL-F-0010135 (MU)
Air, original properties Air, 0.75 ft. lb. impact Air, oven aging Liquid mustard, penetration	Ambient -20 212 100	- 1 48 -	T, 1100 psi min; E, 400% min No cracks T, 1000 psi min; E, 350% min Min time for penetration, 300 minutes	Butyl		8415	Gloves Toxicological Agents, Protective	MIL-G-12223
Air, original properties Air, oven aging Air, compression set Ozone, 1000 pphm	Ambient 212 212 100	- 72 72 1	T, 1000 psi min; E, 400% min; H, 50 ± 5 Change in T and E, -15% max 35% max No cracks under 10X magnification	Type of rubber not specified		1660	Mask, Oxygen and Smoke, Full Face	MIL-M-19417
(Tests on rubber only) Air, original properties	Ambient	-	Hardness, 45 ± 5; tear, 150 lbs/inch min	Silicone	Yes	1660	Mask, Oxygen, MBU-5/p	MIL-M-27274
Air, original properties Air, oven aging	Ambient 212	- 24	Hardness, 72 to 85 Hardness, 72 to 90	Natural or synthetic		8335	Soles, Rubber, Shoe	MIL-S-40043 Classes 1, 2 and 5
Air, original properties Air, oven aging Isooctane/toluene, 70/30	Ambient 212 74	- 24 46	Hardness, 72 to 85 Hardness, 72 to 90 Volume change, +60 max	Synthetic rubber		8335	Soles, Rubber, Shoe	MIL-S-40043 Classes 3, 4 and 6
(Tests on rubber only) Air, original properties Cooling medium, ASTM D1053 Cooling medium, ASTM D1053 Air, oven aging	Ambient -40 -65 212	- 0.08 0.08 16	T, 2500 psi min; E, 500% min Type I, Young's modulus 10,000 psi max Type II, Young's modulus 10,000 psi max Change in T and E, -25% max	Type of rubber not specified		8430	Boots, Insulated, Cold Weather, Rubber (Wet-Cold; Dry-Cold)	MIL-B-41816
Air, original properties Air, flexibility Air, oven aging	Ambient -25 158	- 72 168	T, 3000 psi min; E, 600% min 5 fold increase in stiffness, max T, 2550 psi min; E, 450% min	Natural		4240	Faceblank, C17	MIL-F-50070
Air, original properties Air, flexibility Air, oven aging	Ambient -25 158	- 72 168	T, 3000 psi min; E, 600-700% 5 Fold increase T 2550 psi min; E 400% min	Natural		4240	Faceblank, Protective Mask, C12R4	MIL-F-51109

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T, 1500 psi min; E, 400% min; H, 55 ± 5	EPDM		4240	Rubber Fabricated Products for M171A1 Mask.	MIL-R-51283
Compression set	155	22	25% max	Silicone, Tube and gaskets				
Ozone 100 pphm	122	72	No cracks					
Low temp impact	-67		pass					
Air, original properties	Ambient	-	T, 3500 psi min; E, 750% min	Natural		8415	Gloves, Radioactive Contaminants Protective	MIL-G-82,242
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-82,253 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-82,253 Type II
Air, oven aged	194	22	T, 600 psi min; E, 300% min					
Water	194	22	Max change: T, -25%; E, -15%					

## COATED FABRICS

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, original properties	Ambient	-	Permanent set, 8% max	Cotton yarn and natural or synthetic rubber strands				8305	Webbing, Textile, (Cotton, Elastic)	JJ-W-155
Air, low temperature set	-25	72	Permanent set, 35% max							
Air, low temperature elong.	-40	2	Elongation, 10% min							
Air, oven aging	300	2	Permanent set, 20% max							
Air, inflation @ 3 psi	Ambient	0.08	No leakage	Cotton sheet coated with natural, SBR, chloroprene or butyl				7210	Pillows; Air, Rubber and Synthetic Rubber	ZZ-P-351
Air, breaking strength	Ambient	-	55 to 65 pounds, min	Natural, synthetic or PVC coated fabric				7210	Blankets; Rubber and Synthetic-Resin	ZZ-B-426
Oxygen, bomb aging @ 300 psi	158	240	No softening or stiffening							
Ethyl alcohol	Ambient	2	No stickiness or hardening							
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Nat. or syn.				8305	Cloth, Coated (Rubber and Plastic) and Plastic Sheeting for Hospital Use	ZZ-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 Sheeting for Hospital Use	ZZ-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 L-P-375)	Ambient	-	200 lbs/inch of thickness, min	PVC sheeting				8305	Cloth, Coated (Rubber and Plastic) and Plastic Sheeting Per Hospital Use	ZZ-C-450 Type III
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 40 lbs	Cotton	4.8				Cloth, Coated: Pyroxylin Coated	CCC-C-501 Type I, Class 1
				Cell. nitrate	1.5					
				Composite	6.3					
Air, breaking strength	Ambient	-	Warp, 40 lbs; Fill, 35 lbs	Cotton	2.7			8305	Cloth, Coated: Pyroxylin Coated	CCC-C-501 Type I Class 2
				Cell. nitrate	5.0					
				Composite	7.7					
Air, breaking strength	Ambient	-	Warp, 85 lbs; Fill, 75 lbs	Cotton	8.2			8305	Cloth, Coated: Pyroxylin Coated	CCC-C-501 Type I, Class 3
				Cell. nitrate	3.8					
				Composite	12.0					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/IN <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 110 lbs; Fill, 100 lbs	Cell. nitrate Cotton Cell. nitrate Composite	3.65 8.20 3.65 15.50			8305	Cloth, Coated: Pyroxylin Coated	CCC-C-501 Type II, Class I
MIL-F-16884, Diesel Oil	73	22	No delamination Volume change, 25% Max. No fungus growth	Cotton Chloroprene Multilayer Laminate	8.0	<1/4>1		8305	Cloth, Duck, Cotton, Synthetic Rubber Impregnated and Lami- nated, Oil Resistant	MIL-C-882 Class I
MIL-F-16884, Diesel Oil	73	46								
Culture, mildew resistant	84	336								
MIL-F-16884, Diesel Oil	73	22	No delamination Volume change, 25% Max. No fungus growth	Cotton Nitrile Multilayer Laminate	8.0	<1/4>1		8305	Cloth, Duck, Cotton, Synthetic Rubber Impregnated and Lami- nated, Oil Resistant	MIL-C-882 Class II
MIL-F-16884, Diesel Oil	73	46								
Culture, mildew resistant	84	336								
Air, breaking strength	Ambient	-	Warp, 70 lbs	Silicone Glass Silicone Composite	1.43 4.80	0.002 0.005			Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation	ASTM D1931
Air, breaking strength	Ambient	-	Warp, 125 lbs	Silicone Glass Silicone Composite	3.16 7.68	0.004 0.007			Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation	ASTM D1931
Air, breaking strength	Ambient	-	Warp, 125 lbs	Silicone Glass Silicone Composite	3.16 10.88	0.004 0.010			Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation	ASTM D1931
Air, breaking strength	Ambient	-	Warp, 250 lbs	Silicone Glass Silicone Composite	6.00 14.40	0.015			Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation	ASTM D1931
Air, breaking strength	Ambient	-	Warp, 55 lbs min; Fill, 45 lbs min	Cotton cloth coated with syn- thetic rubber				8340	Paulin, Waterproof, Special Purpose, 10 Feet Long By 8 Feet Wide	MIL-P-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 Cotton Chloroprene Composite	8.0	0.008			Synthetic Rubber Sheet, Cotton Fabric Rein- forced. Weather Re- sistant - Chloroprene Type	AMS 3270
Air, ASTM D746	-20	0.167	No cracks							
Air, oven aging	212	70	Flexible, no deterioration							
Isooctane	80	70	Vol. change, +20% Max.							
ASTM #3 petroleum oil	212	70	Vol. change, +20 to +65%							

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 37 lbs; Fill, 19 lbs	Chloroprene	1.87	0.010			Synthetic Rubber Sheet, Cotton Fabric Reinforced. Weather Resistant - Chloroprene Type	AMS 3270
Air, ASTM D746	-20	0.167	No cracks	Cotton	6.25					
Air, oven aging	212	70	Flexible, no deterioration	Chloroprene	1.87					
Isooctane	80	70	Vol. change, +20% Max.	Composite	9.99					
ASTM #3 petroleum oil	212	70	Vol. change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 90 lbs; Fill, 90 lbs	Chloroprene	27.0	0.025			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						
ASTM #3 petroleum oil	212	70	Vol. change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 250 lbs; Fill, 170 lbs	Chloroprene	35.0	0.035			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						
ASTM #3 petroleum oil	212	70	Vol. change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 250 lbs; Fill, 170 lbs	Chloroprene	54.0	0.050			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						
ASTM #3 petroleum oil	212	70	Vol. change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 35 lbs; Fill, 35 lbs	Chloroprene		0.008			Synthetic Rubber Sheet, Nylon Fabric Reinforced. Weather Resistant - Chloroprene Type	AMS 3273
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Chloroprene						
Isooctane	80	70	Volume change, -5 to +20%	Composite						
ASTM #3 petroleum oil	212	70	Volume change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 65 lbs; Fill, 60 lbs	Chloroprene		0.010-0.025			Synthetic Rubber Sheet, Nylon Fabric Reinforced. Weather Resistant - Chloroprene Type	AMS 3273
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Chloroprene						
Isooctane	80	70	Volume change, -5 to +20%	Composite						
ASTM #3 petroleum oil	212	70	Volume change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 300 lbs	Chloroprene		0.030-0.050			Synthetic Rubber Sheets, Nylon Fabric Reinforced. Weather Resistant - Chloroprene Type	AMS 3273
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Chloroprene						
Isooctane	80	70	Volume change, -5 to +20%	Composite						
ASTM #3 petroleum oil	212	70	Volume change, +20 to +65%							
Air, breaking strength	Ambient	-	Warp, 35 lbs; Fill, 35 lbs	Nitrile		0.008			Synthetic Rubber Sheet, Nylon Fabric Reinforced. Aromatic Fuel Resistant	AMS 3274
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Nitrile						
Isooctane	80	24	Volume change, -20 to +10%	Composite						
70/30 isooctane/toluene	80	24	Volume change, +35% Max.							

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 65 lbs; Fill, 60 lbs	Nitrile					Synthetic Rubber Sheet, Nylon Fabric Reinforced, Aromatic Fuel Resistant	AMS 3274
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Nitrile						
Isooctane	80	24	Volume change, -25 to 0%	Composite		0.010-0.017				
70/30 isooctane/toluene	80	24	Volume change, +35% Max.							
Air, breaking strength	Ambient	-	Warp, 65 lbs; Fill, 60 lbs	Nitrile					Synthetic Rubber Sheet, Nylon Fabric Reinforced, Aromatic Fuel Resistant	AMS 3274
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Nitrile						
Isooctane	80	24	Volume change, -25 to 0%	Composite		0.020-0.030				
70/30 isooctane/toluene	80	24	Volume change, +40% Max.							
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 300 lbs	Nitrile					Synthetic Rubber Sheet, Nylon Fabric Reinforced, Aromatic Fuel Resistant	AMS 3274
Air, ASTM D746	-65	0.167	No cracks	Nylon						
Air, oven aging	212	70	No deterioration	Nitrile						
Isooctane	80	24	Volume change, -25 to 0%	Composite		0.025-0.050				
70/30 isooctane/toluene	80	24	Volume change, +40% Max.							
Air, breaking strength	Ambient	-	Warp, 70 lbs; Fill, 70 lbs	Silicone					Silicone Rubber Sheet, Glass Fabric Reinforced	AMS 3315
Air, ASTM D736	-70	5	No cracks	Glass	3.16	0.004				
Air, oven aging	450	24	No deterioration	Silicone						
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Composite		0.010				
Air, breaking strength	Ambient	-	Warp, 200 lbs; Fill, 150 lbs	Silicone					Silicone Rubber Sheet, Glass Fabric Reinforced	AMS 3315
Air, ASTM D736	-70	5	No cracks	Glass	6.00	0.007				
Air, oven aging	450	24	No deterioration	Silicone						
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Composite		0.017				
Air, breaking strength	Ambient	-	Warp, 400 lbs; Fill, 300 lbs	Silicone					Silicone Rubber Sheet, Glass Fabric Reinforced	AMS 3315
Air, ASTM D736	-70	5	No cracks	Glass	12.4	0.015				
Air, oven aging	450	24	No deterioration	Silicone						
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Composite		0.032				
Air, breaking strength	Ambient	-	Warp, 800 lbs; Fill, 600 lbs	Silicone					Silicone Rubber Sheet, Glass Fabric Reinforced	AMS 3315
Air, ASTM D736	-70	5	No cracks	Glass	25.9	0.027				
Air, oven aging	450	24	No deterioration	Silicone						
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Composite		0.050				
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 300 lbs	Silicone					Silicone Rubber Sheet, Glass Fabric Reinforced, Heat and Weather Resistant (60-80)	AMS 3320
Air, ASTM D736	-70	5	No cracks	Glass						
Air, oven aging	450	24	180° bend, no cracks	Silicone						
ASTM #1 petroleum oil	350	70	Volume change, +10% Max.	Composite		1/16-1/8				

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

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 165 lbs; Fill, 150 lbs	Chloroprene	23.0	0.070		8305	Cloth, Coated, Asbestos	MIL-C-7637 Type II
Air, creased 180°	-20	0.5	No cracks or flaking	Asb. and wire	30.0					
Air, mandrel bend	260	24	No cracks	Chloroprene	23.0					
Flame	-	-	No flame, no glow	Composite	76.0					
Air, breaking strength	Ambient	-	Warp, 50 lbs; Fill, 50 lbs	Nylon	1.1	0.0032	Yes	8305	Cloth, Coated, Rubber Nylon Base	MIL-C-7966 Variety S
Air, creased 180°	-65	0.5	No cracking or flaking	Nat. or syn.	1.9					
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 Nylon Base	MIL-C-7966 Variety P
Air, creased 180°	-65	0.5	No cracking or flaking	Nat. or syn.	3.25					
Air, blocking	200	0.5	No blocking	Composite	6.75					
Air, Mullen burst	Ambient	-	125 points	Syn. rubber	1.6	0.0042		8305	Cloth, Coated, Nylon, Rubber Coated, Fuel-Resistant	MIL-C-8068 Type I
Air, mandrel bend	-67	24	Flexible	Nylon						
Air, oven aging	212	70	No deterioration	Syn. rubber						
Isooctane	75	70	Mullen burst, 125 pts.	Composite						
70/30 isooctane/toluene	75	70	Mullen burst, 125 pts.			0.010-0.020				
Air, Mullen burst	Ambient	-	500 points	Syn. rubber Nylon	5.5	0.013		8305	Cloth, Coated, Nylon, Rubber Coated, Fuel-Resistant	MIL-C-8068 Type II
70/30 isooctane/toluene	-65	24	Flexible							
Air, oven aging	212	70	No deterioration							
Isooctane	75	70	Mullen burst, 500 pts.							
70/30 isooctane/toluene	75	70	Mullen burst, 500 pts.	Composite		0.025+				
Air, Mullen burst	Ambient	-	125 points	Syn. rubber	1.6	0.0042		8305	Cloth, Coated, Nylon, Rubber Coated, Fuel-Resistant	MIL-C-8068 Type III (uncured)
Air, mandrel bend	-67	24	Flexible	Nylon						
Air, oven aging	212	70	No deterioration	Syn. rubber						
Isooctane	75	70	Mullen burst, 125 pts.	Composite						
70/30 isooctane/toluene	75	70	Mullen burst, 125 pts.			0.012-0.018				
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	6.5					
				Composite	23.5					
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 Type I
Air, cantilever stiffness	-65	0.5	Flexible	Nylon						
Air, blocking	180	0.5	No blocking	Nat. or syn.						
Weatherometer, break, strength	135	100	Warp, 70 lbs; Fill, 70 lbs	Nylon						
				Nat. or syn.	1.6					
				Composite	9.3					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 170 lbs	Nat. or syn.				8305	Cloth, Laminated and Coated for Waterproof Containers	MIL-C-10351 Type II
Air, cantilever stiffness	-65	0.5	Flexible	Nylon	3.0					
Air, blocking	180	0.5	No blocking	Nat. or syn.						
Weatherometer, break. strength	135	100	Warp, 160 lbs; Fill, 150 lbs	Nylon	3.0					
				Nat. or syn. Composite	12.5					
(Tests on coated fabric)										
Air, breaking strength	Ambient	-	Warp, 72 lbs min; Fill, 52 lbs	Nylon cloth coated with natural or synthetic rubber				8465	Mattress, Pneumatic	MIL-M-10747
Air, 180° crease	-70	5	No cracks							
Air, burst test @ 40 psi	Ambient	-	No leakage							
Air, breaking strength	Ambient	-	Warp, 140 lbs; Fill, 120 lbs	Silicone	6.0	0.007		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				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	4.5					
Air, blocking	180	0.5	No blocking	PVC						
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite	7.8					
Air, breaking strength	Ambient	-	Warp, 130 lbs; Fill, 75 lbs	PVC				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	4.5					
Air, blocking	180	0.5	No blocking	PVC						
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite	10.0					
Air, breaking strength	Ambient	-	Warp, 160 lbs; Fill, 110 lbs	PVC				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	9.85					
Air, blocking	180	0.5	Slight blocking	PVC						
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite	14.50					
Air, breaking strength	Ambient	-	Warp, 125 lbs; Fill, 120 lbs	PVC				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	8.25					
Air, blocking	180	0.5	Slight blocking	PVC						
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite	12.00					
Air, breaking strength	Ambient	-	Warp, 210 lbs; Fill, 130 lbs	PVC				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	12.29					
Air, blocking	180	0.5	Slight blocking	PVC						
TT-S-735, 40% aromatic	Ambient	2	Creased 180°, no cracks	Composite	18.00					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 235 lbs; Fill, 175 lbs	PVC				8305	Cloth, Coated, Cotton, Vinyl Coated, Fire and Mildew Resistant	MIL-C-10799 Type II, Class 5
Air, mandrel bend	-40	4	No cracking or flaking	Cotton	14.77					
Air, blocking	180	0.5	Slight blocking	PVC						
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: Cotton Balloon, 3 Ply, Air Retaining, Chloroprene	MIL-C-11390
Weatherometer, break. strength	135	200	Loss 10% Max.	Cotton	2.0					
				Chloroprene	3.5					
				Cotton bias	2.0					
				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 Coated, Toxicological Agents, Protective	MIL-C-12189
Air, creased 180°	-40	4	Flexible	Cotton	4.25					
Air, blocking	180	0.5	No blocking	Butyl	2.80					
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 Coated, Acid and Fuel Resistant	MIL-C-12526
Air, creased 180°	-40	4	No cracking or flaking	Glass	5.37	0.0065				
Air, blocking	180	0.5	Slight blocking	PVC	8.00					
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, Polychloroprene Coated (For Pneumatic Floating Equipment)	MIL-C-14505 Class 3 Schedule B (vulcanized)
Air, creased 180°	-20	96	No cracks	Nylon	3.15					
Air, oven aging	158	96	Break strength, 15% loss Max.	Chloroprene	1.20					
				Composite	5.55					
Air, breaking strength	Ambient	-	Warp, 350 lbs; Fill, 335 lbs	Chloroprene		0.010		8305	Cloth, Nylon, Polychloroprene Coated (For Pneumatic Floating Equipment)	MIL-C-14505 Class 4 (vulcanized)
Air, creased 180°	-20	96	No cracks	Nylon	5.8	0.010				
Air, oven aging	158	96	Break strength, 15% loss Max.	Chloroprene						
Air, breaking strength	Ambient	-	Warp, 400 lbs; Fill, 400 lbs	Chloroprene		0.014		8305	Cloth, Nylon, Polychloroprene Coated (For Pneumatic Floating Equipment)	MIL-C-14505 Class 6 (vulcanized)
Air, creased 180°	-20	96	No cracks	Nylon	8.5	0.020				
Air, oven aging	158	96	Break strength, 15% loss Max.	Chloroprene		0.014				
				Composite		0.048				
Air, breaking strength	Ambient	-	Warp, 650 lbs; Fill, 650 lbs	Chloroprene		0.020		8305	Cloth, Nylon, Polychloroprene Coated (For Pneumatic Floating Equipment)	MIL-C-14505 Class 7 (vulcanized)
Air, creased 180°	-20	96	No cracks	Nylon	13.3	0.029				
Air, oven aging	158	96	Break strength, 15% loss Max.	Chloroprene		0.020				
				Composite		0.069				

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



SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, creased 180° Air, blocking	-20 180	94 0.5	No cracks No blocking	Chloroprene Nylon Chloroprene Nylon Nylon pile } Nylon Chloroprene Nylon Chloroprene Composite	5.0 2.0 6.0 9.5 6.0 2.0 5.0 35.5	2 1/4-3		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 11
Air, creased 180° Air, blocking	-20 180	94 0.5	No cracks No blocking	Chloroprene Nylon Chloroprene Nylon Nylon pile } Nylon Chloroprene Nylon Chloroprene Composite	16.8 1.0 8.3 8.2 8.3 1.0 1.5 45.1	2-2 1/4		8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 12
Air, breaking strength Air, creased 180° Air, blocking Oxygen, accelerated aging	Ambient -20 180 158	- 94 0.5 96	Warp, 225 lbs; Fill, 225 lbs No cracks No blocking Break. strength, 10% loss Max.	Chloroprene Nylon Chloroprene Composite	4.5 3.1 4.5 12.1			8305	Cloth, Coated, and Webbing, Inflatable Boat	MIL-C-17415 Type 13
Air, breaking strength Air, creased 180° Air, blocking	Ambient -40 200	- 96 0.5	Warp, 180 lbs; Fill, 170 lbs No cracks No blocking	Nylon Chloroprene Composite	3.1 4.2 7.3			8305	Cloth, Coated; and Tape, Coated Cloth - Chloroprene on Nylon, Pneumatic Life Preserver	MIL-C-19002 Type I
Air, tearing strength Air, blocking	Ambient 200	- 0.5	Warp, 1600 gm; Fill, 1600 gm No blocking	Cotton Chloroprene Composite	5.9 4.9 10.8			8305	Cloth, Coated, Vapor Permeable, Water Impermeable	MIL-C-19208
Air, breaking strength Air, creased 180° Air, blocking	Ambient -40 160	- 96 24	65 lbs. minimum No cracks No blocking	Polyethylene Nat. or syn. Polyethylene Composite	   6.5		Yes	8305	Cloth, Coated (For Aircraft Protectors)	MIL-C-19524

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
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-19759 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-19759 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		0.007		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type I, Class 1
Air, cantilever stiffness	-40	4	Flexible	Nylon	2.3					
Oxygen, accelerated aging	158	168	Not stiff, brittle or tacky	Chloroprene						
MIL-L-6082, petroleum oil	Ambient	1	No leakage	Composite	8.0					
TT-S-735, 40% aromatic	Ambient	0.08	Shall not crack on creasing							
Air, breaking strength	Ambient	-	Warp, 120 lbs; Fill, 100 lbs	PVC		0.007		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type I, Class 2
Air, cantilever stiffness	10	4	Flexible	Nylon	2.3					
MIL-L-6082, petroleum oil	Ambient	1	No leakage	PVC						
TT-S-735, 40% aromatic	Ambient	0.08	Shall not crack on creasing	Composite	9.0					
Air, breaking strength	Ambient	-	Warp, 120 lbs; Fill, 100 lbs	Chloroprene		0.007		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type I, Class 3
Air, cantilever stiffness	-40	4	Flexible	Nylon	2.3					
Oxygen, accelerated aging	158	168	Not stiff, brittle or tacky	Chloroprene						
MIL-L-6082, petroleum oil	Ambient	1	No leakage	Composite	10.5					
TT-S-735, 40% aromatic	Ambient	0.08	Shall not crack on creasing							
Flame	-	-	Flame, 10 sec. Max; Char 3.5 in. Max.							

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength Air, cantilever stiffness Oxygen, accelerated aging MIL-L-6082, petroleum oil TT-S-735, 40% aromatic	Ambient -40 168 Ambient Ambient	- 4 168 1 0.08	Warp, 325 lbs; Fill, 260 lbs Flexible Not stiff, brittle or tacky No leakage Shall not crack on creasing	Chloroprene Nylon Chloroprene Composite	 5.5  16.0	 0.015  		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type II, Class 1
Air, breaking strength Air, cantilever stiffness MIL-L-6082, petroleum oil TT-S-735, 40% aromatic	Ambient 10 Ambient Ambient	- 4 1 0.08	Warp, 325 lbs; Fill, 260 lbs Flexible No leakage Shall not crack on creasing	PVC Nylon PVC Composite	 5.5  18.0	 0.015  		8305	Cloth, Coated, Nylon, Waterproof	MIL-C-20696 Type II, Class 2
Air, breaking strength Air, cantilever stiffness Oxygen, accelerated aging MIL-L-6082, petroleum oil TT-S-735, 40% aromatic Flame	Ambient -40 158 Ambient Ambient	- 4 168 1 0.08	Warp, 325 lbs; Fill, 260 lbs Flexible Not stiff, brittle or tacky No leakage Shall not crack on creasing Flame, 10 sec. Max; Char 3.5	Chloroprene Nylon Chloroprene Composite	 5.5  18.0	 0.015  		8305	Cloth, Coated, Nylon Waterproof	MIL-C-20696 Type II, Class 3
Air breaking strength Air, creased 180° Air, blocking Air, oven aging	Ambient -65 200 200	- 4 0.5 168	Warp 325 lbs; Fill 275 lbs No cracks No blocking Not stiff, brittle or tacky	Nitrile/ Butadiene Natural Composite	7.25  2.0 6.7			8305	Cloth, Coated, Nylon Waterproof	MIL-C-20696 Type III Class 5
Air, breaking strength Air, creased 180° Air, blocking Air, oven aging	Ambient -65 200 200	- 4 0.5 168	Warp, 300 lbs; Fill, 300 lbs No cracks No blocking Not stiff, brittle or tacky	Natural Nylon Natural Composite	4.2 6.0 4.2 14.4			8305	Cloth, Coated, Raft Bottom	MIL-C-21109 Type II
Air, tearing strength Air, blocking Air, oven aging Weatherometer, tear strength	Ambient 200 158 135	- 0.5 96 500	Warp, 130 lbs No blocking Tear strength, 5% loss Max. 5% loss, Max.	Chloroprene Polyester Chloroprene Polyester Chloroprene Hypalon Composite	     16.5			8305	Cloth, Laminated ZPG2 and ZPG2W Type Airship Envelope	MIL-C-21189
Air, breaking strength Air, creased 180° Air, blocking Flame	Ambient -20 180 -	- 1 0.5 -	Warp, 90 lbs; Fill, 70 lbs No cracks No blocking Flame, 2.0 sec. Max; Char 1.5 in Max.	Aluminum Glass Chloroprene Composite	3.0 11.8 4.2 19.0			8305	Cloth, Coated (Neo-prene, Asbestos, Glass, Cotton, Aluminized)	MIL-C-21890

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, creased 180°	-65	4	No cracks	Natural	1.5	1.0		8305	Cloth, Laminated, Rubber on Nylon, Inflatable Floor	MIL-C-22427
Air, blocking	200	0.5	No blocking	Nylon	1.0					
Air, oven aging	158	168	Not stiff, brittle or tacky	Natural	9.5					
				Nylon						
				Nylon pile	7.0					
				Nylon						
				Natural	9.5					
				Nylon	1.0					
				Natural	1.5					
				Composite	31.0					
Air, breaking strength	Ambient	-	Warp, 180 lbs; Fill, 160 lbs	Hypalon	4.9			8305	Cloth, Coated, Fire, Water, Mildew and Weather Resistant	MIL-C-22524 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-22534 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-22524 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 to 20.5			8305	Cloth, Coated, Fuel and Flame Resistant	MIL-C-22787 Types V,VI,VII
Air, blocking scale rating	-	-	3	Vinyl						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
Air, breaking strength	Ambient	-	Warp, 300 lbs; Fill, 250 lbs	Natural	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	Nylon	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	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)				Outer cover-chloroprene Inner cover-nitrile				5430	Tank, Fabric, Collapsible, Liquid Fuel, Cylindrical, 500Gallon Capacity	MIL-T-23119
(Rubber covered by Grade RS-15L of MIL-H-3065 and MIL-STD-417)				SBR coated nylon cloth				5430	Tank, Fabric, Collapsible, Pillow Type, 3,000 Gallon Capacity (For Portable Water)	MIL-T-23268
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-23926 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-23926 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-23926 Type IV
Air, Elongation	Ambient	-	Wales 100%; Courses 250%							
Air, breaking strength	Ambient	-	Warp, 575 lbs; Fill, 525 lbs	Chloroprene	16.2			8305	Cloth, Coated, Nylon, Chloroprene-Coated	MIL-C-26712
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			Yes	8305	Cloth, Coated, Glass, Aluminum Face, Silicone Rubber Back	MIL-C-27347
Air mandrel bend	-65	4	No cracks	Glass	6.7	0.008				
Air, blocking	180	2	No blocking	Silicone						
Flame	-	-	Flame, 10 sec. Max.	Composite	16.0	0.015				

MIL-HDBK-699A(MR)

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, INCH				
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 mg/in <sup>2</sup> 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	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-40056
Air, creased 180°	-20	96	No cracks	Nylon	0.9					
				Chloroprene	6.0					
				Nylon						
				Nylon pile	8.6	¼-4				
				Nylon						
				Chloroprene	6.0					
				Nylon	0.9					
				Chloroprene	0.5					
				Composite	23.4					
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					
Air, blocking	170	2	Slight blocking	PVC	5.5					
				Composite	19.9					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION			QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		TYPE AND ORDER OF COMPONENTS	WEIGHT, OZ/YD <sup>2</sup>	THICK, 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 Chloroprene 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 Chloroprene Base Coated, Chlorosulphonated Polyethylene Top Coated	MIL-C-43285 Type II
Air, breaking strength Air, Blocking Water absorption	Ambient 180 70	- 0.5	Warp, 50 lbs; Fill, 50 lbs Slight blocking 1%	Cotton PVC Chloroprene Composite	12.0			8305	Cloth, Coated, Cotton Vinyl Chloride or Chloroprene Coated	MIL-C-43410
Air, breaking strength Stiffness 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, Polyester, 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
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 Polychloroprene)	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 & Polychloroprene)	MIL-C-82255 Type III
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 & Polychloroprene)	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 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 Type II

## HOSE, DUCT AND TUBING

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

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test Air, 50% compression Air, oven aging	Ambient -40 158	- 5 96	3/8" to 2-1/4" ID; 90 to 60 psi No cracking Tube & cover max T chg: -25%	Nat. or SBR tube & cover, fiber reinforcement			Coolant-System Hoses	SAE J20 Part IV Class R Grades 1 & 2
Air, burst test Air, 50% compression Air, oven aging	Ambient -40 250	- 5 70	3/8" to 2-1/4" ID; 90 to 60 psi No cracking Tube & cover max T chg: -40%	Nat. or SBR tube & cover, fiber reinforcement			Coolant-System Hoses	SAE J20 Part IV Class R Grade 1A
Air, burst test Air, flexibility Air, oven aging ASTM #3 petroleum oil Ozone, 50 pphm	Ambient -40 212 212 100	- 5 70 70 72	175 psi min No cracking Tube & cover max T chg: -20% % V chg: tube -5 +25; cover +100 max No cracking	Nitrile tube, synthetic, cover, fabric reinforcement			Fuel and Oil Hoses	SAE J30 R1
Air, burst test Air, ASTM D736 Air, oven aging ASTM #3 petroleum oil Ozone, 50 pphm	Ambient -40 212 212 100	- 5 70 70 72	0.115" to 0.773" ID; 700 to 500 psi No cracking Tube & cover max T chg: -20% % V chg: tube -5 +25; cover +100 max No cracking	Nitrile tube, synthetic cover, fabric reinforcement			Fuel and Oil Hoses	SAE J30 R2 Type 1
Air, burst test Air, ASTM D736 Air, oven aging ASTM #3 petroleum oil Ozone, 50 pphm	Ambient -40 212 212 100	- 5 70 70 72	0.115" to 2.039" ID; 700 to 250 psi No cracking Tube & cover max T chg: -20% % V chg: tube -5 +25; cover +100 max No cracking	Nitrile tube, synthetic cover, fabric reinforcement			Fuel and Oil Hoses	SAE J30 R2 Type 2
Air burst test Air, ASTM D736 Air, oven aging ASTM #3 petroleum oil Ozone, 50 pphm	Ambient -40 212 212 100	- 5 70 70 72	0.172" to 0.773" ID; 2000 to 1200 psi No cracking Tube & cover max T chg: -20% % V chg: tube -5 +25; cover +100 max No cracking	Nitrile tube, synthetic cover, fabric reinforcement			Fuel and Oil Hoses	SAE J30 R2 Type 3
Air, burst test Air, flexibility Air, oven aging ASTM #3 petroleum oil Ozone, 50 pphm	Ambient -40 212 212 100	- 5 70 70 72	0.172" to 0.391" ID; 2000 to 900 psi No cracking Tube & cover max T chg: -20% Tube vol chg: -5% to +25% No cracking	Nitrile tube, synthetic cover, fabric reinforcement			Fuel and Oil Hoses	SAE J30 R3



SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, tensile strength	Ambient	-	Tube 1250 psi; cover 1500 psi	Cotton or syn. fiber reinforced, static wire wound tube NR and chloroprene cover		4720	Hose & Hose Assembly, Rubber, Liquid Fuel, Noncollapsible	MIL-H-370 Type I Tube Type I Cover
Air, 180° bend	-42	24	No cracking					
Oxygen, aging @ 300 psi	158	48	Tensile change: -25% max					
70/30 isooctane/toluene	70	46	Volume change: +60% max					
Ozone, 50 pphm	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 Type I Cover
Air, 180° bend	-42	24	No cracking					
Oxygen, aging @ 300 psi	158	48	Tensile change: -25%					
70/30 isooctane/toluene	70	46	Volume change: +60% max					
Ozone, 50 pphm	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)	ZZ-H-421 Types I & II
Oxygen, aging @ 300 psi	158	46	Tube & cover max T chg: -40%					
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)	ZZ-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 pphm	100	168	No cracks					
ASTM #3 petroleum oil	212	70	Tube & cover max vol chg: +100%					
Fungus resistance	84	90	Proof pressure = ½ 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)	ZZ-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)	ZZ-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 pphm	100	168	No cracks					
ASTM #3 petroleum oil	212	70	Tube & cover max vol change: +100%					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, tensile strength	Ambient	-	Tube & 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)	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 pphm	100	168	No cracks					
ASTM #3 petroleum oil	212	70	Tube & cover max vol change: +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 Preformed (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 pphm	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 Preformed (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 pphm	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 Preformed (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 Preformed (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 pphm	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 Preformed (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 pphm	100	168	No cracks					
Fungus resistance	84	90	Proof pressure = 1/2 orig burst press.					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, tensile strength	Ambient	-	Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced natural		4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428
Air, flexibility	-65	5	No cracks or breaks					Type V
Air, heat aging	212	70	Tube & cover max T change: -25%					Grade A
Fungus resistance	84	90	Proof pressure = 1/2 orig burst press.					Class 3
Air, tensile strength	Ambient	-	Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced nitrile		7420	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428
Air, flexibility	-40	5	No cracks or breaks					Type V
Air, heat aging	212	70	Tube & cover max T change: -15%					Grade B
ASTM #3 petroleum oil	212	70	Max % vol chg: tube +43; cover +74					Class 1
Air, tensile strength	Ambient	-	Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced chloroprene		4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428
Air, flexibility	-40	5	No cracks or breaks					Type V
Air, heat aging	212	70	Tube & cover max T change: -15%					Grade B
Ozone, 50 pphm	100	168	No cracks					Class 2
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 natural		4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428
Air, flexibility	-40	5	No cracks or breaks					Type V
Air, heat aging	212	70	Tube & cover max T change: -25%					Grade B
								Class 3
Air, tensile strength	Ambient	-	Tube 800 psi min; cover 800 psi min	Tube & cover, wire reinforced butyl		4720	Hose, Non-Metallic & Hose Preformed (For Coolant Systems of Automotive and Other Liquid-Cooled Engines)	ZZ-H-428
Air, flexibility	-40	5	No cracks or breaks					Type V
Air, heat aging	212	70	Tube & cover max T change: -40%					Grade B
Ozone, 50 pphm	100	168	No cracks					Class 4
(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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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test	Ambient	-	Tube & cover: 600 to 700 psi min	Fabric reinforced natural and/or syn. tube & cover		4720	Hose; Gas (Acetylene-Hydrogen, Air, and Oxygen)	ZZ-H-461
Air, ASTM D736	-40	5	No cracks or breaks					
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -25%					
Air, tensile strength	Ambient	-	Rubber tube: 700 psi min	Nat., nitrile, or chloroprene tube over metal tube; cotton jacket		4720	Hose; Gasoline, Rubber-Metal	ZZ-H-466
Gasoline	75	48	Max wt. change: -20%					
Air, burst test	Ambient	-	¾" to 3" ID; 500 to 325 psi	Cotton or nylon reinforced chloroprene tube w/chloroprene cover		4720	Hose; Gasoline, Synthetic-Rubber Wire-Stiffened	ZZ-H-471 Class 1
Air, 180° bend	-40	24	No cracking					
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	-	¾" to 3" ID; 500 to 325 psi	Polysulfide tube w/ chloroprene cover, cotton or nylon reinforced		4720	Hose; Gasoline, Synthetic-Rubber Wire-Stiffened	ZZ-H-471 Class 2
Air, 180° bend	-40	24	No cracking					
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	-	¾" to 3" ID; 500 to 325 psi	Nitrile tube w/ chloroprene cover, cotton or nylon reinforced		4720	Hose; Gasoline, Synthetic-Rubber Wire-Stiffened	ZZ-H-471 Class 3
Air, 180° bend	-40	24	No cracking					
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: -35%					
60/40 isooctane/aromatic	75	46	Max vol change: +60%					
Air, tensile strength	Ambient	-	Tube & cover: 1200 psi min	1) Wire 2) Frictioned cotton 3) Chloroprene 4) Frictioned cotton 5) Embedded wire 6) Frictioned cotton 7) Chloroprene		4720	Hose; Oil & Gasoline, Suction and Discharge, Synthetic-Rubber, Wire Stiffened	ZZ-H-481 Class 1
Oxygen, aging @ 300 psi	158	46	Max tensile change: -35%					
60/40 diisobutylene/aromatic	135	48	Max volume change: +110%					
Air, tensile strength	Ambient	-	Tube, 750 psi min, Cover, 1200 psi min	Tube & cover synthetic rubber reinforced fabric		4720	Hose, Rubber, and Hose Assemblies, Rubber Pneumatic (Yarn or Fabric Reinforced)	ZZ-H-500 Class 1
Air, burst pressure	Ambient	-	¾" to 2", 1000 psi to 600 psi min					
Ozone, 50 pphm	212	72	No cracks					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, tensile strength Air, burst pressure	Ambient Ambient	- -	Tube, 750 psi min, Cover, 1200 psi min 1/4" to 2", 1000 psi to 600 psi min	Tube & cover synthetic rubber reinforced fabric		4720	Hose, Rubber, and Hose Assemblies, Rubber Pneumatic (Yarn or Fabric Reinforced)	ZZ-H-500 Class II
Air, tensile strength Aging, oxygen	Ambient 212	- 48	Tube & cover, 2,000 psi min Tensile strength, -25% change max	Tube & cover synthetic rubber yarn reinforcement		4720	Hose, Rubber (Sleeves; Dredging)	ZZ-H-515
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 or syn. fiber reinforced			Hydraulic Hose	SAE J517 100 R4
Air, burst test	Ambient	-	3/16" to 1-13/16" ID; 12000 to 1400 psi	Sy. rubber tube, syn-rubber impreg- nated 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 rein- forced			Hydraulic Hose	SAE J517 100 R6
Air, burst test Oxygen, aging @ 300 psi Ethylacetate or acetone 60/40 isooctane/aromatic	Ambient 158 75 75	- 46 48 48	800 psi min Tube & cover max T change: -35% Max vol change: tube +30% Max vol change: cover, +100%	Nat. or syn. rubber tube & cover, cotton or syn. fiber reinforced		4720	Hose & Hose Assembly Nonmetallic, Spray	ZZ-H-521 Grade A Wrapped

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test Oxygen, aging @ 300 psi	Ambient 158	- 46	800 psi min Tube & cover max T change: -35%	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
Air, tensile strength Oxygen, aging @ 300 psi ASTM #3 oil Ozone, 100 pphm	Ambient 158 212 212	- 46 70 70	Tube 1000 psi min; cover 1200 psi min Tube & cover max T change: -25% Cover, T.S. max change -40% Cover, no cracks	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
Air, tensile strength Oxygen, aging @ 300 psi	Ambient 158	- 46	Tube 1000 psi min; cover 1200 psi min Tube & cover max T change: -25%	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
Air, tensile strength Oxygen, aging @ 300 psi ASTM #3 oil Ozone, 100 pphm Water extraction	Ambient 158 212 212 212	- 46 70 70 21	Tube 1000 psi min; cover 1000 psi min Tube & cover max T change -25% Cover, T.S. max change -40% Cover, No cracks 21 milligrams per sq. inch; tube only	Chloroprene cover w/syn. tube, wire & fiber reinforced		4720	Hose, Rubber, and Hose Assemblies, Rubber, Smooth Bore, Water Suction and Discharge	ZZ-H-561 Grade A Class 2
Air, tensile strength Air, 180° bend Water	Ambient Ambient 212	- - 8	Tube & cover: 600 psi min No kinking Tube max T change: -50%	Nat. and/or syn. tube & cover, wire & fiber reinforced		2240	Hose; Tender (Locomotive), Corrugated	ZZ-H-581
Air, burst test Oxygen, aging @ 300 psi Water	Ambient 158 73	- 94 22	1/2" to 1-1/2" ID; 600 to 450 psi Tube & cover max T change: -25% Tube & cover max vol change: +20%	Syn. rubber tube & cover		4720	Hose & Hose Assemblies, Rubber (Yarn & Fabric Reinforced)	ZZ-H-601 Grade 1
Air, burst test Oxygen, aging @ 300 psi Water	Ambient 158 73	- 94 22	1/4" to 4" ID; 600 to 400 psi Tube & cover max T change: -25% Tube & cover max vol change: +20%	Chloroprene cover w/syn. rubber tube, yarn reinforced		4720	Hose, Rubber, Water (Yarn-Reinforced)	ZZ-H-601 Grade 3
Air, burst test Air, mandrel bend Air, oven aging Ozone, 50 pphm	Ambient -67 212 100	- 5 70 168	1300 psi No breaks or cracks Max tensile change: -25% Cover, no cracks	Syn. tube & cover, cotton or syn. fiber reinforced	Yes	4720	Hose, Rubber; Windshield Wiper	ZZ-H-617

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, tensile strength Air, oven aging	Ambient 158	- 168	2400 psi min Max tensile change: -25%	Nat. and/or syn. rubber		4720	Tubing, Rubber and Plastic	ZZ-T-831 Type I
Air, tensile strength Air, oven aging	Ambient 158	- 168	1100 psi min Max tensile change: -25%	Syn. rubber		4720	Tubing, Rubber and Plastic	ZZ-T-831 Type II
Air, tensile strength Air, oven aging	Ambient 158	- 168	1200 psi min Max tensile change: -25%	Natural rubber		4720	Tubing, Rubber and Plastic	ZZ-T-831 Type III
Air, tensile strength Air, oven aging	Ambient 158	- 168	3500 psi min Max tensile change: -25%	Liquid latex, dipped		4720	Tubing, Rubber and Plastic	ZZ-T-831 Type IV
Air, tensile strength Air, oven aging	Ambient 158	- 168	3000 psi min Max tensile change: -25%	Natural rubber		4720	Tubing, Rubber and Plastic	ZZ-T-831 Type V
Air, vibration Air, vibration Flame	-65 275 -	6 72 -	No deterioration No deterioration Self burning: 15 sec max	Chloroprene impregnated fabric			Duct, Air, Flexible and Semi-Rigid	NAS 1369 Type A
Air, vibration Air, vibration Flame	-75 500 -	6 72 -	No deterioration No deterioration Self burning: 15 sec max	Silicon impregnated fabric			Duct, Air, Flexible and Semi-Rigid	NAS 1369 Type B
Air, tensile strength Oxygen, aging @300 psi Isooctane	Ambient 158 73	- 48 46	Tube 1600 psi min; cover 1800 psi min Tube & cover max T change: -25% Cover max vol change: +50%	Chloroprene cover syn. tube wire and fabric reinforcements	Yes	4720	Hose Assemblies, Wire-Reinforced Synthetic Rubber, Submarine Rescue Chamber	MIL-H-2217
Air, burst test Oxygen, aging @300 psi	Ambient 158	- 48	1/4" to 1-1/2" ID; 1000 to 550 psi Tube & cover max T change: -25%	Neoprene cover w/neoprene, or SBR or nitrile tube cotton or syn. fiber reinforced		4720	Hose, Pneumatic (Braided or Wrapped)	MIL-H-2699 Classes 1, 2 & 3
Air, burst test Oxygen, aging @300 psi Isooctane	Ambient 158 73	- 46 46	2400 psi min Tube & cover max T change: -25% Cover max vol change: +50%	Chloroprene cover w/SBR or chloroprene tube, cotton reinforced	Yes	4720	Hose Assemblies, Rubber, Diver's Breathing Air and Gas Supply	MIL-H-2815
Air, hardness Air, mandrel bend	Ambient Ambient	- -	90 to 95 No cracks	SBR		4710	Lining, Rubber (Synthetic), For Salt-Water Lines	MIL-L-2824

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test Air, flexibility	Ambient -65	- 24	1/8" to 1-3/8" ID; 6000 to 4000 psi No cracking or breaking	Teflon tube wire reinforcement			Hose, Polytetrafluoroethylene, TFE Fluorocarbon Resin Wire Braid Reinforced	AMS 3380
Air, burst test 70/30 isooctane/toluene	Ambient 80	- 22	500 psi min Max % vol chg: tube +50; cover +100	Syn. tube, fabric reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Textile Reinforced, Collapsing	AMS 3386
Air, burst test 70/30 isooctane/toluene	Ambient 80	- 22	1-1/2" to 3" ID; 800 to 650 psi Max % vol chg: tube +50; cover +100	Syn. tube, fabric reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Textile Reinforced, Noncollapsing	AMS 3387
Air, burst test 70/30 isooctane/toluene	Ambient 80	- 22	2" to 3" ID; 1000 to 750 psi Max % vol chg: tube +50; cover +100	Syn. tube, wire reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Single Wire Braid Reinforced, Noncollapsing	AMS 3388
Air, burst test 70/30 isooctane/toluene	Ambient 80	- 22	2" to 3-1/2" ID; 1600 to 1000 psi Max % vol chg: tube +50; cover +100	Syn. tube wire reinforced, chloroprene cover			Hose, Synthetic Rubber, Aircraft Fueling, Double Wire Braid Reinforced, Noncollapsing	AMS 3389
Air, original properties Air, oven aging	Ambient 158	- 166	T, 3500 psi min; E, 800% min Change in T and E, -25% max	Natural		6515	Tubes, Rubber, Penrose, Drainage	MIL-T-36092
Air, tensile strength Air, tensile strength Air, oven aging Sulfuric acid (Sp. gr. 1.27)	Ambient 5 221 151	- 4 96 24	1250 psi min Tensile strength: 3000 psi min Tensile change: -80% max Tensile change: -80% max	PVC		4720	Hose, Sulfuric Acid Resistant (Thermoplastic)	MIL-H-3726
Air, burst test Air, mandrel bend Air, oven aging ASTM #3 petroleum oil	Ambient -65 158 73	- 24 24 46	3/16" to 1/2" ID; 20,000 to 14000 psi No cracks or breaks No deterioration Max % vol chg: Tube +35; cover +75	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, burst test Air, mandrel bend Air, oven aging ASTM #3 petroleum oil	Ambient -40 158 73	- 24 24 46	3/16" to 1/2" ID; 20,000 to 14000 psi No cracks or breaks No deterioration Max vol chg: tube +35%; cover +75%	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

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test Air, mandrel bend ASTM #3 petroleum oil	Ambient -65 73	- 24 46	3/16" to 3/4" ID; 1200 to 5000 psi No cracks or breaks Max % vol chg: tube +35; cover +75	Syn. rubber tube w/ chloroprene cover, steel wire braid rein- forced		4930	Hose Assemblies, Grease Gun, High and Low Pressure	MIL-H-3868 Type II Grade A
Air, burst test Air, mandrel bend ASTM #3 petroleum oil	Ambient -40 73	- 24 46	3/16" to 3/4" ID; 1200 to 5000 psi No cracks or breaks Max % vol chg: tube +35; cover +75	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, burst test Air, mandrel bend Air, oven aging Ozone, 50 pphm Isooctane	Ambient -65 212 100 Ambient	- 72 70 168 46	900 psi min No breaks or cracks No deterioration Cover, no cracking Max % vol chg: tube +35; cover +50	Syn. rubber tube and rubber cover, cotton or syn. yarn rein- forced	Yes	2530	Hose and Hose Assembly, Rubber; Air and Vacuum Brake, Automotive	MIL-H-3992 Type I Class 1 & 2
Air, burst test Air, mandrel bend Air, oven aging Ozone, 50 pphm Isooctane	Ambient -65 212 100 Ambient	- 72 70 168 46	3/16" to 5/8" ID; 10,000 to 6000 psi No breaks or cracks No deterioration Cover, no cracking Max % vol chg: tube +35; cover +50	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, burst test Air, mandrel bend Air, oven aging Isooctane	Ambient -65 212 Ambient	- 72 70 46	3/15" to 5/8" ID; 1000 to 6000 psi No breaks or cracks No deterioration Tube max vol change: +35%	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 Air, oven aging Ozone, 50 pphm Isooctane	-65 212 100 Ambient	72 70 168 48	No breaks or cracks No deterioration Cover, no cracks No sep. of tube or cover from plies	Syn. rubber tube and rubber cover, cotton and/or steel wire reinforcement	Yes	2530	Hose and Hose Assembly, Rubber; Air and Vacuum Brake, Automotive	MIL-H-3992 Type II Styles a & b
Air, burst test Air, 180° bend 70/30 isooctane/toluene	Ambient -67 75	- 72 24	1-1/4" to 3" ID; 500 to 375 psi No cracking Max % vol change: tube +35; cover +75	Nitrile tube, chloro- prene cover, wire reinforcement		4720	Hose, Rubber, Gasoline, Lightweight	MIL-H-4441
Air, drum wrap 70/30 isooctane/toluene	-65 75	24 72	No cracking Max % vol chg: tube +30; cover +60	1) Tube, syn. rubber 2) Fabric 3) Wire 4) Syn. rubber layer 5) Wire braid 6) Cover, syn. rubber		4720	Hose Assembly, Rubber, Aerial Refueling	MIL-H-4495

MIL-HDBK-699A(MR)

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test Air, mandrel bend Air, oven aging	Ambient -67 158	- 72 168	3/4" to 1-1/4" ID; 2500 to 1200 psi No cracks or breaks Tube & cover max T change: -25%	Rubber tube & cover, cotton or syn. fiber reinforcement		4210	Hose, Cotton, Rubber Lined, Water, Braided Construction, with couplings	MIL-H-4497
Air, burst test Air, mandrel bend Bromochloromethane	Ambient -67 Ambient	- 72 24	1800 psi min No cracks or breaks Tube max vol change: +60%	Syn. rubber tube & cover, cotton or syn. fiber reinforcement	Yes	4210	Hose, Rubber, Bromochloromethane Resistant	MIL-H-4536
Air, burst test Air, mandrel bend Oxygen, aging @ 300 psi	Ambient -65 160	- 48 96	15,000 psi min No cracks or breaks No change in tensile strength	Wire reinforced rubber tube, rubber cover, wire braid reinforced	Yes	1660	Hose Assembly, High Pressure, Breathing Oxygen	MIL-H-4722
Air, burst test Air, mandrel bend Air, oven aging	Ambient -67 158	- 24 168	60 psi min No cracking Tube & cover max T change: -20%	Nat. or syn. rubber tube & cover, wire & fabric reinforced	Yes	8415	Hose, Rubber, Anti-G Suit, Altitude Suit	MIL-H-5581
Air, burst test Air, mandrel bend Air, mandrel bend MIL-H-5606 mineral oil	Ambient -67 158 158	- 72 3 168	1/8" to 5/8" ID; 2000 to 700 psi No cracking No deterioration Tube, vol change: ± 10%	Rubber tube & cover w/fabric reinforcement	Yes	4720	Hose; Aircraft, Low-Pressure, Flexible	MIL-H-5593
Air, burst test ASTM D736 ASTM #1 petroleum oil Ethylene glycol Isooctane and toluene	Ambient -40 252 293 75	- 5 70 70 24	1/4" to 4" ID; 1000 to 300 psi No cracks or breaks Tube, no decrease in volume Tube, max vol change: -10% Max vol change: +85%	Syn. rubber tube, chloroprene cover, frictioning reinforcement		4720	Hose; Rubber (Fuel, Oil, Coolant, Water and Alcohol)	MIL-H-6000
Air, burst test Air, mandrel bend Oxygen, aging @ 300 psi	Ambient -65 160	- 48 96	2200 psi min No breaks or cracks Tube max T change: -40%	Innertube, reinforcing material, braided outer surface	Yes	1660	Hose Assemblies, Low-Pressure, For Breathing Oxygen	MIL-H-6017
Air, burst test Air, mandrel bend	Ambient -40	- 24	50 psi min No cracks	Syn. rubber tube, chloroprene cover, wire reinforced		4720	Hose, Rubber, Wire-Wound, Synthetic, Ice Eliminating System	MIL-H-6399
Air, burst test Air, mandrel bend Paint remover	Ambient -55 75	- 5 72	500 psi min No cracks or breaks Tube & cover max vol change: ± 45%	Rubber tube & cover, reinforced		4720	Hose, Rubber, Aircraft Paint Finish Remover	MIL-H-6439

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test Air, U bend 70/30 isooctane/toluene	Ambient -67 75	- 72 24	1 1/4" to 4" ID; 800 to 500 psi No cracks or breaks on straightening Max % vol chg: tube +50; cover +100	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, burst test 60/40 isooctane/aromatic Isooctane, gunfire @ 16 psi	Ambient Ambient -20	- 24 -	150 psi min Tube & cover max vol change: +90% Self sealing, 5 minutes	Compounded tube, chloroprene cover, fabric reinforced	Yes	4720	Hose, Aircraft, Self-Sealing, Aromatic Fuel	MIL-H-7061
Air, tensile load Air, extension & retraction Flame 91 octane gasoline SAE #10 engine oil	Ambient -65 - Ambient Ambient	- 24 - 48 48	No damage under 250 lb load No deterioration Self burning, 3 sec max Max volume change: +22% Max volume change: +22%	Retractable hose, metal helical stiffener core		4720	Hose, Air Duct, For Ground Heaters	MIL-H-7365
Air, burst test Air, mandrel bend Isooctane	Ambient -40 Ambient	- 5 48	3/16" to 2" ID; 600 to 350 psi No cracking Max volume change: +35%	Nitrile tube, chloroprene cover asbestos reinforced		4720	Hose, Rubber, Flame-Resistant	MIL-H-7938
Air, burst test Air, mandrel bend MIL-H-5606 mineral oil	Ambient -65 158	- 24 168	3" to 9-5/8" ID; 16,000 to 10,000 psi No cracks or leakage Max ID change: -10%	Syn. rubber tube, chloroprene cover, wire reinforced	Yes	4720	Hose, Hydraulic, High Pressure	MIL-H-8788
(Hose covered in MIL-H-8788)						4720	Hose Assemblies, Rubber, Hydraulic, High Pressure (3,000 psi)	MIL-H-8790
Air, burst test Air, 180° bend MIL-H-5606 mineral oil 50/50 water/alcohol 70/30 isooctane/toluene	Ambient -65 158 158 Ambient	- 24 168 24 72	3" to 33" ID; 12,000 to 800 psi Flexible Max ID change: -10% Tube max T change: -35% Tensile strength: 900 psi min	Rubber tube, cotton braid reinforced syn. rubber cover, cotton & wire braid reinforced	Yes	4720	Hose, Rubber, Hydraulic, Fuel, and Oil Resistant	MIL-H-8794
(Hose covered in MIL-H-8794)						4720	Hose Assemblies, Rubber, Hydraulic, Fuel and Oil Resistant	MIL-H-8795
Air, flexibility Air, cyclic vibration Flame Isooctane MIL-J-5624 jet fuel	-65 160 - Ambient Ambient	12 12 - 8 8	No cracking No deterioration Self burning, 30 sec max No softening or tackiness No softening or tackiness	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted		1660	Hose, Airduct, Flexible, Aircraft	MIL-H-8796 Class 1

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SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, flexibility	-65	12	No cracking	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted		1660	Hose, Airduct, Flexible, Aircraft	MIL-H-8796 Class 2
Air, cyclic vibration	300	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	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted		1660	Hose, Airduct, Flexible, Aircraft	MIL-H-8796 Class 3
Air, flexibility	-65	12	No cracking					
Air, cyclic vibration	500	12	No deterioration					
Flame	-	-	Self burning, 30 sec max					
MIL-J-5624 jet fuel	Ambient	8	No softening or tackiness	Syn. rubber w/cotton, linen, fortisan or glass fibers w/wo wire reinforcement, convoluted		1660	Hose, Airduct, Flexible Aircraft	MIL-H-8796 Class 4
Air, flexibility	-75	12	No cracking					
Air, cyclic vibration	600	12	No deterioration					
Flame	-	-	Self burning, 30 sec max					
MIL-J-5624 jet fuel	Ambient	8	No softening or tackiness	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 psig min.					
Low temp. flexibility	-40	0.08	Cover, max 5 fold increase in mod.					
Air, oven aging	212	70	Cover max T change: -40%					
Flame	-	-	Cover, self burning, 60 sec max	Nitrile tube, chloroprene cover, cotton or syn. fiber reinforced static wire wound		4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	MIL-H-11588 Type I
70/30 isooctane/toluene	75	46	Max % vol chg: tube +30; cover +65					
Air, burst test	Ambient	-	200 psig min					
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.	Nitrile tube, chloroprene cover, cotton or syn. fiber reinforced, static wire wound		4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	MIL-H-11588 Type II
60/40 isooctane/aromatic	75	46	Tube max vol change: +40%					
Air, burst test	Ambient	-	350 psig min					
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.	Nitrile tube, chloroprene cover, syn. rubber embedded fiber reinforced static wire wound		4720	Hose Assemblies, Rubber, Synthetic, Liquid Petroleum Fuels, Dispensing Collapsible	MIL-H-11588 Types III & IV
60/40 isooctane/aromatic	75	46	Tube, max 5 fold increase in mod.					
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.					
60/40 isooctane/aromatic	75	46	Tube max vol change: +40%					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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 pphm	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 pphm	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 pphm	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 pphm	100	168	No cracks					
Air, burst test	Ambient	-	1/8" to 1/4" ID; 5000 to 4500 psi	SBR or chloroprene tube, chloroprene cover, imbedded 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 pphm	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 pphm	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; 10,000 to 7,000 psi	Rubber tube, fabric reinforcement chloroprene cover			Air Brake Hose	SAE J1402 Type C
Aging	212	70	No cracks					
Ozone, 50 pphm	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; 2,000 to 1,800 psi	Rubber Tube, wire w/wo fabric reinforcement chloroprene cover			Air Brake Hose	SAE J1402 Type D
Aging	212	70	No cracks					
Ozone, 50 pphm	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; 6,000 to 3,000 psi	Rubber tube, wire w/wo fabric reinforcement, chloroprene cover			Air Brake Hose	SAE J1402 Type E
Aging	212	70	No cracks					
Ozone, 50 pphm	104	70	No cracks					
ASTM #3 oil	212	70	Tube & cover, vol. change, max 100%					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test	Ambient	-	1000 psi	Rubber, tube, wire, fabric reinforced, chloroprene cover			Air Brake Hose	SAE J1402 Type F
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	-	600 psi min	1) Chloroprene tube		4720	Hose, Rubber, Wire-Reinforced (Oil-and-Gasoline, Suction and Discharge Smooth-Bore)	MIL-H-0015100 Class I
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: $\pm 25\%$	2) Frictioned fabric				
Isooctane	73	46	Tube max vol change: +100%	3) Syn. rubber/wire				
				4) Frictioned fabric				
				5) Chloroprene cover				
Air, burst test	Ambient	-	600 psi min	1) Nitrile tube		4720	Hose, Rubber, Wire-Reinforced (Oil-and-Gasoline, Suction and Discharge Smooth-Bore)	MIL-H-0015100 Class II
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: $\pm 25\%$	2) Frictioned fabric				
Isooctane	73	46	Tube max vol change: +50%	3) Syn. rubber/wire				
				4) Frictioned fabric				
				5) Chloroprene cover				
Air, burst test	Ambient	-	500 psi min	Chloroprene or nat. rubber tube, chloroprene cover, syn. rubberized fabric reinforcement		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		4720	Hose and Hose Assemblies, Rubber, Oil-and-Gasoline-Discharge, Smooth-Bore, Light Weight	MIL-H-15523 Types A & B
Oxygen, aging @ 300 psi	158	46	Tube & cover max T change: $\pm 25\%$	2) Frictioned fabric				
70/30 isooctane/toluene	75	46	Max % vol chg: tube (NBR) 50, (CR) 100	3) Chloroprene cover				
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	Hose and Hose Assemblies, Rubber, Wrapped and Braided, Water Service	MIL-H-15923
Air, oven aging	158	48	Tube & cover max T change: $\pm 25\%$					
Water	Ambient	24	Tube & cover max vol change: +20%					
Air, burst test	Ambient	-	8000 psi min	SBR, nitrile or chloroprene tube & cover wire, w/o syn. frictioning, reinforcement		4210	Hose, Fire-Extinguisher (Portable, 15-pound Carbon-Dioxide)	MIL-H-16236
Air, oven aging	194	48	Tube & cover max T change: $\pm 25\%$					
Air, burst test	Ambient	-	2000 psi min	1) Chloroprene tube		4940	Hose Assembly, Plastic Paint Spraying, Electric-Heating	MIL-H-16711
Air, oven aging	212	70	Tube & cover max T change: $\pm 15\%$	2) Glass yarn				
				3) Chloroprene/cloth				
				4) Glass yarn				
				5) Chloroprene cover				

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst pressure Oxygen, aging @ 300 psi 60/40 diisobutylene/aromatic	Ambient 158 140	- 46 48	600 psi Tube & cover max T change: $\pm 35\%$ 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: $\pm 25\%$ Tube max % vol chg: (CR) $+100$ Cover max vol change: $+100\%$	Chloroprene or nitrile (NBR) tube, chloroprene (CR) cover, syn. frictionized fabric reinforced		4720	Hose Assemblies, Rubber, Aircraft, Fueling, Collapsible 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 cover		4720	Hose and Hose Assemblies, Aircraft, Self Fueling, Aromatic Fuel	MIL-H-18288
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: $\pm 25\%$ Max % vol chg: Tube (CR) 100; (NBR) 50 Max % vol chg: Cover $+100$	Chloroprene (CR) or nitrile (NBR) tube syn: - frictioned fabric reinforcement, chloroprene cover		4720	Hose, Rubber (Oil-and-Gasoline Discharge), Smooth-Bore, Light Weight, Bouyant Type; 6 Inch Size	MIL-H-19091
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. - rubberized fabric reinforcement		4720	Hose Assemblies, Rubber, Paint Spray Equipment	MIL-H-19639
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-19992
Tensile Strength ASTM #3 oil Ozone, 100 pphm 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

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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	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%					
Air, burst test	Ambient	-	6" to 7" ID; 600 to 500 psi	Chloroprene cover & or tube, nitrile tube syn. - frictioned, fabric reinforcement	Yes	4720	Hose and Hose Assemblies, Rubber, Oil-and-Gasoline Discharge, Smooth-Bore, Light Weight, Bouyant Type	MIL-H-22240
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%					
Air, burst test	Ambient	-	600 psi min	Chloroprene tube, fabric reinforcement, chloroprene cover, static wire wound		4720	Hose Assemblies, Rubber, Aircraft Fueling Collapsible, By Negative Pressure	MIL-H-22279
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 4730	Hose-Line Assembly: 4-inch Fueling, Quick-Coupling Type	MIL-H-22297
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		Yes	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	Tube, synthetic Polyester reinforced cloth Cover, Synthetic	Yes	4720	Hose, Reinforced, Water And Oil Resistant, And End Fittings, Reusable, For Flexible Hose Connections	MIL-H-24135 Classes I, II, III, & IV
Oil immersion, MIL-L-17331	158	76	No leakage					
Flexibility	-40	24	No cracks					
ASTM D746	-80	-	No cracking			4720	Tubing, Rubber, Silicone, For In Flight Feeding	MIL-T-25458
Air, oven aging	300	24	Max T change: -20%					
Water	212	70	Max vol change: ± 5%					
Air, burst test	Ambient	-	0.110" to 1.406" ID; 12000 to 4000 psi	Tube w/wire braid reinforcement	Yes	4720	Hose Assembly, Tetrafluoroethylene, High Temperature, Medium Pressure	MIL-H-25579
Air, mandrel bend	-67	24	No cracks					
60/40 isooctane/aromatic	450	24	No leakage at room temp					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, burst test	Ambient	-	400 psia min	Tube w/wo dacron jacket		4720	Duct, Pneumatic, Flexible	MIL-D-26124
Air, bend test	-65	48	No damage					
Ozone	100	1	No cracks					
Air, bend test	-65	48	No leakage after exposure	Rubber tube & cover, fabric and wire reinforced		1660	Hose, Oxygen Pressurization, Ozone Resistant	MIL-T-26385 Resistant
Air, oven aging	158	48	No leakage after exposure					
Ozone 120 ppm	Ambient	1	No leakage after exposure					
Air, burst test	Ambient	-	1-1/4" to 4"; 1000 to 700 psi	Syn. tube, chloroprene cover fabric reinforcement	Yes	4930	Hose Assembly, Rubber, Fuel, Collapsible, Low Temperature, With Reattachable Couplings	MIL-H-26521
Air, 180° bend	-67	72	Max force to unbend: 40 lbs					
70/30 isooctane/toluene	75	24	Max % vol chg: tube +30; cover +60					
Air, burst test	Ambient	-	2200 psig min	Teflon tube wire braid reinforcement	Yes	1660	Hose Assembly, Tetrafluoroethylene, Oxygen	MIL-H-26626
Air, 180° bend	-297	0.25	No loss of strength					
Air, oven aging @ 500 psig	260	48	No loss of strength					
Air, burst test	Ambient	-	12000 psig min	Teflon tube, chloroprene or teflon cover wire reinforcement	Yes	1730	Hose Assembly, Polytetrafluoroethylene, Oxygen	MIL-H-26633
Air, 180° bend	-65	24	No cracking or splitting					
Air, burst test	Ambient	-	16000 psig min	Polyethylene tube, chloroprene cover, wire reinforced		1730	Hose Assembly, Pneumatic, High Pressure	MIL-H-26666
Air, 180° bend	-65	24	No cracking or splitting					
Air, burst test	Ambient	-	700 psi min	Syn. tube, chloroprene cover fabric & wire helix reinforcement		4930	Hose Assembly, Rubber, Gasoline, Refueling, Low Temperature	MIL-H-26894
Air, U bend	-67	72	No cracking					
70/30 isooctane/toluene	75	24	Max % vol chg: tube 30; cover 60					
Air, burst test	Ambient	-	0.12" to 1.41" ID; 12000 to 4080 psi	Teflon tube, wire braid reinforcement	Yes	4720	Hose, Tetrafluoroethylene, High Temperature, Medium Pressure	MIL-H-27267
Air, mandrel bend	-67	24	No cracking					
Air, burst test	450	1	No leakage @ 1000 psi					
Air, burst test	Ambient	-	1-1/2" to 6" ID; 600 to 400 psi	Nitrile tube, chloroprene cover, braided reinforcement		4930	Hose Assembly, Rubber GRK-6/E32R-1	MIL-H-27508
Air, U bend	-67	72	No cracks					
60/40 isooctane/aromatic	75	24	Max % vol chg: tube 50; cover 100					
Air, burst test	Ambient	-	1-1/2" to 6" ID; 400 to 240 psi	Nitrile tube chloroprene cover wire stiffened woven jacket reinforcement		4930	Hose Assembly, Rubber GRK-7/E32R-1	MIL-H-27516
Air, ASTM D736	-67	72	No cracking					
60/40 isooctane/aromatic	75	24	Max % vol chg: tube 50; cover 100					

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SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, Burst Pressure	Ambient	-	1600 psi minimum	Tube & Cover, Synthetic Rubber fabric reinforced		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					
ASTM #3 oil	212	70	Tube T.S. 800 psi min					
ozone 50 pphm	212	70	Cover, No Cracks	Tube, & Cover Synthetic Rubber Wirebraid & fabric reinforcement		4720	Hose Assemblies, Rubber, Wire Reinforced 200 psig Saturated Steam Service (3/4" to 2" I.D.)	MIL-H-28596
Air, Burst Pressure	Ambient	-	2000 psi minimum					
ozone resistance 50 pphm	212	70	Cover, No Cracks					
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					
Air, Burst Pressure	Ambient	-	16,000 psig minimum	Tube, Tetrafluoroethylene, two or more layers of stainless steel braid Cover - chloroprene		4720	Hose Assembly, Tetrafluoroethylene, Pneumatic, High Pressure	MIL-H-38390
Flexibility, 180° Bend	-65	-	No cracking					
Air, @ 25 psi	Ambient	0.05	No deformation or damage					
Air, @ 60 psi	Ambient	0.02	No deformation or damage	Tubing - polyurethane		1450	Hose Assembly, Propellant Transfer Oxidizer and Fuel	MIL-H-45704 Types I & III
Air, Tensile strength	Ambient	-	3000 psi minimum					
Hardness, Shore A	Ambient	-	85 ± 5 points					
Dielectric strength	Ambient	-	400 volts per mil thickness			4720	Tubing, Rubber, Urethane, High Strength and Abrasion Resistant	MIL-T-47046

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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 Air, Mandrel Bend Fungus	Ambient -65 82	- 24 2160	75 psi min No cracks Resistant	Chloroprene	Yes	2940	Hose, Preformed: Semi-Flexible, Reinforced	MIL-H-52079
Air, Burst Test Air, S Bend 70/30 Isooctane/toluene Flexibility 180° Bend	Ambient -15 74 -40	- 24 46	500 psi min No cracking Max % vol chg: tube +40; cover +120 No cracks	Nitrile tube, chloroprene cover syn. fabric reinforcement		4720	Hose, Assembly, Rubber: Lightweight, Collapsible 4 inch	MIL-H-52262
Air, Burst Pressure	Ambient	-	1/4" to 2" 1,500 to 11,000 psi min.	Tube - chloroprene	Yes	4720	Hose and Hose Assembly, Hydraulic Pressure-Type	MIL-H-52471
ASTM #3 Oil Ozone, 50 pphm	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-52544
ASTM #3 Oil	250	70	Vol. change cover + 100% max. Tube + 60% max	Tube & Cover, Synthetic Rubber				
Ozone, 50 pphm	122	168	No cracks	Reinforcement - steel wirebraid				
Air, Burst Pressure Air, Tensile Strength ASTM #3 Oil	Ambient Ambient 212	- - 70	3/8" to 1-1/8", 425 to 375 psi min 1000 minimum T.S., -40% max.	Tube, Silicone Reinforcement - Polyester fiber		4720	Hose, Non-Metallic, Silicone, Polyester Reinforced (For Coolant and Heating Systems of Diesel and gasoline Powered Engines)	MIL-H-62217
Hardness, Shore A Ozone, 50 pphm	Ambient 122	- 168	50 to 70 No cracking	Tube & Cover synthetic elastomer Reinforcement, polyester braid		1660	Hose Assemblies, Breathing Oxygen and Air, General Specification for	MIL-H-81581

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, Burst Pressure Air, Tensile Strength ASTM #3 Oil Ozone, 50 pphm	Ambient Ambient 75 212	- - 48 72	400 psi minimum Tube: 1500 psi min. Cover: 1800 psi min. T.S. Tube - 40% max. No cracks in cover	Tube: Butadiene-acrylonitrile Reinforcement - two layers of synthetic fabric Cover: Nitrile or chloroprene		4720	Hose Assembly, Rubber (Synthetic) Fuel, Discharge, Lightweight	MIL-H-82127
Air, Burst Pressure	Ambient	-	Size 4 to 10, 16,000 psi to 12,000 psi, min	Tube: Tetrafluoroethylene	Yes	4720	Hose, Tetrafluoroethylene, High Temperature, High Pressure (3000 psi), Hydraulic and Pneumatic	MIL-H-83289
Conductivity, at 1,000 volts	Ambient	-	Tube 12 microamperes, min.	Reinforcement - corrosion resistant steel				
Air, Burst Pressure Air, Tensile Strength Hardness, Shore A Fuel JP-7	Ambient Ambient Ambient 70	- - - 168	3" 800 psi min: 4" - 700 psi min Tube & Cover 1400 psi min Tube 75 ± 5 Tube & Cover T.S. 1200 psi min	Tube: Fluoroelastomer Reinforcement: Nylon Cloth and Steelwire Helix Cover: Chloroprene		4720	Hose Assembly, Fluoroelastomer Tube, With Reattachable Couplings for JP-7 Service	MIL-H-83373 Type I
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

# MATS AND FLOOR COVERINGS

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION AND ELASTOMER COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Oxygen, aging	158	166	No deterioration	Nat. and/or syn. rubber links		7220	Mat, Floor (Link-Type)	ZZ-M-46 Classes 1 & 4
Oxygen, aging	158	166	No deterioration	Plied rubber-fabric links		7220	Mat, Floor (Link-Type)	ZZ-M-46 Class 2
Oxygen, aging	158	166	No deterioration	Metal reinforced rubber links		7220	Mat, Floor (Link-Type)	ZZ-M-46 Class 3
Oxygen, aging	158	166	No deterioration	PVC links		7220	Mat, Floor (Link-Type)	ZZ-M-46 Class 5
Air, original properties Air, oven aging Air, flexibility	Ambient 212 Ambient	- 166 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
Air, original properties Air, flexibility	Ambient Ambient	- 0.08	T, 700 psi. min; elong, 250% min. No breaks or cracks	Syn. or reclaimed rubber; corrugated		7220	Matting; Rubber and Vinyl	ZZ-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 J80
Air, original properties Air, figure 8 bend Flame Sulfuric acid, 20% 15,000 volts	Ambient 32 - 158 Ambient	- - - 46 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)	ZZ-M-81 Class 1
Air, original properties Air, figure 8 bend Sulfuric acid, 20% 15,000 volts	Ambient 32 158 Ambient	- - 46 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)	ZZ-M-81 Class 2
Air, original properties Air, figure 8 bend Air, oven volatilization 15,000 volts	Ambient 32 225 Ambient	- - 5 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)	ZZ-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 D 178

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	CONSTRUCTION AND ELASTOMER COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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-461
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, $\pm 20\%$ ; elong, $\pm 30\%$					
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 $\pm$ 5 points					
Water absorption	70	24	8% max. wt. increase					
Air, original properties	Ambient	-	T, 1200 psi. min; elong, 300% min.	Fabric reinforced syn. and/or reclaimed rubber	Yes	7220	Matting; Floor, Rubber Insulating For High Voltage Application	MIL-M-15562 Application
Flame	-	-	Slight flame or flash					
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					

## O-RINGS

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

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	PERFORMANCE TESTS REQUIRED	QPL ISSUED	ELASTOMER COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.							
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 aged	158	168	Elong. 275% min.						
ASTM #1 petroleum oil	158	168	Vol. change, ± 8%						
Air, original properties	Ambient	-	Permanent set, 50% max.	Leakage @ -65°F 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 -20°F.	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 @ 160°F and 1500 psi. Leakage @ -65°F. Cycling. Corrosion	Yes	Nitrile	5330	Packing, Preformed Petroleum Hydraulic Fluid Resistant 160°F	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, break-out, crush, fatigue, cycling and corrosion.	Yes	Nitrile	5330	Packing, Preformed Petroleum Hydraulic Fluid Resistant 160°F	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 7263
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%						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	PERFORMANCE TESTS REQUIRED	QPL ISSUED	ELASTOMER COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.							
Air, original properties	Ambient	-	Hardness, 70 ±5; Elong, 150% Min.	None	No	Nitrile		Rings, Sealing, Synthetic Rubber - Fuel Resistant (65-75)	AMS 7270
Isooctane, bend test	-40	5	No cracking						
Air, oven aging	212	70	Elong. change, -40% max.						
70/30 isooctane/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 isooctane/toluene	Ambient	70	Vol. change, +40 to +70%						
Isooctane	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 isooctane/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, breakout and leakage. Fatigue, chew & endurance.	No	Butyl		Rings, Sealing, Synthetic Rubber - Phosphate Ester Hydraulic Fluid Resistant (70-85) (Butyl type)	AMS 7277
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
Cooling medium, temp. retraction	+5	-	10% recovery @ 50% elong.						
Air, oven aging	500	70	Elong. change, -50% max.						
70/30 isooctane/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
Cooling medium, temp. retraction	+5	-	10% recovery @ 50% elong.						
Air, oven aging	500	70	Elong. change, -30% max.						
70/30 isooctane/toluene	Ambient	70	Vol. change, 0 to +10%						
Synthetic ester lubricant	400	70	Vol. change, 0 to +15%						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	PERFORMANCE TESTS REQUIRED	QPL ISSUED	ELASTOMER COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.							
Air, original properties	Ambient	-	Hardness, 70 ± 5; Elong. 250% Min.	None	No	Nitrile	9320	Rubber Sheet, Solid Molded, & Extruded Shapes, Synthetic Oil Resistant	MIL-R-7362 Type I
Cooling medium, temp. retraction	-40	-	10% recovery @ 50% elong.						
Air, oven aging	275	70	Elong. change, -70% max.						
Synthetic ester lubricant	275	70	Vol. change, +2 to +15%						
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 Liner Seal O-Ring, Synthetic Rubber	MIL-G-21569 Class I
Air, oven aging	194	336	Tensile retention, 75% Min.						
ASTM #2 petroleum oil	194	336	Vol. change, 0 to +10%						
Water	194	336	Tensile retention, 75% Min.						
Air, original properties	Ambient	-	Hardness, 65 ± 10; Elong. 120% Min.	None	No	Silicone	5330	Gaskets, Cylinder Liner Seal O-Ring, Synthetic Rubber	MIL-G-21569 Class II
Air, oven aging	194	336	Tensile retention, 75% Min.						
ASTM #2 petroleum oil	194	336	Vol. change, 0 to +15%						
Water	194	336	Tensile retention, 65% Min.						
Air, original properties	Ambient	-	Hardness, 60-75; Elong. 300% Min.	None	No	Nitrile	5330	Gaskets, Heat Exchanger, Various Cross Section Rings, Synthetic Rubber	MIL-G-21610 Type I
Air, oven aging	212	168	Elong. change, -40% max.						
ASTM #1 petroleum oil	230	168	Vol. change, +5% max.						
ASTM #3 petroleum oil	230	168	Vol. change, +25% max.						
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 Exchanger, Various Cross Section Rings, Synthetic Rubber	MIL-G-21610 Type II
Air, oven aging	300	168	Elong. change, -20% max.						
ASTM #1 petroleum oil	300	168	Vol. change, +15% max.						
Air, original properties	Ambient	-	Hardness, 70 ± 5; Elong. 150% Min.	None	No	Fluorocarbon	5330	Gasket and Packing Material Petroleum and Phosphate Ester Fluid Resistant	MIL-G-23652 Type I
Air, oven aging	212	70	Elong. change, -15% max.						
ASTM #3 petroleum oil	212	70	Vol. change, -0 to +5%						
Synthetic ester lubricant	212	70	Vol. change, -0 to +8%						
Air, original properties	Ambient	-	Hardness, 90 ± 5; Elong. 100% Min.	None	No	Fluorocarbon	5330	Gasket and Packing Material Petroleum and Phosphate Ester Fluid Resistant	MIL-G-23652 Type II
Air, oven aging	212	70	Elong. change, -15% max.						
ASTM #3 petroleum oil	212	70	Vol. change, -0 to +5%						
Synthetic ester lubricant	212	70	Vol. change, -0 to +8%						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	PERFORMANCE TESTS REQUIRED	OPL ISSUED	ELASTOMER COMMONLY USED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.							
Air, original properties	Ambient	-	Hardness, 65±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, break-out, cycling fatigue and crush.	Yes	Nitrile	5330	Packing, Preformed, Petroleum Hydraulic Fluid Resistant, 275°F	MIL-P-25732
Cooling medium, temp. retraction	-49	-	10% recovery @50% elong.						
MIL-H-5606 hydraulic fluid	275	72	Vol. change, 0 to +15%						
Air, original properties	Ambient	-	Hardness, 75±5; Elong. 175% Min.	None	No	Fluorocarbon	5330-9320	Rubber, Fluorocarbon Elastomer, High-Temperature, Fluid-Resistant	MIL-R-25897 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±5; Elong. 120% Min.	None	No	Fluorocarbon	5330-9320	Rubber, Fluorocarbon Elastomer, High-Temperature, Fluid-Resistant	MIL-R-25897 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-83,248 Type I Class 1
Air, Hardness Shore A	Ambient	-	75±5						
Air, oven aging	528	70	T.S. - 35% max.						
Stauffer Blend 7700	357	70	T.S. - 30% Max; Elong. -20% Max. Vol. change, +20% Max.						
Air, original properties	Ambient	-	Hardness 75±3			Nitrile	5330	Packing Preformed, Petroleum Hydraulic Fluid Resistant, Improved Performance of 275°F	MIL-P-83461
Air, oven aging	275	70	Elong. 125% Min.						
Hydraulic Fluid MIL-H-5606	275	70	Compression 60% Max. Vol. change, 10 to 20%						

## PACKINGS AND GASKETS

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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 and 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 min- eral fibers (15 grades)			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	Ambient 80 80 80	- 22 22 22	Recovery, 20 to 55% Thickness increase, 5 to 30% Thickness increase, 5 to 30% 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	- - 22 166	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
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 Con- crete Sewer and Culvert Pipe, Using Flexible, Water- tight Rubber Type Gaskets	ASTM C443/
Air, original properties	Ambient	-	Hardness, 50-80	Nitrile or polyacrylate			Lathe Cut Seals	SAE J654
Air, original properties Air, compression set Air, compression set Air, oven aging Ozone 100 pphm	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

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

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Ari, original properties	Ambient	-	Tensile, 700 psi. min.; elong. 150% min.	Nat. or syn. rubber			Sheet Rubber Packing	ASTM D1330/ Grade I
Air, oven aging	158	94	Tensile change, -25% max.					
Air, compression set	158	22	75% max.					
Air, original properties	Ambient	-	Tensile, 400 psi. min.; elong. 150% min.	Nat. or syn. rubber			Sheet Rubber Packing	ASTM D1330/ Grade II
Air, oven aging	158	94	Tensile change, -25% max.					
Air, compression set	158	22	75% max.					
Air, compression set	158	22	16% max.	Nat. or syn. rubber			Rubber Ring for Asbestos- Cement Pipe	ASTM D1869/
Cooling medium, ASTM D746	-13	-	No cracks					
Water	212	480	Volume change, 12% max.					
ASTM #3 petroleum oil	212	70	Volume change, -1 to +15%					
Air, compression set	194	46	40% max.	Syn. rubber		5330	Rubber Sheet, Strip, Extruded, and Molded Shapes, Synthetic, Oil Resistant	MIL-R-2765
Air, compression set	-20	94	35% max.					
ASTM #3 petroleum oil	158	94	Volume change, 25% max.					
Benzene	74	22	No delamination					
Air, original properties	Ambient	-	Hardness, 80 max.	40% Syn. rubber, 30% graphite		5330	Rubber Sheet, Solid, Unvulcanized, High Graphite, Gasket Use, Symbol 2352	MIL-R-2778
(Test performed on rubber compound only)								
TT-S-735 40% aromatic	74	24	Volume change, 100% max.	Syn. rubber, cotton sheeting		5330	Joining Sealing Packing	MIL-J-2829
MIL-L-15017 lubricating oil	210	1000	Satisfactory performance @ 1650 psi.	12% syn. rubber, 40% cotton fabric	Yes	5330	Packing Assembly Hydraulic Conical and V Types	MIL-P-2911 Type I
MIL-L-15017 lubricating oil	212	1000	Satisfactory performance @ 1650 psi.	12% Syn. rubber, 40% cotton, asbestos or wire asbestos fabric	Yes	5330	Packing Assembly, Hydraulic Conical and V Types	MIL-P-2911 Type II
Air, original property	Ambient	-	T.S. 1500 psi. min.	Syn. rubber		5325	Grommets-Rubber, Hot- Oil and Coolant Resistant	MIL-G-3036
Air, impact dropping weight	-40	24	No cracks or deformation					
Air, oven aging	212	70	Breaking strength, 100 lbs. min					
Lubricating Oil	300	72	Volume change, 0 to 15%					
Ethylene glycol	300	72	Volume change, 0 to 25%					
Air, oven aging	200	15	Mandrel bend, no cracks	Nat. or syn. rubber			Gasket, Oil Resisting	AMS 3230
Lubricating Oil	250	5	Thickness increase, 40% max.	or asbestos fibers				
Gasoline	Ambient	5	Thickness increase, 40% max.					

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, oven aging	212	15	Mandrel bend, no cracks	Syn. rubber and asbestos fibers			Gasket, Oil Resisting	AMS 3231
Lubricating oil	300	5	Thickness increase, 20% max.					
Gasoline	80	5	Thickness increase, 25% max.					
Air, compressibility	Ambient	-	25% max.	Syn. rubber and asbestos fibers			Asbestos and Synthetic Rubber Sheet, Hot Oil Resistant	AMS 3232
Air, oven aging	212	16	Mandrel bend, no cracks					
ASTM #1 petroleum oil	300	5	Thickness increase, 0 to 10%					
Isooctane	80	5	Thickness increase, 0 to 10%					
Air, compression set	158	22	70% max.	Syn. rubber and cork			Synthetic Rubber and Cork Composition. General Purpose Soft	AMS 3250
Cooling medium, ASTM D746	-40	-	No cracks					
Air, oven aging	212	70	Mandrel bend, no cracks					
ASTM #1 petroleum oil	212	24	Volume change, ±15%					
Isooctane	80	24	Volume change, -5 to 25%	Syn. rubber and cork			Synthetic Rubber and Cork Composition. General Purpose Medium	AMS 3251
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, ±15%	Syn. rubber and cork			Synthetic Rubber and Cork Composition. General Purpose Firm	AMS 3252
Isooctane	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	Syn. rubber	Yes	1355	Diaphragms, Synthetic-Rubber	MIL-D-3377 Type I
ASTM #1 petroleum oil	212	24	Volume change, ±10%					
Isooctane	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 and cotton fabric	Yes	1355	Diaphragms, Synthetic-Rubber	MIL-D-3377 Type II
SAE #30 paraffin oil	80	24	Weight change, ±1%					
Air, hydrostatic pressure	Ambient	-	300 psi. min.					
Air, oven aging	158	96	Hydrostatic pressure, 210 psi. min.	Syn. rubber		5330	Rubber, Synthetic; Sheet, Strip and Molded	MIL-R-3433 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, ±10%	Syn. rubber with or without fabric		1560	Fittings, Tank, Power-plant Fluid, Removable, General Specification For	MIL-F-5577 Type I
(Tests performed on rubber compound only)								
Air, compressed set	158	22	40% max.					
ASTM #1 petroleum oil	215	70	Volume change, -20 to +10%					
Ozone, 100 PPM	100	1/2	No cracks					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
(Tests performed on rubber compound only)								
Air, compression set	212	22	70% max.	Syn. rubber with or without rubber		1560	Fittings, Tank Power- plant fluid, Removable, General Specification For	MIL-F-1577 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, C1, 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.					
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 I, C1, 1, GR. C (70-85)
Air, compressibility	-40	5	25% min.					
ASTM #1 petroleum oil	212	70	Volume change, ±15%					
TT-S-735 40% aromatic	74	24	Volume change, +20% 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 I, C1, 2, GR. A (40-55) GR. B (55-70)
Air, compressibility	-40	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.					
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 I, C1, 2 GR. C (70-85)
Air, compressibility	-40	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.					
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, C1.1, GR. A (40-55) GR. B (55-70)
Air, compressibility	-40	5	15% min.					
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	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, C1.1, GR. C (70-85)
Air, compressibility	-40	4	15% min.					
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, C1.2, GR. A (40-55) GR. B (55-70)
Air, compressibility	-40	5	30% min.					
ASTM #1 petroleum oil	212	70	Volume change, - to +10%					
TT-S-735 40% aromatic	774	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, C1.2, GR. C (70-85)
Air, compressibility	-40	5	30% min.					
ASTM #1 petroleum oil	212	70	Volume change, 0 to +10%					
TT-S-735 40% aromatic	74	24	Volume change, +60% max.					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, compressibility Air, compressibility 70/30 Isooctane/toluene	Ambient Ambient 74	- - 22	12 ± 5% Recovery, 45% min. Thickness change, 0 to 20%	Nat. or syn. rubber, asbestos fibers		5330	Asbestos Sheet, Compressed, For Fuel, Lubricant, Coolant, Water, and High-Temperature Resistant Gaskets	MIL-A-7021 Class 1
Air, Compressibility Air, compressibility Water	Ambient Ambient 212	- - 70	12 ± 5% Recovery, 45% min. Thickness change, 0 to +10%	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, compression set Air, compression set Isooctane ASTM #1 petroleum oil Isooctane	Ambient 212 80 212 80	- 70 5 70 5	15% max. 10% max. Compression set, 20% max. Thickness change, 0 to 10% Thickness change, 0 to 15%	18 Cr-8 Ni screen between rubberlike gasket material			Gaskets, Type XX Engine Accessory Drive, Corrosion Resistant Steel Screen Reinforced Controlled Performance	AMS 7283
Air, original properties	Ambient	-	T.S. 1200 psi. min., elong. 150% min.	Synthetic rubber		5330	Rubber Synthetic Solid Sheet Strip and Fabricated Parts Synthetic Oil	MIL-R-7362 Type II
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, Preformed Rubber or Synthetic Rubber (for Recoil Mechanism)	MIL-P-11501
Air, original properties Air, oven aging Cooling medium, ASTM D1053	Ambient 437 -40	- 70 -	Tensile, 500 psi, min.; elong. 75% min. Elongation change, -30% max. Flexible	Syn. rubber		5330	Packing, Preformed; Pneumatic Hose Couplings, Universal	MIL-P-11719
Air, compressibility Air, mandrel bend ASTM #3 petroleum oil 70/30 Isooctane/toluene	Ambient -40 302 78	- 6 5 5	Recovery, 15 to 40% No breaks or cracks Thickness increase 0 to +70% Thickness increase 0 to +45%	Nat. or syn. rubber, asbestos or other mineral fibers (15 grades)		5330	Gasket Material, Non-Metallic	MIL-G-12803 Type I
Air, compressibility Air, mandrel bend ASTM #3 petroleum oil Isooctane	Ambient -40 212 78	- 6 70 22	Recovery, 75% min. No breaks or cracks Volume change, -2 to +50% Volume change, -5 to +15%	Nat. or syn. rubber and cork (9 grades)		5330	Gasket Material, Non-Metallic	MIL-G-12803 Type II

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, compressibility	Ambient	-	Recovery, 20 to 55%	Nat. or syn. rubber, cellulose or other organic fabric (24 grades)		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%					
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-P-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)				Syn. rubber with 6 to 10 plies of cotton duck		5330	Packing (Wiper Ring). Synthetic Rubber, Cloth Insertion	MIL-P-14574
Air, original properties	Ambient	-	Tensile, 1500 psi. min.; elong. 300% min.					
Air, compression set	158	22	50% max.					
ASTM #3 petroleum oil	212	70	Volume change, 0 to 120%					
(Tests performed on rubber compound only)				Chloroprene		5330	Rubber, Shaft Covering Material, (For Marine Propeller Shafts)	MIL-S-15058 Type II
Air, original properties	Ambient	-	Tensile, 1800 psi. min.; elong. 300% min.					
Air, oven aging	158	96	Tensile change, ±20%					
Water	212	96	Volume change, 15% max.	SBR		5330 8030	Rubber, Shaft Covering Material, (For Marine Propeller Shafts)	MIL-S-15058 Type III
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-	Tensile, 1200 psi. min.; elong. 250 min.					
Air, oven aging	158	96	Tensile change, ± 20%					
Water	212	96	Volume change, 15% max.	Nitrile		5330 8030	Rubber, Shaft Covering Material, (For Marine Propeller Shafts)	MIL-S-15058 Type IV
(Tests performed on rubber compound only)								
Air, original properties	Ambient	-	Tensile, 1200 psi. min.; elong. 250 min.					
Air, oven aging	158	96	Tensile change, ± 20%					
Water	212	96	Volume change, 15% max.	Class I, Chloro- prene; Class III, Nitrile		5330	Rubber Gasket Material 50 Durometer Hardness (Maximum)	MIL-R-15624 Class I, Class III
Air, original properties	Ambient	-	Tensile, 1500 psi. min.; elong. 400% min.					
Air, flexibility	-20	16	Flexible					
Air, compression set	194	46	30% max.					
Air, oven aging	194	46	Elongation change, -30% max.	SBR		5330	Rubber Gasket Material 50 Durometer Hardness (Maximum)	MIL-R-15624 Class II
Water	74	24	Volume change, 5% max.					
Air, original properties	Ambient	-	Tensile, 1000 psi. min.; elong. 300% min.					
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.					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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 Compart- ments of Submarines	MIL-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

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Air, compression set Water	Ambient 212 194	- 70 70	Tensile, 1600 psi. min.; elong, 70% min. 65% max. Volume change, +25% max.	SBR		5330	Rubber Sheet, Solid, Synthetic, Shipboard Water Evaporator Gasketing	MIL-R-21252
(Tests performed on rubber compound only) MIL-F-17111 hydraulic fluid	150	70	Volume change, -1 to +10%	Syn. rubber		5330	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		5330	Seals, Plain or Plain Encased, Oil	MIL-S-21558 Grades A & B Class 2
Air, original properties Air, oven aging Oil immersion #2 Oil	Ambient 194 194	- 336 94	T.S. 1800 psi. min.; elongation 250% min. Hardness 60 ± 10 T.S. -25% max. change Compression set 50% max. change T.S. -25% max. change Volume change +10% max.	Syn. rubber		5330	Gasket, Cylinder	MIL-G-21569 Class I
Air, original properties Air, oven aging Oil immersion #2 Oil	Ambient 194 194	- 336 94	T.S. 500 psi. min. Elong. 120% min. Hardness 65 ± 10 T.S. -25% max. change Compression set 50% max. change T.S. -35% max. change Volume change +15 % max.	Syn. rubber		5330	Gasket, Cylinder	MIL-G-21569 Class II
Air, original properties Air, compression set ASTM #3 petroleum oil Steam	Ambient 158 230 280	- 22 168 24	Tensile, 1200 psi. min.; elong, 300% min. 35% max. Volume change, +20% max. Volume change, 10% max.	Nitrile	Yes	5330	Gaskets, Heat Exchanger, Various Cross Section Ring, Synthetic Rubber	MIL-G-21610 Type I
Air, original properties Air, compression set ASTM #1 petroleum oil	Ambient 158 230	- 22 168	Tensile, 600 psi. min.; elong. 150% min. 40% max. Volume change, 15% max.	Silicone	Yes	5330	Gaskets, Heat Exchanger, Various Cross Section Ring, Synthetic Rubber	MIL-G-21610 Type II
Air, original properties Air, aging MIL-H-19457 Hydraulic Fluid Steam	Ambient 280 212 330	- 166 166 166	T.S. 2400 psi. min.; elong, 25% min. Hardness 65 ± 5 T.S. -30% max.; elong, -30% max. Volume change 0 - 10% Volume change +5% max.	Ethylene - Propylene		9320	Gasket & Packing Material Rubber for Use with Polar Fluids, Steam and Air at Moderately High Tempera- tures	MIL-C-22050 Grade 1

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T.S. 2400 psi. min.; elong 150% min. Hardness 80 ± 5	Ethylene - Propylene		9320	Gasket & Packing Material, Rubber for Use with Polar Fluids, Steam and Air at Moderately High Temperatures	MIL-C-22050 Grade 2
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.					
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-23652 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-23652 Type II
Air, compression set	212	70	40% 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, 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 pphm	100	168	No cracks					
Air, original properties	Ambient	-	Specific gravity 2.15 Melting Point 327°C	Polytetra- Fluoroethylene		5330	Packing Material, Braided TFE (Poly- tetrafluoroethylene	MIL-P-24396
Lubricant Content	Ambient	-	15% petroleum oil					
Rubber conforms to MIL-H-5606				Synthetic rubber		5330	Packing, Preformed Petroleum Hydraulic Fluid Resistant 275°F	MIL-P-25732
Air, original properties	Ambient	-	T.S. 200 psi. min.; elong, 200% min.	Tetrafluoroethylene		5330	Gasket Material, Tetrafluoroethylene Resin, Glass-Filled Cryogenic Application	MIL-G-38426
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	Yes	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-12095, 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 2
MIL-L-15015, lubricating oil	200	192						

MIL-HDBK-699A(MR)

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	COMPOSITION	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
MIL-L-10295, lubricating oil MIL-L-15015, lubricating oil	-65 300	16 192	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
Rubber conforms to AMS 3222				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% min.					
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% max.					

## WIRE, CABLE AND RELATED ELECTRICAL ITEMS

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
(Tests on cured patch) Air, original properties	Ambient	-	T, 2000 psi min; E, 600% min	Natural rubber		2640	Patch, Repair, for Inner Tubes and Tubeless Tire Liners	ZZ-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)	ZZ-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, Vehi- cle and Portable Equip- ment	ZZ-T-381 Type II
Air, original properties Air, oven aging ASTM #3 petroleum oil	Ambient 158 212	- 70 70	T, 2000 psi min; E, 200% min; H, 65 ± 10 Max change; T, -15%; E, -25%; H, +5 Volume change, 20% max	Type of rubber not specified		2630	Tire, Solid Rubber, and Wheel, Solid Rubber Tire, (Industrial)	ZZ-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 Rub- ber Tire, (Industrial)	ZZ-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)	ZZ-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)	ZZ-T-401
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	ZZ-T-410
(Tests on cured materials) Air, tensile strength Cooling medium, ASTM D746 Ozone, 50 pphm	Ambient -65 100	- 0.05 168	2000 to 3300 psi, varying with type No cracks No greater cracking than for control	Natural, SBR, butyl or polybutadiene		2640	Tire, Pneumatic: Retread and Repair Materials	ZZ-T-416
(Repair and retread materials covered in ZZ-T-416. Curing bags and tubes covered in MIL-C-14625)						2640	Tire, Pneumatic: Re- treaded and Repaired	ZZ-T-441

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, tensile strength	Ambient	-	Psi min; Butyl, 1200; Natural, 2100	Butyl or natural		2610	Inner Tube, Pneumatic Tire	ZZ-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	RR-T-650
Air, tensile strength	Ambient	-	Psi min; Butyl, 1400; Natural, 2300	Natural or butyl		2610	Tubes, Inner, Vehicle Puncture-Sealing	ZZ-T-768
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, type not specified	Yes	2630	Tires, Solid Rubber, and Wheels, Solid Rubber Tired	MIL-T-3100
Air, oven aging	158	166	T change, 25% max; E change, 35% max					
Ozone, 50 pphm	100	168	No cracks under 7X magnification					
Air, original properties	Ambient	-	T, 2100 psi min; E, 550% min	Type of rubber not specified	Yes	2620	Tubes, Inner, Aircraft Pneumatic Tire	MIL-T-5014
Cooling medium, ASTM D746	-65	0.05	No cracks					
Air, air retention	Ambient	24	Air pressure loss, 5% max	Type of rubber not specified		2620	Tires, Pneumatic, Aircraft	MIL-T-5041
Cooling medium, ASTM D746	-65	0.05	No cracks					
Air, original properties	Ambient	-	Camelback; T, 3300 psi min; E, 475% min	Natural		2640	Repair and Treading Materials, Aircraft Pneumatic Tire	MIL-R-7725
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 Elongation 400% sidewall, 300% sidewall	Natural or synthetic rubber		2610	Tires, Pneumatic, Low Speed, Off Highway	ZZ-T-00183
Air, tensile strength	Ambient	-	Bushings, 3500 psi min; Shoes, 2900 psi min	Type of rubber not specified	Yes	2530	Track Shoe Assemblies, Track Shoe Pads, and Track Shoe Sets, Vehicular: Rubberized	MIL-T-11891
Air, elongation	Ambient	-	Bushings, 500% min; Shoes, 400% min					
Cooling medium, ASTM D746	-40	0.05	No cracks (bushings, shoes & pads)					
Air, oven aging	158	70	Change in elong: bushings; -15%, shoes, -25%					
Ozone, 50 pphm	100	168	No cracks under 7X magnification					
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 pphm	100	720	Cracking no greater than for control					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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 T.S. 900 psi min Elongation, tread 400% min; sidewall 300% min	Natural or synthetic		2610	Tire, Pneumatic, Agricultural	ZZ-T-1619
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 Equip- ment	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-46759
(Tests on vulcanized bushings)								
Air, original properties	Ambient	-	T, 3500 psi min; E, 500% min; H, 55-68	Pin bushing: Natural or nat/syn blend		2530	Rubber Stock, Unvul- canized: For Track Shoes, Pads, and Pin Bushings	MIL-R-46762 Style II
Cooling medium, ASTM D746	67	0.05	No cracks					
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, Unvul- canized: 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 pphm	100	168	No cracks under 7X magnification					
No specific properties listed				Natural or synthetic rubber		2610	Tire, Pneumatic: Large Size, Off-the-Road, General Specification For.	MIL-T-52583
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-62118

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties	Ambient	-	T.S. 2500 psi min Elongation 500% min	Natural or synthetic natural rubber		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

## WIRE, CABLE AND RELATED ELECTRICAL ITEMS

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, elongation	Ambient	-	Jkt. min %: PVC, 100; CR, 300	Chloroprene or PVC	Chloroprene (CR) or PVC		6145	Cable and Wire, Power, Electrical, Non- metallic-Sheathed	J-C-94 Types NM, NMC, and UF
Air, mandrel bend	14	5	No cracks, Type NM						
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 pphm	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-103 Types R & RW
Oxygen, aging @ 300 psi	158	96	Max % T chg: ins. -25; jkt. -30						
ASTM #2 petroleum oil	250	18	Max % T chg: jacket -40						
Air, tensile strength	Ambient	-	Min psi: ins. 1500; jkt. 1800	Chlorosulfon- ated polyethylene	Chloroprene		6145	Cable, Power, Electrical and Wire, Electrical	J-C-103 Type RHW-1
Oxygen, aging @ 300 psi	176	168	Max % T chg: ins. -25; jkt. -50						
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 and/or butyl	Chloroprene		6145	Cable, Power, Electrical and Wire, Electrical	J-C-103 Type RH & RHW-2
Oxygen, aging @ 300 psi	176	168	Max % T chg: ins. -50; jkt. -50						
ASTM #2 petroleum oil	250	18	Max % T chg: jkt. -40						
Air, tensile strength	Ambient	-	Min psi: ins. 700; jkt. 1800	Nat and/or SBR and/or butyl	Chloroprene		6145	Cable, Power, Electrical and Wire, Electrical	J-C-103 Type RHH
Air, oven aging	260	168	Max % T chg: ins. -40; jkt. -50						
ASTM #2 petroleum oil	250	18	Max % T chg: jkt. -40						
Air, tensile strength	Ambient	-	Min psi: ins. 3000; jkt. 1800	Natural	Chloroprene		6145	Cable, Power, Electrical and Wire, Electrical	J-C-103 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: jkt. -40						
Air, tensile strength	Ambient	-	Min psi: ins. 3000; jkt. 1800	Natural	Chloroprene		6145	Cable, Power, Electrical and Wire, Electrical	J-C-103 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-103 Type SA
Air, oven aging	277	1440	Max % E chg: -35						
Air, mandrel bend	14	5	No cracks	Rubber or plastic	Natural or chloroprene		6145	Cable and Wire, Power, Electrical, (Service-Entrance and Service-Drop)	J-C-115 Types SE & USE
Flame	-	-	Self burning 1 min. max						



SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, mandrel bend	-30	24	No cracking of jkt.	Natural	Synthetic			High Tension Ignition Cable	SAE J557 Types HTLR, HTHR & HTS
Air, oven aging	250	48	No cracking of jkt.						
Kerosene	Ambient	18	No damage to ins.						
SAE #30 oil	250	-40	No cracking of jkt.						
Air, corona 20,000 volts	Ambient	2	No failure	Natural	Braid			High Tension Ignition Cable	SAE J557 Type HTB
Air, mandrel bend	-30	24	No cracking	PVC	None			High Tension Ignition Cable	SAE J557 Type HTT
Air, oven aging	250	48	No cracking						
Kerosene	Ambient	18	No damage to insulation						
Air, original properties	Ambient	-	Min T: 2300 psi; E 125%	PVC	None			Low Tension Cable	SAE J558 Types GPT, HDT, & SGT
Kerosene & SAE 10 W oil	122	20	Max OD chg: +15%						
SAE 30 and gasoline	Ambient	24	Max OD chg: +15% (Natural)	Natural or PVC	Braid			Low Tension Cable	SAE J558 Types GPB, HDB, & HDB-X
Kerosene & SAE 10 W oil	122	20	Max OD chg: +15% (PVC)						
Gasoline and SAE 30 oil	Ambient	24	Max OD chg: +15%	Natural or synthetic	None			Low Tension Cable	SAE J558 Type SGR
Air, elongation	Ambient	-	Min: ins. 250%; jkt. 300%	Not specified	Not specified			Seven Conductor Jacketed Cable For Truck and Trailer Connections	SAE J559
Air, mandrel bend	-20	4	No cracking of jkt.						
Oxygen, aging @ 300 psi	158	96	Max E chg: ins. & jkt. -30%						
ASTM #2 petroleum oil	250	18	Max E chg: jkt. -40%						
(Tests on rubber only)									
Air, original properties	Ambient	-	Min T: 450 psi; E 250%	Natural or synthetic	Not applicable			Ozone-Resisting Insulation For Wire and Cable	ASTM D574
Air, oven aging	158	168	Min T: 400 psi; E 200%						
Ozone, 10000 to 15000 pphm		3	No cracks						
Air, original properties	Ambient	-	Min: C1 2; T 500 psi, E 200%	Natural or SBR (C1 2), PVC (C1 11), Chloroprene (C1 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
Air, original properties	Ambient	-	Min: C1 11; T 1600 psi, E 200%						
Air, original properties	Ambient	-	Min: C1 13; T 1200 psi, E 250%						
Oxygen, aging @ 300 psi	158	96	C1 2; Max E chg: -35%						
Air, oven aging	212	168	C1 11; Max E chg: -50%						
Air, oven aging	158	168	C1 13; Max E chg: -40%						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, original properties	Ambient	-	Min: C1 2; T 500 psi, E 200%	Natural or SBR (C1 2), PVC (C1 11), PVC (C1 12)	Braid or none		6145	Cord, Flexible, And Wire, Fixture, (Electrical 0 to 600 Volt Service)	J-C-580 Types ET, SPT-2, TF, TFF, SPT-3, HC, & HPD
Air, original properties	Ambient	-	Min: C1 11; T 1600 psi, E 200%						
Air, original properties	Ambient	-	Min: C1 12; T 1500 psi, E 100%						
Oxygen, aging @ 300 psi	158	96	C1 2; Max E chg: -35%						
Air, oven aging	212	168	C1 11; Max E chg: -50%						
Air, oven aging	178	1440	C1 12; Max E chg: -30%						
Air, original properties	Ambient	-	Min: C1 2; T 500 psi, E 200%	Natural or SBR (C1 2, 7) Natural (C1 5, 9)	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: C1 5; T 3000 psi, E 650%						
Air, original properties	Ambient	-	Min: C1 7; T 700 psi, E 300%						
Air, original properties	Ambient	-	Min: C1 9; T 3000 psi, E 650%						
Oxygen, aging @ 300 psi	158	96	C1 2; Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	C1 5; Max E chg: -25%						
Oxygen, aging @ 300 psi	178	168	C1 7, 9; Max E chg: -50%						
Air, original properties	Ambient	-	Min: T: 500 psi; E 100%	Silicone (C1 22)	Braid		6145	Cord, Flexible, And Wire, Fixture, (Electrical 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: C1 3; T 600 psi, E 250%	Nat or SBR (C1 3, 4) chloroprene (C1 17)	Braid or none		6145	Cord, Flexible, And Wire, Fixtures, (Electrical 0 to 600 Volt Service)	J-C-580 Types HPN, SP-3, E
Air, original properties	Ambient	-	Min: C1 4; T 1500 psi, E 350%						
Air, original properties	Ambient	-	Min: C1 17; T 1200 psi, E 250%						
Oxygen, aging @ 300 psi	158	96	C1 3; Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	C1 4; Max E chg: -30%						
Air, oven aging	248	240	C1 17; Max E chg: -40%						
Air, original properties	Ambient	-	Min: C1 3; T 600 psi, E 250%	Nat or SBR (C1 3) PVC (C1 11)	PVC (C1 11, 12)		6145	Cord, Flexible, And Wire, Fixtures, (Electrical 0 to 600 Volt Service)	J-C-580 Types SVT, SRDT, & SJT
Air, original properties	Ambient	-	Min: C1 11; T 1600 psi, E 200%						
Air, original properties	Ambient	-	Min: C1 12; T 1500 psi, E 100%						
Oxygen, aging @ 300 psi	158	96	C1 3; Max E chg: -35%						
Air, oven aging	212	168	C1 11; Max E chg: -50%						
Air, oven aging	178	1440	C1 12; Max E chg: -30%						
Air, original properties	Ambient	-	Min: C1 3; T 600 psi, E 250%	Nat or SBR (C1 3) Nat (C1 5)	Nat or SBR (C1 6) Chloroprene (C1 15)		6145	Cord, Flexible, And Wire, Fixtures, (Electrical 0 to 600 Volt Service)	J-C-580 Types EO, SRD, S, SO, SV
Air, original properties	Ambient	-	Min: C1 5; T 3000 psi, E 650%						
Air, original properties	Ambient	-	Min: C1 6; T 1500 psi, E 300%						
Air, original properties	Ambient	-	Min: C1 15; T 15000 psi, E 300%						
Oxygen, aging @ 300 psi	158	96	C1 3; Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	C1 5; Max E chg: -25%						
Oxygen, aging @ 300 psi	158	96	C1 6; Max E chg: -30%						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, original properties	Ambient	-	Min: C1 2; T 500 psi, E 200%	Nat or SBR (C1 2) FVC (C1 11)	Nat or SBR (C1 6, 10) Chloroprene (C1 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: C1 6, T 1500 psi, E 300%						
Air, original properties	Ambient	-	Min: C1 10, T 1500 psi, E 300%						
Air, original properties	Ambient	-	Min: C1 11; T 1600 psi, E 200%						
Air, original properties	Ambient	-	Min: C1 16; T 1500 psi, E 300%						
Oxygen, aging @ 300 psi	158	96	C1 2; Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	C1 6, 16; Max E chg: -30%						
Oxygen, aging @ 300 psi	178	168	C1 10; Max E chg: -50%						
Air, oven aging	212	168	C1 11; Max E chg: -50%						
Air, original properties	Ambient	-	Min: C1 3, 8; T 600 psi, E 250%	Nat or SBR (C1 3, 8) Nat (C1 5, 9)	Nat or SBR (C1 6, 10) Chloroprene (C1 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: C1 5, 9; T 3000 psi, E 650%						
Air, original properties	Ambient	-	Min: C1 6, 10, 15, 16; T 1500 psi						
Air, original properties	Ambient	-	Min: C1 6, 10, 15, 16; E 300%						
Oxygen, aging @ 300 psi	158	96	C1 3; Max E chg: -35%						
Oxygen, aging @ 300 psi	158	96	C1 5; Max E chg: -25%						
Oxygen, aging @ 300 psi	158	96	C1 6, 15, 16; Max E chg: -30%						
Oxygen, aging @ 300 psi	178	168	C1 9, 10; Max E chg: -50%						
Air, original properties	Ambient	-	Min: C1 4; T 1500 psi, E 350%						
Air, original properties	Ambient	-	Min: C1 14, T 1500 psi, E 300%						
Oxygen, aging @ 300 psi	158	96	C1 4; Max E chg: -25%						
Oxygen, aging @ 300 psi	158	168	C1 14; Max E chg: -30%						
Air, tensile strength	Ambient	-	Min psi: 1800	PVC Tubing		Yes	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		Yes		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		Yes	5970	Insulation, Electrical Synthetic - Resin Composition, Nonrigid	MIL-I-631 Form U 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%						
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 105°C Service)	NAS 702 Types U & S
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						

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
(Covered in MIL-I-3930, Type IS-L Insulation and Type JS-L Jacket)				SBR	SBR or natural		6150	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, oven 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%						
Air, tensile strength	Ambient	-	Min T psi: ins 600; jkt 1800	Synthetic	Chloroprene	Yes	6145	Cable, Cord and Wire Electrical (Shipboard Use)	MIL-C-915 Types: DSS, TSS, SSF, FSS, MSS, CVSF, MCSC, MCGC, DCOP, TCOP, TRF
Oxygen, aging @ 300 psi	176	168	Max % T chg: ins -50						
Navy symbol 3100 oil	240	18	Max % T chg: jkt -35						
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, FHOF, 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						

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, tensile strength Air, heat aging @ 80 psi Navy symbol 3100 lub. oil	Ambient 295 240	- 20 18	Min T psi: jkt 1800 Max % T chg: jkt -35 Max % T chg: jkt -35	Non-elastomeric	Chloroprene	Yes	6145	Cable, Cord and Wire, Electrical (Shipboard Use)	MIL-C-915 Types: TRXF, MNOP, MCOS, FCOTF-4
Water, @ 75 psi Air, @ 75 psi		4 4	Impervious Impervious	Non-elastomeric	PVC	Yes	6145	Cable, Cord and Wire, Electrical (Shipboard Use)	MIL-C-915 Types: TSP, MHFF, TTOP, MCOS, TTRS
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 Oxygen, aging @ 300 psi	Ambient 176	- 168	Min T psi: ins. 600 Max % T chg: ins. -50	Not known	Non-elastomeric	Yes	6145	Cable, Cord and Wire, Electrical (Shipboard Use)	MIL-C-915 Types: DBSP, TBSP, FBSP
Air, tensile strength Air, heat aging @ 80 psi	Ambient 296	- 20	Min T psi: ins. 600 Max % T chg: ins -30	Butyl	Non-elastomeric	Yes	6145	Cable, Cord and Wire, Electrical (Shipboard Use)	MIL-C-915 Types: DBSP, TBSP, FBSP
Air, original properties Air, brittleness ASTM #3 petroleum oil	Ambient -22 158	- 0.05 4	Min: T 2000 psi; E 200% No failure E chg: -20% + 5%	PVC tubing				Non-Rigid Vinyl Chloride Polymer Tubing	ASTM D922 Grade A
Air, original properties Air, brittleness ASTM #3 petroleum oil	Ambient 14 221	- 0.05 4	Min: T 2000 psi; E 200% No failure E chg: -20% + 5%	FVC	None			Non-Rigid Vinyl Chloride Polymer Tubing	ASTM D922 Grade C
(Tests on rubber only) Air, original properties Air, oven aging SAE 20 oil	Ambient 212 158	- 100 4	Min: T 1500 psi; E 100% Max chg: T -20%; E -40% Max chg: T -20%; E -40%	Not applicable	PVC			Poly (Vinylchloride) Jacket for Wire and Cable	ASTM D1047
Air, original properties	Ambient	-	Min: T 1600 psi; E 350%	Synthetic hose				Rubber Insulating Line Hose	ASTM D1050
(Tests on rubber only) Air, original properties Air, aging @ 80 psi Ozone, 25000 to 30000 pphm	Ambient 260 Ambient	- 40 3	Min: T 600 psi; E 350% Max chg: T & E -50% No cracking	Butyl	Not applicable			Ozone-Resisting Butyl Rubber Insulation For Wire and Cable	ASTM D1352

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, original properties Air, mandrel bend Air, oven aging MIL-0-6081 jet oil	Ambient -67 235 Ambient	- 4 1440 20	Min ins: T 1800 psi; E 150% No cracking Max ins chg: T & E -30% No cracking	PVC	Nylon			Wire, Electrical, Insulated, Copper Solid Conductor, Hook-Up and General Purpose (For 105°C Service)	NAS 1391
(Tests on rubber only) Air, original properties Air, aging @ 80 psi	Ambient 260	- 20	Min: T 700 psi; E 300% Max chg: T & E -50%	Not known	Not applicable			Synthetic Rubber Heat-or Moisture-Resisting Insulation For Wire and Cable	ASTM D1520
(Tests on rubber only) Air, original properties Oxygen, aging @ 300 psi	Ambient 158	- 96	Min: T 700 psi; E 300% Max chg: T -25%; E -35%	Not known	Not applicable			Synthetic Rubber Performance, Moisture-Resisting Insulation For Wire and Cable	ASTM D1521
(Tests on rubber only) Air, original properties Air, oven aging	Ambient 250	- 168	Min: T 700 psi; E 300% Max chg: T & E -40%	Not known	Not applicable			Synthetic Rubber Insulation For Wire and Cable, 90C Operation	ASTM D1523
(Tests on rubber only) Air, original properties Oxygen, aging @ 300 psi	Ambient 176	- 168	Min: T 700 psi; E 300% Max chg: T & E -50%	Not known	Not applicable			Synthetic Rubber Heat- And Moisture-Resisting Insulation For Wire and Cable, 75C Operation	ASTM D1679
Air, original properties	Ambient	-	T, 900 psi min; E 250%	Chloroprene Hypolon	SBR Hypolon		1075	Cable and Cable Assemblies, Special Purpose, Electrical, Magnetic Mine Sweeping (Quad Cable)	MIL-C-17694
Air, tensile strength Oxygen, aging @ 300 psi	Ambient 158	- 48	Min T psi: jacket, 800 Max % T chg: jacket, -25	None	SBR			Cable, 1-Conductor Submarine Mine, M6	MIL-C-1892
Air, original properties Air, mandrel bend Air, oven aging	Ambient 14 212	- 1 168	Min: T 1500 psi; E 100% No cracks Max % T & E chg: -35	PVC	None		1390	Wire, Insulated, Submarine Mine Wiring Device	MIL-W-1904 Type TW

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, original properties	Ambient	-	Min: T 1500 psi; E 100%	PVC	Not applicable			Vinyl Chloride Plastic	ASTM D2219
Air, mandrel bend	14	1	No cracking					Insulation For Wire and	
Air, oven aging	212	168	Max % chg: T & E -35%					Cable, 60C Operation	
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	ASTM D2220
Air, mandrel bend	-32	1	No cracks					Insulation For Wire and	
Air, oven aging	250	168	Max % chg: T -20; E -25					Cable, 75C Operation	
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	Nat or syn.	Non-elastomeric		6145	Cable, Electric, Insulated, Low-Tension, Single- Conductor	MIL-C-3078
Air, oven aging, 180° bend	250	120	No damage						
Air, tensile strength	Ambient	-	Min T psi; ins 1500	PVC	None		6145	Cable, Telephone Inside Distribution Wiring (WD-15/U, WF-9/U, and WT-3/U)	MIL-W-3093
Air, oven aging	212	120	Max % T chg: ins -15						
Flame	-	-	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; Flex- ible and Extra Flexible, 300 and 600 volts)	MIL-C-3432 Class G
(Covered in MIL-I-3930 ins IS; jkt JN)				SBR	Chloroprene		6145	Cable and Wire, Electrical (Power and Control; Flex- ible and Extra Flexible, 300 and 600 volts)	MIL-C-3432 Class O
(Covered in MIL-I-3930 ins IS; jkt JS-L)				SBR	SBR		6145	Cable and Wire, Electrical (Power and Control; Flex- ible and Extra Flexible 300 to 600 volts)	MIL-C-3432 Class L
(Covered in MIL-I-3930 ins IS; jkt JN-L)				SBR	Chloroprene		6145	Cable and Wire, Electrical (Power and Control; Flex- ible and Extra Flexible, 300 to 600 volts)	MIL-C-3432 Class D

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		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 $\pm$ 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 decomposition						
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 Specification 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 Cables, Cords and Wires)	MIL-I-3930 Type IP
Air, oven aging	212	96	Max % E chg: ins -20						
Air, tensile strength	Ambient	-	Min T psi: ins 450 to 600	SBR	Not applicable		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type IS
Oxygen, aging @ 300 psi	158	95	Max % T chg: ins -25						
Air, tensile strength	Ambient	-	Min T psi: ins 450 to 600	SBR	Not applicable		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type IS-L
Oxygen, aging @ 300 psi	176	168	Max % T chg: ins -50						
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 Cables, Cords and Wires)	MIL-I-3930 Type IR
Oxygen, aging @ 300 psi	158	95	Max % T chg: ins -25						

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, tensile strength Oxygen, aging @ 300 psi	Ambient 158	- 95	Min T psi: ins 1000 Max % E chg: ins -25	SBR	Not applicable		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type IJ-S
Air, original properties Oxygen, aging @ 300 psi	Ambient 178	- 168	Min: ins, T 25000 psi, E 600% Max % E chg: ins -50	Natural	Not applicable		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type IL-N
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	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type IL-RN
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	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type JP
Air, original properties Oxygen, aging @ 300 psi Ozone, @ 50 pphm	Ambient 158 100	- 95 168	Min: jkt; T 1600 psi, E 300% Max % E chg: jkt -35 No cracking	Not applicable	SBR		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type JS
Air, original properties Oxygen, aging @ 300 psi Ozone, @ 50 pphm	Ambient 158 100	- 95 168	Min: jkt; T 1500 psi, E 300% Max % E chg: jkt -35 No cracking	Not applicable	SBR		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type JS-L
Air, original properties Oxygen, aging @ 300 psi Ozone, @ 50 pphm	Ambient 158 100	- 95 168	Min: jkt; T 2000 psi, E 350% Max % E chg: jkt -35 No cracking	Not applicable	Natural		5970	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type JR
Air, original properties Oxygen, aging @ 300 psi ASTM #2 petroleum oil Ozone, @ 50 pphm	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	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type JN
Air, original properties Air, oven aging ASTM #2 petroleum oil Ozone, @ 50 pphm	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	Insulating and Jacketing Compounds, Electrical (For Cables, Cords and Wires)	MIL-I-3930 Type JN-L

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ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, elongation	Ambient	-	Min elong: ins 75%	PVC	Non-elastomeric	Yes	6145	Wire, Electric, Polyvinyl Chloride Insulated, Copper or Copper Alloy	MIL-W-5086
Air, mandrel bend	-67	1	Ins: no cracks						Types: I, II, and III
Air, oven aging	239	1440	Max % elong chg: ins -30						
MIL-H-5606 hydraulic oil	122	20	No cracks after mandrel bend						
(Covered in MIL-I-3930, Types IS & JN)				SBR	Chloroprene		6145	Cable, Power, Electrical, Polychloroprene Sheathed, Buna Compound Insulated	MIL-C-5136
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-elastomeric	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 or wire	PVC	Yes	6145	Cable, Electric, Aerospace Vehicle, General Specification For	MIL-C-7078
Air, oven aging	248	96	No cracking						
Air, tensile strength	Ambient	-	Min psi: 1800	PVC tubing		Yes	5970	Insulation Sleeving, Electrical, Flexible	MIL-I-7444
Air, ASTM D746	-90	-	No failure	Syn. or natural (cables) PVC, SBR or Natural (Plugs)		Yes	5935-6150	Cable Assemblies and Attachable Plugs, External Electrical Power, Aircraft	MIL-C-7974
(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						
Air, tensile strength	Ambient	-	Min psi: ins 800	Silicone	Silicone	Yes	6145	Wire, Electrical, Silicone-Insulated, Copper, 600-Volt, 200°C	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						
(Covered in MIL-I-3930)				SBR	SBR		6145-	Cables, Special Purpose, Electrical (Multipair Audio Frequency)	MIL-C-10065

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
(Covered in MIL-I-3930, Types IS & JS)				SBR	SBR		6145	Cables, Special Purpose, Electrical (Miniature)	MIL-C-10392
(Covered in MIL-I-3930)				SBR	SBR		6135	Power and Control Cables, Heavy Duty, Buna S Insulated And Jacketed	MIL-P-10582
(Covered in MIL-I-3930)				SBR	SBR		6145	Cables, Power and Control, Electrical, Shielded, Heavy Duty, Buna S Insulated And Jacketed	MIL-C-10769
Air, mandrel bend Ozone, @ 50 pphm	-40 100	20 168	No cracking Jkt: no cracking	SBR	Chloroprene		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	Cord Assembly, Electrical CX-2151 ( )/U	MIL-C-11997
Air, compression Air, mandrel bend Ozone, 50 pphm	Ambient -40 100	- 20 168	800 lbs min crush load No cracking Jkt: no cracks	SBR	Chloroprene		6145	Cable, Telephone WD-33/U	MIL-C-12423
(Covered in MIL-I-3930)				SBR	Braid		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	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	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	Cord, Electrical (Re-traction, 2, 3 and 4 Conductor, WD-9/U, WT-2/U, WF-4/U)	MIL-C-13273

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, mandrel bend	-65	24	No cracking	Elastomeric	Chloroprene	Yes	6145	Cable, Special Purpose, Electrical: Low-Tension, Heavy Duty Single Conduc- tor and Multiconductor	MIL-C-13486 Types I & II
Air, oven aging	250	120	Ins: no breakdown						
ASTM #3 petroleum oil	160	20	Volume change, 20% max.						
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 spi: 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 (Flexible) (Cords and Cordage, Multipair)	MIL-C-13892
Air, tensile strength	Ambient	-	Min psi: jkt 1600						
Air, mandrel bend	-40	20	No cracks						
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						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Air, tensile strength	Ambient	-	Min psi: ins 600	SBR	SBR or chloroprene		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	Polyethylene	PVC		6145	Cable, Special Purpose, (TOW), Electrical, Coaxial, Lead Wrapped, Nylon Covered	MIL-C-15452
ASTM #2 petroleum oil	250	18	Max % T chg: jkt CR -40						
Air, breaking strength	Ambient	-	6400 to 7000 lbs						
(Covered in MIL-C-17 Type I jkt)									
Air, tensile strength	Ambient	-	Ins 2500 psi; jkt 3500 psi	Natural	Natural		6145	Cables, Power, Electrical, Submarine, Navy Standard Harbor Defense	MIL-C-15479
Oxygen, aging @ 300 psi	158	48	Min psi T: ins 2000; jkt 2800						
(Covered in MIL-C-915)									
(See individual specification sheets for tests and requirements)									
Air, mandrel bend	5	20	No cracking	Butyl	Chloroprene		6145	Cable, Special Purpose, Electrical (Underwater Use)	MIL-C-16839 Types DMU, DNU
Air, crush	482	168	No cracking of silicone	Not known (See individual specification sheets for acceptable construction)	PVC		6145	Cable, Special Purpose, Electrical (Underwater Use)	MIL-C-16839 Types DPU, MSU, MTU & SPU
Flame	Ambient	96	Max self burning 45 sec						
Air, original properties	Ambient	-	T, 450 psi min; E, 250% min						
Oxygen, aging @ 300 psi	158	168	T, 400 psi min; E, 200% min						
Air, original properties	Ambient	-	Min: jkt; T 800 psi, E 250%	Glass fiber sleeving, silicone rubber coated	None		5970	Wire, Electrical, Insulated, High Temperature	MIL-W-16878
Air, oven aging	500	24	No exudation at elastomer						
				Syn rubber	Lead		6145	Wire, Electrical, Radio Antenna, 7/12, 7/14, 7/16, 7/18, 7/20, 7/22	MIL-W-17211
				Asbestos	Silicone		6145	Insulation Sleeving, Electrical, Flexible Glass Fiber, Silicone Rubber Treated	MIL-I-18057
							6145	Cable, Power, Electrical, Rubber Insulated, Lead Sheathed, High Voltage	MIL-C-18869
							6145	Cables, Special Purpose, Electrical, (Nuclear Plant)	MIL-C-19381

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
(Jacket covered in MIL-C-17 Type I)				Polyethylene	PVC		6145	Cables, Power, Electrical Submarine, Navy Harbor Defense	MIL-C-19638
Air, tensile strength	Ambient	-	Min: ins 850 psi; jkt 2000 psi	SBR or syn	Chloroprene		6145	Cable, Telephone; Submarine	MIL-C-19654
Air, oven aging	158	96	Max % T chg: ins -30; jkt -25						
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)				PVC	Polyethylene		6145	Cables, Special Purpose, Electrical, For Remote Control Radar Set AN/FPN-28 ( )	MIL-C-19883 Types 4, 5, 6
Air, mandrel bend	-32	20	No damage	None	Not known		1440	Cable Assemblies, Electrical	MIL-C-21529
Steam, aging @ 115 psig	325	0.17	No damage						
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-21557
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)						
Air, tensile strength	Ambient	-	Min psi: 1800	PVC tubing		Yes	5970	Insulation Tubing, Electrical Nonrigid, Vinyl, Very Low Temperature Grade	MIL-I-22076
Air, ASTM D746	-67	0.08	No cracking						
ASTM #3 petroleum oil	Ambient	24	No cracks						
Requirements in accordance with MIL-R-6855				Synthetic rubber			5995	Cable Assembly, Special Purpose, Electrical CX 4832/AR	MIL-C-22442
Air, tensile strength	Ambient	-	Min psi: ins 800; jkt 1500	SBR	PVC		1350	Cables, Controlled Mine	MIL-C-22731 Types SUR, MU A-7 and SUA
Air, oven aging	212	96	Max % chg: jkt -20						
Air, oven aging	158	166	Max % T chg: ins -25						
SAE 20 oil	158	4	Max % T chg: jkt -20						

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
Water, dielectric strength  (Covered in MIL-C-17, Type VIII)	-	-	Ins: no failure at 3000 volts	Polyethylene	PVC		6145	Cable, Electrical, Underwater, Seadrome Lighting	MIL-C-22929
				Teflon or none	Chloroprene		6145	Cable, Coaxial (For Submarine Use)	MIL-C-23020 Types: RG-293/U, RG-294/U, RG-295/U, RG-317/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  (Covered in MIL-W-76 or MIL-W-16878)	Ambient	-	Min psi: ins 2000, jkt 15000	PVC	PVC		6145	Cable, Electrical, Shielded Pairs	MIL-C-23437
				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 construction)	PVC		6145	Cable, Special Purpose Electrical Multiconductor	MIL-C-27072 Grade B and Style 1
Air, elongation Oxygen, aging @ 300 psi ASTM #2 petroleum oil	Ambient 158 250	- 94 18	Min: jkt 300% Min: jkt 250% Max % E chang: JKT-40	Polyamide (See individual specification sheets for acceptable construction)	Chloroprene		6145	Cable, Special Purpose Electrical Multiconductor	MIL-C-27072 Style 3
(Insulation covered in MIL-I-3930, Type IP or IL Jacket covered in MIL-I-3930, Type JP or JN)				Natural or PVC	PVC or chloroprene		6145	Cable, Power, Electrical, Airport Lighting Control	MIL-C-27212
Air, mandrel bend Air, oven aging	-67 322	4 96	Jkt: no cracking Jkt: no cracking	Not specified	PVC		6145	Cable Electrical, Shielded and Unshielded, Aerospace	MIL-C-27500 Symbol 1
(Insulation covered in MIL-W-8777)				Silicone	Not specified		6145	Cable, Electrical, Shielded and Unshielded, Aerospace	MIL-C-27500 Symbol H & F
(Covered in MIL-C-12064)				SBR	Chloroprene		4940	Cable Assemblies, Electrical	MIL-C-45820 Types I & II

MIL-HDBK-699A(MR)

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER COMMONLY USED		OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.		INSULATION	JACKET				
(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)									
Air, elongation	Ambient	-	Min: jkt 100%	PVC	PVC		6145	Cables; Twisted Pairs and Triples, Internal Hookup, Shielded and Unshielded	MIL-C-55021 Symbol P & SP
Air, mandrel bend	-40	4	No cracking						
Air, oven aging	212	96	Max E chg: jkt -35%						
Air, elongation	Ambient	-	Min: jkt 250%	Polyethylene	PVC		6145	Cable, Telephone, WM-130 ( )/G	MIL-C-55036
Air, mandrel bend	-67	24	No cracking						
Air, oven aging	178	346	Max E chg: jkt -10%						
(Jacket covered in MIL-I-3930 Type JN-L)				Polyethylene	Chloroprene		6145	Cable, Telephone, WM-130( )/G	MIL-C-55036
Air, elongation	Ambient	-	Min: ins 250%; jkt 150%	Rubber, type not known	Chloroprene		6145	Cable, Special Purpose, Electrical (Retractable)	MIL-C-55040
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	Polyethylene	PVC		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 WT-26( )/U	MIL-C-55483
Air, elongation	Ambient	-	Min: (jkt.) 175%	Ethylene - Propylene	SBR, or EDDM		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)						

## MISCELLANEOUS RUBBER ITEMS

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, hardness Air, oven aging Steam	Ambient 270 400	- 0.5 3	C1 A, 95-100; C1 b, 70-80; C1 C, 60-65 No disintegration or blistering No disintegration (Class A only)	Natural or synthetic		4510	Valves, Pump, Rubber	ZZ-V-51
Air, 90° bend Air, oven aging	-40 158	120 70	No cracks Hardness increase, 0 to +5	Natural or SBR			Rubber Cups for Hydraulic Actuating Cylinders	SAE J60
Air, original properties Air, oven aging Steam, 15 psi	Ambient 158 -	- 168 2	T, 3000 psi min; E, 800% min Tensile change, -25% max T, 2000 psi min	Natural		6510	Bandages; Rubber	ZZ-B-101
Air, breaking strength Air, elasticity	Ambient Ambient	- -	Warp, 20 lbs min; Filling, 45 lbs min Elongation, 120% min	Cotton yarn and rubber strands. Type rubber not specified		6510	Bandages; Cotton, Elastic (Washable)	JJ-B-102 Type II
Air, original properties Air, oven aging	Ambient 158	- 168	T, 1400 psi min; E, 250% min Tensile change, -25% max	Natural, SBR, chloroprene or butyl		3030	Belting; Conveyor (Rubber and Synthetic Rubber)	ZZ-B-206 Types A, B & D
Preproduction sample must meet procuring activity requirements				Type I - cotton duck and natural Type II - cotton duck and synthetic rubber		3030	Belting, V, Link, Impregnated Cotton Duck and Metal Studs	ZZ-B-220
Air, original properties Air, oven aging	Ambient 158	- 168	T, 600 psi min; E, 300% min T and E change, -25% max	Natural and synthetic		8125	Rings; Jar, Rubber and Synthetic Rubber	ZZ-R-351
Air, original properties Air, oven aging	Ambient 212	- 70	T, 1400 psi min; E, 600% min T change, -30% max; E change, -40% max	Natural		1670	Rings; Parachute Vent, Molded Rubber	ZZ-R-371
Air, original properties Air, 180° crease	Ambient 0	- 1	T, 2000 to 2300 psi; E, 50 to 200% No cracks	PVC		8135	Plastic Film, Flexible, Vinyl Chloride	L-P-375 Type I
Air, original properties Air, 180° crease	Ambient -40	- 1	T, 1600 psi min; E, 50 to 225% No cracks	PVC		8135	Plastic Film, Flexible, Vinyl Chloride	L-P-375 Type II
Air, original properties Air, oven aging	Ambient 158	- 168	T, 2500 psi min; E, 750% min Tensile strength; 2000 psi min	Natural, butyl, SBR or chloroprene		6515	Tourniquets; Rubber and Synthetic Rubber, Tubular	ZZ-T-606

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, hardness	Ambient	-	10 to 95, depending on type	Natural or synthetic		7510	Erasers, Rubber and Rubber Substitute	ZZ-E-661
Air, 90° bend	-42	120	No cracks	Natural		2530	Cups, Hydraulic-Brake, Natural Rubber	ZZ-C-746
Air, oven aging	158	70	Hardness change, 0 to +5					
Brake fluid, VV-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 ±10%					
Compression set @ 40% defl.	194	96	45% max set					
No physical property requirements				Natural		6640	Bulb, Dropping, Pipet	NNN-B-788
Air, inflation @ 3 psi	Ambient	-	No leakage	Fabric coated with SBR, butyl or chloroprene		6530	Cushions; Ring, Cloth-Inserted	ZZ-C-791
Air, original properties	Ambient	-	T, 1700 psi min; E, 400% min	Natural or synthetic		6530	Cushions; Ring, Rubber	ZZ-C-796
Air, oven aging	158	166	T change, -20% max; E change, -25% max					
Air, inflation @ 3 psi	Ambient	-	No leakage					
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					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Cooling medium, ASTM D746 Air, oven aging Air, compression set	Ambient -67 450 212	- - 24 22	T, 250 psi min; E, 100% min No cracks Change in T and E, -25% max 60% max	Silicone			Silicone Rubber Compound, Room Temperature Vulcanizing, 15,000 Centipoises Viscosity (Durometer 35-55)	AMS 3362
Air, original properties Cooling medium, ASTM D746 Air, oven aging Air, compression set	Ambient -67 -50 212	- - 24 22	T, 300 psi min; E, 100% min No cracks Elongation change, -15% max 35% max	Silicone			Silicone Rubber Compound, Room Temperature Vulcanizing, 50,000 Centipoises Viscosity, Short Pot Life (Durometer 35-55)	AMS 3364
Air, original properties Cooling medium, ASTM D746 Air, oven aging Air, compression set	Ambient -67 450 212	- - 24 22	T, 500 psi min; E, 100% min No cracks Change in T and E, -25% max 70% max	Silicone			Silicone Rubber Compound, Room Temperature Vulcanizing, 1,200,000 Centipoises Viscosity (Durometer 55-70)	AMS 3367
Air, original properties Cooling medium, hand bend Air, oven aging SAE 20 paraffin oil	Ambient 0 158 Ambient	- 0.5 96 24	T, 2000 psi min; E, 250% min; H, 70-85 No cracks Change in T, E and H, 0% max Change in T, E and H, 0% max	PVC	Yes	9330	Plastic Sheet, Polyvinyl Chloride, Plasticized, Elastomeric	MIL-P-3584
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3 petroleum oil	Ambient -40 250 212	- - 2 8	T, 1800 psi min; E, 300% min No cracks Lengthwise shrinkage, 10% max Lengthwise shrinkage, 10% max	PVC			Plastic Extrusions, Flexible Polyvinyl Chloride	AMS 3630
Air, original properties Cooling medium, ASTM D746 Air, oven aging ASTM #3, petroleum oil	Ambient -25 265 212	- - 2 8	T, 1800 psi min, E, 250% min No cracks Lengthwise shrinkage, 10% max Lengthwise shrinkage, 10% max	PVC			Plastic Extrusions, Flexible, High Temperature Polyvinyl Chloride	AMS 3631
(Rubber covered by Grades 25, 50, or 60, Class III of (ZZ-R-765)				Silicone	Yes	5930	Boots, Dust and Water Seal (For Toggle and Pushbutton Switches and Rotary-Actuated Parts), General Specification For	MIL-B-5423
(Tests on separator material only)								
Air, mandrel bend Air, oven aging Petroleum oil, MIL-H-5606	-65 158 158	72 168 168	No cracks T change, -20% max; E change, -30% max Volume change, 0 to +15%	Nitrile rubber separator	Yes	1650	Accumulators, Aircraft Hydropneumatic Pressure	MIL-A-5498 Type I

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	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-6891
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)				Nitrile		5340	Clamps, Tube Support, Loop Type	MIL-C-8603 Type II
(Rubber covered in AMS 3209)				Chloroprene		5340	Clamps, Tube Support, Loop Type	MIL-C-8603 Type III
Air, original properties	Ambient	-	H, 45-75; T, 400 psi min	Silicone		5340	Clamps, Tube Support, Loop Type	MIL-C-8603 Type IV
Air, oven aging	500	24	H change, +20 max; T change, -5% max					
Air, original properties	Ambient	-	T, 3000 psi min; E, 700% min	Natural		8465	Bladder, Pneumatic B-5 Life Preserver	MIL-B-8743
Air, oven aging	160	72	Change in T, -25% max					
Air, original properties	Ambient	-	T, 5 lbs/inch width; E, 15% min	Type of material not specified		9330	Film, Elastomeric, Pigmented, For Use In The Manufacture of Aircraft Decalcomanias	MIL-F-8799
Air, impact loading	-20	5	No cracks under 10 ft-lb load					
85/15, paint thinner/xylene	Ambient	-	No visible deterioration					
Air, original properties	Ambient	-	T, 1000 psi min; E, 300% min	Nitrile		4920	Repair Material, For Sealing Fuel Tanks	MIL-R-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			5340	Shock Mounts, M-447, M-448, M-449 and Bracket FT-512	MIL-S-12100
Cooling medium, ASTM D746	-60	-	No cracks	Natural or chloroprene				

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, hardness Air, oven aging	Ambient 158	- 168	75 ± 5 Change in hardness, +10 max	Natural		7510	Eraser, Rubber-Pumice (For Testing Coated Optical Elements)	MIL-E-12397
Air, resilience Air, load deflection	122 -40	- 100	Impact resilience of 65-75% 300% max increase in stiffness	Natural or chloroprene		5340	Mounts, Vibration	MIL-M-12863
Air, hardness Air, 90° bend Air, oven aging Brake fluid, VV-H-910	Ambient -40 212 250	- 22 70 70	50 to 75 No cracking 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
(Tests on rubber only) Air, original properties Air, ASTM D746 Air, oven aging	Ambient -40 158	- 168 166	T, 1500 psi min; E, 300% min No cracks Change in elongation, -35% max	SBR coated nylon		5430	Tanks, Fabric, Collapsible: Water, Nylon, Rubber-Coated	MIL-T-14398
(Rubber covered by Grade RS510F <sub>2</sub> of MIL-R-3065)				SBR, glass cloth laminate		1055	Guard, Bellows, Rocket Launcher M21	MIL-G-14524
Air, hardness Air, compression @ 750 psi Air, 300-350 ft lb impacts	Ambient Ambient Ambient	- 0.5 2/min	70 ± 5 No permanent set or cutting No cutting	Natural or synthetic	Yes	1020	Rubber Facing (For Rammer Heads)	MIL-R-16920
Air, original properties Air, compression set Air, oven aging Air, resilience	Ambient 30 194 80	- 96 96 -	T, 1800 psi min; E, 300% min 15% max T change, -20% max; E change, -25% max 70% max	Nitrile		9320	Rubber Special-Shaped Section; For Mountings	MIL-R-17006
Air, original properties Air, compression set Air, oven aging ASTM #3 petroleum oil	Ambient 30 194 Ambient	- 94 46 46	T, 2200 psi min; E, 650% min; H, 38 ± 5 40% max T, 2100 psi min; E, 600% min Volume change, +15% max	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Portsmouth Bonded Spool Type	MIL-M-17191 Class A
Air, original properties Air, compression set Air, oven aging ASTM #3 petroleum oil	Ambient 30 194 Ambient	- 94 46 46	T, 2500 psi min; E, 600% min; H, 43 ± 5 37% max T, 2400 psi min; E, 550% min Volume change, +15% max	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Portsmouth Bonded Spool Type	MIL-M-17191 Class B
Air, original properties Air, compression set Air, oven aging ASTM #3 petroleum oil	Ambient 30 194 Ambient	- 94 46 46	T, 2800 psi min; E, 575% min; H, 48 ± 5 34% max T, 2700 psi min; E, 525% min Volume change, +15% max	Chloroprene or nitrile	Yes	5340	Mounts, Resilient; Spool Type	MIL-M-17191 Class C

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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	Natural	Yes	5340	Mounts, Resilient; Naval Engineering Station Types 6E2000, 6E900, 7E450, 6E150, and 6E100	MIL-M-17508 Type 6E100
Air, original properties	Ambient	-	T, 2200 psi min; E, 550% min; H, 35 ± 5					
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 Types 6E2000 and 6E900
Air, compression set	30	94	60% min					
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 of rubber not known		4820	Disk, Valve, Non-Metallic (Synthetic Rubber): Insert Type	MIL-D-17650
Air, oven aging	212	70	T, 1600 psi min; E, 55% min					
Water	212	70	Volume change, 0 to +15%					
(Tests on rubber only)				Type of rubber not known	Yes	3130	Bearing Components, Bonded Synthetic Rubber, Water Lubricated	MIL-B-17901
Air, original properties	Ambient	-	T, 1500 psi; E, 150% min; H, 65 to 90					
Air, oven aging	158	96	T and E change, ± 25% max					
Water	Ambient	168	Volume change, +5% max					
(Tests on rubber only)				Nylon yarn and natural rubber thread		8305	Webbing, Nylon, Elastic	MIL-W-17965
Air, oven aging	158	168	Set no greater than that of std. sample					
Air, oven aging	158	168	E no less than that of std. sample					

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	OPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
Air, original properties Air, compressed under 25 psi Air, oven aging  (Covered in ASTM D1048)	Ambient -25 158	- 3 48	T, 1000 psi min; E, 400% min; H, 40 ± 5 No cracks T change, -20% max; H change, +20 max	Type or rubber not known		6650	Eye Guards, Rubber, For Optical Instruments	MIL-E-18648
				Natural or synthetic		5970	Insulation Blanket, Electrical	MIL-I-19254
Air, original properties Air, compression set Air, oven aging ASTM #3 petroleum oil	Ambient 30 194 Ambient	- 94 46 46	T, 2200 psi min; E, 650% min; H, 38 ± 5 50% max T, 2100 psi min; E, 650% min Volume change, +15% max	Chloroprene or nitrile		5340	Mounts, Resilient, Mare Island Types 11M15, 11M25 and 10M50	MIL-M-19379 Types 11M15 and 11M25
Air, original properties Air, compression set Air, oven aging ASTM #3 petroleum oil	Ambient 30 194 Ambient	- 94 46 46	T, 2800 psi min; E, 575% min; H, 48 ± 5 60% max T, 2700 psi min; E, 525% min Volume change, +15% max	Chloroprene or nitrile		5340	Mounts, Resilient, Mare Island Types 11M15, 11M25 and 10M50	MIL-M-19379 Type 10M50
Air, original properties Air, compression set Air, oven aging	Ambient 30 194	- 94 46	T, 2800 psi min; E, 500% min; H, 50 ± 5 25% max T, 2200 psi min; E, 450% min	Natural	Yes	5340	Mount Resilient; Type 5B5000-H	MIL-M-19863
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 Air, leakage	Ambient 28	- 48	269 lbs min No leakage when bladder inflated	Chloroprene coated nylon cloth		8465	Bladder, Flotation, MK2 Mod 0 and MK2 Mod 1	MIL-B-21160
Air, original properties Air, compression set Air, oven aging	Ambient 30 194	- 94 46	T, 3000 psi min; E, 500% min; H, 45 ± 5 20% max T, 2500 psi min; E, 450% min	Natural	Yes	5340	Mount, Resilient, Type 5M10,000-H	MIL-M-21649
Air, original properties Air, compression set Air, oven aging	Ambient 194 194	- 48 48	T, 1800 psi min; E, 400% min 30% max T and E change, -20% max	Natural or synthetic		5340	Mounts, Resilient, Shear (For Use in Shipping Containers)	MIL-M-22322 Class A
Air, original properties Air, compression set Air, oven aging	Ambient 194 194	- 48 48	T, 1200 psi min; E, 400% min 30% max T and E change, -20% max	Natural or synthetic		5340	Mounts, Resilient, Shear (For Use in Shipping Containers)	MIL-M-22322 Classes B & C

SPECIFICATION TEST CONDITIONS			SPECIFICATION REQUIREMENTS	ELASTOMER SPECIFIED OR COMMONLY USED	QPL ISSUED	FSC CLASS	SPECIFICATION TITLE	SPECIFICATION NUMBER
ENVIRONMENT AND TEST	TEMP., °F	TIME, HRS.						
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	168	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 synthetic		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 pphm	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

MIL-HDBK-699A(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		

Custodian:

Army-MR

Preparing Activity:

Army-MR

(Project No. 9320-A115)

Review: ME, WC

User: EL, GL, MI

