

FED. SUPPLY CLASS

5330

1. SCOPE

1.1 This document sets forth design considerations for gasket type static seals of custom design, to be used between mating surfaces of parts and/or equipment transmitting or confining liquid or gaseous fluid media.

2. BASIS

2.1 It is recommended that the drawing prepared by the design activity be coordinated with the gasket manufacturer.

2.2 Dimensions in inches.

3. DESIGN PROCEDURE

3.1 This standard tabulates retainer and seal parameters and illustrates a typical subject type sealing gasket.

3.2 The sealing element described in this design standard provides capability of sealing fluid pressures up to 3,000 PSI.

3.3 The bonding of the elastomer sealing element to the retainer shall be compatible with the intended fluid media.

3.4 The following enlarged cross-sectional view illustrates the custom designed elastomer sealing element.

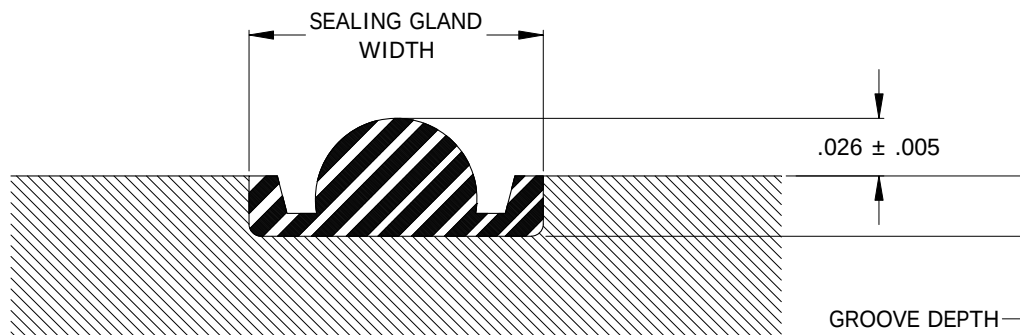


FIGURE 1 – ELASTOMER SEALING ELEMENT

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1000 WILSON BLVD.
ARLINGTON, VA 22209

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME
PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST
REVISION DATE:

REVISION DATE: JUNE 30, 2015

ISSUE DATE: NOVEMBER 1964

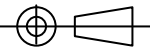
THIRD ANGLE PROJECTION 	CUSTODIAN NATIONAL AEROSPACE STANDARDS COMMITTEE	REVISION 4
PROCUREMENT SPECIFICATION NONE	TITLE GASKET, SEALING, CUSTOM DESIGN	CLASSIFICATION DESIGN STANDARD NAS1412 SHEET 1 OF 11

TABLE I – RECOMMENDED ELASTOMER COMPOUNDS FOR COMPATIBILITY WITH VARIOUS FLUID MEDIA

FLUID MEDIA /a/	TEMPERATURE RANGE (°F)		RECOMMENDED ELASTOMER (POLYMER BASE)	ELASTOMER SPECIFICATION
	MINIMUM	MAXIMUM		
AEROZINE 50 (50% HYDRAZINE, 50% UDMH) (MIL-PRF-27402)	–65	+250/+400	EPR	Commercial
	–65	+300	Butyl	Commercial
AIR	–60	+450	Silicone (static only)	Commercial
	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
AIR (HIGH TEMPERATURE)	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
	–60	+450	Silicone (static only)	Commercial
AMMONIA, ANHYDROUS	–65	+250/+400	EPR	Commercial
	–65	+300	Butyl	Commercial
	–50	+300	Chloroprene	MIL-PRF-6855, Class 2
ASKAREL (TRANSFER FLUID)	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
BORON FUELS (HEF)	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
CELLULUBES	–65	+250/+400	EPR	Commercial
	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
	–65	+300	Butyl	Commercial
DI-ESTER SYNTHETIC LUBRICANTS (MIL-PRF-6085) (MIL-L-27502) (MIL-PRF-7808) (MIL-PRF-8188)	–65	+275	Nitrile	MIL-R-7362-AMS-R-7362 Composition A, Type II
	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
DIFLUORODIBROMOMETHANE	–65	+250/+400	EPR	Commercial
ETHYLENE GLYCOL (O-A-548 A-A-52624, Type I)	–40	+220	Nitrile	Commercial
	–50	+300	Chloroprene	MIL-PRF-6855, Class 2
	–65	+250/+400	EPR	Commercial
	–15	+400/+500	Fluoroelastomer	MIL-R-83248, Type I, Class 1 AMS7276
	–65	+300	Butyl	Commercial
FLUOROLUBE	–65	+250/+400	EPR	Commercial
	–40	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	–50	+300	Chloroprene	MIL-PRF-6855, Class 2
FLUOROCARBON LIQUIDS	–70	+300	Butyl	Commercial
	–65	+250/+400	EPR	Commercial
FREON 11	–65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	–15	+400/+500	Fluoroelastomer	Commercial

REVISION

4

NAS1412

SHEET 2

Document Sharing Hub

USE OF OR RELIANCE UPON THIS DOCUMENT OR ANY NATIONAL AEROSPACE STANDARD IS ENTIRELY VOLUNTARY. AIA DOES NOT QUALIFY SUPPLIERS OR CERTIFY

Copyright Aerospace Industries Association of America Inc. AIA MAKES NO REPRESENTATION OR CLAIM RESPECTING (1) THE SUITABILITY OF
Provided by IHS under license with AIA/NAS Licensee= www.sepana.ir/5991803002, User=sam, albert
No reproduction or networking permitted without license from IHS Not for Resale, 01/04/2016 02:43:39 MST TRADEMARK RIGHTS.

Full document details: AIA NAS1412 2015

AEROSPACE INDUSTRIES ASSOCIATION OF AMERICA, INC.
1000 WILSON BLVD.
ARLINGTON, VA 22209

THIS DRAWING SUPERSEDES ALL ANTECEDENT STANDARD DRAWINGS FOR THE SAME
PRODUCT AND SHALL BECOME EFFECTIVE NO LATER THAN SIX MONTHS FROM THE LAST
REVISION DATE.

FORM 12-01

TABLE I – RECOMMENDED ELASTOMER COMPOUNDS FOR COMPATIBILITY WITH VARIOUS FLUID MEDIA (CONT.)

FLUID MEDIA /a/	TEMPERATURE RANGE (°F)		RECOMMENDED ELASTOMER (POLYMER BASE)	ELASTOMER SPECIFICATION
	MINIMUM	MAXIMUM		
FREON 12	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-15	+400/+500	Fluoroelastomer	Commercial
	-50	+225	SBR	Commercial
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
FREON 13	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-65	+250/+400	EPR	Commercial
	-15	+400/+500	Fluoroelastomer	Commercial
FREON 22	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-50	+225	SBR	Commercial
	-65	+250/+400	EPR	Commercial
FREON 113	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
FREON 114	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-65	+250/+400	EPR	Commercial
	-15	+400/+500	Fluoroelastomer	Commercial
FREON 115	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-65	+250/+400	EPR	Commercial
FREON 13B1	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-65	+250/+400	EPR	Commercial
	-15	+400/+500	Fluoroelastomer	Commercial
FUEL HYDROCARBON (~~TT-S-735, TYPE I, II, III~~ ASTM D471, Ref. Fuel A, B, D) (~~MIL-G-5572~~ ASTM D910) (MIL-DTL-5624, JP-4, JP-5)	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-15	+400/+500	Fluoroelastomer	~~MIL-R-83248, Type I, Class 1~~ AMS7276
FUEL, ROCKET AND RAM JET (MIL-DTL-25576, RP-1)	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-15	+400/+500	Fluoroelastomer	~~MIL-R-83248, Type I, Class 1~~ AMS7276
FUEL OIL (MIL-DTL-16884)	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-15	+400/+500	Fluoroelastomer	~~MIL-R-83248, Type I, Class 1~~ AMS7276

REVISION

4

NAS1412
SHEET 3



Document Sharing Hub

USE OF OR RELIANCE UPON THIS DOCUMENT OR ANY NATIONAL AEROSPACE STANDARD IS ENTIRELY VOLUNTARY. AIA DOES NOT QUALIFY SUPPLIERS OR CERTIFY

Copyright Aerospace Industries Association of America Inc. THIS DOCUMENT IS PRODUCED UNDER NATIONAL AEROSPACE STANDARD: AIA MAKES NO REPRESENTATION OR CLAIM RESPECTING (1) THE SUITABILITY OF
Provided by IHS under license with AIA/NAS Licensee= www.sepana.ir/5991803002, User=sam, albert
No reproduction or networking permitted without license from IHS

Not for Resale, 01/04/2016 02:43:39 MST TRADEMARK RIGHTS.

Full document details: AIA NAS1412 2015

TABLE I – RECOMMENDED ELASTOMER COMPOUNDS FOR COMPATIBILITY WITH VARIOUS FLUID MEDIA (CONT.)

FLUID MEDIA /a/	TEMPERATURE RANGE (°F)		RECOMMENDED ELASTOMER (POLYMER BASE)	ELASTOMER SPECIFICATION
	MINIMUM	MAXIMUM		
GREASES (MIL-PRF-23827) (MIL-G-25537)	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-15	+400/+500	Fluoroelastomer	MIL R 83248, Type I, Class 1 AMS7276
GREASE, SILICONE	-90	+350	Fluorinated Silicone	MIL-DTL-25988
	-65	+250/+400	EPR	Commercial
	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-15	+400/+500	Fluoroelastomer	Commercial
	-50	+300	Chloroprene	MIL-PRF-6855, Class 2
HELIUM	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-15	+400/+500	Fluoroelastomer	Commercial
	-50	+300	Chloroprene	MIL-PRF-6855, Class 2
	-65	+250/+400	EPR	Commercial
HYDRAULIC FLUID PETROLEUM BASE (MIL-PRF-5606) (MIL-PRF-87257) (MIL-PRF-83282)	-65	+275	Nitrile	MIL-P-25732
	-15	+400/+500	Fluoroelastomer	MIL R 83248, Type I, Class 1 AMS7276
HYDRAULIC FLUID PHOSPHATE ESTER (MIL-H-19457)	-65	+250/+400	EPR	Commercial
	-70	+300	Butyl	Commercial
HYDRAULIC FLUID SILICATE ESTER SYNTHETIC BASE (MLO-8200) (MLO-8515) (OS-45)	-65	+300	Neoprene	ASTM D2000 BC 712 BE F11F10
	-15	+400/+500	Fluoroelastomer	MIL R 83248, Type I, Class 1 AMS7276
HYDRAULIC FLUID SYNTHETIC HYDROCARBON BASE (MIL-PRF-83282)	-65	+275	Nitrile	MIL-P-25732
HYDRAZINE (MIL-PRF-26536)	-70	+300	Butyl	Commercial
	-65	+250/+400	EPR	Commercial
HYDRAZINE, MONOETHYL (MIL-PRF-27404)	-70	+300	Butyl	Commercial
	-65	+250/+400	EPR	Commercial
HYDROGEN	-65	+212	Nitrile	MIL-PRF-6855, Class I, Grade 60 /b/
	-65	+250/+400	EPR	Commercial
	-15	+400/+500	Fluoroelastomer	MIL R 83248, Type I, Class 1 AMS7276
	-50	+300	Chloroprene	MIL-PRF-6855, Class 2

REVISION

4

NAS1142

SHEET 4



Document Sharing Hub

USE OF OR RELIANCE UPON THIS DOCUMENT OR ANY NATIONAL AEROSPACE STANDARD IS ENTIRELY VOLUNTARY. AIA DOES NOT QUALIFY SUPPLIERS OR CERTIFY

Copyright Aerospace Industries Association of America Inc. THIS DOCUMENT IS PRODUCED UNDER NATIONAL AEROSPACE STANDARD: AIA MAKES NO REPRESENTATION OR CLAIM RESPECTING (1) THE SUITABILITY OF
Provided by IHS under license with AIA/NAS Licensee= www.sepana.ir/5991803002, User=sam, albert
No reproduction or networking permitted without license from IHS Not for Resale, 01/04/2016 02:43:39 MST TRADEMARK RIGHTS.

Full document details: AIA NAS1412 2015