



### ARAFLEXGASKET

Araflex gaskets and Jointings started its operation in India under the partnership of experts of gaskets since decades. CNAF sheets are the prime focused product under the Araflex roof and manufacture other gasket raw materials like PTFE sheets (Filled & Pure) and Graphite sheets.

Gaskets are considered as a problem solver for joint leakage hassles in industry. Joint leakages are caused by several reasons, but a proper gasket can stop 99% of emissions and fluid leakages to the desired levels. The selection of gaskets depends up on various engineering factors need an expert opinion and a trained technician for installation.

Manufacturing techniques of gaskets are of utmost important to ensure proper sealing. Araflex can supply the highest quality gasket sheets and gaskets by following the latest technology and automations in their factory.

### Mission & Visions

Develop a potential market for gasket sheets and gaskets in India and foreign market is our prime mission by developing mutual trust and 24/7 service to the valuable customers.

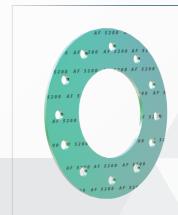
Cater complete gasket raw materials and gaskets under one roof with highest quality standards and utmost important to human safety as a motto is our vision.





# **STYLE: AF-5200**

Mild and less severe applications are always there but why go for traditional and costly gasket sheets? We design an economic combination of HIGH QUALITYAramid fibers and Inorganic fibers bonded with NBR. Recommended for mild services in piping installation applications, work with mild steam, hydrocarbons and refrigerants.



Color	Green, Branded
Fiber:	Aramid/Inorganic
Binder:	Nitrile (NBR)
Fluid Service:	Steam, Water, Oils, Dilute Acids &Alkalies Solvents, Refrigerants.
Density:	1.7 g/cm3
Tensile Strength ASTM F 152:	1500 psi (11.3Mpa)
Change in Tensile, ASTM F-152	30% Max
Compressibility ASTM F 36:	8 to 19%
Recovery ASTM F 36:	45%
Temperature	
Range:	-100 to 662°F (-73 to 350°C)
Max, Continuous :	413°F (212°C)
Max. Pressure:	870 psig (60 bar)
Fluid Resistance-ASTM F146	
IRM 903 Oil, 5h/300°F (150°C)	
Thickness increase:	0 to 15%
Weight increase:	15%



ASTM Fuel B 5h/70°F (21°C)	
Thickness Increase:	0 to 10%
Weight increase:	12%
Sealability	
ASTM F 37 (Fuel A):	0.03ml/hr
ASTM F37 (Nitorgen):	0.5 ml/hr
Dielectric Breakdown ASTM D 149:	11kV/mm (279V/mil)
DIN 3535 Gas Permeability:	0.05cc/min
Creep relaxation ASTM F 38:	20%
Flexibility ASTM F1 47:	10x
Gasket Factors of Araflex-AF-5200	

THICKNESS	1/16"	1/8"
m factor	3	3.2
y psi (Mpa)	3347 (23.08)	3385 (23.34)

### Note:

ASTM properties based on 1/16" sheet thickness except ASTM F38, which is based on 1/32" sheet thickness. This is a general guide only and should not be the sole means of accepting or rejecting this material. The data listed here falls within the normal range of product properties but should not be used to establish specification limits nor used alone as the basis of design.

AraflexWarning: Araflex gasket materials should never be recommended when both the temperature and the pressure are at the maximums listed. Properties and applications shown are typical. No application should be undertaken by anyone without independent study and evaluation for suitability. Never use more than one gasket in one flange joint, and never reuse a gasket. Improper use or gasket selection could cause property damage and/or serious personal injury. The data reported is a compilation of field testing, field service reports and/or in-house testing. While the utmost care has gone into publishing the information contained herein, we assume no responsibility for errors. The information and specifications contained in this website are subject to change without notice. This revision cancels and obsoletes all previous editions.



# **STYLE: AF-5350**

The widely used and high-performance gasket sheet from Araflex to apply joints where doubts of leaking exist, Highest quality of Aramid fiber in extra % added with inorganic fiber and superior quality NBR binder. Excellent with natural gas, Steam, new generation refrigerants, chemical, refinery, gas pipe line, food beverage and pharmaceutical industries.





# **TYPICAL PROPERTIES**

Color	Blue, Branded
Fiber:	Aramid/Inorganic
Binder:	Nitrile (NBR)
Fluid Service:	Steam, natural gas, chemicals, Hydrocarbons Solvents, Refrigerants, food and beverages.
Density:	1.7 g/cm <sup>3</sup>
Tensile Strength ASTM F 152:	2000 psi (13.8 Mpa)
Change in Tensile, ASTM F-152	30% Max
Compressibility ASTM F 36:	8 to 16%
Recovery ASTM F 36:	50%
Temperature	
Range:	-100 to 700°F (-73 to 370°C)
Max. Continuous :	548°F (280°C)
Max. Pressure:	1500 psig (103 bar)
Fluid Resistance-ASTM F146	
IRM 903 Oil, 5h/300°F (150°C)	
Thickness increase:	0 to 15%
Weight increase:	15%
ASTM Fuel B 5h/70°F (21°C)	
Thickness Increase:	0 to 10%
Weight increase:	10%
Sealability	
ASTM F 37 (Fuel A):	0.01ml/hr.



ASTM F37 (Nitorgen):	0.4 ml/hr.
Dielectric Breakdown ASTM D 149:	11.7kV/mm (297V/mil)
DIN 3535 Gas Permeability:	0.03cc/min
Creep relaxation ASTM F 38:	20%
Flexibility ASTM F1 47:	10x
Gasket Factors of Araflex-FLEXGUARD 300	

THICKNESS	1/16"	1/8"
m factor	2.7	4.2
y psi (Mpa)	2359 (16)	2930 (20.20)



Note: ASTM properties based on 1/16" sheet thickness except ASTM F38, which is based on 1/32" sheet thickness. This is a general guide only and should not be the sole means of accepting or rejecting this material. The data listed here falls within the normal range of product properties but should not be used to establish specification limits nor used alone as the basis of design.

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# STYLE: AF-5400

Proved suitable for extreme application range, AF-5400 is widely used in process piping and equipment in chemical, pulp and paper and many other industrial applications. High quality non-asbestos fiber (Aramid Fiber) and excellent heat/oil resistant Nitrile Rubber (NBR) are compounded and calendared into a gasket sheet well suited for use with steam hot oil, oil gas.





# **TYPICAL PROPERTIES**

Color	Golden, Branded
Fiber:	Aramid
Binder:	Nitrile (NBR)
Fluid Service:	Steam, Water, Oils, Dilute Acids & Alkalies Hydrocarbons, Solvents, Refrigerants.
Density:	1.7 g/cm <sup>3</sup>
Tensile Strength ASTM F 152:	1800 psi (12.4 Mpa)
Change in Tensile, ASTM F-152	30% Max
Compressibility ASTM F 36:	8 to 16%
Recovery ASTM F 36:	50%
Temperature	
Range:	-100 to 800°F (-73 to 427°C)
Max. Continuous:	554°F (290°C)
Max, Pressure:	1500 psig (103 bar)
Fluid Resistance-ASTM F146	
IRM 903 Oil, 5h/300°F (150°C)	
Thickness increase:	0 to 15%
Weight increase:	15%
ASTM Fuel B 5h/70°F (21°C)	
Thickness Increase:	0 to 10%
Weight increase:	15%
Sealability	
ASTM F 37 (Fuel A):	0.03ml/hr





ASTM F37 (Nitorgen):	0.5 ml/hr	
Dielectric Breakdown ASTM D 149:	14kV/mm (370V/mil)	
DIN 3535 Gas Permeability:	0,05cc/min	
Creep relaxation ASTM F 38:	25%	
Flexibility ASTM F1 47:	8x	
Gasket Factors of Araflex-FLEXGUARD 300		
THICKNESS	1/16"	1/8"
m factor	3.7	3.0
y psi (Mpa)	3515 (24,2)	4010 (27.50)

Note: ASTM properties based on 1/16" sheet thickness except ASTM F38, which is based on 1/32" sheet thickness. This is a general guide only and should not be the sole means of accepting or rejecting this material. The data listed here falls within the normal range of product properties but should not be used to establish specification limits nor used alone as the basis of design.

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# STYLE: AF-5450

A distinctive design of Araflex for a high trouble sealing area of Steam and Hydrocarbons. Piping experts always demand an alternate to graphite gaskets. AF-5450 contains high strength carbon fibers bonded with NBR synthetic rubber. Best worked with refinery, petrochemical, water desalination and power generating industries.





# **TYPICAL PROPERTIES**

Color	Black, Branded
Fiber:	Aramid
Binder:	Carbon Fiber
Fluid Service:	Steam, Water, Oils, Dilute Acids & Alkalies Hydrocarbons, Solvents, Refrigerants.
Density:	1.6 g/cm <sup>3</sup>
Tensile Strength ASTM F 152:	1800 psi (12.4 Mpa)
Change in Tensile, ASTM F-152	25% Max
Compressibility ASTM F 36:	8 to 16%
Recovery ASTM F 36:	50%
Temperature	
Range:	-100 to 752°F (-73 to 400°C)
Max. Continuous:	600°F (315°C)
Max. Pressure:	2175 psig (150 bar)
Fluid Resistance-ASTM F146	
IRM 903 Oil, 5h/300°F (150°C)	
Thickness increase:	0 to 10%
Weight increase:	10%
ASTM Fuel B 5h/70°F (21°C)	
Thickness Increase:	0 to 10%
Weight increase:	12%
Sealability	
ASTM F 37 (Fuel A):	0.03ml/hr





ASTM F37 (Nitorgen):	0.4 ml/hr
Dielectric Breakdown ASTM D 149:	14kV/mm (370V/mil)
DIN 3535 Gas Permeability:	0.05cc/min
Creep relaxation ASTM F 38:	18%
Flexibility ASTM F1 47:	10x
Gasket Factors of Araflex-FLEXGUARD 300	
THICKNESS	1/16" 1/8"
m factor	3.7 3.0
y psi (Mpa)	3515 (24.2) 4010 (27.50)

Note: ASTM properties based on 1/16" sheet thickness except ASTM F38, which is based on 1/32" sheet thickness. This is a general guide only and should not be the sole means of accepting or rejecting this material. The data listed here falls within the normal range of product properties but should not be used to establish specification limits nor used alone as the basis of design.

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# STYLE: AF-5450W

Extended from AF 5450 to AF 5450W by spreading steel wire to withstand severe conditions of pressure and temperature. AF-5450W contains high strength carbon fibers bonded with NBR synthetic rubber and steel wire reinforced. Best worked with boilers, refinery, petrochemical, water desalination and power generating industries.





# **TYPICAL PROPERTIES**

Color	Black, Branded
Fiber:	Carbon Fiber
Binder:	Nitrile (NBR)
Reinforcement:	Steel Wire
Fluid Service:	Steam, Water, Oils, Dilute Acids & Alkalies Hydrocarbons, Solvents, Refrigerants.
Density:	1.6 g/cm <sup>3</sup>
Tensile Strength ASTM F 152:	2175 psi (15.0 Mpa)
Change in Tensile, ASTM F-152	20% Max
Compressibility ASTM F 36:	10 to 17%
Recovery ASTM F 36:	40%
Temperature	
Range:	-100 to 752°F (-73 to 400°C)
Max, Continuous :	600°F (315°C)
Max. Pressure:	2175 psig (150 bar)
Fluid Resistance-ASTM F146	
IRM 903 Oil, 5h/300°F (150°C)	
Thickness increase:	0 to 10%
Weight increase:	10%
ASTM Fuel B 5h/70°F (21°C)	
Thickness Increase:	0 to 10%
Weight increase:	12%
Sealability	
ASTM F 37 (Fuel A):	0,03ml/hr





ASTM F37 (Nitorgen):	0.4 ml/hr
Dielectric Breakdown ASTM D 149:	14kV/mm (370V/mil)
DIN 3535 Gas Permeability:	0.05cc/min
Creep relaxation ASTM F 38:	19%
Flexibility ASTM F1 47:	10x
Gasket Factors of Araflex-FLEXGUARD 300	
THICKNESS	1/16" 1/8"
m factor	3.8 3.0
y psi (Mpa)	3800 (26.2) 4200 (28.95)

Note: ASTM properties based on 1/16" sheet thickness except ASTM F38, which is based on 1/32" sheet thickness. This is a general guide only and should not be the sole means of accepting or rejecting this material. The data listed here falls within the normal range of product properties but should not be used to establish specification limits nor used alone as the basis of design.

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# **ARAFLON 4522 VIRGIN PTFE** (WHITE)SHEET

PTFE is a soft, low friction fluoropolymer with outstanding chemical and weather resistance. Shows high stability up to 500°F (260°C) and have high dielectric properties. Pure PTFE is extremely soft, formable and it is often used for chemical resistant seals and gasket making, PTFE Rods, Tubes & Tapes (Araflon 4555) are also available in virgin form.





Recommended		Recommended	
Strong acids		Seals & Gaskets	
Caustics, Hydrocarbons, Solvents		Valve and fitting compo	onents
Food and Beverage products		Pump Parts, Manifolds	
Petrochemical Industry		Semi-conductor equipr	ment
Metallic, organic, chemical compo	unds	Chemical resistant Tubi	ing
Cryogenic use		Not good with molten A	Alkali and Fluorine.
Operating Conditions			
Operating Conditions			
Minimum Temperature	(°C/°F)	:	-200/-328
Maximum Temperature	(°C/°F)	:	260/500
Pressure	(bar/psi)	:	55/800
Physical Properties			
Specific Gravity	ASTM D 792	:	2.14-2.18 g/cm <sup>3</sup>
Hardness Shore D	ASTMD 2240	:	51 +/-5
Compressibility	ASTM F36	:	20-25%
Recovery	ASTM F36	:	45%
Tensile Strength	ASTM F152	:	24 Mpa
Creep Relaxation	ASTM F38	:	35%
pH Range		:	0-14
Dielectric Strength (0.5mm specimen)	ASTM D149	:	40 KV/mm
m value (3mm thk)		:	2.5
y value (3mm thk)		;	2845 psi (19Mpa)

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice.

Deviations from the values hereabove indicated may occur, but they do not constitute themselves either detriment of quality or reason for



# ARAFLON 4545 EXPANDED PTFE HARD CORE (WHITE)



White Expanded Microcellular multi directional PTFF with hard core

**Applications** 

Suitable		Speci	alties	
Strong acids		Highly	compressible	
Caustics, Hydrocarbons		Can fill	flange surface	irregularities
Cryogenics		Hard co	ore reduces cre	ep and cold flow
Glass lined equipment		High bo	olt torque reten	tion property
Low bolt load FRP GRP flanges		Easily c	ompressed un	der lower loads
Food Industry		Chemic	ally inert	
Refrigerants		Long sl	nelf life	
One wasting Cornelitions				
Operating Conditions				
Minimum Temperature	(°C/°F)		:	-268/-450
Maximum Temperature	(°C/°F)		:	316/600
Maximum Continuous Temp	(°C/°F)		:	260/500
Pressure	(bar/psi)		:	85/1232
Physical Properties				
Priysical Properties				
Specific Gravity	ASTM D 792		:	0.65 to 0.1 g/cm <sup>3</sup>
Compressibility	ASTM F36		:	50-60%
Recovery	ASTM F36		:	10%
Creep Relaxation	ASTM F38		:	15%
Gas permeability (cc/min)			:	<0.015
Dielectric Strength	F149		:	250 Volts/mil
m value 1/8" (3.2mm Thk)			:	2.0

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y value 1/8" (3.2mm Thk)

2200 psi (15Mpa)



# **ARAFLON 4500 SILICA FILLED PTFE** (GOLDEN)



Suitable	Not Suitable
Conc, H2 So4 (Sulhuric Acid)	Molten Alkali
Most of the chemicals	Hydrofluoric Acids
Potable Water Supply	Fluorine Compounds, gas
Petrochemical Industry	
Pharmaceutical industry	
Food Industry	
Steam, Solvents	
Operating Conditions	

Minimum Temperature	(°C/°F)		-250/-418
Maximum Temperature	(°C/°F)		270/518
Pressure	(bar/psi)	·	85/1232

# **Physical Properties**

Specific Gravity	ASTM D 792	:	2,2g/cm <sup>3</sup>
Compressibility	ASTM F36J		
Recovery	ASTM F36J		42%
Tensile Strength	ASTM F152		14 Mpa
Creep Relaxation	ASTM F38		18%
pH Range			
Dielectric Strength	F149		20kV/mm
m value		:	4
y value		:	2175 psi (15Mpa)

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# ARAFLON 4504 GLASS FILLED PTFE (BLUE)

A special material blend of PTFE with Glass Microspheres

# Applications:



# Suitable Not Suitable

Medium conc. Acids, H2O2 Molten Alkali
Caustics, Hydrocarbons, Solvents Hydrofluoric Acids

Potable Water Supply Fluorine gas

Petrochemical Industry

Pharmaceutical Industry

Food Industry

Steam, Refrigerants, cryogenics

# **Operating Conditions**

 Minimum Temperature
 (°C/°F)
 : -250/-418

 Maximum Temperature
 (°C/°F)
 : 270/518

 Pressure
 (bar/psi)
 : 55/800

# **Physical Properties**

Specific Gravity ASTM D 792 1.6 g/cm<sup>3</sup> Compressibility ASTM F36J 25-35% % Recovery ASTM F36J 45% Tensile Strength ASTM F152 14 Mpa Creep Relaxation ASTM F38 18% 0 - 14pH Range Dielectric Strength F149 15kV/mm m value (3mm thk) 2,5 y value (3mm thk) 1800 psi (12.4Mpa)

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### **ARAFLON 4510 BARIUM SULFATE FILLED PTFE**

Caustic resistant- PTFE filled with BaSo4 off-white



# Applications:

## Suitable

Strong Caustics

Moderate Acids

Aqueous Hydrofluoric Acid (below 45%)

Pharmaceutical Industry

Food Industry

Steam, Refrigerants, cryogenics

### **Not Suitable**

Molten Alkali Metal

Fluorine gas

# **Operating Conditions**

Minimum Temperature (°C/°F) -268/-450 Maximum Temperature (°C/°F) 260/500

85/1235 Pressure (bar/psi)

# **Physical Properties**

Tensile Strength

Specific Gravity ASTM D 792 2.8 g/cm<sup>3</sup>

Compressibility ASTM F36J 5-10 %

Recovery ASTM F36J 40% ASTM F152

14% Creep Relaxation ASTM F38

pH Range 0 - 14

Dielectric Strength F149 20 kV/mm

60500 Tp max

2.0 m value (3mm thk)

y value (3mm thk) 2500 psi (17.2 Mpa)

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www.araflexgasket.com

14 Mpa

# ARAFLON 4530 GRAPHITE PTFE (BLACK)

High performance Graphite filled PTFE gasket for Conc. HF





# Applications

Recommended usages	Advantages
Concentrated Hydrofluoric Acid (HF)	Low emissions
Anhydrous Hydrogen Fluoride (AHF)	Excellent sealability
Cryogenics	No cold Flows
Monomers & refrigerants	Flexible
Steam, Oils, Caustics, Alcohols, Liquid & Gaseous O	xygen Anti-sticking
Toxic gases	Easy cutting
Resistant to Flame and Bacterial Growth	Electrical conducting

Pressure (bar/psi) : 85/1200

# **Physical Properties**

Specific Gravity ASTM D 792	:	2.1g/cm3
Compressibility ASTM F36	:	5-12%
Recovery ASTM F36	:	40%
Tensile Strength ASTM F152	:	20Mpa
Creep Relaxation ASTM F38	:	30%
pH Range	:	0-14
Dielectric Strength D149	:	1Kv/mm33 v/mil

# **Gasket Factors**

m value (1/16" Thk)	:	2.8	
y value (1/16" Thk)	;	1800 psi (12Mpa)	
m value (1/8" Thk)	:	2.0	
y value (1/8" Thk)	:	1800 psi (12Mpa)	





# Leakage

ASTM F37 (Fuel A) : 0.02ml/hr
ASTM F37 (gas N2) : 0.015ml/hr

# **Operating Conditions**

Araflon 4530 is used in Areas where pure PTFE and Barium filled PTFE cannot be used best with highly aggressive chemicals and HF.

Minimum Temperature (°C/°F)

Maximum Temperature (°C/°F)

Pressure (bar/psi)

: -270/-45

: 260/50

: 85/1200

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# ARAFLON 4555 VIRGIN PTFE (WHITE)TAPE

A high molecular weight polymer for chemicals resistivity





# Applications

Machine cut tapes used as filler winding material for spiral wound gaskets industry. Rigid plastic reels are used to support unwinding of the tapes while handling, Supplied in 0.4mm Thk and 5.4mm width.

Suitable		Not Suitable	
Medium conc. Acids		Molten Alkali	
Caustics, Hydrocarbons, Solvents		Hydrofluoric Acids	
Alkalines		Fluorine gas	
Petrochemical Industry			
Metallic, organic, chemical compou	nds		
Food Industry			
cryogenics			
Operating Conditions			
Minimum Temperature	(°C/°F)	;	-164/-328
Maximum Temperature	(°C/°F)	:	260/500
Pressure	(bar/psi)	:	25/362
Physical Properties			
Specific Gravity	ASTM D 792	:	2.15 g/cm³
Compressibility	ASTM F36J	:	16%
Recovery	ASTM F36J	;	45%
Tensile Strength	ASTM F152	:	22 Mpa
Creep Relaxation	ASTM F38	:	79%
pH Range		:	0-14
Dielectric Strength	F149	:	15kV/mm
m value (3mm thk)		:	2,5
y value (3mm thk)		:	2845 psi (19Mpa)

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# ARAFLON 4666 EXPANDED PTFE GASKET TAPE

A self-adhesive tape made from 100% pure ePTFE

Softer and more flexible PTFE suitable for irregular and rough surfaces sealings. Wherever an irregular sealing surface and standard gaskets cannot be used, Araflon 4666 gasket tape can be applied with user friendly and easy installation methods. This is easy to compress and exhibits excellent resistance to creep and cold flow.

Applications

# Recommended for Chemical Industry Molten Alkali Petrochemical and process industries Hydrofluoric Acids Pharmaceutical, paper, pulp, food beverage industries Fluorine gas Flange connections, normal and irregular Reactor and process vessels and exchangers Food Industry Mining Industry

# **Operating Conditions**

Minimum Temperature	(°C/°F)	-268/-450
Maximum Temperature	(°C/°F)	260/500
Short Term Peak	(°C/°F)	315/600
Pressure	(bar/psi)	200/2900

# **Physical Properties**

Color : White

Density : 0.8gm/cm³

pH : 0-14

Size Range : 7mm Width to 25mm Width & 2.5mm Thk to 7mm Thk

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# STYLE: ARAFOIL 6000T (STEEL TANGED)

Pure Expanded Flexible Mineral Graphite Gasket Sheet with Tanged Insert

Metal reinforced laminate consists of Arafoil flexible graphite mechanically bonded to two sides of a perforated steel sheet of SS316/SS304/Inconel. Arafoil exhibits virtually no creep relaxation which helps to avoid periodical bolt tightening considerably.





Steam Service	Low permeability to gas and liquids
Chemicals	Low diffusion rate and high blow out resistance
Petrochemicals	High mechanical strength
Cryogenic Applications	Scratch resistant
Refineries	As a good anti-stick agent on all flanges.
Reactors	Highly resistant to Chemicals and thermal shock

**Specialties** 

Long shelf life

# **Operating Conditions**

Chimneys & Exhausters

Suitable for

Temperature Range (oxidizing media)	-400°F to 975°F (-240°C to 525°C)
Temperature Range (non oxidizing)	-328°F to 5972°F( -200°C to 3300°C)
Maximum Temp Steam	-328°C to 1202°F (-200°C to 650°C)
Pressure	220 bar/3190psi





# **Physical Properties**

Density	ASTM C 559	1.1 g/cm3
Ash Content (Max)		1%
Total Chlorine (Max)		50ppm
Compressibility (@5000psi load)	ASTM F36A-66	30-38% (1.6mm Thk)
Recovery (@5000psi load)	ASTM F36A-66	18% (1.6mm Thk)
Creep Relaxation		<3%
Tensile Strength	ASTM F152	22 Mpa
Dielectric Strength	F149	250 Volts/mil
"M″ Factor		2.0
"y" stress (Max gasket unit load 24000 psi)		2500 psi (17.28Mpa)

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice.

Deviations from the values hereabove indicated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.





High temperature, high pressure & non-oxidizing

Applications & preparations





Suitable		Specialties

Strong acids	Highly compressible
Caustics, Hydrocarbons	Can fill flange surface irregularities
Cryogenics	Low creep and cold flow
Glass lined equipment	High bolt torque retention property
Low bolt load FRP GRP flanges	Easily compressed under lower loads
Food Industry	Chemically inert
Refrigerants	Long shelf life

# **Operating Conditions**

Minimum Temperature	(°C/°F)	:	268/-450
Maximum Temperature	(°C/°F)	:	316/600
Maximum Continuous Temp	(°C/°F)	:	260/500
Pressure	(bar/psi)	:	85/1232

# **Physical Properties**

Specific Gravity	ASTM D 792	:	0.65 to 0.1 g/cm <sup>3</sup>
Compressibility	ASTM F36	:	70-80%
Recovery	ASTM F36	:	8%
Creep Relaxation	ASTM F38	:	10%
Gas permeability (cc/min)		:	<0.015
Dielectric Strength	F149	:	250 Volts/mil
m value 1/8" (3.2mm Thk)		:	3.0
y value 1/8" (3,2mm Thk)		:	2200 psi (15Mpa)

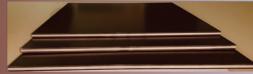
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# ARABOND 2000 EPOXY NEMA G10 BONDED STEEL

High strength dielectric sheet with steel bonding-heavy duty



# Applications & preparations:

Industrial and electrical conductivity arrestor used between high pressure rating flanges and electrical equipment to prevent electrolytic and electrical current flow, supports corrosion resistance and equipment safety. High quality Glass Fiber Epoxy (NEMA G10 or G11 grade) fiber layers are precisely warmed, glued and bonded on stainless steel plates of any grades to form a sandwich panel. This panel give high electric resistivity and high strength at the same time. Various colors and surface finishing's can be achieved as per requirements and codes of applications.

G10 / G11 Recommended for	Not Recommended for
Aliphatic and Aromatic Hydrocarbons	Anhydrous Liquid Ammonia
Transformer Oils	Conc. H2SO4
Sodium Hydroxide 15%	20% HNO3, H2SO4, NaOH
Sulphuric Acid 3% (G11)	
Sulphuric Acid 30% (G11)-Fairly at room Temp.	
Alcohol, Ketons, Benxol, Toluol	
Cryogenics	

# **Operating Conditions Pure G10**

Minimum Temperature (°C/°F) Maximum Temperature (°C/°F)

# Color: Light Green, Black, Brown

: -156/-250 : 140/284

# Table 1. Physical Properties of NEMA G10

Specific Gravity ASTM D 792 1.8 g/cc Water Absorption (max) ASTM D 570 (24 hrs) 0.1% Hardness Rockwell M ASTM D 785 Compressive Strength ASTM D 695 60000 psi Tensile Strength **ASTM D 638 (LW)** 50000 psi Flexural Strenath ASTM D 790 65000 psi IZOD Impact Strength LW ASTM D 256 12 ft-lb/in Shear Strength ASTM D 732 21755 psi ASTM F 36 Cold recovery 50-70% Chemical Resistance pH 0-14

Dielectric Strength (1.6mm Thk) ASTM D 149 : 960 volts/mil

Volume resistivity : 6 x 10<sup>6</sup> Mega ohm-cm



# **Stainless Steel Core Material Typical Properties**

Values of steel properties and composition are shown here are typical only, each supply lot will accompany separate MTC and compliance certificate showing PMI values, mechanical and physical test results.

Table 2. Composition ranges for 316L stainless steel sheets.

•	GRADE	C		Mn	Si	Р	S	Cr	Мо	Ni	N
	Mi 316L	n _	-	_	_	_	_	16.0	2.00	10.0	_
	Ma	ax 0.0	03	2.0	0.75	0.045	0.03	18.0	3.00	14.0	0.10

# Table 3. Mechanical properties of 316L stainless steel sheets.

			Hard	ness	
Grade	Tensile Str (MPa) min	Yield Str 0.2% Proof (MPa) min	Elong (%in50mm)min	Rockwe <b>ll</b> B (HR B) max	Brine <b>ll</b> (HB) max
316L	485	170	40	95	217

# Table 4. Physical properties for 316L grade stainless steel sheet.

Grade	Density (kg/m³)	Elastic Modulus (GPa)	Mean Co-eff of Thermal Expansion (µm/m/°C)	Thermal Conductivity (W/m.K)	Specific Heat 0-100°C (J/kg.K)	Elec Resistivity (nΩ.m)
316/L/H	8000	193	15. 16. 17. 9 2 5	16.3 21.5	500	740

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice.

Deviations from the values hereabove indicated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.

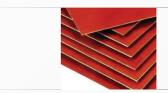


# ARANOLIC 2200 PHENOLIC LAMINATE SHEET

High strength canvas/linen based industrial laminate dielectric sheet

### Applications & preparations:

Aranolic 2200 is produced with a fine weave of cotton cloth fabrics which are mixed with phenolic resins to provide better machinability, mechanical and electrical properties. The sheets are produced by polymerization process which cannot be soften again. So, these materials are also called Thermosets. Variety of resin types and cloth materials can be used to manufacture thermoset laminates with a range of mechanical, thermal and electrical properties.



This is highly recommended for Power Electrical Industry for high voltage applications at power frequencies. High electric strength under oil, air and normal humidity. Sheets are supplied in natural color, but can supplied in black color upon

# **Technical Properties**

Operating Conditions of Aranolic-2200

Maximum Temperature (°C/°F)

Color: Dark Brown, Black

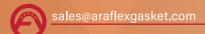
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# Table 1. Physical Properties of Aranolic 2200

Specific Gravity	ASTM D 792	:	1,37 g/cc
Water Absorption (max)	ASTM D 570 (24 hrs)	:	2.5%
Hardness Rockwell M	ASTM D 785	:	100
Compressive Strength	ASTM D 695	:	37000 psi
Tensile Strength	ASTM D 638 (LW)	:	11000 psi
Flexural Strength	ASTM D 790	:	17500 psi
IZOD Impact Strength LW	ASTM D 256	:	1.7 ft-lb/in
Dielectric Strength (3mm Thk)	ASTM D 149	:	550 volts/mil
Arc Resistance (sec)	ASTM D 495	:	15

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice.

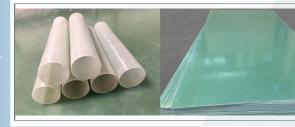
Deviations from the values hereabove indicated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.





# AF 2500 EPOXY NEMA G10 INSULATION SHEETS

High dielectric insulating laminate sheet glass fiber epoxy NFMA std



# Applications & preparations:

Industrial and electrical conductivity arrestor used between high pressure rating flanges and electrical equipment to prevent electrolytic and electrical current flow, supports corrosion resistance and equipment safety. High quality Glass Fiber Epoxy (NEMA G10 or G11 grade) fiber layers are precisely warmed, glued and bonded on stainless steel plates of any grades to form a sandwich panel.

This panel give high electric resistivity and high strength at the same time.

Various colors and surface finishing's can be achieved as per requirements and codes of applications.

# G10 / G11 Recommended for

Aliphatic and Aromatic Hydrocarbons

Transformer Oils

Sodium Hydroxide 15%

Sulphuric Acid 3% (G11)

Sulphuric Acid 30% (G11)-Fairly at room Temp.

Alcohol, Ketons, Benxol, Toluol

cryogenics

### Not Recommended for

Anhydrous Liquid Ammonia

Conc. H2SO4

20% HNO3, H2SO4, NaOH

# **Operating Conditions Pure G10**

# Color: Light Green, Black, Brown

 Minimum Temperature
 (°C/°F)
 : -156/-250

 Maximum Temperature
 (°C/°F)
 : 140/284





# **Table 1. Physical Properties of NEMA G10**

Specific Gravity	ASTM D 792	:	1.8 g/cc
Water Absorption (max)	ASTM D 570 (24 hrs)	:	0.1%
Hardness Rockwell M	ASTM D 785	:	110
Compressive Strength	ASTM D 695	:	60000 psi
Tensile Strength	ASTM D 638 (LW)	:	50000 psi
Flexural Strength	ASTM D 790	:	65000 psi
IZOD Impact Strength LW	ASTM D 256	:	12 ft-lb/in
Shear Strength	ASTM D 732	:	21755 psi
Cold recovery	ASTM F 36	:	50-70%
Chemical Resistance		:	pH 0-14
Dielectric Strength (1.6mm Thk)	ASTM D 149	:	960 volts/mil
Volume resistivity		:	6 x 106 Mega ohm-cm

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice.

Deviations from the values hereabove indicated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.





# ARAFLON 4540 EXPANDED PTFE (WHITE)

Expanded Microcellular multi directional PTFE

**Applications** 

Suitable		Specialties		
Strong acids		Highly compressible		
Caustics, Hydrocarbons		Can fill flange surface irregularities		
Cryogenics		Low creep and cold flow	N	
Glass lined equipment		High bolt torque retenti	on property	
Low bolt load FRP GRP flanges		Easily compressed und	er lower loads	
Food Industry		Chemically inert		
Refrigerants		Long shelf life		
Operating Conditions				
operating conditions				
Minimum Temperature	(°C/°F)	:	268/-450	
Maximum Temperature	(°C/°F)	\:	316/600	
Maximum Continuous Temp	(°C/°F)	:	260/500	
Pressure	(bar/psi)	:	85/1232	
Physical Properties				
1 Hysical 1 Toperties				
Specific Gravity	ASTM D 792	:	0.65 to 0.1 g/cm <sup>3</sup>	
Compressibility	ASTM F36	:	70-80%	
Recovery	ASTM F36	:	8%	
Creep Relaxation	ASTM F38	:	10%	
Gas permeability (cc/min)		:	<0.015	
Dielectric Strength	F149	:	250 Volts/mil	
m value 1/8" (3,2mm Thk)		:	3,0	
y value 1/8" (3.2mm Thk)		:	2200 psi (15Mpa)	

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice. Deviations from the values hereabove indicated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.





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