



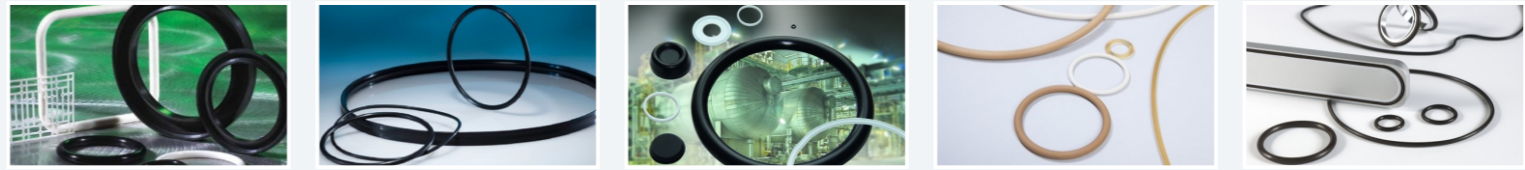
Perfluoroelastomer
& Special synthetic rubber seals



Based on China, serving the world

Dongguan Walle Sealing Technology & Development Co.,Ltd.
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Dongguan Walle Sealing Technology & Development Co.,Ltd.

THE MAJOR MARKET

Our strategy is to offer solutions for the following major market



Aerospace

Aerospace Equipment



Life Sciences

Medical equipment , Diagnosis and laboratory equipment



Military Industry

Biochemical Weapon , Vehicle Equipment , Monitor and Safety Equipment



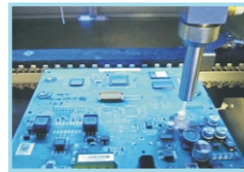
Food and Pharmaceutical Industry

Food machine and pharmaceutical equipment



Chemical Industry

Produce all kinds of solid , liquid , gas and the chemical process



Automatization

Coating machine and dispensing equipment , high temperature mould and equipments, etc



Oil and Gas

Oil and natural gas exploration , well drilling , exploitation, transportation



Fluid Power

Hydropneumatic system of high temperature or corrosivity



Nuclear Power

Nuclear installation and equipment



Electronic Semiconductor

Semiconductor manufacturing equipment and working environment , battery technology



Paper Industry

Paper making machinery and equipment



Surface Treatment

Vacuum coating equipment and spraying equipment



Printing and Dyeing

Printing and dyeing equipment , coating equipment and printing equipment



Transportation Equipment

Railway , subway and navigation equipment



Water Treatment

Chemical and sewage treatment installation and equipment



Automobile

Vehicle and its drive and brake parts



Pump Valve and Pipeline

Chemical pump , chemical valve and chemical pipeline



Machinery Industry

Mechanical seals , centrifuge and grinding equipment

WALLE FFKM SEALS

Bestflur® Perfluoroelastomer Seals

At present, Perfluoroelastomer is the best elastomer rubber material in the world, not only has rubber elasticity, but also with excellent chemical resistance, excellent heat resistance and high degree of cleanliness. Perfluoroelastomer can resist to nearly up to 2000 kinds of chemical medias, including organic acids, alkalis, alcohols, ketones, ethers, nitrogen compounds, hydrocarbons, hydrogen halide, furans, aldehydes, oils and steam, etc. Maximum temperature reach up to 325 °C.

Bestflur® Perfluoroelastomer material is derived from Europe and a new generation of fluorinated rubber material. Using our sophisticated processing technology to produce seals that are the quality equivalent to Europe and America. Our products have the absolute price advantage, fast delivery, and we can provide professional technical support.

Walle have many years production experience and industry field application experience, we aimed at the different harsh sealing environments and developed various of materials suitable for applications. Improving all customers profit and saving all customers cost. Walle automatic production equipments and advanced testing equipments provide a strong guarantee for the manufacture of high quality Perfluoroelastomer products.

PRODUCTION EQUIPMENT INSTRUMENT



Bestfluor® Perfluoroelastomer Code



General Code	Bestfluor 2675	Bestfluor 2690
(shoreA) Hardness	75	90
Temperature Range	-15°C~+260°C	
<p>Walle Perfluoroelastomer has the most spectrum of chemical resistance. It can be used for a variety of chemical substances, the coexistence of single or mixed environment, including epoxy acetylene, propylene oxide, etc. Excellent resistance to 260 °C or less hot water and steam properties.</p>		



High Temperature Code	Bestfluor 3075	
(shoreA) Hardness	75	
Temperature Range	-15°C~+325°C	
<p>The most widely spectrum of high-temperature grade chemical resistance, excellent acid resistance and amine resistance. It can be worked at reliably 300 °C and less hot water and steam environment for a long term.</p>		



Color White Code	Bestfluor B275	Bestfluor B290
(shoreA) Hardness	75	90
Temperature Range	-15°C~+260°C	
<p>Color white perfluoroelastomer, to avoid contamination of the carbon black in manufacturing process. It resists to the chemicals that include strong oxidants , acids, alkalis, ethers, esters, ketones, and other various additives. It can be used in a single or mixed environment where multiple chemicals are present. Excellent heat water and steam properties.</p>		



Certification Code	Bestfluor C275	Bestfluor C290
(shoreA) Hardness	75	90
Temperature Range	-15°C~+260°C	
<p>Medicine and food-grade perfluoroelastomer, it has black, white and other colors. Solve the corrosion, erosion of the drug solution chemicals sealing problems, clean, safe environment, excellent physical properties.</p>		



Anti – explosion Code	Bestfluor E290	
(shoreA) Hardness	90	
Temperature Range	-15°C~+260°C	
<p>Excellent mechanical performance and strict production process ,dedicating to sealing flammable, explosive, high-pressure gas. Excellent anti-aging and anti-explosion performance.</p>		

Bestfluor® perfluoroelastomer products

Property used	Field	Application
Oil, solvent, chemical resistance	Analytical instruments	<ul style="list-style-type: none"> Seals, valve parts, diaphragms for gas and liquid chromatographs. Seals for titration equipment. Seals, tubes, valve parts, diaphragms for pollution prevention analytical and monitoring systems equipment.
Elution, extraction, evaporation resistance	Physical and chemical analytical insrtuments	<ul style="list-style-type: none"> Seals, tubes, valve parts, diaphragms for physical and chemical analytical instruments used for heat, mass, NMR, electron beam, X-ray, vacuum, optics. elution, and extraction analysis.
solvent resistance	Painting and coating equipment	<ul style="list-style-type: none"> Seals, tubes, valve parts, diaphragms for pumps, reactors, mixers, blenders.
	Printing and coating equipment	<ul style="list-style-type: none"> Printing rolls, coating roll, scrapers, tubes, diaphragms products.
	Office automation equipment	<ul style="list-style-type: none"> Printer and other ink rolls, copier rolls, valve parts.
	Semiconductor manufacture	<ul style="list-style-type: none"> Seals, tubes, valve parts, diaphragms for filter pumps.
Chemical, steam resistance	Chemical industry	<ul style="list-style-type: none"> Seals, tubes, valve parts, diaphragms for pharmaceutical and agricultural chemical manufacturing processes, dye synthesis processes , plastics manufacturing, surfactant manufacturing processes.
	Salt electrolytic industry	<ul style="list-style-type: none"> Membrane seal materials and tube parts.
	Fuel cells	<ul style="list-style-type: none"> Seal, tube, valve parts.
	Other	<ul style="list-style-type: none"> Seals, tubes, valve parts, diaphragms requiring excellent resistance to corrosive gases.

Bestfluor® Chemical resistance

Chemical name	Temperature conditions	Tested days	Rating	Chemical name	Temperature conditions	Tested days	Rating
《Organic acid》				《Organic acid》			
Hydrochloric acid 10%	45	100	A	Boric acid	40	30	A
Hydrochloric acid 20%	110	14	A	Bromine	60	10	A
Hydrochloric acid 35%	40	21	A	Sulfuric acid conc 98%	40	11	A
Chlorine liquid dry	60	10	A	Nitricacid 60%	40	21	A
Chlorine gaseous dry	24	150	A	Nitricacid furning	24	120	A
Poly Vinyl Chloride	50	200	A	Acetic acid 10%	50	100	A
Chloro-acetyl chloride	70	90	A	Acetic acid glacial	24	30	A
Hydrochloric acid 99%	-7	300	A	Vinyl Acetate	24	180	A
Benzoic acid	40	30	A	Butyl acetate	45	100	A

A:Rate of volume increase less than 5%
C:Rate of volume increase less than 20% ~50%

B:Rate of volume increase less than 5% ~20%
D:Rate of volume increase over 50%

Chemical name	Temperature conditions	Tested days	Rating
《Organic acid》			
Acetic anhydride	45	100	B
Trichloroacetic acid 10%	40	30	A
Maleic Anhydride	100	100	A
Lactic acid	70	7	A
Phosphoric acid 60%	100	28	A
Formic acid 88%	40	21	A
《ADcalis》			
Sodium hydroxide 30%	40	21	A
Sodium hydroxide 46%	24	10	A
Sodium hypochlorite 10%	40	21	A
Tetrachloroethane	24	21	A
Ammonium hydroxide 28%	40	21	A
Ammonium hydroxide 35%	45	100	A
Ammonia anhydrous	24	200	A
Hydrofluoric acid 75%	100	5	A
Hydrogen peroxide 99%	100	10	A
Hydrogen sulfide	100	20	A
《Alcohols》			
Amyl Alcohol	100	5	A

A:Rate of volume increase less than 5%
C:Rate of volume increase less than 20% ~50%

B:Rate of volume increase less than 5% ~20%
D:Rate of volume increase over 50%

Chemical name	Temperature conditions	Tested days	Rating
《Alcohols》			
Methyl alcohol	40	21	A
Isopropyl alcohol	24	21	A
Ethyl alcohol	40	21	A
Propylene glycol	40	30	A
Ethylidene Glycol	40	21	A
Ethylene glycol	130	10	A
Methyl carblnol	40	21	A
Ethyl carblnol	100	7	A
Butanol	45	100	A
Cyclohexanol	40	40	A
《Nitrogen compounds》			
Acetonitrile	45	100	A
Acrylonitrile	40	21	A
Formamide	40	21	A
Styrene	24	90	A
Phenylene diamine	200	60	A
Ethylene diamine	40	21	A
Diethylamine	24	28	A
Triethylamine	40	21	A

Chemical name	Temperature conditions	Tested days	Rating
《Nltragen compounds》			
Triethylene Diamine	40	21	A
Aniline	40	21	A
Pyridine	40	21	A
N.N-dimethyl formamide	40	21	A
N.N-dimethyl acetamide	40	21	A
N-methyl-2-pyrrolidone	100	7	A
phenol	150	28	A
《Hydrocarbons Hydrogenation hydrogens》			
Acetylene tetrabromide	24	30	A
N-hexane	40	21	A
Cyclohexane	40	21	B
Isooctane	40	21	B
Decalin	40	21	A
Naphtha	70	70	A
Propylene	40	200	A
Mercury	90	300	A
Benzene	45	100	A
Toluene	24	360	A
Glycerine	120	5	A

A:Rate of volume increase less than 5%
C:Rate of volume increase less than 20% ~50%

B:Rate of volume increase less than 5% ~20%
D:Rate of volume increase over 50%

Chemical name	Temperature conditions	Tested days	Rating
《Hydrocarbons ,Hydrogenation hydrogens》			
Xylene	100	90	A
Monochloro benzene	24	30	A
Ethyl benzene	40	21	A
Glyoxal 40%	45	100	A
Nitro benzene	24	360	A
Monochloro toluene	24	30	A
1,2-dichloro benzene	40	21	A
Chloroform	40	21	A
Trichloroacrylic acid	24	28	A
Carbon tetrachloride	40	7	B
Methylene chloride	25	21	A
Perchloro ethylene	100	28	A
Trichloro ethylene	40	7	A
Tetrachloro ethylene	40	21	B
Tetrachloro ethylene	100	7	B
1,2-dibromoethane	40	11	A
Daiflon solvent (R-113)	25	11	D
Daiflon solvent(R-112)	40	11	C
Daifoil #10 (fluoro oil)	130	11	C

Chemical name	Temperature conditions	Tested days	Rating
《Hydrocarbons, Halogenation Hydrogens》			
Daifloil #1(fluoro oil)	40	21	C
Uranium hexafluoride	200	60	A
《Furans, Aldehydes》			
Tetra hydrofuran	40	21	B
2-Methyl tetrahydrofuran	40	21	B
Propionaldehyde	24	28	A
Acetaldehyde	25	21	B
Ethyl chlorohydrin	45	100	B
Butyl aldehyde	40	30	B
Furfurol	40	21	A
Furfurol	100	7	A
Acetophenone	40	21	A
Formalin 35%	40	21	A
《Ketones, Ethers》			
Kerosene	45	100	A
Acetone	40	21	A
Methyl ethyl ketone	40	21	A
Methyl isobutyl ketone	40	21	A
Butyl cellosolve	45	100	A

Chemical name	Temperature conditions	Tested days	Rating
《Ketones, Ethers》			
Isophorone	40	21	A
Diacetone alcohol	40	21	A
r-Butyrolactone	40	21	A
Acetyl acetone	40	21	A
Methyl formate	40	21	A
Ethyl acetate	40	21	A
Isoamyl acetate	40	21	A
Methyl acetoacetate	40	21	A
Ethyl acetoacetate	40	21	A
Acrylic acid	40	21	A
Methyl acrylate	40	21	A
Diethyl oxalate	40	21	A
Dimethyl maleate	40	21	A
Triethyl phosphate	40	21	A
Tricresyl phosphate	100	7	A
Diethyl ether	25	21	B
1,4-dioxane	40	21	A
Methyl methacrylate	100	200	A
Methyl-t-butylether	40	21	B

A:Rate of volume increase less than 5%
 B:Rate of volume increase less than 5% ~20%
 C:Rate of volume increase less than 20% ~50%
 D:Rate of volume increase over 50%

Chemical name	Temperature conditions	Tested days	Rating	Chemical name	Temperature conditions	Tested days	Rating
《Oil, steam etc.》				《Oil, steam etc.》			
Fire resistance oil	130	11	A	ASTM Ref Fuel B	24	7	A
Fire resistance oil	175	3	A	ASTM Ref Fuel C	24	7	A
DN CUT HS-1	130	11	A	Kerosene	45	100	A
Esso Uniflo(Engine oil)	175	3	A	Steam	150	30	A
0-148LCT(Air craft, engine oil)	175	20	A	Steam	190	30	A
JIS No.1 oil	175	16	A	Hot water	95	21	A
ASTM No.3 oil	175	16	A				

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 C:Rate of volume increase less than 20% ~50%
 D:Rate of volume increase over 50%

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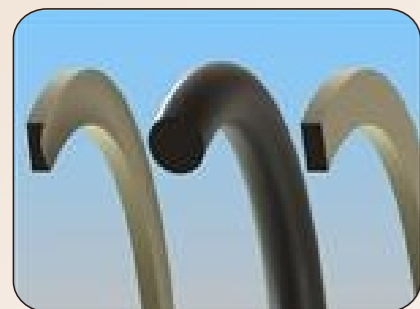
The data given in the technical information are measured values and not guaranteed values.

Note: When using this product, we recommend that you should conduct functional tests appropriate to individual usage conditions before hand.

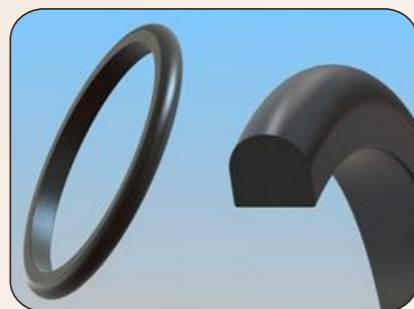
Please conduct test on a case-by-case basis first when contamination of chemicals through dissolution and extraction are an issue.



COMMON PRODUCTS



O-Rings+back up Ring



D-Ring



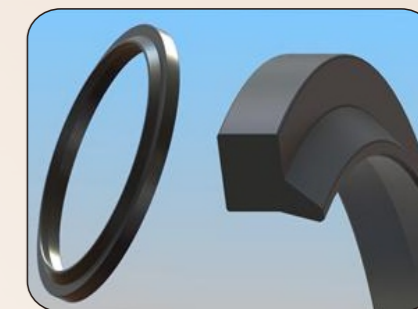
X-Ring



C type Wiper Seals



Y-Ring



J type Wiper Seals



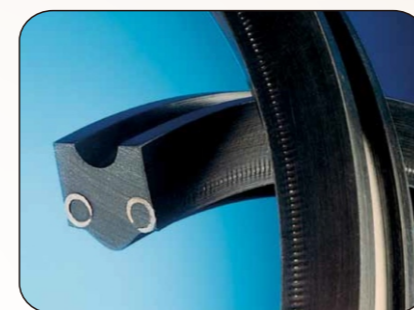
Square Ring



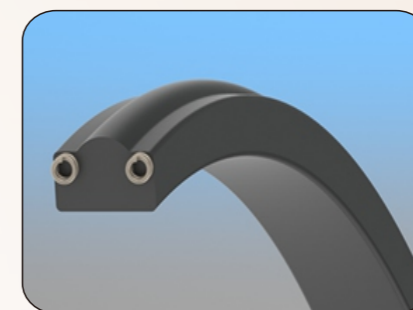
Triangle Ring



Drum type Ring



FS-Seals



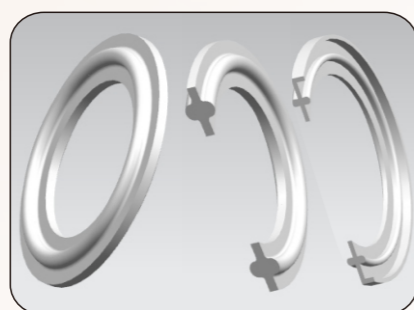
S-Seals



BT-Seals



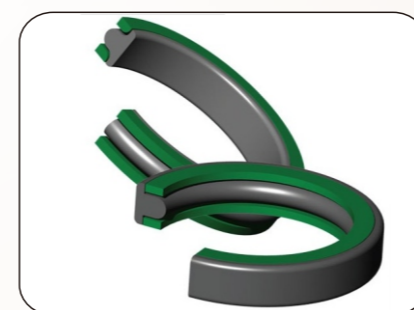
V-Rings



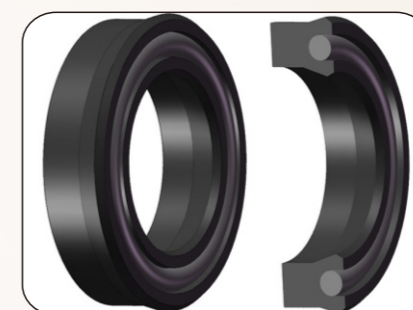
Joints Clamp Seals



PTFE Rubber Diaphragm



T-Seals



U-Seals



Chevron Seals



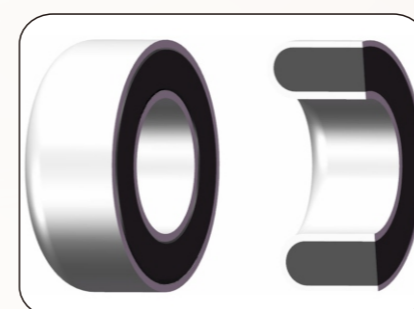
P-Seals



H-Seals



Casing Tubing Hanger Packers



Valve Rod Seal



Metal End Cap Seals



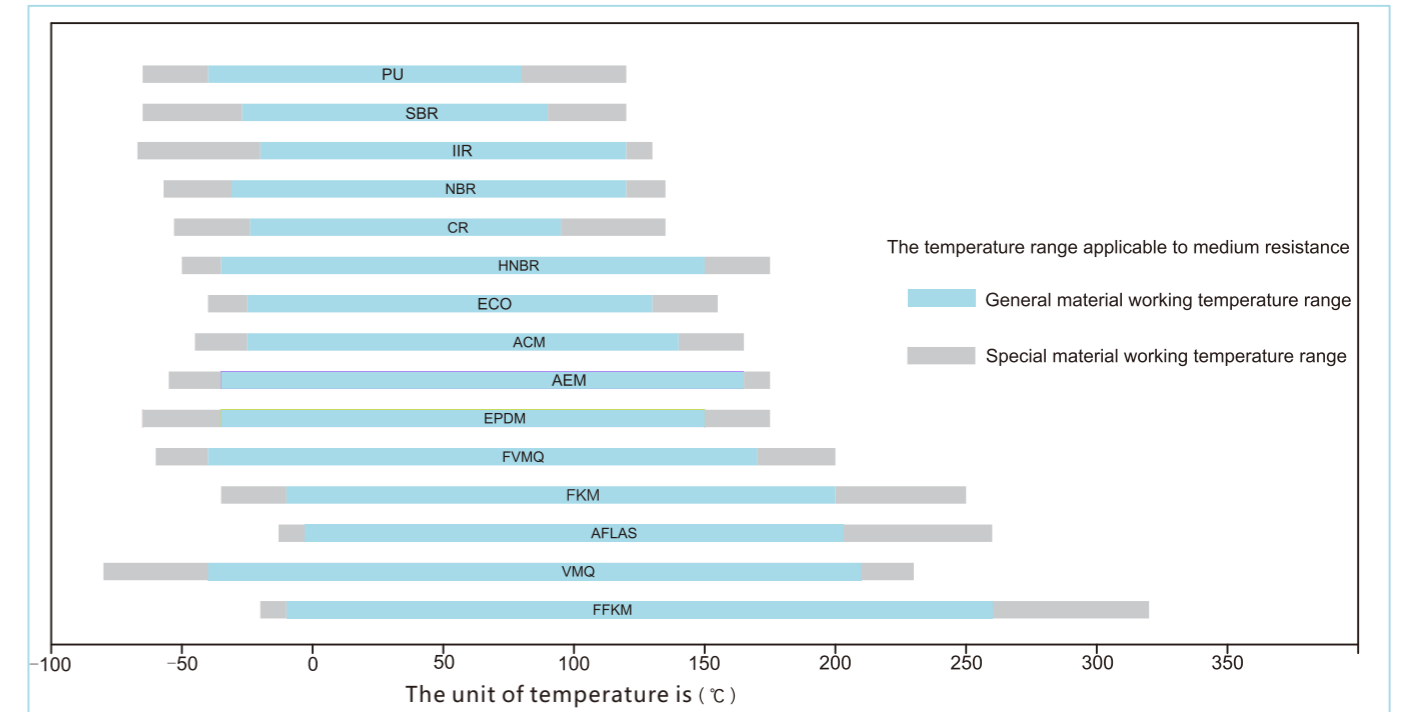
Glyd Ring

PROPERTIES AND APPLICATION OF COMMON MATERIALS

Material	Abbreciation	Properties	Hardness range shoreA	Application
Natural Rubber	NR	Advantage: good elasticity, gas tightness and insulating property, excellent flexing resistance, low heat, small hysteresis loss, blend with variety of rubber, good processability. Disadvantage: Oil resistance, acid resistance, alkali resistance, weather resistance and chemical resistance is poor.	40~90	Manufacture: tread, tire body, tire sidewall, tire tube, rubber tube, rubber belt, general mechanical seals, sponge product, medical device, latex product, etc.
Styrene Butadiene Rubber	SBR	Ageing resistance, heat resistance and abrasion resistance is better than that of natural rubber, but its elasticity performance is lower than natural rubber. Large hysteresis loss, high heat, large contraction deformation, rough surface, weak Self adhesive bonding.	50~70	Manufacture: rubber belt, rubber tube, rubber roller, rubberized fabric, shoe sole, medical device and mechanicals. Small amount of used in wires, cables and other rubber products.
Butadiene Rubber	BR	Advantage: good wear resistance, excellent flexing fatigue resistance, high resilience, small hysteresis loss, low heat, low temperature performance.	35~70	Manufacture: tread, tire sidewall, tire body, rubber belt, rubber tube, rubber shoe and other mechanicals.
Butadiene Acrylonitrile Rubber	NBR	Oil resistance, benzene resistance, hydrocarbon resistance and ageing resistance is good. Along with increasing content of the acrylonitrile, NBR's oil resistance, benzene resistance, wear resistance, heat resistance, hardness and tensile strength is better, but resilience, low temperature flexing fatigue resistance, compression set is worse.	40~90	Manufacture: oil resistance product, molded product, sponge product, industrial rubber roller, oil resistance rubber shoe, rubber sheath of wire and cable, adhesive and building material, etc.
acrylonitrile rubber	HNBR	HNBR is one of the NBR that is catalyzed by hydrogenation, have excellent heat resistance, low-temperature resistance, ozone resistance, high-energy radiation resistance, oil resistance, alkali resistance, oxidant resistance, and its physical property is very good.	40-90	Applicable to automobile, mechanical engineering, petroleum industry. In petroleum industry, HNBR can be used to the stators of pump and engine, protective jacket of drill pipe, valve seals, oil-well seals.
Ethylene Propylene Rubber	EPDM	Heat resistance, ozone resistance, weather resistance, chemical resistance, low temperature resistance and dielectrical property is good. EPDM is able to tolerate a range of chemicals, including polar solvent (such as ketone and esters), hot water and 200°C steam (without air).	40~90	Manufacture: automobile diaphragm, rubber cup, rubber dirt-proof boot, brake mechanism, sealing strip, rubber tube and products of the various chemical resistance.
Chloroprene Rubber	CR	Solvent resistance, oil resistance, acid-base resistance, weather resistance, ozone resistance and hydrolysis resistance is good. Gas tightness is just worse than IIR.	30~90	Manufacture: heat-proof sheath of wire and cable, oil-proof rubber product, sealing strip of building, highway caulking sealant, bridge support, water-proof cap of wire in oil field, automobile oil-proof rubber tube, acid-base proof rubber product, rubber product of weather resistance, Flame resistance rubber products, sealing gasket, ect.
Butyl Rubber	IIR	Heat ageing resistance, ozone ageing resistance, weather ageing resistance, corona resistance, electric insulating and water resistance is good.	30~80	Manufacture: machinery product, product of vibration and isolation, water-proof sheet in building, seal and gap filling product.
Polyurethane	PU	Corrosion resistance, ozone ageing resistance and oil resistance is good. PU possess self-reinforcing property, so it has high tensile strength without reinforcing material. Low temperature and wear resistance is good. Hardness and modulus is high.	30~90	Manufacture: seals of wear resistance, oil resistance and pressure resistance, rubber roller, rubber belt, ect
Epichloro Hydrin Rubber	ECO	Heat ageing resistance, oil resistance, low temperature resistance and gas tightness is good.	40~90	Manufacture: O-ring, sealing ring, gasket oil-proof lining, oil-proof rubber tube, oil-proof rubber cover.
Fluoroelastomer	FKM	FKM has excellent high-temperature resistance, can be used for a long time at 200°C, and can be used for a short time at 300°C. FKM has excellent performance that is vacuum resistance, strong acid resistance, high concentration of hydrogen peroxide resistance, strong oxidant resistance, variety of organic solvents resistance, variety of oil resistance, superheated water and steam resistance, weather resistance, ozone ageing resistance, fire resistance, moderate doses of radiation resistance.	50~90	Manufacture: automobile engine seals, aircraft engine seals, high-temperature seals and oil-field seals.
Fluorinated silicone rubber	FVMQ	The fluoride group have substituted the side chain of organosilicone's main chain, so FVMQ not only have high and low temperature resistance, weather resistance, ozone resistance, electrical insulation, fire resistance, non-toxic, physiological inertia, but also have oil resistance, solvent resistance and chemical resistance. The resistance to aromatic, aliphatic series, fuel oil, lubricating oil and hydraulic oil is excellent.	30~80	Applicable to military industry, automobile parts, petrochemical industry, medical and health industry, electrical and electronic industry.
Four C Fluorine Elastomer	FEPM	FEPM has broad-spectrum chemicals resistance and obvious application advantages for certain specific chemicals, such as oil, lubricating oil, variety of solvents, steam, superheated water, various types of, hydraulic medium, acid, various types of brake fluid, alkali, transmission media, strong oxidant, decolorizer, acidic oil and natural gas, paper pulp, amine preservatives, insecticide, herbicide, ozone, γ-ray, etc. FEPM has paragon electrical insulation property.	50~90	Applied to food processing, nuclear power, electrical, oil mining, chemical plant, automobile, machinery and other various of industries. Manufacture heat-proof seals, chemical-proof seals, engine gasket, wire sheath, shaft seals, thin film, sandwich rubber, rubber latex, ect.

We also produce seals of these materials. **Viton A, Viton B, Viton F, Viton GF, GLT, GFLT, ETP, Aflas, ACM, AEM, VMQ**

COMMON MATERIALS HEAT RESISTANCE



MATERIAL PERFORMANCE INDICATORS HAVE AN EFFECT ON THE SEALS

Performance indicator	Significance
Hardness	Rubber hardness for pressure resistance and resistance to squeeze out is of vital importance. With the increase of rubber hardness, rubber's modulus increasing, can avoid the high pressure fluid squeezing the root of seals out. High hardness rubber seals can be used within the scope of the high pressure mediums, can be also used without retaining ring. So the higher working pressure of seals, the hardness of rubber is higher.
Medium resistance	Chemical resistance of seals is of vital importance for sealing. Working performance and service life of seals will not be reduced by chemicals. Excessive shrinkage or swell of seals often cause leakage. So choosing the incompatible rubber for chemicals is most important.
Compression set	Compression set of rubber is the specific performance of vulcanized rubber stress relaxation, is the structural rheological behavior of vulcanized rubber at constant pressure and temperature, is a permanent deformation after removing stress. The increase of compression set means the reducing of sealing force. When the deformation accumulates a certain degree, sealing force will be completely lost, that cause sealing leakage. So small compression set is good for sealing property.
Tensile strength	Tensile strength represent the ability of material tensile resistance and reflect the uniformity of rubber compound. Tensile strength is a effective indicator that materials swell rubber seals. While the rubber is in the chemicals after a long time, If its tensile strength reduce a little, so the working life of rubber seals will be long. Otherwise, the working life of rubber seals will be short.
Elongation at break	Elongation at break is a rate of the rubber original length and its broken length.
Brittleness temperature	Brittleness temperature is the highest temperature when the rubber sample is broken by the impact under a certain condition, and is not the lower temperature that rubber works at. According to brittleness temperature, you can know which rubber formula is better.

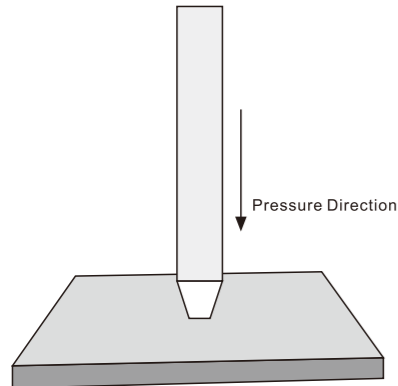
SEALS COLOR

Most of seals is black , but we can change the seals color by adding something that will reduce the mechanical property of rubber .General formula has carbon black that processes electro-conductibility . Insulating seal need a specific rubber formula .

MATERIAL HARDNESS

Hardness is a ability that one object resists the penetration of a hard specific object in the specific range of pressure and time . Our unit is shore A, it's a comparison value by testing different materials .

HARDNESS TESTING DRAWING



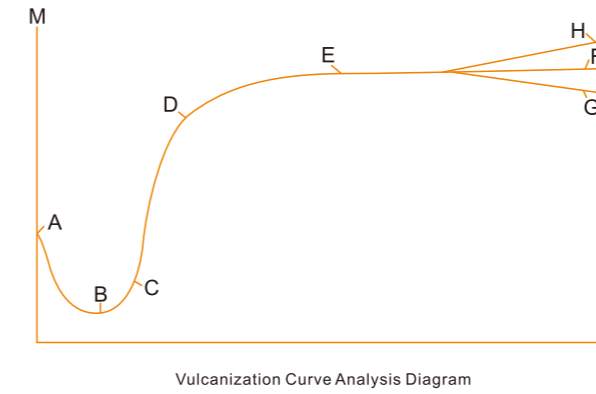
THE RELATION BETWEEN HARDNESS AND EXTRUSION GAP

Pressure id	Hardness shore A	Pressure 35 Kg/cm ³	Pressure 70 Kg/cm ³	Pressure 105 Kg/cm ³	Pressure 140 Kg/cm ³	Pressure 175 Kg/cm ³	Pressure 210 Kg/cm ³	Pressure 350 Kg/cm ³
1.78	70	0.15	0.10	0.05				
	80	0.20	0.15	0.10	0.05	0.03		
	90	0.25	0.20	0.13	0.10	0.08	0.06	0.03
2.62	70	0.18	0.13	0.08				
	80	0.25	0.18	0.13	0.08	0.04		
	90	0.30	0.25	0.18	0.13	0.10	0.08	0.04
3.53	70	0.20	0.15	0.10				
	80	0.30	0.20	0.15	0.10	0.05		
	90	0.40	0.30	0.20	0.15	0.13	0.10	0.05
5.33	70	0.25	0.18	0.13				
	80	0.35	0.25	0.18	0.13	0.08		
	90	0.45	0.35	0.25	0.18	0.15	0.13	0.08
7.00	70	0.30	0.20	0.15				
	80	0.40	0.30	0.20	0.15	0.07		
	90	0.50	0.40	0.30	0.20	0.18	0.15	0.07

VULCANIZATION PROPERTY

Vulcanization of rubber has not only crosslinking , but also has molecular chain rupture because of heat and other factors . And these phenomena penetrate the whole of a vulcanization . In a vulcanization , if the crosslinking dominates , the rubber will be hard and stretching strength will be upward , otherwise , the rubber will be soft . The whole of vulcanization divide into four stages that include induction , prevulcanization , optimum cure and over cure . The property of rubber has the best performance arriving at the optimum cure time .

Vulcanization property is detected by rheometer . Our moving die rheometer is the most advanced ,it can detect accurately scorch time , optimum cure time , curing rate index , mix and max torque ,etc .It is a optimal equipment for controlling rubber quality , fast detection and rubber fundamental research .



PHYSICAL PROPERTY DETERMINATION

Conventional physical property of rubber includes tensile strength、elongation at break、tear strength、elasticity modulus ,etc. The test equipment is the servo precise tensile testing machine with a computer. We can obtain the real data from tensile machine testing .



SERVICE

If you need ,we are very pleased provide rubber or solution that is based on your demands.

CERTIFICATION NATION

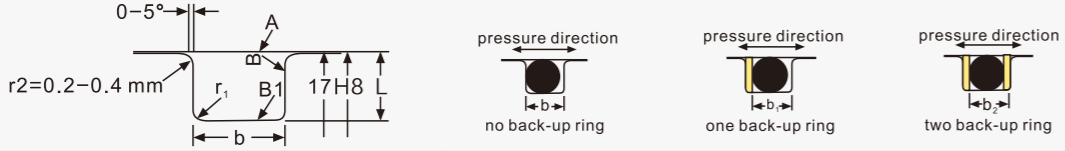
WRAS	England
FDA	USA
KTW	Germany
UL	USA
ACS	France
DVGW	Germany
NSF	USA



APPLICATION OF BACK-UP RING

Material of Back-up Ring	Application	Back-up Ring	Graphical modal
General materials: PTFE, PA, POM, PU, PE, PEEK	Working force of pneumatic sealing and rotating sealing is low. So there is no back-up ring.	no	
	There is possibility to extrude o-ring.	Single	
	Liquid pressure is greater than 10 Mpa.	Double	

SIZE OF SEALING GROOVE



Section d ₂ mm	Groove Width				Groove Width unit: mm (+0.2/0)			Radius r ₂ mm
	Static	Dynamic Hydraulic	Dynamic Pneumatic		b no back-up ring	b ₁ one back-up ring	b ₂ twoback-up rings	
1.00	0.65	0.75	0.80		1.4	2.4	3.4	0.2-0.4
1.50	1.05	1.20	1.25		2.0	3.0	4.0	0.2-0.4
1.80	1.30	1.45	1.55		2.4	3.4	4.4	0.2-0.4
2.00	1.50 ±0.05	1.65 ±0.02	1.75 ±0.02		2.7	3.7	4.7	0.2-0.4
2.50	1.95	2.10	2.20		3.4	4.9	6.4	0.2-0.4
2.65	2.05	2.25	2.35		3.6	5.1	6.6	0.2-0.4
3.00	2.40	2.55	2.70		4.2	5.7	7.2	0.2-0.4
3.50	2.80	3.05	3.20		4.8	6.3	7.8	0.3-0.6
3.55	2.85 ±0.07	3.10	3.25		4.8	6.3	7.8	0.3-0.6
4.00	3.25	3.50 ±0.05	3.65 ±0.05		5.4	6.9	8.4	0.3-0.6
5.00	4.15	4.45	4.65		6.8	8.8	10.8	0.3-0.6
5.30	4.40 ±0.10	4.70	4.90		7.2	9.2	11.2	0.6-1.0
7.00	5.85	6.25	6.55		9.6	12.1	14.6	0.6-1.0
Side A		Static R _a =1.6 um and R _{max} =6.3 um Bearing Area: t _p > 50%			Dynamic R _a =0.4 um and R _{max} =1.6 um Bearing Area: t _p > 50%			
Side B		Static R _a =3.2 um and R _{max} =12.5 um Bearing Area: t _p > 50%			Dynamic R _a =1.6 um and R _{max} =6.3 um Bearing Area: t _p > 50%			

STORAGE

- A. keeping in dry place
- B. temperature is +5°C~+25°C, don't touch directly the heat source
- C. keeping out of sunlight, don't be irradiated specially by sun shine and fluorescent lamp
- D. Being kept in the original box or hermetic container can not to be oxidated

SPECIFICATIONS AND STANDARDS OF O-RINGS

AS 568A-0xx standard: section diameter d ₂ =1.78mm							
AS 568A NO.	ID d ₁ (mm)		section diameter d ₂ (mm)	AS 568A NO.	ID d ₁ (mm)		section diameter d ₂ (mm)
	size	tolerance(±)			size	tolerance(±)	
AS568-001	0.74	0.10	1.02 ±0.08	AS568-026	31.47	0.28	1.78 ±0.08
AS568-002	1.07	0.10	1.27 ±0.08	AS568-027	33.05	0.33	
AS568-003	1.42	0.10	1.53 ±0.08	AS568-028	34.65	0.33	
AS568-004	1.78	0.13		AS568-029	37.82	0.33	
AS568-005	2.57	0.13		AS568-030	41.00	0.33	
AS568-006	2.90	0.13		AS568-031	44.17	0.38	
AS568-007	3.69	0.13		AS568-032	47.35	0.38	
AS568-008	4.47	0.13		AS568-033	50.52	0.46	
AS568-009	5.28	0.13		AS568-034	53.70	0.46	
AS568-010	6.07	0.13		AS568-035	56.87	0.46	
AS568-011	7.65	0.13		AS568-036	60.05	0.46	
AS568-012	9.25	0.13		AS568-037	63.22	0.46	
AS568-013	10.82	0.13		AS568-038	66.40	0.51	
AS568-014	12.42	0.13		AS568-039	69.57	0.51	
AS568-015	14.00	0.18		AS568-040	72.75	0.61	
AS568-016	15.60	0.23		AS568-041	75.92	0.61	
AS568-017	17.17	0.23		AS568-042	82.27	0.61	
AS568-018	18.77	0.23		AS568-043	88.62	0.61	
AS568-019	20.35	0.23		AS568-044	94.97	0.69	
AS568-020	21.95	0.23		AS568-045	101.32	0.69	
AS568-022	25.12	0.25		AS568-046	107.67	0.76	
AS568-023	26.70	0.25		AS568-047	114.02	0.76	
AS568-024	28.30	0.25		AS568-048	120.37	0.76	
AS568-025	29.87	0.28		AS568-049	126.72	0.94	
				AS568-050	133.07	0.94	

AS 568A-1xx standard: 截面直径section diameter d ₂ =2.62mm							
AS 568A NO.	ID d ₁ (mm)		section diameter d ₂ (mm)	AS 568A NO.	ID d ₁ (mm)		section diameter d ₂ (mm)
	size	tolerance(±)			size	tolerance(±)	
AS568-102	1.24	0.10	2.62 ±0.08	AS568-141	58.42	0.51	2.62 ±0.08
AS568-103	2.06	0.13		AS568-142	59.99	0.51	
AS568-104	2.84	0.13		AS568-143	61.60	0.51	
AS568-105	3.63	0.13		AS568-144	63.17	0.51	
AS568-106	4.42	0.13		AS568-145	64.77	0.51	
AS568-107	5.23	0.13		AS568-146	66.34	0.51	
AS568-108	6.02	0.13		AS568-147	67.95	0.56	
AS568-109	7.59	0.13		AS568-148	69.52	0.56	
AS568-110	9.19	0.13		AS568-149	71.12	0.56	
AS568-111	10.77	0.13		AS568-150	72.69	0.56	
AS568-112	12.37	0.13		AS568-151	75.87	0.61	
AS568-113	13.94	0.18		AS568-152	82.22	0.61	
AS568-114	15.54	0.23		AS568-153	88.57	0.61	
AS568-115	17.12	0.23		AS568-154	94.92	0.71	
AS568-116	18.72	0.23		AS568-155	101.27	0.71	
AS568-117	20.29	0.25		AS568-156	107.62	0.76	
AS568-118	21.89	0.25		AS568-157	113.97	0.76	
AS568-119	23.47	0.25		AS568-158	120.32	0.76	
AS568-120	25.07	0.25		AS568-159	126.67	0.89	
AS568-121	26.64	0.25		AS568-160	133.02	0.89	
AS568-122	28.24	0.25		AS568-161	139.37	0.89	
AS568-123	29.82	0.30		AS568-162	145.72	0.89	
AS568-124	31.42	0.30		AS568-163	152.07	0.89	
AS568-125	32.99	0.30		AS568-164	158.42	1.02	
AS568-126	34.59	0.30		AS568-165	164.77	1.02	
AS568-127	36.17	0.30	AS568-166	171.12	1.02		
AS568-128	37.77	0.30	AS568-167	177.47	1.02		
AS568-129	39.34	0.38	AS568-168	183.82	1.14		
AS568-130	40.94	0.38	AS568-169	190.17	1.14		
AS568-131	42.52	0.38	AS568-170	196.52	1.14		
AS568-132	44.12	0.38	AS568-171	202.87	1.14		
AS568-133	45.69	0.38	AS568-172	209.22	1.27		
AS568-134	47.29	0.43	AS568-173	215.57	1.27		
AS568-135	48.90	0.43	AS568-174	221.92	1.27		
AS568-136	50.47	0.43	AS568-175	228.27	1.27		
AS568-137	52.07	0.43	AS568-176	234.62	1.40		
AS568-138	53.64	0.43	AS568-177	240.97	1.40		
AS568-139	55.25	0.43	AS568-178	247.32	1.40		
AS568-140	56.82	0.43					

AS 568A-2xx		standard:		section diameter $d_2=3.53\text{mm}$				
AS 568A	NO.	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$	AS 568A	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$
		size	tolerance(\pm)			size	tolerance(\pm)	
AS568-201		4.34	0.13	3.53 ± 0.10	AS568-243	104.37	0.71	3.53 ± 0.10
AS568-202		5.94	0.13		AS568-244	107.54	0.76	
AS568-203		7.52	0.13		AS568-245	110.72	0.76	
AS568-204		9.12	0.13		AS568-246	113.89	0.76	
AS568-205		10.69	0.13		AS568-247	117.07	0.76	
AS568-206		12.29	0.13		AS568-248	120.24	0.76	
AS568-207		13.87	0.18		AS568-249	123.42	0.89	
AS568-208		15.47	0.23		AS568-250	126.59	0.89	
AS568-209		17.04	0.23		AS568-251	129.77	0.89	
AS568-210		18.64	0.25		AS568-252	132.94	0.89	
AS568-211		20.22	0.25		AS568-253	136.12	0.89	
AS568-212		21.82	0.25		AS568-254	139.29	0.89	
AS568-213		23.39	0.25		AS568-255	142.47	0.89	
AS568-214		24.99	0.25		AS568-256	145.64	0.89	
AS568-215		26.57	0.25		AS568-257	148.82	0.89	
AS568-216		28.17	0.30		AS568-258	151.99	0.89	
AS568-217		29.74	0.30		AS568-259	158.34	1.02	
AS568-218		31.34	0.30		AS568-260	164.69	1.02	
AS568-219		32.92	0.30		AS568-261	171.04	1.02	
AS568-220		34.52	0.30		AS568-262	177.39	1.02	
AS568-221		36.09	0.30		AS568-263	183.74	1.14	
AS568-222		37.69	0.38		AS568-264	190.09	1.14	
AS568-223		40.87	0.38		AS568-265	196.44	1.14	
AS568-224		44.04	0.38		AS568-266	202.79	1.14	
AS568-225		47.22	0.46		AS568-267	209.14	1.27	
AS568-226		50.39	0.46		AS568-268	215.49	1.27	
AS568-227		53.57	0.46		AS568-269	221.84	1.27	
AS568-228		56.74	0.51		AS568-270	228.19	1.27	
AS568-229		59.92	0.51		AS568-271	234.54	1.40	
AS568-230		63.09	0.51		AS568-272	240.89	1.40	
AS568-231		66.27	0.51		AS568-273	247.24	1.40	
AS568-232		69.44	0.61		AS568-274	253.59	1.40	
AS568-233		72.62	0.61		AS568-275	266.29	1.40	
AS568-234		75.79	0.61		AS568-276	278.99	1.65	
AS568-235		78.97	0.61		AS568-277	291.69	1.65	
AS568-236		82.14	0.61		AS568-278	304.39	1.65	
AS568-237		85.32	0.61		AS568-279	329.79	1.65	
AS568-238		88.49	0.61		AS568-280	355.19	1.65	
AS568-239		91.67	0.71		AS568-281	380.59	1.65	
AS568-240		94.84	0.71		AS568-282	405.26	1.91	
AS568-241		98.02	0.71		AS568-283	430.66	2.03	
AS568-242		101.19	0.71		AS568-284	456.06	2.16	

AS 568A-3xx		standard:		section diameter $d_2=5.33\text{mm}$					
AS 568A	NO.	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$	AS 568A	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$	
		size	tolerance(\pm)			size	tolerance(\pm)		
AS568-309		10.46	0.13	5.33 ± 0.13	AS568-353	126.37	0.94	5.33 ± 0.13	
AS568-310		12.07	0.13		AS568-354	129.54	0.94		
AS568-311		13.64	0.18		AS568-355	132.72	0.94		
AS568-312		15.24	0.23		AS568-356	135.89	0.94		
AS568-313		16.81	0.23		AS568-357	139.07	0.94		
AS568-314		18.42	0.25		AS568-358	142.24	0.94		
AS568-315		19.99	0.25		AS568-359	145.42	0.94		
AS568-316		21.59	0.25		AS568-360	148.59	0.94		
AS568-317		23.16	0.25		AS568-361	151.77	0.94		
AS568-318		24.77	0.26		AS568-362	158.12	1.02		
AS568-319		26.34	0.26		AS568-363	164.47	1.02		
AS568-320		27.94	0.30		AS568-364	170.82	1.02		
AS568-321		29.51	0.30		AS568-365	177.17	1.02		
AS568-322		31.12	0.30		AS568-366	183.52	1.14		
AS568-323		32.69	0.30		AS568-367	189.87	1.14		
AS568-324		34.29	0.30		AS568-368	196.22	1.14		
AS568-325		37.47	0.38		AS568-369	202.57	1.14		
AS568-326		40.64	0.38		AS568-370	208.92	1.27		
AS568-327		43.82	0.38		AS568-371	215.27	1.27		
AS568-328		46.99	0.38		AS568-372	221.62	1.27		
AS568-329		50.17	0.46		AS568-373	227.97	1.27		
AS568-330		53.34	0.46		AS568-374	234.32	1.40		
AS568-331		56.52	0.46		AS568-375	240.67	1.40		
AS568-332		59.69	0.46		AS568-376	247.02	1.40		
AS568-333		62.87	0.51		AS568-377	253.37	1.40		
AS568-334		66.04	0.51		AS568-378	266.07	1.52		
AS568-335		69.22	0.51		AS568-379	278.77	1.52		
AS568-336		72.39	0.51		AS568-380	291.47	1.65		
AS568-337		75.57	0.61		AS568-381	304.17	1.65		
AS568-338		78.74	0.61		AS568-382	329.57	1.65		
AS568-339		81.92	0.61		AS568-383	354.97	1.78		
AS568-340		85.09	0.61		AS568-384	380.37	1.78		
AS568-341		88.27	0.61		AS568-385	405.26	1.91		
AS568-342		91.44	0.71		AS568-386	430.66	2.03		
AS568-343		94.62	0.71		AS568-387	456.06	2.16		
AS568-344		97.79	0.71		AS568-388	481.46	2.29		
AS568-345		100.97	0.71		AS568-389	506.86	2.41		
AS568-346		104.14	0.71		AS568-390	532.26	2.41		
AS568-347		107.32	0.76		AS568-391	557.66	2.54		
AS568-348		110.49	0.76		AS568-392	582.68	2.67		
AS568-349		113.67	0.76		AS568-393	608.08	2.79		
AS568-350		116.84	0.76		AS568-394	633.48	2.92		
AS568-351		120.02	0.76		AS568-395	658.88	3.02		
AS568-352		123.19	0.76						

AS 568A-4xx		standard:		section diameter $d_2=6.99\text{mm}$					
AS 568A	NO.	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$	AS 568A	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$	
		size	tolerance(\pm)			size	tolerance(\pm)		
AS568-425		113.67	0.84	6.99 ± 0.15	AS568-451	278.77	1.52	6.99 ± 0.15	
AS568-426		116.84	0.84		AS568-452	291.47	1.52		
AS568-427		120.02	0.84		AS568-453	304.17	1.52		
AS568-428		123.19	0.84		AS568-454	316.87	1.52		
AS568-429		126.37	0.94		AS568-455	329.57	1.52		
AS568-430		129.54	0.94		AS568-456	342.27	1.78		
AS568-431		132.72	0.94		AS568-457	354.97	1.78		
AS568-432		135.89	0.94		AS568-458	367.67	1.78		
AS568-433		139.07	0.94		AS568-459	380.37	1.78		
AS568-434		142.24	0.94		AS568-460	393.07	1.78		
AS568-435		145.42	0.94		AS568-461	405.26	1.91		
AS568-436		148.59	0.94		AS568-462	417.96	1.91		
AS568-437		151.77	0.94		AS568-463	430.66	2.03		
AS568-438		158.12	1.02		AS568-464	443.36	2.16		
AS568-439		164.47	1.02		AS568-465	456.06	2.16		
AS568-440		170.82	1.02		AS568-466	468.76	2.16		
AS568-441		177.17	1.02		AS568-467	481.46	2.29		
AS568-442		183.52	1.14		AS568-468	494.16	2.29		
AS568-443		189.87	1.14		AS568-469	506.86	2.41		
AS568-444		196.22	1.14		AS568-470	532.26	2.41		
AS568-445		202.57	1.14		AS568-471	557.66	2.54		
AS568-446		215.27	1.40		AS568-472	582.68	2.67		
AS568-447		227.97	1.40		AS568-473	608.08	2.79		
AS568-448		240.67	1.40		AS568-474	633.48	2.92		
AS568-449		253.37	1.40		AS568-475	658.88	3.05		
AS568-450		266.07	1.52						

AS 568A-9xx		standard:		O-ring used for joint and pipeline				
AS 568A	NO.	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$	AS 568A	ID $d_1(\text{mm})$		section diameter $d_2(\text{mm})$
		size	tolerance(\pm)			size	tolerance(\pm)	
AS568-901		4.70	0.13	1.42 ± 0.08	AS568-911	21.92	0.23	2.95 ± 0.10
AS568-902		6.07	0.13	1.63 ± 0.08	AS568-912	23.47	0.23	
AS568-903		7.65	0.13	1.83 ± 0.08	AS568-913	25.04	0.25	
AS568-904		8.93	0.13	1.98 ± 0.08	AS568-914	26.59	0.25	
AS568-905		10.52	0.13	2.08 ± 0.08	AS568-916	29.74	0.25	
AS568-906		11.89	0.13	2.18 ± 0.08	AS568-918	34.42	0.30	3.00 ± 0.10
AS568-907		13.46	0.18	2.21 ± 0.08	AS568-920	37.47	0.36	
AS568-908		16.36	0.23	2.46 ± 0.08	AS568-924	43.69	0.36	
AS568-909		17.93	0.23	2.66 ± 0.08	AS568-928	53.09	0.46	
AS568-910		19.18	0.23		AS568-932	59.36	0.46	

ISO3302 DIMENSIONAL TOLERANCE OF NON-STANDARD SEALS

1. Line diameter tolerance of the non-standard o-ring

Line diameter	tolerance	Line diameter	tolerance	Line diameter	tolerance
≥ 0.00	± 0.08	≥ 12.00	± 0.23	≥ 20.75	0.35
≥ 2.62	± 0.09	≥ 12.75	± 0.24	≥ 21.50	0.36
≥ 3.00	± 0.10	≥ 13.50	± 0.25	≥ 22.25	0.37
≥ 3.55	± 0.12	≥ 14.25	± 0.26	≥ 23.00	0.38
≥ 5.00	± 0.13	≥ 15.00	± 0.27	≥ 23.50	0.39
≥ 5.70	± 0.14	≥ 15.75	± 0.28	≥ 24.25	0.40
≥ 8.40	± 0.15	≥ 16.50	± 0.29	≥ 25.00	0.41
≥ 8.75	± 0.18	≥ 17.25	± 0.30	≥ 25.75	0.42
≥ 9.25	± 0.19	≥ 17.75	± 0.31	≥ 26.25	0.43
≥ 10.00	± 0.20	≥ 18.50	± 0.32	≥ 27.00	0.44
≥ 10.75	± 0.21	≥ 19.25	± 0.33	≥ 30.00	0.45
≥ 11.25	± 0.22	≥ 20.00	± 0.34		

2. Tolerance grade of the non-standard product

Nominal size	M1 Level		M2 Level		M3 Level		M4 Level
	F \pm	C \pm	F \pm	C \pm	F \pm	C \pm	F&C \pm
>							
0	4.0	0.08	0.10	0.15	0		

GB3452.1_2005

ID d ₁ (mm)		section diameter d ₂ (mm)				
size	tolerance(±)	1.8 ±0.08	2.65 ±0.09	3.55 ±0.10	5.3 ±0.13	7 ±0.15
1.8	0.13	x				
2.0	0.13	x				
2.24	0.13	x				
2.5	0.13	x				
2.8	0.13	x				
3.15	0.14	x				
3.55	0.14	x				
3.75	0.14	x				
4	0.14	x				
4.5	0.15	x				
4.75	0.15	x				
4.87	0.15	x				
5	0.15	x				
5.15	0.15	x				
5.3	0.15	x				
5.6	0.16	x				
6	0.16	x				
6.3	0.16	x				
6.7	0.16	x				
6.9	0.16	x				
7.1	0.16	x				
7.5	0.17	x				
8	0.17	x				
8.5	0.17	x				
8.75	0.18	x				
9	0.18	x				
9.5	0.18	x				
9.75	0.18	x				
10	0.19	x				
10.6	0.19	x	x			
11.2	0.20	x	x			
11.6	0.20	x	x			
11.8	0.19	x	x			
12.1	0.21	x	x			
12.5	0.21	x	x			
12.8	0.21	x	x			
13.2	0.21	x	x			
14	0.22	x	x			
14.5	0.22	x	x			
15	0.22	x	x			
15.5	0.23	x	x			
16	0.23	x	x			
17	0.24	x	x			
18	0.25	x	x	x		
19	0.25	x	x	x		
20	0.26	x	x	x		
20.6	0.26	x	x	x		
21.2	0.27	x	x	x		
22.4	0.28	x	x	x		
23	0.29	x	x	x		
23.6	0.29	x	x	x		
24.3	0.30	x	x	x		
25	0.30	x	x	x		
25.8	0.31	x	x	x		
26.5	0.31	x	x	x		

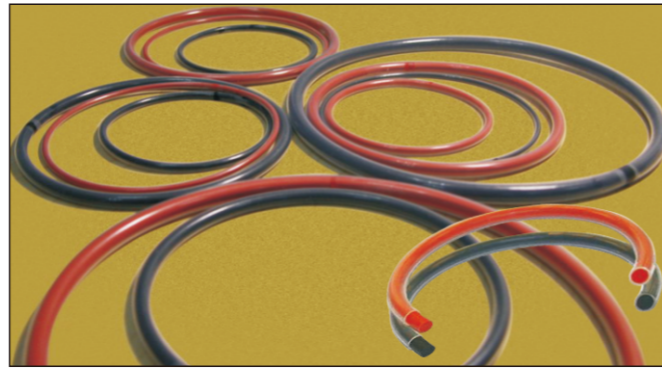
ID d ₁ (mm)		section diameter d ₂ (mm)				
size	tolerance(±)	1.8 ±0.08	2.65 ±0.09	3.55 ±0.10	5.3 ±0.13	7 ±0.15
27.3	0.32	x	x	x		
28	0.32	x	x	x		
29	0.33	x	x	x		
30	0.34	x	x	x		
31.5	0.35	x	x	x		
32.5	0.36	x	x	x		
33.5	0.36	x	x	x		
34.5	0.37	x	x	x		
35.5	0.38	x	x	x		
36.5	0.38	x	x	x		
37.5	0.39	x	x	x		
38.7	0.40	x	x	x		
40	0.41	x	x	x	x	
41.2	0.42	x	x	x	x	
42.5	0.43	x	x	x	x	
43.7	0.44	x	x	x	x	
45	0.44	x	x	x	x	
46.2	0.45	x	x	x	x	
47.5	0.46	x	x	x	x	
48.7	0.47	x	x	x	x	
50	0.48	x	x	x	x	
51.5	0.49		x	x	x	
53	0.50		x	x	x	
54.5	0.51		x	x	x	
56	0.52		x	x	x	
58	0.54		x	x	x	
60	0.55		x	x	x	
61.5	0.56		x	x	x	
63	0.57		x	x	x	
65	0.58		x	x	x	
67	0.60		x	x	x	
69	0.61		x	x	x	
71	0.63		x	x	x	
73	0.64		x	x	x	
75	0.65		x	x	x	
77.5	0.67		x	x	x	
80	0.69		x	x	x	
82.5	0.71		x	x	x	
85	0.72		x	x	x	
87.5	0.74		x	x	x	
90	0.76		x	x	x	
92.5	0.77		x	x	x	
95	0.79		x	x	x	
97.5	0.81		x	x	x	
100	0.82		x	x	x	
103	0.85		x	x	x	
106	0.87		x	x	x	
109	0.89		x	x	x	x
112	0.91		x	x	x	x
115	0.93		x	x	x	x
118	0.95		x	x	x	x
122	0.97		x	x	x	x
125	0.99		x	x	x	x
128	1.01		x	x	x	x
132	1.04		x	x	x	x

ID d ₁ (mm)		section diameter d ₂ (mm)				
size	tolerance(±)	1.8 ±0.08	2.65 ±0.09	3.55 ±0.10	5.3 ±0.13	7 ±0.15
136	1.07		x	x	x	x
140	1.09		x	x	x	x
142.5	1.11		x	x	x	x
145	1.13		x	x	x	x
147.5	1.14		x	x	x	x
150	1.16		x	x	x	x
152.5	1.18			x	x	x
155	1.19			x	x	x
157.5	1.21			x	x	x
160	1.23			x	x	x
162.5	1.24			x	x	x
165	1.26			x	x	x
167.5	1.28			x	x	x
170	1.29			x	x	x
172.5	1.31			x	x	x
175	1.33			x	x	x
177.5	1.34			x	x	x
180	1.36			x	x	x
182.5	1.38			x	x	x
185	1.39			x	x	x
187.5	1.41			x	x	x
190	1.43			x	x	x
195	1.46			x	x	x
200	1.49			x	x	x
203	1.51				x	x
206	1.53				x	x
212	1.57				x	x
218	1.61				x	x
224	1.65				x	x
227	1.67				x	x
230	1.69				x	x
236	1.73				x	x
239	1.75				x	x
243	1.77				x	x
250	1.82				x	x
254	1.84				x	x
258	1.87				x	x
261	1.89				x	x
265	1.91				x	x
268	1.92				x	x
272	1.96				x	x
276	1.98				x	x
280	2.01				x	x
283	2.03				x	x
286	2.05				x	x
290	2.08				x	x
295	2.11				x	x
300	2.14				x	x
303	2.16				x	x
307	2.19				x	x
311	2.21				x	x
315	2.24				x	x
320	2.27				x	x
325	2.30				x	x
330	2.33				x	x

ID d ₁ (mm)		section diameter d ₂ (mm)				
size	tolerance(±)	1.8 ±0.08	2.65 ±0.09	3.55 ±0.10	5.3 ±0.13	7 ±0.15
335	2.36				x	x
340	2.40				x	x
345	2.43				x	x
350	2.46				x	x
355	2.49				x	x
360	2.52				x	x
365	2.56				x	x
370	2.59				x	x
375	2.62				x	x
379	2.64				x	x
383	2.67				x	x
387	2.70				x	x
391	2.72				x	x
395	2.75				x	x
400	2.78				x	x
406	2.82					x
412	2.85					x
418	2.89					x
425	2.93					x
429	2.96					x
433	2.99					x
437	3.01					x
443	3.05					x
450	3.09					x
456	3.13					x
462	3.17					x
466	3.19					x
470	3.22					x
475	3.25					x
479	3.28					x
483	3.30					x
487	3.33					x
493	3.36					x
500	3.41					x
508	3.46					x
515	3.50					x
523	3.55					x
530	3.60					x
538	3.65					x
545	3.69					x
553	3.74					x
560	3.78					x
570	3.85					x
580	3.91					x
590	3.97					x
600	4.03					x
608	4.08					x
615	4.12					x
623	4.17					x
630	4.22					x
640	4.28					x
650	4.34					x
660	4.40					x
670	4.47					x



O-Ring



PTFE Envelope O-Ring



Rubber Diaphragm



Pump and Valve Seals



Rubber Gasket



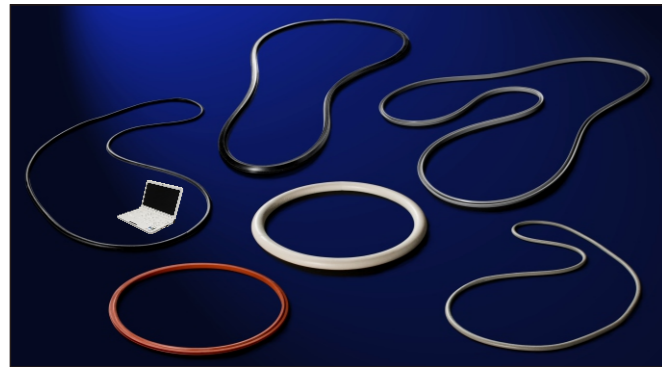
Joints Clamp Seals



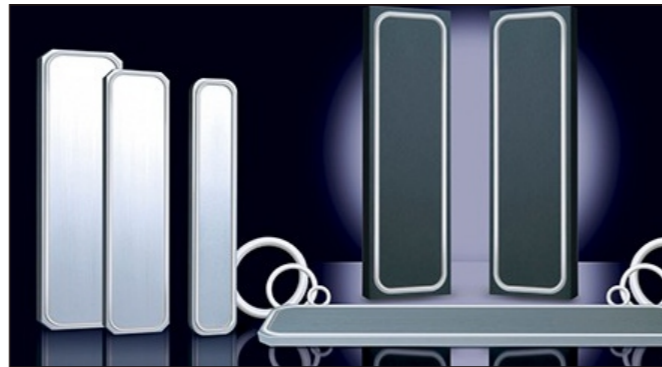
Butterfly Valve Seals



Molded Rubber Products



Large Diameter Seals



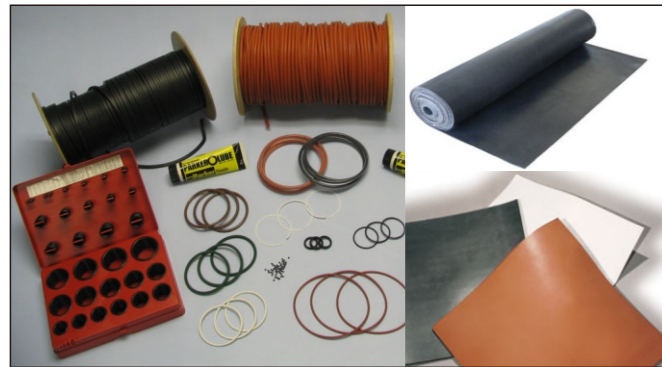
Bonded Door Seals



Chevron Seals



Hydraulic Seals



O Ring Cord and Rubber Sheet



V-Ring



Pneumatic Seals



Oil Seals