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Specializing in
High Performance
And **Quality Sealing Products**

Company Profile

APEX Sealing Technologies is a leading distributor of sealing products across Singapore, Malaysia, Vietnam and the Middle East. The company overcame several obstacles and set-backs with determination, pride, aggressiveness, strong support from customers and clear plans for the future.

Today, it specialises in high performance and quality sealing products for petrochemical, oil and gas, pharmaceutical, ship building and offshore projects, as well as technical user and industrial applications. It provides high performance and quality products from well-established companies in Italy, Germany, Poland, US, UK, Russia, India, China and Singapore to cater to each customers requirements. It prides itself in offering flexible, reliable services and a wide variety of products to its clients.

As a responsible company, APEX Sealing Technologies believes in environmentally friendly and reliable applications. It strives to capture all industries by servicing and supplying certified products with recognised certificates. At the same time, it offers competitive prices coupled with quality, speed and service flexibility. Its ability to understand its customer needs and dedication in going the extra mile for them has won the company a wide network of clients and strong relationships with established brands.

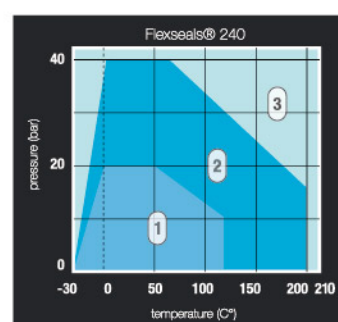
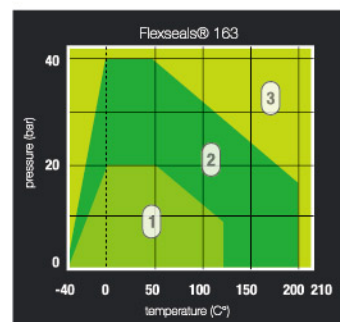
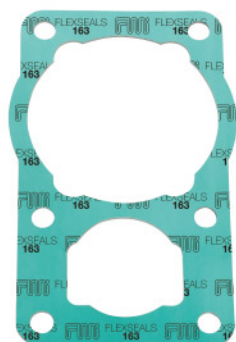
These achievements have propelled APEX Sealing Technologies to expand the business further into Africa and possibly Brazil. The company also plans to move to a bigger self-owned commercial property, which will include a Computer Numerical Control (CNC) gasket-cutting machine, a Water Jet machine, a Spiral Wound Gasket machine, an engineering workshop, warehouse space and a production and servicing workshop. And we supply standard and non-standard mechanical seals. Also provide mechanical seals reconditioning service, design, installation advice and seals troubleshooting services.

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The Flexseals® range of products is manufactured from a mixture of organic fibres and rubber binders, which offer great versatility thanks to their highly flexible chemical and physical properties. Since different versions with different filler materials are available, seals are guaranteed to offer outstanding performance with the majority of chemicals and with most temperatures and operating pressures, also thanks to the use of internal reinforcements.

Flexseals® gasketing materials are available with fillers based on synthetic fibres, mineral fibres, aramid fibres and carbon fibres. All products in this family are designed for maximum versatility and made from the finest materials, to ensure maximum reliability and durability, even in critical sealing applications.

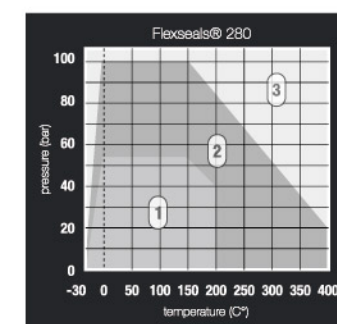


Flexseals® 163

Composition	Organic fibres with NBR/SBR binder
Density DIN 28090-2 (g/cm ³)	1.7 - 2.1
Max Working Temperature Continual (°C)	140
Max Working Temperature Peak (°C)	210
Max operating pressure (Mpa)	7
Leakage rate 3535-6 (mg*s ⁻¹ *m ⁻¹)	0,1
Residual Stress* 16h/175 °C Din 52913 (MPa)	20
Compressibility ASTM F 36-J (%)	5 - 15
Recovery ASTM F 36-J (%) min.	50
ASTM OIL -IRM 903 5h/150 °C max(%) ASTM F 146	10
ASTM FUEL B 5h/23 °C max(%) ASTM F 146	15
Availability Sheets size (mm) Thickness (mm)	1.500x1.000, 1.500x1.500 1.500x3.000 0,5 to 5,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Green
Service	Recommended for low temperature, medium pressure applications. Suitable for sealing hot and cold water and mild chemicals.

Flexseals® 240

Composition	Organic fibres with NBR binder
Density DIN 28090-2 (g/cm ³)	1.6 - 1.9
Max Working Temperature Continual (°C)	140
Max Working Temperature Peak (°C)	350
Max operating pressure (Mpa)	10
Leakage rate 3535-6 (mg*s ⁻¹ *m ⁻¹)	0,1
Residual Stress* 16h/175 °C Din 52913 (MPa)	20
Compressibility ASTM F 36-J (%)	5 - 15
Recovery ASTM F 36-J (%) min.	50
ASTM OIL -IRM 903 5h/150 °C max(%) ASTM F 146	5
ASTM FUEL B 5h/23 °C max(%) ASTM F 146	5
Availability Sheets size (mm) Thickness (mm)	1.500x1.000, 1.500x1.500 1.500x3.000 0,5 to 5,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Blue
Service	Suitable for use in applications involving hot and cold water, steam, oils, fuels, gases and a wide range of general chemicals.



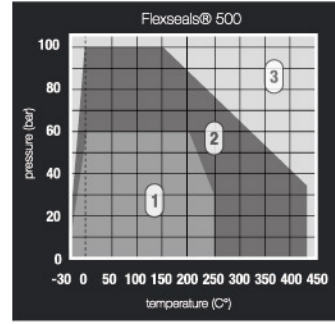
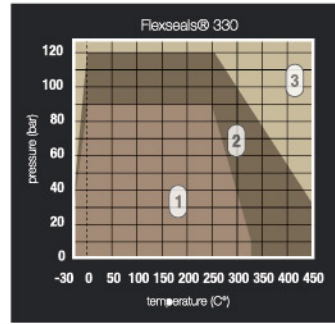
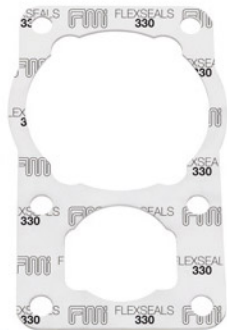
Flexseals® 280

Composition	Organic fibres with NBR binder
Density DIN 28090-2 (g/cm ³)	1.7 - 2.0
Max Working Temperature Continual (°C)	250
Max Working Temperature Peak (°C)	400
Max operating pressure (Mpa)	10
Leakage rate 3535-6 (mg*s ⁻¹ *m ⁻¹)	0,06
Residual Stress* 16h/175 °C Din 52913 (MPa)	30
Compressibility ASTM F 36-J (%)	5 - 15
Recovery ASTM F 36-J (%) min.	50
ASTM OIL -IRM 903 5h/150 °C max(%) ASTM F 146	3
ASTM FUEL B 5h/23 °C max(%) ASTM F 146	5
Availability Sheets size (mm) Thickness (mm)	1.500x1.000, 1.500x1.500 1.500x3.000 0,5 to 5,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black
Service	Suitable for use across a broad spectrum of industrial application involving steam (including superheated steam), water, oils, solvents, fuels, gases, general chemicals, dilute acids and alkalis.

Flexseals® 280 Metallic

Composition	Organic fibres with NBR binder and wire mesh insertion
Density DIN 28090-2 (g/cm ³)	1.9 - 2.2
Max Working Temperature Continual (°C)	250
Max Working Temperature Peak (°C)	400
Max operating pressure (Mpa)	12
Leakage rate 3535-6 (mg*s ⁻¹ *m ⁻¹)	0,08
Residual Stress* 16h/175 °C Din 52913 (MPa)	32
Compressibility ASTM F 36-J (%)	5 - 15
Recovery ASTM F 36-J (%) min.	50
ASTM OIL -IRM 903 5h/150 °C max(%) ASTM F 146	3
ASTM FUEL B 5h/23 °C max(%) ASTM F 146	5
Availability Sheets size (mm) Thickness (mm)	1.500x1.000, 1.500x1.500 1.500x3.000 1,0 to 5,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black
Service	Suitable for use across a broad spectrum of industrial application involving steam (including superheated steam), water, oils, solvents, fuels, gases, general chemicals, dilute acids and alkalis.

Other sheet sizes and thicknesses available upon request.
 Maximum temperature and pressure values cannot be used simultaneously.
 Typical parameters of 2mm thickness jointing.
 * Value valid for 1,5 thickness jointing.



Flexseals® 330

Composition	High quality mineral and aramid fibres with NBR binder
Density DIN 28090-2 (g/cm ³)	1.7 - 2.0
Max Working Temperature Continual (°C)	330
Max Working Temperature Peak (°C)	450
Max operating pressure (Mpa)	12
Leakage rate 3535-6 (mg*s ⁻¹ *m ⁻¹)	0,04
Residual Stress* 16h/175 °C Din 52913 (MPa)	32
Compressibility ASTM F 36-J (%)	5 - 15
Recovery ASTM F 36-J (%) min.	50
ASTM OIL -IRM 903 5h/150 °C max(%) ASTM F 146	3
ASTM FUEL B 5h/23 °C max(%) ASTM F 146	5
Availability Sheets size (mm) Thickness (mm)	1.500x1.000, 1.500x1.500 1.500x3.000 0,5 to 5,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	White

Service
Developed for general industrial applications where an asbestos free sheet is desirable, designed to be used at the same thickness as the CAF material it replaces.

Flexseals® 500

Composition	Carbon fibres and high quality NBR binder
Density DIN 28090-2 (g/cm ³)	1.6 - 1.9
Max Working Temperature Continual (°C)	250
Max Working Temperature Peak (°C)	450
Max operating pressure (Mpa)	10
Leakage rate 3535-6 (mg*s ⁻¹ *m ⁻¹)	0,05
Residual Stress* 16h/175 °C Din 52913 (MPa)	32
Compressibility ASTM F 36-J (%)	5 - 15
Recovery ASTM F 36-J (%) min.	50
ASTM OIL -IRM 903 5h/150 °C max(%) ASTM F 146	3
ASTM FUEL B 5h/23 °C max(%) ASTM F 146	5
Availability Sheets size (mm) Thickness (mm)	1.500x1.000, 1.500x1.500 1.500x3.000 0,5 to 5,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black

Service
Suitable for use in a wide range of industrial applications including oils, fuels, steam, water and dilute acids. Especially suitable for sealing strong caustic liquors.

Chemical Compatibility Guide for Flexseals®

	FLEXSEALS® 163	FLEXSEALS® 240	FLEXSEALS® 280	FLEXSEALS® 330	FLEXSEALS® 500
Acetic acid 100%	●	●	●	●	●
Acetone	●	●	●	●	●
Acetylene	●	●	●	●	●
Air	●	●	●	●	●
Aluminium chloride	●	●	●	●	●
Ammonia	●	●	●	●	●
Ammonium hydrogenphosphate	●	●	●	●	●
Barium chloride	●	●	●	●	●
Benzene	●	●	●	●	●
Boric acid	●	●	●	●	●
Calcium hydroxide	●	●	●	●	●
Carbon dioxide	●	●	●	●	●
Copper sulphate	●	●	●	●	●
Crude oil	●	●	●	●	●
Cyclohexanol	●	●	●	●	●
Cyclohexanon	●	●	●	●	●
Di-butyl phthalate	●	●	●	●	●
Ethyl ether	●	●	●	●	●
Ethylen	●	●	●	●	●
Ethylene glycol	●	●	●	●	●
Formic acid 10%	●	●	●	●	●
Glycerine	●	●	●	●	●
Hydraulic oil(mineral)	●	●	●	●	●
Hydrogen chloride dry	●	●	●	●	●
Hydrochlorid acid 20%	●	●	●	●	●
Chlorine dry	●	●	●	●	●
Chloroform	●	●	●	●	●
Iso-Octane	●	●	●	●	●
Kerosene	●	●	●	●	●
Methylene chloride	●	●	●	●	●
Natural gas	●	●	●	●	●
Nitric acid 20%	●	●	●	●	●
Nitrogen	●	●	●	●	●
Petrol	●	●	●	●	●
Petroleum	●	●	●	●	●
Phenol	●	●	●	●	●
Potable water	●	●	●	●	●
Potassium cyanide	●	●	●	●	●
Potassium iodide	●	●	●	●	●
Saturated steam	●	●	●	●	●
Silicon oil	●	●	●	●	●
Sodium carbonate	●	●	●	●	●
Sodium hydrogen carbonate	●	●	●	●	●
Sodium hydrogen sulphite	●	●	●	●	●
Sodium hydroxide	●	●	●	●	●
Sodium chloride	●	●	●	●	●
Sodium sulphate	●	●	●	●	●
Sugar	●	●	●	●	●
Sulphuric acid 65%	●	●	●	●	●
Tartaric acid	●	●	●	●	●
Tetrachlormethane	●	●	●	●	●
Toluene	●	●	●	●	●
Transformer oil	●	●	●	●	●
Turpentine	●	●	●	●	●
Xylene	●	●	●	●	●

- Suitable
- Unsuitable
- Depends on operating conditions

Flexigraf® FGS is the range of products based on high purity graphite laminate reinforced with stainless steel, nickel, aluminium, and many other materials. This product family is particularly suitable for the sealing of saturated steam at high temperature and of aggressive non-oxidising chemical agents, up to 700° C and pressures of 200 bar.

MULTIFLEX is the multilayers solution which endows this material with excellent resistance up to a pressure of 300 bar.

Unigraph® is the family of products based on high purity graphite which are available in different densities, compressed and coated with special technopolymers to withstand high temperatures.

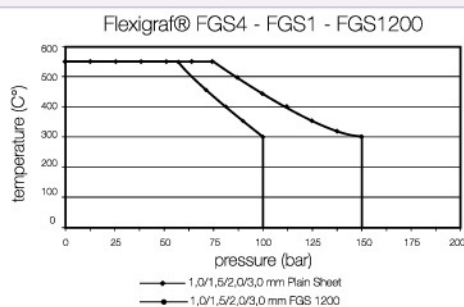
This product family offers exceptional ease of processing and cutting and is suitable for the sealing of saturated steam even at high temperature and of aggressive non-oxidising chemical agents, up to 650° C and pressures of 120 bar.



Flexigraf® FGS1

Composition	Graphite laminate reinforced with a pure nickel foil core
Density DIN 28090-2 (g/cm ³)	1 - 1,2
Min/Max recommended Peak Temperature (°C)	-200/+550
Max operating pressure (bar)	150
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤5
Compressibility DIN 3535-6 (%)	30 - 45
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.000x1.000, 1.500x1.500
Thickness (mm)	0,5 to 3
Tolerances Sheets size (mm)	+/- 50
Thickness (%)	+/- 10
Color	Black

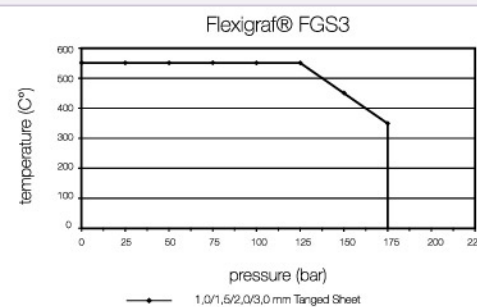
Service
Suitable for use in general gasket applications and can be used for sealing steam and most chemicals with the exception of strong oxidizing agents. It's particularly recommended for ease of cutting.



Flexigraf® FGS3

Composition	Graphite laminate reinforced with a tanged stainless steel core
Density DIN 28090-2 (g/cm ³)	1,2 - 1,5
Min/Max recommended Peak Temperature (°C)	-200/+550
Max operating pressure (bar)	200
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤5
Compressibility DIN 3535-6 (%)	30 - 45
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.000x1.000, 1.500x1.500
Thickness (mm)	0,5 to 3
Tolerances Sheets size (mm)	+/- 50
Thickness (%)	+/- 10
Color	Black

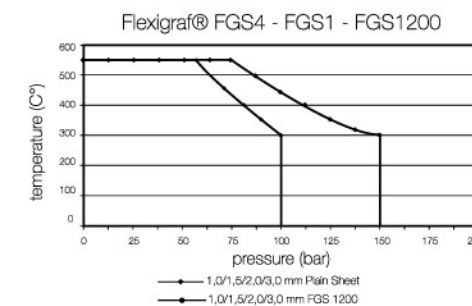
Service
Recommended for applications involving high sealing stresses and where high blowout resistance is required. The inclusion of the steel reinforcing layers give rise to a robust sheet. FGS 3 can be used to seal a wide range of media, with exception of strong oxidizing agents at extreme of temperature and pressure. Typical industries where FGS 3 is used include power generation and petrochemical.



Flexigraf® FGS4

Composition	Graphite laminate reinforced with a flat stainless steel core
Density DIN 28090-2 (g/cm ³)	1,15 - 1,45
Min/Max recommended Peak Temperature (°C)	-200/+550
Max operating pressure (bar)	150
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤5
Compressibility DIN 3535-6 (%)	30 - 45
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.000x1.000, 1.500x1.500
Thickness (mm)	0,5 to 3
Tolerances Sheets size (mm)	+/- 50
Thickness (%)	+/- 10
Color	Black

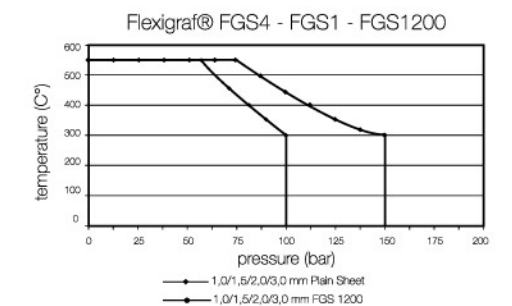
Service
Recommended for high temperature, high pressure sealing applications. The inclusion of the sheet reinforcing core give rise to a robust sheet with excellent handling characteristics. FGS 4 can be used to seal a wide range of media, with exception of strong oxidizing agents at extremes of temperature and pressure. The soft conformable nature of the graphite facing material makes FGS 4 suitable for sealing between worn or pitted flanges. Typical industries where FGS 4 is used include power generation and petrochemical.



Flexigraf® FGS 1200

Composition	Graphite laminate reinforced with a pure aluminium alloy core
Density DIN 28090-2 (g/cm ³)	1 - 1,2
Min/Max recommended Peak Temperature (°C)	-200/+550
Max operating pressure (bar)	100
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤5
Compressibility DIN 3535-6 (%)	30 - 50
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.000x1.000, 1.500x1.500
Thickness (mm)	0,5 to 3
Tolerances Sheets size (mm)	+/- 50
Thickness (%)	+/- 10
Color	Black

Service
Recommended for high temperature and high pressure sealing applications. It can be used to seal a wide range of media, with the exception of strong oxidizing agents and acetic acid. The soft conformable nature of graphite facing material makes FGS 1200 suitable for sealing between worn or pitted flanges.





Flexigraf® Multiflex HPT

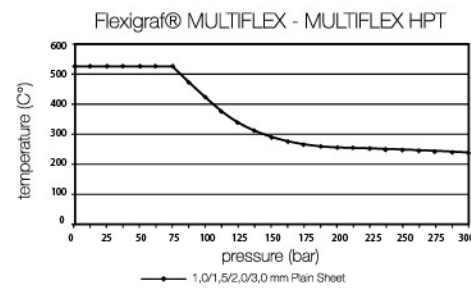
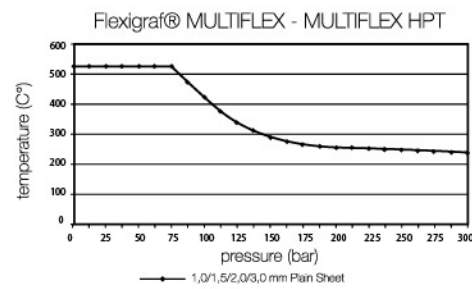
Composition	Graphite laminate reinforced with a tanged stainless steel multilayers core
Density DIN 28090-2 (g/cm ³)	1,4 - 1,6
Min/Max recommended Peak Temperature (°C)	-200/+550
Max operating pressure (bar)	300
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤5
Compressibility DIN 3535-6 (%)	30 - 45
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.000x1.000 1.500x1.000, 1.500x1.500
Thickness (mm)	1 to 6
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black

Service
Multiflex is a multilayer sheet material, obtained from graphite thk 0.5 mm with density 1,1 plus flat SS316L layers thk 0.05mm. Depending on the sheet thk required are used different numbers of SS316L and graphite foil layers. For example to have a final thk 3mm we use 5 SS316L layers and 6 graphite layers.

Flexigraf® Multiflex

Composition	Graphite laminate reinforced with a flat stainless steel multilayers core
Density DIN 28090-2 (g/cm ³)	1,3 - 1,6
Min/Max recommended Peak Temperature (°C)	-200/+550
Max operating pressure (bar)	300
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤5
Compressibility DIN 3535-6 (%)	30 - 45
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.000x1.000 1.500x1.000, 1.500x1.500
Thickness (mm)	1 to 6
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black

Service
The jointing is made using a special hot process glue. Multiflex is a sealing material with excellent mechanical properties, is used when is required high bolt torque. In order to obtain the lowest leakage existing is possible to produce gaskets with inner and outer eylet rings.



Unigraph® is a totally different project on the joining sheet field. It is composed by graphite with a strong special polymer coating, realized by a non-continuous process. The composition of this material makes it suitable for high temperature (up to 450°C) applications as well as cryogenic (-196°C) ones. By being made also by graphite it is widely usable thanks to its chemical inertness. Unigraph® grants stability and creep relaxation of less than 10/12% at temperature up to 450°C. The behavior of Unigraph® in application of thermal cycling and continued exposure to high temperatures is well described on the below charts as well as the comparison of creep values among unigraph and compressed non asbestos sheets. This patent process makes Unigraph® very easy to cut but also, flexible, strong and durable at the same time.

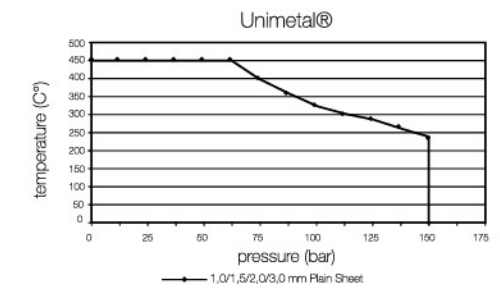
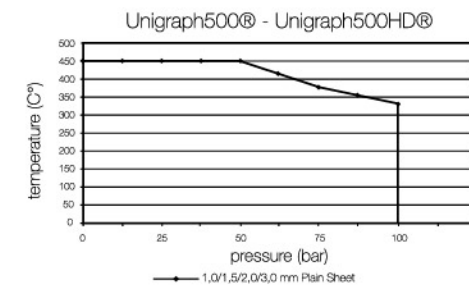


Flexigraf® Unigraph® 500

Composition	Graphite based with polymer coating both sides
Density DIN 28090-2 (g/cm ³)	0,9 - 1,1
Min/Max recommended Peak Temperature (°C)	-200/+450
Max operating pressure (bar)	100
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤8
Compressibility DIN 3535-6 (%)	40 - 50
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.500x1.000 1.500x1.500
Thickness (mm)	0,5 to 3
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black

Flexigraf® Unimetal

Composition	Graphite based wire mesh reinforced with polymer coating both sides
Density DIN 28090-2 (g/cm ³)	0,9 - 1,1
Min/Max recommended Peak Temperature (°C)	-200/+450
Max operating pressure (bar)	150
Leakage DIN 3535-6 (mg*s-1*m-1)	≤0.1
Creep relaxation DIN 3535-6 (%)	≤8
Compressibility DIN 3535-6 (%)	40 - 50
Recovery DIN 3535-6 (%)	3 - 7
Availability Sheets size (mm)	1.500x1.000 1.500x1.500
Thickness (mm)	0,5 to 3
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Black



Other sheet sizes and thickness available upon request.
Maximum temperature and pressure values cannot be used simultaneously.
Typical parameters of 1.5mm thickness jointing.

FM-HIGH® and Micatherm® are the materials which FMI designed and manufactured with a view to meeting the most demanding sealing requirements. Thanks to their chemical formulation, these patented materials, which are available as sheets, fillers for spiral wounds and facing for camprofiles, can be used in all critical applications where other materials fail to ensure the required resistance, durability and reliability up to 1000 °C.

FM-HIGH® and Micatherm® are oxidation-free.



Mica Micatherm® S15

Composition	Flexible Mica sheet bonded with special resin and tanged insert of SS316L
Density DIN 28090-2 (g/cm³)	1,65 - 1,95
Max recommended Temperature (°C)	900
Max operating pressure (Bbar)	60
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.1*
Creep relaxation DIN 3535-6 (%)	<12
Compressibility DIN 3535-6 (%)	>16
Recovery DIN 3535-6 (%)	>3
Availability Sheets size (mm)	1.500x1.500 1.000x1.000
Thickness (mm)	1 to 3
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Golden Brown

Service
Recommended for applications involving high temperature.

Mica FM High

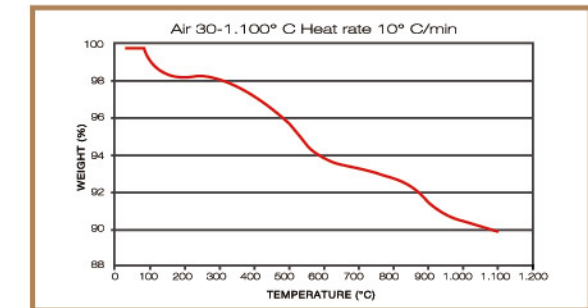
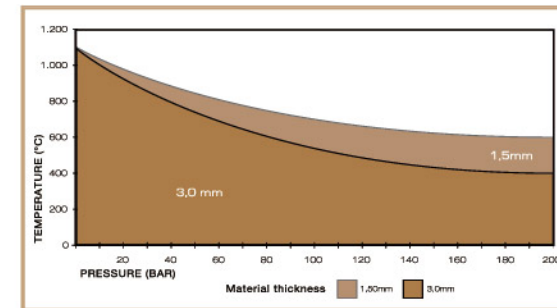
Composition	Expanded Mica and biosoluble fiber bonded to a SS316L tanged core
Density DIN ASTM F 1315 (g/cm³)	1,6 - 1,9
Max recommended Temperature (°C)	950
Max operating pressure (Bbar)	200
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.1*
Creep relaxation DIN 3535-6 (%)	<18
Compressibility DIN 3535-6 (%)	>20
Recovery DIN 3535-6 (%)	>2.2
Availability Sheets size (mm)	1.500x1.500 1.000x1.000
Thickness (mm)	1 to 3
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Gold

Service
FM High has been developed in order to withstand very high temperature and pressure service and for strong oxidizing media.

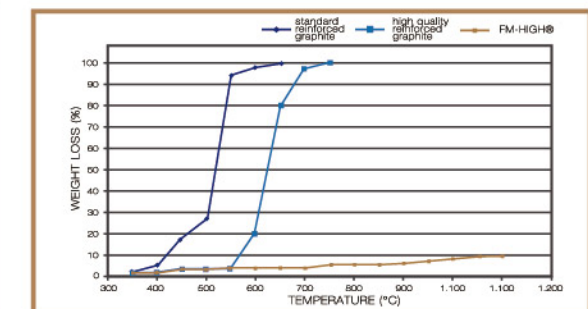
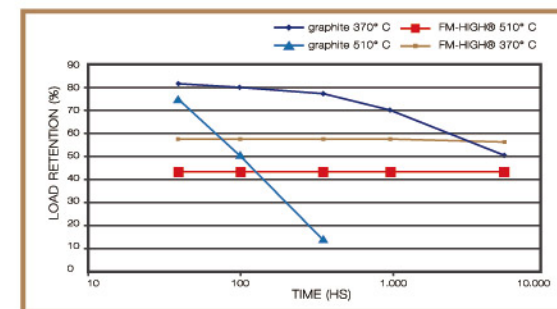
Other sheet sizes and thickness available upon request.
Maximum temperature and pressure values cannot be used simultaneously.
Typical parameters of 1.5mm thickness jointing.

Chemical Compatibility Guide for FM-HIGH® and Micatherm S15®

Acetic acid glacial	●	Dye Liquor	●	Methyl alcohol	●	Sulphur dioxide	●
Acetone	●	Ethyl acetate	●	Methyl isobutyl ketone	●	Sulphur trioxide	●
Acetylene	●	Ethyl alcohol	●	Methyl methacrylate	●	Sulphuric acid (concentrated)	●
Acrylic acid	●	Ethylene glycol	●	Methylene chloride	●	Sulphuric acid (fuming)	●
Acrylonitrile	●	Ethylene oxide	●	Mineral oil	●	Tar	●
Air	●	Ethyl ether	●	Mobiltherm	●	Turpentine	●
Alkaline lye	●	Ethylene	●	Naphthalene	●	Toluene	●
Aluminum chloride	●	Ethylene chloride	●	Natural gas	●	Towns gas	●
Ammonia gas	●	Fatty acids	●	Nitric acid (concentrated 50%)	●	Transformer oil	●
Ammonia	●	Ferric chloride	●	Nitric acid (fuming 95%)	●	Tributyl phosphate	●
Amyl acetate	●	Fluorine	●	Nitrogen	●	Triethanolamine	●
Amyl alcohol	●	Fluosilicic acid	●	Oleum	●	Urea	●
Aniline	●	Formaldehyde	●	Oxygen	●	Vegetable Oil	●
Aviation fuel	●	Formic acid 85%	●	Paraffin	●	Vinyl acetate	●
Beer	●	Formic acid 10%	●	Pentachlorophenol	●	Vinyl chloride	●
Benzene	●	Freons	●	Perchloric acid	●	Vinylidene chloride	●
Benzoyl chloride	●	Gas oil	●	Petroleum	●	Water	●
Biphenyl	●	Gasoline	●	Phenol	●	Water condensate	●
Blast furnace gas	●	Heating oil	●	Phosgene	●	Water distilled	●
Bleach (solution)	●	Hydraulic oil (glycol)	●	Phosphoric acid (concentrated)	●	Whisky	●
Boiler feed water	●	Hydraulic oil (mineral)	●	Phosphoric acid (dilute)	●	Wine	●
Brine	●	Hydraulic oil (phosphate ester)	●	Phosphorous	●	White Spirit	●
Bromine	●	Hydrazine	●	Phthalic anhydride	●	Zylene	●
Calcium chlorate	●	Hydrocarbons (aromatic)	●	Potassium hydroxide	●		
Capro-lactam	●	Hydrocarbons aliphatic (sat.)	●	Potassium nitrate	●		
Carbolic Acid	●	Hydrocarbons aliphatic (unsat.)	●	Potassium permanganate	●		
Carbon dioxide	●	Hydrochloric acid (37% HCl)	●	Producer gas	●		
Carbon disulphide	●	Hydrofluoric acid	●	Pyridine	●		
Carbon monoxide	●	Hydrogen	●	Sea water	●		
Carbon tetrachloride	●	Hydrogen chloride	●	Silicone oil	●		
Chile saltpetre	●	Hydrogen fluoride	●	Soda ash	●		
Chlorine, dry	●	Hydrogen peroxide	●	Sodium bi-carbonate	●		
Chlorine, wet	●	Hydrogen sulfide	●	Sodium carbonate	●		
Chlorinated hydrocarbons	●	Isopropyl acetate	●	Sodium cyanide	●		
Chloroacetic acid	●	Isopropyl alcohol	●	Sodium hydroxide (40%)	●		
Chloro benzene	●	Kerosene	●	Sodium hydroxide (dilute)	●		
Chromic acid	●	Lime	●	Sodium hypochlorite	●		
Copper sulphate	●	Lubrication oil	●	Sodium nitrate	●		
Creosote	●	Machine oil	●	Starch	●		
Cresol	●	Magnesium sulphate	●	Steam	●		
Crude oil	●	Malic acid	●	Steam condensate	●		
Cyclohexanol	●	Methane	●	Styrene	●		
Dichlorobenzene	●	Methyl acrylate	●	Sulphur	●		



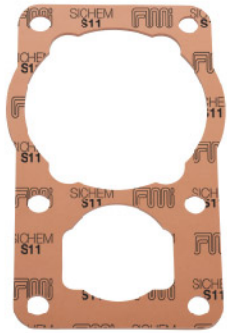
● Suitable
● Unsuitable
● Depends on operating conditions



The SICHEM® product range is our biaxially-oriented PTFE sheet solution, combining excellent chemical resistance with optimal sealing performance.

The SICHEM® product range is developed for processes ranging from cryogenic temperatures up to +260° C and is suitable across the entire range of aggressive media (ph 0 to 14). SICHEM® is the right solution to achieve the lowest creep value, and seal integrity when it is vital to achieve minimum leakage and conventional PTFE based materials are not suited.

Using a patented process, we produce materials that have special controlled microporosity and a close-cell structure. Products from the SICHEM® family achieve high compression and sealability at low bolt torque values. They are optimized for applications with irregular sealing surfaces, compromised load capacity, or replacement of envelope gaskets.



Sichem® S11

Composition	Modified PTFE with Silica filler
Density ASTM F 1315 (g/cm ³)	2.2
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	80
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.05
Creep DIN 3535-6 (%)	<24
Compression DIN 3535-6 (%)	>4
Recovery DIN 3535-6 (%)	>1.7
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 0,75/1,0/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Pink

Service

Suitable for sealing all chemicals across the whole pH range (0-14) with the exception of molten alkali metals, fluorine gas, hydrogen fluoride or materials which may generate these.



Sichem® S33

Composition	Modified PTFE with Barium sulphate filler
Density ASTM F 1315 (g/cm ³)	2.8
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	80
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.005
Creep DIN 3535-6 (%)	<28
Compression DIN 3535-6 (%)	>4.3
Recovery DIN 3535-6 (%)	>2.1
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 0,75/1,0/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Off White

Service

Suitable for sealing all chemicals across the whole pH range (0-14) with the exception of molten alkali metals, fluoride gas, anhydrous HS and sulphuric acid.



Sichem® S50

Composition	Modified PTFE with Hollow Glass microspheres filler
Density ASTM F 1315 (g/cm ³)	1.4
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	50
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.05
Creep DIN 3535-6 (%)	<19
Compression DIN 3535-6 (%)	>32
Recovery DIN 3535-6 (%)	>7
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 0,75/1,0/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Blue

Service

Specifically designed for use in flanges where only low bolt loading is available. Such flanges can be glass lined, ceramic, plastic or be so distorted that they include areas of low gasket stress. Suitable for sealing all chemicals across the whole pH range (0-14) with the exception of molten alkali metals, fluorine gas, hydrogen fluoride or materials which may generate these.

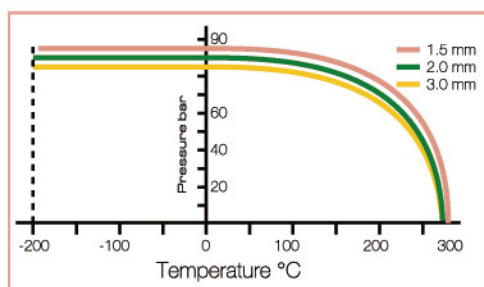


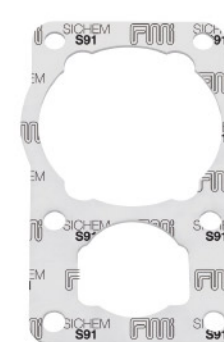
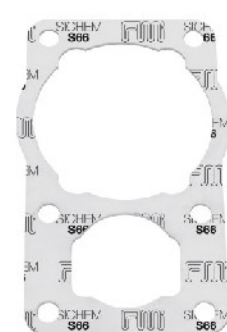
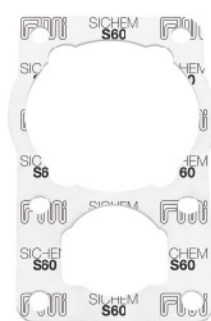
Sichem® S59

Composition	Modified PTFE with Mica filler
Density ASTM F 1315 (g/cm ³)	2.1
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	80
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.005
Creep DIN 3535-6 (%)	<42
Compression DIN 3535-6 (%)	>4.8
Recovery DIN 3535-6 (%)	>3.2
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 0,75/1,0/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	Grey

Service

Specifically designed to minimize emissions from hazardous solvents and chemicals withstanding high pressure and temperature ranging and from standard raised face flange assemblies operating at a constant temperature to process equipment subject to heavy thermal cycling. Thanks to his high mechanical resistance and his low coefficient friction SICHEM S59 is recommended as linear bearing strip material, primarily, on the ways and gibs of machine tools. It provides low friction, stick-slip free operation, long life and minimum wear. Suitable for sealing strong acids, strong caustics, aromatic and aliphatic hydrocarbons, heat transfer fluids, steam and refrigerants





Sichem® S60

Composition	Microcellular Modified PTFE with Inorganic fillers
Density ASTM F 1315 (g/cm ³)	0.85
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	80
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.002
Creep DIN 3535-6 (%)	<12
Compression DIN 3535-6 (%)	>55
Recovery DIN 3535-6 (%)	>5
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 0,75/1,0/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	White

Service

Damaged sealing contact surface. Replacement of envelope gaskets. Load compromised situation (low bolt torque required). Suited to sealing against a wide variety of aggressive chemical media, gases and liquids. Capable of sealing across a wide variety flange materials including steel, glass and plastics. Easy to install even in case of large diameter gaskets.

Sichem® S66

Composition	Microcellular Modified PTFE with SS316L tanged core
Density ASTM F 1315 (g/cm ³)	1.2
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	170
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	25000
P x T Max. (Thk 3.0 mm) (Bar x °C)	15000
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.01
Creep DIN 3535-6 (%)	<5
Compression DIN 3535-6 (%)	>41
Recovery DIN 3535-6 (%)	>6
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1,0/1,5/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 50 +/- 10
Color	White

Service

Designed for use in flange where is required high pressure and low creep. Suited to sealing against a wide variety of aggressive chemical media, gases and liquids.

Sichem® S91

Composition	Microcellular Modified PTFE with Barium sulphate filler
Density ASTM F 1315 (g/cm ³)	2.0
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	70
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.005
Creep DIN 3535-6 (%)	<18
Compression DIN 3535-6 (%)	>35
Recovery DIN 3535-6 (%)	>6
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 1,5/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 10 +/- 50
Color	White

Service

Designed in order to achieve high compressibility, high recovery and high chemical inertness. The microcellular structure allows to achieve high compression and high sealability at low bolt torque values. In this way the sealability is achieved before the yielding point of the material in order to server other mechanical properties. The chemical composition has been developed in order to withstand high aggressive chemical environments.

Sichem® S92

Composition	Microcellular Modified PTFE with graphite
Density ASTM F 1315 (g/cm ³)	1.45
Temperature operating range (°C)	-260/+260
Max operating pressure (Bbar)	50
P x T Max. (Thk 0.8 - 2.0 mm) (Bar x °C)	12000
P x T Max. (Thk 3.0 mm) (Bar x °C)	8500
Leakage DIN 3535-6 (mg*s-1*m-1)	<0.005
Creep DIN 3535-6 (%)	<27
Compression DIN 3535-6 (%)	>42
Recovery DIN 3535-6 (%)	>12
PH range	0-14
Availability Sheets size (mm) Thickness (mm)	1.500x1.500 1.750x1.750 1,5/2,0/2,5/3,0/4,0/5,0/6,0
Tolerances Sheets size (mm) Thickness (%)	+/- 10 +/- 50
Color	Black

Service

Designed for use in applications where high recovery and low bolt loading are required. Suitable to use with glass lined, ceramic and plastic flanges. Suitable to sealing against medium-low concentration acid and base, hydrocarbons and petroleum derivate and products gas.

Other sheet sizes and thickness available upon request.
Maximum temperature and pressure values cannot be used simultaneously.
Typical parameters of 2mm thickness jointing.

Chemical Compatibility Guide for Sichem®

	SICHEM® S11- S90	SICHEM® S50	SICHEM® S33 - S91	SICHEM® S58 - S60	SICHEM® S59 - S93	DIAPHRAGM	SICHEM® S66		SICHEM® S11- S90	SICHEM® S50	SICHEM® S33 - S91	SICHEM® S58 - S60	SICHEM® S59 - S93	DIAPHRAGM	SICHEM® S66		SICHEM® S11- S90	SICHEM® S50	SICHEM® S33 - S91	SICHEM® S58 - S60	SICHEM® S59 - S93	DIAPHRAGM	SICHEM® S66
Acetaldehyde	●	●	●	●	●	●	●	Calcium Chloride	●	●	●	●	●	●	●	E85 (85% Ethanol, 15% Gas)	●	●	●	●	●	●	●
Acetamide	●	●	●	●	●	●	●	Calcium Cyanamide	●	●	●	●	●	●	●	Epoxybutane	●	●	●	●	●	●	●
Acetic Acid	●	●	●	●	●	●	●	Calcium Hydroxide	●	●	●	●	●	●	●	Ethane	●	●	●	●	●	●	●
Acetic Anhydride	●	●	●	●	●	●	●	Calcium Hypochlorite	●	●	●	●	●	●	●	Ethers	●	●	●	●	●	●	●
Acetone	●	●	●	●	●	●	●	Calcium Nitrate	●	●	●	●	●	●	●	Ethyl Acetate	●	●	●	●	●	●	●
Acetonitrile	●	●	●	●	●	●	●	Cane Sugar Liquors	●	●	●	●	●	●	●	Ethyl Acrylate	●	●	●	●	●	●	●
Acetophenone	●	●	●	●	●	●	●	Caproic Acid	●	●	●	●	●	●	●	Ethyl Alcohol	●	●	●	●	●	●	●
Acetylaminofluorene	●	●	●	●	●	●	●	Capitan	●	●	●	●	●	●	●	Ethylbenzene	●	●	●	●	●	●	●
Acetylene	●	●	●	●	●	●	●	Carbaryl	●	●	●	●	●	●	●	Ethyl Carbamate	●	●	●	●	●	●	●
Acrolein	●	●	●	●	●	●	●	Carbolic Acid, Phenol	●	●	●	●	●	●	●	Ethyl Cellulose	●	●	●	●	●	●	●
Acrylamide	●	●	●	●	●	●	●	Carbon Dioxide, Dry	●	●	●	●	●	●	●	Ethyl Chloride	●	●	●	●	●	●	●
Acrylic Acid	●	●	●	●	●	●	●	Carbon Dioxide, Wet	●	●	●	●	●	●	●	Ethyl Ether	●	●	●	●	●	●	●
Acrylic Anhydride	●	●	●	●	●	●	●	Carbon Disulfide	●	●	●	●	●	●	●	Ethyl Hexoate	●	●	●	●	●	●	●
Acrylonitrile	●	●	●	●	●	●	●	Carbon Monoxide	●	●	●	●	●	●	●	Ethylene	●	●	●	●	●	●	●
Adipic Acid	●	●	●	●	●	●	●	Carbon Tetrachloride	●	●	●	●	●	●	●	Ethylene Bromide	●	●	●	●	●	●	●
Adiponitrile	●	●	●	●	●	●	●	Carbonic Acid	●	●	●	●	●	●	●	Ethylene Dibromide	●	●	●	●	●	●	●
Air	●	●	●	●	●	●	●	Carbonyl Sulfide	●	●	●	●	●	●	●	Ethylene Dichloride	●	●	●	●	●	●	●
Allyl Acetate	●	●	●	●	●	●	●	Castor Oil	●	●	●	●	●	●	●	Ethylene Glycol	●	●	●	●	●	●	●
Allyl Chloride	●	●	●	●	●	●	●	Catechol	●	●	●	●	●	●	●	Ethyleneimine	●	●	●	●	●	●	●
Allyl Methacrylate	●	●	●	●	●	●	●	Caustic Soda	●	●	●	●	●	●	●	Ethylene Oxide	●	●	●	●	●	●	●
Aluminum Chloride	●	●	●	●	●	●	●	Cetane (Hexadecane)	●	●	●	●	●	●	●	Ethylene Thiourea	●	●	●	●	●	●	●
Aluminum Fluoride	●	●	●	●	●	●	●	China Wood Oil	●	●	●	●	●	●	●	Ethylidene Chloride	●	●	●	●	●	●	●
Aluminum Hydroxide (Solid)	●	●	●	●	●	●	●	Chloramben	●	●	●	●	●	●	●	Ferric Chloride	●	●	●	●	●	●	●
Aluminum, Molten	●	●	●	●	●	●	●	Chlorazotic Acid (Aqua Regia)	●	●	●	●	●	●	●	Ferric Phosphate	●	●	●	●	●	●	●
Aluminum Nitrate	●	●	●	●	●	●	●	Chloridane	●	●	●	●	●	●	●	Ferric Sulfate	●	●	●	●	●	●	●
Aluminum Sulfate	●	●	●	●	●	●	●	Chlorinated Solvents, Dry	●	●	●	●	●	●	●	Fluorine, Gas	●	●	●	●	●	●	●
Alums	●	●	●	●	●	●	●	Chlorinated Solvents, Wet	●	●	●	●	●	●	●	Fluorine, Liquid	●	●	●	●	●	●	●
Aminodiphenyl	●	●	●	●	●	●	●	Chlorine, Dry	●	●	●	●	●	●	●	Fluorine Dioxide	●	●	●	●	●	●	●
Ammonia, Gas, 70°C and below	●	●	●	●	●	●	●	Chlorine, Wet	●	●	●	●	●	●	●	Formaldehyde	●	●	●	●	●	●	●
Ammonia, Gas, Above 70°C	●	●	●	●	●	●	●	Chlorine Dioxide	●	●	●	●	●	●	●	Formic Acid	●	●	●	●	●	●	●
Ammonia, Liquid, Anhydrous	●	●	●	●	●	●	●	Chlorine Trifluoride	●	●	●	●	●	●	●	Fuel Oil	●	●	●	●	●	●	●
Ammonium Chloride	●	●	●	●	●	●	●	Chloroacetic Acid	●	●	●	●	●	●	●	Fuel Oil, Acid	●	●	●	●	●	●	●
Ammonium Hydroxide	●	●	●	●	●	●	●	Chloroacetophenone	●	●	●	●	●	●	●	Gasoline, Refined	●	●	●	●	●	●	●
Ammonium Nitrate	●	●	●	●	●	●	●	Chlorobenzene	●	●	●	●	●	●	●	Gelatin	●	●	●	●	●	●	●
Ammonium Phosphate, Monobasic	●	●	●	●	●	●	●	Chlorobenzilate	●	●	●	●	●	●	●	Glucose	●	●	●	●	●	●	●
Ammonium Phosphate, Dibasic	●	●	●	●	●	●	●	Chloroethylene	●	●	●	●	●	●	●	Glycerine, Glycerol	●	●	●	●	●	●	●
Ammonium Sulfate	●	●	●	●	●	●	●	Chloroform	●	●	●	●	●	●	●	Glycol	●	●	●	●	●	●	●
Amyl Acetate	●	●	●	●	●	●	●	Chloromethyl Methyl Ether (CMME)	●	●	●	●	●	●	●	Grain Alcohol	●	●	●	●	●	●	●
Amyl Alcohol	●	●	●	●	●	●	●	Chloronitrous Acid (Aqua Regia)	●	●	●	●	●	●	●	Grease, Petroleum Base	●	●	●	●	●	●	●
Aniline, Aniline Oil	●	●	●	●	●	●	●	Chloroprene	●	●	●	●	●	●	●	Green Sulfate Liquor	●	●	●	●	●	●	●
Aniline Hydrochloride	●	●	●	●	●	●	●	Chlorosulfonic Acid	●	●	●	●	●	●	●	Heptachlor	●	●	●	●	●	●	●
Aniline Dyes	●	●	●	●	●	●	●	Chromic Acid	●	●	●	●	●	●	●	Heptane	●	●	●	●	●	●	●
Anisidine	●	●	●	●	●	●	●	Chromic Anhydride	●	●	●	●	●	●	●	Hexachlorobenzene	●	●	●	●	●	●	●
Antimony trichloride	●	●	●	●	●	●	●	Chromium Trioxide	●	●	●	●	●	●	●	Hexachlorobutadiene	●	●	●	●	●	●	●
Aqua Regia	●	●	●	●	●	●	●	Citric Acid	●	●	●	●	●	●	●	Hexachlorocyclopentadiene	●	●	●	●	●	●	●
Aroclors or Arochlor	●	●	●	●	●	●	●	Coke Oven Gas	●	●	●	●	●	●	●	Hexachloroethane	●	●	●	●	●	●	●
Aromatic Hydrocarbons	●	●	●	●	●	●	●	Copper Chloride	●	●	●	●	●	●	●	Hexadecane	●	●	●	●	●	●	●
Arsenic Acid	●	●	●	●	●	●	●	Copper Sulfate	●	●	●	●	●	●	●	Hexamethylene Diisocyanate	●	●	●	●	●	●	●
Arsenous Acid	●	●	●	●	●	●	●	Corn Oil	●	●	●	●	●	●	●	Hexamethylphosphoramide	●	●	●	●	●	●	●
Asphalt	●	●	●	●	●	●	●	Cotton Seed Oil 10	●	●	●	●	●	●	●	Hexane	●	●	●	●	●	●	●
Aviation Gasoline	●	●	●	●	●	●	●	Creosote	●	●	●	●	●	●	●	Hexone	●	●	●	●	●	●	●
Barium Chloride	●	●	●	●	●	●	●	Cresols, Cresylic Acid	●	●	●	●	●	●	●	Hydraulic Oil, Mineral	●	●	●	●	●	●	●
Barium Hydroxide	●	●	●	●	●	●	●	Crotic Acid	●	●	●	●	●	●	●	Phosphate Esters	●	●	●	●	●	●	●
Barium Sulfide	●	●	●	●	●	●	●	Crude Oil	●	●	●	●	●	●	●	Hydrazine	●	●	●	●	●	●	●
Baygon	●	●	●	●	●	●	●	Cumene	●	●	●	●	●	●	●	Hydrobromic Acid	●	●	●	●	●	●	●
Beer	●	●	●	●	●	●	●	Cyclohexane	●	●	●	●	●	●	●	Hydrochloric Acid	●	●	●	●	●	●	●
Benzaldehyde	●	●	●	●	●	●	●	Cyclohexanol	●	●	●	●	●	●	●	Hydrochloric Acid, dry	●	●	●	●	●	●	●
Benzene, Benzol	●	●	●	●	●	●	●	Cyclohexanone	●	●	●	●	●	●	●	Hydrochloric Acid 20%	●	●	●	●	●	●	●
Benzene Sulphonic Acid	●	●	●	●	●	●	●	Diazomethane	●	●	●	●	●	●	●	Hydrocyanic Acid	●	●	●	●	●	●	●
Benzidine	●	●	●	●	●	●	●	Dibenzofuran	●	●	●	●	●	●	●	Hydrofluoric Acid, Anhydrous	●	●	●	●	●	●	●
Benzoic Acid	●	●	●	●	●	●	●	Dibenzylether	●	●	●	●	●	●	●	Hydrofluoric Acid, 65% to Anhydrous/Above 70°C	●	●	●	●	●	●	●
Benzonitrile	●	●	●	●	●	●	●	Dibromo chloropropane	●	●	●	●	●	●	●	Hydrofluoric Acid, 65% to Anhydrous/Above 70°C	●	●	●	●	●	●	●
Benzoguanones	●	●	●	●	●	●	●	Dibromoethane	●	●	●	●	●	●	●	Hydrofluoric Acid, Up to Anhydrous, 70°C & below	●	●	●	●	●	●	●
Benzotrithionide	●	●	●	●	●	●	●	Dibutyl Phthalate	●	●	●	●	●	●	●	Hydrofluoroallic Acid	●	●	●	●	●	●	●
Benzoyl Chloride	●	●	●	●	●	●	●	Dibutyl Sebacate	●	●	●	●	●	●	●	Hydrofluosilicic Acid	●	●	●	●	●	●	●
Benzyl Alcohol	●	●	●	●	●	●	●	Dichlorobenzene	●	●	●	●	●	●	●	Hydrogen	●	●	●	●	●	●	●
Benzyl Chloride	●	●	●	●	●	●	●	Dichlorobenzidene	●	●	●	●	●	●	●	Hydrogen Bromide	●	●	●	●	●	●	●
Bio-diesel (B100)	●	●	●	●	●	●	●	Dichloroethylene	●	●	●	●	●	●	●	Hydrogen Fluoride	●	●	●	●	●	●	●
Biphenyl	●	●	●	●	●	●	●	Dichloroethyl Ether	●	●	●	●	●	●	●	Hydrogen Peroxide, 10%	●	●	●	●	●	●	●
Bis(2-chloroethyl)ether	●	●	●	●	●	●	●	Dichloromethane	●	●	●	●	●	●	●	Hydrogen Peroxide, 10-90%	●	●	●	●	●	●	●

Flexwound® Spiral Wound Gaskets



Description

Gasket made from spiral of metal material (strip) and non metal material (filler). SWG can have outer and inner rings. Spiral wound gaskets are capable of meeting the most exacting condition of pressure and temperature.

Approval

VDI 2440-EMISSION CONTROL

Color

For ease identification, we utilize a color coding system around the outside of the centering ring, thus permitting full identification of both the winding and filler materials.

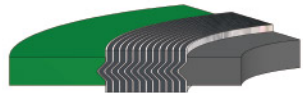
Technical Informations

High temperatures and high pressures depending from selected materials.

Available Gasket Materials

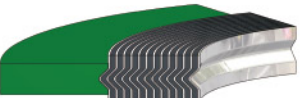
METAL WINDING STRIP	FILLER MATERIAL	GUIDE RING MATERIAL
Standard Stainless Steel Type 316L Type 304 Others STAINLESS STEEL 304 L 309 310 316 TI 321 347 430 410 ALLOY 20 MONEL® TITANIUM® NICKEL® INCONEL® 600	Standard FLEXIGRAF® Graphite Others MICATHERM SICHEM® PTFE BIOCERAMIC	Standard Carbon Steel Others STAINLESS STEEL TYPE 316 L TYPE 304 304 L 309 310 316 TI 321 347 430 410 ALLOY 20 MONEL® TITANIUM® NICKEL® INCONEL® 600 INCONEL® 625 INCONEL® X-750 HASTELLOY® B2 HASTELLOY® C276 INCOLOY® 800 INCOLOY® 825 DUPLEX SUPER DUPLEX ZIRCONIUM® TANTALUM® COPPER PHOS-BRONZE

Types



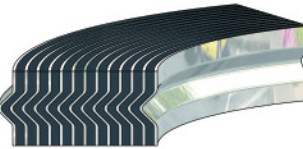
GRI

The standard version is the Style GRI spiral wound gasket with inner and outer ring. This gasket has the best sealing characteristics combined with the highest safety for flanged joints with flat face and raised face flanges.



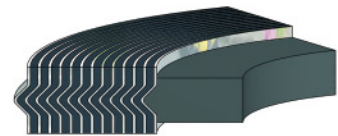
GR

By means of suitable dimensioning of the centering ring, the sealing element is accurately centered on the flange face by the bolts. A general purpose gasket for use with flat face and raised face flanges.



RR

Style RR spiral wound gasket with no accessory ring is suitable for tongue and groove applications and for operation with a compression stop. Given a gasket thickness of 4.5 mm, a groove depth of 3.3 (± 0.1) mm is recommended to provide the compression stop.

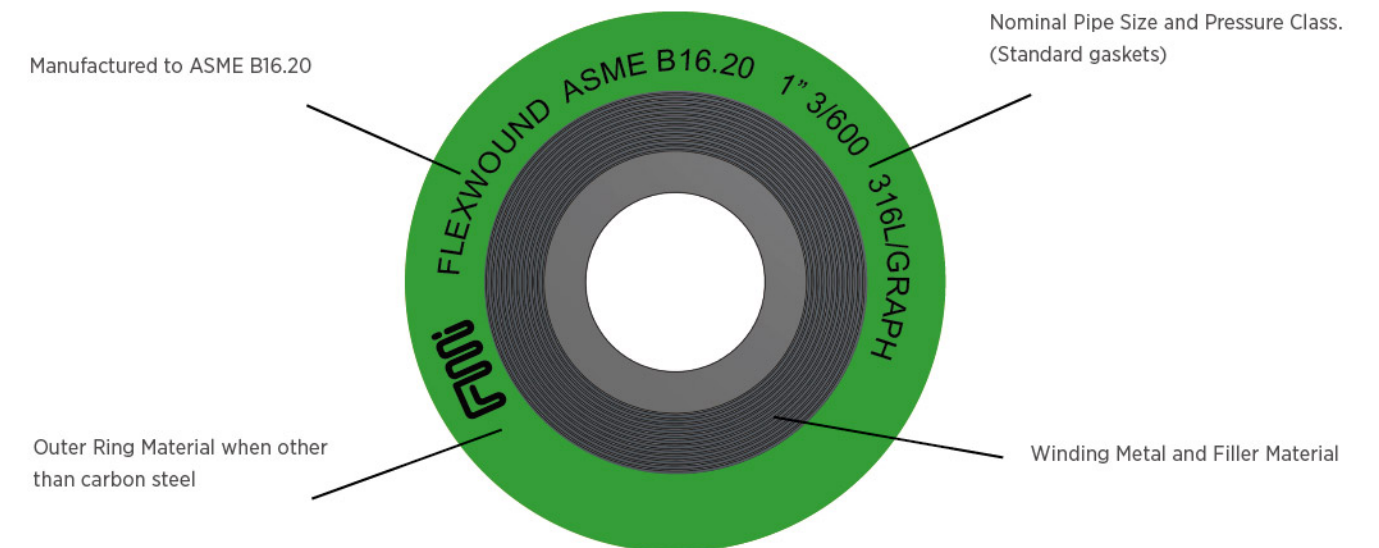


RI

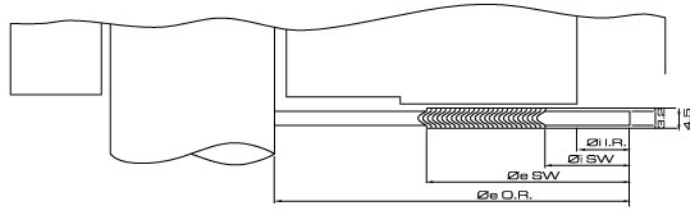
Style RI spiral wound gasket with inner ring is designed specifically for male and female flanges, the inner ring providing radial confinement to prevent blow-out of the spiral element.

Materials should be selected with regard to operating temperature and chemical compatibility. If in doubt, contact **FMI Technical Department**.

ASME B16.20 API STAMPING REQUIREMENTS



DIMENSIONAL DATA STYLE GR AND GRI TO ASME B16.20 TO SUIT ASME B16.5 FLANGES



		1/4"				1/2"				3/4"				1"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150								47,8				57,2				66,8	
300	X	12,7	22,2	44,5				54,1				66,8				73,2	
400	X				14,3	19,1	31,8		20,6	25,4	39,6		27	31,8	47,8		
600	X							63,5									
900		XXX															79,5
1500		XXX											69,9				
2500		XXX											76,2				85,9

		1 1/4"				1 1/2"				2"				2 1/2"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150				76,2	44,5	54,1		85,9	55,6	69,9		104,9	66,7	82,6		124	
300	38,1	47,8						95,3									
400				82,6													
600			60,5				69,9								111,3		
900				88,9				98,6					63,5		98,6		
1500	33,4	39,6			41,3	47,8			52,4	58,7			69,9			165,1	
2500				104,9				117,6					143			168,4	

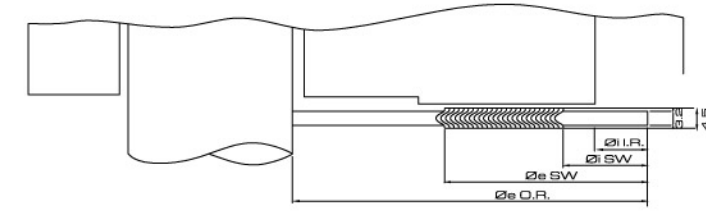
		3"				3 1/2"				4"				4 1/2"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	81,3			136,7	102,6*	114,3		161,9	106,5	127		174,8	128*	139,7		177,8	
300		101,6					133,4	165,1				181,1			165,1	196,9	
400				149,4								177,8				193,7	
600			120,7		92*	104,8		161,9	102,6	120,7	149,4	193,8	122*	134,9		209,6	
900	78,74	95,3		168,4				190,5				206,5				238,1	
1500				174,8				209,6				209,6					
2500		93,2		196,9	XXX								235			XXX	

		5"				6"				8"				10"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	131,8	155,7		196,9	157,3	182,6		222,3	215,9	233,4		279,4	268,3	287,3		339,9	
300				215,9				251				308,1			317,5	362	
400				212,9				247,7	205,8	225,6		304,8	255,3	274,6		358,9	
600	128,3	147,6	177,8	241,3	154,9	174,8	209,6	266,7				320,8				400,1	
900				247,7				289,1		222,3		358,9		276,4	311,2		
1500				254	147,3	171,5		282,7	196,9		257,3	352,6	246,2	266,7		435,1	
2500	124,5	143		279,4				317,5		215,9		387,4		270		476,3	

		12"				14"				16"				18"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	317,5	339,9	374,7	409,7	349,3	371,6	406,4	450,9	400,1	422,4		514,4	449,3	474,7		549,4	
300				422,4				485,9				463,6			527,1	596,9	
400		327,2		419,1	342,9	362		482,6	389,9			539,8		438,2	469,9	593,9	
600	307,4			457,2				492,6		412,8		564,2				612,9	
900		323,9		498,6	320,8	355,6		520,7	374,7		457,2	574,8	425,5	463,6	520,7	638,3	
1500	292,1		368,3	520,7		362	400,1	577,9	368,3	406,4		641,4				704,9	
2500		317,5		549,4	XXX												XXX

		20"				24"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	500,1	525,5	577,9	606,6	603,3	628,7	685,8	717,6	
300				654,1				774,7	
400	489	520,7		647,7	590,6			768,4	
600				682,8				790,7	
900	482,6		571,5	698,8				832,2	
1500	476,3	514,4		755,7	577,9	616	679,5	901,7	

DIMENSIONAL DATA STYLE GR AND GRI TO ASME B16.20 TO SUIT ASME B16.47 SERIES A FLANGES



		22"				26"				28"				30"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150			610	660,4	654,1	673,1	704,9	774,7				723,9	755,6	831,9		774,7	
300	X	577,9		704,8				830	704,9					898,6		882,6	
400	X		628,7	701,7	660,4	685,8	736,5	831,9	711,2	736,6	787,4		892,2	755,7	793,8	844,5	
600	X			733,4	647,7			866,8	698,5				911,4			971,5	
900		XXX				666,8		882,6	711,2				946,1	774,7			1008,9

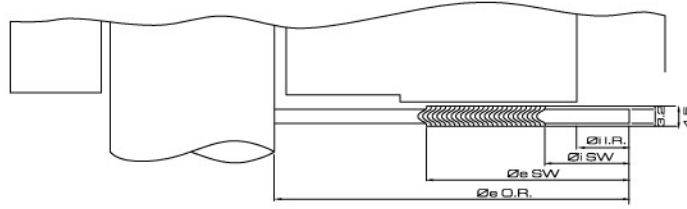
		32"				34"				36"				38"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	806,5	825,5	860,6	939,8	857,3	876,3	911,3	990,6	908,1	927,1	968,3	1047,7	958,9	977,9	1019	1111,2	
300				1000,1				1057,2				1117,6			1016	1054,1	
400				1003				1054		955,7	1006,5		952,5	971,6	1022,3	1073,1	
600	812,8	850,9	901,7	1022	863,6	901,7	952,5	1073	917,6			1130,3		990,6	1041,4	1104,9	
900				1028,6				1136,6	920,8	958,9	1010	1200,1	1009,7	1035	1086	1200,1	

		40"				42"				44"				46"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	1009,7	1028,7	1070	1162	1060,5	1079,5	1124	1219,2	1111,3			1180	1276,3	1162	1181	1229	
300	1003,3	1022,4		1114,4	1054,1	1073,2	1121	1165,2	1105	1130,3			1219,2	1153	1178	1273	
400	1000,2	1025,5	1076,3	1127,1	1051	1076,4	1127	1177,9				1181,1	1231,9	1168,5	1194	1244,6	
600	1009,7	1047,7	1098,5	1155,7	1066,8	1105	1155,7	1219,2	1111,3	1162	1212,8	1270	1162	1213	1263,7	1327	
900	1060,5	1098,5	1149,3	1250,9	1111,3	1149,3	1200,1	1301,7	1155,7	1206,5	1257,3	1368,4	1219,2	1270	1321	1435	

		48"				50"				52"				54"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	1213	1232	1279,5	1384,3	1263,7	1283	1333,5	1435	1314,5	1333,5	1384,3	1492,3	1359	1384,3	1435	1549,4	
300	1209,7	1235	1286	1324	1244,6			1378	1321			1428,8				1492,2	
400	1206,5	1244,6	1295,4	1346,2	1257,3	1295,4	1346,2	1403	1308	1346	1397	1454,2	1352,6	1403,4	1454,2	1517,6	
600	1219,2	1270	1321	1390,6	1270	1321	1371,6	1447,8	1321	1371,6	1422,4	1498,6	1378	1428,8	1479,6	1555,7	
900	1270	1321	1371,6	1486	XXX				XXX				XXX				

		56"				58"				60"			
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	
150	1409,7	1435,1	1486	1606,5	1460,5	1486	1536,7	1663,7	1511,3	1536,7	1587,5	1714,5	
300			1505	1543	1447,8	1511,3	1562	1593,9	1524	1562,1	1612,9	1644,6	
400	1403,4	1454,2		1568,4	1454,1	1505	1555,7	1619,2	1517,6	1568,4	1619,2	1682,7	
600	1428,8	1479,6	1530,3	1612,9	1473,2	1536,7	1587,5	1663,7	1530,3	1593,8	1644,6	1733,5	
900	XXX				XXX				XXX				

DIMENSIONAL DATA STYLE GR AND GRI TO ASME B16.20 TO SUIT ASME B16.47 SERIES B FLANGES



26"				28"				30"				32"				
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR
75	XXX	666,8	658,8	708,03	XXX	717,55	739,78	758,83	XXX	768,35	790,58	809,63	XXX	819,15	841,38	860,43
150			698,5	725,5	704,9	723,9	749,3	776,29	755,65		800,1	827,09	806,45	825,5	850,9	881,06
300	654,1	673,1	711,2	771,5			762	825,5		774,7	812,8	885,82			863,6	939,8
400		666,8	698,5	746,15	701,7	714,38	749,3	800,1	752,47	765,18	797,15	857,25	800,1	812,8	860,43	911,23
600	644,5	663,6	714,4	765,18	692,2	704,85	755,65	819,15		777,88	828,68	879,47	793,75	831,85	882,65	933,45
900	673,1	692,2	749,3	838,2	723,9	742,95	800,1	901,7	787,4	806,4	857,25	958,85	838,2	863,6	914,4	1016

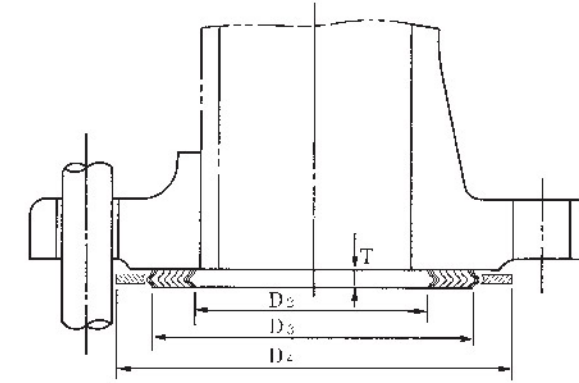
34"				36"				38"				40"				
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR
75	XXX	869,95	892,18	911,23	XXX	920,75	946,15	973,14	XXX				XXX			
150		876,3	908,05	935,04	908,05	927,1	958,85	987,43	958,85	974,74	1009,7	1044,6	1009,7	1022,4	1063,6	1095,4
300	857,25		914,4	993,78			965,2	1047,8	971,55	1009,7	1047,8	1098,6	1022,3	1060,5	1098,6	1149,4
400	850,9	866,78	911,23	962,03	898,53	917,58		1022,4	952,5	971,55	1022,4	1073,2	1000,1	1025,5	1076,3	1127,1
600		889	939,8	996,95	901,7	939,8	990,6	1047,8		990,6	1041,4	1104,9	1009,7	1047,8	1098,6	1155,7
900	895,35	920,08	968,38	1073,2	927,1	946,15	996,65	1124	1009,7	1035,1	1085,9	1200,2	1060,5	1098,6	1149,4	1251

42"				44"				46"				48"				
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR
75	XXX	1073,2	1098,6	1125,5	XXX				XXX				XXX	1228,7	1257,3	1282,7
150	1060,4	1079,5	1114,4	1146,2	1111,2	1124	1165,2	1193,8	1162,1	1181,1	1224	1255,7	1212,9	1231,9	1270	1306,5
300	1054,1	1111,3	1149,4	1200,2	1124	1162,1	1200,2	1251	1177,9	1216	1254,1	1317,6	1231,9	1306,5	1311,3	1368,2
400	1050,9	1076,3	1127,1	1177,9	1104,9	1130,3	1181,1	1231,9	1168,4	1193,8	1244,6	1289,1	1206,5	1244,6	1295,4	1346,2
600	1066,8	1104,9	1155,7	1219,2	1111,2	1162,1	1212,9	1270	1162,1	1212,9	1263,7	1327,2	1219,2	1270	1320,8	1390,7
900	1111,2	1149,4	1200,2	1301,8	1155,7	1206,5	1257,3	1368,4	1219,2	1270	1320,8	1435,1	1270	1320,8	1371,6	1485,9

50"				52"				54"				56"				
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR
75	XXX				XXX				XXX	1381,1	1412,9	1438,3	XXX			
150	1263,7	1282,7	1325,6	1357,3	1314,5	1333,5	1376,4	1408,1	1360	1384,3	1422,4	1463,7	1422,4	1444,6	1478	1514,5
300	1266,8	1317,6	1355,7	1419,2	1317,6	1368,4	1406,5	1470				1530,4	1428,8	1479,6	1524	1593,9
400	1257,3	1295,4	1346,2	1403,4	1308,1	1346,2	1397	1454,2	1352,6	1403,4	1454,2	1517,7	1403,4	1454,2	1505	1568,5
600	1270	1320,8	1371,6	1447,8	1320,8	1371,6	1422,4	1498,6	1378	1428,8	1479,6	1555,8	1428,8	1479,6	1530,4	1612,9
900	XXX				XXX				XXX				XXX			

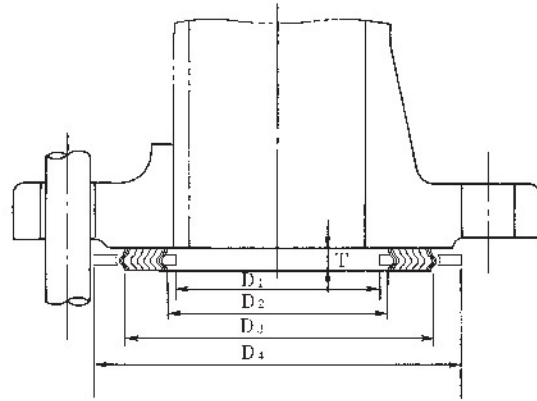
58"				60"				
ASA	ø I.R.	ø SW	øe SW	øe OR	ø I.R.	ø SW	øe SW	øe OR
75	XXX				XXX	1536,7	1568,5	1597
150	1478	1500,2	1528,8	1579,6	1535,1	1557,3	1585,9	1630,4
300	1484,3	1535,1	1573,2	1655,8	1557,3	1585,9	1630,4	1706,6
400	1454,2	1504,9	1555,8	1619,3	1517,7	1568,5	1619,3	1682,8
600	1473,2	1536,7	1587,5	1663,7	1530,4	1593,9	1644,7	1733,6
900	XXX				XXX			

DIMENSIONAL DATA STYLE GR TO JIS B 2404-2006 TO SUIT JIS B 2220-2004/JIS B 2239-1996 FLANGES



Nominal flange diameter	Nominal pressure 10K			16, 20K			30K			40K			63K			Thickness T
	I.D.	D2	O.D. D3	I.D.	D2	O.D. D3	I.D.	D2	O.D. D3	I.D.	D2	O.D. D3	I.D.	D2	O.D. D3	
10A	24	37	52	24	37	52	24	37	59	21	34	59	21	34	64	4.5
15A	28	41	57	28	41	57	28	41	64	24	37	64	24	37	69	4.5
20A	34	47	62	34	47	62	34	47	69	29	42	69	29	42	75	4.5
25A	40	53	74	40	53	74	40	53	79	35	48	79	35	48	80	4.5
32A	51	67	84	51	67	84	51	67	89	44	60	89	44	60	90	4.5
40A	57	73	89	57	73	89	57	73	100	51	67	100	51	67	107	4.5
50A	69	89	104	69	89	104	69	89	114	63	79	114	63	79	125	4.5
65A	87	107	124	87	107	124	78	98	140	78	98	140	78	98	152	4.5
80A	98	118	134	99	119	140	90	110	150	90	110	150	90	110	162	4.5
90A	110	130	144	114	139	150	102	127	162	102	127	162	102	127	179	4.5
100A	123	143	159	127	152	165	116	141	172	116	141	182	116	141	194	4.5
125A	148	173	190	152	177	202	140	165	207	140	165	224	140	165	235	4.5
150A	174	199	220	182	214	237	165	197	249	165	197	265	165	197	275	4.5
175A	201	226	245	—	—	—	—	—	—	—	—	—	—	—	—	4.5
200A	227	252	270	233	265	282	218	250	294	218	250	315	218	250	328	4.5
225A	252	277	290	—	—	—	—	—	—	—	—	—	—	—	—	4.5
250A	278	310	332	288	328	354	271	311	360	271	311	378	271	311	394	4.5
300A	329	361	377	339	379	404	320	360	418	320	360	434	320	360	446	4.5
350A	366	406	422	376	416	450	356	396	463	356	396	479	356	396	488	4.5
400A	417	457	484	432	482	508	403	453	524	403	453	531	403	453	545	4.5
450A	468	518	539	483	533	573	—	—	—	—	—	—	—	—	—	4.5
500A	518	568	594	533	583	628	—	—	—	—	—	—	—	—	—	4.5
550A	569	619	650	584	634	684	—	—	—	—	—	—	—	—	—	4.5
600A	620	670	700	635	685	734	—	—	—	—	—	—	—	—	—	4.5

DIMENSIONAL DATA STYLE GRI TO JIS B 2404-2006 TO SUIT JIS B 2220-2004/JIS B 2239-1996 FLANGES



Nominal flange diameter	Nominal pressure 10K				16, 20K				30K				40K				63K				Thickness T
	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	
10A	18	24	37	52	18	24	37	52	18	24	37	59	15	21	34	59	15	21	34	64	
15	22	28	41	57	22	28	41	57	22	28	41	64	18	24	37	64	18	24	37	69	
20	28	34	47	62	28	34	47	62	28	34	47	69	23	29	42	69	23	29	42	75	
25	34	40	53	74	34	40	53	74	34	40	53	79	29	35	48	79	29	35	48	80	
32	43	51	67	84	43	51	67	84	43	51	67	89	38	44	60	89	38	44	60	90	
40	49	57	73	89	49	57	73	89	49	57	73	100	43	51	67	100	43	51	67	107	
50	61	69	89	104	61	69	89	104	61	69	89	114	55	63	79	114	55	63	79	125	
65	77	87	107	124	77	87	107	124	68	78	98	140	68	78	98	140	68	78	98	152	
80	88	98	118	134	89	99	119	140	80	90	110	150	80	90	110	150	80	90	110	162	
90	98	110	130	144	102	114	139	150	92	102	127	162	92	102	127	162	92	102	127	179	
100	111	123	143	159	115	127	152	165	104	116	141	172	104	116	141	182	104	116	141	194	
125	136	148	173	190	140	152	177	202	128	140	165	207	128	140	165	224	128	140	165	235	
150	158	174	199	220	166	182	214	237	153	165	197	249	153	165	197	265	153	165	197	275	
200	211	227	252	270	217	233	265	282	202	218	250	294	202	218	250	315	202	218	250	328	
250	258	278	310	332	268	288	328	354	251	271	311	360	251	271	311	378	251	271	311	394	
300	309	329	361	377	319	339	379	404	300	320	360	418	300	320	360	434	300	320	360	446	
350	346	366	406	422	356	376	416	450	336	356	396	463	336	356	396	479	336	356	396	488	
400	392	417	457	484	407	432	482	508	383	403	453	524	383	403	453	531	383	403	453	545	
450	443	468	518	539	458	483	533	573	—	—	—	—	—	—	—	—	—	—	—	—	
500	493	518	568	594	508	533	583	628	—	—	—	—	—	—	—	—	—	—	—	—	
550	544	569	619	650	559	584	634	684	—	—	—	—	—	—	—	—	—	—	—	—	
600	595	620	670	700	610	635	685	734	—	—	—	—	—	—	—	—	—	—	—	—	

Nominal flange diameter	Nominal pressure 10K				16K				20K			
	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4
650A	650	675	725	750	674	699	749	784	695	720	770	805
700	701	726	776	810	716	741	791	836	740	765	815	855
750	752	777	827	870	777	802	852	896	799	824	874	918
800	803	828	878	920	831	856	906	945	865	881	931	978
850	854	879	929	970	880	905	955	995	919	944	994	1,038
900	904	929	979	1,020	934	959	1,009	1,045	971	996	1,046	1,088
1,000	1,006	1,036	1,086	1,124	1,030	1,060	1,110	1,158	—	—	—	—
1,100	1,108	1,138	1,188	1,234	1,132	1,162	1,212	1,258	—	—	—	—
1,200	1,209	1,239	1,289	1,344	1,240	1,270	1,320	1,368	—	—	—	—
1,300	—	—	—	—	1,341	1,371	1,421	1,474	—	—	—	—
1,350	1,362	1,392	1,442	1,498	1,403	1,433	1,483	1,534	—	—	—	—
1,400	—	—	—	—	1,453	1,483	1,533	1,584	—	—	—	—
1,500	1,514	1,544	1,594	1,658	1,559	1,589	1,639	1,694	—	—	—	—

- Unit (mm)
- The dimensions in the double border cannot be used on small flat seats.
- The dimensions in the bold border apply to large flat seats and small flat seats. (Note, however, that these dimensions apply only to butt-welded flanges and type C slip-on welded flanges stipulated in JIS B 2220.)
- For a 30K type A slip-on welded flange and a type B slip-on welded flange
- It is recommended that gaskets with inner and outer rings be used on flanges that are intended for a nominal pressure of 63K.
- It is recommended that fitted with inner and outer rings.
- It is not recommended that gaskets used on flanges intended for nominal pressures 2K and 5K.
- It is recommended that high-strength alloy steel bolts of SNB-7 or higher to be used.

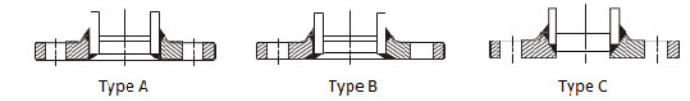
FOR TYPE A SLIP-ON WELDED FLANGES (SOCKET- WELDED TYPE)

Nominal flange diameter	30K			
	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4
10A	21	29	42	59
15	25	32	45	64
20	30.5	37	50	69
25	37.5	47	60	79
32	46	54	70	89
40	52	64	80	100
50	64	75	95	114
65	80	100	120	140
80	93	110	130	150
90	105.5	120	140	163
100	118.5	130	150	173
125	146	160	185	208
150	171.5	190	220	251
200	223	235	265	296
250	274	290	330	360
300	326	350	390	420
350	363	395	435	465
400	414	445	495	524

FOR TYPE B SLIP-ON WELDED FLANGES (SOCKET-WELDED TYPE)

Nominal flange diameter	20K				30K			
	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4	Inner ring I.D. D1	I.D. D2	O.D. D3	Outer ring O.D. D4
10	23	29	39	52	30	36	46	59
15	27	33	43	57	36	42	52	64
20	33	39	49	62	40	46	56	69
25	38	46	59	74	46	54	67	79
32	47	55	68	84	54	62	75	89
40	53	61	74	89	60	68	81	100
50	64	74	90	104	70	80	96	114

Slip-on welded flange (socket-welded flange)

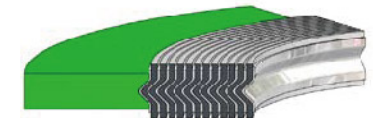


In the case of a slip-on welded type flange, the pipe is inserted into the flange, and then welded to the top part and the inner ID of the flange. JIS 20K and 30K flanges consist of types A, B and C in the figure above. (The figure shows hub flanges.)

SPIRAL WOUND GASKET FOR SPECIAL APPLICATION

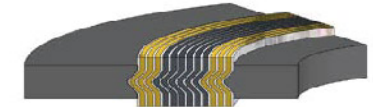
FLEXWOUND® BS low stress spiral wound gaskets

The BS and BSI gaskets are specifically designed to be used in those applications where a low bolt torque is required. Traditional spiral wound gaskets have the steel winding protruding above the compression stop. BS and BSI gaskets instead have the filler material protruding above the metal winding and the guide ring. This results in a perfect sealability achieved with a lower loading stress compared to traditional spiral wound gaskets.



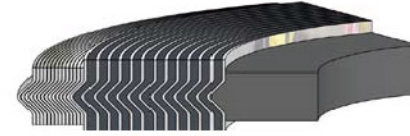
FLEXWOUND® HT high temperature spiral wound gaskets

The HT gaskets are specifically designed to be used at extreme temperatures and in presence of oxidizing environments. The construction includes special HT Inconel X750 windings and rings combined with Flexigra® filler protected on inside and outside diameter by a heat and oxidation resistant Micatherm filler.



**FLEXWOUND® NOSE-RI
heat exchanger spiral wound gaskets**

NOSE RI Gaskets with spiral wound outer ring are primarily designed for TEMA male and female flanges and are custom built to suit the design conditions of individual heat exchanger vessels. These gaskets are available in an extensive range of materials. The external nose ensures the correct location of the spiral wound sealing element which is protect by an internal ring, used also as a compression stop. Nose RI gaskets are available also with solid metal or metal jacketed pass bar configuration.



FLEXWOUND® CARRIER GASKETS

CARRIER gaskets consist of a solid steel ring with machined recess in each faces where spiral wound gaskets are located. This results in a higher recovery gasket which ensure that the bolt torque is maintained even in presence of hard pressure and temperature cycles. Typical applications are power generation, petrochemical and nuclear industries. Carrier gaskets can be used on flat face, raised face or tongue and groove type flange, as well as non standard flange configurations. They can be supplied for both small and large diameter nominal bores up to class 2500 pressure rating. Carrier gaskets are also tailor made to suit specific flange arrangements and design conditions.



Spiral wound sealing element Machined Carring Gasket
Cross-section through Carring Gasket assembly

MULTI - CLASS GASKET CONFIGURATION

One gasket accommodates both Class 150 and 300 flanges.

Multi-Class Gasket features are as follows:

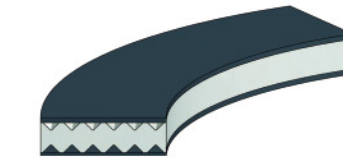
- One gasket accommodates both Class 150 and 300 flanges, available pipe size 1/2" - 24" (Class 150 to 600 in NPS 1/2 through NPS 3).
- Reduced inventory requirements.
- Easy to install: less than half the studs need to be removed to change the gasket.



Flexcamm® Cammprofile Gaskets

Description

FMI Flexcamm® cammprofile gaskets are recognized as a new high quality sealing alternative. These gaskets are used as problem solver when there is a difficult sealing environment and performance are critical at low seating stresses. Flexcamm® gaskets consists of a metal core with concentric grooves with sealing layers made of flexible graphite Flexigraf®, expanded mica Micatherm, conventional ptfе or bidirectional ptfе Sicheм®.Metal core is usually selected based on metallurgy of the piping. Flexcamm® are manufactured in different materials and non-circular shapes with extreme accuracy. They can also be custom engineered to fit various applications.



STYLE FN

Manufactured without a guide ring for tongue and groove, or recessed flange applications such as male and female. It is typically used in heat exchanger applications and applied as an upgrade to double jacketed gaskets.



STYLE FG

Constructed with an integral guide ring for aligning purposes. It is suggested to be used in raised face flanges. The gasket is typically designed and sized per EN 12560-6 spec for ASME B16.5 flanges, but can be manufactured to fit other standards.



STYLE FA

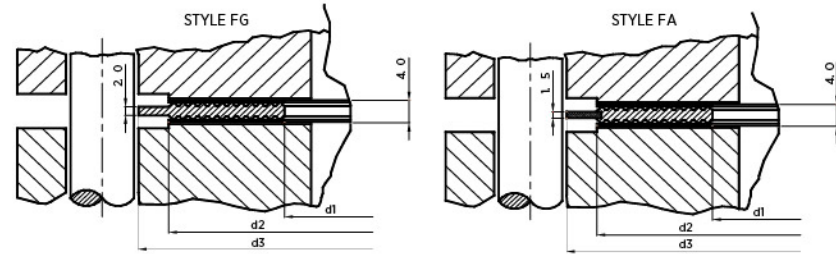
Constructed with a lose guide ring. The solution is recommended in application with excessive radial shear characteristics, thermal cycling, and expansions. The gasket is typically designed and sized per EN 12560-6 spec for ASME B16.5 flanges, but can be manufactured to fit other standards.

SRG Gasket (Solid reinforced graphite)

SRG gasket is a solid gasket made by a rigid metal core with two expanded graphite layers bonded to each lace. Solid core provide protection against blow out whilst soft graphite layers provide an excellent seal due its high comformability into the flange faces even under low applied seating stesses. It is possible to use a wide range of core materials, from carbon steel to exotic alloys. SRG gasket finds applications in chemical and petrochemical plants for Low pressure heat exchangers, narrow land width, non circular shapes.



DIMENSIONAL DATA TO SUIT RAISED FACED EN 12560-6 FLANGES FROM DN 10 TO 1400MM



SIZE mm	10	16	25	40	64	100	160	250	320	400
DN	d1	d2	d3	d3	d3	d3	d3	d3	d3	d3
10	22	36	46	46	46	46	56	56	56	67
15	26	42	51	51	51	51	61	61	61	72
20	31	47	61	61	61	61	-	-	-	78
25	36	52	71	71	71	71	82	82	82	92
32	46	66	82	82	82	82	-	-	-	104
40	53	73	92	92	92	92	103	103	103	119
50	65	87	107	107	107	107	113	119	119	134
65	81	103	127	127	127	127	137	143	143	153
80	95	121	142	142	142	142	148	154	154	170
100	118	144	162	162	168	168	174	180	180	202
125	142	176	192	192	194	194	210	217	217	242
150	170	204	217	217	224	224	247	257	257	284
175	195	229	247	247	254	265	277	287	284	316
200	224	258	272	272	284	290	309	324	324	358
250	275	315	327	328	340	352	364	391	388	442
300	325	365	377	383	400	417	424	458	458	536
350	375	420	437	443	457	474	486	512	-	-
400	426	474	489	495	514	546	543	572	-	-
450	480	528	539	555	-	571	-	-	-	-
500	530	578	594	617	624	628	657	704	-	-
600	630	680	695	734	731	747	764	813	-	-
700	730	780	810	804	833	852	879	950	-	-
800	830	880	910	911	942	974	988	-	-	-
900	930	980	1017	1011	1042	1084	1108	-	-	-
1000	1040	1090	1124	1128	1154	1194	1220	-	-	-
1200	1250	1310	1341	1342	1364	1398	1452	-	-	-
1400	1440	1510	1548	1542	1578	1618	-	-	-	-

DIMENSIONAL DATA TO SUIT RAISED FACED ASME B16.5 AND MSS SP44 FLANGES

SIZE mm	150	300	400	600	900	1500	2500
DN	d1	d2	d3	d3	d3	d3	d3
1/2	23,0	33,3	44,4	50,8	50,8	60,3	66,7
3/4	28,6	39,7	53,9	63,5	63,5	66,7	73,0
1	36,5	47,6	63,5	69,8	69,8	76,2	82,5
1 1/4	44,4	60,3	73,0	79,4	79,4	85,7	101,6
1 1/2	52,4	69,8	82,5	92,1	92,1	95,2	114,3
2	69,8	88,9	101,6	108,0	108,0	139,7	142,8
2 1/2	82,5	101,6	120,6	127,0	127,0	161,9	165,1
3	98,4	123,8	133,4	146,1	146,1	165,1	193,7
3 1/2	111,1	136,5	158,8	161,9	158,7	-	-
4	123,8	154,0	171,5	177,8	174,6	203,2	231,7
5	150,8	182,6	193,7	212,7	209,5	238,1	276,2
6	177,8	212,7	219,1	247,7	244,5	263,5	314,3
8	228,6	266,7	276,2	304,8	301,6	317,5	384,1
10	282,6	320,7	336,5	358,8	355,6	396,9	473,0
12	339,7	377,8	406,4	419,1	415,9	454,0	546,1
14	371,5	409,6	447,7	482,6	479,4	488,9	-
16	422,3	466,7	511,2	536,6	533,4	561,9	-
18	479,4	530,2	546,1	593,7	590,6	609,6	-
20	530,2	581,0	603,2	650,9	644,5	679,5	-
22	581,0	631,8	657,2	701,7	698,5	730,3	-
24	631,8	682,6	714,4	771,5	765,2	787,4	-

SIZE mm	150	300	400	600	900
DN	d1	d2	d3	d3	d3
26	690	740	772	832	829
28	740	790	829	895	889
30	800	850	880	949	943
32	845	905	937	1003	1000
34	895	955	987	1054	1051
36	950	1010	1045	1114	1114
38	960	1020	1108	1051	1070
40	1015	1075	1159	1111	1124
42	1065	1125	1216	1162	1175
44	1125	1185	1273	1216	1229
46	1175	1235	1324	1270	1286
48	1220	1290	1381	1321	1343
50	1270	1350	1432	1375	1400
52	1320	1400	1489	1426	1451
54	1375	1455	1546	1489	1515
56	1430	1510	1603	1540	1565
58	1485	1565	1661	1591	1616
60	1535	1615	1711	1742	1680

RTJ gaskets are produced in different solid metal types. They are used for high pressure (till 1300 bar) and for high temperature (till 1000°C) and are used where corrosive agents are presents. These gaskets are obtained by mechanical working from forged or laminated metals. RTJ find their mainly application in refining process in crude extraction and in high pressure applications. For production we use the last edition of the API standard. We can supply oval and octagonal ring joint, BX and RX for all applications to suite the flanges design with standard and special styles.

Ring Joint Gasket R-Octagonal & R-Oval



R Type Gasket

The Ring Type Joint Gasket is initially developed for high pressure/temperature applications found in the petroleum industry and is primarily used in the oilfield on drilling and completion equipment. However, today this product range can also be found on valves and pipe work assemblies, along with some high integrity pressure vessel joints.

Style R gaskets are manufactured in accordance with both API 6A and ASME B16.20 to suit API 6B and ASME/ANSI B16.5 flanges.

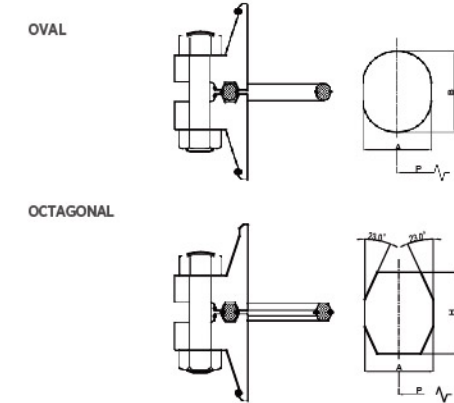
API ring Joint gaskets come in two basic types, an oval cross section and an octagonal cross section. These basic shapes are used in pressures up to 10,000 psi. The dimensions are standardized and require specially grooved flanges. The octagonal cross section has a higher sealing efficiency than the oval and would be the preferred gasket. However, only the oval cross section can be used in the old type round bottom groove. The newer flat bottom groove design will accept either the oval or the octagonal cross section. The sealing surfaces on the ring joint grooves must be smoothly finished to 63 micro inches and to be free of objectionable ridges, tool or chatter marks. They seal by an initial line contact or a edging action as the compressive forces are applied.

The hardness of the ring should always be less than the hardness of the flanges to prevent flange deformation. Dimensions for API ring joint gaskets and grooves are covered in ASME B16.20 and API6A

Apex stocks a wide range of sizes and materials ready for immediate shipment from R11 to R105.

Pressure: 2,000-5,000 PSI

DIMENSIONAL DATA - STYLE R



TOLERANCES:(mm)

A(width of ring) ±0.20 B,H (height of ring) ±0.5 P(average pitch diameter of ring)±0.18 23° (angle) ±1/2°

Style R Ring Type Joints can be manufactured in accordance with all relevant standards to suit the following flange designations

API 6A ASME/ANSI B16.5 MSS SP44 (ASME B16.47 SERIES A) BS 1560

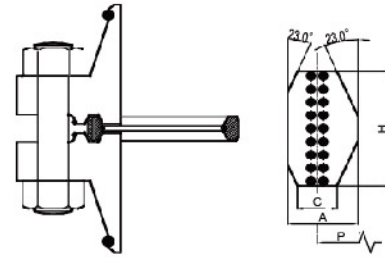
Ring No.	PRESSURE CLASS RATINGS												Pitch Diameter of Ring	Width of Ring	Height of Ring		Approx. Distance Between Made Up Flanges	Gasket Weight, lln	
	ANSI. BS 16.5			API 6B			ASME B16.47 Series A			Oval	Octagonal	Oval			Octagonal				
	150	300/600	900	1500	2500	2000	3000	5000	150							300/600		900	
	Nominal Pipe Size (Inches)															P		A	B
R11	-	1/2	-	-	-	-	-	-	-	-	-	34.13	7.95	11.1	9.5	-	.111	.104	
R12	-	-	1/2	1/2	-	-	-	-	-	-	-	39.69	7.95	14.3	12.7	-	.216	.200	
R13	-	3/4	-	-	1/2	-	-	-	-	-	-	42.86	7.95	14.3	12.7	-	.234	.216	
R14	-	-	3/4	3/4	-	-	-	-	-	-	-	44.45	7.95	14.3	12.7	-	.242	.224	
R15	1	-	-	-	-	-	1	-	-	-	-	47.63	7.95	14.3	12.7	-	.260	.240	
R16	-	1	1	1	3/4	1	-	1	1	-	-	50.80	7.95	14.3	12.7	-	.278	.256	
R17	1 1/4	-	-	-	-	-	1 1/4	-	-	-	-	57.15	7.95	14.3	12.7	-	.311	.288	
R18	-	1 1/4	1 1/4	1 1/4	-	1 1/4	-	1 1/4	1 1/4	-	-	60.33	7.95	14.3	12.7	-	.328	.304	
R19	1 1/2	-	-	-	-	-	1 1/2	-	-	-	-	65.09	7.95	14.3	12.7	-	.354	.328	
R20	-	1 1/2	1 1/2	1 1/2	-	1 1/2	-	1 1/2	1 1/2	-	-	68.28	11.11	14.3	12.7	4.1	.372	.344	
R21	-	-	-	-	1 1/4	-	-	-	-	-	-	72.23	7.95	17.5	15.9	-	.380	.643	
R22	2	-	-	-	-	2	-	-	-	-	-	82.55	11.11	14.3	12.7	-	.450	.415	
R23	-	2	-	-	1 1/2	2	-	-	-	-	-	82.55	11.11	17.5	15.9	4.8	.755	.734	
R24	-	-	2	2	-	-	2	2	-	-	-	95.25	7.95	17.5	15.9	4.8	.870	.846	
R25	2 1/2	-	-	-	-	-	2 1/2	-	-	-	-	101.60	11.11	14.3	12.7	-	.553	.510	
R26	-	2 1/2	-	-	2	2 1/2	-	-	-	-	-	101.60	11.11	17.5	15.9	4.8	.930	.904	
R27	-	-	2 1/2	2 1/2	-	-	2 1/2	2 1/2	-	-	-	107.95	12.70	17.5	15.9	-	1.050	.960	
R28	-	-	-	-	2 1/2	-	-	-	-	-	-	111.13	7.95	19.1	17.5	-	1.255	1.230	
R29	3	-	-	-	-	-	-	-	-	-	-	114.30	11.11	14.3	12.5	-	.822	.575	
R30	-	3	-	-	-	-	3	-	-	-	-	117.48	11.11	17.5	15.9	-	1.075	1.047	
R31	-	3	3	-	-	3	-	3	-	-	-	123.83	12.70	17.5	15.9	4.8	1.130	1.100	
R32	-	-	-	-	3	-	-	-	-	-	-	127.00	7.95	19.1	17.5	-	1.435	1.105	
R33	3 1/2	-	-	-	-	-	-	-	-	-	-	131.76	11.11	14.3	12.7	-	.718	.654	
R34	-	3 1/2	-	-	-	-	-	-	-	-	-	131.76	11.11	17.5	15.9	-	1.200	1.170	
R35	-	-	-	3	-	-	-	3	-	-	-	136.53	7.95	17.5	15.9	4.8	1.250	1.210	
R36	4	-	-	-	-	4	-	-	-	-	-	149.23	11.11	14.3	12.7	-	.813	.735	
R37	-	4	4	-	-	4	-	4	3 1/2	-	-	149.23	15.88	17.5	15.9	4.8	1.360	1.330	
R38	-	-	-	4	4	-	-	-	-	-	-	150.86	11.11	22.4	20.6	-	2.56	2.52	
R39	-	-	-	4	-	-	-	4	-	-	-	161.93	7.95	17.5	15.9	4.8	1.480	1.440	
R40	5	-	-	-	-	5	-	-	-	-	-	171.45	11.11	14.3	12.7	-	.835	.865	
R41	-	5	5	-	-	5	-	5	-	-	-	180.98	19.05	17.5	15.9	4.8	1.66	1.06	
R42	-	-	-	5	-	-	-	-	-	-	-	190.50	7.95	25.4	23.9	-	4.21	4.76	
R43	6	-	-	-	-	-	-	-	-	-	-	193.68	11.11	14.3	12.7	-	1.055	.975	
R44	-	-	-	5	-	6	-	5	-	-	-	193.68	11.11	17.5	15.9	4.8	1.77	1.73	
R45	-	6	6	-	-	6	-	6	-	-	-	211.14	12.70	17.5	15.9	4.8	1.93	1.88	
R46	-	-	-	6	-	-	-	6	-	-	-	211.14	19.05	19.1	17.5	4.8	2.39	2.33	
R47	-	-	-	6	-	-	-	-	-	-	-	226.60	7.95	25.4	23.9	4.1	5.06	4.99	
R48	8	-	-	-	-	8	-	-	-	-	-	247.55	11.11	14.3	12.7	-	1.350	1.240	
R49	-	8	8	-	-	8	-	8	-	-	-	269.88	15.88	17.5	15.9	4.8	2.47	2.40	
R50	-	-	-	8	-	-	-	8	-	-	-	269.88	22.23	22.4	20.6	4.1	4.40	4.32	
R51	-	-	-	8	-	-	-	-	-	-	-	279.40	7.95	28.6	27	-	8.05	8.17	
R52	10	-	-	-	-	10	-	-	-	-	-	304.80	11.11	14.3	12.7	-	1.66	1.53	
R53	-	10	10	-	-	10	-	10	-	-	-	323.85	15.88	17.5	15.9	4.8	3.00	2.88	
R54	-	-	-	10	-	-	-	10	-	-	-	323.85	28.58	22.4	20.6	4.1	5.29	5.18	
R55	-	-	-	10	-	-	-	-	-	-	-	342.90	7.95	36.5	34.9	-	16.23	17.04	
R56	12	-	-	-	-	12	-	-	-	-	-	381.00	11.11	14.3	12.7	-	2.07	1.92	
R57	-	12	12	-	-	12	-	12	-	-	-	381.00	22.23	17.5	15.9	4.8	3.48	3.38	
R58	-	-	-	12	-	-	-	-	-	-	-	381.00	7.95	28.6	27.0	-	11.00	11.13	
R59	14	-	-	-	-	-	-	-	-	-	-	396.88	31.75	14.3	12.7	-	2.16	2.00	
R60	-	-	-	12	-	14	-	-	-	-	-	406.40	11.11	39.7	38.1	-	23.10	23.50	
R61	-	14	-	-	-	14	-	14	-	-	-	419.10	15.88	17.5	15.9	-	3.83	3.73	
R62	-	-	-	14	-	-	-	-	-	-	-	419.10	25.40	22.2	20.6	-	6.84	6.71	
R63	-	-	-	14	-	-	-	-	-	-	-	419.10	7.95	33.3	31.8	5.6	16.2	16.67	
R64	16	-	-	-	-	16	-	-	-	-	-	454.03	11.11	14.3	12.7	-	2.47	2.29	
R65	-	16	-	-	-	16	-	-	-	-	-	469.90	15.88	17.5	15.9	4.8	4.30	4.18	
R66	-	-	16	-	-	-	16	-	-	-	-	469.90	28.58	22.2	20.6	4.1	7.67	7.53	
R67	-	-	-	16	-	-	-	-	-	-	-	469.90	7.95	36.5	34.9	-	22.3	23.4	
R68	18	-	-	-	-	18	-	-	-	-	-	517.53	11.11	14.3	12.7	-	2.82	2.6	
R69	-	18	-	-	-	18	-	-	-	-	-	533.40	19.05	17.5	15.9	4.8	4.87	4.74	
R70	-	-	-	18	-	-	-	18	-	-	-	533.40	28.58	25.4	23.9	4.8	11.80	11.64	
R71	-	-	-	18	-	-	-	-	-	-	-	533.40	7.95	36.5	34.9	-	25.20	26.5	
R72	20	-	-	-	-	20	-	-	-	-	-	558.80	12.70	14.3	12.7	-	3.04	2.81	
R73	-	20	-	-	-	20	-	-	-	-	-	584.20	19.05	19.1	17.5	3.3	6.60	6.47	
R74	-	-	20	-	-	-	-	20	-	-	-	584.20	31.75	25.4	23.9	4.8	12.95	12.75	
R75	-	-	-	20	-	-	-	-	-	-	-	584.20	7.95	39.7	38.1	-	33.30	35.30	
R76	24	-	-	-	-	-	-	-	-	-	-	673.10	15.88	14.3	12.7	-	3.66	3.38	
R77	-	24	-	-	-	-	-	-	-	-	-	692.15	25.40	22.4	20.6	-	11.30	11.10	
R78	-	-	-	24	-	-	-	-	-	-	-	692.15	34.93	33.3	31.8	-	27.10	27.58	
R79	-	-	-	24	-	-	-	-	-	-	-	692.15	7.95	44.5	41.3	-	48.70	49.75	
R80	-	-	-	-	-	-	-	-	-	-	-	615.95	14.29	-	12.7	-	-	3.11	
R81	-	-	-	-	-	-	-	-	-	-	-	635.00	11.11	-	19.1	-	-	8.55	
R82	-	-	-	-	-	-	-	-	-	-	-	57.14	11.11	-	15.9	4.8	-	0.508	
R84	-	-	-	-	-	-	-	1 1/2	-	-	-	63.50	12.70	-	15.9	4.8	-	0.564	
R85	-	-	-	-	-	-	-	2	-	-	-	79.38	15.88	-	17.5	3.3	-	0.978	
R86	-	-	-	-	-	-	-	2 1/2	-	-	-	90.50	15.88	-	20.6	4.1	-	1.447	
R87	-	-	-	-	-	-	-	3	-	-	-	100.03	19.05	-	20.6	4.1	-	1.597	
R88	-	-	-	-	-	-	-	4	-	-	-	122.83	19.05	-	23.9	4.8	-	2.735	
R89	-	-	-	-	-	-	-	3 1/2	-	-	-	114.30	22.23	-	23.9	4.8	-	2.528	
R90	-	-	-	-	-	-	-	5	-	-	-	155.58	31.75	-	26.9	4.8	-	4.55	
R91	-	-	-	-	-	-	-	10	-	-	-	260.25	11.11	-	38.1	4.1	-	15.05	
R92	-	-	-	-	-	-	-	-	-	-	-	228.60	19.05	17.5	15.9	-	2.07	2.02	
R93	-	-	-	-	-	-	-	-	-	-	-	749.30	19.05	-	23.9	-	-	16.33	
R94	-	-	-	-	-	-	-	-	-	-	-	800.10	19.05	-	23.9	-	-	17.44	
R95	-	-	-	-	-	-	-	-	-	-	-	857.25	22.23	-	23.9	-	-	18.69	

Ring No.	PRESSURE CLASS RATINGS												Pitch Diameter of Ring	Width of Ring	Height of Ring		Approx. Distance Between Made Up Flanges	Gasket Weight, lln		
	ANSI. BS 16.5			API 6B			ASME B16.47 Series A			Oval	Octagonal	Oval			Octagonal					
	150	300/600	900	1500	2500	720-960 (1)	2000	3000	5000							150		300/600	900	
	Nominal Pipe Size (Inches)															P		A	B	H
R96	-	-	-	-	-	-	-	-	-	-	-	32	-	914.40	22.23	-	27.0	-	-	26.65
R97	-	-	-	-	-	-	-	-	-	-	-	34	-	965.20	22.23	-	27.0	-		

Ring Joint Gasket RX



DIMENSIONAL DATA - STYLE RX



RX Type Gasket

Style RX type RTJ gaskets are manufactured in accordance with both API 6A and ASME B16.20 to suit API 6B and ASME/ANSI B16.5 flanges.

Style RX is a pressure-energized adaptation of the standard Style R gasket. The RX is designed to fit the same groove design as a standard Style R, making the joints interchangeable. The modified design uses a pressure-energized effect that improves the efficiency of the seal as the internal pressure of the system increases.

Pressure: 2,000-5,000 PSI.

TOLERANCES:(mm)

A*(width of ring) nbsp; +0.20,-0.000 H*(height of ring) nbsp;
+0.20,-0.000 OD(od of ring) +0.5,-0.000 23*(angle) ±1/2*

Ring No.	Pressure Classes API 6B				Pitch Diameter of ring P	Outside Diameter of ring OD	Width of ring A	Height of ring H	Weight lbs.
	720-960 and 2000[Note(1)]	2900[Note(1)]	3000	5000					
RX20	11/2	-	11/2	11/2	68.26	76.20	8.73	19.05	0.527
RX23	2	-	-	-	82.55	93.27	11.91	25.40	1.15
RX24	-	-	2	2	95.25	105.97	11.91	25.40	1.33
RX25	-	-	-	31/8	101.60	109.54	8.73	19.05	1.42
RX26	21/2	-	-	-	101.60	111.92	11.91	25.40	1.50
RX27	-	-	21/2	21/2	107.95	118.27	11.91	25.40	1.73
RX31	3	-	3	-	123.83	134.54	11.91	25.40	1.91
RX35	-	-	-	3	136.53	147.24	11.91	25.40	2.09
RX37	4	-	4	-	149.23	159.94	11.91	25.40	2.27
RX39	-	-	-	4	161.93	172.64	11.91	25.40	2.54
RX41	5	-	5	-	180.98	191.69	11.91	25.40	2.72
RX44	-	-	-	5	193.68	204.39	11.91	25.40	2.96
RX45	6	-	6	-	211.14	221.85	11.91	25.40	3.66
RX46	-	-	-	6	211.14	222.25	13.49	28.58	8.56
RX47	-	-	-	8*	228.60	245.27	19.84	41.28	3.79
RX49	8	-	8	-	269.88	280.59	11.91	25.40	5.36
RX50	-	-	-	8	269.88	283.37	16.67	31.75	4.56
RX53	10	-	10	-	323.85	334.57	11.91	25.40	6.45
RX54	-	-	-	10	323.85	337.34	16.67	31.75	5.36
RX57	12	-	12	-	381.00	391.72	11.91	25.40	26.40
RX63	-	-	-	14	419.10	441.72	26.99	50.80	6.63
RX65	16	-	-	-	469.90	480.62	11.91	25.40	9.39
RX66	-	-	16	-	469.90	483.39	16.67	31.75	7.52
RX69	18	-	-	-	533.40	544.12	11.91	25.40	20.14
RX70	-	-	-	18	533.40	550.07	26.99	41.28	11.63
RX73	20	-	-	-	584.20	596.11	11.91	31.75	22.10
RX74	-	-	20	-	584.20	600.87	19.84	41.28	0.790
RX82	-	1	-	-	571.5	67.87	11.91	25.40	0.880
RX84	-	11/2	-	-	63.50	74.22	11.91	25.40	0.880
RX85	-	2	-	-	79.38	90.09	13.49	25.40	1.79
RX86	-	21/2	-	-	90.49	103.58	15.08	28.58	1.98
RX87	-	3	-	-	100.03	113.11	15.08	28.58	3.22
RX88	-	4	-	-	123.83	139.29	17.46	31.75	2.98
RX89	-	31/2	-	-	114.30	129.78	18.26	31.75	6.82
RX90	-	5	-	-	155.58	174.63	19.84	44.45	17.10
RX91	-	10	-	-	260.35	286.94	30.18	45.24	3.31
RX99	8(2)	-	8(2)	-	234.95	245.67	11.91	25.40	-
RX201	-	-	-	13/8	46.04	51.46	5.74	11.30	-
RX205	-	-	-	113/16	57.15	62.31	5.56	11.10	-
RX210	-	-	-	29/16	88.90	97.63	9.53	19.05	-
RX215	-	-	-	41/16	130.18	140.89	11.91	25.40	-

Ring Joint Gasket IX



IX Type Gasket

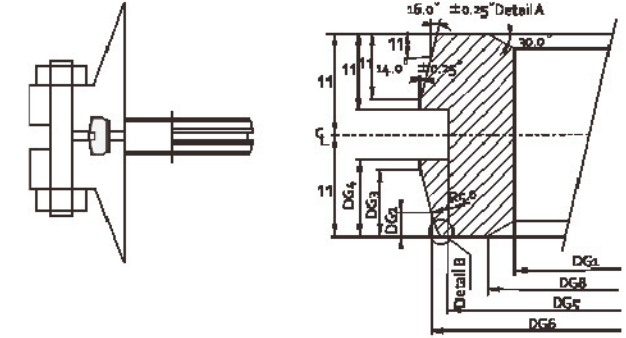
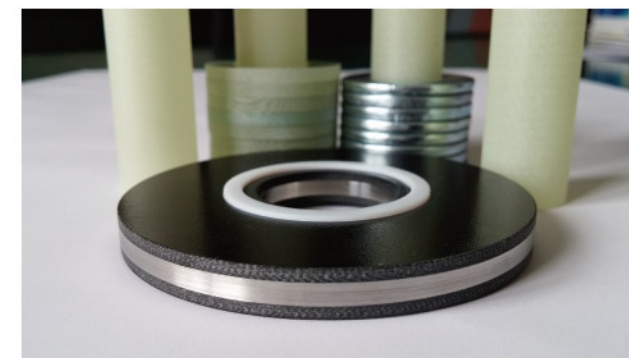


TABLE B.2-DIMENSIONS OF IX SEAL RINGS AND THEIR WEIGHTS

DN	NPS	IX Size	DG1 mm	DG2 mm	DG3 mm	DG4 mm	DG5 mm	DG6 mm	DG7 mm	DG8 mm	HG1 mm	HG2 mm	HG3 mm	HG4 mm	HG5 mm	RG1 mm	Weight kg
15	1/2	IX15	22.2	27.91	28.46	28.66	27.47	29.14	30.19	24.7	0.35	1.20	3.30	3.8	10.00	0.5	0.02
20	3/4	IX20	27.2	32.93	33.47	33.67	32.48	34.16	35.20	29.7	0.35	1.20	3.30	3.8	10.00	0.5	0.03
25	1	IX25	34.2	39.95	40.49	40.69	39.50	41.18	42.22	36.7	0.35	1.20	3.30	3.8	10.00	0.5	0.03
40	1 1/2	IX40	49.3	55.84	56.38	56.58	55.34	57.11	58.21	51.9	0.35	1.27	3.48	4.0	10.56	0.5	0.05
50	2	IX50	61.3	68.43	69.08	69.32	67.92	69.89	71.13	64.4	0.42	1.41	3.89	4.5	11.78	0.6	0.08
65	2 1/2	IX65	74.4	82.14	82.14	83.03	81.52	83.69	85.05	77.8	0.42	1.56	4.28	4.9	12.98	0.6	0.12
80	3	IX80	89.5	97.74	98.49	98.77	97.09	99.47	100.96	93.3	0.49	1.71	4.70	5.4	14.24	0.7	0.17
100	4	IX100	115.7	125.17	126.04	126.36	124.44	127.15	128.85	120.1	0.56	1.94	5.34	6.2	16.19	0.8	0.28
125	5	IX125	142.0	152.66	153.64	154.00	151.87	154.87	156.75	146.7	0.63	2.15	5.92	6.8	17.94	0.9	0.42
150	6	IX150	170.2	182.17	183.25	183.66	181.32	184.61	186.66	175.4	0.70	2.36	6.48	7.5	19.64	1.0	0.62
200	8	IX200	220.5	233.46	234.66	235.10	232.45	236.19	238.54	226.5	0.77	2.68	7.38	8.5	22.36	1.1	0.99
250	10	IX250	274.9	292.64	294.05	294.57	291.57	295.78	298.42	281.7	0.91	3.02	8.31	9.6	25.20	1.3	1.85
300	12	IX300	325.0	341.13	342.65	343.21	339.97	344.52	347.36	332.5	0.98	3.26	8.96	10.4	27.15	1.4	2.18
350	14	IX350	357.1	373.87	375.38	375.94	372.58	377.34	380.32	365.0	0.98	3.42	9.39	11.0	28.46	1.4	2.60
400	16	IX400	409.3	427.36	428.98	429.58	425.98	431.08	434.27	417.9	1.05	3.66	10.05	11.9	30.47	1.5	3.43
450	18	IX450	459.4	478.90	480.63	481.27	477.45	482.85	486.23	468.6	1.12	3.87	10.65	12.7	32.28	1.6	4.38
500	20	IX500	511.6	531.45	533.29	533.97	529.93	535.63	539.20	521.4	1.19	4.09	11.24	13.5	34.06	1.7	5.27
550	22	IX550	561.7	583.04	584.99	585.71	581.62	587.44	591.18	572.1	1.26	4.28	11.78	14.3	35.69	1.8	6.48
600	24	IX600	611.9	633.64	635.70	636.46	632.40	638.26	642.16	622.8	1.33	4.47	12.29	15.0	37.25	1.9	7.55
650	26	IX650	664.0	686.37	688.42	689.18	685.19	691.09	695.16	675.5	1.33	4.66	12.81	15.7	38.81	1.9	8.74
700	28	IX700	714.1	738.01	740.17	740.97	737.01	742.94	747.16	726.1	1.40	4.83	13.28	16.3	40.25	2.0	10.4
750	30	IX750	766.3	790.65	792.92	793.77	789.83	795.79	800.16	778.8	1.47	5.00	13.76	17.0	41.69	2.1	11.8
800	32	IX800	816.4	841.32	843.70	844.58	840.67	846.66	851.16	829.4	1.54	5.16	14.20	17.6	43.03	2.2	13.3
850	34	IX850	866.6	892.10	894.48	895.36	891.52	897.53	902.18	879.9	1.54	5.32	14.63	18.2	44.34	2.2	14.8
900	36	IX900	918.7	945.78	948.27	949.19	945.38	951.41	956.19	932.6	1.61	5.48	15.06	18.8	45.65	2.3	17.1
950	38	IX950	968.8	996.59	999.08	1000.00	996.26	1002.30	1007.21	983.1	1.61	5.63	15.47	19.3	46.88	2.3	18.9
1000	40	IX1000	1021.0	1049.28	1051.88	1052.85	1049.13	1055.19	1060.23	1035.7	1.68	5.77	15.88	19.9	48.12	2.4	20.9
1050	42	IX1050	1071.1	1100.00	1102.70	1103.71	1100.02	1106.10	1111.26	1086.2	1.75	5.92	16.27	20.4	49.29	2.5	23.0
1100	44	IX1100	1121.3	1150.83	1153.53	1154.54	1150.92	1157.00	1162.28	1136.8	1.75	6.05	16.64	21.0	50.43	2.5	25.1
1150	46	IX1150	1173.4	1203.55	1206.36	1207.40	1203.82	1209.91	1215.31	1189.3	1.82	6.19	17.03	21.5	51.59	2.6	27.5
1200	48	IX1200	1223.6	1254.39	1257.25	1257.25	1254.73	1260.83	1266.35	1239.8	1.82	6.32	17.39	22.0	52.68	2.6	29.9

Insulation Gasket Kits



Flanges, the most common trouble area, need to be sealed properly to prevent leakage and must also be cathodically isolated to prevent stray currents which cause undo corrosion and eventual breakdown of the metal. Insulation gasket kits help to solve most flange sealing problems, therefore preventing subsequent corrosion and saving the integrity of the pipeline.

Type	Type D, Type E, Type F
Component	<p>One-Piece Sleeve and Washer Set One - one-piece isolating sleeve Two - 1/8" Steel or Stainless Washers</p> <p>Double Washer and Full Length Sleeve Set One - Full Length Sleeve Two - 1/8" Steel or Stainless Steel Type "E" Full Face Isolating Gasket Type "F" Raised Face Isolating Gasket Type "D" Ring Type Joint Gasket Type "O-Ring Seal" Isolating Gasket Washers Two - 1/8" Isolating Washers</p>
Color	Silver, White & Black
Size	Upon request

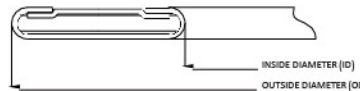
Jacketed Gasket



Jacketed gaskets are normally supplied with a non-asbestos, high temperature filler. The standard filler is normally sufficient for applications up to 900°F (482°C). Other soft fillers are available for higher temperatures or special applications. Standard metals used to make jacketed gaskets, regardless of the type, are aluminum, copper, the various brasses, soft steel, nickel, Monel, Inconel, and stainless steel types 304, 316, 321, 347, 410. The choice of metal used for the jacketed part of gasket would depend upon the service conditions being encountered.

- Double Jacketed Gasket
- Double Jacketed Corrugated Gasket
- Double Jacketed Corrugated Gasket with a Corrugated Metal Filler
- Single Jacketed Gasket
- Single Jacketed Overlap
- Double Jacketed Double Shell Gasket

Dimensions for Double Jacketed (DJ) Gaskets per ASME B16.20 to Suit ASME B16.5 Flanges



Nominal Pipe Size (NPS)	Gasket Insider Diameter (ID)		Outside Diameter of Ring (OD) by Class															
			150		300		400		600		900		1500		2500			
			Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm		
1/2	0.88	22.4	1.75	44.5	2	50.8	—	—	2	50.8	—	—	2.38	60.5	2.63	66.8		
3/4	1.13	28.7	2.13	54.1	2.5	63.5	—	—	2.5	63.5	—	—	2.63	66.8	2.88	73.2		
1	1.5	38.1	2.5	63.5	2.75	69.9	—	—	2.75	69.9	—	—	3	76.2	3.25	82.6		
1 1/4	1.88	47.8	2.88	73.2	3.13	79.5	—	—	3.13	79.5	—	—	3.38	85.9	4	101.6		
1 1/2	2.13	54.1	3.25	82.6	3.63	92.2	—	—	3.63	92.2	—	—	3.75	95.3	4.5	114.3		
2	2.88	73.2	4	101.6	4.25	108	—	—	4.25	108	—	—	5.5	139.7	5.63	143		
2 1/2	3.38	85.9	4.75	120.7	5	127	—	—	5	127	—	—	6.38	162.1	6.5	165.1		
3	4.25	108	5.25	133.4	5.75	146.1	—	—	5.75	146.1	6.5	165.1	6.75	171.5	7.63	193.8		
4	5.19	131.8	6.75	171.5	7	177.8	6.88	174.8	7.5	190.5	8	203.2	8.13	206.5	9.13	231.9		
5	6	152.4	7.63	193.8	8.38	212.9	8.25	209.6	9.38	238.3	9.63	244.6	9.88	251	10.88	276.4		
6	7.5	190.5	8.63	219.2	9.75	247.7	9.63	244.6	10.38	263.7	11.25	285.8	11	279.4	12.38	314.5		
8	9.38	238.3	10.88	276.4	12	304.8	11.88	301.8	12.5	317.5	14	355.6	13.75	349.3	15.13	384.3		
10	11.25	285.8	13.25	336.6	14.13	358.9	14	355.6	15.63	397	17	431.8	17	431.8	18.63	473.2		
12	13.5	342.9	16	406.4	16.5	419.1	16.38	416.1	17.88	454.2	19.5	495.3	20.38	517.7	21.5	546.1		
14	14.75	374.7	17.63	447.8	19	482.6	18.88	479.6	19.25	489	20.38	517.7	22.63	574.8	—	—		
16	16.75	425.5	20.13	511.3	21.13	536.7	21	533.4	22.13	562.1	22.5	571.5	25.13	638.3	—	—		
18	19.25	489	21.5	546.1	23.38	593.9	23.25	590.6	24	609.6	25	635	27.63	701.8	—	—		
20	21	533.4	23.75	603.3	25.63	651	25.38	644.7	26.75	679.5	27.38	695.5	29.63	752.6	—	—		
24	25.25	641.4	28.13	714.5	30.38	771.7	30.13	765.3	31	787.4	32.88	835.2	35.38	898.7	—	—		

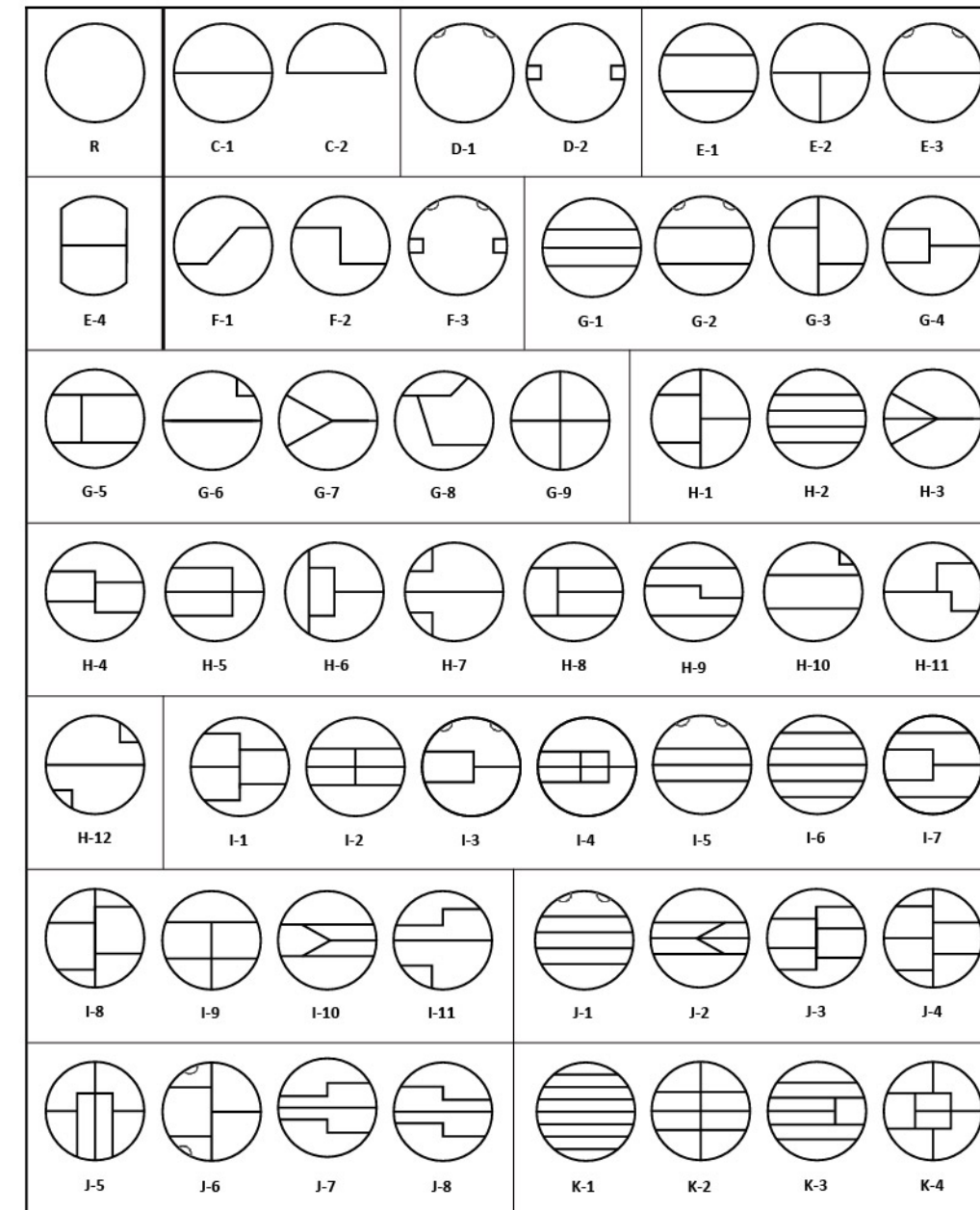
Dimensions for Double Jacketed (DJ) Gaskets per ASME B16.20 to Suit ASME B16.47 Series A Flanges

Nominal Pipe Size (NPS)	Insider Diameter (ID)		Outside Diameter of Ring (OD) by Class									
			Class 150		Class 300		Class 400		Class 600		Class 900	
			Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
26	26.5	673.1	30.38	771.7	32.75	831.9	32.63	828.8	34	863.6	34.63	879.6
28	28.5	723.9	32.63	828.8	35.25	895.4	35	889	35.88	911.4	37.13	943.1
30	30.5	774.7	34.63	879.6	37.38	949.5	37.13	943.1	38.13	968.5	39.63	1006.6
32	32.5	825.5	36.88	936.8	39.5	1003.3	39.38	1000.3	40.13	1019.3	42.13	1070.1
34	34.5	876.3	38.88	987.6	41.5	1054.1	41.38	1051.1	42.13	1070.1	44.63	1133.6
36	36.5	927.1	41.13	1044.7	43.88	1114.6	43.88	1114.6	44.38	1127.3	47.13	1197.1
38	38.5	977.9	43.63	1108.2	41.38	1051.1	42.13	1070.1	43.38	1101.9	47.13	1197.1
40	40.5	1028.7	45.63	1159	43.75	1111.3	44.25	1124	45.38	1152.7	49.13	1247.9
42	42.5	1079.5	47.88	1216.2	45.75	1162.1	46.25	1174.8	47.88	1216.2	51.13	1298.7
44	44.5	1130.3	50.13	1273.3	47.88	1216.2	48.38	1228.9	49.88	1267	53.75	1365.3
46	46.5	1181.1	52.13	1324.1	50	1270	50.63	1286	52.13	1324.1	56.38	1432.1
48	48.5	1231.9	54.38	1381.3	52	1320.8	52.88	1343.2	54.63	1387.6	58.38	1482.9
50	50.5	1282.7	56.38	1432.1	54.13	1374.9	55.13	1400.3	56.88	1444.8	—	—
52	52.5	1333.5	58.63	1489.2	56.13	1425.7	57.13	1451.1	58.88	1495.6	—	—
54	54.5	1384.3	60.88	1546.4	58.63	1489.2	59.63	1514.6	61.13	1552.7	—	—
56	56.5	1435.1	63.13	1603.5	60.63	1540	61.63	1565.4	63.13	1603.5	—	—
58	58.5	1485.9	65.38	1660.7	62.63	1590.8	63.63	1616.2	65.38	1660.7	—	—
60	60.5	1536.7	67.38	1711.5	64.63	1641.6	66.13	1679.7	68.13	1730.5	—	—

Dimensions for Double Jacketed (DJ) Gaskets per ASME B16.20 to Suit ASME B16.47 Series B Flanges

Nominal Pipe Size (NPS)	Insider Diameter (ID)		Outside Diameter of Ring (OD) by Class									
			Class 150		Class 300		Class 400		Class 600		Class 900	
			Inches	mm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
26	26.5	673.1	28.44	722.4	30.25	768.4	29.25	743	30	762	32.88	835.2
28	28.5	723.9	30.44	773.2	32.38	822.5	31.38	797.1	32.13	816.1	35.38	898.7
30	30.5	774.7	32.44	824	34.75	882.7	33.63	854.2	34.5	876.3	37.63	955.8
32	32.5	825.5	34.56	877.8	36.88	936.8	35.75	908.1	36.63	930.4	39.88	1013
34	34.5	876.3	36.69	931.9	39	990.6	37.75	958.9	39.13	993.9	42.13	1070.1
36	36.5	927.1	38.75	984.3	41.13	1044.7	40.13	1019.3	41.13	1044.7	44.13	1120.9
38	38.5	977.9	41	1041.4	43.13	1095.5	42.13	1070.1	43.38	1101.9	47.13	1197.1
40	40.5	1028.7	43	1092.2	45.13	1146.3	44.25	1124	45.38	1152.7	49.13	1247.9
42	42.5	1079.5	45	1143	47.13	1197.1	46.25	1174.8	47.88	1216.2	51.13	1298.7
44	44.5	1130.3	47	1193.8	49.13	1247.9	48.38	1228.9	49.88	1267	53.75	1365.3
46	46.5	1181.1	49.31	1252.5	51.75	1314.5	50.63	1286	52.13	1324.1	56.38	1432.1
48	48.5	1231.9	51.31	1303.3	53.75	1365.3	52.88	1343.2	54.63	1387.6	58.38	1482.9
50	50.5	1282.7	53.31	1354.1	55.75	1416.1	55.13	1400.3	56.88	1444.8	—	—
52	52.5	1333.5	55.31	1404.9	57.75	1466.9	57.13	1451.1	58.88	1495.6	—	—
54	54.5	1384.3	57.5	1460.5	60.13	1527.3	59.63	1514.6	61.13	1552.7	—	—
56	56.5	1435.1	59.5	1511.3	62.63	1590.8	61.63	1565.4	63.13	1603.5	—	—
58	58.5	1485.9	62.06	1576.3	65.06	1652.5	63.63	1616.2	65.38	1660.7	—	—
60	60.5	1536.7	64.06	1627.1	67.06	1703.3	66.13	1679.7	68.13	1730.5	—	—

Standard Shape Index



FLEXPACK 2600L



Temperature range	-85°C / +260°C
Max. Pressure	200 bar for valves 70 bar for pumps
Max. Shaft speed	8 m/s
pH	0-14

Description

Flexpack 2600L is a soft, flexible packing constructed by square braiding lubricated PTFE yarn, impregnated with PTFE dispersion.

Service

Flexpack 2600L can be used in pumps, valve or static applications handling most chemicals. Especially suitable for concentrated acids or where non-contamination of the product is required (e.g. foodstuffs, pharmaceuticals). Fluids can be sealed with a minimum of gland pressure.

FLEXPACK 3050



Max. Temperature	460°C (air) 650°C (steam)
Max. Pressure	180bar
Max. Shaft speed	20 m/s
pH	0-14

Description

FLEXPACK 3050 is a high quality packing manufactured from high purity exfoliated graphite.

Service

FLEXPACK 3050 is a soft naturally lubricious braided packing for sealing valves and pumps. The soft compressible nature of exfoliated graphite gives rise to good sealing performance at relatively low loads. FLEXPACK 3050 has excellent chemical resistance and is suitable for use in applications involving a wide range of chemical media (with the exception of strong oxidisers). The material is particularly suitable for sealing high pressure, high temperature valves in the power and petrochemical industries.

FLEXPACK 3060



Max Temperature	430°C (air) 650°C (steam)
Max. Pressure	300 bar
Max. Shaft speed	2 m/s
pH	0-14

Description

FLEXPACK 3060 is a high quality X-braided packing manufactured from high purity graphite yarn combined with inconel filaments. In addition, the package is treated with specially formulated high temperature lubricants and a corrosion inhibitor.

Service

FLEXPACK 3060 can be used in high pressure, high temperature valves and sealing applications. The combination of high performance graphitised yarn and inconel filaments give rise to increased dimensional stability and long term sealing performance. FLEXPACK 3060 has excellent chemical resistance and can be used for sealing a wide range of chemical media (with the exception of strong oxidisers). Typical industries would include chemical, petrochemical and power generation.

FLEXPACK 3090



Max. Temperature	500°C
Max. Pressure	200 bar
Max. Shaft speed	10 m/s
pH	2-12

Description

FLEXPACK 3090 is a top quality peroxide carbon yarn packing treated with fine graphite powder and corrosion inhibitor.

Service

FLEXPACK 3090 has a large wide of chemical resistance and it has a universal use and it is suitable in dynamic and static application.

FLEXPACK 4300



Max. Temperature	150°C
Max. Pressure	80 bar
Max. Shaft speed	5 m/s
pH range	5-10

Description

FLEXPACK 4300 is a high quality braided packing manufactured from lubricated fine vegetable yarn impregnated with PTFE dispersion.

Service

FLEXPACK 4300 is suitable for sealing a wide range of equipment including valves, rotary and reciprocating pumps handling water, brine, solvents, petroleum products and mild chemicals.

FLEXPACK 5000



Temperature Range	-85°C / + 260°C
Max. Pressure	150 bar (15 MPa)
Max. Shaft speed	15 m/s
pH	2-12

Description

FLEXPACK 5000 is aramid impregnated PTFE packing treated with a high temperature lubricant.

Service

FLEXPACK 5000 is suitable for steel, chemical, paper, pulp and cement industries; particularly recommended for pumping abrasive slurries.

FLEXPACK 5002



Temperature Range	-100°C / + 280°C
Max. Pressure	150 bar (15 MPa)
Max. Shaft speed	15 m/s
pH	1-13

Description

FLEXPACK 5002 is X-braided packing with yarn of streak kevlar with a special PTFE impregnation and inert lubricant.

Service

FLEXPACK 5002 is suitable for valves and pumps which is high pressure, high speed and applicable in deep water sea, mod, food, acid and alcls.

FLEXPACK 8010



Temperature Range	-200°C / 260°C
Max. Pressure	25 MPa (250 bar)
Max. Shaft speed	12 m / sec
pH	0-12

Description

FLEXPACK 8010 is an x-braided gland packing manufactured from high performance, graphite impregnated PTFE yarn, giving the packing a high thermal conductivity combined with low frictional properties. The corners of 801 are reinforced by high strength aramid fibres, increasing its resistance to extrusion at elevated temperatures and pressures.

Service

FLEXPACK 8010 is suitable for use in rotary, reciprocating and valve applications sealing water, solvents, abrasive media, weak acids and alkalis, fit for food and chemical industry.

FLEXPACK 8030



Temperature Range	-40°C / +150°C
Max. Pressure	80 bar
Max. Shaft speed	10 m/s
pH	3-12

Description

FLEXPACK 8030 is a braided packing made by the superior x-plait process and is based upon a synthetic fibre in a form customised for use in packings. The product is impregnated intimately with PTFE and also treated with a break in lubricant.

Service

FLEXPACK 8030 is intended for rotary applications sealing water, steam, gas, most solvents, acid and moderate chemical services. Being free of pigments the packing will not cause any discolouration of the process medium.

FLEXPACK 9000



Temperature Range	-85°C / +260°C
Max. Pressure	200 bar for valves, 70 bar for pumps
Max. Shaft speed	20 m/s
pH range	0-14

Description

FLEXPACK 9000 High quality gland packing, X-braided from a PTFE yarn incorporating graphite and a high temperature lubricant.

Service

FLEXPACK 9000 is suitable for a wide range of rotary and static most applications involving water, steam, slurries, oils, acids and alkalis.

FLEXPACK PTFE Tanklid Packing

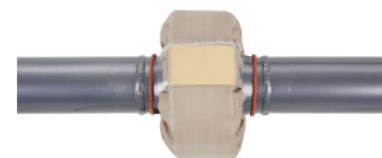


Size	from 20 to 60mm
Temperature Range	-50°C / +260°C
Appearance	Flat & Uniform
Size tolerance <30	-0/+2mm
Size tolerance from 30 to 60	-0/+4mm
Bulk density	From 0.55 to 0.75 g/m
pH	0-14
Hot oil content	from 5 to 10%

Service

TANK LID PACKING is a multi-functional special packing, the core of which is made of special high pressure-resilient elastomeric and which is then wound with high-temperature resistant fibre and branded with protective corrosion-resistant fiber, and is applicable for seal of important locations of oils and chemicals tanks such as manhole, filling hole and protective hole.

PTFE Safety Shields



Most popular shield, compatible with practically all corrosive chemicals (incl. caustic, high concentration sulphuric) due to the technical fabric and Teflon/Kevlar thread used for stitching. Available upon request.

This shield is typically used for acids, caustics, solvents, fuel, lubrication and seal oil applications. In addition to the pipe joint types listed on this website, the PTFE shield can be made to fit a wide range of other fittings such as valves, pumps, expansion joints and hoses (contact us for further details).

Max working temp: 235 °C / 450 °F

Flange Ratings: Ansi 150 – 600lb / DIN PN6 – PN40

Pipe sizes: Standard; ¼" (10mm) – 24" (600mm). Larger sizes available

Applications: Standard; Flanges, Elbow, Tees, Couplings. Available upon request.

PTFE-CLEAR Safety Shields



This shield is generally used for applications where sight of the flange/joint must not be obscured. Thus, liquid releases can be seen within the shield, providing visual indication. It should be noted however, that we do not recommend this shield for applications where external liquid/condensation may result in a false indication of leakage.

The shield is suitable for a range of corrosive chemicals due to the technical fabric and Teflon/Kevlar thread used for stitching. Available upon request. For strong acids and higher temperatures and pressures, please consider the standard PTFE or ST/ST shield.

Typically used for acids, caustics, solvents, fuel, lubrication and seal oil applications. Available upon request, the PTFE-CLEAR shield can be made to fit a wide range of other fittings such as valves, pumps, expansion joints and hoses (contact us for further details).

Max working temp: 150 °C / 300 °F

Flange Ratings: Ansi 150 – 300lb / DIN PN6 – PN40

Pipe sizes: Standard; ¼" (10mm) – 24" (600mm). Larger sizes available

Applications: Standard; Flanges, Elbow, Tees, Couplings. Available upon request.

PTFE Safety Shields



This shield is made from heat-sealed PVC and is designed to provide a 'budget' or short-term solution for low corrosion, pressure and temperature applications. Typically used for water-based liquids and particularly low-concentration chemicals. Each shield comes with external litmus indicator patch.

Max working temp: 60 °C / 150 °F

Flange Ratings: Ansi 150 – 300lb / DIN PN6 – PN25

Pipe sizes: ¼" (10mm) – 24" (600mm). Larger sizes available, contact us

Applications: Flanges, Elbows, Tees, Couplings

STAINLESS STEEL Safety Shields



This shield comprises outer 316 st/st band, inner 4-layer st/st mesh and external quick-release clamp. The key design feature is the internal mesh which effectively diffuses all pressure from the release, resulting in a safe drip. Equally important is the exact alignment of the shield and 'crimped' central mesh section, as other ill-fitting shields may create additional lateral spray-outs or dangerous mist formation.

Typically used for fuel, lubrication, seal & hydraulic oil, steam and other chemicals. Its design and materials of construction make it suitable for applications involving high temperature and pressure. Currently only available for flanges – though we can supply shielding solutions for 'special' applications so feel free to contact us for further consultation.

Max working temp: 500 °C / 930 °F

Flange Ratings: Ansi 150 – 1500lb / DIN PN6 – PN100

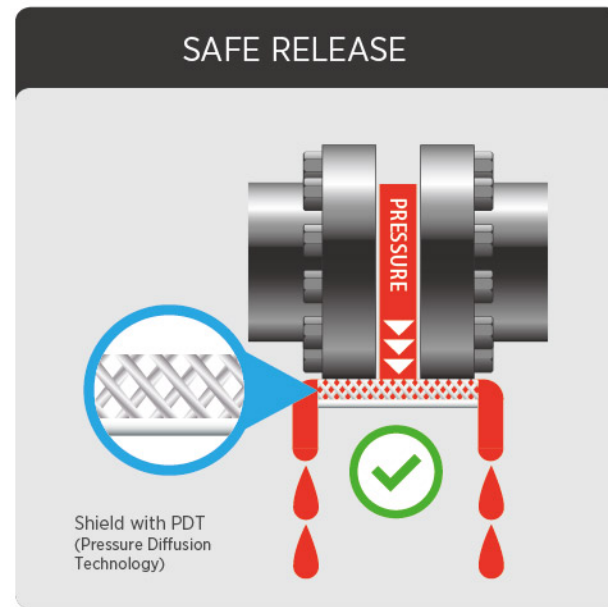
Pipe sizes: Standard; ¼" (15mm) – 24" (600mm). Larger sizes available, contact us

Applications: Flanges



SUREBAND® PDT (Pressure Diffusion Technology)

uses a specially formulated multi-layered mesh that is held against the flange. The pressure is diffused in a controlled manor thus preventing formation of a mist / vapour cloud. At the point of exit from the shield, the leak takes the form of a safe, vertical drip or stream.



Our leak testing facility has proven that pressure diffusion is required to prevent spray and mist formation. However, many shield designs have no diffusion - and this can actually create a worse leak than no shield at all.



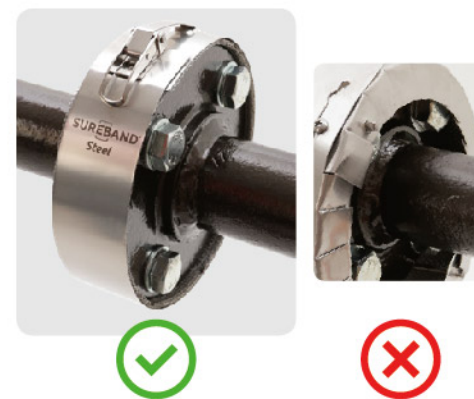
SUREBAND® has been designed with simplicity in mind. Unlike conventional 'pull-cord' shields, no knots are required. This is a significant benefit, especially when removing shields - as tightly tied knots are typically cut, not untied

SUREBAND® Clear



The Clear shield uses propriety technical hook+loop connection (40kg lateral shear strength).

SUREBAND® Steel



The Steel shield uses a quickconnection latch which locks into one of 4 specially designed louvre slots.

OUR QUICK-FIT CONNECTION HAS TWO IMPORTANT BENEFITS

Installation time can often cost more than the shields themselves. **SUREBAND®** is fitted within seconds (rather than minutes). This saves time and money, whilst maintaining maximum safety.

Ongoing pipe maintenance requires shields to be removed. Gloves are generally mandatory, so pull-cord knots are typical cut off rendering conventional shields useless. With **SUREBAND®**, operatives are much more likely to re-fit shields (shields are often used within hazardous area zoning calculations, thus failure to re-install the shields invalidates zone classification)

SUREBAND® Clear

Ideal for Acid / Caustic / EI15 Oil and Diesel mist prevention

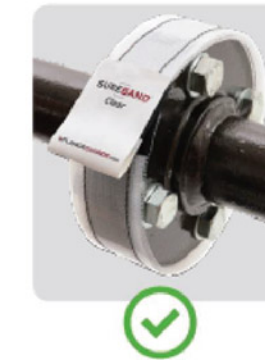
Manufactured from All-PTFE materials (no fibreglass) comprising clear ETFE outer and multi-layered ECTFE mesh inner. This material provides unparalleled chemical resistance. All our shields are tested on our hydrostatic pressure test facility, test certificates available on request.

The internal mesh is compressed against the flange and prevents direct and lateral spray. The liquid pressure inside is rapidly diffused, resulting in a safe drip-release.

Specification

Band Material	ETFE
Mesh Material	ECTFE
Fastener	Heavy Duty Velcro
Shear force	196 N
Max Temperature	230 Deg C
Flange Ratings	ANSI / DIN / many others
Pipe Sizes	15mm to 1200mm
Leak Detection	Visual Litmus Paper
Typical Applications	Acid, Bases, Oil

SUREBAND® Clear is very quick to install using heavy duty Velcro tabs which have been lwak tested at various orifice sizes at pressure up to 75Bar. It can be re-used in the event of a leakm thus providing a long term solution.



This product can also be made to fit valves and ot her non-standard pipe joints,contact us for further information

SUREBAND® Steel

Ideal for Fuel / Hydraulic oil / Steam - EI15 Oil and Diesel mist prevention

This shield design comprises a steel band and an internal layer of steel mesh which is compressed against the flange itself. This mesh, which is crimped along the centre to fill the gap between the two flange faces, is critically important. It quickly and efficiently diffuses the spray-out, resulting in a safe drip-release.All our shields are tested on our hydrostatic pressure test facility, test certificates available on request. The internal mesh is compressed against the flange and prevents direct and lateral spray. The liquid pressure inside is rapidly diffused, resulting in a safe drip-release.

SUREBAND® Steel is quick to install and typically used on high pressure pipe lines.It is ideally suited to Steam / Oil applications & has been leak tested at various orifice sizes at pressure up to 110 Bar. It can be re-used in the event of a leak, thus providing a long term solution.

Specification

Band Material	316 st st
Mesh Material	316 st st
Fastener	316 st st
Shear force	2,000 N
Max Temperature	500 Deg C
Flange Ratings	ANSI / DIN / many others
Pipe Sizes	15mm to 1200mm
Typical Applications	Steam / Oil



Marine Impa Code

Product Features

Applied to connection of various kinds of metal pipes and composite materials of pipe lines. Allowable angular deflection, provide restraint and strong sealing. HOLDENCLAMP can provide safe, fast and steady connection and very good effect of noise reduction and anti-vibration. As well as function of distance compensation in pipe ends. Easy to be installed and disassembled and reusable.



CODE	RUBBER SLEEVE MATERIALS	NOMINAL SIZE	PIPE OD MM
GRIP TYPE			
	STANDARD	AXIAL TENSILE (TOOTH RING GR-S)	
614131	EPDM	50	57-61
614132	EPDM	65	74-78
614133	EPDM	80	87-93
614134	EPDM	100	112-118
614135	EPDM	125	137-142
614136	EPDM	150	165-171
614137	EPDM	200	217-221
614141	NBR	50	57-61
614142	NBR	65	74-78
614143	NBR	80	87-93
614144	NBR	100	112-118
614145	NBR	125	137-142
614146	NBR	150	165-171
614147	NBR	200	217-221

CODE	RUBBER SLEEVE MATERIALS	NOMINAL SIZE	PIPE OD MM
FLEX TYPE can be used as pipe coupling and pipe repair clamp (Connection MF-S)			
614131	EPDM	50	57-61
614132	EPDM	65	74-78
614133	EPDM	80	87-93
614134	EPDM	100	112-118
614135	EPDM	125	137-142
614136	EPDM	150	165-171
614137	EPDM	200	217-221
614141	NBR	50	57-61
614142	NBR	65	74-78
614143	NBR	80	87-93
614144	NBR	100	112-118
614145	NBR	125	137-142
614146	NBR	150	165-171
614147	NBR	200	217-221



Marine Impa Code

Product Features

HOLDENCLAMP is widely used on quick repairing of pipe leaks which can seal under pressure and no need of changing pipes. Help a lot on repairing pin holes and breaks caused by aging or rusting. Have advantages of safe, convenient and efficiency.



CODE	RUBBER SLEEVE MATERIALS	NOMINAL SIZE	PIPE OD MM
614170	EPDM	50	57-61
614171	EPDM	65	74-78
614172	EPDM	80	87-93
614173	EPDM	100	112-118
614174	EPDM	125	137-142
614175	EPDM	150	165-171
614176	EPDM	200	217-221
614177	EPDM	250	263-273
614178	EPDM	300	314-324
614180	NBR	50	57-61
614181	NBR	65	74-78
614182	NBR	80	87-93
614183	NBR	100	112-118
614184	NBR	125	137-142
614185	NBR	150	165-171
614186	NBR	200	217-221
614187	NBR	250	263-273
614188	NBR	300	314-324

Holdenclamp Gasket for flexible pipe coupling:
Material : NBR / Viton



SIZE	OD mm	ID mm	Thickness mm
80A	89	113	26
100A	108/114	132/138	26
125A	133/140	157/164	26
150A	159/168	183/192	26
200A	219	243	26
250A	273	297	26
300A	325	349	26
350A	377	401	26
400A	426	450	26
450A	480	504	26
500A	530	554	26
550A	560	588	30
600A	630	658	30
650A	660	688	30

Rubber Sheeting



Type

- SM149/75 Black High Temperature GENUINE Viton® (DuPont A) Rubber 70° shore
- SM117 Black Commercial Grade NR / EPDM Rubber 65° Shore
- SM153 Black 'Economy' SBR Skirting 60° shore
- SM123 Black Commercial Premium Grade NR / SBR 70° shore
- SM118 Black Premium Grade Nitrile 65° shore
- SM196CT Black High Grade Neoprene Reinforced Sheeting
- SM165 Black Hard Premium Grade Neoprene / SBR 80° shore
- SM175 Black General Purpose Fuel Resistant Nitrile/PVC 65° shore
- SM197CO Black High Grade Natural Rubber Reinforced Sheeting
- SM1310 Black Abrasion Resistant Natural Rubber 50° shore
- SM213 Black Hydrogenated Nitrile 70° shore
- SM178 Black High Temperature EPDM/Butyl Rubber 60° shore
- SM177 - Black WRAS Approved EPDM 70° shore
- SM1618 Black Medium Grade Neoprene 70° shore

SM570 Fine Ribbed Black EPDM Rubber Matting to IEC61111-2009 Class 0 & 2 & 4



SM570-00 Fine Ribbed Rubber Matting to IEC61111-2009 Class 0, is a high quality electrical safety matting fully tested to 1,000 volts, SM570-02 Fine Ribbed Rubber Matting to IEC61111-2009 Class 2, is a high quality electrical safety matting fully tested to 17,000 volts, SM570-04 Fine Ribbed Rubber Matting to IEC61111-2009 Class 4, is a high quality electrical safety matting fully tested to 36,000 volts. The Working voltage with regulation standard stamped on reverse of roll at 1000mm intervals.

It has a fine ribbed, anti-slip surface pattern on one side and a cloth impression finish on the reverse.

- Fully tested to specification
- Health & Safety regulation material
- Fully traceable supply
- Regulatory branding on reverse
- Anti-slip finish
- Low maintenance
- Available 0.91m, 1.0m and 1.2m wide rolls
- THIS GRADE DOES NOT CONTAIN RECYCLED RUBBER

This Product is REACH, RoHS, PAH and CE Compliant

Due to the very high quality of METROSEAL raw materials the need for additional thickness is not necessary. The IEC:61111 specification only states 'maximum' thickness with minimum thickness being determined by suppliers ability to pass the correct tests defined in Clause 5 of specification. The above materials do so with the 'integral' layflat quality of the rubber compounds use not impaired in any way. In addition to the above our thinner grades present less of a trip hazard when laid offering additional safety to operators. Standard finishes on this type is FINE RIBBED [corrugated] one side with an anti-creep impression on reverse.

Specifications	Values
Colour	Black, Grey, Yellow / Black
Compound	EPDM
Hardness [Shore A]	65°

MARKINGS

The example marking on the underside of the mat will consist of a tag denoting details as right:
The brand shall be placed at 1000mm intervals along length of rolls. The brand shall be colour coded as per IEC:61111:2009 guidelines

Class '0' - RED, Class '1' - WHITE, Class '2' - YELLOW, Class '3' - GREEN, Class '4' - ORANGE

SM580 Fine Ribbed Rubber Matting to 50,000v - Grey VDE0303 Grade



SM580 Fine Ribbed Rubber Matting to 50,000v - Grey Previously VDE0303 Grade is a high quality matting tested to 50,000 volts and in accordance to VDE0303 European specification with the regulation standard, stamped on the reverse of the roll at 1000mm intervals. Fully certified and tested to 50,000 volts with a recommended safety working voltage of 1,000v. It has a fine ribbed, anti-slip surface pattern on one side and a cloth impression finish on the reverse. A very commonly requested and approved Electrical Safety Matting specified by our customers in the UK and Europe

- Fully tested to specification
- Health & Safety regulation material
- Fully traceable supply
- Regulatory branding on reverse
- Anti-slip finish
- Low maintenance

Cut lengths available to order. SM580 can also be supplied to order in colours and flame retardant, low smoke emission grades

Aquamaster Vinyl Backed and Edged Carpet Mats



SM376 Aquamaster Vinyl Backed and Edged Carpet Mats are attractive and hard wearing carpet door mats with a vinyl base and edges for internal or external use.

- Suitable for inside or outside use [PET]
- Ideal for foot traffic areas
- Traps dirt and moisture with dual level surface
- Durable vinyl base for longer life
- Bevelled vinyl safety edges
- Anti creep base finish
- Absorbs 2.8kgs of water per square metre

Color

Blue, Red, Charcoal

Runner Matting



- SM505 Premium Grade Fine Ribbed (corrugated) Rubber Runner Matting
- SM560 Ribbed PVC Runner Matting
- SM561 'Circular Stud Pattern' PVC Runner Matting
- SM562 Pyramid Pattern PVC Runner Matting
- SM591 'Rhombus' Rubber Matting
- SM593 Micro Dot Plate Runner Matting
- SM597 'Pyramid' Plate Non Slip Rubber Runner Matting
- SM598 'Rope Affect' Rubber Runner Matting
- SM667 'Grip Flute' PVC Reversible Runner Matting
- SM667GL 'Grip Liner' PVC Membrane Matting
- SM737 'Diamond Plate' High Quality Checker Pattern PVC Runner Matting

SM545 Checker Plate Rubber Matting Single & Five Bar



SM545 Checker Plate Rubber Matting Single & Five Bar is a general purpose rubber matting with a 'Checker Plate' pattern design on one side and a cloth impression pattern on the reverse. Available in two standard thickness' in Black and Grey 3mm and 4.5mm and in Blue and Green at 3mm only. Ideally suited for walkways, tread mats, runners and general purpose industrial applications where a multi directional tread pattern is required.

- Neat, attractive pattern
- Easily cut to size & shape
- Multi direction tread
- Low maintenance
- Non slip when wet
- Cut lengths to order

This grade can be produced in varying width, length and thickness formats and in a variety of colours to special order. These would be subject to minimum batch run quantities, usually 500 M2 per size/colour.

Color
Grey, Black

SM630 Hollow Ring' Connectable Rubber Tile Mats



SM630 Hollow Ring' Connectable Rubber Tile Mats are high quality moulded natural rubber ring mats with an open base and raised knobs on the reverse which allows for excellent drainage of debris and liquids. Probably the most commonly requested and best known floor protection, anti-fatigue safety mat. SM630 mats have an integrally moulded studded edge to allow mats to be connected together forming larger areas. Ideally suited for heavy traffic areas in kitchens, canteens, bars and walkways providing a non slip and hygienic underfoot safety surface. Available in black general purpose and red oil & grease resistant types.

- Excellent drainage properties
- Easy to clean and Hygienic
- Good anti-fatigue characteristics
- Highly durable & resilient
- Anti-slip finish
- Low maintenance

SM630 can also be supplied to order in colours and flame retardant, low smoke emission grades.

SM669 Loopex PVC Entrance Matting



SM669 Loopex PVC Entrance Matting is a premium PVC rubber 'loop' matting. It is an ideal mat for front entrances/exit areas. The unique 'loop' pattern gives it excellent properties for the retention of dirt, dust, debris and fluids from dirty feet and footwear and it allows easy cleaning when soiled.

- Premium grade PVC
- Unique inter-woven design
- Highly affected surface for removing debris from feet
- Construction allows fore dust and debris retention
- Hygienic and easy to shake clean and wash
- Attractive design and pattern

Color
Blue, Grey

SM684/SM685 Checkafor Heavy Duty Mats



SM684/SM685 Checkafor Heavy Duty Mats are heavy duty moulded rubber mats with a 4 bar deep checker pattern which gives high grip and facilitates scraping of dirt and debris from feet. Waste and moisture is accumulated in a well and can be shaken free or hosed down when cleaned.

- Robust heavy duty natural rubber
- High profile checker plate design
- Dust, debris and fluid retentative pattern
- Hygienic and easy to clean
- Bevelled rubber safety edges
- Ideal for entrance or workstation applications

Color
Black

SM759 'Iron Look' Rubber Door Mat



SM759 'Iron Look' Rubber Door Mats are moulded rubber door mats are produced from high quality natural rubber with a unique cast 'iron look' appearance offering good traction under foot with fluid and debris drainage. Available in half round and rectangular format as standard with many other patterns and designs to special order.

- Good non slip characteristics
- Easily cleaned
- Excellent drainage properties
- Good durability & resilience
- Attractive finish and appearance
- Low maintenance

Color
Black

SM410 Bark / SM412 Diamond Finish PVC Foam Anti Fatigue Matting



SM410 Bark Finish PVC Foam Anti Fatigue Matting is a closed cell [cushioned] PVC foamed anti-fatigue matting with 'pebbled' non directional anti-slip surface pattern for underfoot traction. Supplied in roll or cut mat format with side bevelled edges in grey and black with a yellow warning edge.

SM410 is an ideal product for bench and workstation areas enhancing ergonomic benefit and worker comfort for medium term standing activity.

SM412 Diamond Finish PVC Foam Anti-Fatigue Matting is cushioned 'foamed' PVC anti-fatigue matting offering operator and workstation comfort and safety.

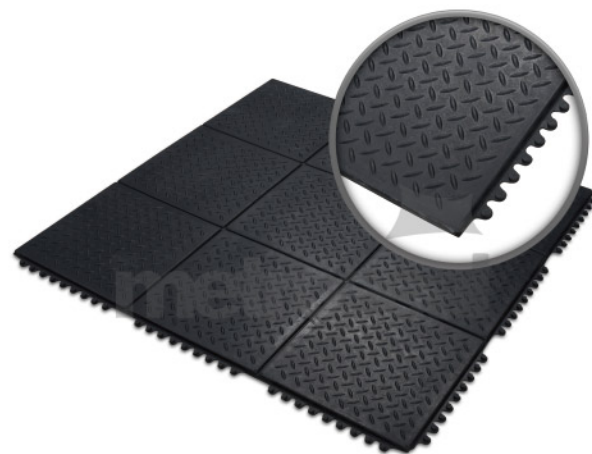
Supplied in roll or cut mat format with side bevelled edges in black and black with a yellow warning edge, SM412 is an ideal product for bench and workstation areas enhancing ergonomic benefit and worker comfort for medium term standing activity.

We Offer this style in black and yellow colours, two roll sizes and also in cut pieces.

- Good non slip properties
- Easy to clean and hygienic
- Good anti-fatigue characteristics
- Durable & resilient
- Attractive 'pebbled' finish
- Low maintenance



SM610 Linkable Rubber Gym Mats



SM610 Linkable Rubber Gym Mats are a superior, but economically produced all rubber moulded mat ideal for gym exercise and weights areas. Studded on one side.

Also see SM607 and SM611

- Durable and robust mat
- Easy to lay and fit to size
- Jigsaw patterned linkable
- Pattern options on both faces
- Reversible for longer extended life
- Easily cleaned
- Economically priced

This material has a shelf life of 5 years from date of manufacture when protected from environmental extremes. The values shown represent current production and may vary under different conditions.

FIBREFLEX is an insoluble, impregnated, strong & flexible high-grade fiber.

- FIBREFLEX is recommended for all oil, grease, water, gasoline flange connections on trucks, tractors, automobiles, Recreational Vehicles, and industrial motors.
- FIBREFLEX is used for oil applications, alcohol distilleries, shipyards, equipment makers and industrial plants for pump, pipe, tank, gear, flange joints.
- FIBREFLEX is plant fibre, chemically treated to resist coal tar, oils, water, alcohol, grease, air, gas, gasoline and solvents of all kinds. Resists heavy pressure-Strong but Compressible.
- For use in industrial, chemical, petroleum, petrochemical and automotive industries.
- Meets all USA federal, military, S.A.E. and A.S.T.M. specifications.

Vegetable Fibre Sheet



GENERAL SPECIFICATIONS FIBREFLEX GRADE A

A. SCOPE: FIBREFLEX GRADE "A" is a premium grade of vegetable fibre sheet packing, efficiently saturated with a glue-glycerine impregnant rendered insoluble by means of a tanning agent to give a strong, flexible, all-proof packing with properties retained during proper storage and in use.

B. CERTIFICATION: FIBREFLEX GRADE "A" is certified to meet the below listed specifications:

HH-P-96g, Type 1 only (Federal Specification)

MII-g-12803A	Ident. No. P3313B
MII-g-12803OB & MII-g-12803C	Ident. No. F326128M6
ASTM D 1170 and SAE J90	Ident. No. P3313B
ASTM F 104 and SAE J90	Ident. No. F326128-E21-M6
Underwriters' laboratory listing	No. MH 4649 (763N)

C. TEMPERATURE LIMIT: 250 °F

Sizes Available

Thickness: 0.15mm-4mm
Width: 1m

Cork/Rubber Sheet DRG-46



Property	Test Method
Binder	ASTM D2000
Density	ASTM D3676
Density	ASTM D3676
Tensile Strength	ASTM F152
Compression	ASTM F36
400psi	
Shore A Hardness	ASTM D2240
Flexibility	ASTM F147
Fluid Immersion	ASTM F146
Fuel A (Room temp. for 22 hrs)	
Compression Set B	ASTMD395
25% deflection, 22hrs. 158 deg. F	
Temperature Range	
Meets Specification	P2268A

Sizes Available

Thickness: 0.8mm-6.4mm
Width: 0.9m

Waterless Hand Cleaner



Colour	White
Size	1000g

Description

Waterless hand cleaner powder is a heavy-duty hand cleanser. It is a non-abrasive paste, which acts like tiny scrubbing brushes removing the toughest soiling. It effectively removes oil, grease, diesel, paints, tar, carbon and most other soiling.

Feature

It is highly economical. Rub a small amount into your hands for fast deep cleaning action and simply rinse or wipe off with a tissue or cotton cloth with no residue.

Leak Stopping Tape



Colour	Black
Size	25MM X 10MTR, 38MM X 10MTR, 50MM X 10MTR

Description

Leak Stopping Tape is a self-fusing silicon tape for emergencies and all-purpose repairs. It can be applied on a wide range of surfaces, has many uses including the repair of leaking pipes and hoses, protection of electrical connections, cables, hand tool handles and much more.

Leak Stopping Tape is resistant to UV, fuel, water, oils, acids, and wide range of solvents. The tape creates a permanent air-tight and water-tight seal immediately after application. It ensures anti-corrosive and electrical protection. It is very easy to remove and leaves no sticky residue on the elements it covered.

Features

- Can be used for all types of pipes, even most plastic types
- Unique inter-woven design
- Activated when mixed with water construction allows fore dust and debris retention
- Comes with SDS, technical sheet, gloves and application tools

Benefits

- No need to consider base material
- No sparks
- No distortion of the base material
- Accessories available

Installation Instructions

- Clean the repair surface from dirt, oil etc. before the application.
- Attach the beginning of tape close to damage area and start wrapping around (with tension).
- Keep stretching the tape, and continue installation with 50% overlap. It will fuse to itself after overlapping.
- Finish the wrapping over the problem area and once finished press the end firmly into place.
- For high pressure leaks, additional wrapping may be required. Most hose repairs can be repaired with 3-5 layers in thickness, and wrapping 3 to 5 inches in each direction away from the leak point; however, additional strength can be added simply by wrapping more layers of the tape.
- For electrical wiring, it is not necessary to stretch tightly. In fact, it will be more resilient to abrasion when it is not stretched as tightly.

Quick Pipe Repair Tape



Colour	White
Size	50MM X 1500MM, 50MM X 4600MM, 75MM X 4600MM, 100MM X 4600MM

The Quick Pipe Repair Tape is economic to repair and used for repairing leaking pipes. It includes a fiberglass polyepoxide soaked resin bandage and a putty. It can be applied to the most commonly used pipes; steel, concrete, fiberglass, PVC, copper & other. It can be used on pipes with internal pressure up to 25 bar (362Psi). Installation process takes only a few minutes & the pipes is ready to be used within an hour.

Maintenance & Storing

Material should be stored in a dry, cool and well ventilated area and used within 12 months after goods receipt. It is recommended to store the product in the original packaging.

Amount of rolls required for installation

Normal pipe diameter (MM)	3.5bar 10 layers of wrapping (MM x M)	10bar 15 layers of wrapping (MM x M)	28bar 20+layers of wrapping (MM x M)
12.5	1 (50x1.5)	1 (50x1.5)	1 (50x1.5)
19	1 (50x1.5)	1 (50x1.5)	1 (50x1.5)
25	1 (50x1.5)	1 (50x1.5)	1 (50x3.6)
32	1 (50x1.5)	1 (50x3.6)	1 (50x3.6)
38	1 (50x1.5)	1 (50x3.6)	1 (50x3.6)
50	1 (50x3.6)	1 (50x3.6)	1 (50x3.6)
63	1 (50x3.6)	1 (50x3.6)	2 (50x3.6)
75	1 (50x3.6)	1 (50x3.6)	2 (50x3.6)
88	2 (75x2.7)	2 (75x2.7)	3 (75x2.7)
100	2 (75x2.7)	2 (75x2.7)	3 (75x2.7)
125	2 (75x2.7)	3 (75x2.7)	3 (75x2.7)
150	2 (75x2.7)	3 (75x2.7)	4 (75x2.7)
200	3 (75x2.7)	4 (75x2.7)	5 (75x2.7)
250	3 (100x3.6)	4 (100x3.6)	5 (100x3.6)
300	3 (100x3.6)	4 (100x3.6)	6 (100x3.6)
350	4 (100x3.6)	5 (100x3.6)	7 (100x3.6)
400	4 (100x3.6)	6 (100x3.6)	8 (100x3.6)
450	4 (100x3.6)	7 (100x3.6)	9 (100x3.6)

Safety Reflective Tape



Colour	Silver, Orange
Size	50MM X 47.5M

Retro-reflective tape is a reflecting material with micro glass beads of high reflecting rate embedded a special layer. After this reflective sheeting is applied to hard surface of other objects, its wearer or itself is in high visibility under the sea night time as well as weak light conditions. This kind of reflective sheeting suitable for salvage life saving kit, nowadays it is popular by relative personals and organizations in many countries. Furthermore it is maritime admission usage by IMO and US COAST GUARD.

Water Finding Paste/Gasoline and Oil Finding Paste



Colour	Brown
Size	75g

Water Finding Paste is water detection systems used to aid in the detection of water within fuel supplies. Water Finding Paste is normally used in the petroleum industry to monitor and detect moisture levels in various fuel types.

80% of fuel contamination with water occurs from naturally present moisture levels from the atmosphere condensing within the fuel storage tanks. Other contributing factors towards this problem is the failure of

fuel transfer or fuel storage equipment. That is bad seals within tank covers or holes in underground tanks where the tank is below the water table all allowing the gradual seepage of water into the fuel reserves.

Testing and recording of fuel supplies should be done regularly to ensure no presence or water. Water has a greater density than fuel so within any tank water will naturally gravitate to the bottom. This is why when performing any water contamination test you should apply Water Finding Paste to the bottom of the dipstick being used to test the tank. The Water Finding Paste serves two purposes when conducting the dipstick test, firstly it will detect the presence of water and secondly it can also determine to what volume of water is present in the tank from the level of reaction of the paste up the height of the dipstick. Water Finding Paste upon contact with water will turn from brown to pink color.

Gasoline and Oil Finding Paste

1. A chemical paste used with oil gauging tape for measuring the presence of various types of oils.
2. The color of the paste will generally change from brown to red upon contact with oil.
3. This paste will detect almost any kind of oil including mineral oil, vegetable oil, and animal oil, and solvents, alcohol, acrylic solution, alkaline solution, and spirits.

Wood Glue



Colour	White
Size	1000g

Benefits

- Universal for all types of wood
- Good bonding strength
- Ready-to-use
- Transparent joint

Scope of Use

Recommended for assembling and repairing all kind of wood elements; heavy wood, light wood, cork carpentry, cardboard and paper.

Application

Surface preparation:
Surfaces should be leveled, dry, clean of dust and free of substances which may impair adhesion.

Application procedure:

Apply a thin regular layer of Wood Glue Classic on one of the surfaces by brush or roller. For heavy wood, the glue should be applied on both surfaces. Join the two parts within the open time (approximately 15 minutes, depending on the temperature, humidity and type of wood used). Press for 30 minutes, applying a pressure of 2 to 5 kg/cm². Pressing can either be hot or cold with the usual tools and appliances.

Cleaning:

Remove excess glue with a cloth. Once dry, remove excess glue with a wet cloth.

Silicone Grease



Colour	Transparent
Size	200g, 1000g

Description

High performance grease for plastic/plastic and plastic/metal combination involving slow to medium-fast movements and light to medium loading.

Composition

- Silicone oil
- Lithium complex thickener

Feature

- High oxidation resistance
- Wide service temperature range
- High water resistance
- Excellent corrosion protection
- Compatible with many plastics and elastomers

Application

- Suitable for friction contacts with low to medium loading and speeds which have to remain serviceable through a wide temperature range.
- Use on control cables, water pumps, bearing bushes, gearwheels, slideways and other plastic parts in domestic appliances, toys and electrical appliances.

Graphite paste/powder



Colour	Grey
Type	Graphite Paste, Graphite Powder
Size	500g, 1000g, 2000g

Description

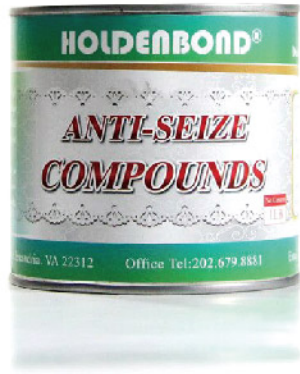
Calcium stearate complex grease

Composition/Information on ingredients

COMPONENT (WEIGHT%)	CAS NUMBER	TLV/PEL (MG/M3)
Petroleum 80-90	Oil 64742-52-5	10 (As Oil Mist)
Performance Package 10-20	Mixture	NE

The specific chemical names and composition of the components not disclosed is confidential business information and is withheld as permitted by 29CFR 1910.1200 and various state Right-to-Know laws.

Copper Anti-Seize Compound



Description

Copper Anti-Seize Compound is a soft copper coloured grease used to prevent seizure caused by metal to metal contact under arduous conditions. The product is both thermally and mechanically stable, very water repellent and will naturally adhere to metal surfaces.

Applications

Copper Anti-Seize Compound is recommended for most applications where metal to metal contact needs to be avoided and for all assembly work where ease of dismantling is required, including; keys, keyways, track adjusters, rock drill extension rods, most threaded connections and general assembly work.

Copper Anti-Seize Compound is especially recommended for applications where the presence of lead (contained in many other anti-seize compounds) is unacceptable.

Benefits

- Very long lasting product.
- Lead free.
- Easy to apply, naturally adheres to metal and gives maximum coverage.
- Mechanically stable.
- Very broad temperature range – Non-melting.

Typical Physical Characteristics

- Appearance Smooth Grease.
- Colour Gold / Copper.
- Thickener Highly refined Modified Clay.
- Solid Lubricant Content >20%.
- Penetration (IP 50) 280 – 320.
- Temperature Range -20°C to +1100°C.
- Drop Point None (Infusible product).

Silicone Sealant



Silicone sealant is a versatile, high performance which reacts with atmospheric moisture to produce a flexible silicone rubber, ideal for a wide variety of general purpose joint sealing and glazing applications. It provides exceptional cure stability. Capable of taking extension, compression, transverse and longitudinal movements, resists severe environmental conditions such as wind loading, wind driven rain, snow and sleet, and is impervious to acid rain, ozone, ultraviolet light and extreme temperature variations. Because of its excellent adhesive qualities, it provides the long-term performance required for demanding weatherproofing applications. It is recommended for use on both new construction and renovation projects.

Applications

The high modulus and outstanding physical properties of silicone sealant allow for sealing a wide variety of demanding applications, such as:

- Curtain Walling, included cap, toe, heel and air seals
- General sealing/jointing
- Silicone Structural Glazing in 2 sided systems
- A weather seal in butt (2 sided) and stopless (4 sided) glazing systems
- Joint within curtain/window systems

Colour	Transparent, White, Black, Grey
Size	300ml

Red Hi-Temp RTV Silicone Gasket Sealant



Colour	Red
Size	85g

Description

Red Hi-Temp RTV Silicone Gasket Sealant is a non-slump acetoxy curing paste that cures to permanently flexible silicone rubber on exposure to atmospheric moisture at room temperature. It exhibit an outstanding resistance to weathering, moisture, vibration, UV light. The RTV Red adheres to glass, metal, wood, painted surfaces, silicone rubber and some plastics. Since the composition of the substrates can vary greatly, adhesion tests for the specific case are advisable.

Applications

- Hi-Temp RTV is a ready to use, solvent free silicone sealant which is primarily designed for general purposed sealing and bonding applications.
- Hi-Temp RTV silicone makes reliable “formed-to place” gaskets that resist cracking, shrinking and migrating caused by thermal cycling. Ideal for use as replacement for non asbestos gaskets, seals, gasket dressing, cork, felt, paper, rubber and asbestos gaskets.
- The consistency of the uncured material allows a high application rate and makes it good choice not only for dispensing from a caulking gun but also for automatic dispensing.
- The silicone rubber form from Hi-Temp RTV is well suited for sealing joints that are exposed to high temperatures. The elasticity of the rubber remains unchanged over a wide temperature range from -62°C to 343°C.
- Hi-Temp RTV is well suited as Formed-in-Place-Gasket (FIPG) material for flange sealing, for example on transmissions, compressors and pumps.
- Hi-Temp RTV may also be used for:
 - o Assembling valve and timing cover, crankcase, radiator, thermostat
 - o Bonding gaskets in heating and cooling systems appliances.
 - o Sealing connecting joints, flanged pipe joints.
 - o Repairing cables.

General Purpose Glue



Colour	Golden Yellow
Size	150ml, 800ml, 3000ml

Description

General purpose glue is a solvent based neoprene adhesive which have high viscosity, short tack time, easy to apply, cost saving, strong bonding strength and provides heat resistant. It provides highly effective strong bonds for wood, plywood, rubber, leather, metal, PVC carpet, linoleum, felt, tiles, chipboard, concrete, formica countertops, paper product etc...

General purpose glue is most suitable for general purpose, light industry, furniture, construction and decoration industry. It is simple to use and resistant to damp, oil, salt, mild acid and alkaline.

Applications

- Wipe off moisture, oil and all other foreign matters on bonding surfaces.
- Apply a thin layer of glue on the bonding surfaces evenly. For effective bonding on absorbent surfaces and porous material normally two coats is required.
- For bonding surfaces assemble under room temperature the recommended time is 30 to 45 mins.
- For bonding surfaces with higher absorbent rate the open time shall be shorter but at the smooth bonding surfaces the open time shall be longer.
- After assemble apply suitable pressure on the bonding substrates.
- Bond strength can be fully obtained after 24 hours.
- Application should be carried out in a well ventilated area.

Marine Maintenance & Emergency Repair Kit



Description

A "must have" solution kit for general maintenance and emergency repair for every vessel. The Marine Maintenance & Emergency Repair Kit provides solutions from simple vibration-proof bolt fastening to emergency pipe repair in open sea. Applications include thread locking, thread sealing, retaining, flange sealing & gasketing, emergency metal rebuilding & pipe repair, anti seize and bonding.

Feature & Benefit

- No special tools required. Easy application by spatula or applicator
- Simple and tolerant 1:1 mixing ratio; mix just the right amount for the job
- Rapid curing and extended working life materials suitable for use in all climates and application situations
- No shrinkage, expansion or distortion during cure
- No stress or strain on repaired components
- Excellent electrical insulation characteristics prevents bimetallic corrosion caused by dissimilar metals
- Apply thin or thick sections in one will not slump at up to 25mm (1") sections. Stays where it is applied even on overhead surfaces
- Bonds tenaciously to almost any surface including steel, aluminium, copper, brass, stainless steel, fiberglass laminate, concrete, unglazed ceramics and glass
- Mouldable to precise contours
- Machinable with conventional tipped tools
- High mechanical strength and adhesion
- Outstanding resistance to a broad range of chemicals
- Corrosion resistant

Lifeboat Kit



Description

Lifeboat kit contains high performance, low viscosity, 100% solids materials designed for use as a resin repairs for polyester laminated hulls of lifeboats and life rafts. The kit contains Lifeboat Resin which consists of a unique blend of epoxy resin combined with polyamino amine adducts, which have been specially selected to provide the optimum level of penetration, adhesion and over-coat-ability. The material is easy to use and because of its adhesion properties it can also be used to effectively repair metals, wood, glass and synthetic materials. The materials are supplied as a kit contained in special watertight packaging to meet accepted marine industry standards.

Product Features

- Full range of accessories supplied in kit
- 100% solids coating
- Excellent adhesion & penetration properties
- Excellent over coating properties

Zip Patch Kit



Description

Easy to use, fast setting patch for making permanent, waterproof field repairs.

Recommended Applications

- Repairs pipes, tanks, containers and PVC/ABS pipes
- Use on punctured container roofs, side panels and liners
- Non-structural repairs to truck and trailer bodies
- Patches machine housings
- Thin wall repairs

Surface Preparation

Zip Patch requires minimal surface preparation. However, for maximum adhesion, the repair surface should be roughened and wiped clean with MEK, Acetone, IPA or similar. When making repairs to pipes, shut down the pressure. In tanks, pressure should be relieved by lowering the fluid level.

Application

Apply only in well-ventilated areas. The Zip Patch kit contains one adhesive-impregnated fibreglass patch, an aerosol can of activator, a plastic applicator and one pair of rubber gloves – everything required to make fast, permanent emergency repairs.

- First, carefully peel away one side of the foil pouch, completely exposing the adhesive impregnated fibreglass.
- Then, spray the exposed patch surface lightly but completely (including the corners) with the activator.
- The patch becoming darker in colour indicates proper activation.
- Apply the activated patch to the repair area and carefully peel back the remaining foil. Use the plastic applicator provided in the kit to eliminate trapped air by gently smoothing the patch from the center towards the outer edges.
- Spray the entire surface of the exposed patch lightly with the activator.

Quick Pipe Repair Kit



Applications

- By utilizing Pipe Repair Bandage – immediate and cost effective repairs can be carried out.
- Surface preparation is at a minimum due to the surface tolerant characteristics
- The end result can offer long term protection at a working temperature of 270°C and at pressures ranging from 10 bar (150 psi) through to 27 bar (400 psi) if used in conjunction with double wrap
- The finished repair can seal effectively after only 5 minutes with full care after 30 minutes.
- Pipe Repair Bandage is fully WRAS approved for contact with potable water

Description

Designed to put all products required to carry out emergency repairs to leaking pipework.

Many industries and marine companies today are suffering from unplanned small pipe leaks that need an instant repair solution. The leaks can seriously affect the companies ability to continue to manufacture and make profits. To prevent the replacement of pipework – we supply a long term solution that enables full repair whilst allowing full protection/plant operation to continue.

The repair systems are simple and easy to use and are based on the latest solvent free epoxy technology. They can be used in confined space without the need for expensive air fed equipment for the applicators and come in a range of grades that can include extra fast curing to the repair procedure.

“A” Kit Complete



Description

“A” Kit contains a specially selected range of high performance laminate, adhesive and engineering repair products.

Suitable for encapsulating long lengths of large diameter pipework, bonding dissimilar materials and injection into voids and cracks from 1 to 20mm.

Product Features

- Ideal for emergency repairs to leaking pipework.
- Repairs with pressure tolerance up to 3000 psi.
- Contains 100% solids Standard Resin & Hardener.
- Up to 20 repairs possible from one kit.
- Repairs to pumps and valves.
- Water activated pipe repair bandages.
- General purpose adhesive.
- Fast curing metal repair compounds.

“C” Kit Complete



Description

This is a top-up for the “A” Kit it contains a specially selected range of high performance laminate, adhesive and engineering repair products, products features are as followed

Product Features

- Ideal for emergency repairs to leaking pipework.
- Repairs with pressure tolerance up to 3000 psi.
- Contains 100% solids Standard Resin & Hardener.
- Up to 20 repairs possible from one kit.
- Repairs to pumps and valves.
- Water activated pipe repair bandages.
- General purpose adhesive.
- Fast curing metal repair compounds.

Repair Kit Complete



Description

Repair Kit for large pipe has been designed to put all products required to repair any size pipe. It will also protect worn pipes where the wall thickness has been compromised. Can also be used for Off Shore protection to immersed legs and support structures.

Product Features

- By utilizing Resin & Hardener in conjunction with Glass Tape – immediate and cost effective repairs can be carried out
- Surface preparation is at a minimum due to the surface tolerance of the Resin & Hardener
- The end result can offer long term protection
- Simple to apply with minimum surface preparation required

Adhesive Glue



Type: HB222 Threadlocker

Description: For low strength and small screw, applicable for fasteners of Ø 1/4” below.

Type: HB242 Threadlocker

Description: General purpose medium strength thread locker removable and fasteners between Ø 1/4” & 3/4”.

Type: HB243 Threadlocker

Description: General purpose medium strength thread locker.

Type: HB262 Threadlocker

Description: Medium to high strength thread locker fasteners up to Ø M20 dia.

Type: HB270 Threadlocker

Description: High strength thread locker for fasteners up to Ø M20 thread.

Type: HB271 Threadlocker

Description: High strength low viscosity thread locker for fasteners up to M25 thread.

Type: HB277 Threadlocker

Description: High strength low viscosity thread locker for fasteners up to M25 thread.

Type: HB542 Threadlocker

Description: Liquid sealant is suitable for fine threads of hydraulic

Colour	Transparent, White, Red
Type	HB222 50ml, HB242 50ml, HB243 50ml, HB262 50ml, HB270 50ml, HB271 50ml, HB277 50ml, HB542 50ml, HB545 50ml, HB401 20g, HB406 20g, HB460 20g, HB495 20g, HB496 20g, HB454 20g, HB601 50ml, HB648 50ml, HB504 250ml

connectors.

Type: HB545 Threadlocker

Description: Suitable for hydraulic pneumatic fittings up to Ø 2”.

Type: HB401 Cyanoacrylate Adhesive

Description: General purpose surface insensitive adhesive for difficult to bond.

Type: HB406 Cyanoacrylate Adhesive

Description: Rubber bonding for rubbers, plastics and elastomers.

Type: HB460 Cyanoacrylate Adhesive

Description: General purpose use, especially for rubber bonding.

Type: HB495 Cyanoacrylate Adhesive

Description: General purpose use, metal, rubber, plastics.

Type: HB496 Cyanoacrylate Adhesive

Description: General purpose use, bond rubber only.

Type: HB454 Cyanoacrylate Adhesive

Description: General purpose use, can be applied to vertical surfaces.

Type: HB601 Retaining Compound

Description: Retaining compound for high strength.

Type: HB648 Retaining Compound

Description: Retaining compound for continuous temperature up to 130°C. Fills gaps up to 0.006”.

Type: HB504 Flange Sealant

Description: Flange sealant for low pressure gasket eliminates gap.

Aluminum Putty



Description

Aluminum-filled epoxy putty for dependable no rusting repairs to aluminum castings, machinery, and equipment widely used in HVAC applications.

Intended Use: Patch aluminum castings; make jigs, dies, and holding fixtures.

Product features: Can be machined, drilled, or tapped using conventional metalworking tools. Bonds to aluminum, concrete, and many other metals. Fills voids or pores in castings.

Limitations: Not recommended for long term exposure to concentrated acids or to organic solvents.

Size	454g
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Bronze Putty



Description

Bronze-filled epoxy for repairing, rebuilding, and maintaining bronze parts and equipment

Intended Use: Repair, rebuild, and maintain marine propellers, shafts, trays, chutes, gate valves, and pump wear rings.

Product features: Resistant to chemicals and most acids, bases, solvents, and alkalis. Machinable to metallic finish. Bonds to ferrous and non-ferrous metals.

Limitations: Not recommended for long term exposure to concentrated acids or to organic solvents.

Size 454g

Ceramic Bead



Description

A high performance compound which contain fine high alumina ceramic beads, for maximum wear and abrasion resistance in areas conveying fine particles.

Recommended: Use to protect, repair and rebuild exhausts, pulverizers, ash systems, cyclones, vibrating tables, dust collectors, screens, fans and housings, chutes, screw conveyors, pumps, pneumatic conveying systems and other equipment. Repair ceramic tile lined equipment - use to feather edge ceramic tiles or to fill in irregular shaped surfaces in conjunction with ceramic tiles.

Size 454g

Ceramic Putty



Description

A ceramic-filled epoxy putty with a smooth, low-friction finish.

Intended Use: For repairing flange faces, machine ways, valve seats and bodies, and tracing guides.

Product features: Rebuilds and protects interfacing metal surfaces. Protects metal from bi-metallic corrosion. Repairs metals and concrete.

Limitations: Not recommended for long term exposure to concentrated acids or to organic solvents.

Size 454g

Express Titanium Putty



Description

A Steel-filled, fast-setting epoxy putty for filling, rebuilding, and bonding metal surfaces.

Intended Use: Restores worn or fatigued metals; patches castings; makes jigs and fixtures; rebuilds pump and valve bodies; restores bearing journals and races.

Product features: Bonds to aluminum, concrete, and many other metals. Resistant to chemicals and most acids, bases, solvents, and alkalis. Applies easily to vertical surfaces. Machinable to metallic finish.

Limitations: Not recommended for long term exposure to concentrated acids or to organic solvents.

Size 454g

Flex Putty



Description

Trowelable urethane for repairing and lining process equipment exposed to wear, impact, abrasion, vibration, and expansion/contraction.

Intended Use: Repair and rebuild conveyor belts. Line process equipment to dampen noise. Line concrete control joints. Cast flexible molds, fixtures, and parts. Pot and encapsulate.

Product Features: Trowels on smoothly. Cures to tough, medium-hard rubber (Shore 87A).

Size 454g

HT-Aluminum Putty



Description

High-density, alumina-filled epoxy system for maximum wear and abrasion resistance in high-temperature.

Intended Use: Repair scrubbers, ash handling systems, pipe elbows, screens, and chutes; recontour chippers, bins, hoppers, bunkers, separators, diester tables; protect exhausters, chutes, launderers, housing fans, crushers, and breakers.

Product features: Provides up to 30% better abrasion resistance than conventional wear compounds. Unmatched resistance to acids, bases, salts, and solvents. Services temperatures to 450°F. Excellent adhesion to metal, ceramic, and concrete.

Size 454g

High Performance Backing Compound



Size 454g

Description

High-strength liquid epoxy with the necessary resiliency and strength to withstand forces generated by crushers and mills.

Intended Use: Rod, ball, pebble, and autogenously mills; cone and gyratory crushers.

Product features: 100% solids - no solvents. High compression and impact strength. Negligible shrink. Easy to pour; easy to use. Low exothermic reaction.

Metal Assembly Paste



Size 500g

- High temperature and corrosive areas used in bolts, nuts, pins
- pivot joints, studs,
- screw connections, guides
- bushings, fittings, spark plugs, spindles, flanges
- flange seals, exhaust screw connections
- pipe connections, linkages, sliding sleeves
- press fits, threaded parts

Benefits

- Reduces friction and wear
- Prevents seizing at high temperature
- Resists high loads due to its high solid content
- Ensures accurate assembly during installation
- Provides easy dismantling of threaded parts even after long operational periods
- Threaded parts remain in good condition and can be re-used
- Prevents rust and corrosion
- Excellent cold, hot and salt water resistance
- Long life and efficiency
- Resists temperature up to 450°C

Surface Preparation

Surface should be clean, dry and free from oil, grease, etc., Wire brush sealed parts.

Description

Metal Assembly Paste is a high temperature assembly paste prevents metal-metal contact, seizing, galling and fretting corrosion.

Recommended Applications

- Anti-rust paste for slow moving, anti-seize
- High load

Super Titanium Putty



Size 1000g

Description

High performance alloy reinforced epoxy putty, engineered to make precision repairs to critical stress bearing equipment. Used to protect new or repaired surfaces from cavitation, erosion and corrosion.

Recommended Applications

- Repairing worn pumps, scored shafts and hydraulic rams
- Rebuilding wear rings, pump impellers, butterfly and gate valves and tube sheets
- Protecting wear plates
- Preventing cavitations to condenser water boxes
- Refitting keyways
- Restoring bearing housings
- Leveling and chocking critical equipment

Stainless Steel Putty



Size 454g

Description

A stainless steel-filled epoxy for rebuilding and repairing stainless steel equipment.

Intended Use

Repairs cracks, dents, and breaks in stainless steel machinery or castings; rebuilds dairy equipment; repairs stainless steel holding tanks.

Product features

- Bonds to aluminum, concrete, and many other metals
- Resistant to chemicals and most acids, bases, solvents, and alkalis
- Applies easily to vertical surfaces
- Machinable to metallic finish

Limitations

Not recommended for long term exposure to concentrated acids or to organic solvents.

Steel Putty



Size 454g

Description

A steel-filled epoxy putty that cures at room temperature and is designed for filling, rebuilding, and bonding metal surfaces.

Intended Use

Patching and repairing areas where welding or brazing would be undesirable or impossible.

Product features

- Applies easily to vertical surfaces
- Machinable to metallic finish
- Bonds to aluminum, concrete, and many other metals
- Resistant to chemicals and most acids, bases, solvents, and alkalis

Limitations

Not recommended for long term exposure to concentrated acids or to organic solvents.

Steel Liquid



Size 454g

Description

A steel-filled, liquid epoxy designed for maintaining and/or repairing tooling, mold-making, and leveling equipment.

Intended Use

Holding fixtures for intricate parts; filling and leveling equipment; repairing hard-to-reach areas where a flow able epoxy is needed; duplicating or tracing masters; short run dies and molds.

Product features

- Low viscosity, self-leveling liquid. Castable. Low shrinkage. Machinable to metallic finish.

Limitations

Not recommended for long term exposure to concentrated acids or to organic solvents.

SB Resin & Activator



Size	454g
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Introduction

A free flowing resin with activator that impregnates glass/cloth/tape/mat & bonds tenaciously to practically any surface to produce a tight seal which will not dissolve in water oil and will resist high temperature.

Intended Use

impregnates glass/cloth/tape/mat

Limitations

None

Application Instruction

Applicable for multipurpose material like Plastics, Steel, Wood, Ceramics.

Mixing Instructions

It is strongly recommended that full units be mixed, as ratios are pre-measured.

1. Add hardener to resin
 2. Mix thoroughly with screwdriver or similar tool (continuously scrape material away from sides and bottom of container) until a uniform, streak-free consistency is obtained.
- LARGE SIZES (2 lb., 25 lb.): Use a propeller-type Jiffy Mixer Model ES on an electric drill. Mix until color is uniform and consistent.

Titanium Putty



Size	454g
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Description

High performance alloy reinforced epoxy putty, engineered to make precision repairs to critical stress bearing equipment. Used to protect new or repaired surfaces from cavitation, erosion and corrosion.

Recommended Applications

- Repairing worn pumps, scored shafts and hydraulic rams
- Rebuilding wear rings, pump impellers, butterfly and gate valves and tube sheets
- Protecting wear plates
- Preventing cavitations to condenser water boxes
- Refitting keyways
- Restoring bearing housings
- Leveling and chocking critical equipment

Underwater Putty



Size	454g
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Description

A unique, non-rusting, high exothermic epoxy for repairing, patching and rebuilding equipment in chronically wet environments - even under water.

Recommended Applications

- Repairing and fitting pipes, valves, pumps, tanks and other equipment in marine environments, offshore drilling, water treatment plants and paper and pulp mills
- Repairing concrete pipes and vessels in wet environments.

Steel /Underwater Stick



Colour	Black
Size	114g

Description

A 2-part epoxy putty stick which repairs leaks, holes, cracks in metal, fiberglass, concrete, and ceramics.

Intended Use:

Repairs cracks and breaks in tanks and drums. Plumbing and pipe repair. Repairing machinery and equipment.

Product features:

- Fast-curing
- Bonds to wet surfaces
- Can be machined, drilled, or tapped using conventional metalworking tools

Insulation Putty



Description

An insulation sealing compound called "HOLDENBOND". This is a common solution for sealing cable entrance through walls or floors... terminal boxes. Furnished in 1kg pkt.

Colour	Brown
Size	1kg

Hatch Cover Tape



Colour	Black
Size	Width 75mm (3in) x 20mtr x 4 rolls/case Width 100mm (4in) x 20mtr x 3rolls/case Width 150mm (6in) x 20mtr x 2rolls/case

StrongWrap hatch cover tape is recommended for marine applications where the weather and sea conditions can be moderate and predictable, and only demand a medium strength tape.

StrongWrap hatch cover tape makes it possible to acquire reliable flexible and effective medium duty sealing for the hatch cover. StrongWrap hatch cover tape offers far greater strength than duct tape but does not quite equal the heavy duty, critical service strength.

Usage

Typical uses include barge hatch covers, ship's hatch covers, tank covers, weather deck doors, and metal pipe protection from cathodic and corrosion conditions.

Lifetime of the hatch cover tape after applied to the ship: 10 years based on usage

Data Test

- Test Item Properties
- Tensile strength (N/5cm) ≥ 230
- Low-temperature -20 - 180°No Crack
- Rupture stretch strength ≥ 450%

MF 01 Anti Spray (Anti Splashing) Tape



The Mareflex MF-01 anti-splashing tape was designed with the aim of protecting pipeline installations against leakage in accordance with the latest SOLAS Consolidated Edition 2001, Regulation II-2/4.2.2.5.3 and the previous SOLAS Consolidated Edition 1997, Regulation II-2/15.2.9/10/11/12 (see details). The flammable substance once it comes into contact with a hot surface may be the cause of fire. According to the Solas Regulations the tape has been designed to protect pipe flanges and fittings in oil pipe systems against the uncontrolled oil spraying and leakages. The MF01 tape directs any potential leakage to areas where the hot substance will not be dangerous.

See the official interpretation of the above regulation.

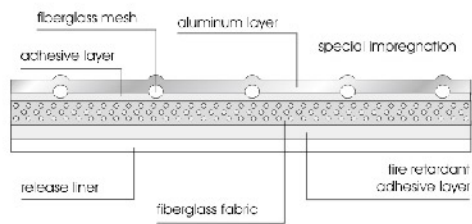
Antispray MF 01 is available in format of various size tapes, in all versions equipped with an adhesive layer to ensure easy installation.

Mareflex MF01 is enhanced with a fire-retardant (self-extinguishing) adhesive layer for further enhancing the safety standards. The self-adhesive layer is extremely strong and water resistant.

TECHNICAL SPECIFICATION

Mareflex MF01 is produced using the materials of the highest quality selected in such a way as to ensure the best protection against high pressure, high temperature while maintaining the elasticity necessary for a quick and easy installation.

The picture below shows in a schematic way the idea of the tape's structure:



PHYSICAL PROPERTIES AND PERFORMED TESTS

Colour	Synthetic cloth	
Thickness (without release liner)	Oil derivative plastic mass with corrosion inhibitors	
Temperature range	Beige	
Shelf Life	≥ 1,2 mm	
Physical prop.	Result	Regulation
Tensile strength	1167 ± 50 N/50 mm 137 lbs/inch	acc. to EN-ISO 1421:2001 acc. to ASTM-882
Adhesion to steel	49 ± 4 N/50 mm 5,49 lbs/inch	acc. to EN-ISO 2411:2002 acc. to ASTM-3330

AVAILABILITY

PRODUCT CODE	DIMENSION	IMPA
MF01-35	35mm x 10m	871801
MF01-50	50mm x 10m	871802
MF01-75	75mm x 10m	871808
MF01-100	100mm x 10m	871804
MF01-140	140mm x 10m	871803
MF01-250	250mm x 10m	871807
MF01-500	500mm x 10m	871805
MF01-1000	1000mm x 10m	871806

*other dimensions can be prepared on special demand

MAINTENANCE AND STORING

Material should be stored in a dry and cool area. It is recommended to store the rolls in the original packaging.

Mareflex provides the tapes in ready-to-sell, separate, cartoon boxes with English instruction inside.

MF 02 High Pressure 50 bar Anti Splashing Tape



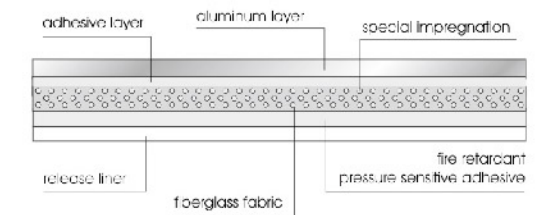
The Mareflex MF 02 (50 bar) High Pressure Antispray Tape is an upgraded version of Mareflex MF 01 Antispray Tape. It was designed for protecting high pressure (up to 50 bar) pipeline installations against spraying of dangerous substances. General purpose of the MF 02 tape is the same as so called "anti splashing tapes" described in Regulation II-2/4.2.2.5.3 (SOLAS Consolidated Edition 2001), with the exception of designed pressure, which is up to 50 bar. See the official interpretation of the above regulation.

Mareflex MF 02 (50 bar) Antispray Tape is supposed to serve as fire protection in case of leakage of flammable substances transported through the high-pressure pipeline. While MF 02 does not stop the leakage itself, it allows to avoid spraying of hazardous substances and therefore prevents from possible contact of flammable substances with a hot surfaces, which may be a cause of fire.

TECHNICAL SPECIFICATION

Mareflex MF01 is produced using the materials of the highest quality selected in such a way as to ensure the best protection against high pressure, high temperature while maintaining the elasticity necessary for a quick and easy installation.

The picture below shows in a schematic way the idea of the tape's structure:



PHYSICAL PROPERTIES AND PERFORMED TESTS

Colour	Silver (with blue print)	
Thickness (without release liner)	440 micrometers (without release liner)	
Maximum pressure	50 bar (49,35 atm)	
Temperature range	up to 150°C	
Shelf Life	Indefinite, when properly stored	
Physical prop.	Result	Regulation
Tensile strength	2119 N ± 95	acc. to EN-ISO 1421:2001
Elongation at break in length	4%	

AVAILABILITY

PRODUCT CODE	DIMENSION
MF02-35	35mm x 10m
MF02-50	50mm x 10m
MF02-100	100mm x 10m
MF02-140	140mm x 10m
MF02-250	250mm x 10m
MF02-500	500mm x 10m



*other dimensions can be prepared on special demand

MAINTENANCE AND STORING

Material should be stored in a dry and cool area. It is recommended to store the rolls in the original packaging.

Mareflex provides the tapes in ready-to-sell, separate, cartoon boxes with English instruction inside.

Norust Anti Corrosive Tape / Mastic



Norust products are developed for long time anti-corrosive protection of metal elements installed underwater, underground or exposed to weather conditions. NoRust Tape and NoRust Mastic is a cold applied system. It is composed of synthetic fabric impregnated with specially developed petrolatum compounds.

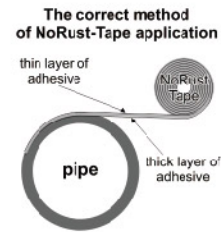
The field where the NoRust Mastic and Tape can be applied: steel flanges, pipes, valves, welded connection points, electrical connection boxes, pipe crossings etc. It may be also used for waterproofing and sealing.

Petrolatum NoRust Anti-corrosive Tape is designed for hand wrapping field joints, fittings, tees, etc.

NoRust-Mastic corrosion protection mastic, it is used for surface irregularity filling, for irregular profile and dimension levelling and smoothing in case of two - layer isolation system: Mastic is perfect for flanges, pipe connections and ship fittings.

INSTALLATION NoRust - Tape

1. Clean the surface to be coated from rust, dirt and moisture.
2. Clean and tarnish existing isolation ends with abrasive paper (about 10 cm length on each end).
3. Using a spiral wrap with 50% overlap, apply NoRust-Tape with a tension. Extend the wrapping over the existing isolation.
4. On the end press the coated surface to adjust the coating to any irregular shapes of protected elements.



NoRust - Mastic

It is to be applied with hands or spatula on the surface clean and free from rust, dirt and moisture.

After application, smooth out an isolated surface.

TECHNICAL SPECIFICATION

NoRust - Tape	
Backing	Synthetic cloth
Adhesive	Oil derivative plastic mass with corrosion inhibitors
Colour	Beige
Total thickness	≥ 1,2 mm
Synthetic Cloth Thickness	up to 0,4 mm
Installation Temperature	-5°C to +45°C
Operating Temperature	-34°C to +55°C

NoRust - Mastic	
Density at 20°C	1,2 - 1,4 kg/dm ³
Flash-point	200°C
Colour	Beige
Installation Temperature	-5°C to +45°C
Operating Temperature	-34°C to +55°C

CERTIFICATE OF CONFORMITY



AVAILABILITY



PRODUCT CODE NoRust-50-10
SIZE 50 mm x 10 m
WEIGHT 730 g
UNIT PER BOX 24



PRODUCT CODE NoRust-Mastic-2
SIZE n/a
WEIGHT 2 kg (net)
UNIT PER BOX 6

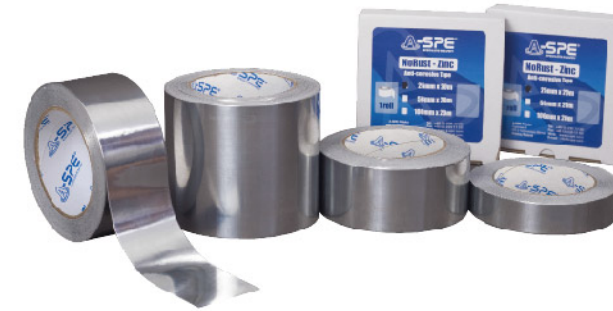


PRODUCT CODE NoRust-100-10
SIZE 100 mm x 10 m
WEIGHT 1440 g
UNIT PER BOX 12



PRODUCT CODE NoRust-Mastic-5
SIZE n/a
WEIGHT 5 kg (net)
UNIT PER BOX single container

Norust Zinc Tapes



INSTALLATION INSTRUCTIONS

- The surface must be dry before tape application.
- Do not apply NoRust Zinc Tape when the air or metal temperature is less than 3°C (38°F) or within 3° C (5°F) of the dew point. Exposure temperature should be between -45 and +120°C (-45 to +248°F).
- In order to achieve an optimum functionality of the NoRust Zinc tape it is important to ensure good electric contact between two layers. For this reason it is recommended to prepare the surface by removing loose coating or loose corrosion.

Properly installed NoRust Zinc Tape offers a long time protection which in most situations will last for the lifetime of the protected object.

FIELDS OF APPLICATION

The clean application form and easy installation are the main reasons of wide range of use for the zinc anti-corrosive tapes. They are used in the production facilities like refineries and petrochemical plants where difficult environmental conditions create high risk of the corrosion. Zinc Tapes are good alternative in the areas where traditional methods – like anticorrosive painting – cannot be performed due to the impossibility of the proper surface preparation like sandblasting.

Zinc Tapes are the good method of the protecting the connections of the light alloys and steel materials which is a frequent issue in the automotive and train industry. The contact point of the light alloy and steel is often subjected to the corrosion. Installing NoRust Zinc Tape between these two layers eliminates risk of the corrosion.

NoRust Zinc Tape offers double protection:

- Passive protection – as zinc layer creates a barrier coating the protected surface.
- Active protection – as the zinc in combination with the electro-conductive adhesive acts as a sacrificial anode corroding instead of the protected element.

NoRust Zinc Anti-corrosive Tape is a flexible and self-adhesive material composed of the high pureness mass of zinc, special adhesive layer and release liner. It has been designed to ensure anti-corrosive protection for metal elements made of steel, iron and light alloys. The adhesive layer of the NoRust Zinc Tape has a special composition of the glue and the zinc powder which results in the electro-conductive properties. It ensures that the zinc has a permanent electrical contact with the protected metal.

AVAILABILITY

Product code	Dimension (roll)	Weight	IMPA code
NoRust-Zinc 25	25mm x 20m	0,45 kg	673221
NoRust-Zinc 50	50mm x 20m	0,90 kg	673522
NoRust-Zinc 100	100mm x 20m	1,80 kg	673523

IMO Signs



Size 300 x 300mm, 300 x 150mm, 250 x 200mm, 250 x 75mm, 200 x 300mm, 150 x 150mm, 150 x 75mm, 100 x 300mm, 150 x 400mm, 30 x 150mm

Signs Categories

- 1: Evacuation and Safety Signs
- 2: Transparent Low Location Lighting Signs
- 3: Level/Floor Marking Signs
- 4: Safety (Green) Signs
- 5: Direction Signs
- 6: Mandatory (Blue) Signs
- 7: Evacuation Instructions
- 8: General Fire Safety Signs
- 9: Fire Control Symbols IMO A.654(16)
- 10: Fire Control Symbols ISO 17631
- 11: Hazard Signs
- 12: IMDG and Hazard Diamonds
- 13: Prohibition Signs
- 14: ISPS Signs
- 15: Combination Signs
- 16: Public Room Signs
- 17: Passenger Vessels and Terminal Signs

PAS-20 Reflective Warning Tapes



High quality hazard yellow-black and red-white warning tapes for industry. Tapes are self-adhesive with a strong adhesive layer on the back.

GENERAL DESCRIPTION

The reflective warning (hazard) tapes improve the safety standards during night-time, blackouts or low visibility conditions. Our tapes are suitable for indoor and outdoor use. The product is weather resistant.

AS-44 (Tapes) Photoluminescent Tapes



Luminescent tapes with green, red or black diagonal stripes.

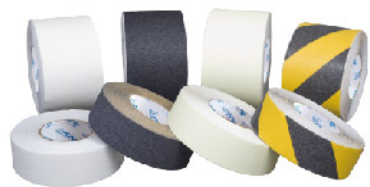
GENERAL DESCRIPTION

A-SPE photoluminescent tape is a self-adhesive flexible material with high intensity luminous properties. The product far exceeds requirements of DIN 67510 Part 1.

After its exposure to natural or artificial lighting the material is highly visible to the human eye in the dark. The gradual diminution of glow intensity takes several hours. The material can undergo the process of being recharged with light repeatedly.

The material is non-toxic and non-radioactive, it is phosphorus and lead free. It is not harmful to health or the environment.

AS-50 Anti-slip Tapes - Hard Surface



Easy to apply tape, designed for boats, water sports equipment and many other applications.

GENERAL DESCRIPTION

HS and SS series tapes are an excellent and economical solution improving the safety standards in slip hazard areas. They are available in 2 basic widths (5 cm and 10 cm). Installation is very simple – just follow the instructions below.

HARD surface tapes (HS) – offer excellent anti-slip properties, however, because of the rough surface they are difficult in cleaning and cannot be washed with mops.

AS-21 Self-adhesive Warning Tapes



Simple, universal, self-adhesive (PSA) tapes will help you to increase safety in your company.

GENERAL DESCRIPTION

Diagonal warning tapes are also available on regular self-adhesive vinyl foils.

temperatures ranging from -40°C to +90°C
the effects of humidity, steam, snow, dust etc.
the effects of lipids/grease and oils
the effects of weak acids and bases
the effects of UV rays

This is the most economical solution, however, it does not offer photoluminescent nor reflective properties.

AAS-23 Barrier Tapes



Not-adhesive warning tapes are popular tapes used as a simple barrier for the temporary cordoning off of hazardous sites.

GENERAL DESCRIPTION

Non-adhesive plastic barrier tape, printed with high visibility warning stripes (red-white or yellow-black) are perfect for the temporary cordoning off of hazardous areas and marking out accident scenes, race courses, car parks etc.

These economy warning tape comes packed in a transparent foil preventing the roll from unravelling when stored.

Barricade tape is made of high quality, 0,07mm thick low-density polyethylene (LDPE).

AS-51 Anti-slip Tapes - Soft Surface



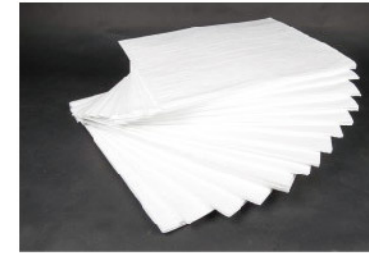
Easy to apply, safe for bare foots tapes, designed for boats, water sports equipment and many other applications.

GENERAL DESCRIPTION

HS and SS series tapes are an excellent and economical solution improving the safety standards in slip hazard areas. They are available in 2 basic widths (5 cm and 10 cm). Installation is very simple – just follow the instructions below.

SOFT surface tapes (SS) – are a mop-friendly solution, they offer considerably lower anti-slippery properties, however, they are much easier in maintenance and cleaning.

Oil Absorbent Pad



Colour	White
Size	430mm x 480mm 200g 430mm x 480mm 400g 390mm x 390mm 200g

Fuel & Oil absorbents are made of melt-blown polypropylene. Being hydrophobic, they are also called oil-only absorbents which repel water and float once they become fully saturated, making them most suitable for marine application.

Pads are used to clean up and recover spilt liquids. They are used like wipe and are very versatile for getting at hard to reach areas. When a spill occurs, socks or booms are used to contain the spill then pads are used to absorb the trapped liquid from the centre.

Oil-only absorbent pad comes in flat and dimpled pattern.

Oil Absorbent Pillow



Colour	White
Size	177mm x 380mm 250mm x 400mm 350mm x 550mm 460mm x 460mm

Fuel & Oil absorbents are made of melt-blown polypropylene. Being hydrophobic, they are also called Oil-only absorbents which repel water and float once they become fully saturated, making them most suitable for marine application.

Pillows are used to clean up and recover spilt liquids in tight areas such as bilge pumps, drains, sumps and holding tanks. Pillow are suitable for placing under machinery and drums leaking oils and fuels.

Oil Absorbent Boom



Colour	White
Size	DIA 76MM X L 1.2MTR DIA 127MM X L 3MTR DIA 200MM X L 3MTR DIA 127MM X L 6MTR DIA 200MM X L 6MTR

Oil absorbent booms are floating barriers used to contain and minimise the spread of oil on water. Enclosed in a strong outer netting for durability, hooks and rings are attached for linking together to form any required length. Hooks are placed 30cm in from each end of the boom to form an overlap which acts as an extra barrier against oil escaping.

The oil absorbent boom will float on water even saturated. Strong mesh outer sleeve encases a poly skin filled with highly absorbent PP. Filler will not shed. Sturdy hardware with nylon rope ensures durability and easy retrieval. Booms can be linked together with carbon steel connector hardware.

Oil Absorbent Roll



Colour	White
Size	W450MM X L 20MTR W965MM X L 20MTR W1170MM X L 20MTR

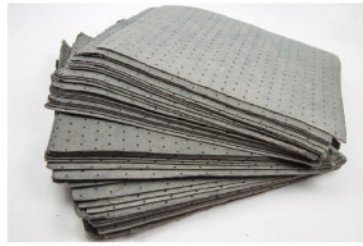
Oil absorbent roll can be used as blanket put beneath the machine to absorb leaking and dropping oil. In addition, pads and rolls are useful for placing dirty / oily components and tools on.

Outer layers of tough-skinned, spunbond material resist abrasions and tears – can withstand rough handling and won't tear apart when pulled or positioned under equipment. It's ideal as a liner for oily parts and tools or for use in rugged applications near machinery.

High-loft Melt-Blown inner layer draws and holds liquids from outer layers. Absorbs high volumes of liquid fast.

Color-coding helps you visually identify the right absorbent for your needs. oil-only absorbency for oil and other petroleum-based fluids – but not water; makes it easy to identify when saturated.

Universal Absorbent Pad



Colour	Grey
Size	400mm x 520mm 180g 400mm x 520mm 350g

Universal absorbent pad can absorb a wide range of liquid including hydrocarbons and common chemicals.

They are used to clean up and recover spilt liquids. They are used like wipe and are very versatile for getting at hard to reach areas. When a spill occurs, socks or booms are used to contain the spill then pads are used to absorb the trapped liquid from the centre.

Universal Absorbent Pillow



Colour	Grey
Size	177mm x 380mm 350mm x 550mm 460mm x 460mm

Universal Absorbent Pillows are used to contain leaks and constant drips that are too large for an absorbent pad. Pillows absorb large quantities of spilled fluids, shortening your spill response time. Pillows are ideal for tight spaces under leaky equipment and drums.

1. 100% PP
2. Absorb large oil spills and drips
3. Lint-free spun bond outer layer
4. Both oil and universal are available

Our full line of pillows all have a strong, lint-free spunbond outer layer and contain the highest quality, 100% polypropylene fill available. Oil-only pillows are available in white. Universal pillows are offered in grey. Hazardous material spills should be tackled with our yellow pillows.

Universal Absorbent Boom



Colour	White
Size	DIA 76MM X L 1.2MTR DIA 127MM X L 3MTR DIA 200MM X L 3MTR DIA 127MM X L 6MTR DIA 200MM X L 6MTR

Universal absorbent boom can absorb a wide range of liquid including hydrocarbons and common chemicals.

Booms are floating barriers used to contain and minimise the spread of oil on water. Enclosed in a strong outer netting for durability, hooks and rings are attached for linking together to form any required length.

Hooks are placed 30cm in from each end of the boom to form an overlap which acts as an extra barrier against oil escaping.

Universal Absorbent Roll



Colour	Grey
Size	W450MM X L 20MTR W965MM X L 20MTR W1170MM X L 20MTR

Universal Absorbent Roll can be used as blanket put beneath the machine to absorb leaking and dropping oil. In addition, pads and rolls are useful for placing dirty / oily components and tools on.

This grey absorbent roll is made of one layer of lint-free spunbond fabric that is ultrasonically bonded to one layer of melt-blown polypropylene absorbent.

Dimpled pattern allows pad to quickly soak up liquids. Keeps its shape even when completely saturated. Perforated so you save money by using only what you need.

Grey color masks dirt for longer use. Can be wrung out and reused. Flame resistant in original state, will melt when exposed to high heat. This general purpose absorbent comes in pad and roll. Great for everyday maintenance, repair and general operations.

Absorbs all water based fluids, oil, diesel, gas, coolants, cutting fluids, hydraulic fluids, vegetable oil, acetone, turpentine, ether, MEK, hexane, trichloroethylene, etc.

Oil Spill Emergency Kits



Spill Kits offers an effective and immediate response to a broad variety of spills, from common fluids and oil to chemicals even hazardous liquids that can be detrimentally damaging to the environment.

Having spill kits on site is highly beneficial in the event of a spill and they allow the user to efficiently and successfully clean up spills.

The spill kits contain a variety of items depending on the spill kits. It is an essential product to use around working, factories, ships, workshops and warehouses.

Colour	Red PVC Bag / Yellow Container
Type	Oil Spill Emergency Kits 30LTR Oil Spill Emergency Kits 50LTR Oil Spill Basic Kits, Oil Spill Kits 7 Barrels, Oil Spill Kits 12 Barrels, Oil Spill Response Kits (SOPEP KIT) 6 Barrels, Oil Spill Kits USCG 7 Barrels, Oil Spill Kits USCG 12 Barrels
Size	40LTR, 120LTR, 240LTR, 1100LTR, 1915LTR, 40LTR OPA90, 1100LTR OPA90, 1915LTR OPA90, 683LTR, 1915LTR

Model 2618 Industrial



Specifications

Power Source	2xD-cell Alkaline
Bulb/Lamp	PR-2
Life	15hrs
Light Output	Beam Candlepower

Features

- Distortion free, vacuum metalized reflector
- 250,000 Cycle switch
- Lens ring accepts snap-in wand
- "Switch Guard" prevents accidental lighting
- Deep ribbed case for non-slip grip
- Proven industrial quality
- Anti-Roll Tube
- Crush-resistant reinforced case
- Unbreakable Lens

Size

L: 8.1 in. (20.6cm) W: 2.3 in. (5.8cm) at head

Model 2117 Incandescent Waterproof



Specifications

Power Source	2xD-cell Alkaline or Carbon Zinc
Bulb/Lamp	PR-2
Life	15 hrs
Light Output	10,000 Beam Candlepower
Weight (Without batteries)	4.5 oz (.13 kg)

Features

- For use in hazardous atmospheres
- Division 1 UL
- Lower cost of maintenance
- Crush Resistant Case

- Switch Guard
- 250,000 cycle positive locking switch
- Anti-roll tube
- Oversized, faceted reflector for more light
- Unbreakable Lens

Safety Approvals

UL Divisions 1 & 2
Class I, Group C & D
Class II, Group G
Class III
Operating Temp T4
ASTM & MSHA Approved

Size

L: 8.1 in. (20.6cm) W: 2.3 in. (5.8cm) at head

Model 2124 Incandescent Waterproof



Specifications

Power Source	Carbon Zinc Only: 3xD-cell
Bulb/Lamp	PR-7
Bulb/Lamp Life	15 hrs
Light Output	9,000 Beam Candlepower 460 Candelas Peak Beam Intensity
Weight (Without batteries)	6.0 oz (.17 kg)

Features

- For use in hazardous atmospheres
- Division 1 UL & CUL approved
- Lower cost of maintenance
- Crush Resistant Case
- Switch Guard
- 250,000 cycle positive locking switch
- Anti-roll Tube
- Oversized, faceted reflector for more light
- Unbreakable Lens

Safety Approvals

Division 1 & 2
UL/CUL: Class I, Div 1, Group C & D
Class II, Div 1, Group G
Class III
Operating Temp T3C
ASTM & MSHA Approved

Size

L: 10.2 in. (25.1cm) W: 2.3 in. (5.8cm) at head

Model 2217 Incandescent Waterproof



Specifications

Power Source	Alkaline or Carbon Zinc: 2xD-cell
Bulb/Lamp	PR-2
Life	20 hrs
Light Output	10,000 Beam Candlepower
Weight (Without batteries)	4.5 oz (.13 kg)

Features

- For use in hazardous atmospheres
- Waterproof
- Spare bulb compartment
- Circuit breaking mechanism

Safety Approvals

UL Divisions 1 & 2
Class I, Group C & D
Class II, Group G
Class III
Operating Temp T5
ASTM & MSHA Approved

Size

L: 8.1 in. (20.6cm) W: 2.3 in. (5.8cm) at head

Model 2224 Incandescent Waterproof



Specifications

Power Source	Carbon Zinc Only: 3xD-cell
Bulb/Lamp	PR-3
Life	15 Hours
Light Output	15,000 Beam Candlepower 770 Candelas Peak Beam Intensity
Weight (Without batteries)	6.0 oz (.17 kg)

Features

- For use in hazardous atmospheres
- Division 1 UL & CUL approved
- Waterproof
- Three-way switch : On-Off-Flash
- Anti-roll tube
- Oversized, faceted reflector for more light
- Circuit breaking mechanism

Safety Approvals

UL/CUL: Class I, Div 1, Group C & D
Class II, Div 1, Group G
ASTM & MSHA: Approved

Size

L: 10.2 in. (25.1cm) W: 2.3 in. (5.8cm) at head

Model 2206 Incandescent Waterproof



Specifications

Power Source	Alkaline or Carbon Zinc 6V Lantern Battery
Bulb/Lamp	KPR 113
Bulb/Lamp Life	15 hrs
Light Output	50,000 Beam Candlepower
Weight (Without batteries)	14.0 oz

Features

- For use in hazardous atmospheres
- Division 1 UL & CUL approved
- Waterproof & floating
- Krypton Bulb

- Alkaline Battery
- Switch guard protects switch on impacts
- Optional stand
- Spare bulb compartments
- Oversized reflector for more light output
- Glove size handle
- Circuit Breaking Mechanism

Safety Approvals

UL/CUL: Class I, Div 1, Group C & D
Class II, Div 1, Group G
Operating Temp T3B
Class I Zone 1 Group IIB & IIA
MSHA Approved

Size

L: 8.2 in. (20.9cm) W: 4.9 in. (12.4cm) H: 5.6 in. (14.2cm)



Specifications

Power Source	3AAA Batteries KPR 113
Run Time	6.75 Hours
Light Output	185 Lumens
Weight (Without batteries)	3.5 oz (.10 kg)

The Vision LED Headlamp provides lightweight, hands-free illumination up to 185 lumens. The user has the ability to switch from spot to flood in both high and low modes.

A great all around headlamp, designed for a variety of environments at an affordable price.

Features

- 4 Light Modes: High Spot, Low Spot, High Flood, Low Flood allows user to choose beam that best suits their need at any given time
- Large push button switch
- Lightweight polymer housing design
- Adjustable mount for greater vision
- Multi-use adjustable strap securely adheres to helmets, hardhats and heads
- IPx4 rated water-resistant design suitable for outdoor use in wet environment

Size

L: 1.57 in. (4cm) **W:** 0.9 in. (2cm) at head

Model 2618 LED Industrial



Specifications

Power Source	2xD-cell Alkaline
Light Source	LED
Life	30,000 hrs
Runtime	200 hrs
Light Output	50 Lumens
Beam Distance	75 Meters

Features

- Distortion free, vacuum metalized reflector
- Lens ring accepts snap-in wand
- "Switch Guard" prevents accidental lighting
- Deep ribbed case for non-slip grip
- Proven industrial quality
- Anti-Roll Tube
- Crush-resistant reinforced case
- Chemical & Grease Resistant

Size

L: 8.1 in. (20.6cm) **W:** 2.3 in. (5.8cm) at head

Model 2217 LED WORKSAFE



Specifications

Power Source	2x 'D' Cell Alkaline
Light Source	LED
Life	30,000 hrs
Runtime	200 hrs
Light Output	50 Lumens
Beam Distance	88 Meters
Weight (Without batteries)	5.0 oz (.13 kg)

Features

- For use in hazardous atmospheres
- 'S' Biner included for quick attachment
- Waterproof, IP67 rating
- 'Switch Guard' Prevents accidental lighting
- Three-way switch : On-Momentary-Off
- Anti-roll tube
- Faceted reflector for more light

Safety Approvals

UL Protection Methods
Intrinsically Safe
Divisions 1 & 2
Class I, II, III Div 1 Groups A-G
Class I, II, III Div 2 Groups A-G
Operating Temp T5

Size

L: 8.1 in. (20.6cm) **W:** 2.3 in. (5.8cm) at head

Model 2224 LED WORKSAFE



Specifications

Power Source	3 x 'D' Cell Alkaline
Light Source	LED
Life	30,000 hrs
Runtime	250 hrs
Light Output	50 Lumens
Beam Distance	88 Meters
Weight (Without batteries)	6.0 oz (.17 kg)

Features

- For use in hazardous atmospheres
- 'S' Biner included for quick attachment
- Waterproof, IP 67 rating
- 'Switch Guard' prevents accidental lighting
- Anti-roll tube • Faceted reflector for more light
- Three way switch: On-Momentary-Off

Safety Approvals

UL Protection Methods
Intrinsically Safe
Divisions 1 & 2
Class I, II, III Div 1 Groups A-G
Class I, II, III Div 2 Groups A-G
Operating Temp T5

Size

L: 10.2 in. (25.1cm) **W:** 2.3 in. (5.8cm) at head

Model 2206 LED WORKSAFE



Specifications

Power Source	4 x 'D' Cell Alkaline
Light Source	LED
Life	30,000 hrs
Runtime	150 hrs
Light Output	90 Lumens

Features

- For use in hazardous atmospheres
- Waterproof, IP 67 rating
- 'D' Cell Alkaline Batteries
- Switch Guard protects switch on impact
- Glove friendly handle

Safety Approvals

UL Protection Methods
UL 913 CSA C22.2
Intrinsically Safe
Divisions 1 & 2
Class I, II, III Div 1 Groups A-G
Class I, II, III Div 2 Groups A-G
Operating Temp T5

Size

L: 8.2 in. (20.9cm) **W:** 4.9 in. (12.4cm) **H:** 5.6 in. (14.2cm)

Model 2217 WORKSAFE LED ATEX



Specifications

Power Source	2x 'D' Cell Alkaline
Light Source	LED
Life	30,000 hrs
Runtime	200 hrs
Light Output	50 Lumens / 2,450 Candelas
Beam Distance	99 Meters
Weight (Without batteries)	5.0 oz (.13 kg)

Features

- For use in hazardous atmospheres
- 'S' Biner included for quick attachment
- Waterproof, IP67 rating

- 'Switch Guard' Prevents accidental lighting
- Three-way switch : On-Momentary-Off
- Anti-roll tube

Safety Approvals

IECEx Protection Methods:
Ex ia IIB T3 Ga
Ex ia IIIB T145°C Da
-5°C≤Ta≤+40°C
ATEX Protection Methods:
EX II 1GD Ex ia IIIB T3 Ga Ex ia IIIB T145°C Da -5°C≤Ta≤+40°C
ZONE 0 BASEEFA
Approved For use with Duracell MNI300 or Energizer E95 cells only

Size

L: 8.1 in. (20.6cm) **W:** 2.3 in. (5.8cm) at head

Model 2206 WORKSAFE LED ATEX



Specifications

Power Source	4 x 'D' Cell Alkaline
Light Source	LED
Life	30,000 hrs
Runtime	95 hrs
Light Output	90 Lumens

Features

- For use in hazardous atmospheres
- Waterproof, IP 67 rating
- 'D' Cell Alkaline Batteries
- Switch Guard protects switch on impact
- Glove friendly handle

Safety Approvals

IECEx Protection Methods:

Ex ib IIB T3 Gb

Ex ib IIIB T180°C Db

-5°C≤Ta≤+40°C

ATEX Protection Methods:

EX II 2GD Ex ib IIB T3 Gb Ex ib IIIB T180°C Db -5°C≤Ta≤+40°C

ZONE 1 BASEEFA

Size

L: 8.2 in. (20.9cm) W: 4.9 in. (12.4cm) H: 5.6 in. (14.2cm)

RAZOR LED ATEX (#60100, #60101, #60102)



Specifications

Power Source	3 AA-cell Alkaline Batteries
Lamp	Advanced LED Technology
Lamp Life	30,000 hrs
Light Output	100 Lumens
Peak Beam Intensity	7,000 candela
Burn Time	26 hrs
Weight	7 oz.
Colour Range	Orange, Green, Black

Features

- Deep Dish Reflector focuses the light from the high output LED
- Ergonomic & Tactical Design
- Push Button Switch for easy accessibility
- Knurled Design allows for maximum grip & total control
- Watertight Seal

Safety Approvals

Intrinsically Safe—Zone Zero Rating

UL 913 CSA C22.2

Class 1 Div 1 Groups A,B,C,D

Class 1 Div 2 Groups A,B,C,D

Class 2 Div 1 Groups E,F,G

Class 2 Div 2 Groups F,G

Class 3

T3

Worldwide Safety Standard (IECEx):

Ex ia IIC T3 Ga

Ex ia IIIB T195°C Da

European Safety Standard (ATEX):

EX II1GD Ex ia IIC T3 Ga

Ex ia IIIB T195°C Da

LI-6000-G Cordless Mining Cap Lamps



Specifications

Total Light Output	65 Lumens
Peak Beam Intensity	6000 Candelas
Beam Distance	140 Meters
Run Time	15 hrs high/ >60 hrs low
Impact Resistance	1 Meter
Ingress Protection	IP68
Power Source	Single Lithium Ion 18650 (2600mAh Capacity)
Light Source	LED
Charge Time	<6 Hours
Weight	5 oz.
Size	3.4"x2.4"x2.7"
Operating Temperature	-20°C to +60°C

Features

- Multiple options for recharging unit can be used with all Koehler chargers, including:
 - Legacy Koehler rack (10, 30 & 40 station) and single-unit chargers
 - Dedicated 50-unit and single-unit cordless chargers
- Regulated, consistent light output, Maintains optimum brightness for entire run time, Optimizes central & peripheral vision
- Multiple lighting modes at the press of a button
 - 1st press - Low setting, 25% brightness
 - 2nd press - High setting, 100% brightness
 - 3rd press - Off
- Easy-to-view LED charge status indication
 - Red - Charging
 - Green - Fully Charged
- Automatic low power detection and Indication
 - Switches to 25% brightness setting upon low cell charge
 - Blinks once each minute to remind the user of low charge

Responder (#200201, #200202, #200203)



Specifications

Power Source	2 C Cell
Bulb/Lamp	Xenon
Bulb/Lamp Life	15 Hours
Light Output	30,000 Beam Candlepower
Weight (Without batteries)	6.7 oz.
Replacement Bulb	XPR2C #20351
Approx. Burn time during continuous use	5 hours 40 min.
Approximate Burn time during intermittent use	6 hours 30 min.
Colour Range	Orange, Yellow, Black

Features

- UL Division 1 & 2 Listed
- Non-Conductive
- Passes 30 foot drop onto concrete
- 30,000 Candlepower
- Pushbutton Switch
- Pre-focused spot beam
- Key-Ring Lanyard & Belt Clip Standard
- Lifetime Warranty
- Xenon Bulb
- Submersible 100ft

Safety Approvals

UL: Class I, Div 1, Group D / Class I, Div 2 Group A, B, C & D

Class II, Div 2, Group G

Operating Temp T3A

MSHA: Approved

When used with a KPR102, KPR104 or PR2 Bulb:

Class I, Div 1, Group C & D

Operating Temp T3C

ATEX II 2G EEX ibe IIB T3

Responder (#200301)



Specifications

Power Source	2 AA Cells
Bulb/Lamp	Xenon
Bulb/Lamp Life:	15 Hours
Light Output:	13,000 Beam Candlepower
Weight (Without batteries)	2.2 oz.
Replacement Bulb	XPR2AA #20350
Approx. Burn time during continuous use	3 hours 30 min
Approximate Burn time during intermittent use	4 hours 30 min.

Features

- UL Division 1 & 2 Listed
- Non-Conductive
- Passes 30 foot drop onto concrete
- 13,000 Candle Power
- Pushbutton Switch
- Pre-focused spot beam

Safety Approvals

UL: Class I, Div 1, Group C & D / Class I, Div 2 Group A, B, C, D
Class II, Div 2, Group G
Operating Temp T3C
MSHA: Approved

Size

L: 6.65in. W: 1.42 in. H: 1.4 in.

Rechargeable Right Angle LED (#510242)



Specifications

Power Source	Single Lithium-Ion 18650 cell, 2600mAh capacity
Lamp	Lithium-Ion 4 hours
Lamp Life	LED
Light Output	30,000 Hours
Peak Beam Intensity	205 Lumens/ 55,000 Candelas
Burn Time	under 1.0 lb.
Weight	477 Meters

Features

- Division 1 safety approved
- First RA light utilizing Lithium-Ion Technology
- Supports Alkaline or Li-Ion Battery Packs
- Impact Resistant to 1 Meter
- Ergonomically Designed Switch, for Ease of Operation
- Waterproof to 1 Meter
- 4 hour charge time
- Light weight (under 1lb)
- Battery Charge Indicator
- Low Profile Design keeps it close to your body
- Unparalleled smoke penetration.
Emergency Light Feature: By placing Right Angle into charging cradle with switch pressed into on position, Right Angle will automatically turn on in the absence of power.

Safety Approvals

UL Protection Methods
UL 913 CSA C22.2
NFPA 70 504.2 (2008)
NFPA 1901-14.1.11.2 (2003) Certified Mounted in any Position
Intrinsically Safe
Class I, II, III DIV I, Groups C-G
Class I, II, III DIV II, Groups C-G
Operating Temp Code T3

Right Angle LED (#510304)



Specifications

Power Source	6 'AA' Alkaline Batteries
Runtime	Alkaline 17 hrs
Light Source	LED
Life	30,000 Hours
Light Output	220 Lumens/ 60,000 Candelas
Weight (With Alkaline Batteries)	1.0 lb (.45359237 kg)
Beam Distance	490 Meters

(To maintain safety approvals, only Duracell MN1500 or Energizer E91 batteries can be used)

Features

- Division 1 safety approved
- Supports Alkaline or Li-Ion Battery Packs
- Impact Resistant to 1 Meter
- Ergonomically Designed Switch, for Ease of Operation
- Waterproof to 1 Meter
- Light weight (1 lb)
- Low Profile Design keeps it close to your body
- Unparalleled smoke penetration.

Safety Approvals

UL Protection Methods
UL 913 CSA C22.2
NFPA 70 504.2 (2008)
Intrinsically Safe
Class I Div 1 & 2 Groups A, B, C, D
Class II, Div 1 & 2 Groups E, F, G
Class III, Div 1 & 2
Operating Temp Code T3

Size

L: 2.5in. (6.4cm) W: 3.0 in. (7.6cm) H: 7.0 in. (17.8cm)

Lighthawk LED



Specifications

Power Source	4 Cell Lithium Ion Battery
LED Life	30,000 Hours
Light Output	225 Lumens High Mode / 100 Lumens Low Mode
Peak Beam Intensity	70,000 Candela
Beam Distance	447 M
Battery Run Time	8 Hours High Mode / 16 Hours Low
Weight	1.9 lbs
Operating Temp Range	- 20C to 50C

Features

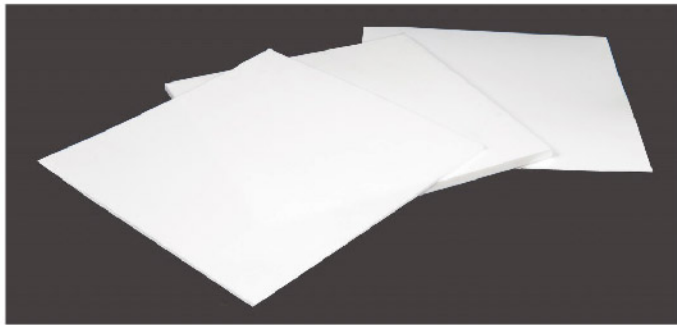
- Wall and Vehicle Mountable
- Dual Mode Main Beam High Mode / Low Mode
- Super Tough Nylon Construction
- LED charge Status Indicator
- Non-Slip rubber bottom and handle
- Low Battery Indicator
- Dual Mode High Visibility Signal Tail Light Flashing Mode/ Steady Mode
- Easily adjustable articulated head
- Quick release shoulder strap
- Limited Lifetime warranty

Safety Approvals

Class I, II, III, Division 1, Groups C - G, T1
Class I, II, III, Division 2, Groups A - G, T5
-20°C to +50°C•

L: 9.5in. W: 3.12 in. H: 5.12 in.

PTFE SHEET/ROD



Description

The full name for PTFE is Polytetrafluoroethylene, it is a low friction fluoropolymer (Low coefficient of friction (measured against polished steel)) with outstanding chemical and weathering resistance. The working temp range is -150° C to 200° C, and melting point is 327 °C. It has no slip-stick characteristics; static and dynamic coefficients are equal. Even gecko cannot stick. The best properties makes PTFE has a numerous applications.

Main features of PTFE:

1. Temperature resistance –It is able to work stably between -160°C to +200°C.
2. Excellent chemical corrosion resistance –Applicable medium includes oil, acid solution and almost all chemical materials.
3. Excellent non-sticky property – With low friction coefficient it easier to remove those resin, dopes, oil and other sticky things.
4. Anti-aging, weathering resistance.
5. Excellent insulation property.

Application

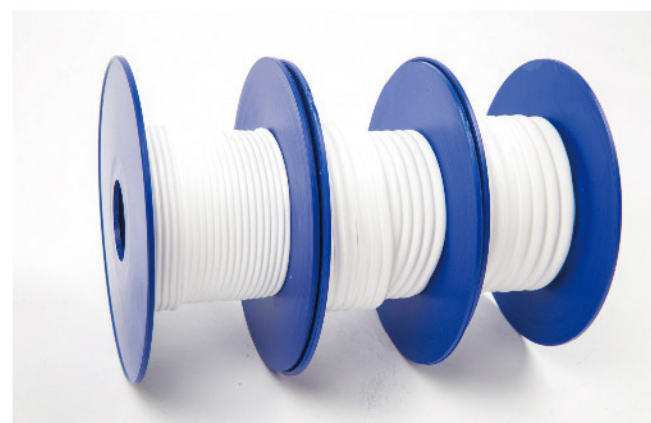
- Seals and gaskets
- Valve and fitting components
- Pump parts
- Scientific equipment
- Chemical resistant

NAME OF INDEX	UNIT OF MEASUREMENT	INDEX VALUE	FOUND
Proportion	G/CM3	2.10-2.30	2.20
Tensile strength	Mpa	≥15	20
Elongation at break	%	≥150	180

Sheet Size Available	Rod Size Available	Colour
300mm x 300mm	300mm	White
500mm x 500mm	500mm	
1000mm x 1000mm	1000mm	
1500mm x 1000mm	<u>Diameter</u>	
	4mm-160mm	

Thickness
0.5mm-20mm

PTFE CORD



Application areas

Reliably sealing cord for static application made of unsintered PTFE for the foodzone approved, lubricant, silicone free, universal application.

Chemical resistance

Unaffected by most chemicals in range of pH 0-14, except molten alkali metals and element fluorine.

Temperature range	Size
-100° C to +250° C	4mm x 6mtr
	6mm x 3mtr
	8mm x 3mtr
	2.4mm x 12mtr

Color
White

Felt Sheet



Description

“FELT” is a textile structure composed of fibers physically interlocked and consolidated by the utilization of Mechanical Work, Chemical Action, Moisture.

No weaving, knitting, stitching, thermal bonding or adhesives unlike other textile fabrics. Wool is the basic and only raw material used in felts.

Properties

- No effect of lubricating oil, organic solvents & dilute inorganic acids to felt.
- Felt is unchanged by temperature in the range of -15°C to 100°C (-60°F to 212°F). No effect of diverse atmospheric condition.
- Felt can be made to engineer’s requirement
- Felt is easy to put into any desired Shape/Form
- Non-glazing: wool felt doesn’t get glazed even after continuous rubbing

Properties

- Polishing and Buffing
- Wicking & Lubrication
- Spacing & Sealing
- Surfacing, Padding, Cushioning
- Sound absorption & Vibration isolation
- Filtration
- Frictional application
- Thermal Insulation
- Denoatation

Specifications

Color	Off White
Size	2mmx1mmx1.8m, 3mmx1mmx1.8m 4mmx1mmx1.8m, 5mmx1mmx1.8m 6mmx1mmx1.8m, 7mmx1mmx1.8m 10mmx1mmx1.8m, 12mmx1mmx1.8m 20mmx1mmx1.8m

Insulation Lagging



Description

Designed to meet the needs of the commercial fishing fleet, our exhaust solutions are built to last. Available in a variety of standard sizes and configurations, our products are built using the highest quality materials; some of which include: stainless steel wire mesh, fiberglass insulation material, and siliconized cloth. Featured online, you will find our standard product line featuring siliconized grey cloth and needled fiberglass insulation. The heat rating on the fiberglass insulation is 1200 degrees, while the cloth is rated to 450 degrees. Our sleeve insulation is made with a variety of materials to include non-siliconized fiberglass cloth for maximum temperature performance. We only use heat resistant thread in our sewing, and all products undergo a rigorous quality inspection prior to being approved for use.

Lagging/ sleeve insulation is listed based off of Outside Diameter (OD) size of the pipe.

Features

- 1000° C working temperature for needled fiberglass insulation (rating on hot face)
- 1200° C maximum temperature rating for needled fiberglass insulation
- Siliconized Grey Cloth rated to 450°C exposure
- Silicone impregnated cloth provides non-pervious layer protecting against liquid contact
- Stainless Steel Mesh provides support and durability
- Stainless Steel lacing anchors for ease of install
- Other colors and configurations available

Specifications

Color	Off White
Size	Customized

Pipe Insulation Tapes



Product Application

HOLDENFLEX® is the 'one-step' insulation system for quick and easy way to insulate high temperature surfaces in vessel engine rooms. HOLDENFLEX® is a revolutionary system made from bio soluble vitreous silicate fibre which is reinforced with an outer jacket of heat sealed aluminium foil. In tape or blanket format, HOLDENFLEX® is applied in one step eliminating the need for bulky and time consuming layered insulation.

HOLDENFLEX® can be easily removed and reinstalled by using the insulating tape and is rated for use to 1,000° C max.

HOLDENFLEX® can be used throughout the engine room and also various parts of the vessel where required.

Application Instruction

HOLDENFLEX® Pipe Insulation Tape

For use on bent and flanged pipes in areas where maintenance is not a consideration and/or space is limited. HOLDENFLEX® has a pressure sensitive adhesive on the inner side for ease of installation.

Remove dirt, oil, scale and excessive moisture from surface. HOLDENFLEX® is wound around the pipe in a spiral motion using a 50% overlap to ensure good adhesion. Be sure that the foil edges are securely fastened. Ends can be secured with wire or clips if desired. For removal, unwind or cut the HOLDENFLEX® Tape from the pipe. Tape is not reusable.

HOLDENFLEX® Pipe Insulation Blanket

For use on straight pipes, valves, exhaust equipment, turbochargers, angled and uneven surfaces. And, anywhere that insulation is required. HOLDENFLEX® Blankets are secured with HOLDENFLEX® Insulating Tape for ease of maintenance.

Cut the HOLDENFLEX® Blankets to size with a utility knife or shears. Wrap around the surface to be insulated, butting the ends together forming a seam. Secure and seal the seam with Insulating Tape. To remove HOLDENFLEX® Blanket, cut the Insulating Tape and unwrap from metal surface. To reinstall, new Insulating Tape must be applied.

Specifications

Color	Silver/White
Size	3mmx50mmx7.7m, 12mmx100mmx3.3m 25mmx300mmx7.7m, 25mmx600mmx7.7m

Carbon Products



Specifications

Color	Carbon Grey
Type	Carbon Cloth, Carbon Tape, Carbon Rope
Size	Cloth 1.5mmx1mx30m, Cloth 2mmx1mx30m Tape 1mmx25mmx30m, Tape 1mmx50mmx30m Tape 1mmx75mmx30m, Tape 2mmx25mmx30m Tape 2mmx50mmx30m, Tape 2mmx75mmx30m Rope 9.6mmx1kg/rls, Rope 16mmx2.5kg/rls Rope 22mmx2.5kg/rls

Description

Carbon fiber first began serving a growing range of applications in industries such as Welding, Steel, Ship building and Steam turbines, and so on. Carbon fiber can be combined with a diverse range of other materials, gaining exciting new characteristics that are expected to open up a whole new dimension of applications in space development, next-generation energy and beyond.

Woven from best quality carbonized fiber, used as heat insulation materials and an excellent substitute for asbestos cloth, it offers lightness and strength significantly superior to conventional materials, combined with excellent process ability.

Mechanical properties

Lower density than metal, with higher tensile strength and elastic modulus. Outstanding fatigue, wear and frictional properties;

Thermal properties

Low coefficient of thermal expansion and outstanding dimensional stability. Minimal deterioration in mechanical properties at elevated temperatures, and low thermal conductivity at ultra-low temperatures.

Chemical properties

Excellent chemical stability, with outstanding resistance to acids, alkalis and various solvents

Fiberglass Glove



Application

Woven with the fiberglass, had good insulation and heat resistance, extensively apply to building, waterproof, antiseptic and wrapping up the coil of electrical machinery and electrical apparatus.

This 2 divided fiberglass glove provide a protective barrier against fire, heat, etc.

Specifications

Color	White
Size	2 Divided

Fiberglass Rope



Construction

Glass fibre is stand out among the different organic and inorganic fibres as ideal replacement of asbestos. All of HOLDENFLEX glass products are made of good quality E-glass fibre, it has many excellent capabilities of high strength and high temperature resistance, low density and low thermal conductivity, better insulation and incombustible etc.

Braided Fiberglass packing

Braided from E-glass fibres without any impregnation, untreated, will not shrink or swell in service. May ordered square or with a rectangular cross section. It can be reinforced by nickel wire, stainless wire etc. on request FGR.

Application

As a static seal for vessels, heaters, manhole, lids, covers, thermal insulation and fire-proof of pipes etc. Suited for chemically neutral and resistance to water, steam, hot air, oils and so on.

Service Limits

Style:	FGR
Temperature Max. °C:	500
PH range:	5 - 9
Stock Dimensions:	Thickness 1.5 mm to 50 mm
Packaging:	Pack in Spool or box

Specifications

Color	White
Size	1mmx1kg/rls, 1.5mmx2kg/rls, 3.2mmx2kg/rls, 3.2mmx5kg/rls, 4.8mmx5kg/rls, 6.4mmx5kg/rls 8mmx5kg/rls, 9.6mmx5kg/rls 12.5mmx5kg/rls, 19.2mmx10kg/rls 25.4mmx10kg/rls, 32mmx15kg/rls 40mmx15kg/rls, 50mmx15kg/rls

Fiberglass Tape



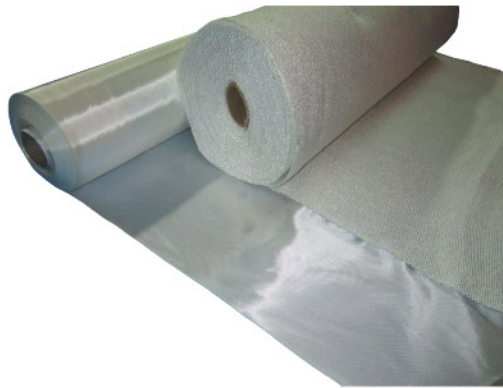
Application

Style FGT Braided Fibreglass Tape For wrapping steam pipes, exhaust pipe, heat protection & similar application.

Service Limits

Style:	FGT
Temperature Max. °C:	500
PH range:	5 - 9
Stock Dimensions:	Thickness 1.5 mm to 50 mm
Packaging:	Pack in Spool or box

Fiberglass Cloth



Application

Style FGT Braided Fibreglass Tape For wrapping steam pipes, exhaust pipe, heat protection & similar application.

Service Limits

Style Fibreglass:	FGC
Temperature °C:	350 - 550
Thickness (mm):	0.18, 1.3, 1.5 - 6±0.3
Width (mm):	25 - 1200
Length (m):	30

Woven fibreglass resist most acids, alkalis and solvents except hydrofluoric acid that will soften the fabrics into high temperature resistance. Woven fibreglasses have very high tensile strength to weight ratios, incombustible, mildewresistance and provide excellent electrical characteristics.

Specifications

Color	White
Type	Fiberglass Cloth Normal Fiberglass Cloth HT800 Gold
Size	0.18mmx1.27mx100m, 0.45mmx1.27mx100x 1mmx1mx30m, 1.5mmx1mx30m 2.0mmx1mx30m, 3.0mmx1mx30m 6.0mmx1mx20m

Physical Properties			
Appearance	White		
Specific Gravity (H ² O=1)	2.52		
Flashpoint	Not Applicable		
Flammable Limits	Not Applicable		
Solubility in Water	Insoluble		
Chemical Properties			
SiO ²	56 - 60	Na ² O :	02-08
CaO	14 - 18	Fe ² O ³ :	0.2 - 08
Al ² O ³	05 - 18	TiO ² :	0 - 1.5
MgO	03 - 05	K ₂ O :	0 - 2
B ² O ³	06 - 10	F ₂ :	0 - 1.0

Ceramic Fibre Blanket



Characteristics: Ceramic Fibre Blanket are low thermal conductivity and low heat storage. Excellent thermal stability and thermal shock resistance, excellent erosion resistance, excellent heat insulation, fire proofing and processing function.

application: Style CMB applies at industrial furnace, heaters, inside wall of high temperature tube. Electric power furnace, nuclear power station and heat insulation, Fire proofing and heat insulation of high building.

Service Limits

Item	Common	Standard	
Max. Temperature °C	1100	11260	
Working Temperature °C	1000	1050	
Colour	Off White	Pure White	
Density kg/m	96	96	
Rate of line (%)	-4	-3	
24h, 128kg/m	1000	1000	
Rate of thermal conductivity w/m.k	0.09 (400)	0.09 (400)	
Density: 128kg.m	0.16 (800)	0.16 (800)	
Tensile strength Mpa	0.04	0.04	
Chemical content (%)	Al ₂ O ₃	40-44	45-46
	Al ₂ O ₃ +SiO ₂	95-96	96-97
	Al ₂ O ₃ +SiO ₂ +ZrO ₂	-	-
	ZrO ₂	-	-
	Fe ₂ O ₃	1.2	1.0
Na ₂ O+K ₂ O	0.5	0.5	

Specifications

Color	White
Size	6.0mmx610mmx7200mm 12.5mmx610mmx7200mm 25mmx610mmx7200mm 50mmx610mmx3600mm

Ceramic Rope



Characteristics: Ceramic Ropes are asbestos free and have very high strength to weight ratio, incombustible and provide excellent heat protection. When expose to heat, it neither emits flame nor toxic products.

Application: Ceramic Ropes are applicable to all thermal insulation protection and energy conservation. This includes expansion joint packing for furnace door seal insulation, gaskets, crucible lid seals, hot top seal, pipe lagging and tadpole gasket.

Service Limits

Item	Services	
Max. Temperature °C	1000	
Working Temperature °C	800	
Colour	Off White	
Density kg/m	96	
Rate of line (%)	-4	
24h, 128kg/m	1000	
Rate of thermal conductivity w/m.k	0.09 (400)	
Density: 128kg.m	0.16 (800)	
Tensile strength Mpa	0.04	
Chemical content (%)	Al ₂ O ₃	40-44
	Al ₂ O ₃ +SiO ₂	95-96
	Al ₂ O ₃ +SiO ₂ +ZrO ₂	-
	ZrO ₂	-
	Fe ₂ O ₃	1.2
Na ₂ O+K ₂ O	0.5	

Specifications

Color	Off White
Size	1mmx1kg/rls, 1.5mmx1kg/rls, 4.8mmx1kg/rls 6.5mmx1kg/rls, 9.6mmx1kg/rls, 12.5mmx2kg/rls 16mmx3kg/rls, 19.2mmx4kg/rls, 25.4mmx7kg/rls 30mmx5kg/rls, 40mmx10kg/rls, 50mmx13kg/rls

Ceramic Tape Wire Inserted



Characteristics: Ceramic Tape are asbestos free and have very high tensile strength to weight ratio, incombustible and provide excellent heat protection. When expose to heat, it neither emits flame nor toxic products.

Application: Ceramic Tape are applicable to all thermal insulation protection and energy conservation. This includes removable insulation pads, acoustical, flange, expansion joints, lagging and welding blankets.

Service Limits

Item	Services	
Max. Temperature °C	1000°C	
Working Temperature °C	800°C	
Colour	Off White	
Density kg/m	96	
Rate of line (%)	-4	
24h, 128kg/m	1000	
Rate of thermal conductivity w/m.k	0.09 (400)	
Density: 128kg.m	0.16 (800)	
Tensile strength Mpa	0.04	
Chemical content (%)	Al2O3	40-44
	Al2O3+SiO2	95-96
	Al2O3+SiO2+ZrO2	-
	ZrO2	-
	Fe2O3	1.2
	Na2O+K2O	0.5

Specifications

Color	Off White
Size	2mmx25mmx30mtr, 3mmx25mmx30mtr 2mmx50mmx30mtr, 3mmx50mmx30mtr 2mmx75mmx30mtr, 3mmx75mmx30mtr 2mmx100mmx30mtr, 3mmx100mmx30mtr

Ceramic Cloth Wire Inserted



Characteristics: Ceramic Cloth are asbestos free and have very high tensile strength to weight ratio, incombustible and provide excellent heat protection. When expose to heat, it neither emits flame nor toxic products.

Application: Ceramic Cloth are applicable to all thermal insulation protection and energy conservation. This includes removable insulation pads, acoustical, flange, expansion joints, lagging and welding blankets.

Service Limits

Item	Services	
Max. Temperature °C	1000	
Working Temperature °C	800	
Colour	Off White	
Density kg/m	96	
Rate of line (%)	-4	
24h, 128kg/m	1000	
Rate of thermal conductivity w/m.k	0.09 (400)	
Density: 128kg.m	0.16 (800)	
Tensile strength Mpa	0.04	
Chemical content (%)	Al2O3	40-44
	Al2O3+SiO2	95-96
	Al2O3+SiO2+ZrO2	-
	ZrO2	-
	Fe2O3	1.2
	Na2O+K2O	0.5

Weave: Plain
Yarn Diameter: 3-4 mu
Packaging: Pack in roll

Specifications

Color	Off White
Size	2mmx1000mmx30mtr 3mmx1000mmx30mtr

Mechanical Seals

There are multiple designs available for the mechanical seal configuration. Understanding how they work will help the readers select the appropriate type for their application.

Types of Mechanical Seals



Mechanical seals are leakage control devices, which are found on rotating equipment such as pumps and mixers to prevent the leakage of liquids and gases from escaping into the environment.

A mechanical seal consists of 2 principle components. One component is stationary and the other rotates against it to achieve a seal. There are many types of mechanical seal, ranging from simple single spring designs to considerably more complex cartridge seal types. The design, arrangement and materials of construction are essentially determined by the pressure, temperature, speed of rotation and product being sealed.

A simple mechanical seal design has 7 components:

1. Stationary component; commonly referred to as the seat.
2. Stationary component sealing member.
3. Rotating component.
4. Rotating component sealing member.
5. Spring.
6. Gland plate.
7. Clamp ring.

FLUID FILM

If the mechanical seal faces rotated against each other without some form of lubrication they would wear out (and the seal would fail) due to face friction and the resultant heat generated. So, lubrication is required which for simplicity, is supplied by the product media. This is known as fluid film and maintaining its stability is of prime importance if the seal is to provide satisfactory and reliable service.

The primary disadvantage of this seal type is that it is prone to secondary seal hang-up and fretting of the shaft or sleeve, especially when the seal is exposed to solids. A pusher seal type should not be selected if the secondary seal is likely to hang-up. Can small deposits of solids form ahead of the secondary sealing member?



Component Seal AS-WB2



Multiple Spring Seals with Sleeve AS-57F



Component Seal AS-491B



Standard Marine Seal AS-1500 (US2)



Wave Spring Seal AS-M74



Diaphragm Spring Seal AS-G3



Multiple Spring Double Seals AS-699DL-2



Diaphragm Seals AS-580



Multiple Spring Seals AS-604



Conical 'O'-Ring Mounted Seals AS-M3



Parallel 'O'-Ring Mounted Seals AS-29B



Cup Seal AS-301



Auto Cooling Pump Seal AS-FT



Wave Spring Seal AS-M7N

Single & Dual Cartridge and Dry Gas Seals

Customized Seals & Seal Faces



AS-DC-1



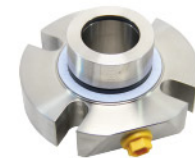
AS-DC-2



AS-DC-3



AS-DC-4



AS-DC-5



AS-CMB Seal

THE SEALING POINTS

A mechanical seal has 4 main sealing points:

- I. The seal between the rotating and stationary faces. This is known as the primary seal.
- II. The seal between the stationary member and stuffing box face, i.e. Gasket.
- III. The seal between the rotating member and shaft or shaft sleeve. This is known as the secondary seal and may be an O-ring as shown, a V-ring, a wedge or any similar sealing ring.
- IV. The seal between the gland plate and stuffing box, this is usually a gasket, or O-ring.

3 of the 4 main sealing points need little explanation, but consideration is required for the sealing point between the rotating and stationary components (faces). This primary seal is the basis of a mechanical seal design, and is what makes it work. The rotating component and stationary component are pressed against each other, usually by means of spring force. The mating faces of both components are precision machined (lapped) to be extremely flat within light bands, which is an optical method of measuring flatness.

This flatness minimizes leakage to a degree where it is essentially negligible. In fact, there is leakage between these faces but it is minute and appears as a vapor.

Spring compression (usually) provides initial face pressure. This pressure is maintained when the seal is at rest via the spring(s) thus preventing leakage between the faces

Watertight Rubber Door Packing



Description

HOLDENFLEX Rubber Profile for hatch covers, doors, Windows. Sponge type or rigid, in several dimensions.

Made of natural rubber and used as watertight door packing. Seawater resistance, and maximum temperature -40°C to + 70°C. Color is black and standard length: 10 mtr. Tolerations: 18 - 30 mm ±1.0 mm, 30 - 50 mm ± 1.5 mm.

The list shows standard size, other sizes are available upon request.

25mm x 15mm	30mm x 15mm	30mm x 20mm
35mm x 15mm	35mm x 20mm	35mm x 25mm
35mm x 30mm	40mm x 15mm	40mm x 20mm
40mm x 25mm	40mm x 30mm	40mm x 35mm
40mm x 40mm	45mm x 20mm	45mm x 15mm

Specifications

Color	Black
-------	-------

Roll Paper Wiping Rags/ Dispensers



A sanitary paper wiping rag supplied in rolls for a variety of uses. There are many types available but the most common type have been selected and described below with respective specifications. The roller stands and dispensers are sold separately.

A-Tork

Designed for a wide variety of heavy duty wiping applications. A-Tork is a simpler, more efficient and more hygienic material than rags or cotton waste.

E-Tork

Specially developed to replace rags and cloths. E-Tork is for more detailed work such as the polishing of enamel paint or the cleaning of precision engineering parts. E-Tork is chemically pure and features an absorption rate as much as 4 times greater than cotton materials.

M-Tork & Mini Tork

Intended principally as a towel wipe. This single material can be utilized for many other lightweight purposes such as cleaning kitchen counters, bathroom fixtures or first aid rooms. Has the same quality paper as the A-Tork type.

Wall and Floor Dispensers

Designed for use with the rolled paper rags mentioned above. Paper rags and rolls are sold separately.

Specifications

Color	White
Type	Roll Paper Wiping Rags Roll Paper Wiping Rags Dispensers
Size	A-Tork 290mmx240 4rls/box E-Tork 320mmx320 2rls/box Mini-Tork 220mmx120m 12rls/box Wall Dispenser Floor Dispenser

Non-Spark Fibreglass Square Shovels



Specifications

Color	Green
Size	Shovel 1040mmx290mmx445mm Shovel 100mmx150mm

Description

Non-spark safety shovels and scoops reduce the risk of sparks during a spill clean-up. These environmental safety shovels are manufactured from polypropylene and are light, safe and easy to use in a spill clean-up. Prior to use wipe the shovels with a damp cloth to reduce surface static.

These deep-pan, high-walled safety shovels are similar to a traditional-shape shovel but with a much larger blade. Ideal for spill kits, these safety shovels will not rust nor rot, and are resistant to oils and chemicals. The deep pan and large blade provides extra capacity and is ideal for handling bulky but lightweight materials.

Non-spark hand scoop is ideal in a spill kit for dispensing ground and floor absorbent onto a spill. The scoop is small with high sides, ideal for inserting into a bag. The scoop will not rust nor rot, anti-sparking and resistant to oils and chemicals.

- Lightweight non spark shovel/scoop is easy to use
- Reduces the risk of sparks during a spill clean-up operation as it is made from polypropylene not metal
- Non-spark properties
- Tough and durable – resistant to oils, fuels and most chemicals
- Rot and rust proof construction
- High-grade polypropylene color compounded to BS 5378 safety green
- Ideal for inclusion in spill kits
- Non spark shovel is virtually unbreakable
- Easy to clean surfaces
- Non-stick
- Excellent wear resistance against concrete and hard floor surfaces
- Non spark shovel can be used/stored in temperatures from -30°C to + 80°C

Gun for Silicon Sealant



Specifications

Color	Blue
-------	------

Description

Finish off any sealing projects with precision and accuracy using a cleverly designed caulking gun. Supporting most standard sized caulk and sealer cartridges in a sturdy steel frame, this gun is perfect for achieving smooth, clean results each and every time. Equip with a comfortable grip for controlled application, the caulking gun is ideal for any DIY aficionado producing quality professional edges, corners and joins.

- Durable steel frame
- Comfortable grip
- Fits most caulk and sealer cylinders
- Strong sturdy steel rod and quick-release system
- Suitable for light to medium sealant applications

Punching Tool Sets



Description

Used for punching holes in soft brass, copper, and other soft metals as well as leather, canvas, and gasketing materials.

Component

16 pcs Punching Dies

Specifications

Color	Silver
Size	6mm, 7mm, 8mm, 9mm, 10mm, 11mm, 12mm, 13mm, 16mm, 19mm, 22mm, 25mm, 28mm, 32mm, 35mm, 38mm,

Packing Hook Sets



Description

The shank consists of one inner spiral shaft wrapped with an outer spiral of steel wire laid in the opposite direction. The flexible shaft has a solid handle and the hook is carefully tempered and pointed.

Perfect labor saving tool for removing packing from stuffing boxes. Flexible design allows access around obstructions and into hard-to-reach areas. Available in 5 convenient sizes to meet a wide variety of requirements.

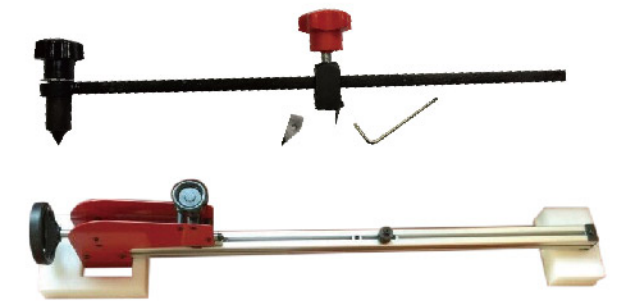
Component

1 pcs Hook with Ring
4 pcs Flexible Hook

Specifications

Color	Silver
Size	23.5cm, 27.5cm, 32.5cm, 36cm, 36.5cm

Gasket Cutter



Description

Designed for cutting gaskets or washers from leather, paper, or rubber sheets up to a diameter of 600 mm/24" .

The knife and center are made of tool steel, are well tempered, and adjustable.

A tool box is furnished with the cutter.

Specifications

Length	300mm / 1200mm
Weight	0.42kg/7kg
Cutting size	60-300mm/60-1500mm

Packing cutter



Description

Packing cutter is made with 15° and 45° cutting angle. The use of a packing cutter facilitates the correct cutting of packing rings directly from the spool without any waste.

There are two versions available, both with metric and imperial scales: cutting size up to a shaft-diameter of 100mm (4") and a packing cross-section of 25mm (1")

Advantages:

- Easy to use
- Precise cutting of packing rings
- Always handy

Specifications

Size	57cm x 18cm x 6cm
Weight	3.5kg

O-Ring Splicing Kits



This O-Ring splicing kit is made of Black Buna-N, has a durometer of 70A, and includes common o-ring cord in metric cross sections. The splicing kit comes in a plastic box with cord stock, splicing jig, pencil, cutting tool, and adhesive.

Buna-nitrile can have high tensile strength, as well as abrasion, tear, and compression set resistance. It is compatible for use with petroleum, hexafluoroacetone (HFA), hexafluoro-2-butyne (HFB) and hydrofluorocarbon (HFC) fluids, vegetable oil, alcohol, acids, and aliphatic hydrocarbons. Buna-nitrile is vulnerable to acetone, ethers, esters, ozone, sunlight and weathering, and should not be used in ozone-generating electric motors, welding equipment, or in applications with exposure to UV light.

The durometer hardness of this Buna-N O-Ring cord is 70A. Durometers measure the hardness of a material and its resistance to permanent indentation. A higher durometer value indicates greater resistance to indentation. On a scale of 0 to 100, a value of 0 indicates that a sample was completely penetrated, while a value of 100 shows no indentation in the sample.

Fiber O-Ring Kits



Fiber O-Ring Kits

- Standard Series
- Fiber
- 10Size 72pcs

NO.	ID x OD x THK	Qty	NO.	ID x OD	Qty
R-01	19 x 13 x 2	6	R-16	26.5 x 22 x 1.5	8
R-02	20 x 14 x 1.5	8	R-17	29 x 21.5 x 2	6
R-03	21 x 16 x 2	8	R-18	30 x 24 x 1.5	8
R-04	24.5 x 18 x 2	8	R-19	32 x 24.5 x 1.5	8
R-05	24.5 x 16 x 2	6	R-20	34.5 x 27.5 x 2	6

Copper Ring Kits



Copper Ring Kits (half set)

- Standard Series
- Copper
- 30Size 540pcs

NO.	ID x OD	Qty	NO.	ID x OD	Qty
R-01	4 x 8	40	R-16	17 x 23	15
R-02	5 x 9	40	R-17	18 x 24	15
R-03	6 x 10	40	R-18	18 x 22	15
R-04	6 x 12	40	R-19	20 x 24	15
R-05	8 x 12	40	R-20	20 x 26	15
R-06	8 x 14	30	R-21	21 x 26	10
R-07	10 x 14	30	R-22	21 x 28	10
R-08	10 x 16	20	R-23	22 x 27	10
R-09	12 x 16	20	R-24	22 x 29	10
R-10	12 x 18	20	R-25	24 x 30	5
R-11	13 x 18	15	R-26	26 x 32	5
R-12	14 x 18	15	R-27	27 x 32	5
R-13	14 x 20	15	R-28	28 x 34	5
R-14	16 x 20	15	R-29	30 x 36	5
R-15	17 x 21	15	R-30	33 x 39	5

Copper Ring Kits (half set)



Copper Ring Kits (half set)

- Standard Series
- Copper
- 30Size 270pcs

NO.	ID x OD	Qty	NO.	ID x OD	Qty
R-01	4 x 8	20	R-16	17 x 23	7
R-02	5 x 9	20	R-17	18 x 24	7
R-03	6 x 10	20	R-18	18 x 22	7
R-04	6 x 12	20	R-19	20 x 24	7
R-05	8 x 12	20	R-20	20 x 26	7
R-06	8 x 14	15	R-21	21 x 26	5
R-07	10 x 14	15	R-22	21 x 28	5
R-08	10 x 16	10	R-23	22 x 27	5
R-09	12 x 16	10	R-24	22 x 29	5
R-10	12 x 18	10	R-25	24 x 30	3
R-11	13 x 18	8	R-26	26 x 32	3
R-12	14 x 18	8	R-27	27 x 32	3
R-13	14 x 20	8	R-28	28 x 34	2
R-14	16 x 20	8	R-29	30 x 36	2
R-15	17 x 21	8	R-30	33 x 39	2

NBR O-Ring Kits



NBR O-Ring Kits

- Standard Series
- NBR-70
- 18Size 225pcs

NO.	ID x OD	Qty	NO.	ID x OD	Qty
R-01	2.38 x 1.78	10	R-16	9.19 x 2.62	10
R-02	2.9 x 1.78	20	R-17	10.71 x 2.62	10
R-03	3.68 x 1.78	20	R-18	12.37 x 2.62	10
R-04	4.47 x 1.78	20	R-19	13.94 x 2.62	10
R-05	5.28 x 1.78	15	R-20	15.54 x 2.62	10
R-06	6.07 x 1.78	15	R-21	17.12 x 2.62	10
R-07	7.56 x 1.78	15	R-22	18.72 x 2.62	10
R-08	9.25 x 1.78	10	R-23	18.64 x 3.53	10
R-09	15.6 x 1.78	10	R-24	20.22 x 3.53	10

NBR Metric O-Ring Kits



NBR Metric O-Ring Kits

- Metric Standard Series
- NBR-70
- 30 Size 386pcs

NO.	ID x CS	Qty	NO.	ID x CS	Qty
R-01	3.0 x 2.0	16	R-16	20 x 3.0	12
R-02	4.0 x 2.0	16	R-17	22 x 3.0	12
R-03	5.0 x 2.0	16	R-18	24 x 3.0	12
R-04	6.0 x 2.0	16	R-19	25 x 3.0	12
R-05	7.0 x 2.0	16	R-20	27 x 3.0	12
R-06	8.0 x 2.0	16	R-21	28 x 3.0	12
R-07	10 x 2.0	16	R-22	30 x 3.0	12
R-08	10 x 2.5	13	R-23	32 x 3.0	12
R-09	11 x 2.5	13	R-24	33 x 3.0	12
R-10	12 x 2.5	13	R-25	35 x 3.0	12
R-11	14 x 2.5	13	R-26	36 x 3.0	12
R-12	16 x 2.5	13	R-27	38 x 3.0	12
R-13	17 x 2.5	13	R-28	38 x 4.0	9
R-14	19 x 2.5	13	R-29	41 x 4.0	9
R-15	19 x 3.0	12	R-30	44 x 4.0	9

NBR Imperial O-Ring Kits



NBR Imperial O-Ring Kits

- AS-568 Standard Series
- NBR-70
- 30Size 382pcs

NO.	ID x CS	Qty	NO.	ID x CS	Qty
R-01	2.90 x 1.78	20	R-16	20.22 x 3.53	10
R-02	3.68 x 1.78	20	R-17	21.82 x 3.53	10
R-03	4.48 x 1.78	20	R-18	23.40 x 3.53	10
R-04	5.28 x 1.78	20	R-19	24.99 x 3.53	10
R-05	6.07 x 1.78	20	R-20	26.58 x 3.53	10
R-06	7.66 x 1.78	20	R-21	28.17 x 3.53	10
R-07	9.25 x 1.78	20	R-22	29.75 x 3.53	10
R-08	9.19 x 2.62	13	R-23	31.34 x 3.53	10
R-09	10.78 x 2.62	13	R-24	32.92 x 3.53	10
R-10	12.37 x 2.62	13	R-25	34.52 x 3.53	10
R-11	13.95 x 2.62	13	R-26	36.10 x 3.53	10
R-12	15.54 x 2.62	13	R-27	37.69 x 3.53	10
R-13	17.13 x 2.62	13	R-28	37.47 x 5.33	7
R-14	18.72 x 2.62	13	R-29	40.65 x 5.33	7
R-15	18.64 x 3.53	10	R-30	43.82 x 5.33	7

FKM (Viton) Metric O-Ring Kits



Viton Metric O-Ring Kits

- Metric Standard Series
- Viton-70
- 30 Size 386pcs

NO.	ID x CS	Qty	NO.	ID x CS	Qty
R-01	3.0 x 2.0	16	R-16	20 x 3.0	12
R-02	4.0 x 2.0	16	R-17	22 x 3.0	12
R-03	5.0 x 2.0	16	R-18	24 x 3.0	12
R-04	6.0 x 2.0	16	R-19	25 x 3.0	12
R-05	7.0 x 2.0	16	R-20	27 x 3.0	12
R-06	8.0 x 2.0	16	R-21	28 x 3.0	12
R-07	10 x 2.0	16	R-22	30 x 3.0	12
R-08	10 x 2.5	13	R-23	32 x 3.0	12
R-09	11 x 2.5	13	R-24	33 x 3.0	12
R-10	12 x 2.5	13	R-25	35 x 3.0	12
R-11	14 x 2.5	13	R-26	36 x 3.0	12
R-12	16 x 2.5	13	R-27	38 x 3.0	12
R-13	17 x 2.5	13	R-28	38 x 4.0	9
R-14	19 x 2.5	13	R-29	41 x 4.0	9
R-15	19 x 3.0	12	R-30	44 x 4.0	9

Copper Wool Filters



Description

Made of wool-like fine copper and woven into flat tubes. Finely meshed net can strain out and refine lubricating oil or any other liquid. Furnished in a width of 100 mm and coiled approximately 5kgs per roll.

Specifications

Color	Cooper
Size	5kg

Air Filter Blue & White



Specifications

Color	Blue & White
Size	15mmx1.8mx10m 15mmx1.6mx10m(125g) 15mmx1.6mx10m(160g) 15mmx1.6mx10m(200g) 15mmx1.6mx10m(300g) 15mmx1.6mx10m(500g)

Speciality

- Pre-filtration for the heavy polluted general draft apparatus and the air controls system
- Anti-fractured PET organics synthetic fibre
- Large dust holding capacity, small resistance, long service and economical
- Not contain silicon, chemical resistance and anti-acidic
- Conform to European & American classification for non-flammability (e.g DIN53438-F1, UI900 class 2 with flame out)
- Applied to plank filter & foldaway filter
- Available in paper flame, galvanize flame, aluminium flame & so on.

Application

Applied to many industry such as pollution controlling, public construction, air condition, electronic, pharmacy, food & so on

Remarks

Variety of sizes & thickness, according to the customers requirement

Oil Gauging Tapes



Tape Oil Gauges are strong and durable with a corrosion resistant frame. The frames come with red handle with grounding wire and clip, and longer crank arm to speed retraction.

Oil Gauge tape blades have an abrasion and chemical resistant coating and are available in English/Metric, and Decimal. The 3 rivet end assembly makes them durable and dependable. Blade refills are compatible with frames. There are different blade styles available for different needs.

Steel White Oil Gauge Tapes are for use with dark and light oils and liquids. There is a dark stripe printed along the bottom edge of the blade to help detect light liquids.

Stainless Steel Oil Gauge Tapes are useful for gauging many kinds of oils and liquids.

Steel Black Oil Gauges Tapes are for use with dark and clear liquids. The black steel blade has etched numbers and markings which better resist abrasion, and the black background makes it easier to see light colored oils and liquids.

Specifications

Color	White, Black, Silver
Size	15m/50', 20m/66', 30m/100', 50m/165'

Gauge Glass



Reflex Flat Gauge Glasses

Reflex glasses are designed to give an enhanced indication of the liquid level by increasing the light refraction where liquid is present. The standard material used is borosilicate; mica protection cannot be used.

Gauge Glass Mica & Packing

For the heat insulation and protection of glass. Mica is generally used. The mica is generally furnished in a thickness of 0.2mm. The packing and mica are furnished separately.

Specifications

Type	Reflex Glass Type, Mica, Non-asbestos Packing, Fibre Packing
Size	Upon Request

Reflex Flat Gauge Glasses		Gauge Glass Mica & Packing	
Impa	Size	Impa	Size
813201 813211	34 x 17 x 115	813261 813281	0.2 x 34 x 115
813202 813212	34 x 17 x 140	813262 813282	0.2 x 34 x 140
813203 813213	34 x 17 x 165	813263 813283	0.2 x 34 x 165
813204 8132014	34 x 17 x 190	813264 8132084	0.2 x 34 x 190
813205 8132015	34 x 17 x 220	813265 8132085	0.2 x 34 x 220
813206 8132016	34 x 17 x 250	813266 8132086	0.2 x 34 x 250
813207 8132017	34 x 17 x 280	813267 8132087	0.2 x 34 x 280
813208 8132018	34 x 17 x 300	813268 8132088	0.2 x 34 x 300
813209 8132019	34 x 17 x 320	813269 8132089	0.2 x 34 x 320
813210 8132020	34 x 17 x 340	813270 8132090	0.2 x 34 x 340

Pressure Gauges



Industrial-grade pressure gauges with 63mm, 80mm, 100mm stainless steel cases are suitable for measuring the pressure of gaseous or liquid media, but not for highly viscous or crystallizing media.

- Stainless steel case
- Brass or stainless steel threaded connection
- Connection at bottom or back, BSP 1/2"

Case type

The stainless steel case is available in a crimped-on ring. Case ventilation is provided by a pressure equalisation insert.

Display ranges

DIN display ranges from -1...0 bar to 0...600 bar are available (max. 600 bar with brass connection or stainless steel connection). Gauges with special ranges can be provided on request.

Window

Instrument glass for types with brass connection thread, laminated safety glass with stainless steel connection, polycarbonate with stainless steel connection.

Connection threads and materials

Standard pressure gauges have a brass connection thread. Connection thread made from stainless steel is optionally available.

Glycerine Filled Type

The internal mechanism for the pointer operation is filled with glycerine to protect the accuracy of the gauge from mechanical vibration and to extend the working life of the gauge.

Specifications

Color	Silver, Black
Type	Pressure Gauges Filled with Glycerine Pressure Gauges Dry Type
Size	Dial Size 63mm, Dial Size 80mm, Dial Size 100mm

Bimetal Thermometer



The Bimetal thermometer is used for Low and Medium temperature on-site measuring. It can gauge directly contact with gas and liquid. Compared to mercury thermometer, the design, quality, and craftsmanship make the Bimetal Thermometer an Industry standard for rugged reliability and accuracy without any harm.

Dials are specially fabricated of low-glare finished metal using a deep-drawn design for anti-parallax alignment of pointer to graduation marks. With high-visibility numerals and graduations also help minimize reading errors. It also come with Superior heat transfer characteristics, fast response, and consistent repeatability are achieved through the use of a high-torque, low mass bimetal sensing element.

Materials and design combine to convert the sensor's movement quickly and accurately into a dial reading.

Specifications

Case	60mm, 100mm, 150mm
Material	Aluminum alloy with plastic coating, Stainless steel
Connection	1/2" BSP, bottom entry
Operating Temperature	-50 to +500°C
Stem Length	Dia 6mm, 8mm, 10mm up to 1250mm, Dia 12mm, 14mm up to 2000mm
Accuracy	Within 1.5% of full scale.
Filling	Dry

Diesel Engine Exhaust Gas Thermometers



The Nitrogen filled diesel engine exhaust gas thermometer is the most widely specified instrument for measuring exhaust gas temperatures and is fitted as original equipment by leading engine manufacturers. The Nitrogen filled diesel engine exhaust gas thermometer system is reliable and accurate as well as environmentally friendly. These exhaust gas thermometers are protected against vibration using silicone oil to ensure the maximum life under the most severe conditions.

Specifications

Case	63mm, 80mm, 105mm, 150mm
Casing material	Plastic, Aluminum, Stainless steel
Connection	1/2" BSP, bottom entry
Pointer inserting depth	150mm-280mm
Temperature Range	+60 to +600°C
Accuracy	Within 1.5% to 2.5 % of full scale
Stem Diameter Options	8, 10 or 12mm

Industrial Thermometer



Casing

Aluminum, V-shaped, completely polished, gold-colored anodized (or silver-colored upon request). Numerals of reading scale printed on the right side. Printing black-colored for easy readability. Straight types adjustable to any desired viewing position and locked by brass nut, wrench size 22. Angle thermometers (90 degrees) have a grooved adapter piece with locking screw. Advantage: When mounting the thermometer, it is not necessary to turn the casing.

Glass inserts (Capillaries)

Capillary tube of solid glass, bar-shaped, prismatic (optic enlargement of the column, except for high temperature types), diameter approx. 6 mm, oval opening, with yellow background for mercury and white background for blue fluid column. Scale is deeply burnt in black, thus being absolutely resistant. The main graduations, which correspond with the printing on the casing, are especially clearly outlined.

Thermometric liquids

Mercury-free standard version from 0 to 600 °C with blue thermometric fluid. For display ranges mercury filling is technically possible. According to regulation no. 847 / 2012 of European Union, thermometers with mercury filling are only bound for export outside the EU. Placing them on the market inside the EU after April 10th, 2014 is prohibited.

Concerned are industrial thermometers and glass inserts with display ranges 0...600 °C and higher, only. In this case, we are recommending the use of our dial or digital thermometers.

Specifications

Color	Gold
Type	Straight Thermometer 90 deg Angle Thermometer
Size	174B (straight), 175B (angle) 291B (straight), 292B (angle)

Type	Stem Length	Temperature Range
174B	30mm, 40mm, 63mm, 100mm, 160mm other size upon request	0-100°C, 0-200°C
175B	30mm, 40mm, 63mm, 100mm, 160mm other size upon request	0-100°C, 0-200°C
291B	63mm, 100mm, 160mm other size upon request	-30-50°C, 0-100°C, 0-160°C, 0-200°C, 0-500°C, 0-600°C
292B	63mm, 100mm, 160mm other size upon request	-30-50°C, 0-100°C, 0-160°C, 0-200°C, 0-500°C, 0-600°C

Tank Thermometers



Glass made thermometer scale with stainless steel case. Range is -10°C to +100°C and 14° to 212°F.

Provided with a sampler at the lower end of the casing which will keep the liquid preserved for the most accurate reading. Overall length 265 mm.

Specifications

Color	Silver
Range	-10-100°C

Spare Glass Thermometers

Spare glass thermometers are used for cased thermometer for refrigerator.

The liquid filled thermometers utilize an alcohol-based solution, which works similar to the mercury thermometers. Then there are the analogue thermometers that make use of a bimetallic coil. Here, two different metals that have different expansion rates are coiled and bonded together. A pointer stem is attached to one end while the other end is firmly fixed. Any temperature change will be noticed by due to the expansion and contraction of the bimetallic coil as it pushes or pulls the pointer.



Specifications

Range	-30-100°C 0-100°C 0-500°C
Content	alcohol-based alcohol-based mercury
Color	Transparent

Thermometers for Refrigerator Use

The thermometer have been designed to measure the interior temperature of each of their devices. They were used to measure the temperature of climate control warehouses, cold storage units and trucks that delivered perishable goods. This was a requirement by the industry.

The liquid filled thermometers utilize an alcohol-based solution, which works similar to the mercury thermometers. Then there are the analogue thermometers that make use of a bimetallic coil. Here, two different metals that have different expansion rates are coiled and bonded together. A pointer stem is attached to one end while the other end is firmly fixed. Any temperature change will be noticed by due to the expansion and contraction of the bimetallic coil as it pushes or pulls the pointer.



Specifications

Range	-30-100°C 0-100°C 0-500°C
Content	alcohol-based alcohol-based mercury
Color	Silver

Caliper



Vernier caliper for general measurement in machining, can measure the internal and external dimensions, depth and step. The precision of the vernier caliper in line with international standards and national standards (metric & inch).

To measure using a vernier caliper, the user first reads the finely marked "fixed" scale (in the diagram). This measure is typically between two of the scale's smallest graduations. The user then reads the finer vernier scale (see diagram), which measures between the smallest graduations on the fixed scale—providing much greater precision.

Digital caliper is easy to take relative measurements which zero setting, metric and inch system interchange at any position. With data output interface, data can be input to a special printer or a computer via special cable for data processing and printing.

Special function: With data holding, fast display, fast tracing maximum and minimum value during measurements, conversion between relative and absolute measurement and tolerance zone setting.

Specifications

Color	Silver
Type	Digital Caliper Vernier Caliper
Range	0-150mm 0-200mm 0-300mm

- Resolution: 0.01mm
- Power: One 1.5V button cell
- Measuring speed: ≤ 1.5m/s
- Working temperature: 0-+40°C
- Relative humidity: <80%
- Storage temperature: -10-+60°C

Infrared Thermometer



The infrared thermometer is used for measuring the temperature of the object's surface, which is applicable for various hot, hazardous or hard-to-reach objects without contact safely and quickly.

This unit consist of optics, temperature sensor signal amplifier, processing circuit and LCD display. The optics collected the infrared energy emitted by object and focus onto the sensor. Then the sensor translates the energy into an electricity signal. This signal will be turned out to be digital shown on the LCD after the signal amplifier and processing circuit.

Function

- Celsius/Fahrenheit switchable
- Equipped with a laser for aiming
- Temperature hold
- LCD backlight
- 7 seconds auto power off
- Light weight and easy operation

Features

- Measuring range: -50-+380°C/550°C
- Accuracy: ± 1.5°C/± 1.5%
- Resolution: 0.1°C or 0.1°F
- Distance spot ratio: 12:1
- Emissivity: 0.95 (fixed)
- °C/°F unit selectable
- Auto power off & Data Hold
- Laser ON/OFF selectable
- Backlight ON/OFF selectable
- Use one standard 9V battery

Specifications

Color	Orange
Temperature Range	-50°C-+380°C, -50°C-+550°C -50°C-+900°C

Rock Wool Products



Rockwool Pipe Cover

Nominal pipe size (NPS) inches	Internal diameter pipe insulation mm
1/2	22
3/4	27
1	34
1 1/4	43
1 1/2	49
2	61
2 1/2	74
3	90
3 1/2	102
4	115
4 1/2	128
5	143
6	170
7	196
8	221
9	246
10	275
11	300
12	326
14	358
16	408.8
18	459.6
20	510.4
22	561.2
24	2612
26	662.8
28	713.6

Rock wool is made of select fine basalt as the major materials which is pulled into 4-7 micro non-continuous fibers after melted by adopting advanced international four-roller centrifugal cotton-making procedures and adding a certain of adhesives, dust laying oil and water repellent into rock wool fibers.

Specifications

Color	Brown
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Rockwool Mat

Thickness (mm) Density (100 kg/m ³)	Sheet Size (mm x mm)	Pieces/Pack
25	1200 x 600	12
38	1200 x 600	8
50	1200 x 600	6
63	1200 x 600	5
75	1200 x 600	4

Refractory Products



Specifications

Packaging:	25kg
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Plastic refractories are firebricks in plastic putty-like form which can be installed by ramming the plastics with a wooden hammer or air rammer into any shapes required. After installation, it is baked with operation temperature of the furnace itself (over 1,000°C) to form the tough walls.

Castables are refractory cements which are mixed with the proper amount of water for installation. May be poured into frames or trowelled as is the case with ordinary cement, or gunited by gunning machine. After installation by whichever method, it hardens to a sufficient strength.

From among various types of products, the most common products are listed below and other products.

- Fireclay Plastic Refractories AB 40
- High Alumina Plastic Refractories AB 60
- Fire Clay Powder #1400
- Dense Castable Refractories #1700, #CAC 50, #CAC 95

