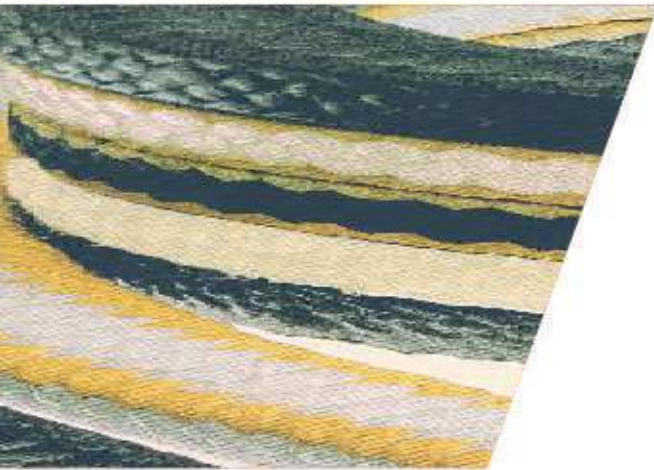




**Innovations in Fluid Sealing.**  
[www.inmarco.ae](http://www.inmarco.ae)

## Engineered Sealing Materials



## Compression Packings







## ABOUT US

INMARCO is one of the leading manufacturer of superior quality "Fluid Sealing Products" accepted and approved by variety of industries. Inmarco has attained market leadership in fluid sealing industry through its dedication to customer service and product development. Inmarco is committed to continuous improvement and has grown throughout three decades contributing to the environmental friendly Sealing Solutions. Non Asbestos culture has been driven and many a personnel to understand the asbestos menace in today's life. Inmarco's clientele are happy and satisfied of our untiring support for the sealing problems. Based on technological capabilities and perfection achieved over the years, Inmarco provides a wide range of products and services to the maintenance Industry. Our determinations to conduct business on a global scale is supported by and reflected in a fundamental philosophy utilization of technological expertise/ accumulation over three decades to access changes that occurred with passage of time while continuously evolving previously unexplored areas.

## VALUES

With MARKET-oriented structures, new and stronger product offerings, technically skilled-employees and efficient environmental impact MANAGEMENT SYSTEM, armed with global rapport with similar manufacturing companies and access to the latest development in the industry and a resilient local spirit, we are dedicated to delivering the best results. It is our people who make the system come alive and turn these principles, policies, and procedures into reality.

## MISSION & VISION

**MISSION** - Values - a driving force for Change...

A company rooted in unweaving values, INMARCO keeps ahead of change, reaping opportunities for growth. Striving to maintain leadership in industrial sealing products with wide manufacturing range. Providing a high quality product that combines performance with value for pricing, while establishing a successful relationship with the customers.

**VISION** - To be a market leader surpassing all hurdles of the industry, automate the process, systematized supplies and offer twenty-four-seven on service.

## WARE HOUSING

Located in the heart of the world business hub at SAIF Zone Sharjah UAE. Equipped with State of European Machinery.

**STOCKS** - The Warehouse stocks varieties of exotic raw materials for ever demanding modernized applications.

**STORES** - The temperature control stores takes care of the wellbeing and enhances shelf life of raw materials and the finished products.

**INSPECTION** - We never choose cheap materials, every incoming shipment follows stringent inspections system and are stored at predefined locations.

**PACKING AND DISPATCH** - Latest packing methodology in use with the modern gadgets and simplified equipments to perform efficient packing.

## TECHNOLOGIES & RESOURCES

INMARCO is driven by using non asbestos materials and is committed to provide superior and quality products that passed international standards and are environmental friendly. Technologies has helped develop more advance processes and has produced unwanted by-products causing pollution and deplete natural resources to the detriment of the earth and its environment that causes threat not only in the environment but also to mankind. With its philosophy in non-asbestos fluid sealing products INMARCO is able to do its part in conserving the environment.

## CREDENTIALS





Inmarco is pleased to offer 24/7 onsite technical and installation services. Inmarco is specialized in manufacture of valve sealing systems and is proud to announce that the recently developed expandable version of valve cart seal has outperformed the expected results. Certificated by American Petroleum Institute under standard ANSI/API standard 607 Fifth Edition – and API 589 Second Edition . We offer valve seal refurbishment and can undertake onsite jobs also.

- Construction
- Chemical Processing
- Food & Beverage
- Marine & Dry-docking
- Oil & Gas
- Pharmaceuticals
- Power Generation Desalination & Waster Water
- Paper & Pulp
- Steel & Aluminum

## CERTIFICATIONS & APPROVALS



Cartseal Fire Safe Certified  
As Per Api 607



Packing Style 100fxi-special Conform  
To Fugitive Emission Norms As Per Api 622



Packing Style 100fxi-special  
Fire Safe Certified Asper Api 607



Borogue



Takreer



Gasco



Ruweis Fertilizer  
Industries (Fertil)



Adgas



Adco



Petroleum Development  
Of Oman

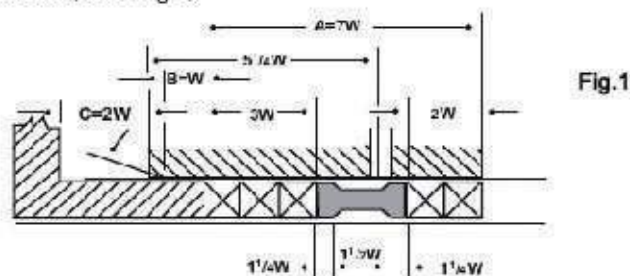


Qatar Petroleum



## INMARCO GUIDELINES FOR STUFFING BOX DIMENSIONS

**Rotating Shafts:** Dimension A shown on this drawing is the total depth of packing including lantern gland. A standard depth of  $7W$  or 7 times the packing space has been established when a lantern gland is used. A depth dimension is used where lantern gland is omitted. (Refer Fig.1).



**Lantern Gland Position:** It should be noted that the illustration shows the dimension of  $2W$  on the pressure side of the lantern ring and  $3W$  on the gland end of the stuffing box. While this is a common practice, it should be noted that  $3W$  on the pressure side and  $2W$  on the gland end of the stuffing box can also be used. For proper set up consult INMARCO sales personnel.

**Gland take-up:** This gland take-up is limited to 40% of the packing. The reason for this limitation is to include those packings which will have the largest volume loss. Additional gland take-up is not recommended, in order to prevent galling of the shafts. This means that complete take-up will take place before equipment is damaged; therefore, packing replacement would be indicated. This is based on the theory that most damage is done during the late running of packing life.

**Lantern Ring:** (Also known as Seal cage) – The suggested depth or length of lantern ring is set at  $2W$ .

**Chamfer Depth:** A minimum of  $1/8"$  (3mm) is recommended. It is felt that less than  $1/8"$  (3mm) will not contribute to easy entry of packing.

**Chamfer Angle:** Wedging or guiding action is between 15 and 30 degrees.

**Gland Entrance:** It is recommended that a minimum of  $1W$  be maintained to minimize the probability of gland cocking and allow for general variations of soft packing, molded and other types.

**Size Limitation:** In designing equipment with shaft below  $5/8"$  (16mm) diameter, consult INMARCO regarding packing space required ( $W$ ).

**Clearance:** Clearances should be as per acceptable machining practices, taking into consideration thermal expansion and contraction of metals.

**Finishes:** Finishes of rotating elements in contact with packing should be best economically possible, bearing in mind that the finer or smoother the finish, the longer the packing life expectancy.

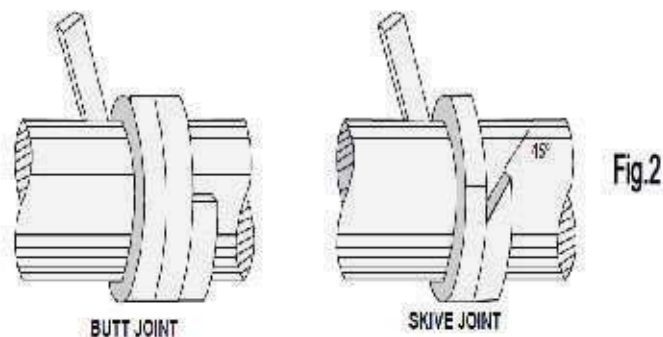
**Pressure:** These standard dimensions are intended for the use up to approximately 1500psi (102bar).

**Performance:** Performance at various high speeds is a function of the material used rather than the stuffing box dimensions and recommendations for speed limits are not considered here. Consideration of high – speed problems should be referred to INMARCO's customer service department.

## INSTALLATION OF INMARCO PUMP PACKINGS

The importance of packing the pump correctly cannot be overemphasized. Many failures are due to incorrect installation of packings. The following steps have been devised to ensure effective installation of packing on pumps.

1. Remove all the old packing from the stuffing box. Clean box and shaft thoroughly and examine shaft or sleeve for wearing and scoring. Replace shaft or sleeve if wear is excessive.
2. Use the correct cross-section of packing or die-formed rings. To determine the correct packing size, measure the diameter of the shaft (inside the stuffing box area if possible) and then measure the diameter of the stuffing box (to give the OD of the ring). Subtract the ID measurement from the OD measurement and divide by two. The result is required size ( $w$ ).
3. When using coil or spiral packing, always cut the packing into separate rings. Never wind a coil of packing into a stuffing box. Rings can be with butt (square), skive (or diagonal) joints, depending on the method used for cutting. The following illustration shows these methods of preparing bulk packing. The best way is to cut them on a mandrel of same diameter as that of a shaft. If there is no shaft wear, rings can be cut on the shaft outside the stuffing box. Hold the packing tightly on the mandrel, but do not stretch. Cut the ring and insert it into the stuffing box, making sure if it fits the packing space properly. Each additional ring can be cut in the same manner. When cutting diagonal joints, use a meter board so that each successive ring can be cut at the correct angle. It is necessary that the rings be cut to the correct size. Otherwise, service life is reduced. This is where die-cut rings are advantage, as they give the exact size.



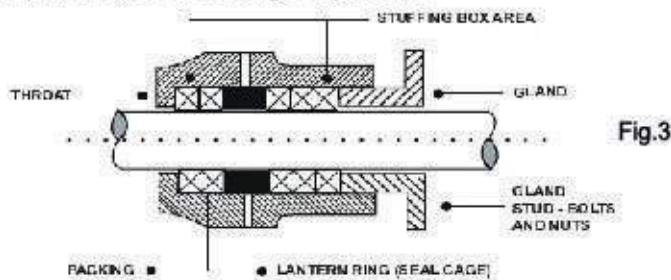
4. Install one ring at a time: make sure it is clean and has not picked up any dirt in handling. Seat rings firmly (except PTFE filament and graphite yarn packing, which should be snugged up very gently, then tightened gradually after the pump is operating). Joints of successive rings should be staggered and kept at least  $90^\circ$  apart. Each individual ring should be firmly seated with a tamping tool.



5. After the last ring is installed, take-up gland bolts should be finger tight or very slightly snugged up. Do not jam the packing into place by excessive gland loading. Start the pump and tighten take up gland bolts until leakage is reduced to a tolerable minimum. Make sure gland bolts are taken up evenly. Stopping leakage entirely at this point will cause the packing to burn, harden and damage equipment.

6. Allow packing to leak freely starting up a newly packed pump. Excessive leakage during the first hour of operation will result in a better packing job over a longer period of time. Take up gradually on the gland as the packing seats, until leakage is reduced to a tolerable level, preferably 8-10 drops per minute, per inch of shaft diameter. Some packing can run virtually leak free. Contact INMARCO for specific recommendations.

7. If specified by INMARCO, provide means of lubricating the shaft and packing through the lantern ring by supplying water, oil, grease or liquid handled in the pump fittings for this purpose are standard on many pumps. Flush pressure should be minimum 15psi (-1bar) above stuffing box pressure.



8. If the stuffing box has a lantern ring (see fig. 3), make sure that the lantern ring is installed properly so it will remain in place as gland pressure is applied.

9. Replace packing when leakage cannot be controlled by further take-up on the gland. Do not add more packing rings.

10. On both centrifugal and reciprocating pumps, about 70% of wear is on the outer two packings nearest the gland. However, each additional ring does throttle some fluid pressure. On most pumps, there must be enough rings so if one fails, another does the sealing, and the pump need not be shutdown.

## PACKING VALVES CORRECTLY

As with pump packing, the first step in getting the most out of valve packing is correct installation.

1. Carefully perform all operations listed under pump packing steps 1-5. Rings used on valves are cut with a butt or skive joint (illustrated in fig. 2). Be sure the first ring is cut carefully and tested on the stem.

2. Slide gland forward until it contacts the packing. Tighten the gland bolts to the point where heavy resistance to wrenching is felt. During this time, turn valve stem back and forth to determine ease of turning. Do not torque down to the point where the stem won't turn.

3. Inspect the valve after it has been on line. If leakage is observed, adjust the gland in accordance with safe maintenance procedures.

4. Live loading of valve stem packing gland: in its simplest form, live loading is the application of a spring load to the gland follower of a packed valve. A Belleville spring between the gland follower assists fastening studs and nuts to provide an effective way to establish and maintain a controlled amount of stress in the packing set. The amount of the packing stress in a live loaded system can be controlled by the size of the Belleville spring used and the extent to which it is compressed or deflected.

In a live loaded packing system, the follower will continue to push against the packing even when packing volume is lost (by friction, extrusion, consolidation, etc.). The spring load will be slightly reduced as the springs expand, but this reduction in load will be much less than the load that is lost if the packing set was not live loaded. This remaining load allows the packing stress to remain at a level above the minimum sealing stress and may enable the packing to remain leak free (see fig. 4).

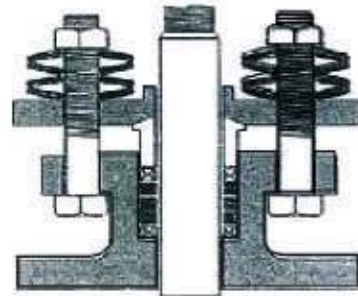


Fig. 4

## SELECTION OF CORRECT PACKING

To determine the packing to be used the following 6 parameters of equipment should be available, commonly known as "STAMPS".

- S = Size / Cross section
- T = Temperature of media (°C)
- A = Application (type of pump/valve/equipment)
- M = Media
- P = Pressure (bar)
- S = Shaft speed in RPM

## PACKING SIZE SELECTION CHART

SHAFT SIZE	
16mm to and including 29mm	8mm
29mm to and including 48mm	10mm
48mm to and including 75mm	13mm
75mm to and including 120mm	16mm
120mm to and including 300mm	19mm

Table 1 w = width of packing































## Selection of correct packing material according to pH value

pH Factor Determination of Correct Packing Material	
Range:	
0-1	PTFE Fiber, carbonaceous Fiber, Flexible Graphite
2-3	PTFE Fiber, carbonaceous Fiber, Flexible Graphite, Aramid PTFE, Dispersed Acrylic, PTFE Dispersed, Glass
4-5	PTFE Fiber, carbonaceous Fiber, Flexible Graphite, Lube & Graphite, Aramid PTFE Dispersed, Lube & Graphite Acrylic PTFE Dispersed, Lube & Graphite Glass
6-7	PTFE Fiber, carbonaceous Fiber, Flexible Graphite, Lube & Graphite, Aramid PTFE Dispersed, Lube & Graphite Acrylic PTFE Dispersed, Lube & Graphite Glass
8-9	PTFE Fiber, carbonaceous Fiber, Flexible Graphite, Lube & Graphite, Aramid PTFE Dispersed, Lube & Graphite Acrylic PTFE Dispersed, Lube & Graphite Glass
10-11	PTFE Fiber, Carbonaceous Fiber, Flexible Graphite, Aramid PTFE, Dispersed Acrylic PTFE Dispersed, Glass PTFE Dispersed
12-13	PTFE Fiber, carbonaceous Fiber, Flexible Graphite
14	PTFE Fiber, carbonaceous Fiber, Flexible Graphite































pH factor: The pH factor is a numerical measure of the intensity or severity of an acid or alkali. In table 2, pH valves are given for a wide range of acid and alkali services. Distilled water is neutral at 7 (see table 3). The above table should be considered as a guide or starting point for the selection of the proper packing.































pH Chart		
14	}	Highly Alkaline
13		
12		
11		
10	}	Mild Alkaline
9		
8		
7		
6	}	Mild Acidic
5		
4		
3		
2	}	Acidic
1		
0		
0		

































Product Type	Description	Operational Parameters																								
<div></div> <div>INM033 <b>INMARCO STYLE 105</b></div>	<p>STYLE 105 is a dense braided combination gland packing having aramid yarn corners with PTFE yarn faces with highly resilient and high tensile core of aramid fibre. The aramid yarn is lubricated with highly anti-frictional fluoropolymer dispersions and break-in lubricant, while the PTFE faces are lubricated with high temperature resisting inert lubricant.</p> <p>STYLE 105 offers excellent strength coupled with dimensional stability in service. Strong aramid fibre avoids corner failures in reciprocating plunger pump. The PTFE fibre ensures low friction, cool shaft runs eliminating wear and tear to plunger &amp; valve stems. The strong aramid fiber core provides extremely high pressure resistance.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Dense construction &amp; excellent sealability.</li><li>*High pressure &amp; compatibility.</li><li>*Extremely durable packing for ammonia and carbamate solution.</li><li>*Can be used as lip seals.</li><li>*Wide chemical &amp; abrasion resistance &amp; high penetration.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +280</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">4mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Centrifugal reciprocating &amp; plunger pumps, Valves, Agitators, Extruders, Mixers, Reactors etc.</p> <p><b>Service Media:</b> Ammonia, Urea &amp; Carbamate condensate in fertilizer industry, Amide, Fine slurries, Detergents, Pigments, Dyestuffs, Paints, Emulsions, Synthetic molten material, Tri sodium phosphate, Hydrazine, Sodium hexameta phosphate, Water, etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-200 to +280			VELOCITY (m/s)	25	20	—	SIZE	4mm² to 35mm² *						
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<div></div> <div>INM034 <b>INMARCO STYLE 105SUT</b></div>	<p>STYLE 105SUT is a dense braided combination gland packing having aramid yarn corners with PTFE yarn faces in highly resilient but high tensile core of extruded and expanded PTFE cord. The aramid yarn is lubricated with highly anti-frictional fluoropolymer dispersions &amp; break-in lubricant, while the PTFE faces are lubricated with high temperature resisting inert lubricant.</p> <p>STYLE 105SUT excellent strength coupled with dimensional stability in service. Strong aramid fibre avoids corner failures in reciprocating plunger pump. The PTFE fibre ensures low friction, cool shaft runs eliminating wear and tear to plunger &amp; valve stems. The strong PTFE cord core provides extremely high pressure resistance.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Dense construction &amp; excellent sealability.</li><li>*High pressure compatibility.</li><li>*Extremely durable packing for ammonia and carbamate solution.</li><li>*Can be used as lip seals.</li><li>*Wide chemical &amp; abrasion resistance &amp; high penetration.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>500</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">5mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Centrifugal reciprocating &amp; plunger pumps, Valves, Agitators, Extruders, Mixers, Reactors etc.</p> <p><b>Service Media:</b> Ammonia, Urea &amp; Carbamate condensate in fertilizer industry, Amide, Fine slurries, Detergents, Pigments, Dyestuffs, Paints, Emulsions, Synthetic molten material, Tri sodium phosphate, Hydrazine, Sodium hexameta phosphate, Water, etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-200 to +280			PRESSURE (BAR)	150	500	500	VELOCITY (m/s)	25	20	—	SIZE	5mm² to 35mm² *		
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<div></div> <div>INM035 <b>INMARCO STYLE 107</b></div>	<p>STYLE 107 is a special combination packing manufactured with a tough but smooth aramid fibre yarn at the corners and PTFE graphite solid yarn at the faces having core of aramid yarn. The aramid yarn is impregnated with highly anti-frictional fluoropolymer dispersion and special break-in lubricant.</p> <p>STYLE 107 is resistant to almost all known chemicals and also resistant to abrasion. This packing has excellent heat dissipation properties and cool run due to integral graphite on the faces. The aramid yarn at the corners avoids corner failures in reciprocating plunger pump. STYLE 107 is compact and dimensionally stable packing which ensures longer leakage free performance.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Dense construction &amp; excellent sealability.</li><li>*High pressure compatibility.</li><li>*Extremely durable packing for ammonia and carbamate solution.</li><li>*Can be used as lip seals.</li><li>*Wide chemical resistance, abrasion resistance &amp; high penetration.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>200</td><td>500</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">6mm² to 50mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Pumps, Valves, Reactors, Autoclaves, Mixers, Agitators, etc.</p> <p><b>Service Media:</b> Fine chemical slurry, Liquid ammonia &amp; Ammonium compounds, Carbamate solutions, Fuel &amp; lube oil, Hydrazine, Emulsions, Tri sodium phosphates, Sodium Hexameta phosphate, black &amp; green liquor, paper pulp, Pulp diluted with water, Emulsion water etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	200	500	500	VELOCITY (m/s)	25	20	—	SIZE	6mm² to 50mm² *		
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Product Type	Description	Operational Parameters																								
 INM036 <b>INMARCO STYLE 107PT</b>	<p>STYLE 107PT is a special combination packing manufactured with a tough but smooth aramid fibre yarn at the corners and PTFE graphite solid yarn at the faces having core of high density extruded and expanded PTFE cord. The aramid yarn is impregnated with highly antifrictional fluoropolymer dispersion and special break-in-lubricant.</p> <p>STYLE 107PT is resistant to almost all known chemicals and also resistant to abrasion. This packing has excellent heat dissipation properties and cool run due to integral graphite on the faces. The aramid yarn at the corners prevents corner failures in reciprocating plunger pump. The strong extruded and expanded PTFE core provides extremely high pressure resistance and resiliency.</p> <p>STYLE 107PT is compact and dimensionally stable packing which ensures longer leakage free performance.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>* Dense construction &amp; excellent sealability.</li><li>* High pressure compatibility.</li><li>* Extremely durable packing for ammonia and carbamate solution.</li><li>* Can be used as lip seals.</li><li>* Wide chemical &amp; abrasion resistance &amp; high penetration.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>200</td><td>500</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">6mm<sup>2</sup> to 50mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Pumps, Valves, Reactors, Autoclaves, Mixers, Agitators, etc.</p> <p><b>Service Media:</b> Fine chemical slurry, Liquid ammonia &amp; ammonium compounds, Carbamate solutions, Fuel &amp; Lube oil, Hydrazine, Emulsions, Tri sodium phosphates, Sodium phosphates, Sodium hexamata phosphate, Slurry, Black &amp; Green liquor, Paper pulp, Pulp diluted with water, Water contamination, etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	200	500	500	VELOCITY (m/s)	25	20	—	SIZE	6mm <sup>2</sup> to 50mm <sup>2</sup> *		
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 INM037 <b>INMARCO STYLE 504</b>	<p>STYLE 504 is a universal duplex braided packing manufactured from expanded PTFE intimately bonded with special quality graphite in a single molecular structure incorporating break-in-lubricant in a special process. This is a dense packing having high degree of resiliency and chemical properties. Presence of graphite enables the packing dissipate heat evenly leading to longer life of the packing.</p> <p>STYLE 504 is highly antifrictional and hence able to safeguard shaft/sleeves from wear/ erosion. This packing is having excellent resistance to almost all known chemicals and is compatible to wide range of industrial media and is only affected by strong oxidizers, molten alkali metal &amp; fluorine compounds.</p> <p>STYLE 504 is dimensionally stable and requires minimum gland loading to effect perfect seal. This is also compatible to very high peripheral speed with extremely low leakage rate.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>200</td><td>350</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Centrifugal &amp; Reciprocating pumps, Valves, Large diameter shafts, Reactor vessels, Agitators, Mixers, Autoclaves, etc.</p> <p><b>Service Media:</b> Acids &amp; Alkalis of any concentration, Solvents, Hydrocarbons, Phosphoric acids, Raw water, DM water, Condensate, Cooling water, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +300			PRESSURE (BAR)	100	200	350	VELOCITY (m/s)	25	10	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *		
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SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *																									
 INM038 <b>INMARCO STYLE 507</b>	<p>STYLE 507 is a pure PTFE fiber yarn duplex braided packing having incorporation of special proprietary inlube break-in lubricant. The break-in-lubricant ensures extra lubrication during the complete operational life. The yarn of the packing during process undergoes a special chemical treatment.</p> <p>STYLE 507 is non toxic and inert in nature, hence ensures safety and purity of the fluid media. It is dimensionally stable and ensures trouble free operation reducing maintenance cost.</p> <p>STYLE 507 is suitable for dynamic as well as static application. As it is dimensionally stable it ensures leak free operational life for a longer period.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>150</td><td>200</td></tr><tr><td>VELOCITY (m/s)</td><td>10</td><td>15</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Pumps, Valves, Mixers, Reactors, Agitators, Dryers, Air compressors, etc.</p> <p><b>Service Media:</b> Acids &amp; Alkalis of any concentration, Solvents, Organic / Inorganic chemicals, Dyes, Pigments &amp; Viscous fluids, Wax, Synthetic resins, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	100	150	200	VELOCITY (m/s)	10	15	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *		
PROPERTIES																										
pH	0-14																									
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VELOCITY (m/s)	10	15	—																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *																									

Product Type	Description	Operational Parameters																								
<div></div> <div>INM039 <b>INMARCO STYLE 508</b></div>	<p>STYLE 508 is a Pure PTFE Fiber yarn duplex braided packing having incorporation of special proprietary inlube break-in lubricant &amp; also incorporating PTFE suspenoid. The break-in-lubricant ensures extra lubrication during the complete operational life and dispersion acts as blocking agent as well as antifrictional additives.</p> <p>STYLE 508 is non toxic and inert in nature, hence ensures safety and purity of the fluid media. It is dimensionally stable and ensures trouble free operation reducing maintenance cost.</p> <p>STYLE 508 is suitable for dynamic as well as static application. As it dimensionally stable it ensures leakage free operational life for a longer period.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +290</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>350</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>28</td><td>24</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Mixers, Reactors, Agitators, Dryers, Air compressors, etc.</p> <p>Service Media: Acids &amp; Alkalis of any concentration, Solvents, Organic / Inorganic chemicals, Dyestuffs, Paints, Pigments &amp; Viscous fluids, Wax, Synthetic resins, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +290			PRESSURE (BAR)	150	350	300	VELOCITY (m/s)	28	24	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-240 to +290																									
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VELOCITY (m/s)	28	24	—																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *																									
<div></div> <div>INM040 <b>INMARCO STYLE 509</b></div>	<p>STYLE 509 is a dry Pure PTFE Fiber yarn interlocked braided packing. This packing is manufactured without any lubricants or additives of any kind. The packing is most suitable for food &amp; pharma industries and also for oxygen, nitrogen and hydrogen services.</p> <p>STYLE 509 is a self lubricating packing with very low coefficient of friction, hence ensures easy operation. This packing needs very little gland adjustment after initial installation.</p> <p>STYLE 509 is highly antifrictional and as such safeguards the parent equipments from erosion during operation.</p> <p>STYLE 509 is inert to almost all known chemicals except molten alkali metals and aquarezia, hence volume loss due to chemical attack is negligible which leads to longer leakage free operational life.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>150</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>15</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Mixers, Reactors, Agitators, Extruders, etc.</p> <p>Service Media: Acids &amp; Alkalis of any concentration, Solvents, Organic / Inorganic Chemicals, Oxygen, Nitrogen &amp; Hydrogen services, Salt slurry, Food &amp; Pharma services, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	100	150	300	VELOCITY (m/s)	15	20	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *		
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VELOCITY (m/s)	15	20	—																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *																									
<div></div> <div>INM041 <b>INMARCO STYLE 104</b></div>	<p>STYLE 104 is pure PTFE fiber yarns inter braided packing having incorporation of special proprietary inlube break-in-lubricant and also incorporating PTFE inflon dispersion. The break-in-lubricant ensures extra lubrication during the complete operational life and dispersion acts as blocking agent as well as anti-frictional additives.</p> <p>STYLE 104 is non toxic and inert in nature, hence ensures safety and purity of the fluid media. It is dimensionally stable and ensures trouble free operation reducing maintenance cost.</p> <p>STYLE 104 is suitable for dynamic as well as static application. As it is dimensionally stable it ensures leakage free operational life for a longer period.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>150</td><td>—</td></tr><tr><td>VELOCITY (m/s)</td><td>10</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Liquid oxygen, Pumps and Valves, Air compressors, Acids, Alkalis, Solvents, Organic/inorganic chemicals equipment, Glands, Hydrogen services, Mixers, Powder Dryers.</p> <p>Service Media: Acids and alkalis of any concentration, Solvents, Organic/Inorganic chemicals, Petrochemicals, Dyestuffs, Paints, Synthetic resins, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	100	150	—	VELOCITY (m/s)	10	10	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-240 to +280																									
PRESSURE (BAR)	100	150	—																							
VELOCITY (m/s)	10	10	—																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *																									

































Product Type	Description	Operational Parameters																								
 INM042 <b>IMMARCO STYLE 104S</b>	<p>STYLE 104S is a dry pure PTFE fiber yarns interlocked braided packing. This packing is manufactured without any lubricants or additives of any kind. The packing is most suitable for food and pharma industries and also for oxygen and hydrogen services.</p> <p>STYLE 104S is a self lubricating packing with very low coefficient of friction, hence ensures easy operation. This packing needs very little gland adjustment after initial installation.</p> <p>STYLE 104S is anti-frictional and as such safeguards the parent equipments from erosion during operation.</p> <p>STYLE 104S is inert to almost all known chemicals except molten alkali metals and aquarezia, hence volume loss due to chemical attack is almost nil which leads to longer leakage free operational life.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280 200</td></tr><tr><td>PRESSURE (BAR)</td><td>25</td><td>5</td><td></td></tr><tr><td>VELOCITY (m/s)</td><td>10</td><td></td><td>---</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps and Valves, Mixers, Agitators, etc.</p> <p>Service Media: Acids &amp; Alkalis of any concentration, Solvents, Organic / Inorganic Chemicals, Oxygen, Nitrogen &amp; Hydrogen services, Salt slurry, Food &amp; Pharma services, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +280 200			PRESSURE (BAR)	25	5		VELOCITY (m/s)	10		---	SIZE	3mm² to 35mm² *		
PROPERTIES																										
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PRESSURE (BAR)	25	5																								
VELOCITY (m/s)	10		---																							
SIZE	3mm² to 35mm² *																									
 INM043 <b>IMMARCO STYLE 104E</b>	<p>STYLE 104E is an expanded pure PTFE fiber yarn duplex braided packing having incorporation of special proprietary inlube break-in-lubricant. The break-in-lubricant ensures extra lubrication during the complete operational life. The yarn of the packing during process undergoes a special chemical treatment.</p> <p>STYLE 104E is non toxic and inert in nature, hence ensures safety and purity of the fluid media. It is dimensionally stable &amp; ensures trouble free operation reducing maintenance cost.</p> <p>STYLE 104E is suitable for dynamic as well as static application. As it is dimensionally stable it ensures leakage free operational life for a longer period.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>25</td><td>100</td><td>200</td></tr><tr><td>VELOCITY (m/s)</td><td>8</td><td>4</td><td>---</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Mixers, Reactors, Agitators, Dryers, Air compressors etc.</p> <p>Service Media: Acids and alkalis of any concentration, Solvents, Organic / Inorganic chemicals, Dyestuffs, Paints, Pigments &amp; Viscous Fluids, Wax, Synthetic resins, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	25	100	200	VELOCITY (m/s)	8	4	---	SIZE	3mm² to 35mm² *		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-240 to +280																									
PRESSURE (BAR)	25	100	200																							
VELOCITY (m/s)	8	4	---																							
SIZE	3mm² to 35mm² *																									
 INM043 <b>IMMARCO STYLE 106SSW</b>	<p>STYLE 106SSW an excellent abrasion/brine resistant packing manufactured from copolymer fiber yarn thoroughly impregnated with PTFE based inflon dispersion which is further impregnated with break-in-lubricant and a surface run-in-lubricant.</p> <p>STYLE 106SSW this packing also is very good resistant to corrosive/acidic reaction. The run-in-lubricant ensures improvement of antifrictional property of the packing leading to avoid erosion of sleeves/shaft.</p> <p>Advantages: *The basic co-polymer yarn is highly abrasion resistant so also corrosion. *Incorporation of break-in-lubricant and run-in-lubricant ensures extremely low friction. *The tough co-polymer yarn construction enables dimensional stability and resistance to deformation on arduous duties. *Excellent performance against turbid saline water.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">500</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">25</td></tr><tr><td>SIZE</td><td colspan="3">6mm² to 50mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Mixers, Reactors, Clinker Grinder, Autoclaves, Door seals, Agitators, Blenders, Extruders, Rotary vacuum dryer, etc.</p> <p>Service Media: Ash slurry, Fly ash water, Chemical slurries, Wood pulp, Coolant, Coal dust, Dry powdered chemicals, Turbid water, Surface water, Saline sea water, Brines, Crude oil, Fuel oil, etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-200 to +300			PRESSURE (BAR)	500			VELOCITY (m/s)	25			SIZE	6mm² to 50mm² *		
PROPERTIES																										
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VELOCITY (m/s)	25																									
SIZE	6mm² to 50mm² *																									

































Product Type	Description	Operational Parameters																								
<div></div> <div>INM044 <b>INMARCO STYLE 607</b></div>	<p>STYLE 607 is an excellent abrasion/corrosion resistant packing manufactured from co polymer technora fibre yarn thoroughly impregnated with PTFE dispersion and lubricated with silicone oil. STYLE 607 is highly anti-frictional and hence, does not damage sleeves/shaft. This is extremely high tensile packing and the tensile strength of this packing is eight times stronger than steel. This is extremely good resistance to fatigue. STYLE 607 is highly resistant to acids, alkalis, organic solvents and also is highly insulating and fire retardant.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*The basic co-polymer technora yarn is highly resistant to abrasion and corrosion.</li><li>*This packing is anti-frictional and incorporation of PTFE dispersion &amp; silicone oil makes it extremely low coefficient of friction.</li><li>*This is highly dimensionally stable packing &amp; resistance to deformation on arduous duties.</li><li>*As the packing is highly resilient and anti-frictional it does not erode the sleeve.</li></ul>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>pH</td><td>1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td>-200 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td></tr><tr><td>SIZE</td><td>6mm² to 50mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Pumps, Valves, Agitators, Mixers, Reactors, Blenders, Extruders, Rotary vacuum dryers etc.</p> <p><b>Service Media:</b> Chemical slurry, Ash slurry, Acids, Alkalis, Organic solvents, Crude oil, Fuel Oil, Paper pulp, Turbid water, etc.</p>	PROPERTIES	VALUES	pH	1-13	TEMPERATURE (°C)	-200 to +300	PRESSURE (BAR)	300	VELOCITY (m/s)	25	SIZE	6mm² to 50mm² *												
PROPERTIES	VALUES																									
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PRESSURE (BAR)	300																									
VELOCITY (m/s)	25																									
SIZE	6mm² to 50mm² *																									
<div></div> <div>INM045 <b>INMARCO STYLE 175</b></div>	<p>STYLE REBACKLON 175 is a combination of duplex braided packing with inmalon yarn and expanded PTFE intimately bonded with special quality graphite yarn incorporating break-in-lubricant in a special process. This is a dense packing having high degree of resiliency and chemical properties. STYLE REBACKLON 175 the presence of graphite enables the packing dissipate heat accurately leading to longer life of the packing. The break-in-lubricant ensures extra lubrication during the complete operational life.</p> <p>STYLE REBACKLON 175 is highly anti-frictional and hence able to safeguard shaft/sleeves from wear/erosion. This packing is having excellent resistance to almost all known chemicals and is compatible to wide range of industrial media and is only affected by strong oxidizers, molten alkali metal, fluorine compounds, concentrated fuming acids. STYLE REBACKLON 175 is suitable for dynamic as well as static application. As it is dimensionally stable it ensures leakage free operational life for a longer period.</p>	<table><tr><th>PROPERTIES</th><th>↻</th><th>↔</th><th>↔</th></tr><tr><td>pH</td><td colspan="3">3-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to 280</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>200</td><td>350</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>35</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">5mm² to 50mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Pumps, Valves, Mixers, Reactors, etc.</p> <p><b>Service Media:</b> Raw water, Surface water, DM water, Industrial water, Hydrocarbon, Paints, Caustic, Synthetic Resins, Emulsions and general purpose applications.</p>	PROPERTIES	↻	↔	↔	pH	3-14			TEMPERATURE (°C)	-200 to 280			PRESSURE (BAR)	150	200	350	VELOCITY (m/s)	25	35	—	SIZE	5mm² to 50mm² *		
PROPERTIES	↻	↔	↔																							
pH	3-14																									
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VELOCITY (m/s)	25	35	—																							
SIZE	5mm² to 50mm² *																									
<div></div> <div>INM046 <b>INMARCO STYLE 606</b></div>	<p>STYLE ALDEHYDE 606 is an excellent abrasion/corrosion resistant packing manufactured from aldehyde fibre yarn thoroughly impregnated with PTFE based inflon dispersion which is further impregnated with break-in-lubricant and a surface run-in-lubricant having core of red inmalon yarn.</p> <p>STYLE ALDEHYDE 606 is a packing which has a very good resistant to corrosive/acidic reaction. The run-in-lubricant ensures improvement of anti-frictional property of the packing leading to avoid erosion of sleeves/shaft.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*The basic aldehyde yarn is highly abrasion resistant so also corrosion.</li><li>*Incorporation of break-in-lubricant &amp; run-in-lubricant ensure extremely low friction.</li><li>*The tough aldehyde yarn construction enables dimensional stability and resistance to deformation on arduous duties.</li><li>*The core of red inmalon yarn makes the packing highly resilient.</li><li>*Excellent performance against turbid saline water.</li></ul>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>pH</td><td>1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td>-200 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td></tr><tr><td>SIZE</td><td>6mm² to 50mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Pumps, Valves, Agitators, Mixers, Reactors, Clinker grinder, Autoclave, Door seals, Blenders, Extruders, Rotary vacuum dryers etc.</p> <p><b>Service Media:</b> Sea water, Saline water, Ash slurry, Iron slurry, Fly ash water, Chemical slurries, Paper pulp, Pulp with water, Coolant, Coal dust, Dry powdered chemicals, Turbid water, Surface water, Brines, Crude oil, Fuel oil, etc.</p>	PROPERTIES	VALUES	pH	1-13	TEMPERATURE (°C)	-200 to +300	PRESSURE (BAR)	300	VELOCITY (m/s)	25	SIZE	6mm² to 50mm² *												
PROPERTIES	VALUES																									
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VELOCITY (m/s)	25																									
SIZE	6mm² to 50mm² *																									



Product Type	Description	Operational Parameters																								
 INM047 <b>INMARCO STYLE 400</b>	<p>STYLE DECILON 400 is a combination cross braided packing with fluoropolymer based blue inmalon yarn and pure PTFE yarn thoroughly impregnated with PTFE based inflon dispersion further incorporating a special proprietary inlube break-in-lubricant in a special process.</p> <p>STYLE DECILON 400 is a dense packing having high degree of resiliency and chemical properties. The break-in-lubricant ensures extra lubrication during the complete operational life.</p> <p>STYLE DECILON 400 is highly anti-frictional and corrosion resistant and hence able to safeguard shaft/sleeves from wear/erosion. The yarn construction enables dimensional stability and resistance to deformation on arduous duties. Also ensures leakage free operational life for a longer period.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to 280</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>200</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>15</td><td>25</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">5mm<sup>2</sup> to 50mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Mixers, Reactors, Dyes, Agitators, etc.</p> <p>Service Media: Organic/Inorganic chemicals, Acids and Alkalies, Dyestuffs, Paints, Synthetic resins, Emulsions, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to 280			PRESSURE (BAR)	150	200	300	VELOCITY (m/s)	15	25	—	SIZE	5mm <sup>2</sup> to 50mm <sup>2</sup> *		
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TEMPERATURE (°C)	-200 to 280																									
PRESSURE (BAR)	150	200	300																							
VELOCITY (m/s)	15	25	—																							
SIZE	5mm <sup>2</sup> to 50mm <sup>2</sup> *																									
 INM048 <b>INMARCO STYLE 200</b>	<p>STYLE BLUELON 200 is a duplex braided packing manufactured from fluoropolymer based blue inmalon yarn. It is further impregnated with PTFE dispersion having a core of high density expanded PTFE extruded cord. PTFE dispersions ensure extra lubrication during the complete operational life.</p> <p>STYLE BLUELON 200 is soft yarn packing hence suitable for dynamic application. The packing is dimensionally stable and performs extremely well in solvent application.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to 300</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>150</td><td>250</td></tr><tr><td>VELOCITY (m/s)</td><td>15</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 50mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Organic/Inorganic chemicals, Acids and Chemicals, Dyestuffs, Solvents, Synthetic resins, Emulsions, etc.</p> <p>Service Media: Organic/Inorganic chemicals, Acids and Alkalies, Dyestuffs, Paints, Synthetic resins, Emulsions, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to 300			PRESSURE (BAR)	100	150	250	VELOCITY (m/s)	15	20	—	SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup> *		
PROPERTIES																										
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VELOCITY (m/s)	15	20	—																							
SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup> *																									
 INM049 <b>INMARCO STYLE 499</b>	<p>STYLE 499 is a special new generations synthetic packing impregnated with fluoropolymer dispersion. Unlike the first generation of synthetic packing.</p> <p>STYLE 499 does not suffer from limitation that prevents general service use. It does not cause shaft scoring like many other synthetic packing does.</p> <p>STYLE 499 lacks the stiffness of conventional synthetics and thus readily conforms to stuffing box configuration, can be installed easily and requires minimal gland torque and very less adjustments. This packing has extremely good resistance to extrusions.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-150 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>250</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>15</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">5mm<sup>2</sup> to 50mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Reactors, Agitators, Mixers, etc.</p> <p>Service Media: Abrasive slurries, Chemical slurries, Wood pulp, Bagasse pulp, Bamboo pulp, etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-150 to +260			PRESSURE (BAR)	150	250	500	VELOCITY (m/s)	15	20	—	SIZE	5mm <sup>2</sup> to 50mm <sup>2</sup> *		
PROPERTIES																										
pH	1-13																									
TEMPERATURE (°C)	-150 to +260																									
PRESSURE (BAR)	150	250	500																							
VELOCITY (m/s)	15	20	—																							
SIZE	5mm <sup>2</sup> to 50mm <sup>2</sup> *																									













Product Type	Description	Operational Parameters																								
<div><p>INM050 <b>INMARCO STYLE 411</b></p></div>	<p>STYLE 411 is a dense braided combination gland packing having novoloid yarn corners with PTFE yarn faces with highly resilient but high tensile core of extruded and expanded PTFE cord. The novoloid yarn is lubricated with highly anti-frictional fluoropolymer dispersion &amp; break-in-lubricant, while the PTFE faces are in totally dry condition without any additives.</p> <p>STYLE 411 offers excellent strength coupled with dimensional stability in service. Strong novoloid fiber avoids corner failures in pumps.</p> <p>STYLE 411 the PTFE fibers ensures low friction, cool shaft runs eliminating wear &amp; tear to sleeve and valve stems. The strong PTFE cord core provides extremely high pressure resistance and resiliency.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Dense construction &amp; excellent sealability.</li><li>*High pressure &amp; compatibility.</li><li>*Extremely durable packing for dry powdered chemicals.</li><li>*Can be used as lip seals.</li><li>*Wide chemical &amp; abrasion resistance and high penetration.</li><li>*No erosion on metallic sleeves.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>500</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">5mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Centrifugal, Reciprocating &amp; Plunger pump, Valves, Agitators, Extruders, Mixers, Reactors, etc.</p> <p><b>Service Media:</b> Amide, Fine slurries, Detergents, Pigments, Dyestuffs, Paints, Emulsions, Synthetic molten materials, Fine &amp; coarses, Powdered chemicals, etc.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-200 to +280			PRESSURE (BAR)	150	500	500	VELOCITY (m/s)	25	20	—	SIZE	5mm² to 35mm² *		
PROPERTIES																										
pH	1-13																									
TEMPERATURE (°C)	-200 to +280																									
PRESSURE (BAR)	150	500	500																							
VELOCITY (m/s)	25	20	—																							
SIZE	5mm² to 35mm² *																									
<div><p>INM051 <b>INMARCO STYLE 103</b></p></div>	<p>STYLE 103 is manufactured from a premium graphite PTFE yarn impregnated with proprietary inblend dispersion in high density braiding.</p> <p>STYLE 103 is premium graphite PTFE yarns ensure excellent self lubrication to control frictional heat and to eliminate shaft galling, so common in other PTFE graphite yarns. Moreover, this results in overall inert packing.</p> <p>STYLE 103 graphite in inblend ensures excellent heat dissipation without hardening thus limiting shaft wear.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>120</td><td>100</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Equipments like mixers, agitators, autoclaves, reactor vessels etc., pain stocks, centrifugal/rotary pumps, pumps with damaged shafts and stuffing boxes, valves with grooved stem and pitted glands, flange grooves.</p> <p><b>Service Media:</b> Acids, Alkalis, Solvents, Resins, Effluents, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +300			PRESSURE (BAR)	120	100	300	VELOCITY (m/s)	25	10	—	SIZE	3mm² to 35mm² *		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-240 to +300																									
PRESSURE (BAR)	120	100	300																							
VELOCITY (m/s)	25	10	—																							
SIZE	3mm² to 35mm² *																									
<div><p>INM052 <b>INMARCO STYLE 117</b></p></div>	<p>STYLE 117 Graphited PTFE Fiber packing with carbonaceous aramid core and corners.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*High compressive &amp; tensile strengths ensure effective sealing.</li><li>*Due to the intherm sealer &amp; the carbon fibers, the packing exhibits superior heat dissipation.</li><li>*The Graphited PTFE fibers reduce the packing &amp; the shaft wear.</li><li>*Universal replacement to Asbestos in arduous operating conditions.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">1-13</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>500</td><td>375</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>3</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p><b>Typical Application:</b> Equipment relevant to paper water treatment, power, chemical, distillery &amp; petrol chemical industries. Screw pumps handling powdered slurries. Fomenters, Reactors, Mixers and Agitators. Application involving slurry, sand, gritty media and as a 'Bull Ring'.</p>	PROPERTIES				pH	1-13			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	150	500	375	VELOCITY (m/s)	25	3	—	SIZE	3mm² to 35mm² *		
PROPERTIES																										
pH	1-13																									
TEMPERATURE (°C)	-240 to +280																									
PRESSURE (BAR)	150	500	375																							
VELOCITY (m/s)	25	3	—																							
SIZE	3mm² to 35mm² *																									























# COMPRESSION PACKINGS

## FOR CENTRIFUGAL PUMPS

Product Type	Description	Operational Parameters																								
<div><p>INM053 <b>INMARCO STYLE 125 F/T</b></p></div>	<p>STYLE 125F is a premium grade economical packing braided from extremely strong acrylic fiber and further impregnated with proprietary inflon PTFE dispersion to enhance the chemical resistance property of the packing.</p> <p>STYLE 125T packing is impregnated with graphite based intherm dispersion which is for better heat dissipation.</p> <p>Advantages:</p> <ul style="list-style-type: none"><li>*Proprietary inflon/intherm dispersion enhances the density and sealing ability.</li><li>*Safe and stays under clean water application.</li><li>*Comparatively better mechanical strength as against natural and vegetable fibers.</li><li>*Excellent lubrication leading to minimal shaft wear.</li><li>*An economical choice for fluid handling equipment.</li><li>*Intherm dispersion enhances the thermal conductivity of the packing.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">4-10</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">Ambient to +260</td></tr><tr><td>PRESSURE (BAR)</td><td>50</td><td>125</td><td>150</td></tr><tr><td>VELOCITY (m/s)</td><td>7</td><td>4</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup> *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Reactors, Agitators, Mixtures, etc.</p> <p>Service Media: Water handling equipments, application involving salt solutions. Equipment handling mild acid and alkalis.</p>	PROPERTIES				pH	4-10			TEMPERATURE (°C)	Ambient to +260			PRESSURE (BAR)	50	125	150	VELOCITY (m/s)	7	4	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *		
PROPERTIES																										
pH	4-10																									
TEMPERATURE (°C)	Ambient to +260																									
PRESSURE (BAR)	50	125	150																							
VELOCITY (m/s)	7	4	—																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup> *																									





















## FOR REACTORS

 <p>INM054 <b>INMARCO STYLE 101</b></p>	<p>STYLE 101 is a special packing manufactured from carbon fibre yarn. The packing is thoroughly impregnated with naturally cured graphite based intherm dispersion to act as blocking agent. The interbraid construction and the blocking agent prevents body leakage of any gaseous or liquid material. To prevent galvanic corrosion on the steam, molybdenum based metal corrosion inhibitor also is incorporated in the packing.</p> <p>Advantages:</p> <ul style="list-style-type: none"><li>*Adequate lubrication for low friction runs.</li><li>*No embrittlement or abrasion to metallic parent equipment.</li><li>*Strong but pliant without brittleness.</li><li>*Excellent heat dissipation for cooler shaft runs without wear to packing volume to ensure excellent sealing service.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +650</td></tr><tr><td>PRESSURE (BAR)</td><td>200</td><td>300</td><td>200</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>25</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 50mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Agitators, Dryers, Mixers, Soot blowers, etc.</p> <p>Service Media: Acids, Alkalis, Solvent, Organic chemicals, Gases, Steam, Thermic fluids, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +650			PRESSURE (BAR)	200	300	200	VELOCITY (m/s)	25	25	—	SIZE	3mm² to 50mm² *		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-200 to +650																									
PRESSURE (BAR)	200	300	200																							
VELOCITY (m/s)	25	25	—																							
SIZE	3mm² to 50mm² *																									
 <p>INM055 <b>INMARCO STYLE 102</b></p>	<p>STYLE 102 interbraided from goretex expanded PTFE + graphite fiber, which is a single molecular combination of PTFE and graphite, offers excellent inertia to chemical attack and enhance heat conduction, helping to reduce friction.</p> <p>STYLE 102 graphite entrapment in expanded PTFE matrixes provides excellent lubrication &amp; resistance to hardening unlike the conventional PTFE packings. The sealing performance is the best among any other PTFE graphite packings.</p> <p>Advantages:</p> <ul style="list-style-type: none"><li>*Easy to cut and fit.</li><li>*Very low friction and high heat conduction.</li><li>*Low thermal expansion.</li><li>*No static charge builds up.</li><li>*Easy on shafts and help cool runs.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>125</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 35mm² *</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Reactors, Agitators, etc.</p> <p>Service Media: Acids, Alkalis, Organic Chemicals, Hot water, DM water, Hydrocarbons, Thermic fluids, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +300			PRESSURE (BAR)	150	125	300	VELOCITY (m/s)	25	10	—	SIZE	3mm² to 35mm² *		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-240 to +300																									
PRESSURE (BAR)	150	125	300																							
VELOCITY (m/s)	25	10	—																							
SIZE	3mm² to 35mm² *																									













# COMPRESSION PACKINGS

## FOR REACTORS



















































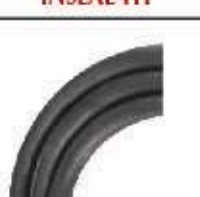









Product Type	Description	Operational Parameters																								
<div></div> <div>INM056 <b>INMARCO STYLE 111</b></div>	<p>STYLE 111 is a high grade carbon fiber packing, thoroughly impregnated with proprietary inblend graphited and corrosion inhibitors.</p> <p>STYLE 111 the entrapped inblend graphite in braided carbon fiber matrix enables excellent lubrication as well as superior blocking of body leakage. The tough carbon fibers are capable of handling steam and dry runs of shaft at vapour pressure.</p> <p>STYLE 111 enhances the sealability, this packing is impregnated thoroughly with proprietary inblend dispersion based on graphite, high temperature, solid lubricant and corrosion inhibitors.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +350</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>200</td><td>200</td></tr><tr><td>VELOCITY (m/s)</td><td>10</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 35mm² +</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Static &amp; Dynamic equipment, Stuffing box.</p> <p>Service Media: Acids, Alkalis, Organic chemicals, Steam, Hot water &amp; dry powder, Thermic fluids, etc. especially at high temperature &amp; speeds</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +350			PRESSURE (BAR)	100	200	200	VELOCITY (m/s)	10	10	—	SIZE	3mm² to 35mm² +		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-240 to +350																									
PRESSURE (BAR)	100	200	200																							
VELOCITY (m/s)	10	10	—																							
SIZE	3mm² to 35mm² +																									
<div></div> <div>INM057 <b>INMARCO STYLE 501</b></div>	<p>STYLE 501 is a specially developed hybrid combination packing of non metallic expanded pure graphite yarn reinforced with high structural carbon filament at four corners. The packing is impregnated with proprietary THERMOLUBE graphite based dispersion and also INORGANIC PASSIVE CORROSION INHIBITOR. This passive corrosion inhibitor safeguards parent equipment from galvanic corrosion and also reduction of LOSS ON IGNITION.</p> <p>STYLE 501 is a combination of softness of expanded pure graphite and toughness of carbon fiber yarn. The packing is highly chemical resistant and very good thermal conductor. This can be used both in dynamic and static application.</p> <p>Advantages: *Excellent dry run capabilities and hence reduce continuous water flashing. *Incorporation of corrosion inhibitor prevents corrosion and pitting on parent equipment. *THERMOLUBE dispersion acts as a blocking agent. *The packing adapts to worn out surface and pitting with smooth running. *Dissipates heat without chemical hardening.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +650 (2750°C in non oxidizing media)</td></tr><tr><td>PRESSURE (BAR)</td><td>150</td><td>300</td><td>350</td></tr><tr><td>VELOCITY (m/s)</td><td>25</td><td>20</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">6mm² to 50mm² +</td></tr></table> <p>*Other sizes possible on request</p> <p>Typical Application: Pumps, Valves, Autoclaves, Converters, Mixers, Reactors, etc.</p> <p>Service Media: Hydrocarbon, Steam, FCC catalyst &amp; bottom slurry, Hypo, Fuel oil, Lube oil, Thermic fluid, Hydrogent sulphide, Liquid Sulphur, Sulphur Dioxide, Sulphur trioxide, Acids &amp; Alkalis, Boiler feed water, Gasoline, Abrasive media like ash slurry, Fly ash water, Sea water, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +650 (2750°C in non oxidizing media)			PRESSURE (BAR)	150	300	350	VELOCITY (m/s)	25	20	—	SIZE	6mm² to 50mm² +		
PROPERTIES																										
pH	0-14																									
TEMPERATURE (°C)	-200 to +650 (2750°C in non oxidizing media)																									
PRESSURE (BAR)	150	300	350																							
VELOCITY (m/s)	25	20	—																							
SIZE	6mm² to 50mm² +																									

## BULK SEALING COMPOUNDS

Product Type	Description	Operational Parameters																				
<div><p>INM058 <b>INSEAL-AR</b></p></div>	<p>INSEAL-AR is a combination of inert fibers and self lubricating sealing materials. Available in "cake or stick" form.</p> <p>Advantages: Abrasion residents' flexible IN SITU sealing sticks. For pumps, valves, mixers, agitators, autoclaves, dryers, reaction vessels.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">3-11</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">400</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">15mtr/sec.</td></tr></table> <p>Typical Application: Moderate acidic and alkaline slurries, ash slurries, dry powder and abrasive fluids or powders.</p>	PROPERTIES				pH	3-11			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	400			VELOCITY (m/s)	15mtr/sec.		
PROPERTIES																						
pH	3-11																					
TEMPERATURE (°C)	-240 to +260																					
PRESSURE (BAR)	400																					
VELOCITY (m/s)	15mtr/sec.																					



## BULK SEALING COMPOUND

Product Type	Description	Operational Parameters																				
 <b>INSEAL-CR</b>	<p>INSEAL-CR a blend of high temperature inert fibrils, solid lubrications and sealing aids.</p> <p>Advantages: High chemical resistant flexible IN SITU sealing sticks for pumps, valves, mixers, agitators, autoclaves, dryers, reaction vessels.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +250</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">400</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">30mtr/sec.</td></tr></table> <p>Typical Application: Aggressive chemical, acid &amp; alkalis, volatile organic chemical, oils, boiler feed water, emissive gases, thermic fluids, ash slurries.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +250			PRESSURE (BAR)	400			VELOCITY (m/s)	30mtr/sec.		
PROPERTIES																						
pH	0-14																					
TEMPERATURE (°C)	-240 to +250																					
PRESSURE (BAR)	400																					
VELOCITY (m/s)	30mtr/sec.																					
 <b>INSEAL-FG</b>	<p>INSEAL-FG a blend of injectible food/pharma grade, inert fibrils, lubricants and sealing acids. Available in cake &amp; stick form</p> <p>Advantages: Food grade IN SITU sealing sticks for pumps, valves, mixers, agitators, autoclaves, dryers, reaction vessels.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">250</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">15mtr/sec.</td></tr></table> <p>Typical Application: Food pumps, alcoholic beverages, purified water, paints and pigments, chocolate slurries, juices, pharmaceutical formulations, aggressive chemicals, acids &amp; alkalis, VOC, oils, emissive gases.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	250			VELOCITY (m/s)	15mtr/sec.		
PROPERTIES																						
pH	0-14																					
TEMPERATURE (°C)	-240 to +260																					
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VELOCITY (m/s)	15mtr/sec.																					
 <b>INSEAL-GP</b>	<p>INSEAL-GP a blend of chemical resistant fibrils, inert fibrils, inert lubrications and sealing aids. Available in cake &amp; stick form</p> <p>Advantages: General purpose IN SITU sealing sticks for pumps, agitators, dryers, mixers &amp; reaction vessels.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">3-12</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">300</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">30mtr/sec.</td></tr></table> <p>Typical Application: Hot &amp; cold water, boiler feed, mild acids &amp; alkalis, organic chemicals and low temperature steam.</p>	PROPERTIES				pH	3-12			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	300			VELOCITY (m/s)	30mtr/sec.		
PROPERTIES																						
pH	3-12																					
TEMPERATURE (°C)	-240 to +260																					
PRESSURE (BAR)	300																					
VELOCITY (m/s)	30mtr/sec.																					
 <b>INSEAL-GPL</b>	<p>INSEAL-GPL a blend of chemical resistant fibrils, inert fibrils, inert lubrications and sealing aids. Available in cake &amp; stick form.</p> <p>Advantages: General purpose IN SITU sealing sticks for pumps, agitators, dryers, mixers &amp; reaction vessels.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">3-12</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">300</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">30mtr/sec.</td></tr></table> <p>Typical Application: Hot &amp; cold water, boiler feed, mild acids &amp; alkalis, organic chemicals and low temperature steam.</p>	PROPERTIES				pH	3-12			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	300			VELOCITY (m/s)	30mtr/sec.		
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TEMPERATURE (°C)	-240 to +260																					
PRESSURE (BAR)	300																					
VELOCITY (m/s)	30mtr/sec.																					
 <b>INSEAL-HT</b>	<p>INSEAL-HT a blend of high temperature fibrils, solids &amp; lubrications and proprietary sealing aids. Available in cake &amp; stick form.</p> <p>Advantages: High temperature flexible IN SITU sealing sticks.</p> <p>Three Grades: *HT – sticks for dynamic &amp; static equipments. *HTA – sticks for online leak sealing. *HT – HTF – flakes for valves sealing.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +260</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">400</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">30mtr/sec.</td></tr></table> <p>Typical Application: High temperature steam, thermic fluids, high temperature gases and chemicals, hot air, flue gases.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +260			PRESSURE (BAR)	400			VELOCITY (m/s)	30mtr/sec.		
PROPERTIES																						
pH	0-14																					
TEMPERATURE (°C)	-240 to +260																					
PRESSURE (BAR)	400																					
VELOCITY (m/s)	30mtr/sec.																					
 <b>INSEAL-SUPPER</b>	<p>INSEAL-SUPPER a blend of 100% inert fibrils, solid lubrications and sealing aids. Available in cake &amp; stick form.</p> <p>Advantages: High performance universal flexible IN SITU sealing sticks for pumps, valves, mixers, agitators, autoclaves, dryers, reaction vessels.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +288</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">200</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">30mtr/sec.</td></tr></table> <p>Typical Application: Aggressive chemicals, acid &amp; alkalis, volatile organic chemicals, oils, boiler feed water, emissive gases.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +288			PRESSURE (BAR)	200			VELOCITY (m/s)	30mtr/sec.		
PROPERTIES																						
pH	0-14																					
TEMPERATURE (°C)	-240 to +288																					
PRESSURE (BAR)	200																					
VELOCITY (m/s)	30mtr/sec.																					



### Product Type

### Description & Operational Parameters



INM065

**INMARCO STYLE 300**

STYLE INGRAF® 300 is a high purity (99% to 99.9% carbon) self lubricating and anti-frictional die moulded pre-formed gland packing ring manufactured from Flexible Pure graphite Foil. These rings are manufactured in endless form or in 2 halves in oblique cut containing no Oil or grease or Binder/ Additives of any kind. The packing however is incorporated with sacrificial metal corrosion inhibitor to avoid Galvanic Corrosion on parent body.

STYLE INGRAF®300 is manufactured from flexible pure graphite tape vertically placed into the die and then pressed in hydraulic press and the pressure is calculated on the basis of required density. As the tapes are placed vertically & the compression also is vertical in a closed die there are chances of crimping of tape on OD & ID of the ring which are normally mistaken as cracks. These are not cracks but crimping of tape and this crimping provides resiliency in the sealing ring which is most important for perfect sealing against pressure surge.

STYLE INGRAF®300 is totally free from any kind of contamination. For compression resistance and retention of size & shape Style 300 is manufactured with accurate specific density suitable to the working condition. These packing rings are having high thermal and dimensional stability and extremely low gas/liquid permeability, very low thermal expansion and extremely high chemical resistance. These rings are having low co-efficient of friction (0.08 to 0.1 against steel) and hence, with continuous operation it polishes the stem/shaft and also non abrasive in nature.

STYLE INGRAF® 300 Flexible pure graphite rings adjusts to any irregularities under moderate pressure and has resistance to pressure surge and thermal shock. These packing rings are chemically inert and also fire safe.

STYLE INGRAF® 300 packing ring is having inherent characteristics of basic graphite and hence having high degree of flexibility, compatibility, conformity & resiliency. These rings expand radially to form perfect seal against the shaft and housing. Graphite is an extremely good thermal conductor & as such the packing dissipates heat away from the body leading to a longer life of the packing.

STYLE INGRAF® 300 is also manufactured for nuclear applications with slightly improved chemical properties. These packing's are stable even under exposure to high doses of nuclear radiation.

PROPERTIES	↻	↔	⚡
pH	0-14		
TEMPERATURE (°C)	-200 to +600		
PRESSURE (BAR)	150	250	300
VELOCITY (m/s)	—	—	—
SIZE	—	—	—

#### Technical Specification:

Carbon Content	99% to 99.9%
Ash Content	2% (max.)
Leachable Chloride	35ppm to 50 ppm
Density	1.4 – 1.8 gms/cc
Corrosion Inhibitor (zinc dust)	4% (max.)

Typical Application:  
Valves & Pumps.

Service Media:  
Superior heated and saturated steam, non oxidizing liquids and gases, fuel gases and hot blast.

PROPERTIES	↻	↔	⚡
pH	0-14		
TEMPERATURE (°C)	-240 to +650		
PRESSURE (BAR)	200	500	500
VELOCITY (m/s)	25	30	—
SIZE	OD x ID x Total Length of Stuffing Box is to be mentioned.		

Typical Application:  
Pumps, Valves, Reactors, Mixers, Agitators etc.

Service Media:  
Acids, Alkalis, Solvent, Amide, Aldehyde, Alcohol, Detergents, Pigments, Dyestuffs, paints, Emulsions, Synthetic molten materials, Fine chemicals/slurry, Liquid ammonia & Ammonium compounds, Carbamate solutions, Fuel & Lube oil, hydrazine, Emulsions, Tri sodium phosphate, Sodium Hexamate phosphate, Black & Green liquor, Paper pulp, Pulp diluted with water, Emulsion water and any other fluid media.



INM066

**CARTSEAL**

CART SEAL is a carefully & sequentially designed set of assorted sealing ring set, keeping in mind the application parameters and the media to be installed in.

CART SEAL is a concept and not a single product. The set consist of top and bottom molded rings and intermediate braided rings as per the requirement.

CART SEAL is a combination of various sealing aids which enables optimum sealing by maintaining lower levels of friction, high degree of heat dissipation and excellent blocking of body or shaft leakage which may not be possible with a single fiber or a hybrid packing.

CART SEAL is able to replace mechanical seal in any kind of application reducing cost of sealing drastically.

#### Advantages:

- \*Performance beyond set standards for volatile organic compound & hazardous chemicals.
- \*Friction reduces by 15% to 25% than flat rings.
- \*Self-adjustments to thermal & pressure cycling.

\*Conforms API 589 & 607 also API 622 standards with ISO 15848 Certification for Fugitive Emission Control Norms

### Product Type

### Description & Operational Parameters



INM067

**INMARCO STYLE 310**

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is made from flexible pure graphite foil, die moulded to required cross sectional profile reinforced with SS wire net/SS strip. The reinforcement of SS wire net/SS strip increases the mechanical strength of the ring/gasket which leads to extremely high pressure surge resistance.

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is manufactured from corrugated flexible pure graphite tape vertically placed into the die and then pressed in hydraulic press and the pressure is calculated on the basis of required density. As the tapes are placed vertically and the compressions also are vertical in a closed die there are chances of crimping of tapes on OD & ID of the ring which are normally mistaken as cracks. These are not cracks but crimping provides resiliency in the sealing ring which is most important for perfect sealing against pressure surge.

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is having carbon content 99.5% to 99.9%. These are manufactured in angular TOA cross sectional profile, square or rectangular cross sectional profile and BHEL ("V" on angle) cross sectional profile with high density. These are dimensionally stable under extreme pressure surge, highly thermal conductive and thermally stable. It is a better substitute of soft iron pressure seal gasket because of very good compressibility and recovery factor.

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is also highly resistant to chemicals and can work in the entire PH range.

#### Advantages:

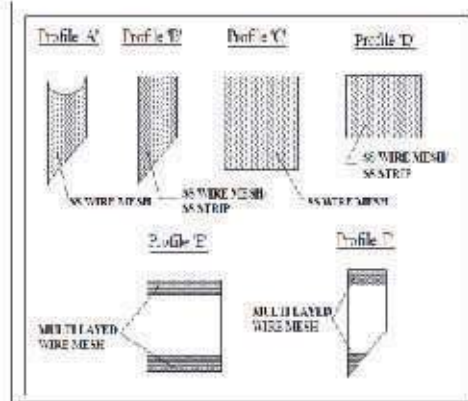
- \*This packing does not disintegrate on cutting.
- \*HITHERM dispersion acts as a blocking agent.
- \*This packing adapts to worn out surface and pitting with smooth running.
- \*Dissipates heat without chemical hardening.
- \*Extremely smooth removal during shutdown.

PROPERTIES	VALUES
Ph Range	0-14
Temperature (°C)	-200 to +600
Pressure (BAR)	300
Velocity (m/s)	---
Size	---

#### Technical Specification:

Carbon Content	99.5% to 99.9%
Ash Content	0.5% max.
Leachable Chloride Content	<50 ppm
Density	1.8 – 2 gsm/cc

#### Cross Sectional Profiles:



#### Service Media:

Super heated & Saturated steam, Hydrocarbon, Thermic fluid, Acids, Alkalis, Lube oil, etc.

#### Typical Application:

Valve bonnet, Metallic flanges, etc.



INM068

**EXPANDABLE VALVE  
CARTSEAL**

Fugitive emissions are hazardous and costly, as large process costs are involved in fluid or gas handling. VOC's find leak paths in valves along the stem. The steam leakages prove extremely costly on control of turbine valves, due to pressure and thermal fluctuations.

EVCS is a state of the art new generation seal designed specifically to conform to fugitive emission norms. V shape design permits effective sealing's at all times due to radial expansion of tips under live loadings. These seals have high performance capabilities and give excellent results in critical fluid and gas applications. These are custom built and manufactured to custom orders.

#### Advantages:

- \*Performance beyond set standards for VOC, hazardous chemicals.
- \*Friction reduces by 15-25%.
- \*Slit adjustments to thermal and pressure cycles.

PROPERTIES	↻	↔	↔
pH			0-14
TEMPERATURE (°C)			-240 to +650
PRESSURE (BAR)	350	350	---
VELOCITY (m/s)	25	25	---
SIZE	Customary sizes made to order		






















#### Typical Application:



















The variable densities of selected packing rings, adjust to wide range of chemicals including fluids, gases, VOC's or solids at variable temperature and pressure. The excellent sealability of valve cartseal enables total leak free performance over long runs. The costly on-line leak sealing can be eliminated.

#### Service Media:

Superheated & Saturated Steam, Hydrocarbon, Thermic Fluid, Acids and Alkalis, Solvent, Gases, Petrochemicals, etc.

































Product Type	Description	Operational Parameters																								
<div><p>INM069 <b>INMARCO STYLE 100FXI</b></p></div>	<p>STYLE 100FXI is manufactured from premium expanded graphite fibre yarn having minimum carbon content 98% reinforced with inconel wire. This is braided and thoroughly impregnated with proprietary Hitherm dispersion based on fine graphite and also incorporated with sacrificial metal corrosion inhibitor to prevent equipment from galvanic corrosion which leads to pitting on the stem &amp; body.</p> <p>STYLE 100FXI the soft expanded graphite fibers are secured by strong but resilient inconel wire which ensures high pressure resistance. On demand the yarns can also be reinforced with multiple inconel wire to resist pressure surge.</p> <p><b>Advantages:</b> *Self generating lubrication accommodates and aids self adjustment on tightening of the gland. *Hi-therm lubrication developed by us, in-house R &amp; D prevents the body and shaft leakage on static or dynamic equipments.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +650 in oxidizing media (3315°C in non oxidizing media)</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">300</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 90mm²</td></tr></table> <p>Typical Application: Valves, Autoclaves, Rotary Kiln, etc.</p> <p>Service Media: Superheated and Saturated steam, Hydrocarbon, Thermic fluid, Petrochemical, Hot oil, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +650 in oxidizing media (3315°C in non oxidizing media)			PRESSURE (BAR)	300			VELOCITY (m/s)	—			SIZE	3mm² to 90mm²		
PROPERTIES																										
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PRESSURE (BAR)	300																									
VELOCITY (m/s)	—																									
SIZE	3mm² to 90mm²																									
<div><p>INM070 <b>INMARCO STYLE 800</b></p></div>	<p>STYLE 800 is a Premium Grade Expanded Graphite fibre yarn packing reinforced with Inconel/SS Wire having a core of bunch of carbonised filament. The packing is also impregnated with proprietary Hitherm dispersion based on fine Graphite and Sacrificial metal Corrosion Inhibitor.</p> <p>STYLE 800 is an improved Hi-Tech packing basically designed for Valves gland rating from 150 to 3000 class. This packing is also able to withstand extreme Pressure Surge and ensures a longer leakage free life.</p> <p><b>Advantages:</b> *The Soft expanded graphited fibre is secured by strong but resilient inconel wire which ensures flexibility for wrapping around small diameter Shaft &amp; Spindle. *The core of bunch of carbonised yarn increases the tensile strength to withstand high pressure at the same time high temperature. *Self generating lubrication accommodates and aids self adjustment on tightening of the gland. *Hi-therm lubrication developed by us, in-house R&amp;D prevents the body and shaft leakage on static or dynamic equipment.</p>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>pH</td><td>0 - 14</td></tr><tr><td>TEMPERATURE (°C)</td><td>-240 TO 650 (1200°C in Non oxidizing media)</td></tr><tr><td>PRESSURE (BAR)</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>—</td></tr><tr><td>SIZE</td><td>6mm² to 50mm²</td></tr></table> <p>Typical Application: Valves, Dryers, Autoclaves, etc.</p> <p>Service Media: Superheated &amp; Saturated Steam, Hydrocarbon, gases, Ammonia, Hydrogen, Petrochemicals, etc.</p>	PROPERTIES	VALUES	pH	0 - 14	TEMPERATURE (°C)	-240 TO 650 (1200°C in Non oxidizing media)	PRESSURE (BAR)	300	VELOCITY (m/s)	—	SIZE	6mm² to 50mm²												
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PRESSURE (BAR)	300																									
VELOCITY (m/s)	—																									
SIZE	6mm² to 50mm²																									
<div><p>INM071 <b>INMARCO STYLE 100FX</b></p></div>	<p>STYLE 100FX Expanded flexible pure graphite fibre (purity 99% minimum) braided packing reinforced with non metallic filament. The packing is extrusion resistant and capable of withstanding higher pressure both in dynamic and static condition.</p> <p>STYLE 100FX packing is also impregnated with proprietary hitherm dispersion to fill the leak paths between the braids. Under gland pressure it becomes a homogeneous mass.</p> <p><b>Advantages:</b> *Self generating lubrication accommodates and aids self adjustment on stem upon tighting of gland. *Most effective sealing performance &amp; no scoring of sleeve, plunger or stem. *Hitherm lubrication developed by us, in-house R &amp; D prevents the body and shaft leakage on static or dynamic equipment. *Suits for high mechanical &amp; cylindrical load. *Excellent sealing during long duration.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +650 (2700°C in non oxidizing media)</td></tr><tr><td>PRESSURE (BAR)</td><td>35</td><td>80</td><td>100</td></tr><tr><td>VELOCITY (m/s)</td><td>20</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 50mm²</td></tr></table> <p>*not suitable for valves beyond class 300</p> <p>Typical Application: Pumps, Valves, Dryers, Reactors, etc.</p> <p>Service Media: Superheated &amp; Saturated steam, Gases, Petrochemicals, Hydrocarbon, Thermic fluid, Hot oil, Acids &amp; Alkalis, Solvents, Organic chemicals, Emissive fluids, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +650 (2700°C in non oxidizing media)			PRESSURE (BAR)	35	80	100	VELOCITY (m/s)	20	10	—	SIZE	3mm² to 50mm²		
PROPERTIES																										
pH	0-14																									
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VELOCITY (m/s)	20	10	—																							
SIZE	3mm² to 50mm²																									

Product Type	Description	Operational Parameters																					
<div></div> <div>INM072</div> <div>INMARCO STYLE 100FXI SPECIAL</div>	<p>STYLE 100FXI SPECIAL is a premium expanded pure graphite (carbon content 99.5 to 99.9%) fibre yarn braided packing, each yarn of which is reinforced with multiple inconel wire, thoroughly incorporated with inorganic passive corrosion inhibitor &amp; special lubricating agents. This passive corrosion inhibitor safeguards parent equipment from galvanic corrosion and also reduction of loss on ignition. Each yarn is jacketed with inconel wire mesh. Reinforcement &amp; jacketing with inconel wire mesh in each yarn enables the packing to withstand extreme mechanical stress and cyclic loads.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Excellent sealing under mechanical &amp; thermal stress or cyclic loads.</li><li>*Low wear and tear means long sealing life.</li><li>*Emission much below the EPI limits.</li><li>*Highly resistant to pressure and extrusion.</li></ul> <p><b>Approved Fire safe under clause Api 589/607 and Confirms to Fugitive Emission Norms as per API 622</b></p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +650</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">500</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 50mm<sup>2</sup></td></tr></table> <p><b>Typical Application:</b> Valves, Screw conveyers, Dryers, etc.</p> <p><b>Service Media:</b> All non oxidising liquids &amp; gases, Super heated &amp; Saturated steam, Hot dry ash, Flue gases, Dyes &amp; Chemicals, Emissive fluids, Fuel Oil &amp; Lube oil, Thermic fluid, Hydrocarbons, etc.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>*A special lubricating agent reduces stem friction &amp; corrosion inhibitor prevents pitting due to galvanic corrosion.</li><li>* Very high sealing efficiency even on oscillating valve stems without much wear and tear.</li><li>*The reinforcement &amp; jacketing of inconel wire enhances the strength of packing &amp; withstand high temperature &amp; pressure.</li></ul>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +650			PRESSURE (BAR)	500			SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>			
PROPERTIES																							
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PRESSURE (BAR)	500																						
SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>																						
<div></div> <div>INM073</div> <div>INMARCO STYLE 900</div>	<p>STYLE 900 is a premium flexible expanded graphite fiber packing with high carbon content impregnated with proprietary thermolube® dispersion reinforced with Inconel wire/SS wire in each strand. The packing also incorporates of inorganic passive corrosion inhibitor to safeguard parent body from galvanic corrosion and reduce loss on ignition.</p> <p>STYLE 900 is a soft expanded graphite Fiber packing secured by strong but resilient Inconel wires/ SS wires which ensures flexibility for wrapping around small diameter shaft and spindle. Moreover, reinforcement of Inconel wire of special grade enhances the mechanical strength of the packing which increases the resistance to pressure surge.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*The thermolube® dispersion acts as a blocking agent and fill up the hair gap between the yarns to ensure zero leakage.</li><li>*Self-generating lubrication accommodates and aids self-adjustment on tightening of the gland.</li><li>*There is no volume loss due to loss on ignition.</li></ul>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>pH</td><td>0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td>-200 to +650</td></tr><tr><td>PRESSURE (BAR)</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>—</td></tr><tr><td>SIZE</td><td>3mm<sup>2</sup> to 50mm<sup>2</sup></td></tr></table> <p><b>Typical Application:</b> Valves, Dryers, Rotary Kiln, etc.</p> <p><b>Service Media:</b> Superheated &amp; Saturated Steam, Hydrocarbon, Thermic Fluid, Acids and Alkalis, Solvent, Gases, Petrochemicals, etc.</p>	PROPERTIES	VALUES	pH	0-14	TEMPERATURE (°C)	-200 to +650	PRESSURE (BAR)	500	VELOCITY (m/s)	—	SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>									
PROPERTIES	VALUES																						
pH	0-14																						
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PRESSURE (BAR)	500																						
VELOCITY (m/s)	—																						
SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>																						
<div></div> <div>INM074</div> <div>INMARCO STYLE 1300/1310</div>	<p><b>JOINT SEALANT/VALVE STEM PACKING</b></p> <p>Joint Sealant (flat) &amp; valve Stem Packing (round) are made from 100% pure expanded PTFE designed to be used as gap filling dependable sealants for flanges &amp; valve glands. Flexible &amp; heat stabilized Inmatex sealant eliminates the disadvantages associated with embrittlement &amp; heat retention of gasket and made from conventional PTFE. Inmatex is a reliable seal due to its inertness to most chemicals and is also cost effective alternative on most flanges and valve glands.</p> <p><b>Construction:</b> Flat tapes for flange joints, with or without adhesive backing. Round cords for valve stems.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Due to its excellent resilience property, Inmatex could withstand high compressive loads.</li><li>*Resistant to creep, hot &amp; cold flow.</li><li>*Safe &amp; clean for food &amp; pharmaceutical applications.</li><li>*Fast assembly, easy compression.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th></tr><tr><td>pH</td><td colspan="2">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="2">-260 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>Vacuum to 200</td></tr><tr><td>P x T</td><td colspan="2">2 x 10<sup>6</sup></td></tr><tr><td>Sizes for Joint Sealants (width x thickness in mm)</td><td colspan="2">3 x 1.5, 5 x 2, 7 x 2.5, 10 x 3, 12 x 4, 14 x 5, 17 x 6, 20 x 7 &amp; 25 x 10</td></tr><tr><td>Sizes for Valve Stem Packing (width x thickness in mm)</td><td colspan="2">2, 2.5, 3, 4, 6, 8, 10, 12, 13, 16, 17, 19 &amp; 20</td></tr></table> <p><b>Typical Application:</b> Ideal for fragile glass, FRP, Ceramic, Plastic flanges &amp; Lined pipe joints. Flanges involving all kinds of chemical fluids &amp; gaseous mediums. Graphite flanges in HCL, PVC &amp; Nuclear plants.</p>	PROPERTIES			pH	0-14		TEMPERATURE (°C)	-260 to +300		PRESSURE (BAR)	100	Vacuum to 200	P x T	2 x 10 <sup>6</sup>		Sizes for Joint Sealants (width x thickness in mm)	3 x 1.5, 5 x 2, 7 x 2.5, 10 x 3, 12 x 4, 14 x 5, 17 x 6, 20 x 7 & 25 x 10		Sizes for Valve Stem Packing (width x thickness in mm)	2, 2.5, 3, 4, 6, 8, 10, 12, 13, 16, 17, 19 & 20	
PROPERTIES																							
pH	0-14																						
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Sizes for Joint Sealants (width x thickness in mm)	3 x 1.5, 5 x 2, 7 x 2.5, 10 x 3, 12 x 4, 14 x 5, 17 x 6, 20 x 7 & 25 x 10																						
Sizes for Valve Stem Packing (width x thickness in mm)	2, 2.5, 3, 4, 6, 8, 10, 12, 13, 16, 17, 19 & 20																						



## VALVE SEALING

Product Type	Description	Operational Parameters																								
 INM075 <b>INGRAF BF</b>	<p>INGRAF® Box Foil Gasket Tape is made from 100% pure flexible graphite with knurled surface. Simply wind around valve stem and top up..</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Could be used by itself or in combination with other packings for effective sealing and possible nuclear compatibility.</li><li>*Wide range of pressure and thermal compatibility.</li><li>*Low friction &amp; permeability, eliminates wear and associated risks in equipment ensuring plant safety.</li><li>*Emergency replacement packing for virtually any equipment.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +300, -200 to +650 in steam</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">Vacuum 28" hg to 250</td></tr><tr><td>VELOCITY (m/s)</td><td>30</td><td>3</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">¼" x 25ft., ½" x 25ft., ¾" x 50ft. &amp; 1" x 50ft.</td></tr></table> <p>Typical Application: Pumps and valve glands, Mixers, Agitators, Autoclaves handling variety of fluids &amp; gases.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +300, -200 to +650 in steam			PRESSURE (BAR)	Vacuum 28" hg to 250			VELOCITY (m/s)	30	3	—	SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.		
PROPERTIES																										
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VELOCITY (m/s)	30	3	—																							
SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.																									
 INM076 <b>INGRAF FJ</b>	<p>INGRAF FJ Gasket Tape is made from 100% pure flexible graphite, specially corrugated to enable ease of installation over flanges with circular or with complex sealing area. The tape has a unique self adhesive backing for overhead or vertical flange surfaces. At high temperature, the adhesive would integrate itself with the graphite by carbonizing. This tape is also available without adhesive.</p> <p><b>Construction:</b> Corrugated foil with or without adhesive backing. Chloride content: less than 50ppm. Ash content: max. 0.5%.</p> <p>Ingaf tapes are available in 2 basic versions: Ingaf FJ® generally used for Flange Joints and Ingaf BF used for Box Foil.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Can be used in tandem as a complete gasket with conventional gasket types such as PTFE, Spiral Wound, metallic etc.</li><li>*Can be used to form gaskets from a small diameter as 1" to every large diameters.</li><li>*Nuclear compatibility, radiation resistance – 1.5 x 100 rads conforms to surface irregularities.</li><li>*Non sticking while dismantling.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +450</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">Vacuum 28" hg to 300</td></tr><tr><td>VELOCITY (m/s)</td><td>—</td><td>—</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">¼" x 25ft., ½" x 25ft., ¾" x 50ft. &amp; 1" x 50ft.</td></tr></table> <p>Typical Application: Heat Exchangers, Reactors, Pumps, Valves, bonnets and for various service conditions. As a filler to spiral wound and metallic gaskets. Flanges made from fragile material like glass. To encapsulate &amp; enhance the sealing efficiency of other gasketing materials, such as PTFE &amp; other gasketing materials.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +450			PRESSURE (BAR)	Vacuum 28" hg to 300			VELOCITY (m/s)	—	—	—	SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.		
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VELOCITY (m/s)	—	—	—																							
SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.																									
 INM077 <b>INMARCO STYLE 114V</b>	<p>STYLE 114V is a pure PTFE fibre yarn duplex braided packing manufactured from extruded trim tape having incorporation of special proprietary INLUBE break-in-lubricant. The break-in-lubricant ensures extra lubrication during the complete operational life.</p> <p>STYLE 114V is non toxic and inert in nature, hence ensures safety and purity of the fluid media. It is dimensionally stable and ensures trouble free operation reducing maintenance cost. STYLE 114V is suitable for dynamic as well as static application. As it is dimensionally stable it ensures leakage free operational life for a longer period.</p> <p><b>Typical Application:</b> Valves, Mixers, Reactors, Agitators, Dryers, Air compressors, etc.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>25</td><td>100</td><td>200</td></tr><tr><td>VELOCITY (m/s)</td><td>8</td><td>4</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup></td></tr></table> <p>Service Media: Acids &amp; Alkalis of any concentration, Solvents, Organic/Inorganic chemicals, Dyestuffs, Paints, Synthetic resins, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	25	100	200	VELOCITY (m/s)	8	4	—	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup>		
PROPERTIES																										
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VELOCITY (m/s)	8	4	—																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup>																									

## CONTROL VALVE

INM078

## INMARCO STYLE 503

STYLE 503 is a unique combination packing of expanded graphite yarn and carbon fibre yarn. This is one of the best solutions of sealing for all type of high pressure and high temperature valves specially in Control Valves. STYLE 503 is also extremely suitable for soot blower application. STYLE 503 is having a core consist of expanded graphite yarn reinforced with multiple inconnel wire further jacketed with fine inconnel wire mesh. The outer cover of the packing is braided with high strength-low friction-non scoring carbon yarn. STYLE 503 is finally incorporated with INORGANIC PASSIVE CORROSION INHIBITOR and graphite based proprietary HITHERM dispersion. This passive corrosion inhibitor safeguards parent equipment from galvanic corrosion and also reduction of LOSS ON IGNITION.

### Advantages:

- \*This packing does not disintegrate on cutting.
- \*HITHERM dispersion acts as a blocking agent.
- \*This packing adopts to worn out surface and pitting with smooth running.
- \*Dissipates heat without chemical hardening.
- \*Extremely smooth removal during shutdown.

PROPERTIES	VALUES
pH	0-14
TEMPERATURE (°C)	-250 to +650
PRESSURE (BAR)	500
VELOCITY	---
SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>

### Typical Application:

All types of Valves and Soot blowers, Specialty Control Valve.

### Service Media:

Hydrocarbon, Super heated & Saturated steam, Thermic fluid, Ammonia, Fuel oil, Lube oil, Non oxidizing liquids & gases, Amides, Dyes, Chemicals & Acids, Gasoline, etc.



**Innovations in Fluid Sealing.**

**INMARCO Fzc.**

P. O. Box : 120284 SAIF Zone, Sharjah, U.A.E.  
Tel : +971 6 557 8378 Fax : +971 6 557 8948  
E-mail : [info@inmarco.ae](mailto:info@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)

**INMARCO EMIRATES L.L.C.**

P. O. Box : 91937, Mussafah, Abu Dhabi, U.A.E.  
Tel : +971 2 552 1818 Fax : +971 2 552 1718  
E-mail : [abudhabi@inmarco.ae](mailto:abudhabi@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)





Innovations in Fluid Sealing.  
[www.inmarco.ae](http://www.inmarco.ae)

Gasket failures can  
crush your bottom line..



Metallic And Semi-metallic Gaskets





## ABOUT US

INMARCO is one of the leading manufacturer of superior quality "Fluid Sealing Products" accepted and approved by variety of industries. Inmarco has attained market leadership in fluid sealing industry through its dedication to customer service and product development. Inmarco is committed for continuous improvement and has grown throughout three decades contributing to the environmental friendly Sealing Solutions. Non Asbestos culture has been driven and many a personnel to understand the asbestos menace in today's life. Inmarco's clientele are happy and satisfied of our untiring support for the sealing problems. Based on technological capabilities and perfection achieved over the years, Inmarco provides a wide range of products and services to the maintenance Industry. Our determinations to conduct business on a global scale is supported by and reflected in a fundamental philosophy utilization of technological expertise/ accumulation over three decades to access changes that occurred with passage of time while continuously evolving previously unexplored areas.

## VALUES

With MARKET-oriented structures, new and stronger product offerings, technically skilled-employees and efficient environmental impact MANAGEMENT SYSTEM, armed with global rapport with similar manufacturing companies and access to the latest development in the industry and a resilient local spirit, we are dedicated to delivering the best results. It is our people who make the system come alive and turn these principles, policies, and procedures into reality.

## MISSION & VISION

**MISSION** - Values - a driving force for Change...

A company rooted in unweaving values, INMARCO keeps ahead of change, reaping opportunities for growth. Striving to maintain leadership in industrial sealing products with wide manufacturing range. Providing a high quality product that combines performance with value for pricing, while establishing a successful relationship with the customers.

**VISION** - To be a market leader surpassing all hurdles of the industry, automate the process, systematized supplies and offer twenty-four-seven on service.

## WARE HOUSING

Located in the heart of the world business hub at SAIF Zone Sharjah UAE. Equipped with State of European Machinery.

**STOCKS** - The Warehouse stocks varieties of exotic raw materials for ever demanding modernized applications.

**STORES** - The temperature control stores takes care of the wellbeing and enhances shelf life of raw materials and the finished products.

**INSPECTION** - We never choose cheap materials, every incoming shipment follows stringent inspections system and are stored at predefined locations.

**PACKING AND DISPATCH** - Latest packing methodology in use with the modern gadgets and simplified equipments to perform efficient packing.

## TECHNOLOGIES & RESOURCES

INMARCO is driven by using non asbestos materials and is committed to provide superior and quality products that passed international standards and are environmental friendly. Technologies has helped develop more advance processes and has produced unwanted by-products causing pollution and deplete natural resources to the detriment of the earth and its environment that causes threat not only in the environment but also to mankind. With its philosophy in non-asbestos fluid sealing products INMARCO is able to do its part in conserving the environment.

## CREDENTIALS





Inmarco is pleased to offer 24/7 onsite technical and installation services. Inmarco is specialized in manufacture of valve sealing systems and is proud to announce that the recently developed expandable version of valve cart seal has outperformed the expected results. Certificated by American Petroleum institute under standard ANSI/API standard 607 Fifth Edition – and API 589 Second Edition . We offer valve seal refurbishment and can undertake onsite jobs also.

- Construction
- Chemical Processing
- Food & Beverage
- Marine & Dry-docking
- Oil & Gas
- Pharmaceuticals
- Power Generation Desalination & Waster Water
- Paper & Pulp
- Steel & Aluminum

## CERTIFICATIONS & APPROVALS



Cartseal Fire Safe Certified  
As Per Api 607



Packing Style 100fxi-special Conform  
To Fugitive Emission Norms As Per 622



Packing Style 100fxi-special  
Fire Safe Certified Asper Api 607



Borogue



Takreer



Gasco



Ruweis Fertilizer  
Industries (Fertil)



Adgas



Adco



Petroleum Development  
Of Oman



Qatar Petroleum

## INTRODUCTION TO GASKETING

### WHY DO WE USE GASKET?

If flange surface mated perfectly, there would be no need for gaskets. In practice, flanges always have slight surface irregularities. The gasket with compressible and resilient properties will compensate this irregularities. This provides an uninterrupted barrier against the medium and compensates for slight movement of the flanges during service.

### DESIGNING OF GASKET

This involves determining of three basic elements, namely;  
**Right material | Proper dimension | Correct surface stress**

Selection of right gasket material depends on three factors namely;

**Medium | Working temperature | Working pressure**

### SURFACE STRESS

Even at low internal pressure the gasket must be pressed against the flanges with a definite minimum surface stress. The "deformation stress" depends on the structure and compressibility of the gasket material.

### HYDROSTATIC END THRUST

In a closed vessel or a closed pipeline, the internal pressure of a medium exerts a thrust on the cover lid. This is called the hydrostatic end thrust, which tends to pull apart the flanges and thereby reduce the "assembly stress" originally applied to the gasket. The assembly stress must therefore compensate for the effect of the hydrostatic end thrust, while still maintaining the "minimum gasket surface stress" needed to seal at the working pressure.

### MAXIMUM SURFACE STRESS

Too high a gasket surface stress can cause leakage. This is because the gasket loses the resilience needed to maintain its pressure against the flange surface. The surface stress on the gasket must never exceed the recommended maximum. For a given material the maximum permissible surface stress depends mainly on the temperature and the thickness. For example, thin materials withstand higher stresses depends, mainly on the temperature and the thickness.

### THE RIGHT GASKET THICKNESS

Compressed non asbestos materials have a slight porosity, so gaskets should be as thin as possible. However, the selection of gasket thickness depends on

**Depth of flange surface roughness.**

**Compressibility of the gasket.**

**Gasket surface stress at working pressure.**

### INMARCO GASKET ASSEMBLY GUIDELINES

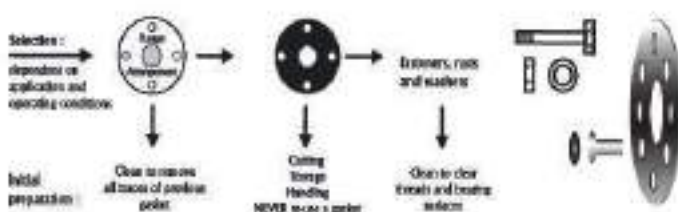
**Flanges:** Should be even and parallel and also sufficiently rigid not to be destroyed by the bolt load.

**Flange Finish:** Is important and concentric groove finish is ideal for high pressure. Spiral (gramophone record) groove finish gives a continuous path for leakage and is not recommended for gases. Flanges with flat surface finish are considered best.

**Bolts:** Should be tightened with a torque spanner, working at diametrically opposite nuts alternately. First turn all nuts to about half the recommended torque, then follow up to full assembly torque. It is important to follow up the bolts about 4 hours later or 1 hour after the gasket reaches its working temperature.

**Pipelines:** Undergo longitudinal thermal expansion which generates force that can crush the gasket. On the other hand, contraction of pipelines can reduce the gasket surface stress below the minimum required for sealing. Pipe expansion and contraction must therefore be considered while designing the thickness of gasket.

## INTRODUCTION TO GASKETING





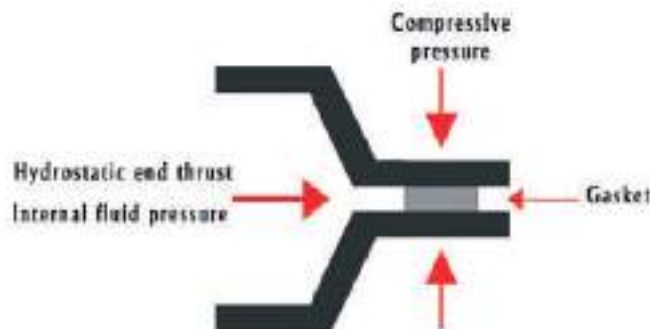
## GASKET SELECTION AND INSTALLATION

Selection of the correct gasket type and proper installation are the key factors in avoiding blow outs. Incorrect gasket selection can lead to excessive relaxation, chemical attack, heat degradation or the gasket crushing under the available bolt load. All these factors can result in a loss of compressive load and create the potential for blow out. Specifications for gaskets in each service should be developed in consultation with the manufacturer.

Gasket selection is only part of the process in avoiding the problem. Proper installation is also necessary to ensure the gasket has sufficient load to create a seal and maintain the seal against the internal pressure. Since all gaskets relax to varying extents, especially at elevated temperature, knowing the potential amount of relaxation in the joint is essential in the preload selection.

Proper selection of gasket material and type for the application is of fundamental importance. This selection must ensure that the gasket seals effectively throughout all operating conditions that the application experiences including:

Temperature | Internal Pressure | Process Fluid | Compressive Load

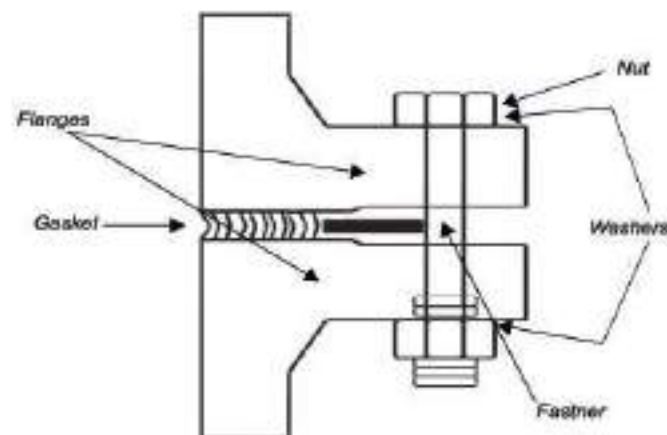


The gasket must be able to tolerate the temperature and internal pressures experienced during all phases of operation. It must also be chemically compatible with the process fluid and handle the compressive loads required for effective sealing without being crushed. In addition, the gasket must have the correct dimensions with thickness appropriate for the flange conditions and service. Once received from the manufacturer or supplier, the gasket must be stored and handled according to the requirement of the material to ensure that it is appropriate for installation.

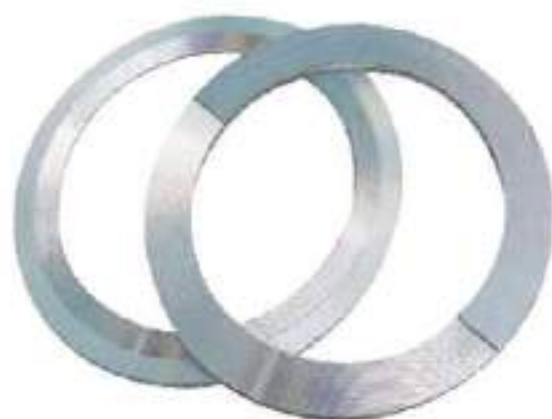
Only when all the components of the system are working together in harmony can the seal be expected to provide good performance over a reasonable lifetime. The integrity of a safe seal depends upon:

- Selection of correct components appropriate for the application.
- Careful preparation, cleaning, installation and assembly.
- Correct bolt tightening and loading.

The behavior of a flanged joint in service depends on whether or not the tension created in the fasteners will clamp the joint components together with a force great enough to resist failure of the seal, but small enough to avoid damage to the fasteners, joint components, gasket etc. The clamping load on the joint is created on assembly, as the nuts on the fasteners are tightened. This creates tension in the fastener (often referred to as preload). Although there may be some plastic deformation in the threads when a fastener is tightened normally, especially on the first tightening, most of the joint components respond elastically as the nuts are tightened. Effectively, the entire system operates as a spring, with the fasteners being stretched and the other joint components being compressed. Joints fail, not just gaskets! Low bolting torques, over-tight bolt loads, weak bolt materials, inadequate bolt/washer/nut lubrication, poor flange design or materials, poor gasket cutting or storage, improper installation practices, may each and all contribute to seal failure, even though the gasket material itself may be correctly specified!



## CAMPROFILE GASKETS



INM001

Camprofile gaskets consist of a metal core (Generally Stainless Steel) with concentric grooves on either side with sealing materials. The sealing layers can be Graphite, PTFE depends on application. Camprofile can be used without sealing layers to provide an excellent seal but there is a risk of flange surface damage.

### DUE TO WIDE SEATING STRESS RANGE OF THE CAMPROFILE GASKET MAKES IT:

- Highly suitable for varying temperature and pressure.
- Less sensitive to assembly faults (inaccurate bolt tensioning).
- Suitable for light and heavily constructed flanges.
- Depending on layer material camprofile gaskets are resistant to temperature up to 1000°C.
- Resistant to media pressures up to 250bar.

### BENEFITS:

- When assembled the layer thickness of the sealing material is extremely small (0.5mm) thus reducing leaks, reject rates and environment pollution.
- The gasket will not damage the flange surface and can be easily removed.
- Reduces maintenance costs.
- Emergency sealing of damaged flanges by using 1mm thick sealing layers until the flange can be reworked.
- Excellent performance on fluctuating temperatures and pressures.
- Direct replacement for existing gaskets. No special flange is necessary.
- Eco friendly.

### CAMPROFILE GASKET FOR FLANGE JOINTS



Without Ring



With Integral Ring



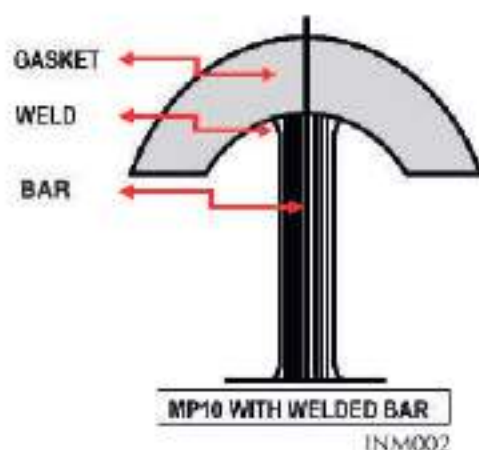
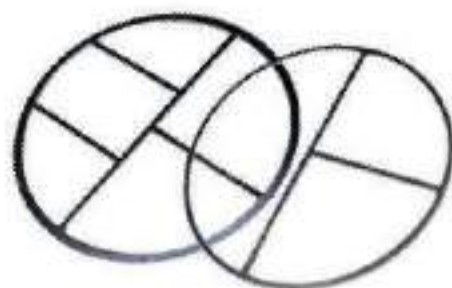
With Split Ring

### RECOMMENDED SEATING STRESS RANGE FOR RELIABLE AND EFFECTIVE PERFORMANCE

Material	Temp. Deg. °C		Max. Operating Pressure (bar)	Gas Tightness	Application	Seating Stress		
	Min.	Max.				Min (N/mm <sup>2</sup> )	Optimum (N/mm <sup>2</sup> )	Max (N/mm <sup>2</sup> )
Graphite	-200	+550	250	Good	Aggressive Media	20	90	400
PTFE	-200	+250	100	Good	Aggressive Media	20	90	400
Silver	-200	+750	250	Good	Aggressive Media	125	240	450



## HEAT EXCHANGER GASKET



Heat Exchanger Gasket is a term that has been given to gasket used in heat exchangers. The structure of the gasket or its type varies according to the operating conditions of the exchangers. The heat exchanger gaskets come in a broad spectrum of types including single or double jacketed, corrugated, plain metal, soft and many other. A large selection of different materials allows heat exchangers to operate at temperatures beyond the capabilities of most soft gasket materials.

### ADVANTAGES

- Available in wide range of materials, since they are all custom made.
- Metal jacketed heat exchangers.
- The metal jacket provides mechanic strength to contain the filler and improves chemical resistance.
- Unique construction provides stability and ensures trouble-free handling and installation.

Gaskets with welded bars have eliminated greatest problems of conventional gaskets, which develop cracks in the radius. Metals or alloys are commercially available in sheets or rolls of 1000mm width.

The primary and secondary seals are continuous all around the gasket. The gasket has an excellent sealability, reducing leaks to the environment. The bars which seal between the heat exchanger passages are plasma or TIG welded with spot welds at each end. These welds are soft and small to avoid areas of increased resistance to seating.

### MATERIALS FOR METALLIC JACKET

MATERIAL	ASTM	DIN Material No.
Low Carbon Steel	Soft Iron	1.1003
Stainless Steel	AISI 304	1.4301
Stainless Steel	AISI 316	1.4401
Stainless Steel	AISI 321	1.4541
Stainless Steel	AISI 316 Ti	1.4571
Monel (NiCu30Fe)	B172, alloy 400	2.4360
Copper	Copper	2.0090
Brass	Brass Ms 63	2.0321
Aluminium	Aluminium 99.5	3.0255
Titanium	B348 Gr. 1	3.7025

- Filler : Flexible Graphite, ceramic, Calendered sealing materials
- Size : Gasket thick – 3.2mm
- Gasket Width : 10, 13 and 16mm
- Bar Width : 8, 10 and 13mm

### GASKET ORDERING EXAMPLE

- Gasket Style : (refer to TYPE 1 to 25), Shape drawing
- Dimensions : OD (outer dia.), (inner dia.)
- Materials : Metal or Metal Filler
- Gasket Thickness :
- Bar Width :
- Radius and distance between bars or center line of bars

	Type 1		Type 10		Type 19
	Type 2		Type 11		Type 20
	Type 3		Type 12		Type 21
	Type 4		Type 13		Type 22
	Type 5		Type 14		Type 23
	Type 6		Type 15		Type 24
	Type 7		Type 16		Type 25
	Type 8		Type 17		
	Type 9		Type 18		

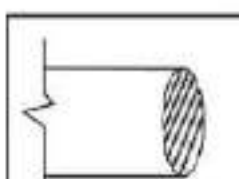
## RING JOINT GASKET



INM003

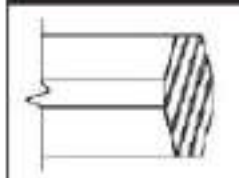
Ring joint gaskets are metallic sealing rings suitable for high pressure and high temperature applications and are fitted in ring groove type flanges. They are widely used in the Oil/Petrochemical Industry and in valves and pipe work. Choice of material may be determined to suit higher temperatures and aggressive media. They comply with ASME B16.20 standards and API spec 6A. Ring type joint Gaskets are designed to seal by "initial line contact" or wedging action between that mating flange and the gasket. By applying pressure on the seal interface through bolt force, the softer metal of the gasket flows into the micro fine structure of the harder flange material, creating a very tight and efficient seal.

## STANDARD RING JOINTS TYPES



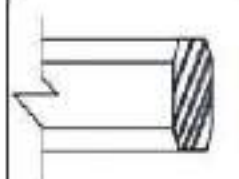
Style R - Oval

**STYLE: R Oval** : The contact face is oval shape. It provides a high reliability seal. These gaskets are manufactured in accordance to API 6A of ASME B16.20 to suit API613 and ASME/ANSI B16.5 flanges. Fits the round and flat bottom ring groove flange.



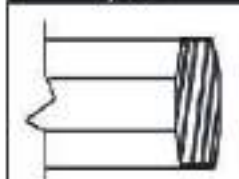
Style R - Octagonal

**STYLE: R Octagonal** : More accurate in dimensions and surface finish than oval type because it consists of straight surfaces only. A higher torque load is required to flow the gasket material into imperfections of the flange facings. These gaskets comply with API6A of ASME B16.20 to suit API 6B and ASME/ANSI B16.5 flanges. Fits only the modern flat bottom groove flange.



Style BX

**STYLE: BX** : the BX type RTJ gaskets are manufactured in accordance with API 6A and are suitable for use in high pressure API 6BX flanges. The gaskets form a metal to metal seal on assembly and the efficiency improves as internal pressure increases. All BX sizes have a pressure relief hole to equalize pressure across sealing faces.



Style RX

**STYLE RX** : The RX type RTJ gasket is manufactured in accordance to API 6A and ASME B16.20 to suit API 6B and ASME/ANSI B16.5 flanges. The RX is a pressure energized version of the R octagonal gasket and fits the R type flat bottomed groove. The RX has an increased height and utilizes the internal system pressure to energize and improve the seal as internal pressure increases. Some RX sizes have a pressure relief hole to equalize pressure on both sides of the sealing faces.



## SPIRAL WOUND GASKET

Spiral Wound gasket is a sealing element with or without outer guide rings/inner rings. The sealing element consist of spirally wound strip filled with different types of fillers like Graphite/PTFE/Ceramic etc., depending upon the nature and type of application. The picture below illustrates a typical arrangement of a spiral wound gasket. INMARCO manufactures different types of gaskets in different combinations and sizes of exotic materials like carbon steel, stainless steel, nickel and alloy steels. These gaskets are manufactured meeting the requirements of international specification such as ASME, DIN, JIS etc.

Company Name/ Manufacturers name

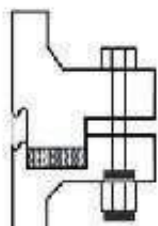
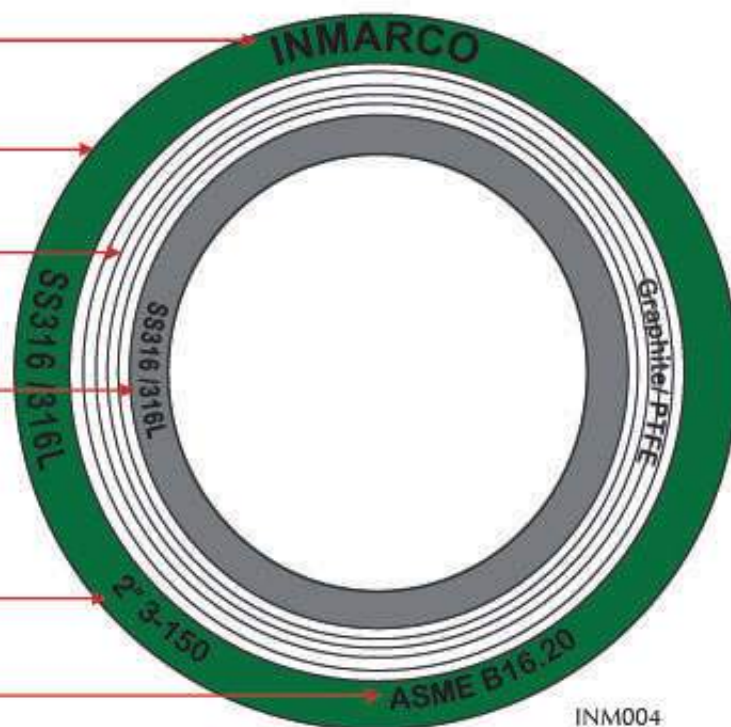
Outer Ring/ Centering Ring (when other than Carbon Steel)

Spiral Winding Metal and Filler Material

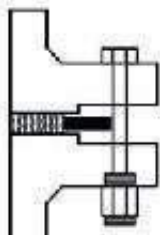
Inner Ring Material Stamped on Inner Ring (when other than Carbon Steel or PTFE)

Nominal Pipe Size and Pressure Class (Std. gaskets only)

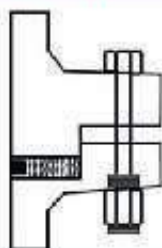
Manufactured to ASME B16.20 Standard



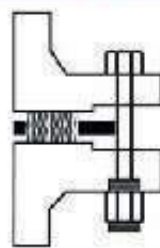
SPG w/o Inner and Outer Ring (G)



SPG w/ Outer Ring only (OR)



SPG w/ Inner Ring only (IR)



SPG w/ Inner and Outer Ring (IOR)

**SPG (G) :** Wide choice of material for metal strip and filler (Ceramic/Flexible Graphite/PTFE/Verdicarb (mica graphite). Suitable for high pressures and temperatures application. Recommended for flanges with tongue and groove.

**SPG (IR) :** Consist of solid metal inner ring. Suitable for high pressures and temperatures. Recommended for male and female flanges.

**SPG (OR) :** Solid metal outer ring used as centering device and compression stop. Recommended for raised face and flat face flanges.

**SPG (IOR) :** Consist of metal inner and outer rings. Suitable for high pressures and temperatures applications. Prevents turbulence and erosion damage to flange. Prevents turbulence and erosion damage to flange. Prevents damage for gasket bore and inner windings. Acts as a corrosion barrier. Recommended for raised face or flat face flanges.



## REFERENCE CHARTS

**DIMENSIONAL DATA OF SPIRAL WOUND GASKETS TO SUIT ANSI STANDARD FLANGES  
AS PER ASME B16 20**

NPS (inches)	Class 150 (mm)	Class 300 (mm)	Class 600 (mm)
1/2"	48 x 32 x 19 x 14	54 x 32 x 19 x 14	54 x 32 x 19 x 14
3/4"	57 x 40 x 25 x 21	67 x 40 x 25 x 21	67 x 40 x 25 x 21
1.0"	67 x 48 x 32 x 27	73 x 48 x 32 x 27	73 x 48 x 32 x 27
1 1/4"	76 x 60 x 48 x 38	83 x 60 x 48 x 38	83 x 60 x 48 x 38
1 1/2"	86 x 70 x 54 x 44	95 x 70 x 54 x 44	95 x 70 x 54 x 44
2.0"	105 x 86 x 70 x 56	111 x 86 x 70 x 56	111 x 86 x 70 x 56
2 1/2"	124 x 99 x 83 x 67	130 x 99 x 83 x 67	130 x 99 x 83 x 67
3.0"	137 x 121 x 102 x 81	149 x 121 x 102 x 81	149 x 121 x 102 x 79
4.0"	175 x 149 x 127 x 106	181 x 149 x 127 x 106	194 x 149 x 121 x 103
5.0"	197 x 178 x 156 x 132	216 x 178 x 156 x 132	241 x 178 x 148 x 128
6.0"	222 x 210 x 183 x 157	251 x 210 x 183 x 157	267 x 210 x 175 x 155
8.0"	279 x 264 x 233 x 216	308 x 264 x 233 x 216	321 x 264 x 226 x 206
10.0"	340 x 318 x 287 x 268	362 x 318 x 287 x 268	400 x 318 x 275 x 255
12.0"	410 x 375 x 340 x 318	422 x 375 x 340 x 318	457 x 375 x 327 x 307
14.0"	451 x 406 x 372 x 349	486 x 406 x 372 x 349	492 x 406 x 362 x 343
16.0"	514 x 464 x 422 x 400	540 x 464 x 422 x 400	565 x 464 x 413 x 390
18.0"	549 x 527 x 475 x 449	597 x 527 x 475 x 449	613 x 527 x 470 x 438
20.0"	607 x 578 x 526 x 500	654 x 578 x 526 x 500	683 x 578 x 521 x 489
24.0"	718 x 686 x 629 x 603	775 x 686 x 629 x 603	791 x 686 x 629 x 591

NPS (inches)	Class 900 (mm)	Class 1500 (mm)	Class 2500 (mm)
1/2"	64 x 32 x 19 x 14	64 x 32 x 19 x 14	70 x 32 x 19 x 14
3/4"	70 x 40 x 25 x 21	70 x 40 x 25 x 21	76 x 40 x 25 x 21
1.0"	80 x 48 x 32 x 27	80 x 48 x 32 x 27	86 x 48 x 32 x 27
1 1/4"	89 x 60 x 40 x 33	89 x 60 x 40 x 33	105 x 60 x 40 x 33
1 1/2"	99 x 70 x 48 x 41	99 x 70 x 48 x 41	118 x 70 x 48 x 41
2.0"	143 x 86 x 59 x 52	143 x 86 x 59 x 52	146 x 86 x 59 x 52
2 1/2"	165 x 99 x 70 x 64	165 x 99 x 70 x 64	168 x 99 x 70 x 64
3.0"	168 x 121 x 95 x 79	175 x 121 x 92 x 79	197 x 121 x 92 x 79
4.0"	207 x 149 x 121 x 103	210 x 149 x 118 x 98	235 x 149 x 118 x 98
5.0"	248 x 178 x 148 x 128	254 x 178 x 143 x 124	279 x 178 x 143 x 124
6.0"	289 x 210 x 175 x 155	283 x 210 x 171 x 147	318 x 210 x 171 x 147
8.0"	359 x 257 x 222 x 197	353 x 257 x 216 x 197	387 x 257 x 216 x 197
10.0"	435 x 311 x 276 x 246	435 x 311 x 267 x 246	476 x 311 x 270 x 246
12.0"	499 x 368 x 324 x 292	521 x 368 x 324 x 292	549 x 368 x 318 x 292
14.0"	521 x 400 x 356 x 321	578 x 400 x 362 x 321	eg. (1/2" Class 150#) 48.0mm (Outer Ring OD) 32.0mm (Gasket OD) 19.0mm (Gasket ID) 14.0mm (Inner Ring ID)
16.0"	575 x 457 x 413 x 375	641 x 457 x 406 x 368	
18.0"	638 x 521 x 464 x 425	705 x 521 x 464 x 425	
20.0"	699 x 572 x 521 x 483	756 x 572 x 512 x 476	
24.0"	838 x 679 x 629 x 591	902 x 679 x 616 x 578	



# REFERENCE CHARTS

**RING JOINT GASKET R TYPE DIMENSIONAL DATA AS PER ASME B16.20 (Dimensions are in inches)**

Ring No.	Nominal Size	Class	Oval			Octagonal				
			Pitch Dia.	Width	Height	Pitch Dia.	Width	Height	Width of Flat	Radius
R-11	½"	300, 600	1.344	0.250	0.440	1.344	0.250	0.380	0.170	0.06
R-12	½"	900, 1500	1.563	0.313	0.560	1.563	0.313	0.500	0.206	0.06
R-13	¾"	300, 600	1.688	0.313	0.560	1.688	0.313	0.500	0.206	0.06
R-13	¾"	2500	1.688	0.313	0.560	1.688	0.313	0.500	0.206	0.06
R-14	¾"	900, 1500	1.750	0.313	0.560	1.750	0.313	0.500	0.206	0.06
R-15	1.0"	150	1.875	0.313	0.560	1.875	0.313	0.500	0.206	0.06
R-16	1.0"	300, 600, 900, 1500	2.000	0.313	0.560	2.000	0.313	0.500	0.206	0.06
R-16	¾"	2500	2.000	0.313	0.560	2.000	0.313	0.500	0.206	0.06
R-17	1 ¼"	150	2.250	0.313	0.560	2.250	0.313	0.500	0.206	0.06
R-18	1 ¼"	300, 600, 900, 1500	2.375	0.313	0.560	2.375	0.313	0.500	0.206	0.06
R-18	1.0"	2500	2.375	0.313	0.560	2.375	0.313	0.500	0.206	0.06
R-19	1 ½"	150	2.563	0.313	0.560	2.563	0.313	0.500	0.206	0.06
R-20	1 ½"	300, 600, 900, 1500	2.688	0.313	0.560	2.688	0.313	0.500	0.206	0.06
R-21	1 ¼"	2500	2.844	0.438	0.690	2.844	0.438	0.630	0.305	0.06
R-22	2.0"	150	3.250	0.313	0.560	3.250	0.313	0.500	0.206	0.06
R-23	2.0"	300, 600	3.250	0.438	0.690	3.250	0.438	0.630	0.305	0.06
R-23	1 ½"	2500	3.250	0.438	0.690	3.250	0.438	0.630	0.305	0.06
R-24	2.0"	900, 1500	3.750	0.438	0.690	3.750	0.438	0.630	0.305	0.06
R-25	2 ½"	150	4.000	0.313	0.560	4.000	0.313	0.500	0.206	0.06
R-26	2 ½"	300, 600	4.000	0.438	0.690	4.000	0.438	0.630	0.305	0.06
R-26	2.0"	2500	4.000	0.438	0.690	4.000	0.438	0.630	0.305	0.06
R-27	2 ½"	900, 1500	4.250	0.438	0.690	4.250	0.438	0.630	0.305	0.06
R-28	2 ½"	2500	4.375	0.500	0.750	4.375	0.500	0.690	0.341	0.06
R-29	3.0"	150	4.500	0.313	0.560	4.500	0.313	0.500	0.206	0.06
R-30	3.0" (1)***	300	4.625	0.438	0.690	4.625	0.438	0.630	0.305	0.06
R-31	3.0"	300, 600, 900	4.875	0.438	0.690	4.875	0.438	0.630	0.305	0.06
R-32	3.0"	2500	5.000	0.500	0.750	5.000	0.500	0.690	0.341	0.06
R-33	3 ½"	150	5.188	0.313	0.560	5.188	0.313	0.500	0.206	0.06
R-34	3 ½"	300, 600	5.188	0.438	0.690	5.188	0.438	0.630	0.305	0.06
R-35	3.0"	1500	5.375	0.438	0.690	5.375	0.438	0.630	0.305	0.06
R-36	4.0"	150	5.875	0.313	0.560	5.875	0.313	0.500	0.206	0.06
R-37	4.0"	300, 600, 900	5.875	0.438	0.690	5.875	0.438	0.630	0.305	0.06
R-38	4.0"	2500	6.188	0.625	0.880	6.188	0.625	0.810	0.413	0.06
R-39	4.0"	1500	6.375	0.438	0.690	6.375	0.438	0.630	0.305	0.06
R-40	5.0"	150	6.750	0.313	0.560	6.750	0.313	0.500	0.206	0.06
R-41	5.0"	300, 600, 900	7.125	0.438	0.690	7.125	0.438	0.630	0.305	0.06
R-42	5.0"	2500	7.500	0.750	0.750	7.500	0.750	0.940	0.485	0.06
R-43	6.0"	150	7.625	0.313	0.560	7.625	0.313	0.500	0.206	0.06
R-44	5.0"	1500	7.625	0.438	0.690	7.625	0.438	0.630	0.305	0.06
R-45	6.0"	300, 600, 900	8.313	0.438	0.690	8.313	0.438	0.630	0.305	0.06
R-46	6.0"	1500	8.313	0.500	0.750	8.313	0.500	0.690	0.341	0.06
R-47	6.0"	2500	9.000	0.750	1.000	9.000	0.750	0.940	0.485	0.06
R-48	8.0"	150	9.750	0.313	0.560	9.750	0.313	0.500	0.206	0.06
R-49	8.0"	300, 600, 900	10.625	0.438	0.690	10.625	0.438	0.630	0.305	0.06
R-50	8.0"	1500	10.625	0.625	0.880	10.625	0.625	0.810	0.413	0.06
R-51	8.0"	2500	11.000	0.875	1.130	11.000	0.875	1.060	0.583	0.06
R-52	10.0"	150	12.000	0.313	0.560	12.000	0.313	0.500	0.206	0.06
R-53	10.0"	300, 600, 900	12.750	0.438	0.690	12.750	0.438	0.630	0.305	0.06
R-54	10.0"	1500	12.750	0.625	0.880	12.750	0.625	0.880	0.413	0.06
R-55	10.0"	2500	13.500	1.125	1.440	13.500	1.125	1.380	0.780	0.09
R-56	12.0"	1500	15.000	0.313	0.560	15.000	0.313	0.500	0.206	0.06
R-57	12.0"	300, 600, 900	15.000	0.438	0.690	15.000	0.438	0.630	0.305	0.06
R-58	12.0"	1500	15.000	0.875	1.130	15.000	0.875	1.060	0.583	0.06
R-59	14.0"	150	15.625	0.313	0.560	15.625	0.313	0.500	0.206	0.06
R-60	12.0"	2500	16.000	1.250	1.560	16.000	1.250	1.500	0.879	0.09
R-61	14.0"	300, 600	16.500	0.438	0.690	16.500	0.438	0.630	0.305	0.06
R-62	14.0"	900	16.500	0.625	0.880	16.500	0.625	0.810	0.413	0.06
R-63	14.0"	1500	16.500	1.000	1.310	16.500	1.000	1.250	0.681	0.09
R-64	16.0"	150	17.875	0.313	0.560	17.875	0.313	0.500	0.206	0.06
R-65	16.0"	300, 600	18.500	0.438	0.690	18.500	0.438	0.630	0.305	0.06
R-66	16.0"	900	18.500	0.625	0.880	18.500	0.625	0.810	0.413	0.06
R-67	16.0"	1500	18.500	1.125	1.440	18.500	1.125	1.380	0.780	0.09
R-68	18.0"	150	20.375	0.313	0.560	20.375	0.313	0.500	0.206	0.06
R-69	18.0"	300, 600	21.000	0.438	0.690	21.000	0.438	0.630	0.305	0.06
R-70	18.0"	900	21.000	0.750	1.000	21.000	0.750	0.940	0.485	0.06
R-71	18.0"	1500	21.000	1.125	1.440	21.000	1.125	1.380	0.780	0.09
R-72	20.0"	150	22.000	0.313	0.560	22.000	0.313	0.500	0.206	0.06
R-73	20.0"	300, 600	23.000	0.500	0.750	23.000	0.500	0.690	0.341	0.06
R-74	20.0"	900	23.000	0.750	1.000	23.000	0.750	0.940	0.485	0.06
R-75	20.0"	1500	23.000	1.250	1.560	23.000	1.250	1.500	0.879	0.09
R-76	24.0"	150	26.500	0.313	0.560	26.500	0.313	0.500	0.206	0.06
R-77	24.0"	300, 600	27.250	0.625	0.880	27.250	0.625	0.810	0.413	0.06
R-78	24.0"	900	27.250	1.000	1.131	27.250	1.00	1.250	0.681	0.09
R-79	24.0"	1500	27.250	1.375	1.750	27.250	1.375	1.630	0.977	0.09

\*\*\* R-30 for Lapped Joint Only

**DISCLAIMER:**  
All the information available in this catalogue is intended for general guidelines. The user is expected to understand the products well for prior use, suitability and meet appropriate safety and health standards. In view of variety of applications and the operating conditions, we cannot draw the final conclusion about behavior of this product within the catalogue. Inmarco does not make any warranty of any statement of this catalogue and disclaims the liability for incidental and sequential damages rising out of equipment damage, injury or any other complications arising out of the utility of products. Please consult our technical cell for appropriate recommendations.





**Innovations in Fluid Sealing.**

**INMARCO Fzc.**

P. O. Box : 120284 SAIF Zone, Sharjah, U.A.E.  
Tel : +971 6 557 8378 Fax : +971 6 557 8948  
E-mail : [info@inmarco.ae](mailto:info@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)

**INMARCO EMIRATES L.L.C.**

P. O. Box : 91937, Mussafah, Abu Dhabi, U.A.E.  
Tel : +971 2 552 1818 Fax : +971 2 552 1718  
E-mail : [abudhabi@inmarco.ae](mailto:abudhabi@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)





Innovations in Fluid Sealing



## TECHNICAL DATA SHEET

# Inmatex Pure Expanded PTFE Sheet

## INMARCO INMATEX™ TYPE 1400

### Description:

TYPE 1400 is 100% multidirectionally expanded pure PTFE sheet which is designed to be soft, flexible & resilient enabling compressibility & conformance to flange sealing surface.

### Advantages:

- Resistant to creep, hot and cold flow.
- High sealing ability with minimum torque.
- Easy installation and less downtime. Excellent permeation and emission resistant.
- Withstands compressive loads of over 1650 bars.

### Operational Parameters

PROPERTIES	VALUES
Material	100% PTFE (Polytetrafluoroethylene) Ultra high molecular weight fine resin without binders & fillers
Process	100 % multidirectionally expanded
Color	White
Thickness Tolerance	+/-0.010"
Temperature Range	-267.77°C to +315.55°C
Pressure Range	Full vacuum to 3000PSI
Chemical Compatibility Range	pH range 0 ~ 14
Specific Gravity (ASTM D 792)	0.80 +/-0.10
ASTM Testing	Yes
Sealability (ASTM F-37-B Fule A (isooctane) Fule B (nitrogen) @ 60 psig	0.02 ml/hrNA
Compressibility (ASTM F-36)	66%
Recovery (ASTM F-36)	12%
Creep Relaxation (ASTM F-38)	38%
Tensile Strength (ASTM F-152)	2106 PSI
Matrix Tensile	5455 PSI
Elongation (ASTM F-152)	169.9%
Tensile @ break point	2632 PSI
FSA Testing	Yes
FSA high pressure steam test (275°C) @ 860 PSI for 561 hrs.	Yes Pass (.49% Loss)
Hot Compression Test (300°C)	Yes
Hot Loss	70.9%
Hot Creep	17.5%

### Typical Applications:

Ideal for fragile glass, FRP, Ceramic, Plastic flanges & Lined pipe joints. Flanges involving all kinds of chemical fluids & gaseous mediums. Graphite flanges in HCL, PVC & Nuclear plants.

All information and recommendations given in this technical data sheet are correct to the best of our knowledge. However, in view of the wide variety of application and operating conditions one cannot draw the final conclusion in all application cases regarding the behavior of compounds. The above information can only serve as a guideline.

INMARCO FZC

P.O. Box 120284, Sharjah Airport International Free Zone (SAIF-Zone), Sharjah, UAE

Tel. No.: +971 6 5578378 Fax No.: +971 6 5578948

Email: [info@inmarco.ae](mailto:info@inmarco.ae) Web: [www.inmarco.ae](http://www.inmarco.ae)



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## Compressed Non-asbestos Fiber Jointing Sheets



## Non-metallic Gaskets







## ABOUT US

INMARCO is one of the leading manufacturer of superior quality "Fluid Sealing Products" accepted and approved by variety of industries. Inmarco has attained market leadership in fluid sealing industry through its dedication to customer service and product development. Inmarco is committed for continuous improvement and has grown throughout three decades contributing to the environmental friendly Sealing Solutions. Non Asbestos culture has been driven and many a personnel to understand the asbestos menace in today's life. Inmarco's clientele are happy and satisfied of our untiring support for the sealing problems. Based on technological capabilities and perfection achieved over the years, Inmarco provides a wide range of products and services to the maintenance Industry. Our determinations to conduct business on a global scale is supported by and reflected in a fundamental philosophy utilization of technological expertise/ accumulation over three decades to access changes that occurred with passage of time while continuously evolving previously unexplored areas.

## VALUES

With MARKET-oriented structures, new and stronger product offerings, technically skilled-employees and efficient environmental impact MANAGEMENT SYSTEM, armed with global rapport with similar manufacturing companies and access to the latest development in the industry and a resilient local spirit, we are dedicated to delivering the best results. It is our people who make the system come alive and turn these principles, policies, and procedures into reality.

## MISSION & VISION

**MISSION** - Values - a driving force for Change...

A company rooted in unweaving values, INMARCO keeps ahead of change, reaping opportunities for growth. Striving to maintain leadership in industrial sealing products with wide manufacturing range. Providing a high quality product that combines performance with value for pricing, while establishing a successful relationship with the customers.

**VISION** - To be a market leader surpassing all hurdles of the industry, automate the process, systematized supplies and offer twenty-four-seven on service.

## WARE HOUSING

Located in the heart of the world business hub at SAIF Zone Sharjah UAE. Equipped with State of European Machinery.

**STOCKS** - The Warehouse stocks varieties of exotic raw materials for ever demanding modernized applications.

**STORES** - The temperature control stores takes care of the wellbeing and enhances shelf life of raw materials and the finished products.

**INSPECTION** - We never choose cheap materials, every incoming shipment follows stringent inspections system and are stored at predefined locations.

**PACKING AND DISPATCH** - Latest packing methodology in use with the modern gadgets and simplified equipments to perform efficient packing.

## TECHNOLOGIES & RESOURCES

INMARCO is driven by using non asbestos materials and is committed to provide superior and quality products that passed international standards and are environmental friendly. Technologies has helped develop more advance processes and has produced unwanted by-products causing pollution and deplete natural resources to the detriment of the earth and its environment that causes threat not only in the environment but also to mankind. With its philosophy in non-asbestos fluid sealing products INMARCO is able to do its part in conserving the environment.

## CREDENTIALS





Inmarco is pleased to offer 24/7 onsite technical and installation services. Inmarco is specialized in manufacture of valve sealing systems and is proud to announce that the recently developed expandable version of valve cart seal has outperformed the expected results. Certificated by American Petroleum institute under standard ANSI/API standard 607 Fifth Edition – and API 589 Second Edition . We offer valve seal refurbishment and can undertake onsite jobs also.

- Construction
- Chemical Processing
- Food & Beverage
- Marine & Dry-docking
- Oil & Gas
- Pharmaceuticals
- Power Generation Desalination & Waster Water
- Paper & Pulp
- Steel & Aluminum

## CERTIFICATIONS & APPROVALS



Cartseal Fire Safe Certified  
As Per Api 607



Packing Style 100fxi-special Conform  
To Fugitive Emission Norms As Per 622



Packing Style 100fxi-special  
Fire Safe Certified Asper Api 607



Borogue



Takreer



Gasco



Ruweis Fertilizer  
Industries (Fertil)



Adgas



Adco



Petroleum Development  
Of Oman



Qatar Petroleum



## INTRODUCTION TO GASKETING

### WHY DO WE USE GASKET?

If flange surface mated perfectly, there would be no need for gaskets. In practice, flanges always have slight surface irregularities. The gasket with compressible and resilient properties will compensate this irregularities. This provides an uninterrupted barrier against the medium and compensates for slight movement of the flanges during service.

### DESIGNING OF GASKET

This involves determining of three basic elements, namely;  
**Right material | Proper dimension | Correct surface stress**

Selection of right gasket material depends on three factors namely;

**Medium | Working temperature | Working pressure**

### SURFACE STRESS

Even at low internal pressure the gasket must be pressed against the flanges with a definite minimum surface stress. The "deformation stress" depends on the structure and compressibility of the gasket material.

### HYDROSTATIC END THRUST

In a closed vessel or a closed pipeline, the internal pressure of a medium exerts a thrust on the cover lid. This is called the hydrostatic end thrust, which tends to pull apart the flanges and thereby reduce the "assembly stress" originally applied to the gasket. The assembly stress must therefore compensate for the effect of the hydrostatic end thrust, while still maintaining the "minimum gasket surface stress" needed to seal at the working pressure.

### MAXIMUM SURFACE STRESS

Too high a gasket surface stress can cause leakage. This is because the gasket loses the resilience needed to maintain its pressure against the flange surface. The surface stress on the gasket must never exceed the recommended maximum. For a given material the maximum permissible surface stress depends mainly on the temperature and the thickness. For example, thin materials withstand higher stresses depends, mainly on the temperature and the thickness.

### THE RIGHT GASKET THICKNESS

Compressed non asbestos materials have a slight porosity, so gaskets should be as thin as possible. However, the selection of gasket thickness depends on

**Depth of flange surface roughness.**

**Compressibility of the gasket.**

**Gasket surface stress at working pressure.**

### INMARCO GASKET ASSEMBLY GUIDELINES

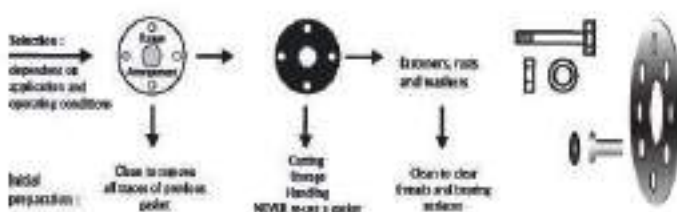
**Flanges:** Should be even and parallel and also sufficiently rigid not to be destroyed by the bolt load.

**Flange Finish:** Is important and concentric groove finish is ideal for high pressure. Spiral (gramophone record) groove finish gives a continuous path for leakage and is not recommended for gases. Flanges with flat surface finish are considered best.

**Bolts:** Should be tightened with a torque spanner, working at diametrically opposite nuts alternately. First turn all nuts to about half the recommended torque, then follow up to full assembly torque. It is important to follow up the bolts about 4 hours later or 1 hour after the gasket reaches its working temperature.

**Pipelines:** Undergo longitudinal thermal expansion which generates force that can crush the gasket. On the other hand, contraction of pipelines can reduce the gasket surface stress below the minimum required for sealing. Pipe expansion and contraction must therefore be considered while designing the thickness of gasket.

## INTRODUCTION TO GASKETING



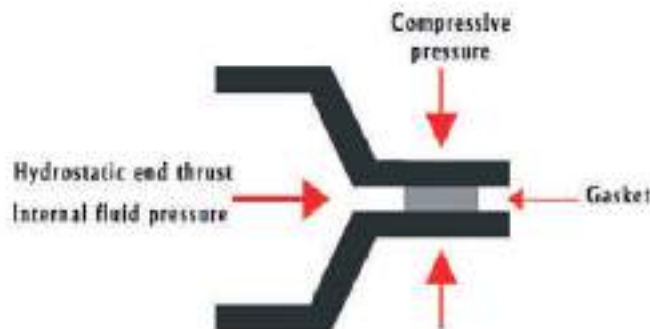
## GASKET SELECTION AND INSTALLATION

Selection of the correct gasket type and proper installation are the key factors in avoiding blow outs. Incorrect gasket selection can lead to excessive relaxation, chemical attack, heat degradation or the gasket crushing under the available bolt load. All these factors can result in a loss of compressive load and create the potential for blow out. Specifications for gaskets in each service should be developed in consultation with the manufacturer.

Gasket selection is only part of the process in avoiding the problem. Proper installation is also necessary to ensure the gasket has sufficient load to create a seal and maintain the seal against the internal pressure. Since all gaskets relax to varying extents, especially at elevated temperature, knowing the potential amount of relaxation in the joint is essential in the preload selection.

Proper selection of gasket material and type for the application is of fundamental importance. This selection must ensure that the gasket seals effectively throughout all operating conditions that the application experiences including:

Temperature | Internal Pressure | Process Fluid | Compressive Load

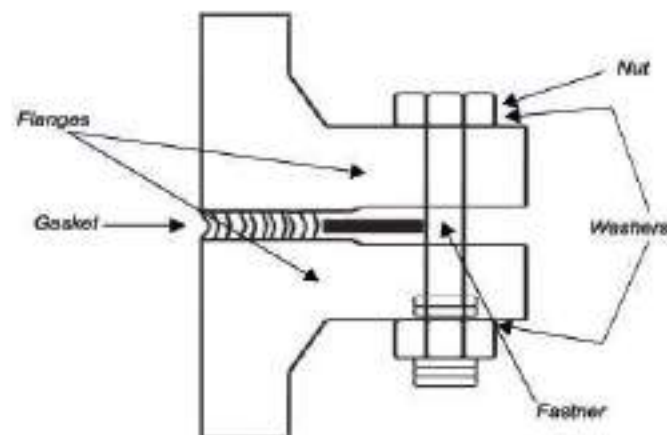


The gasket must be able to tolerate the temperature and internal pressures experienced during all phases of operation. It must also be chemically compatible with the process fluid and handle the compressive loads required for effective sealing without being crushed. In addition, the gasket must have the correct dimensions with thickness appropriate for the flange conditions and service. Once received from the manufacturer or supplier, the gasket must be stored and handled according to the requirement of the material to ensure that it is appropriate for installation.

Only when all the components of the system are working together in harmony can the seal be expected to provide good performance over a reasonable lifetime. The integrity of a safe seal depends upon:

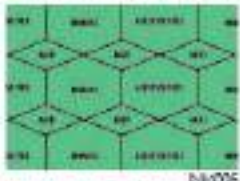
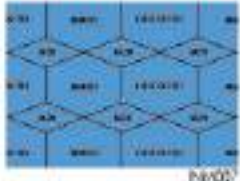
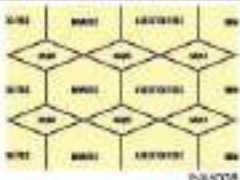
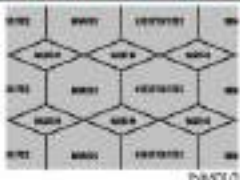
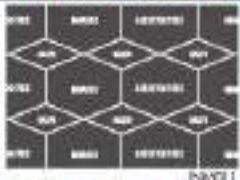
- Selection of correct components appropriate for the application.
- Careful preparation, cleaning, installation and assembly.
- Correct bolt tightening and loading.

The behavior of a flanged joint in service depends on whether or not the tension created in the fasteners will clamp the joint components together with a force great enough to resist failure of the seal, but small enough to avoid damage to the fasteners, joint components, gasket etc. The clamping load on the joint is created on assembly, as the nuts on the fasteners are tightened. This creates tension in the fastener (often referred to as preload). Although there may be some plastic deformation in the threads when a fastener is tightened normally, especially on the first tightening, most of the joint components respond elastically as the nuts are tightened. Effectively, the entire system operates as a spring, with the fasteners being stretched and the other joint components being compressed. Joints fail, not just gaskets! Low bolting torques, over-tight bolt loads, weak bolt materials, inadequate bolt/washer/nut lubrication, poor flange design or materials, poor gasket cutting or storage, improper installation practices, may each and all contribute to seal failure, even though the gasket material itself may be correctly specified!





## NON-ASBESTOS JOINTING SHEETS

Product Type	Description	Typical Applications
 <p>INMARCO TYPE NA-220</p>	High quality heat resistant fiber (Aramid fiber) and excellent oil resistant synthetic rubber (NBR) are compounded and calendared into a gasket sheet for oil resistance required applications.	Water, Hot Water, Oils, Mild Acids & Alkalis.
 <p>INMARCO TYPE NA-211</p>	This is an economical Non Asbestos sheet that is compounded with high quality Non Asbestos fiber and filler & synthetic rubber materials. Especially, it shows a decent quality in processing & sealing performance under water, hot water, mild acids and alkalis and building-fire-fighting pipe.	Air, Water, Hot Water, Salt Solution, Mild Acids & Alkalis.
 <p>INMARCO TYPE NA-239</p>	High quality Non Asbestos fiber (Aramid fiber) and excellent heat & oil resistant rubber are compounded and calendared into a gasket sheet with superior chemical resistance. Especially it shows a good sealing performance under hot oil, oil gas, etc.	Water, Alkali, Salt solution, Hot oil, Oil gas, Fuels below & Organic solvents.
 <p>INMARCO TYPE NA-265</p>	This Non Asbestos Sheet with carbon fillers provides superior chemical resistance and excellent heat resistance to use in steam and other high-temperature required lines. Suitable for a wide range of fluids like as fuel, lubricating, animal & vegetable oil, organic solvents, etc.	Lubricating oil, Fuel, Animal oil, Organic solvents, Water, Hot water, Steam, Hot oil, Oil gas, Salt solution.
 <p>INMARCO TYPE NA-239 METALLIC</p>	Is an excellent quality Non Asbestos gasket material with stainless steel wire-mesh inserted to be suitable for exhaust line under high temperature and high pressure (Aramid Fiber + NBR binder).	Suitable for Water, Alkali, Salt solution, Hot oil, Oil gas, Solvents. Not be used in Steam, Strong Acid, Alkali and Soluble chemicals.
 <p>INMARCO TYPE NA-265 METALLIC</p>	Is excellent quality Non Asbestos carbon fiber gasket material with stainless steel wire-mesh inserted to be suitable for exhaust line under high temperature and high pressure.	Suitable for water, Hot oil, Oil gas, Alkali, Salt Solutions, Solvents, Strong Acid, Alkali, Suitable chemicals, etc.
 <p>INMARCO TYPE NA-270</p>	Specially designed Non Asbestos Jointing Sheet developed by our R&D for over an unlimited range of critical application. This jointing sheet can be termed as UNIVERSAL Non Asbestos Jointing Sheet for extreme working condition. The exceptional formulation of this gasketing sheet with carbon fibre, Graphite & NBR binder helps solve various problems of the industries as far gasketing is concerned.	Suitable for all known fluid media at high temperature and pressure. Extremely flexible and resilient gasketing sheet.

Availability: (L X W) 1500 mm X 1500 mm, 1500 mm X 3000 mm, Thickness 1 mm - 3 mm.  
Other sizes can be available, if required.

# GASKETS

## TECHNICAL SPECIFICATIONS


Properties	Density (g/cm <sup>3</sup> )	Tensile Strength Across Grain, N/mm <sup>2</sup>	Compressibility (%)	Recovery (%)	Fluid resistance after 5hrs. Immersion				Flexibility	Ignition Loss	Short-term Peak Temperature	Max. Continuous Temperature	Short-term Peak Pressure
					ASTM #3 Oil (130 °C)	ASTM Fuel Oil (25.00 °C)	ASTM Fuel Oil (25.00 °C)	ASTM Fuel Oil (25.00 °C)					
Test Method	-	ASTM F152	ASTM F361		ASTM F146				ASTM F147	ASTM F148	Degree Centigrade	Degree Centigrade	BAR
	1.6	10.8	11	53	6	26	5	13	No Crack	31	260	180	60
	1.8	11	13	55	10	-	15	15	No Crack	25	400	200	30
	1.7	11.8	10	53	4	17	5	8	No Crack	28	430	250	100
	1.8	13.7	9	58	5	23	4	9	No Crack	26	480	320	100
	1.7	17.7	9	53	5	21	3	11	No Crack	25	400		100
	1.8	17.7	10	57	4	16	3	6	No Crack	24	500	350	100
	1.7 - 2.0	15 - 20	9 - 12	50 - 60	8	-	8	8	No Crack	30	600	550	200

### Note:

- The above test results are based on test carried out on 2.0mm thick. The values mentioned in the table are based on actual test carried out in our laboratory. The end user should carry out test independently to determine suitability of our material for their application. The gasket sheet should not be subjected to maximum temperature and pressure values simultaneously.
- Can also be supplied in ready cut gasket conforming to any international standard. Custom sizes possible.



## INGRAF GRAPHITE SHEETS

Product Type	Description	Typical Applications
 <p><b>INGRAF TYPE FG 320</b></p>	<p>TYPE FG 320 is manufactured from exfoliated graphite. During the initial process of exfoliation of graphite, acid treatment is done but 100% of acids are washed out by the DM water. After this, the whole process of manufacturing flexible graphite gasket sheet is mechanical, without incorporation of any additives, oils or bonding material.</p> <p>TYPE FG 320 flexible pure graphite sheet is having carbon content 99% to 99.9%. These are extremely suitable for high temperature and high pressure application. These gaskets are highly resilient and as such easily adapts to irregularities of flange or surface to make perfect seal. Inmarco flexible pure graphite gaskets are suitable for metallic, glass, enamel flanges and are designed for trouble free change over which ultimately reduces maintenance cost. They are dimensionally stable under extreme pressure surge. These are also suitable for cryogenic services.</p>	Any type of Pipe flanges, Valve bonnets & Heat exchangers.
 <p><b>INGRAF TYPE SSF 321</b></p>	<p>TYPE SSF 321 sheet is manufactured from plain SS sheet sandwich between two layers of flexible pure graphite sheet.</p> <p>TYPE SSF 321 SS sheet Inert graphite gaskets are suitable for metallic, glass, enamel flanges and are designed for trouble free change over which ultimately reduces maintenance cost. They are dimensionally stable under extreme pressure surge. These are also suitable for cryogenic services.</p>	Any type of Pipe flanges, Valve bonnets & Heat exchangers.
 <p><b>INGRAF FG TYPE 320 SSW 322</b></p>	<p>STYLE SSW 322 is manufactured from plain SS wire mesh sandwich between two layers of flexible pure graphite sheet. The whole process of manufacturing flexible graphite sheet with SS wire mesh is mechanical.</p> <p>STYLE SSW 322 SS wire mesh reinforced graphite gaskets are suitable for metallic, glass, enamel flanges and are designed for trouble free change over which ultimately reduces maintenance cost. They are dimensionally stable under extreme pressure surge. These are also suitable for cryogenic services.</p>	Any type of Pipe flanges, Valve bonnets & Heat exchangers.
 <p><b>INGRAF FG TYPE SST 323</b></p>	<p>TYPE SST 323 Flexible pure Graphite Tanged Gasket Sheet is manufactured from perforated tanged SS sheet sandwich between two layers of flexible pure graphite sheet. The whole process of manufacturing flexible pure graphite tanged gasket sheet is mechanical without incorporation of any additives or bonding materials.</p> <p>TYPE SST 323 the flexible pure graphite sheet is having 99% to 99.9% carbon. These are extremely suitable for high temperature and high pressure application. These gaskets are highly resilient and as such easily adapts to irregularities of flange or surface to make perfect seal. SS tanged gaskets are suitable for metallic, glass, enamel flanges and are designed for trouble free change over which ultimately reduces maintenance cost. They are dimensionally stable under extreme pressure surge. These are also suitable for cryogenic services.</p>	Any type of Pipe flanges, Valve bonnets & Heat exchangers.

**Note:**

- Chemical Properties: Carbon Content 99%-99.9%, Sulphur Content Less Than 500 ppm, Chloride Content Less Than 30 Ppm, Ash Content Less Than 1%
- Availability: (L X W): 1500 mm X 1500 mm, 1000 mm X 1000 mm, Thickness 0.5 - 6 mm.
- Metallic insertion possible > 1.0mm thickness.

# GASKETS

## TECHNICAL SPECIFICATIONS

Properties	DENSITY (g/cm³)	pH	Compressibility (%)	Recovery (%)	"α" factor (3mm thick)	"γ" factor (µm)	Creep Relaxation %	Sealability			Ignition Loss		Permeability Nitrogen, cm³/cm²	Temperature			Pressure	Thickness of Reinforcement
Test Method	-	-	ASTM F36				psi psi	Test A: psi	Blowup ratio	psi psi	psi psi	psi psi	cm³/cm² (psi)	Degree Centigrade			BAR	mm
	1.1	0-14	35-40	15-18	2.5	4500	5	0.5	2.0	1	8	0.4	-200-3315	600	650	Vacuum 28Hg to 300		
	1.1 - 1.4	0-14	35-40	15-18	2.8	4700	5	0.5	2.0	1	8	0.4	-200-3315	600	650	Vacuum 28Hg to 300	0.05-0.1	
	1.1 - 1.4	0-14	35-40	15-18	2.5	4500	5	0.5	2.0	1	8	0.4	-200-3315	600	650	Vacuum 28Hg to 300	0.05-0.1	
	1.1 - 1.4	0-14	35-40	15-18	2.8	4700	5	0.5	2.0	1	8	0.4	-200-3315	600	650	Vacuum 28Hg to 300	0.05-0.1	

### Note:

- The above test results are based on test carried out on 2.0mm thick. The values mentioned in the table are based on actual test carried out in our laboratory.
- The end user should carry out test independently to determine suitability of our material for their application. The gasket sheet should not be subjected to maximum temperature and pressure values simultaneously.
- Can also be supplied in ready cut gasket conforming to any international standard. Custom sizes possible.



## INFLON VIRGIN PTFE SHEETS

Product Type	Description	Properties
 <p>INFLON VIRGIN TYPE 600</p>	<p>TYPE 600 is a pure form of PTFE available in various types such as skived sheets, moulded sheets, rods, tubes, rings and custom moulded components. 100% virgin PTFE has excellent inertness to most chemicals. PTFE is not inflammable and highly stable at normal operating temperature of 250°C. It has low friction and high release properties. Easy to machine cut or mould. It has good electrical insulation properties.</p>	<p>*Excellent chemical resistance.</p> <p>*Excellent flexural properties.</p> <p>*Outstanding electrical properties.</p>
 <p>INFLON GRAPHITE FILLED TYPE 601</p>	<p>TYPE 601 is a Virgin PTFE with 15% Graphite. It has excellent wear properties and specially used in dynamic applications. Its crystalline graphite sacrifices itself to facilitate lubrication.</p>	<p>*Excellent chemical resistance.</p> <p>*Excellent flexural properties.</p> <p>*Outstanding electrical properties.</p>
 <p>INFLON GLASS FILLED TYPE 602</p>	<p>TYPE 602 is a Virgin PTFE with 15% Glass Filler enhances the properties of Virgin PTFE like creep resistance, enhanced chemical stability &amp; wear resistance.</p>	<p>*High compressive strength.</p> <p>*Better wear resistance.</p> <p>*Excellent chemical resistance.</p>
 <p>INFLON CARBON FILLED TYPE 603</p>	<p>TYPE 603 is a Virgin PTFE with either 25% Carbon filler enhances the creep resistance, hardness and thermal conductivity. They have exceptionally high wear and tear properties and also helps in lubrication when combined with graphite.</p>	<p>*High compressive strength.</p> <p>*Better wear resistance.</p> <p>*Better thermal conductivity.</p>
 <p>INFLON BRONZE FILLED TYPE 604</p>	<p>TYPE 604 is a Virgin PTFE with 40% bronze. This alloy is used in certain percentage as a filler to enhance the properties like thermal conductivity of PTFE, creep resistance and to facilitate lubrication.</p>	<p>*High compressive strength.</p> <p>*Very low cold flow.</p> <p>*Good thermal conductivity.</p> <p>*Excellent wear resistance.</p>
 <p>INFLON MODIFIED TYPE 605</p>	<p>TYPE 605 is an advanced material with improved creep resistance used in chemical process industries. Due to improved creep resistance this material has increased stiffness even at elevated temperatures. The modified PTFE components can be used for higher pressure conditions. Modified PTFE allows better high voltage insulation giving new opportunity to improve performance particularly in electrical applications. The vessel linings, tubings, sealing materials, expansion joints, made out of modified PTFE have more life &amp; less/near zero leakage due this enhanced permeation resistance.</p>	<p>*Excellent Creep resistance.</p> <p>*High Stiffness at elevated temperatures.</p> <p>*Good Electrical insulation properties.</p>

PTFE is chemically inert & unaffected by all known chemicals except molten or dissolved alkali metals, Sodium, Potassium, Rubidium, Caesium, Francium, & fluoride gas. certain fluorine compounds & complexes at elevated temperatures. Filled PTFE has inferior chemical resistance depending upon the particular filler.

**Material Availability:**  
 Size: 1000mm x 1000mm / 1500mm x 1500mm  
 Thickness: 0.5, 0.8, 1.0, 1.5, 2.0, 2.5, 3.0mm  
 Other sheet sizes and thickness available upon request.

**Caution:** The presence of filler generally causes following negative features in compound:  
 Reduction in tensile strength & break elongation. Reduction in volume & surface resistivity.  
 Difficulty in process & fabrication. Lower chemical resistance depending upon types of filler.  
 Reduction in coefficient of linear thermal expansion.

# GASKETS

## TECHNICAL SPECIFICATION




Properties	Density (g/cm <sup>3</sup> )	Tensile Strength % kgf/cm <sup>2</sup>	Elongation @ Break %	Compressive Strength kgf/cm <sup>2</sup>	Compressive Modulus kgf/cm <sup>2</sup>	Hardness Shore D	Continuous Service Temp. @ Atmospheric Pressure °C	Thermal Conductivity 10 <sup>-3</sup> cal/cm <sup>2</sup> °C	Linear Thermal Expansion (Max.) %	Dielectric Strength kV/mm	Volume Resistivity ohm cm	Surface Resistivity ohm	Water Absorption (Max.)	Permeability
Test Method	ASTM D 792	ASTM D 638	ASTM D 638	ASTM D 695	ASTM D 695	ASTM D 248	ASTM D 448	ASTM D 2000	ASTM D 696	ASTM D 149	ASTM D 257	ASTM D 258	ASTM D 114	ASTM D 31
	2.1 - 2.2	210-375	250-400	40-50	3500-4000	52-58	-252 to +260	6	Axial 1.5 2.4 3.4 Radial 1.5 2.3 3.6	22-24	>10 <sup>18</sup>	>10 <sup>15</sup>	0	0.01
	1.90 - 2.16	150 - 200	150 - 250	65-75	7500-8000	58-63	-250 to +260	14	Axial 1.3 2.0 3.0 Radial 1.0 1.8 2.2	1 - 2	>10 <sup>3</sup>	>10 <sup>6</sup>	0	0.01
	2.15-2.22	180-260	225-325	65-75	5500-6000	55-63	-250 to +260	8	Axial 1.5 2.3 3.3 Radial 1.0 1.8 2.2	15-16	>10 <sup>3</sup>	>10 <sup>6</sup>	0.015	0.01
	2.0-2.14	125-200	125-200	75-85	8000-8400	60 - 65	-250 to +260	13	Axial 1.2 1.9 2.7 Radial 1.0 1.5 2.4	1-2	>10 <sup>4</sup>	>10 <sup>7</sup>	0	0.01
	3.0 - 3.2	125-300	225 - 325	85-100	8000-8500	63-68	-250 to +260	17	Axial 1.15 1.85 2.55 Radial 0.95 1.55 2.25	Conductive	>10 <sup>7</sup>	>10 <sup>9</sup>	0	0.01
	2.15-2.20	300-325	400-450	45-55	4000-4500	58-63	-250 to +260	6	Axial 1.5 2.4 3.4 Radial 1.5 2.3 3.6	30-35	>10 <sup>20</sup>	>10 <sup>18</sup>	0	0.01

Note:




\* The above test results are based on test carried out on 2.0mm thick. The values mentioned in the table are based on actual test carried out in our laboratory. The end user should carry out test independently to determine suitability of our material for their application. (The gasket sheet should not be subjected to maximum temperature and pressure values simultaneously).

\* Can also be supplied in ready cut gasket conforming to any international standard. Custom sizes possible.



Product Type	Description	Properties																																				
<div></div> <div>NATURAL RUBBER SHEET (NR/SBR) TYPE 410</div>	<p>Natural Rubber widely used where many types of acids and bases, except those types are highly oxidizing are present. SBR has similar resistance to solvents and chemicals as natural rubber and it can be successfully bonded to a wide range of materials.</p> <p>General Recommendation: *Ozone-Mild                      *Solvent-N/A *Concentration Dilute        *Oil-N/A Acid and Base-Fair</p>	<table><tr><th>Properties</th><th>Test Method</th><th>Unit</th><th>Values</th></tr><tr><td>Density</td><td>ASTM D 297</td><td>g/cm<sup>3</sup></td><td>1.45±0.05</td></tr><tr><td>Hardness</td><td>ASTM D 2240</td><td>Shore A</td><td>70±5</td></tr><tr><td>Tensile Strength</td><td>ASTM D 412</td><td>Kg/cm<sup>2</sup> (min)</td><td>50</td></tr><tr><td>Elongation @ Break</td><td>ASTM D 412</td><td>% (min)</td><td>300</td></tr><tr><td>Abrasion Loss</td><td>ASTM D 5963</td><td>mm<sup>3</sup></td><td>300</td></tr><tr><td>Compression Set (70°C/22h)</td><td>ASTM D 395</td><td>%</td><td>32</td></tr><tr><td>Tear Strength</td><td>ASTM D 624</td><td>Kg/cm</td><td>23</td></tr><tr><td>Temperature Range</td><td></td><td>°C</td><td>-20 to +80</td></tr></table>	Properties	Test Method	Unit	Values	Density	ASTM D 297	g/cm <sup>3</sup>	1.45±0.05	Hardness	ASTM D 2240	Shore A	70±5	Tensile Strength	ASTM D 412	Kg/cm <sup>2</sup> (min)	50	Elongation @ Break	ASTM D 412	% (min)	300	Abrasion Loss	ASTM D 5963	mm <sup>3</sup>	300	Compression Set (70°C/22h)	ASTM D 395	%	32	Tear Strength	ASTM D 624	Kg/cm	23	Temperature Range		°C	-20 to +80
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<div></div> <div>NEOPRENE RUBBER SHEET TYPE 411</div>	<p>TYPE 411 is a polymer chloroprene and is available in many varieties. Neoprene is known for its resistance to oil, gasoline, sunlight, ozone and oxidation.</p> <p>General Recommendation: *Ozone-Mild                      *Solvent-N/A *Concentration Acid            *Oil-Fair and Base-N/A</p>	<table><tr><th>Properties</th><th>Test Method</th><th>Unit</th><th>Values</th></tr><tr><td>Density</td><td>ASTM D 297</td><td>g/cm<sup>3</sup></td><td>1.45±0.05</td></tr><tr><td>Hardness</td><td>ASTM D 2240-97</td><td>Shore A</td><td>65±5</td></tr><tr><td>Tensile Strength</td><td>ASTM D 412-98a</td><td>Kg/cm<sup>2</sup> (min)</td><td>50</td></tr><tr><td>Elongation @ Break</td><td>ASTM D 412-98a</td><td>% (min)</td><td>300</td></tr><tr><td>Abrasion Loss</td><td>ASTM D 5963</td><td>mm<sup>3</sup></td><td>300</td></tr><tr><td>Compression Set (70°C/22h)</td><td>ASTM D 395-98</td><td>%</td><td>32</td></tr><tr><td>Tear Strength</td><td>ASTM D 624</td><td>Kg/cm</td><td>23</td></tr><tr><td>Temperature Range</td><td></td><td>°C</td><td>-30 to +120</td></tr></table>	Properties	Test Method	Unit	Values	Density	ASTM D 297	g/cm <sup>3</sup>	1.45±0.05	Hardness	ASTM D 2240-97	Shore A	65±5	Tensile Strength	ASTM D 412-98a	Kg/cm <sup>2</sup> (min)	50	Elongation @ Break	ASTM D 412-98a	% (min)	300	Abrasion Loss	ASTM D 5963	mm <sup>3</sup>	300	Compression Set (70°C/22h)	ASTM D 395-98	%	32	Tear Strength	ASTM D 624	Kg/cm	23	Temperature Range		°C	-30 to +120
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<div></div> <div>EPDM RUBBER SHEET TYPE 412</div>	<p>TYPE 412 are used extensively in outdoor applications. They will withstand the abuse of all types of weather including sunlight, ozone and oxidants and they exhibit excellent resistance to animal and vegetable oils, water steam, oxygenated solvents (acetone, methyl ethyl ketone and other ketones).</p> <p>General Recommendation: *Ozone-Good                      *Solvent-N/A *Concentration Acid            *Oil-N/A and Base-Fair *Dilute Acid and Base-Good</p>	<table><tr><th>Properties</th><th>Test Method</th><th>Unit</th><th>Values</th></tr><tr><td>Density</td><td>ASTM D 297</td><td>g/cm<sup>3</sup></td><td>1.55±0.07</td></tr><tr><td>Hardness</td><td>ASTM D 2240-97</td><td>Shore A</td><td>65±5</td></tr><tr><td>Tensile Strength</td><td>ASTM D 412-98a</td><td>Kg/cm<sup>2</sup> (min)</td><td>55</td></tr><tr><td>Elongation @ Break</td><td>ASTM D 412-98a</td><td>% (min)</td><td>310</td></tr><tr><td>Abrasion Loss</td><td>ASTM D 5963</td><td>mm<sup>3</sup></td><td>310</td></tr><tr><td>Compression Set (70°C/22h)</td><td>ASTM D 395-98</td><td>%</td><td>34</td></tr><tr><td>Tear Strength</td><td>ASTM D 624</td><td>Kg/cm</td><td>26</td></tr><tr><td>Temperature Range</td><td></td><td>°C</td><td>-35 to +100</td></tr></table>	Properties	Test Method	Unit	Values	Density	ASTM D 297	g/cm <sup>3</sup>	1.55±0.07	Hardness	ASTM D 2240-97	Shore A	65±5	Tensile Strength	ASTM D 412-98a	Kg/cm <sup>2</sup> (min)	55	Elongation @ Break	ASTM D 412-98a	% (min)	310	Abrasion Loss	ASTM D 5963	mm <sup>3</sup>	310	Compression Set (70°C/22h)	ASTM D 395-98	%	34	Tear Strength	ASTM D 624	Kg/cm	26	Temperature Range		°C	-35 to +100
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Material Availability:  
 Size: 1200mm x 1000mm / 1500mm x 1000mm  
 Thickness: 1.0 - 10mm

Product Type	Description	Properties																																								
<div><p><b>NITRILE (NBR) RUBBER SHEET TYPE 413</b></p></div>	<p>TYPE 413 is a copolymer of butadiene and acrylonitrile and is recommended when excellent resistance to petroleum oils and gasoline is required. Nitrile's resistance to the more aromatic distillates of petroleum is better than neoprene.</p> <p><b>General Recommendation:</b> *Ozone-Poor                      *Solvent-NA *Dilute Acid and Base-Good    *Oil-Mild *Concentration Acid and Base-Fair</p>	<table><tr><th>Properties</th><th>Test Method</th><th>Unit</th><th>Values</th></tr><tr><td>Density</td><td>ASTM D 297</td><td>g/cm<sup>3</sup></td><td>1.45±0.05</td></tr><tr><td>Hardness</td><td>ASTM D 2240-97</td><td>Shore A</td><td>65±5</td></tr><tr><td>Tensile Strength</td><td>ASTM D 412-98a</td><td>Psi</td><td>50</td></tr><tr><td>Elongation @ Break</td><td>ASTM D 412-98a</td><td>% (min)</td><td>300</td></tr><tr><td>Abrasion Loss</td><td>ASTM D 5963</td><td>mm<sup>3</sup></td><td>300</td></tr><tr><td>Compression Set (70°C/22h)</td><td>ASTM D 395-98</td><td>%</td><td>32</td></tr><tr><td>Tear Strength</td><td>ASTM D 624</td><td>Kg/cm</td><td>23</td></tr><tr><td>Temperature Range</td><td></td><td>°C</td><td>-30 to +110</td></tr></table>	Properties	Test Method	Unit	Values	Density	ASTM D 297	g/cm <sup>3</sup>	1.45±0.05	Hardness	ASTM D 2240-97	Shore A	65±5	Tensile Strength	ASTM D 412-98a	Psi	50	Elongation @ Break	ASTM D 412-98a	% (min)	300	Abrasion Loss	ASTM D 5963	mm <sup>3</sup>	300	Compression Set (70°C/22h)	ASTM D 395-98	%	32	Tear Strength	ASTM D 624	Kg/cm	23	Temperature Range		°C	-30 to +110				
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<div><p><b>VITON RUBBER SHEET TYPE 414</b></p></div>	<p>TYPE 414 is one of the toughest, most versatile materials ever developed. It delivers reliable protection against leaks long after ordinary rubber seals have failed. Viton provides excellent resistance to compression set at high temperatures which accounts for its ability to maintain sealing force and remain tough and elastic even after long exposure.</p> <p><b>General Recommendation:</b> *Good ozone resistance, good oil resistance and excellent weather resistance.</p>	<table><tr><th>Properties</th><th>Test Method</th><th>Unit</th><th>Values</th></tr><tr><td>Density</td><td>ASTM D 297</td><td>g/cm<sup>3</sup></td><td>1.97</td></tr><tr><td>Hardness</td><td>ASTM D 2240-97</td><td>Shore A</td><td>75±5</td></tr><tr><td>Tensile Strength</td><td>ASTM D 412-98a</td><td>Psi (min)</td><td>1145</td></tr><tr><td>Elongation @ Break</td><td>ASTM D 412-98a</td><td>% (min)</td><td>310</td></tr><tr><td>Compression Set (70°C/22h)</td><td>ASTM D 395-98</td><td>% (max)</td><td>50</td></tr><tr><td>Aging Test (70°C/168h)</td><td>ASTM D 573-99</td><td></td><td></td></tr><tr><td>Hardness Change</td><td>ASTM D 2240-97</td><td>Shore A</td><td>±5</td></tr><tr><td>Tensile Strength Change</td><td>ASTM D 412-98a</td><td>% (max)</td><td>-5</td></tr><tr><td>Elongation @ Break Change</td><td>ASTM D 412-98a</td><td>% (max)</td><td>-15</td></tr></table>	Properties	Test Method	Unit	Values	Density	ASTM D 297	g/cm <sup>3</sup>	1.97	Hardness	ASTM D 2240-97	Shore A	75±5	Tensile Strength	ASTM D 412-98a	Psi (min)	1145	Elongation @ Break	ASTM D 412-98a	% (min)	310	Compression Set (70°C/22h)	ASTM D 395-98	% (max)	50	Aging Test (70°C/168h)	ASTM D 573-99			Hardness Change	ASTM D 2240-97	Shore A	±5	Tensile Strength Change	ASTM D 412-98a	% (max)	-5	Elongation @ Break Change	ASTM D 412-98a	% (max)	-15
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<div><p><b>SILICON RUBBER SHEET TYPE 415</b></p></div>	<p>TYPE 415 is a semi organic synthetic. Its structure consists of a chain of silicon and oxygen atoms rather than carbon and hydrogen atoms, as in the case with other types of rubber. Silicon's are very stable at low and high temperatures.</p> <p><b>General Recommendation:</b> *Good weather resistance, good ozone resistance, good water resistance and not suitable for acids.</p>	<table><tr><th>Properties</th><th>Test Method</th><th>Unit</th><th>Values</th></tr><tr><td>Density</td><td>ASTM D 297</td><td>g/cm<sup>3</sup></td><td>1.20</td></tr><tr><td>Hardness</td><td>ASTM D 2240-97</td><td>Shore A</td><td>70±5</td></tr><tr><td>Tensile Strength</td><td>ASTM D 412-98a</td><td>Psi (min)</td><td>1000</td></tr><tr><td>Elongation @ Break</td><td>ASTM D 412-98a</td><td>% (min)</td><td>250</td></tr><tr><td>Compression Set (70°C/22h)</td><td>ASTM D 395-98</td><td>% (max)</td><td>20</td></tr><tr><td>Aging Test (70°C/168h)</td><td>ASTM D 573-99</td><td></td><td></td></tr><tr><td>Hardness Change</td><td>ASTM D 2240-97</td><td>Shore A</td><td>±5</td></tr><tr><td>Tensile Strength Change</td><td>ASTM D 412-98a</td><td>% (max)</td><td>-10</td></tr><tr><td>Elongation @ Break Change</td><td>ASTM D 412-98a</td><td>% (max)</td><td>-15</td></tr></table>	Properties	Test Method	Unit	Values	Density	ASTM D 297	g/cm <sup>3</sup>	1.20	Hardness	ASTM D 2240-97	Shore A	70±5	Tensile Strength	ASTM D 412-98a	Psi (min)	1000	Elongation @ Break	ASTM D 412-98a	% (min)	250	Compression Set (70°C/22h)	ASTM D 395-98	% (max)	20	Aging Test (70°C/168h)	ASTM D 573-99			Hardness Change	ASTM D 2240-97	Shore A	±5	Tensile Strength Change	ASTM D 412-98a	% (max)	-10	Elongation @ Break Change	ASTM D 412-98a	% (max)	-15
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Material Availability:  
 Size: 1200mm x 1000mm / 1500mm x 1000mm  
 Thickness: 1.0 - 10mm



## OTHER GASKETING MATERIALS

Product Type	Description	Properties																																																												
<div></div> <div>INBOND CORK SHEET TYPE 800</div>	<p>TYPE 800 is produced from superior quality cork granules bonded with synthetic rubber (natural / nitrile / neoprene). Cork materials have exceptional compressibility and resilience. They also offer a high mechanical strength.</p> <p><b>Applications:</b> Cork has wide applications in automotive / industrial electrical (transformers), petrochemical, oil &amp; gas, etc. and also confirmed many general sealing applications.</p>	<table><thead><tr><th>Description</th><th>Test Method</th><th>Unit</th><th>Result</th></tr></thead><tbody><tr><td>Binder</td><td>As per IS-4253 (part II) 2008</td><td>—</td><td>Synthetic Rubber / NBR</td></tr><tr><td>Cork Grain Size</td><td>—</td><td>—</td><td>0.5 - 1.0mm</td></tr><tr><td colspan="4">PHYSICAL CHARACTERISTICS</td></tr><tr><td>Hardness</td><td>IS-3400 (part II) 1965</td><td>Shore A</td><td>75 - 85</td></tr><tr><td>Compressibility @ 400 PSI</td><td>IS-4253 (part II) 1980 (clause 7.5)</td><td>%</td><td>15 - 25</td></tr><tr><td>Recovery after</td><td>IS-4253 (part II) 1980 (clause 7.5)</td><td>%</td><td>75 min.</td></tr><tr><td>Tensile Strength</td><td>IS-4253 (part II) 1980 (clause 7.4)</td><td>kg/cm<sup>2</sup></td><td>19 min.</td></tr><tr><td>FLEXIBILITY (thickness x 3)</td><td>IS-4253 (part II) 1980 (clause 7.7)</td><td>—</td><td>No Cracks</td></tr><tr><td>Specific Gravity</td><td>IS-4253 (part II) 1980</td><td>gm/cc</td><td>0.70 - 0.90</td></tr><tr><td>Compression Set</td><td>IS-4253 (part II) 1980</td><td>%</td><td>90 max.</td></tr><tr><td>Side Flow</td><td>IS-4253 (part II) 1980</td><td>%</td><td>18 max.</td></tr><tr><td colspan="4">VOLUME CHANGE AFTER IMMERSION</td></tr><tr><td>ASTM Oil No. 1, 70hrs @ 100°C</td><td>IS-4253 (part II) 1980</td><td>%</td><td>-15 - +5</td></tr><tr><td>ASTM Oil No. 3, 70hrs @ 100°C</td><td>IS-4253 (part II) 1980</td><td>%</td><td>10 max.</td></tr></tbody></table>	Description	Test Method	Unit	Result	Binder	As per IS-4253 (part II) 2008	—	Synthetic Rubber / NBR	Cork Grain Size	—	—	0.5 - 1.0mm	PHYSICAL CHARACTERISTICS				Hardness	IS-3400 (part II) 1965	Shore A	75 - 85	Compressibility @ 400 PSI	IS-4253 (part II) 1980 (clause 7.5)	%	15 - 25	Recovery after	IS-4253 (part II) 1980 (clause 7.5)	%	75 min.	Tensile Strength	IS-4253 (part II) 1980 (clause 7.4)	kg/cm <sup>2</sup>	19 min.	FLEXIBILITY (thickness x 3)	IS-4253 (part II) 1980 (clause 7.7)	—	No Cracks	Specific Gravity	IS-4253 (part II) 1980	gm/cc	0.70 - 0.90	Compression Set	IS-4253 (part II) 1980	%	90 max.	Side Flow	IS-4253 (part II) 1980	%	18 max.	VOLUME CHANGE AFTER IMMERSION				ASTM Oil No. 1, 70hrs @ 100°C	IS-4253 (part II) 1980	%	-15 - +5	ASTM Oil No. 3, 70hrs @ 100°C	IS-4253 (part II) 1980	%	10 max.
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<div></div> <div>FELT SHEET TYPE 1200</div>	<p>TYPE 1200 is a high grade density felt recommended for precision uses where maximum durability and resistance to wear are required.</p> <p><b>Advantages:</b> *Excellent heat &amp; abrasion resistance. *Heat elasticity. *Good recovery from compression. *Light weight. *Will not damage nor blur the surface of glass containers or other high temperature glass products.</p> <p><b>Typical Applications:</b> *Uses include home appliances. *Electric motors. *Polishing &amp; wiping. *Kiln machine. *Seals &amp; bearings. *Automotive components. *Welding power tools &amp; duplicating machines.</p>	<table><thead><tr><th>Description</th><th>Unit</th><th>Value</th></tr></thead><tbody><tr><td>Color</td><td>—</td><td>Off-white</td></tr><tr><td>Combined choir. &amp; water sol.</td><td>% (max)</td><td>3.0</td></tr><tr><td>Tensile Strength</td><td>Psi (min)</td><td>600</td></tr><tr><td>Wool Content</td><td>% (min)</td><td>95</td></tr><tr><td>Ash Content max.</td><td>%</td><td>1.5</td></tr><tr><td>Density (1")</td><td>lbs/sq yard</td><td>0.671</td></tr><tr><td>Acid resistance</td><td>—</td><td>Good</td></tr><tr><td>Durometer (hardness)</td><td>Shore A</td><td>30 - 40</td></tr><tr><td>Compression rec</td><td>%</td><td>99</td></tr><tr><td>Solvent resistance</td><td>—</td><td>Excellent</td></tr><tr><td>Alkalie resistance</td><td>dil</td><td>Fair</td></tr><tr><td>Temperature tolerance</td><td>°C</td><td>-62.22 to +93.33</td></tr></tbody></table>	Description	Unit	Value	Color	—	Off-white	Combined choir. & water sol.	% (max)	3.0	Tensile Strength	Psi (min)	600	Wool Content	% (min)	95	Ash Content max.	%	1.5	Density (1")	lbs/sq yard	0.671	Acid resistance	—	Good	Durometer (hardness)	Shore A	30 - 40	Compression rec	%	99	Solvent resistance	—	Excellent	Alkalie resistance	dil	Fair	Temperature tolerance	°C	-62.22 to +93.33																					
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## OTHER GASKETING MATERIALS

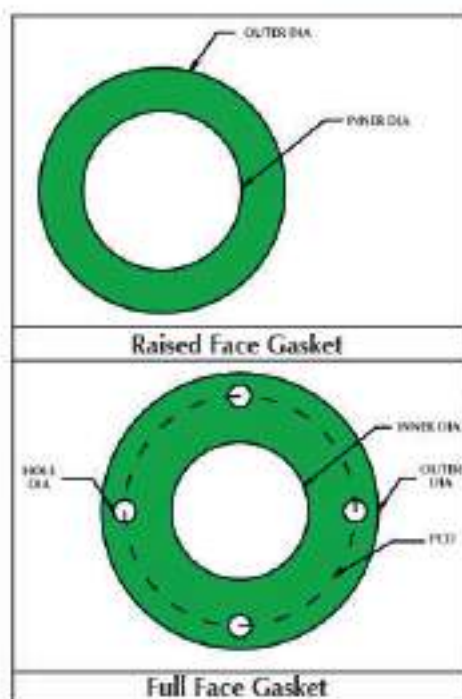
Product Type	Description	Properties																																																																				
<div><p>INMARCO INMATEX™ TYPE 1400</p></div>	<p>TYPE 1400 is designed to be soft, flexible &amp; resilient enabling compressibility &amp; conformance to flange sealing surface. Resistant to creep, hot and cold flow. High sealing ability with minimum torque. Easy installation and less downtime. Excellent permeation and emission resistant. Withstands compressive loads of over 1650 bars.</p> <p><b>Typical Applications:</b> Ideal for fragile glass, FRP, Ceramic, Plastic flanges &amp; lined pipe joints. Flanges involving all kinds of chemical fluids &amp; gaseous mediums. Graphite flanges in HCL, PVC &amp; Nuclear plants.</p>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>Material</td><td>100% PTFE (Polytetrafluoroethylene) Ultra high molecular weight fine resin without binders &amp; fillers</td></tr><tr><td>Process</td><td>Highly expanded</td></tr><tr><td>Color</td><td>White</td></tr><tr><td>Thickness Tolerance</td><td>+/-0.010"</td></tr><tr><td>Temperature Range</td><td>-267.77°C to +315.55°C</td></tr><tr><td>Pressure Range</td><td>Full vacuum to 3000PSI</td></tr><tr><td>Chemical Compatibility Range</td><td>pH range 0 ~ 14</td></tr><tr><td>Specific Gravity (ASTM D 792)</td><td>0.80 +/-0.10</td></tr><tr><td>ASTM Testing</td><td>Yes</td></tr><tr><td>Sealability (ASTM F-37-B)</td><td></td></tr><tr><td>    Fuel A (isooctane)</td><td>0.02 ml/hr</td></tr><tr><td>    Fuel B (nitrogen) @ 60 psig</td><td>NA</td></tr><tr><td>Compressibility (ASTM F-36)</td><td>66%</td></tr><tr><td>Recovery (ASTM F-36)</td><td>12%</td></tr><tr><td>Creep Relaxation (ASTM F-38)</td><td>38%</td></tr><tr><td>Tensile Strength (ASTM F-152)</td><td>2106 PSI</td></tr><tr><td>    Matrix Tensile</td><td>5455 PSI</td></tr><tr><td>Elongation (ASTM F-152)</td><td>169.9%</td></tr><tr><td>Tensile @ break point</td><td>2632 PSI</td></tr><tr><td>PSA Testing</td><td>Yes</td></tr><tr><td>    FSA high pressure steam test (275°C) @ 860 PSI for 561 hrs.</td><td>Yes Pass (49% Loss)</td></tr><tr><td>Hot Compression Test (300°C)</td><td>Yes</td></tr><tr><td>Hot Loss</td><td>70.9%</td></tr><tr><td>Hot Creep</td><td>17.5%</td></tr></table>	PROPERTIES	VALUES	Material	100% PTFE (Polytetrafluoroethylene) Ultra high molecular weight fine resin without binders & fillers	Process	Highly expanded	Color	White	Thickness Tolerance	+/-0.010"	Temperature Range	-267.77°C to +315.55°C	Pressure Range	Full vacuum to 3000PSI	Chemical Compatibility Range	pH range 0 ~ 14	Specific Gravity (ASTM D 792)	0.80 +/-0.10	ASTM Testing	Yes	Sealability (ASTM F-37-B)		Fuel A (isooctane)	0.02 ml/hr	Fuel B (nitrogen) @ 60 psig	NA	Compressibility (ASTM F-36)	66%	Recovery (ASTM F-36)	12%	Creep Relaxation (ASTM F-38)	38%	Tensile Strength (ASTM F-152)	2106 PSI	Matrix Tensile	5455 PSI	Elongation (ASTM F-152)	169.9%	Tensile @ break point	2632 PSI	PSA Testing	Yes	FSA high pressure steam test (275°C) @ 860 PSI for 561 hrs.	Yes Pass (49% Loss)	Hot Compression Test (300°C)	Yes	Hot Loss	70.9%	Hot Creep	17.5%																		
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Fuel B (nitrogen) @ 60 psig	NA																																																																					
Compressibility (ASTM F-36)	66%																																																																					
Recovery (ASTM F-36)	12%																																																																					
Creep Relaxation (ASTM F-38)	38%																																																																					
Tensile Strength (ASTM F-152)	2106 PSI																																																																					
Matrix Tensile	5455 PSI																																																																					
Elongation (ASTM F-152)	169.9%																																																																					
Tensile @ break point	2632 PSI																																																																					
PSA Testing	Yes																																																																					
FSA high pressure steam test (275°C) @ 860 PSI for 561 hrs.	Yes Pass (49% Loss)																																																																					
Hot Compression Test (300°C)	Yes																																																																					
Hot Loss	70.9%																																																																					
Hot Creep	17.5%																																																																					
<div><p>HIGH TEMPERATURE GASKET SHEET TYPE HTG 1100</p></div>	<p>TYPE HTG 1100 is a high temperature gasket, an insulation material base on Ceramic Fibres which stands out for its high temperature limit and low heat conductivity. Type HTG 1100 is best suited for steel works, glass industries, industrial furnace, foundries, electrical equipment and boiler industry.</p> <p><b>Typical Applications:</b> Steel works, foundries, Furnace and boiler construction.</p> <p><b>Availability:</b> Size: L X W 1000mm x 1000mm, 1040mm x 1040mm Thickness 1-8 (mm)</p>	<table><tr><th>Description</th><th>Test Method</th><th>Unit</th><th>Value</th></tr><tr><td>Binder</td><td></td><td></td><td>Organic</td></tr><tr><td>Colour</td><td></td><td></td><td>White with honeycomb</td></tr><tr><td>Temperature limit</td><td></td><td>°C</td><td>1100</td></tr><tr><td>Tolerance in thickness</td><td></td><td>%</td><td>±10</td></tr><tr><td>Density</td><td>DIN 28 090-2</td><td>g/cm³</td><td>0.91</td></tr><tr><td>Tensile Strength</td><td>DIN 52 910</td><td></td><td></td></tr><tr><td>    Longitudinal</td><td></td><td>N/mm²</td><td>4</td></tr><tr><td>    Transverse</td><td></td><td>N/mm²</td><td>2</td></tr><tr><td>Compressibility</td><td>ASTM F 36 K</td><td>%</td><td>≤25</td></tr><tr><td>Recovery</td><td>ASTM F 36 K</td><td>%</td><td>≥30</td></tr><tr><td>Loss on ignition</td><td>DIN 52 911</td><td>%</td><td>17</td></tr><tr><td>Decrease in thickness</td><td>1h/800°C</td><td>%</td><td>≤2.5</td></tr><tr><td>Shrinkage by surface</td><td>1h/800°C</td><td></td><td></td></tr><tr><td>    Longitudinal</td><td></td><td>%</td><td>≤2</td></tr><tr><td>    Transverse</td><td></td><td>%</td><td>≤2</td></tr><tr><td>Heat conduct @ 400°C average</td><td></td><td>W/m²K</td><td>0.11</td></tr></table>	Description	Test Method	Unit	Value	Binder			Organic	Colour			White with honeycomb	Temperature limit		°C	1100	Tolerance in thickness		%	±10	Density	DIN 28 090-2	g/cm³	0.91	Tensile Strength	DIN 52 910			Longitudinal		N/mm²	4	Transverse		N/mm²	2	Compressibility	ASTM F 36 K	%	≤25	Recovery	ASTM F 36 K	%	≥30	Loss on ignition	DIN 52 911	%	17	Decrease in thickness	1h/800°C	%	≤2.5	Shrinkage by surface	1h/800°C			Longitudinal		%	≤2	Transverse		%	≤2	Heat conduct @ 400°C average		W/m²K	0.11
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# REFERENCE CHARTS

## STANDARD DIMENSIONS FOR RAISED FACE AND FULL FACE FLANGES AS PER EN 1514-1 ASME B16.21 (ASME B16.5)

NPS	RAISED FACE			FULL FACE											
	OD x ID (mm)			Class 150#				Class 300#				Class 600#			
	Class 150#	Class 300#	Class 600#	OD x ID (mm)	No. of Bolts	Hole Dia (mm)	Bolt PCD (mm)	OD x ID (mm)	No. of Bolts	Hole Dia (mm)	Bolt PCD (mm)	OD x ID (mm)	No. of Bolts	Hole Dia (mm)	Bolt PCD (mm)
1/2"	48 x 21	54 x 21	54 x 21	89 x 21	4	16	60	95 x 21	4	16	67	95 x 21	4	16	67
3/4"	57 x 27	67 x 27	67 x 27	95 x 27	4	16	70	117 x 27	4	19	83	117 x 27	4	19	83
1"	67 x 33	73 x 33	73 x 33	108 x 33	4	16	79	124 x 33	4	19	89	124 x 33	4	19	89
1 1/4"	76 x 42	83 x 42	83 x 42	117 x 42	4	16	89	133 x 42	4	19	98	133 x 42	4	19	98
1 1/2"	86 x 48	95 x 48	95 x 48	127 x 48	4	16	98	156 x 48	4	22	114	156 x 48	4	22	114
2"	105 x 60	111 x 60	111 x 60	152 x 60	4	19	121	165 x 60	8	19	127	165 x 60	8	19	127
2 1/2"	124 x 73	130 x 73	130 x 73	178 x 73	4	19	140	191 x 73	8	22	149	191 x 73	8	22	149
3"	137 x 89	149 x 89	149 x 89	191 x 89	4	19	152	210 x 89	8	22	168	210 x 89	8	22	168
3 1/2"	162 x 102	165 x 102	165 x 102	216 x 102	8	19	178	229 x 102	8	22	184	229 x 102	8	25	184
4"	175 x 114	181 x 114	194 x 114	229 x 114	8	19	191	254 x 114	8	22	200	273 x 114	8	25	216
5"	197 x 141	216 x 141	241 x 141	254 x 141	8	22	216	279 x 141	8	22	235	330 x 141	8	29	267
6"	222 x 168	251 x 168	267 x 168	279 x 168	8	22	241	318 x 168	12	22	270	356 x 168	12	29	292
8"	279 x 219	308 x 219	321 x 219	343 x 219	8	25	298	381 x 219	12	29	330	419 x 219	12	32	349
10"	340 x 273	362 x 273	400 x 273	406 x 273	12	25	362	445 x 273	16	29	387	508 x 273	16	35	432
12"	410 x 324	422 x 324	457 x 324	483 x 324	12	29	432	521 x 324	16	25	451	559 x 324	20	35	489
14"	451 x 356	486 x 356	492 x 356	533 x 356	12	29	476	584 x 356	20	32	514	603 x 356	20	38	527
16"	514 x 406	540 x 406	565 x 406	579 x 406	16	32	540	648 x 406	20	35	572	686 x 406	20	41	603
18"	549 x 457	597 x 457	613 x 457	635 x 457	16	32	578	711 x 457	24	35	629	743 x 457	20	44	654
20"	606 x 508	654 x 508	683 x 508	699 x 508	20	32	635	775 x 508	24	35	686	813 x 508	24	44	724
24"	718 x 610	775 x 610	791 x 610	813 x 610	20	35	749	914 x 610	24	41	813	948 x 610	24	51	830



### TOLERANCES

(mm)	Up to 600	Over 600
ID	±0.4	+0 -3.2
OD	±0.4	+0 -3.2

The above data is compiled carefully. However, Inmarco does not accept responsibility for any error in the above data, customer should re-confirm above from his own source.



**Innovations in Fluid Sealing.**

**INMARCO Fzc.**

P. O. Box : 120284 SAIF Zone, Sharjah, U.A.E.  
Tel : +971 6 557 8378 Fax : +971 6 557 8948  
E-mail : [info@inmarco.ae](mailto:info@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)

**INMARCO EMIRATES L.L.C.**

P. O. Box : 91937, Mussafah, Abu Dhabi, U.A.E.  
Tel : +971 2 552 1818 Fax : +971 2 552 1718  
E-mail : [abudhabi@inmarco.ae](mailto:abudhabi@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)





Innovations in Fluid Sealing.  
[www.inmarco.ae](http://www.inmarco.ae)

## Technical Textiles in Silica, Ceramic & Glass



## Thermal Insulation





## ABOUT US

INMARCO is one of the leading manufacturer of superior quality "Fluid Sealing Products" accepted and approved by variety of industries. Inmarco has attained market leadership in fluid sealing industry through its dedication to customer service and product development. Inmarco is committed to continuous improvement and has grown throughout three decades contributing to the environmental friendly Sealing Solutions. Non Asbestos culture has been driven and many a personnel to understand the asbestos menace in today's life. Inmarco's clientele are happy and satisfied of our untiring support for the sealing problems. Based on technological capabilities and perfection achieved over the years, Inmarco provides a wide range of products and services to the maintenance Industry. Our determinations to conduct business on a global scale is supported by and reflected in a fundamental philosophy utilization of technological expertise/ accumulation over three decades to access changes that occurred with passage of time while continuously evolving previously unexplored areas.

## VALUES

With MARKET-oriented structures, new and stronger product offerings, technically skilled-employees and efficient environmental impact MANAGEMENT SYSTEM, armed with global rapport with similar manufacturing companies and access to the latest development in the industry and a resilient local spirit, we are dedicated to delivering the best results. It is our people who make the system come alive and turn these principles, policies, and procedures into reality.

## MISSION & VISION

**MISSION** - Values - a driving force for Change...

A company rooted in unweaving values, INMARCO keeps ahead of change, reaping opportunities for growth. Striving to maintain leadership in industrial sealing products with wide manufacturing range. Providing a high quality product that combines performance with value for pricing, while establishing a successful relationship with the customers.

**VISION** - To be a market leader surpassing all hurdles of the industry, automate the process, systematized supplies and offer twenty-four-seven on service.

## WARE HOUSING

Located in the heart of the world business hub at SAIF Zone Sharjah UAE. Equipped with State of European Machinery.

**STOCKS** - The Warehouse stocks varieties of exotic raw materials for ever demanding modernized applications.

**STORES** - The temperature control stores takes care of the wellbeing and enhances shelf life of raw materials and the finished products.

**INSPECTION** - We never choose cheap materials, every incoming shipment follows stringent inspections system and are stored at predefined locations.

**PACKING AND DISPATCH** - Latest packing methodology in use with the modern gadgets and simplified equipments to perform efficient packing.

## TECHNOLOGIES & RESOURCES

INMARCO is driven by using non asbestos materials and is committed to provide superior and quality products that passed international standards and are environmental friendly. Technologies has helped develop more advance processes and has produced unwanted by-products causing pollution and deplete natural resources to the detriment of the earth and its environment that causes threat not only in the environment but also to mankind. With its philosophy in non-asbestos fluid sealing products INMARCO is able to do its part in conserving the environment.

## CREDENTIALS





Inmarco is pleased to offer 24/7 onsite technical and installation services. Inmarco is specialized in manufacture of valve sealing systems and is proud to announce that the recently developed expandable version of valve cart seal has outperformed the expected results. Certificated by American Petroleum institute under standard ANSI/API standard 607 Fifth Edition – and API 589 Second Edition . We offer valve seal refurbishment and can undertake onsite jobs also.

- Construction
- Chemical Processing
- Food & Beverage
- Marine & Dry-docking
- Oil & Gas
- Pharmaceuticals
- Power Generation Desalination & Waster Water
- Paper & Pulp
- Steel & Aluminum

## CERTIFICATIONS & APPROVALS



**Cartseal Fire Safe Certified  
As Per Api 607**



**Packing Style 100fxi-special Conform  
To Fugitive Emission Norms As Per Api 622**



**Packing Style 100fxi-special  
Fire Safe Certified Asper Api 607**



**Borogue**



**Takreer**



**Gasco**



**Ruweis Fertilizer  
Industries (Fertil)**



**Adgas**



**Adco**



**Petroleum Development  
Of Oman**



**Qatar Petroleum**



## THERMAL INSULATION

Insulation is a barrier that minimizes the transfer of heat energy from one material to another by reducing the conduction, convection and/or radiation effects; Derived by application of Heat transfer between objects of differing temperature. This means to stem the heat Flow by specially engineered methods or processes. Heat flow is an inevitable consequence of contact between objects of differing temperature. Thermal insulation provides a means to maintain a gradient of temperature, by providing a region of insulation in which heat flow is reduced or thermal radiation is reflected rather than absorbed.

In building construction, insulating materials are assigned a quantitative measure of the insulating capability, called the R-value. In thermal engineering of insulating systems for ovens,

reactors, and furnaces, thermal conductivity (K), product density and specific heat (C ) are the key product characteristics, which influence insulating efficiency, such as accolade insulating. Flow thermal conductivity (K) is analogous to high insulating capability (R).

Thermal insulation is a versatile term but principally covers the subject of control the loss of heat energy. This energy loss can be controlled with the help of naturally available minerals processed to suit a particular application. The minerals are Glass, Ceramic and Silica. Various forms of above materials are manipulated / processed and treated with synthetic /organic additives or coating helps the materials to perform in most critical applications.

## OTHER INSULATION MATERIALS



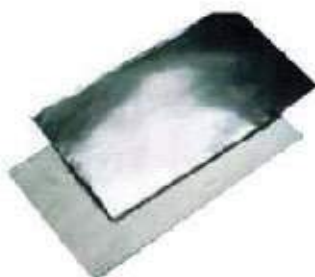
TADPOLE GASKET



CERAMIC MILL BOARD



LADDER TAPE



ALUMINUM FOIL FELT FABRIC



STAINLESS STEEL NEEDLE FELT



NEEDLE MATS WITH ADHESIVE



WEBBING TAPES



EYELETED BLANKET



GLASS NEEDLE MAT



### Product Type

### Description

### Operational Parameters

#### CERAMIC BRAIDED ROPE

STYLE 123 Ceramic Fibre Rope is diagonally braided or over braided or around a bulk ceramic rope core, the fibers are either E-Glass reinforced or Stainless Steel wire reinforced and can withstand temperature up to 1260°C.

STYLE 123 is available with special chemical treatment which will not only make the product flame proof/fire retardant but also will increase the temperature resistance up to 1400°C.

STYLE 123 conforms to ISO14000 norms and are environmentally friendly, non-toxic and non health hazardous. Ceramic products conform to physical parameter including dimensions to IS 14656. There are no specific standards for ceramic fibre rope but are generally covered under ASTM C892.

#### Advantages:

- \*Non toxic, non health hazardous and environmental friendly.
- \*Longer life due to no loss of strength at optimum working temperature.
- \*High thermal insulation properties ensures friendly working atmosphere.
- \*Non combustible and electrically non conductive (non metallic).
- \*Increase safety of plant personnel and improves productivity.

#### Style Index

Style	Description
S-123E	E-Glass plain inter-braided ceramic packing.
S-123S	Stainless Steel wire reinforced inter-braided ceramic packing.
S-123T	E-Glass reinforced inter-braided ceramic packing impregnated with Iutherm® to enhance abrasion resistance and density.
S-123V	E-Glass reinforced inter-braided ceramic packing impregnated with special synthetic dispersion to enhance density and temperature resistance.
S-123ST	Stainless Steel wire reinforced inter-braided ceramic packing impregnated with Iutherm® to enhance abrasion resistance and density.
S-123SV	Stainless Steel wire reinforced inter-braided packing impregnated with special synthetic dispersion to enhance density and temperature resistance.

PROPERTIES	UNIT	Style 123/123-S
Composition - $Al_2O_3$	%	42-46
$SiO_2$	%	52-55
$Fe_2O_3$	%	1
$TiO_2$		Traces
Max. Working Temperature	°C	1260
Melting Point	°C	1760
Thermal Conductivity (@ average of 1100°C)	W/m-°K	0.18
Effective under pH range	pH	2-12
Leachable Chloride content	ppm	<100
Loss on Ignition (@average of 1200°C)	%	15max.
Linear Shrinkage (@ average 1200°C)	%	3
Average Density	Kg/m³	600-800
Thickness	mm	3.0 to 90 cross section (round/square)
Standard Length	Mtr.	100 (3-10mm), 50 (12-25mm), 20 (30-50mm) & 10 (60-90mm)

#### Typical Application:

Superior replacement of asbestos static door seals in boilers / ovens / reformers / heat exchangers / radiant tube packing core / heat treatment furnaces / thermocouple tubes / dummy bar seals / insulation of pipe lines / exhaust and pipe line expansion joints / high temperature valve glands in air, fuel and gas.

#### Service Media:

Superior heated and saturated steam, non oxidizing liquids and gases, hot blast, alumina in power and molten form, dyes and chemicals, mild acid and alkalis.

#### Note:

\*Custom sizes and lengths possible, please contact our technical team for your requirements.

\*Please indicate cross section required in square or round.

PROPERTIES	VALUES
pH	1 - 13
Temperature (°C)	+550°C
Thermal Conductivity	0.20 WMK (@ average 550°C)
Loss on Ignition	1% max. @ 850°C
Size	3mm² to 90mm²

#### Service Media:

Super heated and Saturated steam, All non oxidizing liquids and gases, Dyes & Chemicals, etc.

#### Typical Application:

Furnace & Oven doors, boiler door, Peep & Inspection hole, Flange Grooves, Exhaust Steam Pipes, Kiln, etc.



INM056

INMARCO STYLE 123





INM057

INMARCO STYLE 140




STYLE 140 is a dry non asbestos cover on cover braided packing. The yarn is manufactured from inorganic fibrous material made from refractory oxides. The packing is highly resistant to heat. This is electrically and thermally insulating.

STYLE 140 is a packing which is not only thermal resistant but also chemical resistant. It is thermally stable and is highly resilient.



STYLE 140 is non health hazardous, non toxic and eco friendly. This packing can effectively be used in gaseous application as well as in liquid and viscous chemicals but are suitable for static applications only.

Product Type	Description	Operational Parameters																																							
 <p>INMARCO STYLE 124</p>	<p><b>FIBERGLASS BRAIDED ROPE</b></p> <p>STYLE 124 is a braided rope made from premium texturized electrical and chemical resistant special fiberglass in cover on cover braid.</p> <p>STYLE 124 is of high tenacity and is meant for static sealing in dry condition.</p> <p>STYLE 124 can also be used in dynamic condition while treated with special dispersion based on graphite, vermiculite or PTFE. This is also available with SS wire/inconel wire reinforced to resist higher pressure and static load.</p> <p>Style Index:</p> <table border="1"> <thead> <tr> <th>Style</th><th>Description</th><th>Temperature</th></tr> </thead> <tbody> <tr> <td>S-124</td><td>Glass Fibre Packing</td><td>-240°C to 550°C</td></tr> <tr> <td>S-124T</td><td>Graphite Dispersed Glass Fiber Packing</td><td>-240°C to 550°C</td></tr> <tr> <td>S-124F</td><td>Inlaid* PTFE Dispersed Glass Fiber Packing</td><td>-240°C to 550°C</td></tr> <tr> <td>S-124I</td><td>Glass Fiber Packing Reinforced with Inconel wires/SS wires</td><td>-240°C to 550°C</td></tr> <tr> <td>S-124F</td><td>Glass Fiber Packing Inlaid* PTFE Dispersed Reinforcement with Inconel wires/SS wires</td><td>-240°C to 550°C</td></tr> <tr> <td>S-124G</td><td>Graphite Dispersed Glass Fiber packing Reinforced with Inconel wires/SS wires</td><td>-240°C to 600°C</td></tr> </tbody> </table>	Style	Description	Temperature	S-124	Glass Fibre Packing	-240°C to 550°C	S-124T	Graphite Dispersed Glass Fiber Packing	-240°C to 550°C	S-124F	Inlaid* PTFE Dispersed Glass Fiber Packing	-240°C to 550°C	S-124I	Glass Fiber Packing Reinforced with Inconel wires/SS wires	-240°C to 550°C	S-124F	Glass Fiber Packing Inlaid* PTFE Dispersed Reinforcement with Inconel wires/SS wires	-240°C to 550°C	S-124G	Graphite Dispersed Glass Fiber packing Reinforced with Inconel wires/SS wires	-240°C to 600°C	<table border="1"> <thead> <tr> <th>PROPERTIES</th><th>UNIT</th><th>3-10mm-100mtr. 12-25mm-15mtr. 30-50mm-20mtr. 60-90mm-10mtr.</th></tr> </thead> <tbody> <tr> <td>Max. Working Temperature</td><td>°C</td><td>-240 ~ 500</td></tr> <tr> <td>Loss on Ignition (@ 850°C)</td><td>%</td><td>1</td></tr> <tr> <td>Thermal Conductivity (@ 550°C)</td><td>Wm<sup>-2</sup>K</td><td>0.2</td></tr> <tr> <td>Thickness</td><td>mm</td><td>3.0 to 100 cross sections (round/square)</td></tr> <tr> <td>Standard Length</td><td>Mtr.</td><td>100 for cross sectional size 3 - 10mm 50 for cross sectional size 12 - 25mm 20 for cross sectional size 30 - 50mm 10 for cross sectional size 60 - 90mm</td></tr> </tbody> </table> <p>Typical Application: Furnace doors, Fill glass flanges and kiln cover, Chemical glass flanges in exhaust chimneys, Equipment handling highly corrosive alcohol and solvents except HF HCL and hot phosphoric acid.</p> <p>Service Media: Superior heated and saturated steam, non oxidizing liquids and gases, hot blast, alumina in power and molten form, dyes and chemicals, mild acid and alkalis.</p> <p>Note: Custom thickness and widths possible, please contact our technical team for your requirements. *Can be supplied in roll form, square or rectangular cross sections. *Please specify cross section when placing order. *This rope is also available with wire reinforcement. Please see below table for ordering.</p>	PROPERTIES	UNIT	3-10mm-100mtr. 12-25mm-15mtr. 30-50mm-20mtr. 60-90mm-10mtr.	Max. Working Temperature	°C	-240 ~ 500	Loss on Ignition (@ 850°C)	%	1	Thermal Conductivity (@ 550°C)	Wm <sup>-2</sup> K	0.2	Thickness	mm	3.0 to 100 cross sections (round/square)	Standard Length	Mtr.	100 for cross sectional size 3 - 10mm 50 for cross sectional size 12 - 25mm 20 for cross sectional size 30 - 50mm 10 for cross sectional size 60 - 90mm
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 <p>INMARCO STYLE 126</p>	<p><b>SILICA ROPE</b></p> <p>STYLE 126 is amorphous silica fiber have excellent corrosion and deterioration resistance at elevated temperatures, the braided ropes are available in square and round cross sections. These ropes are suitable in sealing applications where temperatures exceed 1000°C. These ropes do not brittle and does not lose its properties.</p> <p>Advantages: *Non toxic, non health hazardous. *Environmental friendly.</p>	<table border="1"> <thead> <tr> <th>PROPERTIES</th><th>UNIT</th><th>3-10mm-100mtr. 12-25mm-15mtr. 30-50mm-20mtr. 60-90mm-10mtr.</th></tr> </thead> <tbody> <tr> <td>Composition - SiO<sub>2</sub></td><td>%</td><td>94-96</td></tr> <tr> <td>Max. Working Temperature</td><td>°C</td><td>1100</td></tr> <tr> <td>Loss on Ignition</td><td>%</td><td>7-12</td></tr> <tr> <td>Melting Point</td><td>°C</td><td>1600</td></tr> <tr> <td>Average Density</td><td>kg/cm<sup>3</sup></td><td>700-900</td></tr> <tr> <td>Cross sectional size</td><td>mm</td><td>3.0 to 90 cross section (round/square)</td></tr> <tr> <td>Standard Length</td><td>Mtr.</td><td>100 for cross sectional size 3 - 10mm 50 for cross sectional size 12 - 25mm 20 for cross sectional size 30 - 50mm 10 for cross sectional size 60 - 90mm</td></tr> </tbody> </table> <p>Typical Application: Furnace, Oven, Boiler, Flange grooves, Exhaust steam pipes. These ropes can be effectively be used in gaseous applications as well as in liquid and viscous chemicals but are suitable for static applications only. Seal for casting moulds, as a packing in electric transformers.</p> <p>Service Media: Superior heated and saturated steam, non oxidizing liquids and gases, hot blast, etc.</p> <p>Note: *Custom sizes and lengths possible, please contact our technical team for your requirements. *Please indicate cross section required in square or round.</p>	PROPERTIES	UNIT	3-10mm-100mtr. 12-25mm-15mtr. 30-50mm-20mtr. 60-90mm-10mtr.	Composition - SiO <sub>2</sub>	%	94-96	Max. Working Temperature	°C	1100	Loss on Ignition	%	7-12	Melting Point	°C	1600	Average Density	kg/cm <sup>3</sup>	700-900	Cross sectional size	mm	3.0 to 90 cross section (round/square)	Standard Length	Mtr.	100 for cross sectional size 3 - 10mm 50 for cross sectional size 12 - 25mm 20 for cross sectional size 30 - 50mm 10 for cross sectional size 60 - 90mm															
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Product Type	Description	Operational Parameters																					
<div><p>INM060 <b>INMARCO STYLE 160</b></p></div>	<p>STYLE 160 an excellent hybrid combination non-asbestos packing rope for static sealing applications. The packing has a central core of inorganic bulk fibre and outer braided jacket with gas &amp; heat resistant inorganic filament yarn. The packing is a combination of extremely high mechanical strength and resiliency which is most important in sealing application.</p> <p>STYLE 160 does not cause any itching sensation on human skin as caused by conventional ceramic yarn/packing.</p> <p>STYLE 160 is a extremely very good packing for Coke oven door sealing, Caulking, Furnace door sealing etc because of extremely good resiliency and also extremely low loss on ignition.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Extremely high thermal and electrical insulating properties.</li><li>*No embrittlement or abrasion</li><li>*Do not cause itching sensation on skin.</li><li>*Negligible volume loss during operation due to extremely low loss on ignition.</li><li>*Negligible volume loss leads to longer leakage-free operational life.</li></ul>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>TEMPERATURE (°C)</td><td>1000</td></tr><tr><td>THERMAL CONDUCTIVITY</td><td>0.14 WMK (@ average 650°C)</td></tr><tr><td>LOSS ON IGNITION</td><td>5% max. @ 850°C</td></tr><tr><td>SIZES</td><td>12mm sq.dia - 100mm sq/dia</td></tr></table> <p><b>Typical Application:</b> Hot blast valve, Furnace door sealing, Coke oven door sealing &amp; caulking, Mill door sealing, Pouring ladle, etc.</p> <p><b>Service Media:</b> Super heated &amp; saturated steam, Non-oxidising liquids and gases, Hot blast, Molten alumina, Flue gas, etc.</p>	PROPERTIES	VALUES	TEMPERATURE (°C)	1000	THERMAL CONDUCTIVITY	0.14 WMK (@ average 650°C)	LOSS ON IGNITION	5% max. @ 850°C	SIZES	12mm sq.dia - 100mm sq/dia											
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<div><p>INM061 <b>INMARCO STYLE 160M</b></p></div>	<p>STYLE 160M an excellent hybrid combination non asbestos packing rope for static sealing application. The packing has a central core of Inorganic bulk fibre and outer braided jacket with gas &amp; heat resistant inorganic filament yarn. The packing is a combination of extremely high mechanical strength and resiliency which is most important in sealing application. The final braided rope is treated with a special chemical (Microlite Compound) to increase its temperature resistance and make the rope fire retardant.</p> <p>STYLE 160M do not cause any itching sensation on human skin as caused by conventional ceramic yarn/packing.</p> <p>STYLE 160M is extremely very good packing for coke oven door sealing, caulking, furnace door sealing, BF toyer assembly etc. because of extremely good resiliency and also extremely low loss on ignition.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Extremely high thermal and electrical insulating properties.</li><li>*No embrittlement or abrasion to metallic parent equipment.</li><li>*Do not cause itching sensation on skin.</li><li>*Negligible volume loss during operation due to extremely low loss on ignition.</li><li>*Negligible volume loss leads to longer leakage-free operational life.</li></ul>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>Temperature (°C)</td><td>1400</td></tr><tr><td>Thermal Conductivity</td><td>0.16 WMK (@ average 1400°C)</td></tr><tr><td>Loss on Ignition</td><td>10% max. @ 1400°C</td></tr><tr><td>Sizes</td><td>12mm sq/dia -100mm sq/dia</td></tr></table> <p><b>Typical Application:</b> Hot blast valve, furnace door sealing, BF toyer assembly, Coke oven door sealing &amp; caulking, Mill door sealing, Pouring ladle, etc.</p> <p><b>Service Media:</b> Superior heated and saturated steam, non oxidizing liquids and gases, Hot blast, Molten Alumina, Flue gas, etc.</p>	PROPERTIES	VALUES	Temperature (°C)	1400	Thermal Conductivity	0.16 WMK (@ average 1400°C)	Loss on Ignition	10% max. @ 1400°C	Sizes	12mm sq/dia -100mm sq/dia											
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<div><p>INM062 <b>INMARCO STYLE 161</b></p></div>	<p><b>FIBERGLASS TUBING &amp; SLEEVES</b></p> <p>STYLE 161 are made from superior e-glass filament yarns, texturized e-glass fibers, specially used as a cover on the electrical cables, other application include pipe protection and offer excellent insulation capabilities and can withstand in temperatures as high as 540°C.</p> <p><b>Typical Application:</b> Electrical sleeving, Cover high temperature pipes, High temperature for pipe / duct &amp; turbine insulation, Heat treatment furnaces.</p>	<table><tr><th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr><tr><td>Max. Working Temperature</td><td>°C</td><td>550</td></tr><tr><td>Loss on Ignition</td><td>%</td><td>10</td></tr><tr><td>Melting Point</td><td>°C</td><td>1050</td></tr><tr><td>Inner Diameter</td><td>mm</td><td>10.0 to 100</td></tr><tr><td>Wall Thickness</td><td>mm</td><td>2.0 to 6.0</td></tr><tr><td>Standard Length</td><td>Mtr.</td><td>30</td></tr></table> <p><b>Note:</b> *Custom thickness, widths and customary coatings possible, please contact our technical team for your requirements. *Available with silicone coatings.</p>	PROPERTIES	UNIT	VALUE	Max. Working Temperature	°C	550	Loss on Ignition	%	10	Melting Point	°C	1050	Inner Diameter	mm	10.0 to 100	Wall Thickness	mm	2.0 to 6.0	Standard Length	Mtr.	30
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## ROPES & SLEEVES

PRODUCT TYPE	DESCRIPTION	OPERATIONAL PARAMETERS																																													
 <p><b>INMARCO STYLE 162</b></p>	<p><b>SILICA TUBING &amp; SLEEVES</b></p> <p>STYLE 162 are generally used in protecting precious industrial cables with high temperature pipe lines to control energy loss. It can provide protection against weld splatter, fire, and extreme heat. These sleeves can be pulled over any items which are in circular cross section. Additional coating will be required to provide abrasion resistance. Can withstand temperatures up to +1000°C.</p> <p>Advantages: *Environmentally safe, no asbestos content, non hazardous.</p> <p>Typical Application: Insulation wraps for pipes, Hoses and electrical cables, Isolated high temperature welding protection. Can be a good substitute upon glass tapes.</p>	<table> <tr> <th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr> <tr> <td>Composition - <math>\text{SiO}_2</math></td><td>%</td><td>94-96</td></tr> <tr> <td>Max. Working Temperature</td><td>°C</td><td>1100</td></tr> <tr> <td>Loss on Ignition</td><td>%</td><td>7-12</td></tr> <tr> <td>Melting Point</td><td>°C</td><td>1600</td></tr> <tr> <td>Average Density</td><td>Kg/cm<sup>3</sup></td><td>700-900</td></tr> <tr> <td>Inner Diameter</td><td>mm</td><td>10.0 to 100</td></tr> <tr> <td>Wall Thickness</td><td>mm</td><td>2.0 to 6.0</td></tr> <tr> <td>Standard Length</td><td>Mtr.</td><td>30.0</td></tr> </table> <p>Service Media: Superior heated and saturated steam, Non oxidizing liquids and gases, Hot blast, etc.</p>	PROPERTIES	UNIT	VALUE	Composition - $\text{SiO}_2$	%	94-96	Max. Working Temperature	°C	1100	Loss on Ignition	%	7-12	Melting Point	°C	1600	Average Density	Kg/cm <sup>3</sup>	700-900	Inner Diameter	mm	10.0 to 100	Wall Thickness	mm	2.0 to 6.0	Standard Length	Mtr.	30.0																		
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 <p><b>INMARCO STYLE 250</b></p>	<p><b>CERAMIC SLEEVES</b></p> <p>STYLE 250 Ceramic Sleeves are woven by e-glass reinforced ceramic fibers. Ceramic sleeves offer excellent thermal and electrical insulation properties. Can be used for electrical cable sleeving and as covering of high temperatures pipes. This can withstand molten splash and offer high mechanical strength with special chemical treatment.</p> <p>STYLE 250 is available with special chemical treatment which will not only make the product flame proof/fire retardant but also will increase the temperature resistance up to 1400°C.</p> <p>STYLE 250 conforms to ISO1400 norms and is environmentally friendly, non-toxic and non health hazardous. Ceramic products conform to physical parameter including dimensions to IS14656. There is no specific standards for ceramic sleeves but are generally covered under ASTM C892.</p> <p>Typical Application: Electrical sleeving, Cover high temperature pipes, High temperature for pipe, duct &amp; turbine insulation, Heat treatment furnaces.</p>	<table> <tr> <th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr> <tr> <td>Composition - <math>\text{Al}_2\text{O}_3</math></td><td>%</td><td>42-46</td></tr> <tr> <td><math>\text{SiO}_2</math></td><td>%</td><td>52-55</td></tr> <tr> <td><math>\text{Fe}_2\text{O}_3</math></td><td>%</td><td>1</td></tr> <tr> <td><math>\text{TiO}_2</math></td><td></td><td>Traces</td></tr> <tr> <td>Max. Working Temperature</td><td>°C</td><td>1260</td></tr> <tr> <td>Melting Point</td><td>°C</td><td>1760</td></tr> <tr> <td>Thermal Conductivity (@ average of 1100°C)</td><td>wmk</td><td>0.18</td></tr> <tr> <td>Effective under pH</td><td></td><td>2-12</td></tr> <tr> <td>Leachable Chloride content</td><td>ppm</td><td>100</td></tr> <tr> <td>Loss on ignition (@ average of 1200°C)</td><td>%</td><td>15</td></tr> <tr> <td>Linear Shrinkage (@ average of 1200°C)</td><td>%</td><td>3</td></tr> <tr> <td>Inner Diameter</td><td>mm</td><td>10.0 to 100</td></tr> <tr> <td>Wall Thickness</td><td>mm</td><td>2.0 to 6.0</td></tr> <tr> <td>Standard Length</td><td>Mtr.</td><td>30.0</td></tr> </table> <p>Note: *Custom thickness and widths possible, please contact our technical team for your requirements.</p>	PROPERTIES	UNIT	VALUE	Composition - $\text{Al}_2\text{O}_3$	%	42-46	$\text{SiO}_2$	%	52-55	$\text{Fe}_2\text{O}_3$	%	1	$\text{TiO}_2$		Traces	Max. Working Temperature	°C	1260	Melting Point	°C	1760	Thermal Conductivity (@ average of 1100°C)	wmk	0.18	Effective under pH		2-12	Leachable Chloride content	ppm	100	Loss on ignition (@ average of 1200°C)	%	15	Linear Shrinkage (@ average of 1200°C)	%	3	Inner Diameter	mm	10.0 to 100	Wall Thickness	mm	2.0 to 6.0	Standard Length	Mtr.	30.0
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## TAPES

INMD65

## INMARCO STYLE 131

### FIBERGLASS WOVEN TAPE

STYLE 131 is made of 100% continuous filament fiberglass and does not contain asbestos or ceramic. Tough, flexible and versatile material it can withstand temperature up to 550°C.

STYLE 131 fiberglass tape is non hazardous and it has good insulation and heat resistance properties.

STYLE 131 is non toxic, no heavy metals, and excellent heat retention capabilities.

#### Style Index:

Style	Description
S - 131	Plain fiberglass inter-woven tape
S - 131SS	Wire reinforced
S - 131AF	Aluminum foil backing
S - 131G	Graphite coating
S - 131SR	Silicon rubberized
S - 131V	Vermiculite coating

PROPERTIES	UNIT	VALUE
Max. Working Temperature	°C	550
Loss on Ignition	%	10
Thermal Conductivity (@ average 550°C)	wmk	0.3
Melting Point	°C	1050
Average Density	grms/cc	1.2-1.4
Width	mm	20.0 to 100
Standard Length	Mtr	30
Thickness	mm	2.0 to 6.0

#### Typical Application:

Static door seal for boilers/ovens/reformers/furnaces/heat exchangers/radiant tube packings, Dummy bar seals, Insulation of pipe lines, Exhausts and pipe line expansion joints, High temperature valve glands in air/fuel gas, etc.



### Product Type

### Description

### Operational Parameters



INMD66

**INMARCO STYLE 132**

#### SILICA WOVEN TAPE

STYLE 132 is amorphous silica fiber are woven tapes from 96% pure SiO<sub>2</sub> silica fibers. These fibers have excellent corrosion and deterioration resistance at elevated temperatures; the tapes are available in different widths & thicknesses. These tapes are suitable in sealing and thermal insulation applications where temperatures exceed 1000°C. These tapes do not brittle and do not lose its properties. STYLE 132 silica woven taper is protected and can withstand in extreme heat, welding splatter and molten metal. The performance is extremely good and attributes resistance to fire flame.

#### Advantages:

- \*Non toxic, non health hazardous.
- \*Environmental friendly.

PROPERTIES	UNIT	VALUE
Composition - SiO <sub>2</sub>	%	94-96
Max. Working Temperature	°C	1100
Loss on Ignition	%	7-12
Melting Point	°C	1600
Average Density	Kg/cm <sup>3</sup>	700-900
Width	mm	10.0 to 100
Thickness	mm	2.0 to 6.0
Standard Length	Mtr.	30.0

#### Typical Application:

Insulation wraps for pipes, Hoses and electrical cables, Isolated high temperature welding protection. Can be a good substitute upon glass tapes.

#### Service Media:

Superior heated and saturated steam, Non oxidizing liquids and gases, Hot blast, etc.

#### Note:

\*Custom sizes and lengths possible, please contact our technical team for your requirements.

#### CERAMIC WOVEN TAPE

STYLE 240 Ceramic Woven Tape is manufactured by weaving ceramic fibers reinforced with either e-glass or stainless steel wire. These tapes have high heat retention capabilities and can be used as thermal protection/energy loss of pipe lines. As wrapping of exhaust. Control thermal properties on expose pipe joints/flanges etc and can withstand maximum temperature of 1260°C.

STYLE 240 is available with special chemical treatment which will not only make the product flame proof/fire retardant but also will increase the temperature resistance up to 1400°C. STYLE 123 conforms to ISO14000 norms and is environmentally friendly, non-toxic and non health hazardous. Ceramic products conform to physical parameter including dimensions to IS 14656. There are no specific standards for ceramic fibre rope but are generally covered under ASTM C892.



INMD67

**INMARCO STYLE 240**

#### Advantages:

- \*Non toxic, non health hazardous and environmental friendly.
- \*Longer life due to no loss of strength at optimum working temperature.
- \*High thermal insulation properties ensures friendly working atmosphere.
- \*Non combustible and electrically non conductive (non metallic).
- \*Increase safety of plant personnel and improves productivity.

#### Style Index:

Style	Description
S-240B T	E-Glass reinforced impregnated with Intherm® to enhance abrasion resistance and density.
S-240B V	E-Glass reinforced impregnated with special synthetic dispersion to enhance density and temperature resistance.
S-240 ST	Stainless Steel reinforced impregnated with Intherm® to enhance abrasion resistance and density.
S-240 SV	Stainless Steel reinforced impregnated with special synthetic dispersion to enhance density and temperature resistance.

PROPERTIES	UNIT	VALUE
		Style 240-E/240-S
Composition - Al <sub>2</sub> O <sub>3</sub>	%	42-46
SiO <sub>2</sub>	%	52-55
Fe <sub>2</sub> O <sub>3</sub>	%	1
TiO <sub>2</sub>		Traces
Max. Working Temperature	°C	1260
Melting Point	°C	1760
Thermal Conductivity (at average of 1100°C)	W/m·K	0.18
Effective under pH range:	pH	2-12
Leachable Chloride content	ppm	<100
Loss on Ignition (at average of 1200°C)	%	15max.
Linear Shrinkage (at average 1200°C)	%	3
Average Density	Kg/m <sup>3</sup>	600-800
Thickness	mm	2.0 to 6.0
Standard Length	Mtr.	30
Width	mm	2.0 to 200

#### Typical Application:

Superior replacement of asbestos static door seals in boilers / ovens / reformers / heat exchangers / radiant tube packing core / heat treatment furnaces / thermocouple tubes / dummy bar seals / insulation of pipe lines / exhaust and pipe line expansion joints / high temperature valve glands in air, fuel and gas.

#### Service Media:

Superior heated and saturated steam, Non oxidizing liquids and gases, Hot blast, Alumina in power and molten form, Dyes and chemicals, Mild acid and Alkalies.

#### Note:

\*Custom thickness and widths possible, please contact our technical team for your requirements.

### Product Type

### Description

### Operational Parameters



INM068

**INMARCO STYLE 142**

#### SILICA FABRIC

STYLE 142 is woven from 96% SiO<sub>2</sub> silica fibers. These fabrics are time tested and proven to perform in extreme heat condition. These are highly resistant to corrosion and chemical attack. Excellent thermal insulation and electrical resistance capabilities. Silica fabrics are resistant to temperature of 1000°C and resist up to 1400°C for a short period of time. Silica fabrics can be a protection device in case of a fire. These fabrics have low thermal conductivity, high resistance to thermal shock and inert to chemical reagents, resistance to organic and chemical acids in any concentration even at high temperatures except hydrofluoric, phosphoric and hydrochloric acid.

#### Advantages:

- \*Low halogen and soluble chlorides.
- \*Does not contain asbestos or ceramic.
- \*Safe, suitable for ceramic refractory applications.

Property	Unit	Unit			
		Style 142 (60X3)	Style 142 (60X3)	Style 142 (100X3)	Style 142 (100X3)
Composition - SiO <sub>2</sub>	%	94-96	94-96	94-96	94-96
Temperature	°C	1200	1200	1200	1200
Loss on ignition	%	7-12	7-12	7-12	7-12
Melting Point	°C	1600	1600	1600	1600
Surface Density	g/m <sup>2</sup>	580±60	630±60	1100±100	1200±150
Thickness	mm	0.6	0.6	1.1	1.1
Length	Yards	50	50	50	50
Weave	Satin	8/3 Satin	8/3 Satin	12/5 Satin	12/5 Satin
Tensile Strength (W-warp)	kgf	1078 (110)	1274 (130)	1764 (180)	1764 (180)
Tensile Strength (W-weft)	kgf	784 (80)	980 (100)	1372 (140)	1372 (140)
Width	cm	94-200	94-200	94-200	94-200
Coating	—		Verticallite 2 side		Verticallite 2 side
Colour	—	Off-white	Tan	Off-white	Tan

#### Typical Application:

Molten metal splash, Valve Covers, Welding blankets & curtains. Insulation of furnaces, Thermal and Fire protection in machine, Building, Shipbuilding and Aviation. Stree remover in pipe welding. Insulation for turbines and insulation of mufflers in automotive. Fire resistant doors and firemen protection.

#### Service Media:

Superior heated and saturated steam, Non oxidizing liquids and gases, Hot blast, Alumina in power and molten form, Dyes and chemicals, Mild acid and Alkalies.

#### Note:

- \*Custom widths and thickness possible, please contact our technical team for your requirements.
- \*This silica fabric can be treated with different coatings or finishes to precisely meet customer specification



INM069

**INMARCO STYLE 225**

#### FIBERGLASS FABRIC COATED WITH ALUMINIUM FOIL

STYLE 225 is used for higher temperature exposure; textured e-glass products are used with an added high temperature treatment. An inorganic finish is applied to the surface of the fabric, giving the fabric temperature resistance up to 750°C. For additional strength and support in applications where fabrics will be subjected to high mechanical stress, stainless steel threads may be woven into the fabric. E-glass can be treated with different coatings or finishes to precisely meet customer's specifications. Among the possibilities; reflective or water resistant surfaces, enhanced cut resistance and increased thermal and mechanical resistance for higher performance in high temperature applications such as welding.

#### Typical Application:



- \*Excellent heat radiation reflection.
- \*Resistance to abrasion and cracks.



PROPERTIES	UNIT	VALUE
Temperature Resistance Fabric	°C	750
Temperature resistance Coating	°C	200
Finish		Aluminium Foil
Weight	g/m <sup>2</sup>	200
Coating Weight	g/m <sup>2</sup>	1 x 70
Thickness	mm	0.18
Width	cm	100
Roll Length	Mtrs.	100

#### Note:

- \*Custom sizes and lengths possible, please contact our technical team for your requirements.
- \*Please specified cross section when placing order.



PRODUCT TYPE	DESCRIPTION	OPERATIONAL PARAMETERS																																
<div></div> <div>INM070 INMARCO STYLE 500</div>	<p><b>FIBERGLASS FABRIC</b></p> <p>STYLE 500 fiberglass fabric has excellent resistance to high temperature superior mechanical strength provides acoustics insulation and is woven from texturized e-glass fibers, the texturized fibers provide a smooth shiny finished on the fabric. Can be used on variety of applications. The properties of fiberglass can be improved with special coatings and heat treatment.</p> <p>STYLE 500 has perfect insulating characteristics as well as excellent abrasion and tear resistance.</p> <p>Style Index:</p> <table><tr><th>Style</th><th>Description</th></tr><tr><td>S – 500</td><td>E-glass woven fabric</td></tr><tr><td>S – 500S</td><td>Silicone coated</td></tr><tr><td>S – 500V</td><td>Vermiculite coating</td></tr></table>	Style	Description	S – 500	E-glass woven fabric	S – 500S	Silicone coated	S – 500V	Vermiculite coating	<table><tr><th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr><tr><td>Max. Working Temperature</td><td>°C</td><td>550</td></tr><tr><td>Loss on Ignition</td><td>%</td><td>10</td></tr><tr><td>Melting Point</td><td>°C</td><td>1050</td></tr><tr><td>Average Density</td><td>g/cc</td><td>1.2-1.4</td></tr><tr><td>Thermal Conductivity</td><td>w/mk</td><td>0.3</td></tr><tr><td>Width</td><td>mm</td><td>1000-1010</td></tr><tr><td>Thickness</td><td>mm</td><td>3, 4, 5 &amp; 6</td></tr></table> <p>Typical Application: Weld protection, Heat shield oven door seals, Emergency fire blanket, Fire curtain insulation, Foundry splash protection.</p> <p>Note: *Custom widths possible, please contact our technical team for your requirements. *These fiberglass fabrics can be treated with different coatings or finishes to precisely meet customer specification.</p>	PROPERTIES	UNIT	VALUE	Max. Working Temperature	°C	550	Loss on Ignition	%	10	Melting Point	°C	1050	Average Density	g/cc	1.2-1.4	Thermal Conductivity	w/mk	0.3	Width	mm	1000-1010	Thickness	mm	3, 4, 5 & 6
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<div></div> <div>INM071 INMARCO STYLE 500M</div>	<p><b>FIBERGLASS FABRIC</b></p> <p>STYLE 500M non asbestos textiles are manufactured from special untexturized filament yarn. This is manufactured from inorganic refractory oxides in fibrous form having composition of Alumina, Silica and some special additives. These yarns are closely woven in power looms to manufacture textile.</p> <p>STYLE 500M are highly resistant. These are electrically and thermally insulating. These are thermally stable and does not become brittle and loss its properties at elevated temperature. This is extremely suitable for heat shield.</p> <p>STYLE 500M non asbestos cloths is finally chemically treated with microlite compound to make the cloth fire retardant &amp; molten resistant. If required this non asbestos cloth can be treated with rubber compound which can be graphite or non graphitic.</p> <p>STYLE 500M textile products are environment friendly, non toxic and non health hazardous. These textiles can effectively be used in gaseous applications as well as in liquid and in viscous chemicals but are suitable for static applications only.</p>	<table><tr><th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr><tr><td>Max. Working Temperature</td><td>°C</td><td>1000</td></tr><tr><td>pH Range</td><td>pH</td><td>1-13</td></tr><tr><td>Thermal Conductivity (@ average of 850°C)</td><td>w/mk</td><td>0.2</td></tr><tr><td>Loss on Ignition (@ average of 850°C)</td><td>%</td><td>8</td></tr><tr><td>Thickness</td><td>mm</td><td>3</td></tr><tr><td>Standard Length</td><td>Mtr.</td><td>25-30</td></tr><tr><td>Average Density</td><td>grms/cc</td><td>1.3-1.5</td></tr><tr><td>Width</td><td>mm</td><td>1000-1010</td></tr></table> <p>Typical Application: Furnaces, Ovens, Boilers, Flanges, Grooves, Casting cover, Exhaust steam pipes, Welding blankets.</p> <p>Service Media: Superheated and saturated steam, Non oxidizing liquids and gases, Hot blast, Alumina in power and molten form, Dyes and chemicals, Mild acid &amp; Alkalis.</p> <p>Note: *Custom widths possible, please contact our technical team for your requirements. *These fiberglass fabrics can be treated with different coatings or finishes to precisely meet customer specification.</p>	PROPERTIES	UNIT	VALUE	Max. Working Temperature	°C	1000	pH Range	pH	1-13	Thermal Conductivity (@ average of 850°C)	w/mk	0.2	Loss on Ignition (@ average of 850°C)	%	8	Thickness	mm	3	Standard Length	Mtr.	25-30	Average Density	grms/cc	1.3-1.5	Width	mm	1000-1010					
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<div><p>INM072 <b>INMARCO STYLE 550</b></p></div>	<p><b>CERAMIC FABRIC</b></p> <p>STYLE 550 Ceramic Fabrics are manufactured by weaving ceramic yarns. These yarns are manufactured from inorganic refractory oxides in fibrous form having composition of alumina, silica and some special additives. These are either e-glass reinforced or SS wire reinforced. These yarns are closely woven in power looms to manufacture the textile. STYLE 550 is available with special chemical treatment which will not only make the product flame proof/fire retardant but also will increase the temperature resistance up to 1400°C.</p> <p>STYLE 550 conforms to ISO14000 norms and is environmentally friendly, non-toxic and non health hazardous. Ceramic products conform to physical parameter including dimensions to IS 14656. There are no specific standards for ceramic fibre but are generally covered under ASTM C892.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Non toxic, non health hazardous and environmental friendly.</li><li>*Longer life due to no loss of strength at optimum working temperature.</li><li>*High thermal insulation properties ensures friendly working atmosphere.</li><li>*Non combustible and electrically non conductive (non metallic).</li><li>*Increase safety of plant personnel and improves productivity.</li></ul> <p><b>Style Index:</b></p> <table><thead><tr><th>Style</th><th>Description</th></tr></thead><tbody><tr><td>S - 550</td><td>Plain E-Glass reinforced inter-woven ceramic fabric.</td></tr><tr><td>S - 550E7</td><td>E-Glass reinforced impregnated with Isotherm® to enhance abrasion resistance and density.</td></tr><tr><td>S - 550EV</td><td>E-Glass reinforced impregnated with special synthetic dispersion to enhance density and temperature resistance.</td></tr><tr><td>S - 550S7</td><td>Stainless Steel wire reinforced impregnated with Isotherm® to enhance abrasion resistance and density.</td></tr><tr><td>S - 550SV</td><td>Stainless Steel wire reinforced impregnated with special synthetic dispersion to enhance density and temperature resistance.</td></tr></tbody></table>	Style	Description	S - 550	Plain E-Glass reinforced inter-woven ceramic fabric.	S - 550E7	E-Glass reinforced impregnated with Isotherm® to enhance abrasion resistance and density.	S - 550EV	E-Glass reinforced impregnated with special synthetic dispersion to enhance density and temperature resistance.	S - 550S7	Stainless Steel wire reinforced impregnated with Isotherm® to enhance abrasion resistance and density.	S - 550SV	Stainless Steel wire reinforced impregnated with special synthetic dispersion to enhance density and temperature resistance.	<table><thead><tr><th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr></thead><tbody><tr><td>Composition – <math>Al_2O_3</math></td><td>%</td><td>42-46</td></tr><tr><td><math>SiO_2</math></td><td>%</td><td>52-55</td></tr><tr><td><math>Fe_2O_3</math></td><td>%</td><td>1</td></tr><tr><td><math>TiO_2</math></td><td></td><td>Traces</td></tr><tr><td>Max. Working Temperature</td><td>°C</td><td>1260</td></tr><tr><td>Melting Point</td><td>°C</td><td>1760</td></tr><tr><td>Thermal Conductivity (@ average of 1100°C)</td><td>W/m-°K</td><td>0.18</td></tr><tr><td>Effective under pH range</td><td>pH</td><td>2-12</td></tr><tr><td>Leachable Chloride content</td><td>ppm</td><td>&lt;100</td></tr><tr><td>Loss on Ignition (@average of 1200°C)</td><td>%</td><td>15max.</td></tr><tr><td>Linear Shrinkage (@ average 1200°C)</td><td>%</td><td>3</td></tr><tr><td>Width</td><td>mm</td><td>1000</td></tr><tr><td>Thickness</td><td>mm</td><td>2.0 to 6.0</td></tr><tr><td>Standard Length</td><td>Mtr.</td><td>30</td></tr></tbody></table> <p><b>Typical Application:</b> Thermal power station, iron &amp; steel plants, Aluminum plants, Glass &amp; ceramic industries, refineries, fertilizers, Cement industries, etc.</p> <p><b>Service Media:</b> Superior heated and saturated steam, Non oxidizing liquids and gases, Hot blast, Alumina in power and molten form, Dyes and chemicals, Mild acid and Alkalis.</p> <p><b>Note:</b> *Custom thickness and widths possible, please contact our technical team for your requirements.</p>	PROPERTIES	UNIT	VALUE	Composition – $Al_2O_3$	%	42-46	$SiO_2$	%	52-55	$Fe_2O_3$	%	1	$TiO_2$		Traces	Max. Working Temperature	°C	1260	Melting Point	°C	1760	Thermal Conductivity (@ average of 1100°C)	W/m-°K	0.18	Effective under pH range	pH	2-12	Leachable Chloride content	ppm	<100	Loss on Ignition (@average of 1200°C)	%	15max.	Linear Shrinkage (@ average 1200°C)	%	3	Width	mm	1000	Thickness	mm	2.0 to 6.0	Standard Length	Mtr.	30
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<div><p>INM073 <b>INMARCO STYLE 260</b></p></div>	<p><b>CERAMIC NEEDLE BLANKET</b></p> <p>STYLE 260 Ceramic Needle Blanket is lightweight manufactured from refractory ceramic fibers, the special spinning method applied in manufacturing these blankets offer high flexibility and insulating properties.</p> <p>STYLE 260 these are also called needle blankets and are purely inorganic. Does not fume and resistance to most chemicals except hydrofluoric, phosphoric acid and concentrated alkalis. They retain physical and thermal properties even in wet condition.</p> <p>STYLE 260 is non combustible and it's approved for use against cellulosic and hydrocarbon fires and for dry wrapping of structural steel.</p> <p><b>Typical Application:</b> Crude oil, Reformer &amp; Pyrolysis heater linings, High temperature for pipe, duct &amp; turbine insulation, Heat treatment furnaces, Reheating furnace linings, Soaking pit cover sealing, Stress relieving insulation, Ovens &amp; Stock linings.</p>	<table><thead><tr><th>PROPERTIES</th><th>UNIT</th><th>VALUE</th></tr></thead><tbody><tr><td>Max. Working Temperature</td><td>°C</td><td>1260</td></tr><tr><td>Loss on Ignition</td><td>%</td><td>10</td></tr><tr><td>Melting Point</td><td>°C</td><td>1760</td></tr><tr><td>Average Density</td><td>Kg/m³</td><td>64/96/128</td></tr><tr><td>Thermal Conductivity</td><td>wmk</td><td>0.18</td></tr><tr><td>Width</td><td>mm</td><td>610</td></tr><tr><td>Standard Length</td><td>Mtr.</td><td>3800/7620</td></tr><tr><td>Thickness</td><td>mm</td><td>12.5 to 50.0</td></tr></tbody></table> <p><b>Service Media:</b> Superior heated and saturated steam, Non oxidizing liquids and gases, Hot blast, Alumina in power and molten form, Dyes and chemicals, Mild acid and Alkalis.</p> <p><b>Note:</b> *Custom thickness and widths possible, please contact our technical team for your requirements.</p>	PROPERTIES	UNIT	VALUE	Max. Working Temperature	°C	1260	Loss on Ignition	%	10	Melting Point	°C	1760	Average Density	Kg/m³	64/96/128	Thermal Conductivity	wmk	0.18	Width	mm	610	Standard Length	Mtr.	3800/7620	Thickness	mm	12.5 to 50.0																														
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**Innovations in Fluid Sealing.**

**INMARCO Fzc.**

P. O. Box : 120284 SAIF Zone, Sharjah, U.A.E.  
Tel : +971 6 557 8378 Fax : +971 6 557 8948  
E-mail : [info@inmarco.ae](mailto:info@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)

**INMARCO EMIRATES L.L.C.**

P. O. Box : 91937, Mussafah, Abu Dhabi, U.A.E.  
Tel : +971 2 552 1818 Fax : +971 2 552 1718  
E-mail : [abudhabi@inmarco.ae](mailto:abudhabi@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)



Innovations in Fluid Sealing.  
[www.inmarco.ae](http://www.inmarco.ae)

Sealing Valves Correctly  
will boost Plant Performance



Valve Sealing







## ABOUT US

INMARCO is one of the leading manufacturer of superior quality "Fluid Sealing Products" accepted and approved by variety of industries. Inmarco has attained market leadership in fluid sealing industry through its dedication to customer service and product development. Inmarco is committed to continuous improvement and has grown throughout three decades contributing to the environmental friendly Sealing Solutions. Non Asbestos culture has been driven and many a personnel to understand the asbestos menace in today's life. Inmarco's clientele are happy and satisfied of our untiring support for the sealing problems. Based on technological capabilities and perfection achieved over the years, Inmarco provides a wide range of products and services to the maintenance Industry. Our determinations to conduct business on a global scale is supported by and reflected in a fundamental philosophy utilization of technological expertise/ accumulation over three decades to access changes that occurred with passage of time while continuously evolving previously unexplored areas.

## VALUES

With MARKET-oriented structures, new and stronger product offerings, technically skilled-employees and efficient environmental impact MANAGEMENT SYSTEM, armed with global rapport with similar manufacturing companies and access to the latest development in the industry and a resilient local spirit, we are dedicated to delivering the best results. It is our people who make the system come alive and turn these principles, policies, and procedures into reality.

## MISSION & VISION

**MISSION** - Values - a driving force for Change...

A company rooted in unweaving values, INMARCO keeps ahead of change, reaping opportunities for growth. Striving to maintain leadership in industrial sealing products with wide manufacturing range. Providing a high quality product that combines performance with value for pricing, while establishing a successful relationship with the customers.

**VISION** - To be a market leader surpassing all hurdles of the industry, automate the process, systematized supplies and offer twenty-four-seven on service.

## WARE HOUSING

Located in the heart of the world business hub at SAIF Zone Sharjah UAE. Equipped with State of European Machinery.

**STOCKS** - The Warehouse stocks varieties of exotic raw materials for ever demanding modernized applications.

**STORES** - The temperature control stores takes care of the wellbeing and enhances shelf life of raw materials and the finished products.

**INSPECTION** - We never choose cheap materials, every incoming shipment follows stringent inspections system and are stored at predefined locations.

**PACKING AND DISPATCH** - Latest packing methodology in use with the modern gadgets and simplified equipments to perform efficient packing.

## TECHNOLOGIES & RESOURCES

INMARCO is driven by using non asbestos materials and is committed to provide superior and quality products that passed international standards and are environmental friendly. Technologies has helped develop more advance processes and has produced unwanted by-products causing pollution and deplete natural resources to the detriment of the earth and its environment that causes threat not only in the environment but also to mankind. With its philosophy in non-asbestos fluid sealing products INMARCO is able to do its part in conserving the environment.

## CREDENTIALS





Inmarco is pleased to offer 24/7 onsite technical and installation services. Inmarco is specialized in manufacture of valve sealing systems and is proud to announce that the recently developed expandable version of valve cart seal has outperformed the expected results. Certificated by American Petroleum institute under standard ANSI/API standard 607 Fifth Edition – and API 589 Second Edition . We offer valve seal refurbishment and can undertake onsite jobs also.

- Construction
- Chemical Processing
- Food & Beverage
- Marine & Dry-docking
- Oil & Gas
- Pharmaceuticals
- Power Generation Desalination & Waster Water
- Paper & Pulp
- Steel & Aluminum

## CERTIFICATIONS & APPROVALS



**Cartseal Fire Safe Certified  
As Per Api 607**



**Packing Style 100fxi-special Conform  
To Fugitive Emission Norms As Per Api 622**



**Packing Style 100fxi-special  
Fire Safe Certified Asper Api 607**



**Borogue**



**Takreer**



**Gasco**



**Ruweis Fertilizer  
Industries (Fertil)**



**Adgas**



**Adco**



**Petroleum Development  
Of Oman**

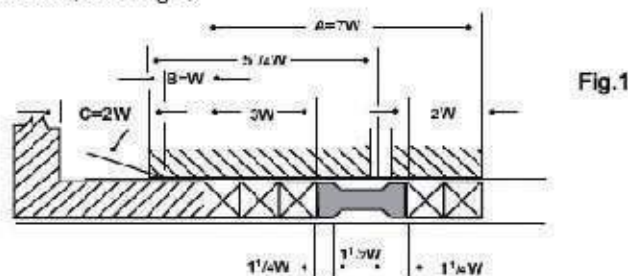


**Qatar Petroleum**



## INMARCO GUIDELINES FOR STUFFING BOX DIMENSIONS

**Rotating Shafts:** Dimension A shown on this drawing is the total depth of packing including lantern gland. A standard depth of  $7W$  or 7 times the packing space has been established when a lantern gland is used. A depth dimension is used where lantern gland is omitted. (Refer Fig.1).



**Lantern Gland Position:** It should be noted that the illustration shows the dimension of  $2W$  on the pressure side of the lantern ring and  $3W$  on the gland end of the stuffing box. While this is a common practice, it should be noted that  $3W$  on the pressure side and  $2W$  on the gland end of the stuffing box can also be used. For proper set up consult INMARCO sales personnel.

**Gland take-up:** This gland take-up is limited to 40% of the packing. The reason for this limitation is to include those packings which will have the largest volume loss. Additional gland take-up is not recommended, in order to prevent galling of the shafts. This means that complete take-up will take place before equipment is damaged; therefore, packing replacement would be indicated. This is based on the theory that most damage is done during the late running of packing life.

**Lantern Ring:** (Also known as Seal cage) – The suggested depth or length of lantern ring is set at  $2W$ .

**Chamfer Depth:** A minimum of  $1/8"$  (3mm) is recommended. It is felt that less than  $1/8"$  (3mm) will not contribute to easy entry of packing.

**Chamfer Angle:** Wedging or guiding action is between 15 and 30 degrees.

**Gland Entrance:** It is recommended that a minimum of  $1W$  be maintained to minimize the probability of gland cocking and allow for general variations of soft packing, molded and other types.

**Size Limitation:** In designing equipment with shaft below  $5/8"$  (16mm) diameter, consult INMARCO regarding packing space required ( $W$ ).

**Clearance:** Clearances should be as per acceptable machining practices, taking into consideration thermal expansion and contraction of metals.

**Finishes:** Finishes of rotating elements in contact with packing should be best economically possible, bearing in mind that the finer or smoother the finish, the longer the packing life expectancy.

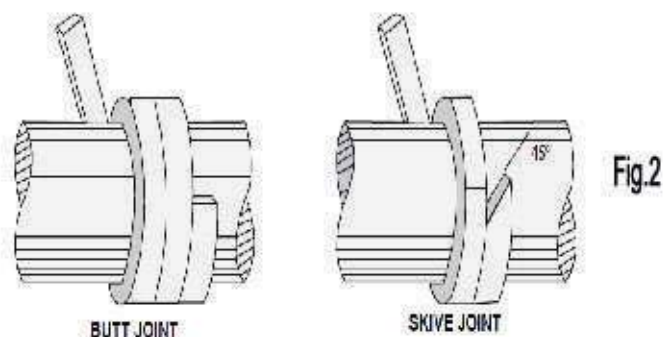
**Pressure:** These standard dimensions are intended for the use up to approximately 1500psi (102bar).

**Performance:** Performance at various high speeds is a function of the material used rather than the stuffing box dimensions and recommendations for speed limits are not considered here. Consideration of high – speed problems should be referred to INMARCO's customer service department.

## INSTALLATION OF INMARCO PUMP PACKINGS

The importance of packing the pump correctly cannot be overemphasized. Many failures are due to incorrect installation of packings. The following steps have been devised to ensure effective installation of packing on pumps.

1. Remove all the old packing from the stuffing box. Clean box and shaft thoroughly and examine shaft or sleeve for wearing and scoring. Replace shaft or sleeve if wear is excessive.
2. Use the correct cross-section of packing or die-formed rings. To determine the correct packing size, measure the diameter of the shaft (inside the stuffing box area if possible) and then measure the diameter of the stuffing box (to give the OD of the ring). Subtract the ID measurement from the OD measurement and divide by two. The result is required size ( $w$ ).
3. When using coil or spiral packing, always cut the packing into separate rings. Never wind a coil of packing into a stuffing box. Rings can be with butt (square), skive (or diagonal) joints, depending on the method used for cutting. The following illustration shows these methods of preparing bulk packing. The best way is to cut them on a mandrel of same diameter as that of a shaft. If there is no shaft wear, rings can be cut on the shaft outside the stuffing box. Hold the packing tightly on the mandrel, but do not stretch. Cut the ring and insert it into the stuffing box, making sure it fits the packing space properly. Each additional ring can be cut in the same manner. When cutting diagonal joints, use a meter board so that each successive ring can be cut at the correct angle. It is necessary that the rings be cut to the correct size. Otherwise, service life is reduced. This is where die-cut rings are advantage, as they give the exact size.



4. Install one ring at a time: make sure it is clean and has not picked up any dirt in handling. Seat rings firmly (except PTFE filament and graphite yarn packing, which should be snugged up very gently, then tightened gradually after the pump is operating). Joints of successive rings should be staggered and kept at least  $90^\circ$  apart. Each individual ring should be firmly seated with a tamping tool.



### Product Type

### Description & Operational Parameters



INM065

**INMARCO STYLE 300**

STYLE INGRAF® 300 is a high purity (99% to 99.9% carbon) self lubricating and anti-frictional die moulded pre-formed gland packing ring manufactured from Flexible Pure graphite Foil. These rings are manufactured in endless form or in 2 halves in oblique cut containing no Oil or grease or Binder/ Additives of any kind. The packing however is incorporated with sacrificial metal corrosion inhibitor to avoid Galvanic Corrosion on parent body.

STYLE INGRAF®300 is manufactured from flexible pure graphite tape vertically placed into the die and then pressed in hydraulic press and the pressure is calculated on the basis of required density. As the tapes are placed vertically & the compression also is vertical in a closed die there are chances of crimping of tape on OD & ID of the ring which are normally mistaken as cracks. These are not cracks but crimping of tape and this crimping provides resiliency in the sealing ring which is most important for perfect sealing against pressure surge.

STYLE INGRAF®300 is totally free from any kind of contamination. For compression resistance and retention of size & shape Style 300 is manufactured with accurate specific density suitable to the working condition. These packing rings are having high thermal and dimensional stability and extremely low gas/liquid permeability, very low thermal expansion and extremely high chemical resistance. These rings are having low co-efficient of friction (0.08 to 0.1 against steel) and hence, with continuous operation it polishes the stem/shaft and also non abrasive in nature.

STYLE INGRAF® 300 Flexible pure graphite rings adjusts to any irregularities under moderate pressure and has resistance to pressure surge and thermal shock. These packing rings are chemically inert and also fire safe.

STYLE INGRAF® 300 packing ring is having inherent characteristics of basic graphite and hence having high degree of flexibility, compatibility, conformity & resiliency. These rings expand radially to form perfect seal against the shaft and housing. Graphite is an extremely good thermal conductor & as such the packing dissipates heat away from the body leading to a longer life of the packing.

STYLE INGRAF® 300 is also manufactured for nuclear applications with slightly improved chemical properties. These packing's are stable even under exposure to high doses of nuclear radiation.

PROPERTIES	↻	↔	↔
pH	0-14		
TEMPERATURE (°C)	-200 to +600		
PRESSURE (BAR)	150	250	300
VELOCITY (m/s)	—	—	—
SIZE	—	—	—

#### Technical Specification:

Carbon Content	99% to 99.9%
Ash Content	2% (max.)
Leachable Chloride	35ppm to 50 ppm
Density	1.4 – 1.8 gms/cc
Corrosion Inhibitor (zinc dust)	4% (max.)

Typical Application:  
Valves & Pumps.

Service Media:  
Superior heated and saturated steam, non oxidizing liquids and gases, fuel gases and hot blast.

PROPERTIES	↻	↔	↔
pH	0-14		
TEMPERATURE (°C)	-240 to +650		
PRESSURE (BAR)	200	500	500
VELOCITY (m/s)	25	30	—
SIZE	OD x ID x Total Length of Stuffing Box is to be mentioned.		

Typical Application:  
Pumps, Valves, Reactors, Mixers, Agitators etc.

Service Media:  
Acids, Alkalis, Solvent, Amide, Aldehyde, Alcohol, Detergents, Pigments, Dyestuffs, paints, Emulsions, Synthetic molten materials, Fine chemicals, slurry, Liquid ammonia & Ammonium compounds, Carbamate solutions, Fuel & Lube oil, hydrazine, Emulsions, Tri sodium phosphate, Sodium Hexamete phosphate, Black & Green liquor, Paper pulp, Pulp diluted with water, Emulsion water and any other fluid media.



INM066

**CARTSEAL**

CART SEAL is a carefully & sequentially designed set of assorted sealing ring set, keeping in mind the application parameters and the media to be installed in.

CART SEAL is a concept and not a single product. The set consist of top and bottom molded rings and intermediate braided rings as per the requirement.

CART SEAL is a combination of various sealing aids which enables optimum sealing by maintaining lower levels of friction, high degree of heat dissipation and excellent blocking of body or shaft leakage which may not be possible with a single fiber or a hybrid packing.

CART SEAL is able to replace mechanical seal in any kind of application reducing cost of sealing drastically.

#### Advantages:

- \*Performance beyond set standards for volatile organic compound & hazardous chemicals.
- \*Friction reduces by 15% to 25% than flat rings.
- \*Self-adjustments to thermal & pressure cycling.

\*Conforms API 589 & 607 also API 622 standards with ISO 15848 Certification for Fugitive Emission Control Norms



### Product Type

### Description & Operational Parameters



INM067

**INMARCO STYLE 310**

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is made from flexible pure graphite foil, die moulded to required cross sectional profile reinforced with SS wire net/SS strip. The reinforcement of SS wire net/SS strip increases the mechanical strength of the ring/gasket which leads to extremely high pressure surge resistance.

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is manufactured from corrugated flexible pure graphite tape vertically placed into the die and then pressed in hydraulic press and the pressure is calculated on the basis of required density. As the tapes are placed vertically and the compressions also are vertical in a closed die there are chances of crimping of tapes on OD & ID of the ring which are normally mistaken as cracks. These are not cracks but crimping provides resiliency in the sealing ring which is most important for perfect sealing against pressure surge.

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is having carbon content 99.5% to 99.9%. These are manufactured in angular TOA cross sectional profile, square or rectangular cross sectional profile and BHEL ("V" on angle) cross sectional profile with high density. These are dimensionally stable under extreme pressure surge, highly thermal conductive and thermally stable. It is a better substitute of soft iron pressure seal gasket because of very good compressibility and recovery factor.

STYLE 310 INMARCO FLEXIBLE PURE GRAPHITE SELF SEALING RING/PRESSURE SEALING GASKET is also highly resistant to chemicals and can work in the entire PH range.

#### Advantages:

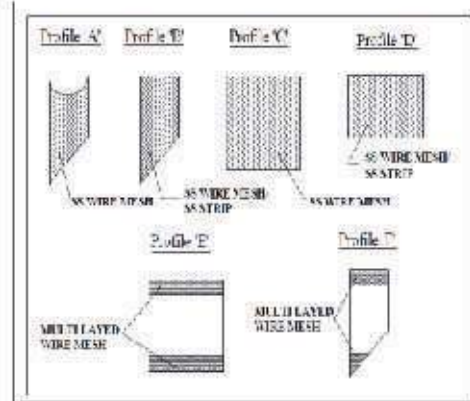
- \*This packing does not disintegrate on cutting.
- \*HITHERM dispersion acts as a blocking agent.
- \*This packing adapts to worn out surface and pitting with smooth running.
- \*Dissipates heat without chemical hardening.
- \*Extremely smooth removal during shutdown.

PROPERTIES	VALUES
Ph Range	0-14
Temperature (°C)	-200 to +600
Pressure (BAR)	300
Velocity (m/s)	---
Size	---

#### Technical Specification:

Carbon Content	99.5% to 99.9%
Ash Content	0.5% max.
Leachable Chloride Content	<50 ppm
Density	1.8 – 2 gsm/cc

#### Cross Sectional Profiles:



#### Service Media:

Super heated & Saturated steam, Hydrocarbon, Thermic fluid, Acids, Alkalis, Lube oil, etc.

#### Typical Application:

Valve bonnet, Metallic flanges, etc.



INM068

**EXPANDABLE VALVE  
CARTSEAL**

Fugitive emissions are hazardous and costly, as large process costs are involved in fluid or gas handling. VOC's find leak paths in valves along the stem. The steam leakages prove extremely costly on control of turbine valves, due to pressure and thermal fluctuations.

EVCS is a state of the art new generation seal designed specifically to conform to fugitive emission norms. V shape design permits effective sealing's at all times due to radial expansion of tips under live loadings. These seals have high performance capabilities and give excellent results in critical fluid and gas applications. These are custom built and manufactured to custom orders.

#### Advantages:

- \*Performance beyond set standards for VOC, hazardous chemicals.
- \*Friction reduces by 15-25%.
- \*Slit adjustments to thermal and pressure cycles.






















PROPERTIES	↻	↔	↔
pH	0-14		
TEMPERATURE (°C)	-240 to +650		
PRESSURE (BAR)	350	350	---
VELOCITY (m/s)	25	25	---
SIZE	Customary sizes made to order		

#### Typical Application:



















The variable densities of selected packing rings, adjust to wide range of chemicals including fluids, gases, VOC's or solids at variable temperature and pressure. The excellent sealability of valve cartseal enables total leak free performance over long runs. The costly on-line leak sealing can be eliminated.

#### Service Media:

Superheated & Saturated Steam, Hydrocarbon, Thermic Fluid, Acids and Alkalis, Solvent, Gases, Petrochemicals, etc.

Product Type	Description	Operational Parameters																								
<div><p>INM069 <b>INMARCO STYLE 100FXI</b></p></div>	<p>STYLE 100FXI is manufactured from premium expanded graphite fibre yarn having minimum carbon content 98% reinforced with inconel wire. This is braided and thoroughly impregnated with proprietary Hitherm dispersion based on fine graphite and also incorporated with sacrificial metal corrosion inhibitor to prevent equipment from galvanic corrosion which leads to pitting on the stem &amp; body.</p> <p>STYLE 100FXI the soft expanded graphite fibers are secured by strong but resilient inconel wire which ensures high pressure resistance. On demand the yarns can also be reinforced with multiple inconel wire to resist pressure surge.</p> <p><b>Advantages:</b> *Self generating lubrication accommodates and aids self adjustment on tightening of the gland. *Hi-therm lubrication developed by us, in-house R &amp; D prevents the body and shaft leakage on static or dynamic equipments.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +650 in oxidizing media [3315°C in non oxidizing media]</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">300</td></tr><tr><td>VELOCITY (m/s)</td><td colspan="3">—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 90mm²</td></tr></table> <p>Typical Application: Valves, Autoclaves, Rotary Kiln, etc.</p> <p>Service Media: Superheated and Saturated steam, Hydrocarbon, Thermic fluid, Petrochemical, Hot oil, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +650 in oxidizing media [3315°C in non oxidizing media]			PRESSURE (BAR)	300			VELOCITY (m/s)	—			SIZE	3mm² to 90mm²		
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PRESSURE (BAR)	300																									
VELOCITY (m/s)	—																									
SIZE	3mm² to 90mm²																									
<div><p>INM070 <b>INMARCO STYLE 800</b></p></div>	<p>STYLE 800 is a Premium Grade Expanded Graphite fibre yarn packing reinforced with Inconel/SS Wire having a core of bunch of carbonised filament. The packing is also impregnated with proprietary Hitherm dispersion based on fine Graphite and Sacrificial metal Corrosion Inhibitor.</p> <p>STYLE 800 is an improved Hi-Tech packing basically designed for Valves gland rating from 150 to 3000 class. This packing is also able to withstand extreme Pressure Surge and ensures a longer leakage free life.</p> <p><b>Advantages:</b> *The Soft expanded graphited fibre is secured by strong but resilient inconel wire which ensures flexibility for wrapping around small diameter Shaft &amp; Spindle. *The core of bunch of carbonised yarn increases the tensile strength to withstand high pressure at the same time high temperature. *Self generating lubrication accommodates and aids self adjustment on tightening of the gland. *Hi-therm lubrication developed by us, in-house R&amp;D prevents the body and shaft leakage on static or dynamic equipment.</p>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>pH</td><td>0 - 14</td></tr><tr><td>TEMPERATURE (°C)</td><td>-240 TO 650 (1200°C in Non oxidizing media)</td></tr><tr><td>PRESSURE (BAR)</td><td>300</td></tr><tr><td>VELOCITY (m/s)</td><td>—</td></tr><tr><td>SIZE</td><td>6mm² to 50mm²</td></tr></table> <p>Typical Application: Valves, Dryers, Autoclaves, etc.</p> <p>Service Media: Superheated &amp; Saturated Steam, Hydrocarbon, gases, Ammonia, Hydrogen, Petrochemicals, etc.</p>	PROPERTIES	VALUES	pH	0 - 14	TEMPERATURE (°C)	-240 TO 650 (1200°C in Non oxidizing media)	PRESSURE (BAR)	300	VELOCITY (m/s)	—	SIZE	6mm² to 50mm²												
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SIZE	6mm² to 50mm²																									
<div><p>INM071 <b>INMARCO STYLE 100FX</b></p></div>	<p>STYLE 100FX Expanded flexible pure graphite fibre (purity 99% minimum) braided packing reinforced with non metallic filament. The packing is extrusion resistant and capable of withstanding higher pressure both in dynamic and static condition.</p> <p>STYLE 100FX packing is also impregnated with proprietary hitherm dispersion to fill the leak paths between the braids. Under gland pressure it becomes a homogeneous mass.</p> <p><b>Advantages:</b> *Self generating lubrication accommodates and aids self adjustment on stem upon tightening of gland. *Most effective sealing performance &amp; no scoring of sleeve, plunger or stem. *Hitherm lubrication developed by us, in-house R &amp; D prevents the body and shaft leakage on static or dynamic equipment. *Suits for high mechanical &amp; cylindrical load. *Excellent sealing during long duration.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +650 (2700°C in non oxidizing media)</td></tr><tr><td>PRESSURE (BAR)</td><td>35</td><td>80</td><td>100</td></tr><tr><td>VELOCITY (m/s)</td><td>20</td><td>10</td><td>—</td></tr><tr><td>SIZE</td><td colspan="3">3mm² to 50mm²</td></tr></table> <p>*not suitable for valves beyond class 300</p> <p>Typical Application: Pumps, Valves, Dryers, Reactors, etc.</p> <p>Service Media: Superheated &amp; Saturated steam, Gases, Petrochemicals, Hydrocarbon, Thermic fluid, Hot oil, Acids &amp; Alkalis, Solvents, Organic chemicals, Emissive fluids, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +650 (2700°C in non oxidizing media)			PRESSURE (BAR)	35	80	100	VELOCITY (m/s)	20	10	—	SIZE	3mm² to 50mm²		
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









Product Type	Description	Operational Parameters																					
<div></div> <div>INM072</div> <div>INMARCO STYLE 100FXI SPECIAL</div>	<p>STYLE 100FXI SPECIAL is a premium expanded pure graphite (carbon content 99.5 to 99.9%) fibre yarn braided packing, each yarn of which is reinforced with multiple inconel wire, thoroughly incorporated with inorganic passive corrosion inhibitor &amp; special lubricating agents. This passive corrosion inhibitor safeguards parent equipment from galvanic corrosion and also reduction of loss on ignition. Each yarn is jacketed with inconel wire mesh. Reinforcement &amp; jacketing with inconel wire mesh in each yarn enables the packing to withstand extreme mechanical stress and cyclic loads.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Excellent sealing under mechanical &amp; thermal stress or cyclic loads.</li><li>*Low wear and tear means long sealing life.</li><li>*Emission much below the EPI limits.</li><li>*Highly resistant to pressure and extrusion.</li></ul> <p><b>Approved Fire safe under clause Api 589/607 and Confirms to Fugitive Emission Norms as per API 622</b></p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +650</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">500</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 50mm<sup>2</sup></td></tr></table> <p><b>Typical Application:</b> Valves, Screw conveyers, Dryers, etc.</p> <p><b>Service Media:</b> All non oxidising liquids &amp; gases, Super heated &amp; Saturated steam, Hot dry ash, Flue gases, Dyes &amp; Chemicals, Emissive fluids, Fuel Oil &amp; Lube oil, Thermic fluid, Hydrocarbons, etc.</p> <p><b>Benefits:</b></p> <ul style="list-style-type: none"><li>*A special lubricating agent reduces stem friction &amp; corrosion inhibitor prevents pitting due to galvanic corrosion.</li><li>* Very high sealing efficiency even on oscillating valve stems without much wear and tear.</li><li>*The reinforcement &amp; jacketing of inconel wire enhances the strength of packing &amp; withstand high temperature &amp; pressure.</li></ul>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +650			PRESSURE (BAR)	500			SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>			
PROPERTIES																							
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<div></div> <div>INM073</div> <div>INMARCO STYLE 900</div>	<p>STYLE 900 is a premium flexible expanded graphite fiber packing with high carbon content impregnated with proprietary thermolube® dispersion reinforced with Inconel wire/SS wire in each strand. The packing also incorporates of inorganic passive corrosion inhibitor to safeguard parent body from galvanic corrosion and reduce loss on ignition.</p> <p>STYLE 900 is a soft expanded graphite Fiber packing secured by strong but resilient Inconel wires/ SS wires which ensures flexibility for wrapping around small diameter shaft and spindle. Moreover, reinforcement of Inconel wire of special grade enhances the mechanical strength of the packing which increases the resistance to pressure surge.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*The thermolube® dispersion acts as a blocking agent and fill up the hair gap between the yarns to ensure zero leakage.</li><li>*Self-generating lubrication accommodates and aids self-adjustment on tightening of the gland.</li><li>*There is no volume loss due to loss on ignition.</li></ul>	<table><tr><th>PROPERTIES</th><th>VALUES</th></tr><tr><td>pH</td><td>0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td>-200 to +650</td></tr><tr><td>PRESSURE (BAR)</td><td>500</td></tr><tr><td>VELOCITY (m/s)</td><td>—</td></tr><tr><td>SIZE</td><td>3mm<sup>2</sup> to 50mm<sup>2</sup></td></tr></table> <p><b>Typical Application:</b> Valves, Dryers, Rotary Kiln, etc.</p> <p><b>Service Media:</b> Superheated &amp; Saturated Steam, Hydrocarbon, Thermic Fluid, Acids and Alkalis, Solvent, Gases, Petrochemicals, etc.</p>	PROPERTIES	VALUES	pH	0-14	TEMPERATURE (°C)	-200 to +650	PRESSURE (BAR)	500	VELOCITY (m/s)	—	SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>									
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SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>																						
<div></div> <div>INM074</div> <div>INMARCO STYLE 1300/1310</div>	<p><b>JOINT SEALANT/VALVE STEM PACKING</b></p> <p>Joint Sealant (flat) &amp; valve Stem Packing (round) are made from 100% pure expanded PTFE designed to be used as gap filling dependable sealants for flanges &amp; valve glands. Flexible &amp; heat stabilized Inmatex sealant eliminates the disadvantages associated with embrittlement &amp; heat retention of gasket and made from conventional PTFE. Inmatex is a reliable seal due to its inertness to most chemicals and is also cost effective alternative on most flanges and valve glands.</p> <p><b>Construction:</b> Flat tapes for flange joints, with or without adhesive backing. Round cords for valve stems.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Due to its excellent resilience property, Inmatex could withstand high compressive loads.</li><li>*Resistant to creep, hot &amp; cold flow.</li><li>*Safe &amp; clean for food &amp; pharmaceutical applications.</li><li>*Fast assembly, easy compression.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th></tr><tr><td>pH</td><td colspan="2">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="2">-260 to +300</td></tr><tr><td>PRESSURE (BAR)</td><td>100</td><td>Vacuum to 200</td></tr><tr><td>P x T</td><td colspan="2">2 x 10<sup>5</sup></td></tr><tr><td>Sizes for Joint Sealants (width x thickness in mm)</td><td colspan="2">3 x 1.5, 5 x 2, 7 x 2.5, 10 x 3, 12 x 4, 14 x 5, 17 x 6, 20 x 7 &amp; 25 x 10</td></tr><tr><td>Sizes for Valve Stem Packing (width x thickness in mm)</td><td colspan="2">2, 2.5, 3, 4, 6, 8, 10, 12, 13, 16, 17, 19 &amp; 20</td></tr></table> <p><b>Typical Application:</b> Ideal for fragile glass, FRP, Ceramic, Plastic flanges &amp; Lined pipe joints. Flanges involving all kinds of chemical fluids &amp; gaseous mediums. Graphite flanges in HCL, PVC &amp; Nuclear plants.</p>	PROPERTIES			pH	0-14		TEMPERATURE (°C)	-260 to +300		PRESSURE (BAR)	100	Vacuum to 200	P x T	2 x 10 <sup>5</sup>		Sizes for Joint Sealants (width x thickness in mm)	3 x 1.5, 5 x 2, 7 x 2.5, 10 x 3, 12 x 4, 14 x 5, 17 x 6, 20 x 7 & 25 x 10		Sizes for Valve Stem Packing (width x thickness in mm)	2, 2.5, 3, 4, 6, 8, 10, 12, 13, 16, 17, 19 & 20	
PROPERTIES																							
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Sizes for Valve Stem Packing (width x thickness in mm)	2, 2.5, 3, 4, 6, 8, 10, 12, 13, 16, 17, 19 & 20																						



# COMPRESSION PACKINGS

## VALVE SEALING

Product Type	Description	Operational Parameters																								
<div></div> <div>INM075 <b>INGRAF BF</b></div>	<p>INGRAF® Box Foil Gasket Tape is made from 100% pure flexible graphite with knurled surface. Simply wind around valve stem and top up..</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Could be used by itself or in combination with other packings for effective sealing and possible nuclear compatibility.</li><li>*Wide range of pressure and thermal compatibility.</li><li>*Low friction &amp; permeability, eliminates wear and associated risks in equipment ensuring plant safety.</li><li>*Emergency replacement packing for virtually any equipment.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +300, -200 to +650 in steam</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">Vacuum 28" hg to 250</td></tr><tr><td>VELOCITY (m/s)</td><td>30</td><td>3</td><td>---</td></tr><tr><td>SIZE</td><td colspan="3">¼" x 25ft., ½" x 25ft., ¾" x 50ft. &amp; 1" x 50ft.</td></tr></table> <p>Typical Application: Pumps and valve glands, Mixers, Agitators, Autoclaves handling variety of fluids &amp; gases.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +300, -200 to +650 in steam			PRESSURE (BAR)	Vacuum 28" hg to 250			VELOCITY (m/s)	30	3	---	SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.		
PROPERTIES																										
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VELOCITY (m/s)	30	3	---																							
SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.																									
<div></div> <div>INM076 <b>INGRAF FJ</b></div>	<p>INGRAF FJ Gasket Tape is made from 100% pure flexible graphite, specially corrugated to enable ease of installation over flanges with circular or with complex sealing area. The tape has a unique self adhesive backing for overhead or vertical flange surfaces. At high temperature, the adhesive would integrate itself with the graphite by carbonizing. This tape is also available without adhesive.</p> <p><b>Construction:</b> Corrugated foil with or without adhesive backing. Chloride content: less than 50ppm. Ash content: max. 0.5%.</p> <p>Inggraf tapes are available in 2 basic versions: Inggraf FJ® generally used for Flange Joints and Inggraf BF used for Box Foil.</p> <p><b>Advantages:</b></p> <ul style="list-style-type: none"><li>*Can be used in tandem as a complete gasket with conventional gasket types such as PTFE, Spiral Wound, metallic etc.</li><li>*Can be used to form gaskets from a small diameter as 1" to every large diameters.</li><li>*Nuclear compatibility, radiation resistance – 1.5 x 100 rads conforms to surface irregularities.</li><li>*Non sticking while dismantling.</li></ul>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-200 to +450</td></tr><tr><td>PRESSURE (BAR)</td><td colspan="3">Vacuum 28" hg to 300</td></tr><tr><td>VELOCITY (m/s)</td><td>---</td><td>---</td><td>---</td></tr><tr><td>SIZE</td><td colspan="3">¼" x 25ft., ½" x 25ft., ¾" x 50ft. &amp; 1" x 50ft.</td></tr></table> <p>Typical Application: Heat Exchangers, Reactors, Pumps, Valves, bonnets and for various service conditions. As a filler to spiral wound and metallic gaskets. Flanges made from fragile material like glass. To encapsulate &amp; enhance the sealing efficiency of other gasketing materials, such as PTFE &amp; other gasketing materials.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-200 to +450			PRESSURE (BAR)	Vacuum 28" hg to 300			VELOCITY (m/s)	---	---	---	SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.		
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VELOCITY (m/s)	---	---	---																							
SIZE	¼" x 25ft., ½" x 25ft., ¾" x 50ft. & 1" x 50ft.																									
<div></div> <div>INM077 <b>INMARCO STYLE 114V</b></div>	<p>STYLE 114V is a pure PTFE fibre yarn duplex braided packing manufactured from extruded trim tape having incorporation of special proprietary INLUBE break-in-lubricant. The break-in-lubricant ensures extra lubrication during the complete operational life.</p> <p>STYLE 114V is non toxic and inert in nature, hence ensures safety and purity of the fluid media. It is dimensionally stable and ensures trouble free operation reducing maintenance cost. STYLE 114V is suitable for dynamic as well as static application. As it is dimensionally stable it ensures leakage free operational life for a longer period.</p> <p><b>Typical Application:</b> Valves, Mixers, Reactors, Agitators, Dryers, Air compressors, etc.</p>	<table><tr><th>PROPERTIES</th><th></th><th></th><th></th></tr><tr><td>pH</td><td colspan="3">0-14</td></tr><tr><td>TEMPERATURE (°C)</td><td colspan="3">-240 to +280</td></tr><tr><td>PRESSURE (BAR)</td><td>25</td><td>100</td><td>200</td></tr><tr><td>VELOCITY (m/s)</td><td>8</td><td>4</td><td>---</td></tr><tr><td>SIZE</td><td colspan="3">3mm<sup>2</sup> to 35mm<sup>2</sup></td></tr></table> <p>Service Media: Acids &amp; Alkalis of any concentration, Solvents, Organic/Inorganic chemicals, Dyestuffs, Paints, Synthetic resins, etc.</p>	PROPERTIES				pH	0-14			TEMPERATURE (°C)	-240 to +280			PRESSURE (BAR)	25	100	200	VELOCITY (m/s)	8	4	---	SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup>		
PROPERTIES																										
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VELOCITY (m/s)	8	4	---																							
SIZE	3mm <sup>2</sup> to 35mm <sup>2</sup>																									

## CONTROL VALVE

INM078

## INMARCO STYLE 503

STYLE 503 is a unique combination packing of expanded graphite yarn and carbon fibre yarn. This is one of the best solutions of sealing for all type of high pressure and high temperature valves specially in Control Valves. STYLE 503 is also extremely suitable for soot blower application. STYLE 503 is having a core consist of expanded graphite yarn reinforced with multiple inconnel wire further jacketed with fine inconnel wire mesh. The outer cover of the packing is braided with high strength-low friction-non scoring carbon yarn. STYLE 503 is finally incorporated with INORGANIC PASSIVE CORROSION INHIBITOR and graphite based proprietary HITHERM dispersion. This passive corrosion inhibitor safeguards parent equipment from galvanic corrosion and also reduction of LOSS ON IGNITION.

### Advantages:

- \*This packing does not disintegrate on cutting.
- \*HITHERM dispersion acts as a blocking agent.
- \*This packing adopts to worn out surface and pitting with smooth running.
- \*Dissipates heat without chemical hardening.
- \*Extremely smooth removal during shutdown.

PROPERTIES	VALUES
pH	0-14
TEMPERATURE (°C)	-250 to +650
PRESSURE (BAR)	500
VELOCITY	---
SIZE	3mm <sup>2</sup> to 50mm <sup>2</sup>

### Typical Application:

All types of Valves and Soot blowers, Specialty Control Valve.

### Service Media:

Hydrocarbon, Super heated & Saturated steam, Thermic fluid, Ammonia, Fuel oil, Lube oil, Non oxidizing liquids & gases, Amides, Dyes, Chemicals & Acids, Gasoline, etc.





**Innovations in Fluid Sealing.**

**INMARCO Fzc.**

P. O. Box : 120284 SAIF Zone, Sharjah, U.A.E.  
Tel : +971 6 557 8378 Fax : +971 6 557 8948  
E-mail : [info@inmarco.ae](mailto:info@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)

**INMARCO EMIRATES L.L.C.**

P. O. Box : 91937, Mussafah, Abu Dhabi, U.A.E.  
Tel : +971 2 552 1818 Fax : +971 2 552 1718  
E-mail : [abudhabi@inmarco.ae](mailto:abudhabi@inmarco.ae)  
[www.inmarco.ae](http://www.inmarco.ae)