



# PRODUCT GUIDE

July 2018



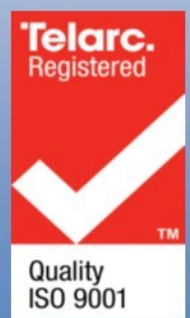
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*Flexitallic*





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This product guide supercedes all others.



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*Flexitallic*

# FLEXITALLIC

**The Flexitallic Group is the international market leader in the manufacture and supply of high quality, high value industrial static sealing products, delivering industrial gaskets on a global scale.**



## About Flexitallic

As the developer of the spiral wound gasket in 1912, Flexitallic have built on this legacy of innovation with revolutionary products including Thermiculite® and Sigma®, the Flange Rescue Gasket winner of the NACE and Dupont Plunkett Awards, and most recently the Change™ Gasket, set to transform the global sealing industry.

Flexitallic have a global network of Allied Distributors across 30 countries. This ensures local demand is met quickly, providing a combination of the highest product quality and outstanding customer service.

Flexitallic's extensive and varied product offering includes spiral wound gaskets, RTJ gaskets, Flexpro™ Kammprofiles, sheet materials, dynamic and static packings, pipe support and custom rubber products. Drawing upon the group's rich history and present day values of leadership, quality, service and technology, they are at the forefront of developing sealing solutions for industries around the world.

In addition to a wide range of products, Flexitallic also deliver world-class technical support and Joint Integrity training.

## The Flexitallic Group has become *the* global supplier of industrial gaskets.

### Innovative Product Range

Flexitallic have a rich history of innovation, which has seen them lead the industry with many new products.

Over the years, their products have gained a reputation for quality, reliability and technology that is second to none.

### Customised Engineering Solutions

Flexitallic Application Engineering, Production Engineering and R&D teams work closely together to design, develop and manufacture bespoke sealing solutions.

Flexitallic have been responsible for a number of truly revolutionary products, including Thermiculite®, Sigma® and the Flange Rescue Gasket, which ensure they are able to continually meet the ever more stringent requirements of their customers.

### Flexitallic® Safe

The Flexitallic approach to safety is more than a program it's a way of doing business that started in 1912. They believe their commitment to innovate, customize and educate adds another level of protection to their customers' operations.

From the first Spiral Wound Gasket in 1912 to the ever evolving applications for Thermiculite®, our goal is to develop materials that push the parameters of heat, pressure and chemical resistance.

### Our Commitment to Quality

Flexitallic place great emphasis on maintaining international quality standards, and are approved to ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007, API 6A and API 17D, to ensure they meet the highest possible standards for all their products and services.

Flexitallic also invest heavily in test and quality assurance equipment to maintain their reputation for the highest quality products.

Their materials are subjected to a wide range of tests as specified by statutory regulations and customer requirements. These approvals enable their customers to make informed choices as to the suitability of a product for each and every application.

### Inside Industry

Flexitallic pride themselves on not simply supplying products, but by supporting customers with a detailed knowledge of their industry and applications, so that products and services are tailored to their specific needs.

This unique approach means that Flexitallic focus on providing more than just a product, but also a complete solution that adds genuine value to their clients.

ARE YOU *Flexitallic*  
**SAFE?**

Allied Distributor



Licensee Manufacturer



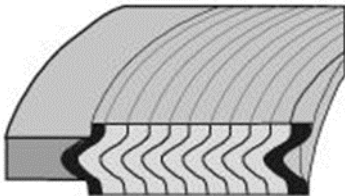
## SPIRAL WOUND GASKETS



### Spiral Wound Gaskets

The concept of spiral wound gasket construction was originated by Flexitallic in 1912, inaugurating the beginning of a new era in safe, effective sealing. The primary purpose for this development was the increasingly severe temperatures and pressures used by the U.S. refinery operators in the first half of the last century. The necessity for a gasket to have the ability to recover cannot be over emphasised. The effects of pressure and temperature fluctuations, the temperature differential across the flange face, together with bolt stress, relaxation and creep, demand a gasket with adequate flexibility and recovery to maintain a seal even under these varying service conditions. The Flexitallic Spiral Wound Gasket is the precision engineered solution to such problems, meeting the most exacting conditions of both temperature and pressure in flanged joints and similar assemblies and against virtually every known corrosive and toxic media.

#### Style CG



- Use with Full Face and Raised Face Flanges
- Compression stop provided by external metal ring

#### Spiral Wound Gasket

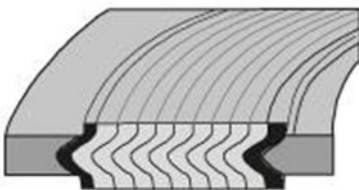
##### Style CG

An external metal ring accurately centres gasket on the flange face, acts as a compression stop and provides additional radial strength to prevent gasket blow-out.

##### Typical Application

A standard pipeline flange connection gasket suitable use with flat face and raised face flanges up to and inclusive of class 2500. Above class 600 an internal ring is recommended.

#### Style CGI



- Specified for high pressure / temperature applications
- Use where corrosive or toxic media are present for erosion prevention

#### Spiral Wound Gasket

##### Style CGI

For use above class 600, this gasket is a Style CG gasket with an internal ring for an additional compression limiting stop. For use with flat face and raised face flanges, this gasket features increased compressive force for blow-out prevention.

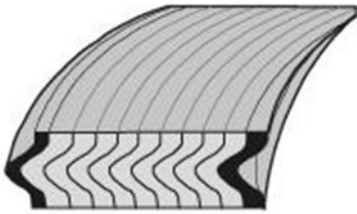
##### Typical Application

The Style CGI provides a heat and corrosion barrier, protecting gasket windings and preventing flange erosion.



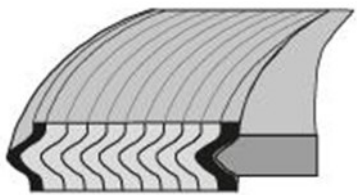
## SPIRAL WOUND GASKETS

### Style R



- Basic construction type with several plies of metal
- Available in a wide selection of materials, tailored to application

### Style RIR



- Suitable for male and female connections
- Typically used in vessels and valve bonnets

### Style LS



- Seats at half stress, adhering to ASME codes requiring bolt stresses do not exceed 25,000psi
- All features of a spiral wound gasket for lightly loaded applications

### Spiral Wound Gasket

#### Style R

This spiral wound gasket is a sealing element only - controlled compression must be in the flange. Inner and outer diameters are reinforced with several plies of metal, without filler, to give greater stability and sealing. All other SWG's (except Style R and HXRIR) have compression built into the gasket.

#### Typical Application

Suitable for applications including valves, valve bonnet, vessels and pumps in tongue and groove, male and female or grooved to flat face flange assemblies.

### Spiral Wound Gasket

#### Style RIR

Style R with a solid metal inner ring, designed for flanges without a compression stop. Fills the annular space between flange bore and the inside diameter of the gasket to prevent accumulation of solids, reduce turbulent flow and minimise erosion at flange faces.

#### Typical Application

Contact us for further information.

### Spiral Wound Gasket

#### Style LS

The Style LS provides all the superior sealing properties of a spiral wound gasket in a gasket suitable for lightly loaded and/or compromised applications which require a low-stress seal, including class 150 service.

#### Typical Application

The gasket allows designers to strictly adhere to ASME B and PV and ASME B31.3 codes requiring that bolt stresses do not exceed 25,000 psi. Where ASME flange design calculations indicate that flanges will be overstressed if a standard Class 150 spiral wound gasket is used, the LS gasket is designed to compress at significantly lower bolt load than standard Class 150 spiral wound gaskets, thereby maintaining flange stresses within allowable limits.

## SPIRAL WOUND GASKETS

Style CG to ASME B16.20  
To suit ASME / ANSI B16.5 flanges

Style: **CG**  
Outer Ring: **Mild Steel**  
Winding: **316L**  
Filler: **Flexicarb**

Bore	Pressure Rating					
	150 lb	300 lb	600 lb	900 lb	1500 lb	2500 lb
<b>15mm</b>	1B-FX	36B-FX	36B-FX	915B-FX	915B-FX	25B-FX
<b>1/2"</b>	48 x 32 x 19	54 x 32 x 19	54 x 32 x 19	64 x 32 x 19	64 x 32 x 19	70 x 32 x 19
<b>20mm</b>	1C-FX	36C-FX	36C-FX	915C-FX	915C-FX	25C-FX
<b>3/4"</b>	57 x 40 x 25	67 x 40 x 25	67 x 40 x 25	70 x 40 x 25	70 x 40 x 25	76 x 40 x 25
<b>25mm</b>	1D-FX	36D-FX	36D-FX	915D-FX	915D-FX	25D-FX
<b>1"</b>	67 x 48 x 32	73 x 48 x 32	73 x 48 x 32	80 x 48 x 32	80 x 48 x 32	86 x 48 x 32
<b>32mm</b>	1E-FX	36E-FX	36E-FX	915E-FX	915E-FX	25E-FX
<b>1 1/4"</b>	76 x 61 x 48	83 x 61 x 48	83 x 61 x 48	89 x 61 x 40	89 x 61 x 40	105 x 61 x 40
<b>40mm</b>	1F-FX	36F-FX	36F-FX	915F-FX	915F-FX	25F-FX
<b>1 1/2"</b>	86 x 70 x 54	95 x 70 x 54	95 x 70 x 54	99 x 70 x 48	99 x 70 x 48	118 x 70 x 48
<b>50mm</b>	1G-FX	36G-FX	36G-FX	915G-FX	915G-FX	25G-FX
<b>2"</b>	105 x 86 x 70	111 x 86 x 70	111 x 86 x 70	143 x 86 x 59	143 x 86 x 59	146 x 86 x 59
<b>65mm</b>	1H-FX	36H-FX	36H-FX	915H-FX	915H-FX	25H-FX
<b>2 1/2"</b>	124 x 99 x 83	130 x 99 x 83	130 x 99 x 83	165 x 99 x 70	165 x 99 x 70	168 x 99 x 70
<b>80mm</b>	1J-FX	36J-FX	36J-FX	9J-FX	15J-FX	25J-FX
<b>3"</b>	137 x 121 x 102	149 x 121 x 102	149 x 121 x 102	168 x 121 x 92	175 x 121 x 92	197 x 121 x 92
<b>90mm</b>	1K-FX	3K-FX	6K-FX	9K-FX	15K-FX	
<b>3.5"</b>	162 x 133 x 114	165 x 133 x 114	162 x 133 x 105	191 x 133 x 105	187 x 133 x 105	
<b>100mm</b>	1L-FX	3L-FX	6L-FX	9L-FX	15L-FX	25L-FX
<b>4"</b>	175 x 149 x 127	181 x 149 x 127	194 x 149 x 121	207 x 149 x 121	210 x 149 x 118	235 x 149 x 118
<b>125mm</b>	1N-FX	3N-FX	6N-FX	9N-FX	15N-FX	25N-FX
<b>5"</b>	197 x 178 x 156	216 x 178 x 156	241 x 178 x 148	248 x 178 x 148	254 x 178 x 143	279 x 178 x 143
<b>150mm</b>	1P-FX	3P-FX	6P-FX	9P-FX	15P-FX	25P-FX
<b>6"</b>	222 x 210 x 183	251 x 210 x 183	267 x 210 x 175	289 x 210 x 175	283 x 210 x 172	318 x 210 x 172
<b>200mm</b>	1Q-FX	3Q-FX	6Q-FX	9Q-FX	15Q-FX	25Q-FX
<b>8"</b>	279 x 264 x 233	308 x 264 x 233	321 x 264 x 226	359 x 257 x 222	353 x 257 x 216	387 x 257 x 216
<b>250mm</b>	1R-FX	3R-FX	6R-FX	9R-FX	15R-FX	25R-FX
<b>10"</b>	340 x 318 x 287	362 x 318 x 287	400 x 318 x 275	435 x 311 x 276	435 x 311 x 267	476 x 311 x 270
<b>300mm</b>	1S-FX	3S-FX	6S-FX	9S-FX	15S-FX	25S-FX
<b>12"</b>	410 x 375 x 340	422 x 375 x 340	457 x 375 x 327	499 x 368 x 324	521 x 368 x 324	549 x 368 x 318
<b>350mm</b>	1T-FX	3T-FX	6T-FX	9T-FX	15T-FX	
<b>14"</b>	451 x 406 x 372	486 x 406 x 372	492 x 406 x 362	521 x 400 x 356	578 x 400 x 362	
<b>400mm</b>	1U-FX	3U-FX	6U-FX	9U-FX	15U-FX	
<b>16"</b>	514 x 464 x 422	540 x 464 x 422	565 x 464 x 413	575 x 457 x 413	641 x 457 x 406	
<b>450mm</b>	1V-FX	3V-FX	6V-FX	9V-FX	15V-FX	
<b>18"</b>	549 x 527 x 475	597 x 527 x 475	613 x 527 x 470	638 x 521 x 464	705 x 521 x 464	
<b>500mm</b>	1W-FX	3W-FX	6W-FX	9W-FX	15W-FX	
<b>20"</b>	607 x 578 x 526	654 x 578 x 526	683 x 578 x 521	699 x 572 x 521	756 x 572 x 514	
<b>600mm</b>	1X-FX	3X-FX	6X-FX	9X-FX	15X-FX	
<b>24"</b>	718 x 686 x 629	775 x 686 x 629	791 x 686 x 629	838 x 680 x 629	902 x 680 x 616	

**Note: Also available on request - Style CG Gaskets to ASME B16.20**

To suit large diameter ASME B16.47 Series A (MSS-SP44) flanges

To suit large diameter ASME B16.47 Series B (API605) flanges

## SPIRAL WOUND GASKETS

Style CGI to ASME B16.20  
To suit ASME / ANSI B16.5 flanges

Style: CGI  
Outer Ring: Mild Steel  
Winding: 316L  
Filler: Flexicarb  
Inner Ring: 316

Bore	Pressure Rating					
	150 lb	300 lb	600 lb	900 lb	1500 lb	2500 lb
15mm	1B-S-FX	36B-S-FX	36B-S-FX	915B-S-FX	915B-S-FX	25B-S-FX
1/2"	48 x 32 x 19 x 14	54 x 32 x 19 x 14	54 x 32 x 19 x 14	64 x 32 x 19 x 14	64 x 32 x 19 x 14	70 x 32 x 19 x 14
20mm	1C-S-FX	36C-S-FX	36C-S-FX	915C-S-FX	915C-S-FX	25C-S-FX
3/4"	57 x 40 x 25 x 21	67 x 40 x 25 x 21	67 x 40 x 25 x 21	70 x 40 x 25 x 21	70 x 40 x 25 x 21	76 x 40 x 25 x 21
25mm	1D-S-FX	36D-S-FX	36D-S-FX	915D-S-FX	915D-S-FX	25D-S-FX
1"	67 x 48 x 32 x 27	73 x 48 x 32 x 27	73 x 48 x 32 x 27	80 x 48 x 32 x 27	80 x 48 x 32 x 27	86 x 48 x 32 x 27
32mm	1E-S-FX	36E-S-FX	36E-S-FX	915E-S-FX	915E-S-FX	25E-S-FX
1 1/4"	76 x 61 x 48 x 38	83 x 61 x 48 x 38	83 x 61 x 48 x 38	89 x 61 x 40 x 33	89 x 61 x 40 x 33	105 x 61 x 40 x 33
40mm	1F-S-FX	36F-S-FX	36F-S-FX	915F-S-FX	915F-S-FX	25F-S-FX
1 1/2"	86 x 70 x 54 x 44	95 x 70 x 54 x 44	95 x 70 x 54 x 44	99 x 70 x 48 x 41	99 x 70 x 48 x 41	118 x 70 x 48 x 41
50mm	1G-S-FX	36G-S-FX	36G-S-FX	915G-S-FX	915G-S-FX	25G-S-FX
2"	105 x 86 x 70 x 56	111 x 86 x 70 x 56	111 x 86 x 70 x 56	143 x 86 x 59 x 52	143 x 86 x 59 x 52	146 x 86 x 59 x 52
65mm	1H-S-FX	36H-S-FX	36H-S-FX	915H-S-FX	915H-S-FX	25H-S-FX
2 1/2"	124 x 99 x 83 x 67	130 x 99 x 83 x 67	130 x 99 x 83 x 67	165 x 99 x 70 x 64	165 x 99 x 70 x 64	168 x 99 x 70 x 64
80mm	1J-S-FX	36J-S-FX	36J-S-FX	9J-S-FX	15J-S-FX	25J-S-FX
3"	137 x 121 x 102 x 81	149 x 121 x 102 x 81	149 x 121 x 102 x 81	168 x 121 x 95 x 79	175 x 121 x 92 x 79	197 x 121 x 92 x 79
90mm	1K-S-FX	3K-S-FX	6K-S-FX	9K-S-FX	15K-S-FX	
3.5"	162 x 133 x 114 x 94	165 x 133 x 114 x 94	162 x 133 x 105 x 92	191 x 133 x 105 x 91	187 x 133 x 105 x 88	
100mm	1L-S-FX	3L-S-FX	6L-S-FX	9L-S-FX	15L-S-FX	25L-S-FX
4"	175 x 149 x 127 x 106	181 x 149 x 127 x 106	194 x 149 x 121 x 103	207 x 149 x 121 x 103	210 x 149 x 118 x 98	235 x 149 x 118 x 98
125mm	1N-S-FX	3N-S-FX	6N-S-FX	9N-S-FX	15N-S-FX	25N-S-FX
5"	197 x 178 x 156 x 132	216 x 178 x 156 x 132	241 x 178 x 148 x 128	248 x 178 x 148 x 128	254 x 178 x 143 x 124	279 x 178 x 143 x 124
150mm	1P-S-FX	3P-S-FX	6P-S-FX	9P-S-FX	15P-S-FX	25P-S-FX
6"	222 x 210 x 183 x 157	251 x 210 x 183 x 157	267 x 210 x 175 x 155	289 x 210 x 175 x 155	283 x 210 x 172 x 147	318 x 210 x 172 x 147
200mm	1Q-S-FX	3Q-S-FX	6Q-S-FX	9Q-S-FX	15Q-S-FX	25Q-S-FX
8"	279 x 264 x 233 x 216	308 x 264 x 233 x 216	321 x 264 x 226 x 206	359 x 257 x 222 x 197	353 x 257 x 216 x 197	387 x 257 x 216 x 197
250mm	1R-S-FX	3R-S-FX	6R-S-FX	9R-S-FX	15R-S-FX	25R-S-FX
10"	340 x 318 x 287 x 268	362 x 318 x 287 x 268	400 x 318 x 275 x 255	435 x 311 x 276 x 246	435 x 311 x 267 x 246	476 x 311 x 270 x 246
300mm	1S-S-FX	3S-S-FX	6S-S-FX	9S-S-FX	15S-S-FX	25S-S-FX
12"	410 x 375 x 340 x 318	422 x 375 x 340 x 318	457 x 375 x 327 x 307	499 x 368 x 324 x 292	521 x 368 x 324 x 292	549 x 368 x 318 x 292
350mm	1T-S-FX	3T-S-FX	6T-S-FX	9T-S-FX	15T-S-FX	
14"	451 x 406 x 372 x 349	486 x 406 x 372 x 349	492 x 406 x 362 x 343	521 x 400 x 356 x 321	578 x 400 x 362 x 321	
400mm	1U-S-FX	3U-S-FX	6U-S-FX	9U-S-FX	15U-S-FX	
16"	514 x 464 x 422 x 400	540 x 464 x 422 x 400	565 x 464 x 413 x 390	575 x 457 x 413 x 375	641 x 457 x 406 x 368	
450mm	1V-S-FX	3V-S-FX	6V-S-FX	9V-S-FX	15V-S-FX	
18"	549 x 527 x 475 x 449	597 x 527 x 475 x 449	613 x 527 x 470 x 438	638 x 521 x 464 x 425	705 x 521 x 464 x 425	
500mm	1W-S-FX	3W-S-FX	6W-S-FX	9W-S-FX	15W-S-FX	
20"	607 x 578 x 526 x 500	654 x 578 x 526 x 500	683 x 578 x 521 x 489	699 x 572 x 521 x 483	756 x 572 x 514 x 476	
600mm	1X-S-FX	3X-S-FX	6X-S-FX	9X-S-FX	15X-S-FX	
24"	718 x 686 x 629 x 603	775 x 686 x 629 x 603	791 x 686 x 629 x 591	838 x 680 x 629 x 591	902 x 680 x 616 x 578	

**Note: Also available on request - Style CGI Gaskets to ASME B16.20**

To suit large diameter ASME B16.47 Series A (MSS-SP44) flanges

To suit large diameter ASME B16.47 Series B (API605) flanges



## SPIRAL WOUND GASKETS

Style CG to ASME B16.20  
To suit ASME / ANSI B16.5 flanges

Style: **CG**  
Outer Ring: **316**  
Winding: **316L**  
Filler: **Flexicarb**

Bore	Pressure Rating					
	150 lb	300 lb	600 lb	900 lb	1500 lb	2500 lb
<b>15mm</b>	316-1B-FX	316-36B-FX	316-36B-FX	316-915B-FX	316-915B-FX	316-25B-FX
<b>1 1/2"</b>	48 x 32 x 19	54 x 32 x 19	54 x 32 x 19	64 x 32 x 19	64 x 32 x 19	70 x 32 x 19
<b>20mm</b>	316-1C-FX	316-36C-FX	316-36C-FX	316-915C-FX	316-915C-FX	316-25C-FX
<b>3/4"</b>	57 x 40 x 25	67 x 40 x 25	67 x 40 x 25	70 x 40 x 25	70 x 40 x 25	76 x 40 x 25
<b>25mm</b>	316-1D-FX	316-36D-FX	316-36D-FX	316-915D-FX	316-915D-FX	316-25D-FX
<b>1"</b>	67 x 48 x 32	73 x 48 x 32	73 x 48 x 32	80 x 48 x 32	80 x 48 x 32	86 x 48 x 32
<b>32mm</b>	316-1E-FX	316-36E-FX	316-36E-FX	316-915E-FX	316-915E-FX	316-25E-FX
<b>1 1/4"</b>	76 x 61 x 48	83 x 61 x 48	83 x 61 x 48	89 x 61 x 40	89 x 61 x 40	105 x 61 x 40
<b>40mm</b>	316-1F-FX	316-36F-FX	316-36F-FX	316-915F-FX	316-915F-FX	316-25F-FX
<b>1 1/2"</b>	86 x 70 x 54	95 x 70 x 54	95 x 70 x 54	99 x 70 x 48	99 x 70 x 48	118 x 70 x 48
<b>50mm</b>	316-1G-FX	316-36G-FX	316-36G-FX	316-915G-FX	316-915G-FX	316-25G-FX
<b>2"</b>	105 x 86 x 70	111 x 86 x 70	111 x 86 x 70	143 x 86 x 59	143 x 86 x 59	146 x 86 x 59
<b>65mm</b>	316-1H-FX	316-36H-FX	316-36H-FX	316-915H-FX	316-915H-FX	316-25H-FX
<b>2 1/2"</b>	124 x 99 x 83	130 x 99 x 83	130 x 99 x 83	165 x 99 x 70	165 x 99 x 70	168 x 99 x 70
<b>80mm</b>	316-1J-FX	316-36J-FX	316-36J-FX	316-9J-FX	316-15J-FX	316-25J-FX
<b>3"</b>	137 x 121 x 102	149 x 121 x 102	149 x 121 x 102	168 x 121 x 92	175 x 121 x 92	197 x 121 x 92
<b>100mm</b>	316-1L-FX	316-3L-FX	316-6L-FX	316-9L-FX	316-15L-FX	316-25L-FX
<b>4"</b>	175 x 149 x 127	181 x 149 x 127	194 x 149 x 121	207 x 149 x 121	210 x 149 x 118	235 x 149 x 118
<b>125mm</b>	316-1N-FX	316-3N-FX	316-6N-FX	316-9N-FX	316-15N-FX	316-25N-FX
<b>5"</b>	197 x 178 x 156	216 x 178 x 156	241 x 178 x 148	248 x 178 x 148	254 x 178 x 143	279 x 178 x 143
<b>150mm</b>	316-1P-FX	316-3P-FX	316-6P-FX	316-9P-FX	316-15P-FX	316-25P-FX
<b>6"</b>	222 x 210 x 183	251 x 210 x 183	267 x 210 x 175	289 x 210 x 175	283 x 210 x 172	318 x 210 x 172
<b>200mm</b>	316-1Q-FX	316-3Q-FX	316-6Q-FX	316-9Q-FX	316-15Q-FX	316-25Q-FX
<b>8"</b>	279 x 264 x 233	308 x 264 x 233	321 x 264 x 226	359 x 257 x 222	353 x 257 x 216	387 x 257 x 216
<b>250mm</b>	316-1R-FX	316-3R-FX	316-6R-FX	316-9R-FX	316-15R-FX	316-25R-FX
<b>10"</b>	340 x 318 x 287	362 x 318 x 287	400 x 318 x 275	435 x 311 x 276	435 x 311 x 267	476 x 311 x 270
<b>300mm</b>	316-1S-FX	316-3S-FX	316-6S-FX	316-9S-FX	316-15S-FX	316-25S-FX
<b>12"</b>	410 x 375 x 340	422 x 375 x 340	457 x 375 x 327	499 x 368 x 324	521 x 368 x 324	549 x 368 x 318
<b>350mm</b>	316-1T-FX	316-3T-FX	316-6T-FX	316-9T-FX	316-15T-FX	
<b>14"</b>	451 x 406 x 372	486 x 406 x 372	492 x 406 x 362	521 x 400 x 356	578 x 400 x 362	
<b>400mm</b>	316-1U-FX	316-3U-FX	316-6U-FX	316-9U-FX	316-15U-FX	
<b>16"</b>	514 x 464 x 422	540 x 464 x 422	565 x 464 x 413	575 x 457 x 413	641 x 457 x 406	
<b>450mm</b>	316-1V-FX	316-3V-FX	316-6V-FX	316-9V-FX	316-15V-FX	
<b>18"</b>	549 x 527 x 475	597 x 527 x 475	613 x 527 x 470	638 x 521 x 464	705 x 521 x 464	
<b>500mm</b>	316-1W-FX	316-3W-FX	316-6W-FX	316-9W-FX	316-15W-FX	
<b>20"</b>	607 x 578 x 526	654 x 578 x 526	683 x 578 x 521	699 x 572 x 521	756 x 572 x 514	
<b>600mm</b>	316-1X-FX	316-3X-FX	316-6X-FX	316-9X-FX	316-15X-FX	
<b>24"</b>	718 x 686 x 629	775 x 686 x 629	791 x 686 x 629	838 x 680 x 629	902 x 680 x 616	

**Note: Also available on request - Style CG Gaskets to ASME B16.20**

To suit large diameter ASME B16.47 Series A (MSS-SP44) flanges

To suit large diameter ASME B16.47 Series B (API605) flanges

## SPIRAL WOUND GASKETS

Style CGI to ASME B16.20  
To suit ASME / ANSI B16.5 flanges

Style: **CGI**  
Outer Ring: **316**  
Winding: **316L**  
Filler: **Flexicarb**  
Inner Ring: **316**

Bore	Pressure Rating					
	150 lb	300 lb	600 lb	900 lb	1500 lb	2500 lb
<b>15mm</b>	316-1B-S-FX	316-36B-S-FX	316-36B-S-FX	316-915B-S-FX	316-915B-S-FX	316-25B-S-FX
<b>1 1/2"</b>	48 x 32 x 19 x 14	54 x 32 x 19 x 14	54 x 32 x 19 x 14	64 x 32 x 19 x 14	64 x 32 x 19 x 14	70 x 32 x 19 x 14
<b>20mm</b>	316-1C-S-FX	316-36C-S-FX	316-36C-S-FX	316-915C-S-FX	316-915C-S-FX	316-25C-S-FX
<b>3/4"</b>	57 x 40 x 25 x 21	67 x 40 x 25 x 21	67 x 40 x 25 x 21	70 x 40 x 25 x 21	70 x 40 x 25 x 21	76 x 40 x 25 x 21
<b>25mm</b>	316-1D-S-FX	316-36D-S-FX	316-36D-S-FX	316-915D-S-FX	316-915D-S-FX	316-25D-S-FX
<b>1"</b>	67 x 48 x 32 x 27	73 x 48 x 32 x 27	73 x 48 x 32 x 27	80 x 48 x 32 x 27	80 x 48 x 32 x 27	86 x 48 x 32 x 27
<b>32mm</b>	316-1E-S-FX	316-36E-S-FX	316-36E-S-FX	316-915E-S-FX	316-915E-S-FX	316-25E-S-FX
<b>1 1/4"</b>	76 x 61 x 48 x 38	83 x 61 x 48 x 38	83 x 61 x 48 x 38	89 x 61 x 40 x 33	89 x 61 x 40 x 33	105 x 61 x 40 x 33
<b>40mm</b>	316-1F-S-FX	316-36F-S-FX	316-36F-S-FX	316-915F-S-FX	316-915F-S-FX	316-25F-S-FX
<b>1 1/2"</b>	86 x 70 x 54 x 44	95 x 70 x 54 x 44	95 x 70 x 54 x 44	99 x 70 x 48 x 41	99 x 70 x 48 x 41	118 x 70 x 48 x 41
<b>50mm</b>	316-1G-S-FX	316-36G-S-FX	316-36G-S-FX	316-915G-S-FX	316-915G-S-FX	316-25G-S-FX
<b>2"</b>	105 x 86 x 70 x 56	111 x 86 x 70 x 56	111 x 86 x 70 x 56	143 x 86 x 59 x 52	143 x 86 x 59 x 52	146 x 86 x 59 x 52
<b>65mm</b>	316-1H-S-FX	316-36H-S-FX	316-36H-S-FX	316-915H-S-FX	316-915H-S-FX	316-25H-S-FX
<b>2 1/2"</b>	124 x 99 x 83 x 67	130 x 99 x 83 x 67	130 x 99 x 83 x 67	165 x 99 x 70 x 64	165 x 99 x 70 x 64	168 x 99 x 70 x 64
<b>80mm</b>	316-1J-S-FX	316-36J-S-FX	316-36J-S-FX	316-9J-S-FX	316-15J-S-FX	316-25J-S-FX
<b>3"</b>	137 x 121 x 102 x 81	149 x 121 x 102 x 81	149 x 121 x 102 x 81	168 x 121 x 95 x 79	175 x 121 x 92 x 79	197 x 121 x 92 x 79
<b>100mm</b>	316-1L-S-FX	316-3L-S-FX	316-6L-S-FX	316-9L-S-FX	316-15L-S-FX	316-25L-S-FX
<b>4"</b>	175 x 149 x 127 x 106	181 x 149 x 127 x 106	194 x 149 x 121 x 103	207 x 149 x 121 x 103	210 x 149 x 118 x 98	235 x 149 x 118 x 98
<b>125mm</b>	316-1N-S-FX	316-3N-S-FX	316-6N-S-FX	316-9N-S-FX	316-15N-S-FX	316-25N-S-FX
<b>5"</b>	197 x 178 x 156 x 132	216 x 178 x 156 x 132	241 x 178 x 148 x 128	248 x 178 x 148 x 128	254 x 178 x 143 x 124	279 x 178 x 143 x 124
<b>150mm</b>	316-1P-S-FX	316-3P-S-FX	316-6P-S-FX	316-9P-S-FX	316-15P-S-FX	316-25P-S-FX
<b>6"</b>	222 x 210 x 183 x 157	251 x 210 x 183 x 157	267 x 210 x 175 x 155	289 x 210 x 175 x 155	283 x 210 x 172 x 147	318 x 210 x 172 x 147
<b>200mm</b>	316-1Q-S-FX	316-3Q-S-FX	316-6Q-S-FX	316-9Q-S-FX	316-15Q-S-FX	316-25Q-S-FX
<b>8"</b>	279 x 264 x 233 x 216	308 x 264 x 233 x 216	321 x 264 x 226 x 206	359 x 257 x 222 x 197	353 x 257 x 216 x 197	387 x 257 x 216 x 197
<b>250mm</b>	316-1R-S-FX	316-3R-S-FX	316-6R-S-FX	316-9R-S-FX	316-15R-S-FX	316-25R-S-FX
<b>10"</b>	340 x 318 x 287 x 268	362 x 318 x 287 x 268	400 x 318 x 275 x 255	435 x 311 x 276 x 246	435 x 311 x 267 x 246	476 x 311 x 270 x 246
<b>300mm</b>	316-1S-S-FX	316-3S-S-FX	316-6S-S-FX	316-9S-S-FX	316-15S-S-FX	316-25S-S-FX
<b>12"</b>	410 x 375 x 340 x 318	422 x 375 x 340 x 318	457 x 375 x 327 x 307	499 x 368 x 324 x 292	521 x 368 x 324 x 292	549 x 368 x 318 x 292
<b>350mm</b>	316-1T-S-FX	316-3T-S-FX	316-6T-S-FX	316-9T-S-FX	316-15T-S-FX	
<b>14"</b>	451 x 406 x 372 x 349	486 x 406 x 372 x 349	492 x 406 x 362 x 343	521 x 400 x 356 x 321	578 x 400 x 362 x 321	
<b>400mm</b>	316-1U-S-FX	316-3U-S-FX	316-6U-S-FX	316-9U-S-FX	316-15U-S-FX	
<b>16"</b>	514 x 464 x 422 x 400	540 x 464 x 422 x 400	565 x 464 x 413 x 390	575 x 457 x 413 x 375	641 x 457 x 406 x 368	
<b>450mm</b>	316-1V-S-FX	316-3V-S-FX	316-6V-S-FX	316-9V-S-FX	316-15V-S-FX	
<b>18"</b>	549 x 527 x 475 x 449	597 x 527 x 475 x 449	613 x 527 x 470 x 438	638 x 521 x 464 x 425	705 x 521 x 464 x 425	
<b>500mm</b>	316-1W-S-FX	316-3W-S-FX	316-6W-S-FX	316-9W-S-FX	316-15W-S-FX	
<b>20"</b>	607 x 578 x 526 x 500	654 x 578 x 526 x 500	683 x 578 x 521 x 489	699 x 572 x 521 x 483	756 x 572 x 514 x 476	
<b>600mm</b>	316-1X-S-FX	316-3X-S-FX	316-6X-S-FX	316-9X-S-FX	316-15X-S-FX	
<b>24"</b>	718 x 686 x 629 x 603	775 x 686 x 629 x 603	791 x 686 x 629 x 591	838 x 680 x 629 x 591	902 x 680 x 616 x 578	

**Note: Also available on request - Style CGI Gaskets to ASME B16.20**

To suit large diameter ASME B16.47 Series A (MSS-SP44) flanges

To suit large diameter ASME B16.47 Series B (API605) flanges

## SPIRAL WOUND GASKETS

Style CG to BS10 Table Series  
To suit BS10 flanges

Style: **BS10 CG**  
Outer Ring: **Mild Steel**  
Winding: **316L**  
Filler: **Flexicarb**

Bore	Pressure Rating							
	Table D	Table E	Table F	Table H	Table J	Table K	Table R	Table S
<b>15mm</b>	DB-FX	DB-FX	FB-FX	HB-FX	HB-FX	HB-FX	HB-FX	SB-FX
<b>1/2"</b>	54 x 37 x 26	54 x 37 x 26	54 x 39 x 26	67 x 39 x 26	67 x 39 x 26	67 x 39 x 26	67 x 39 x 26	70 x 32 x 19
<b>20mm</b>	DC-FX	DC-FX	FC-FX	HC-FX	HC-FX	HC-FX	HC-FX	SC-FX
<b>3/4"</b>	60 x 43 x 32	60 x 43 x 32	60 x 44 x 32	67 x 44 x 32	67 x 44 x 32	67 x 44 x 32	67 x 44 x 32	70 x 40 x 25
<b>25mm</b>	DD-FX	DD-FX	FD-FX	FD-FX	FD-FX	KD-FX	KD-FX	SD-FX
<b>1"</b>	70 x 52 x 40	70 x 52 x 40	71 x 56 x 40	71 x 56 x 40	71 x 56 x 40	79 x 56 x 40	79 x 56 x 40	83 x 48 x 32
<b>32mm</b>	DE-FX	DE-FX	FE-FX	FE-FX	FE-FX	FE-FX	FE-FX	SE-FX
<b>1 1/4"</b>	75 x 60 x 48	75 x 60 x 48	83 x 64 x 48	83 x 64 x 48	83 x 64 x 48	83 x 64 x 48	83 x 64 x 48	89 x 56 x 38
<b>40mm</b>	DF-FX	DF-FX	FF-FX	FF-FX	FF-FX	KF-FX	KF-FX	SF-FX
<b>1 1/2"</b>	86 x 67 x 54	86 x 67 x 54	89 x 70 x 54	89 x 70 x 54	89 x 70 x 54	95 x 70 x 54	95 x 70 x 54	102 x 64 x 44
<b>50mm</b>	DG-FX	DG-FX	FG-FX	FG-FX	JG-FX	FG-FX	FG-FX	SG-FX
<b>2"</b>	98 x 79 x 67	98 x 79 x 67	111 x 83 x 67	111 x 83 x 67	108 x 83 x 67	111 x 83 x 67	111 x 83 x 67	114 x 79 x 57
<b>65mm</b>	DH-FX	DH-FX	FH-FX	FH-FX	JH-FX	JH-FX	JH-FX	SH-FX
<b>2 1/2"</b>	111 x 98 x 83	111 x 98 x 83	130 x 102 x 83	130 x 102 x 83	127 x 102 x 83	127 x 102 x 83	127 x 102 x 83	127 x 95 x 73
<b>80mm</b>	DJ-FX	DJ-FX	FJ-FX	FJ-FX	JJ-FX	JJ-FX	JJ-FX	SJ-FX
<b>3"</b>	130 x 113 x 97	130 x 113 x 97	149 x 116 x 97	149 x 116 x 97	146 x 116 x 97	146 x 116 x 97	146 x 116 x 97	143 x 108 x 86
<b>100mm</b>	DL-FX	DL-FX	FL-FX	FL-FX	JL-FX	FL-FX	FL-FX	SL-FX
<b>4"</b>	162 x 140 x 124	162 x 140 x 124	175 x 143 x 124	175 x 143 x 124	171 x 143 x 124	175 x 143 x 124	175 x 143 x 124	178 x 137 x 111
<b>125mm</b>	DN-FX	DN-FX	FN-FX	FN-FX	JN-FX	JN-FX	JN-FX	SN-FX
<b>5"</b>	194 x 165 x 149	194 x 165 x 149	216 x 171 x 149	216 x 171 x 149	213 x 171 x 149	213 x 171 x 149	213 x 171 x 149	213 x 162 x 137
<b>150mm</b>	DP-FX	EP-FX	FP-FX	FP-FX	JP-FX	JP-FX	JP-FX	SP-FX
<b>6"</b>	219 x 191 x 175	216 x 191 x 175	241 x 197 x 175	241 x 197 x 175	238 x 197 x 175	238 x 197 x 175	238 x 197 x 175	248 x 187 x 162
<b>200mm</b>	DQ-FX	EQ-FX	FQ-FX	FQ-FX	JQ-FX	KQ-FX	RQ-FX	SQ-FX
<b>8"</b>	276 x 244 x 225	273 x 244 x 225	305 x 251 x 225	305 x 251 x 225	302 x 251 x 225	292 x 251 x 225	298 x 251 x 225	324 x 244 x 213
<b>250mm</b>	DR-FX	DR-FX	FR-FX	FR-FX	JR-FX	JR-FX	RR-FX	SR-FX
<b>10"</b>	337 x 295 x 276	337 x 295 x 276	359 x 305 x 279	359 x 305 x 279	356 x 305 x 279	356 x 305 x 279	362 x 305 x 279	394 x 302 x 267
<b>300mm</b>	DS-FX	ES-FX	FS-FX	FS-FX	JS-FX	KS-FX	RS-FX	SS-FX
<b>12"</b>	387 x 349 x 327	384 x 349 x 327	416 x 359 x 330	416 x 359 x 330	413 x 359 x 330	403 x 359 x 330	429 x 359 x 330	470 x 356 x 321
<b>350mm</b>	DT-FX	DT-FX	FT-FX	FT-FX	JT-FX	KT-FX	RT-FX	ST-FX
<b>14"</b>	448 x 416 x 394	448 x 416 x 394	470 x 416 x 387	470 x 416 x 387	467 x 416 x 387	476 x 416 x 387	495 x 416 x 387	540 x 410 x 371
<b>400mm</b>	DU-FX	DU-FX	FU-FX	FU-FX	JU-FX	KU-FX	RU-FX	SU-FX
<b>16"</b>	498 x 467 x 445	498 x 467 x 445	527 x 476 x 445	527 x 476 x 445	524 x 476 x 445	533 x 476 x 445	552 x 476 x 445	616 x 467 x 425
<b>450mm</b>	DV-FX	DV-FX	FV-FX	FV-FX	JV-FX	KV-FX	RV-FX	
<b>18"</b>	562 x 524 x 498	562 x 524 x 498	581 x 530 x 495	581 x 530 x 495	578 x 530 x 495	619 x 530 x 495	638 x 530 x 495	
<b>500mm</b>	DW-FX	DW-FX	FW-FX	FW-FX	JW-FX	KW-FX	RW-FX	
<b>20"</b>	619 x 575 x 549	619 x 575 x 549	645 x 587 x 549	645 x 587 x 549	641 x 587 x 549	673 x 587 x 549	692 x 587 x 549	
<b>600mm</b>	DX-FX	EX-FX	FX-FX	FX-FX	JX-FX			
<b>24"</b>	730 x 679 x 651	727 x 679 x 651	749 x 695 x 651	749 x 695 x 651	746 x 695 x 651			



## SPIRAL WOUND GASKETS

Style CGI to BS10 Table Series  
To suit BS10 flanges

Style: **BS10 CGI**  
Outer Ring: **316**  
Winding: **316L**  
Filler: **Flexicarb**  
Inner Ring: **316**

Bore	Pressure Rating						
	Table D	Table E	Table F	Table H	Table J	Table K	Table R
<b>15mm</b>	DB-S-FX	DB-S-FX	FB-S-FX	HB-S-FX	HB-S-FX	HB-S-FX	HB-S-FX
<b>1/2"</b>	54 x 37 x 26 x 14	54 x 37 x 26 x 14	54 x 39 x 26 x 14	67 x 39 x 26 x 14	67 x 39 x 26 x 14	67 x 39 x 26 x 14	67 x 39 x 26 x 14
<b>20mm</b>	DC-S-FX	DC-S-FX	FC-S-FX	HC-S-FX	HC-S-FX	HC-S-FX	HC-S-FX
<b>3/4"</b>	60 x 43 x 32 x 21	60 x 43 x 32 x 21	60 x 44 x 32 x 21	67 x 44 x 32 x 21	67 x 44 x 32 x 21	67 x 44 x 32 x 21	67 x 44 x 32 x 21
<b>25mm</b>	DD-S-FX	DD-S-FX	FD-S-FX	FD-S-FX	FD-S-FX	KD-S-FX	KD-S-FX
<b>1"</b>	70 x 52 x 40 x 27	70 x 52 x 40 x 27	71 x 56 x 40 x 27	71 x 56 x 40 x 27	71 x 56 x 40 x 27	79 x 56 x 40 x 27	79 x 56 x 40 x 27
<b>32mm</b>	DE-S-FX	DE-S-FX	FE-S-FX	FE-S-FX	FE-S-FX	FE-S-FX	FE-S-FX
<b>1 1/4"</b>	75 x 60 x 48 x 33	75 x 60 x 48 x 33	83 x 64 x 48 x 33	83 x 64 x 48 x 33	83 x 64 x 48 x 33	83 x 64 x 48 x 33	83 x 64 x 48 x 33
<b>40mm</b>	DF-S-FX	DF-S-FX	FF-S-FX	FF-S-FX	FF-S-FX	KF-S-FX	KF-S-FX
<b>1 1/2"</b>	86 x 67 x 54 x 40	86 x 67 x 54 x 40	89 x 70 x 54 x 40	89 x 70 x 54 x 40	89 x 70 x 54 x 40	95 x 70 x 54 x 40	95 x 70 x 54 x 40
<b>50mm</b>	DG-S-FX	DG-S-FX	FG-S-FX	FG-S-FX	JG-S-FX	FG-S-FX	FG-S-FX
<b>2"</b>	98 x 79 x 67 x 52	98 x 79 x 67 x 52	111 x 83 x 67 x 52	111 x 83 x 67 x 52	108 x 83 x 67 x 52	111 x 83 x 67 x 52	111 x 83 x 67 x 52
<b>65mm</b>	DH-S-FX	DH-S-FX	FH-S-FX	FH-S-FX	JH-S-FX	JH-S-FX	JH-S-FX
<b>2 1/2"</b>	111 x 98 x 83 x 65	111 x 98 x 83 x 65	130 x 102 x 83 x 65	130 x 102 x 83 x 65	127 x 102 x 83 x 65	127 x 102 x 83 x 65	127 x 102 x 83 x 65
<b>80mm</b>	DJ-S-FX	DJ-S-FX	FJ-S-FX	FJ-S-FX	JJ-S-FX	JJ-S-FX	JJ-S-FX
<b>3"</b>	130 x 113 x 97 x 78	130 x 113 x 97 x 78	149 x 116 x 97 x 78	149 x 116 x 97 x 78	146 x 116 x 97 x 78	146 x 116 x 97 x 78	146 x 116 x 97 x 78
<b>100mm</b>	DL-S-FX	DL-S-FX	FL-S-FX	FL-S-FX	JL-S-FX	FL-S-FX	FL-S-FX
<b>4"</b>	162 x 140 x 124 x 103	162 x 140 x 124 x 103	175 x 143 x 124 x 103	175 x 143 x 124 x 103	171 x 143 x 124 x 103	175 x 143 x 124 x 103	175 x 143 x 124 x 103
<b>125mm</b>	DN-S-FX	DN-S-FX	FN-S-FX	FN-S-FX	JN-S-FX	JN-S-FX	JN-S-FX
<b>5"</b>	194 x 165 x 149 x 129	194 x 165 x 149 x 129	216 x 171 x 149 x 129	216 x 171 x 149 x 129	213 x 171 x 149 x 129	213 x 171 x 149 x 129	213 x 171 x 149 x 129
<b>150mm</b>	DP-S-FX	EP-S-FX	FP-S-FX	FP-S-FX	JP-S-FX	JP-S-FX	JP-S-FX
<b>6"</b>	219 x 191 x 175 x 154	216 x 191 x 175 x 154	241 x 197 x 175 x 154	241 x 197 x 175 x 154	238 x 197 x 175 x 154	238 x 197 x 175 x 154	238 x 197 x 175 x 154
<b>200mm</b>	DQ-S-FX	EQ-S-FX	FQ-S-FX	FQ-S-FX	JQ-S-FX	KQ-S-FX	RQ-S-FX
<b>8"</b>	276 x 244 x 225 x 205	273 x 244 x 225 x 205	305 x 251 x 225 x 205	305 x 251 x 225 x 205	302 x 251 x 225 x 205	292 x 251 x 225 x 205	298 x 251 x 225 x 205
<b>250mm</b>	DR-S-FX	DR-S-FX	FR-S-FX	FR-S-FX	JR-S-FX	JR-S-FX	RR-S-FX
<b>10"</b>	337 x 295 x 276 x 256	337 x 295 x 276 x 256	359 x 305 x 279 x 256	359 x 305 x 279 x 256	356 x 305 x 279 x 256	356 x 305 x 279 x 256	362 x 305 x 279 x 256
<b>300mm</b>	DS-S-FX	ES-S-FX	FS-S-FX	FS-S-FX	JS-S-FX	KS-S-FX	RS-S-FX
<b>12"</b>	387 x 349 x 327 x 306	384 x 349 x 327 x 306	416 x 359 x 330 x 306	416 x 359 x 330 x 306	413 x 359 x 330 x 306	403 x 359 x 330 x 306	429 x 359 x 330 x 306
<b>350mm</b>	DT-S-FX	DT-S-FX	FT-S-FX	FT-S-FX	JT-S-FX	KT-S-FX	RT-S-FX
<b>14"</b>	448 x 416 x 394 x 357	448 x 416 x 394 x 357	470 x 416 x 387 x 357	470 x 416 x 387 x 357	467 x 416 x 387 x 357	476 x 416 x 387 x 357	495 x 416 x 387 x 357
<b>400mm</b>	DU-S-FX	DU-S-FX	FU-S-FX	FU-S-FX	JU-S-FX	KU-S-FX	RU-S-FX
<b>16"</b>	498 x 467 x 445 x 408	498 x 467 x 445 x 408	527 x 476 x 445 x 408	527 x 476 x 445 x 408	524 x 476 x 445 x 408	533 x 476 x 445 x 408	552 x 476 x 445 x 408
<b>450mm</b>	DV-S-FX	DV-S-FX	FV-S-FX	FV-S-FX	JV-S-FX	KV-S-FX	RV-S-FX
<b>18"</b>	562 x 524 x 498 x 459	562 x 524 x 498 x 459	581 x 530 x 495 x 459	581 x 530 x 495 x 459	578 x 530 x 495 x 459	619 x 530 x 495 x 459	638 x 530 x 495 x 459
<b>500mm</b>	DW-S-FX	DW-S-FX	FW-S-FX	FW-S-FX	JW-S-FX	KW-S-FX	RW-S-FX
<b>20"</b>	619 x 575 x 549 x 510	619 x 575 x 549 x 510	645 x 587 x 549 x 510	645 x 587 x 549 x 510	641 x 587 x 549 x 510	673 x 587 x 549 x 510	692 x 587 x 549 x 510
<b>600mm</b>	DX-S-FX	EX-S-FX	FX-S-FX	FX-S-FX	JX-S-FX		
<b>24"</b>	730 x 679 x 651 x 611	727 x 679 x 651 x 611	749 x 695 x 651 x 611	749 x 695 x 651 x 611	746 x 695 x 651 x 611		

**Note:** Special Gasket dimensions are required when an inner ring is fitted to gaskets for Tables S and T  
Please request details

## SPIRAL WOUND GASKETS

Style CG to BS EN 1514-2:2005  
To suit BS EN 1092-1 2007 Flanges  
(Previously DIN Flanges PN10 - PN250)

Style: **CG**  
Outer Ring: **Mild Steel**  
Winding: **316L**  
Filler: **Flexicarb**

Bore	Pressure Rating					
	PN10	PN25	PN40	PN63	PN100	PN160
10mm	DIN1040A-FX	DIN1040A-FX	DIN1040A-FX	DIN63160A-FX	DIN63160A-FX	DIN63160A-FX
	46 x 34 x 24	46 x 34 x 24	46 x 34 x 24	56 x 34 x 24	56 x 34 x 24	56 x 34 x 24
15mm	DIN1040B-FX	DIN1040B-FX	DIN1040B-FX	DIN63160B-FX	DIN63160B-FX	DIN63160B-FX
	51 x 39 x 29	51 x 39 x 29	51 x 39 x 29	61 x 39 x 29	61 x 39 x 29	61 x 39 x 29
20mm	DIN1040C-FX	DIN1040C-FX	DIN1040C-FX			
	61 x 46 x 34	61 x 46 x 34	61 x 46 x 34			
25mm	DIN1040D-FX	DIN1040D-FX	DIN1040D-FX	DIN63160D-FX	DIN63160D-FX	DIN63160D-FX
	71 x 53 x 41	71 x 53 x 41	71 x 53 x 41	82 x 53 x 41	82 x 53 x 41	82 x 53 x 41
32mm	DIN1040E-FX	DIN1040E-FX	DIN1040E-FX			
	82 x 61 x 49	82 x 61 x 49	82 x 61 x 49			
40mm	DIN1040F-FX	DIN1040F-FX	DIN1040F-FX	DIN63160F-FX	DIN63160F-FX	DIN63160F-FX
	92 x 68 x 56	92 x 68 x 56	92 x 68 x 56	103 x 68 x 56	103 x 68 x 56	103 x 68 x 56
50mm	DIN1040G-FX	DIN1040G-FX	DIN1040G-FX	DIN63G-FX	DIN100160G-FX	DIN100160G-FX
	107 x 86 x 70	107 x 86 x 70	107 x 86 x 70	113 x 86 x 70	119 x 86 x 70	119 x 86 x 70
65mm	DIN1040H-FX	DIN1040H-FX	DIN1040H-FX	DIN63H-FX	DIN100160H-FX	DIN100160H-FX
	127 x 102 x 86	127 x 102 x 86	127 x 102 x 86	137 x 106 x 86	143 x 106 x 86	143 x 106 x 86
80mm	DIN1040J-FX	DIN1040J-FX	DIN1040J-FX	DIN63J-FX	DIN100160J-FX	DIN100160J-FX
	142 x 115 x 99	142 x 115 x 99	142 x 115 x 99	148 x 119 x 99	154 x 119 x 99	154 x 119 x 99
100mm	DIN10L-FX	DIN2540L-FX	DIN2540L-FX	DIN63L-FX	DIN100160L-FX	DIN100160L-FX
	162 x 143 x 127	168 x 143 x 127	168 x 143 x 127	174 x 147 x 127	180 x 147 x 127	180 x 147 x 127
125mm	DIN10N-FX	DIN2540N-FX	DIN2540N-FX	DIN63N-FX	DIN100160N-FX	DIN100160N-FX
	192 x 172 x 152	194 x 172 x 152	194 x 172 x 152	210 x 176 x 152	217 x 176 x 152	217 x 176 x 152
150mm	DIN10P-FX	DIN2540P-FX	DIN2540P-FX	DIN63P-FX	DIN100160P-FX	DIN100160P-FX
	217 x 199 x 179	224 x 199 x 179	224 x 199 x 179	247 x 203 x 179	257 x 203 x 179	257 x 203 x 179
200mm	DIN10Q-FX	DIN25Q-FX	DIN40Q-FX	DIN63Q-FX	DIN100160Q-FX	DIN100160Q-FX
	272 x 248 x 228	284 x 248 x 228	290 x 248 x 228	309 x 252 x 228	324 x 252 x 228	324 x 252 x 228
250mm	DIN10R-FX	DIN25R-FX	DIN40R-FX	DIN63R-FX	DIN100R-FX	DIN160R-FX
	327 x 303 x 279	340 x 303 x 279	352 x 303 x 279	364 x 307 x 279	391 x 307 x 279	388 x 307 x 279
300mm	DIN10S-FX	DIN25S-FX	DIN40S-FX	DIN63S-FX	DIN100160S-FX	DIN100160S-FX
	377 x 354 x 330	400 x 354 x 330	417 x 354 x 330	424 x 358 x 330	458 x 358 x 330	458 x 358 x 330
350mm	DIN10T-FX	DIN25T-FX	DIN40T-FX	DIN63T-FX	DIN100T-FX	
	437 x 400 x 376	457 x 400 x 376	474 x 400 x 376	486 x 404 x 376	512 x 404 x 376	
400mm	DIN10U-FX	DIN25U-FX	DIN40U-FX	DIN63U-FX	DIN100U-FX	
	488 x 450 x 422	514 x 450 x 422	546 x 450 x 422	543 x 456 x 422	572 x 456 x 422	
500mm	DIN10W-FX	DIN25W-FX	DIN40W-FX	DIN63W-FX	DIN100W-FX	
	593 x 550 x 522	624 x 550 x 522	628 x 550 x 522	657 x 556 x 522	704 x 556 x 522	
600mm	DIN10X-FX	DIN25X-FX	DIN40X-FX	DIN63X-FX	DIN100X-FX	
	695 x 650 x 622	731 x 650 x 622	747 x 650 x 622	764 x 656 x 622	813 x 656 x 622	

DIMENSIONS IN MILLIMETRES

The use of an inner ring is recommended for gaskets for use with PN100 Flanges and above

## SPIRAL WOUND GASKETS

Style CGI to BS EN 1514-2:2005

To suit BS EN 1092-1 2007 Flanges

(Previously DIN Flanges PN10 - PN250)

Style: **CGI**  
Outer Ring: **Mild Steel**  
Winding: **316L**  
Filler: **Flexicarb**  
Inner Ring: **316**

Bore	Pressure Rating					
	PN10	PN25	PN40	PN63	PN100	PN160
10mm	DIN1040A-S-FX	DIN1040A-S-FX	DIN1040A-S-FX	DIN63160A-S-FX	DIN63160A-S-FX	DIN63160A-S-FX
	46 x 34 x 24 x 18	46 x 34 x 24 x 18	46 x 34 x 24 x 18	56 x 34 x 24 x 18	56 x 34 x 24 x 18	56 x 34 x 24 x 18
15mm	DIN1040B-S-FX	DIN1040B-S-FX	DIN1040B-S-FX	DIN63160B-S-FX	DIN63160B-S-FX	DIN63160B-S-FX
	51 x 39 x 29 x 23	51 x 39 x 29 x 23	51 x 39 x 29 x 23	61 x 39 x 29 x 23	61 x 39 x 29 x 23	61 x 39 x 29 x 23
20mm	DIN1040C-S-FX	DIN1040C-S-FX	DIN1040C-S-FX			
	61 x 46 x 34 x 28	61 x 46 x 34 x 28	61 x 46 x 34 x 28			
25mm	DIN1040D-S-FX	DIN1040D-S-FX	DIN1040D-S-FX	DIN63160D-S-FX	DIN63160D-S-FX	DIN63160D-S-FX
	71 x 53 x 41 x 35	71 x 53 x 41 x 35	71 x 53 x 41 x 35	82 x 53 x 41 x 35	82 x 53 x 41 x 35	82 x 53 x 41 x 35
32mm	DIN1040E-S-FX	DIN1040E-S-FX	DIN1040E-S-FX			
	82 x 61 x 49 x 43	82 x 61 x 49 x 43	82 x 61 x 49 x 43			
40mm	DIN1040F-S-FX	DIN1040F-S-FX	DIN1040F-S-FX	DIN63160F-S-FX	DIN63160F-S-FX	DIN63160F-S-FX
	92 x 68 x 56 x 50	92 x 68 x 56 x 50	92 x 68 x 56 x 50	103 x 68 x 56 x 50	103 x 68 x 56 x 50	103 x 68 x 56 x 50
50mm	DIN1040G-S-FX	DIN1040G-S-FX	DIN1040G-S-FX	DIN63G-S-FX	DIN100160G-S-FX	DIN100160G-S-FX
	107 x 86 x 70 x 61	107 x 86 x 70 x 61	107 x 86 x 70 x 61	113 x 86 x 70 x 61	119 x 86 x 70 x 61	119 x 86 x 70 x 61
65mm	DIN1040H-S-FX	DIN1040H-S-FX	DIN1040H-S-FX	DIN63H-S-FX	DIN100160H-S-FX	DIN100160H-S-FX
	127 x 102 x 86 x 77	127 x 102 x 86 x 77	127 x 102 x 86 x 77	137 x 106 x 86 x 77	143 x 106 x 86 x 77	143 x 106 x 86 x 77
80mm	DIN1040J-S-FX	DIN1040J-S-FX	DIN1040J-S-FX	DIN63J-S-FX	DIN100160J-S-FX	DIN100160J-S-FX
	142 x 115 x 99 x 90	142 x 115 x 99 x 90	142 x 115 x 99 x 90	148 x 119 x 99 x 90	154 x 119 x 99 x 90	154 x 119 x 99 x 90
100mm	DIN10L-S-FX	DIN2540L-S-FX	DIN2540L-S-FX	DIN63L-S-FX	DIN100160L-S-FX	DIN100160L-S-FX
	162 x 143 x 127 x 115	168 x 143 x 127 x 115	168 x 143 x 127 x 115	174 x 147 x 127 x 115	180 x 147 x 127 x 115	180 x 147 x 127 x 115
125mm	DIN10N-S-FX	DIN2540N-S-FX	DIN2540N-S-FX	DIN63N-S-FX	DIN100160N-S-FX	DIN100160N-S-FX
	192 x 172 x 152 x 140	194 x 172 x 152 x 140	194 x 172 x 152 x 140	210 x 176 x 152 x 140	217 x 176 x 152 x 140	217 x 176 x 152 x 140
150mm	DIN10P-S-FX	DIN2540P-S-FX	DIN2540P-S-FX	DIN63P-S-FX	DIN100160P-S-FX	DIN100160P-S-FX
	217 x 199 x 179 x 167	224 x 199 x 179 x 167	224 x 199 x 179 x 167	247 x 203 x 179 x 167	257 x 203 x 179 x 167	257 x 203 x 179 x 167
200mm	DIN10Q-S-FX	DIN25Q-S-FX	DIN40Q-S-FX	DIN63Q-S-FX	DIN100160Q-S-FX	DIN100160Q-S-FX
	272 x 248 x 228 x 216	284 x 248 x 228 x 216	290 x 248 x 228 x 216	309 x 252 x 228 x 216	324 x 252 x 228 x 216	324 x 252 x 228 x 216
250mm	DIN10R-S-FX	DIN25R-S-FX	DIN40R-S-FX	DIN63R-S-FX	DIN100R-S-FX	DIN160R-S-FX
	327 x 303 x 279 x 267	340 x 303 x 279 x 267	352 x 303 x 279 x 267	364 x 307 x 279 x 267	391 x 307 x 279 x 267	388 x 307 x 279 x 267
300mm	DIN10S-S-FX	DIN25S-S-FX	DIN40S-S-FX	DIN63S-S-FX	DIN100160S-S-FX	DIN100160S-S-FX
	377 x 354 x 330 x 318	400 x 354 x 330 x 318	417 x 354 x 330 x 318	424 x 358 x 330 x 318	458 x 358 x 330 x 318	458 x 358 x 330 x 318
350mm	DIN10T-S-FX	DIN25T-S-FX	DIN40T-S-FX	DIN63T-S-FX	DIN100T-S-FX	
	437 x 400 x 376 x 360	457 x 400 x 376 x 360	474 x 400 x 376 x 360	486 x 404 x 376 x 360	512 x 404 x 376 x 360	
400mm	DIN10U-S-FX	DIN25U-S-FX	DIN40U-S-FX	DIN63U-S-FX	DIN100U-S-FX	
	488 x 450 x 422 x 410	514 x 450 x 422 x 410	546 x 450 x 422 x 410	543 x 456 x 422 x 410	572 x 456 x 422 x 410	
500mm	DIN10W-S-FX	DIN25W-S-FX	DIN40W-S-FX	DIN63W-S-FX	DIN100W-S-FX	
	593 x 550 x 522 x 510	624 x 550 x 522 x 510	628 x 550 x 522 x 510	657 x 556 x 522 x 510	704 x 556 x 522 x 510	
600mm	DIN10X-S-FX	DIN25X-S-FX	DIN40X-S-FX	DIN63X-S-FX	DIN100X-S-FX	
	695 x 650 x 622 x 610	731 x 650 x 622 x 610	747 x 650 x 622 x 610	764 x 656 x 622 x 610	813 x 656 x 622 x 610	

DIMENSIONS IN MILLIMETRES

The use of an inner ring is recommended for gaskets for use with PN100 Flanges and above

## SPIRAL WOUND GASKETS

Style CG to BS 4865 Part 2  
To suit BS4504 flanges

Style: **CG**  
Outer Ring: **Mild Steel**  
Winding: **316L**  
Filler: **Flexicarb**

Bore	Pressure Rating					
	PN10	PN16	PN25	PN40		
10mm	PN1040A-FX	PN1040A-FX	PN1040A-FX	PN1040A-FX		
	48 x 36.4 x 23.6	48 x 36.4 x 23.6	48 x 36.4 x 23.6	48 x 36.4 x 23.6		
15mm	PN1040B-FX	PN1040B-FX	PN1040B-FX	PN1040B-FX		
	53 x 40.4 x 27.6	53 x 40.4 x 27.6	53 x 40.4 x 27.6	53 x 40.4 x 27.6		
20mm	PN1040C-FX	PN1040C-FX	PN1040C-FX	PN1040C-FX		
	63 x 47.4 x 33.6	63 x 47.4 x 33.6	63 x 47.4 x 33.6	63 x 47.4 x 33.6		
25mm	PN1040D-FX	PN1040D-FX	PN1040D-FX	PN1040D-FX		
	73 x 55.4 x 40.6	73 x 55.4 x 40.6	73 x 55.4 x 40.6	73 x 55.4 x 40.6		
32mm	PN1040E-FX	PN1040E-FX	PN1040E-FX	PN1040E-FX		
	84 x 66.4 x 49.6	84 x 66.4 x 49.6	84 x 66.4 x 49.6	84 x 66.4 x 49.6		
40mm	PN1040F-FX	PN1040F-FX	PN1040F-FX	PN1040F-FX		
	94 x 72.4 x 55.6	94 x 72.4 x 55.6	94 x 72.4 x 55.6	94 x 72.4 x 55.6		
50mm	PN1040G-FX	PN1040G-FX	PN1040G-FX	PN1040G-FX		
	109 x 86.4 x 67.6	109 x 86.4 x 67.6	109 x 86.4 x 67.6	109 x 86.4 x 67.6		
65mm	PN1040H-FX	PN1040H-FX	PN1040H-FX	PN1040H-FX		
	129 x 103.4 x 83.6	129 x 103.4 x 83.6	129 x 103.4 x 83.6	129 x 103.4 x 83.6		
80mm	PN1040J-FX	PN1040J-FX	PN1040J-FX	PN1040J-FX		
	144 x 117.4 x 96.6	144 x 117.4 x 96.6	144 x 117.4 x 96.6	144 x 117.4 x 96.6		
100mm	PN1016L-FX	PN1016L-FX	PN2540L-FX	PN2540L-FX		
	164 x 144.4 x 122.6	164 x 144.4 x 122.6	170 x 144.4 x 122.6	170 x 144.4 x 122.6		
125mm	PN1016N-FX	PN1016N-FX	PN2540N-FX	PN2540N-FX		
	194 x 170.4 x 147.6	194 x 170.4 x 147.6	196 x 170.4 x 147.6	196 x 170.4 x 147.6		
150mm	PN1016P-FX	PN1016P-FX	PN2540P-FX	PN2540P-FX		
	220 x 200.4 x 176.6	220 x 200.4 x 176.6	226 x 200.4 x 176.6	226 x 200.4 x 176.6		
200mm	PN1016Q-FX	PN1016Q-FX	PN25Q-FX	PN40Q-FX		
	275 x 255.4 x 228.6	275 x 255.4 x 228.6	286 x 255.4 x 228.6	293 x 255.4 x 228.6		
250mm	PN1016R-FX	PN1016R-FX	PN25R-FX	PN40R-FX		
	330 x 310.4 x 282.4	330 x 310.4 x 282.4	343 x 310.4 x 282.4	355 x 310.4 x 282.4		
300mm	PN10S-FX	PN16S-FX	PN25S-FX	PN40S-FX		
	380 x 360.4 x 331.6	386 x 360.4 x 331.6	403 x 360.4 x 331.6	420 x 360.4 x 331.6		
350mm	PN10T-FX	PN16T-FX	PN25T-FX	PN40T-FX		
	440 x 405.4 x 374.6	446 x 405.4 x 374.6	460 x 405.4 x 374.6	477 x 405.4 x 374.6		
400mm	PN10U-FX	PN16U-FX	PN25U-FX	PN40U-FX		
	491 x 458.4 x 425.6	498 x 458.4 x 425.6	517 x 458.4 x 425.6	549 x 458.4 x 425.6		
450mm	PN10V-FX	PN16V-FX	PN25V-FX	PN40V-FX		
	541 x 512.4 x 476.6	558 x 512.4 x 476.6	567 x 512.4 x 476.6	574 x 512.4 x 476.6		
500mm	PN10W-FX	PN16W-FX	PN25W-FX	PN40W-FX		
	596 x 566.4 x 527.6	620 x 566.4 x 527.6	627 x 566.4 x 527.6	631 x 566.4 x 527.6		
600mm	PN10X-FX	PN16X-FX	PN25X-FX	PN40X-FX		
	698 x 675.4 x 634.6	737 x 675.4 x 634.6	734 x 675.4 x 634.6	750 x 675.4 x 634.6		

DIMENSIONS IN MILLIMETRES

The use of an inner ring is recommended for gaskets for use with PN25 and PN40 flanges

Inner rings may be fitted also to gaskets for use with PN10 and PN16 flanges

## SPIRAL WOUND GASKETS

Style CGI to BS 4865 Part 2  
To suit BS4504 flanges

Style: CGI  
Outer Ring: Mild Steel  
Winding: 316L  
Filler: Flexicarb  
Inner Ring: 316

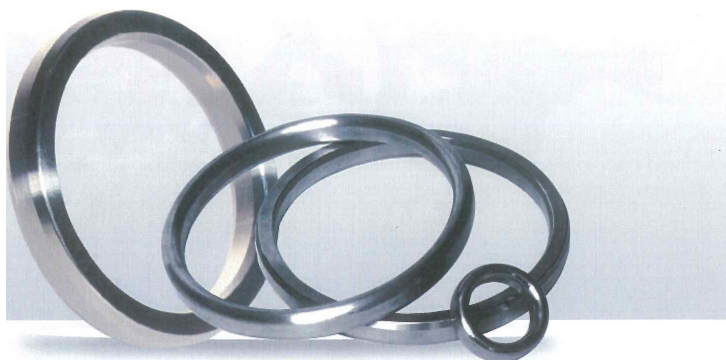
Bore	Pressure Rating					
	PN10	PN16	PN25	PN40		
10mm	PN1040A-S-FX	PN1040A-S-FX	PN1040A-S-FX	PN1040A-S-FX		
	48 x 36.4 x 23.6 x 15	48 x 36.4 x 23.6 x 15	48 x 36.4 x 23.6 x 15	48 x 36.4 x 23.6 x 15		
15mm	PN1040B-S-FX	PN1040B-S-FX	PN1040B-S-FX	PN1040B-S-FX		
	53 x 40.4 x 27.6 x 19	53 x 40.4 x 27.6 x 19	53 x 40.4 x 27.6 x 19	53 x 40.4 x 27.6 x 19		
20mm	PN1040C-S-FX	PN1040C-S-FX	PN1040C-S-FX	PN1040C-S-FX		
	63 x 47.4 x 33.6 x 24	63 x 47.4 x 33.6 x 24	63 x 47.4 x 33.6 x 24	63 x 47.4 x 33.6 x 24		
25mm	PN1040D-S-FX	PN1040D-S-FX	PN1040D-S-FX	PN1040D-S-FX		
	73 x 55.4 x 40.6 x 30	73 x 55.4 x 40.6 x 30	73 x 55.4 x 40.6 x 30	73 x 55.4 x 40.6 x 30		
32mm	PN1040E-S-FX	PN1040E-S-FX	PN1040E-S-FX	PN1040E-S-FX		
	84 x 66.4 x 49.6 x 39	84 x 66.4 x 49.6 x 39	84 x 66.4 x 49.6 x 39	84 x 66.4 x 49.6 x 39		
40mm	PN1040F-S-FX	PN1040F-S-FX	PN1040F-S-FX	PN1040F-S-FX		
	94 x 72.4 x 55.6 x 45	94 x 72.4 x 55.6 x 45	94 x 72.4 x 55.6 x 45	94 x 72.4 x 55.6 x 45		
50mm	PN1040G-S-FX	PN1040G-S-FX	PN1040G-S-FX	PN1040G-S-FX		
	109 x 86.4 x 67.6 x 56	109 x 86.4 x 67.6 x 56	109 x 86.4 x 67.6 x 56	109 x 86.4 x 67.6 x 56		
65mm	PN1040H-S-FX	PN1040H-S-FX	PN1040H-S-FX	PN1040H-S-FX		
	129 x 103.4 x 83.6 x 72	129 x 103.4 x 83.6 x 72	129 x 103.4 x 83.6 x 72	129 x 103.4 x 83.6 x 72		
80mm	PN1040J-S-FX	PN1040J-S-FX	PN1040J-S-FX	PN1040J-S-FX		
	144 x 117.4 x 96.6 x 84	144 x 117.4 x 96.6 x 84	144 x 117.4 x 96.6 x 84	144 x 117.4 x 96.6 x 84		
100mm	PN1016L-S-FX	PN1016L-S-FX	PN2540L-S-FX	PN2540L-S-FX		
	164 x 144.4 x 122.6 x 108	164 x 144.4 x 122.6 x 108	170 x 144.4 x 122.6 x 108	170 x 144.4 x 122.6 x 108		
125mm	PN1016N-S-FX	PN1016N-S-FX	PN2540N-S-FX	PN2540N-S-FX		
	194 x 170.4 x 147.6 x 133	194 x 170.4 x 147.6 x 133	196 x 170.4 x 147.6 x 133	196 x 170.4 x 147.6 x 133		
150mm	PN1016P-S-FX	PN1016P-S-FX	PN2540P-S-FX	PN2540P-S-FX		
	220 x 200.4 x 176.6 x 160	220 x 200.4 x 176.6 x 160	226 x 200.4 x 176.6 x 160	226 x 200.4 x 176.6 x 160		
200mm	PN1016Q-S-FX	PN1016Q-S-FX	PN25Q-S-FX	PN40Q-S-FX		
	275 x 255.4 x 228.6 x 209	275 x 255.4 x 228.6 x 209	286 x 255.4 x 228.6 x 209	293 x 255.4 x 228.6 x 209		
250mm	PN1016R-S-FX	PN1016R-S-FX	PN25R-S-FX	PN40R-S-FX		
	330 x 310.4 x 282.4 x 262	330 x 310.4 x 282.4 x 262	343 x 310.4 x 282.4 x 262	355 x 310.4 x 282.4 x 262		
300mm	PN10S-S-FX	PN16S-S-FX	PN25S-S-FX	PN40S-S-FX		
	380 x 360.4 x 331.6 x 311	386 x 360.4 x 331.6 x 311	403 x 360.4 x 331.6 x 311	420 x 360.4 x 331.6 x 311		
350mm	PN10T-S-FX	PN16T-S-FX	PN25T-S-FX	PN40T-S-FX		
	440 x 405.4 x 374.6 x 355	446 x 405.4 x 374.6 x 355	460 x 405.4 x 374.6 x 355	477 x 405.4 x 374.6 x 355		
400mm	PN10U-S-FX	PN16U-S-FX	PN25U-S-FX	PN40U-S-FX		
	491 x 458.4 x 425.6 x 406	498 x 458.4 x 425.6 x 406	517 x 458.4 x 425.6 x 406	549 x 458.4 x 425.6 x 406		
450mm	PN10V-S-FX	PN16V-S-FX	PN25V-S-FX	PN40V-S-FX		
	541 x 512.4 x 476.6 x 452	558 x 512.4 x 476.6 x 452	567 x 512.4 x 476.6 x 452	574 x 512.4 x 476.6 x 452		
500mm	PN10W-S-FX	PN16W-S-FX	PN25W-S-FX	PN40W-S-FX		
	596 x 566.4 x 527.6 x 508	620 x 566.4 x 527.6 x 508	627 x 566.4 x 527.6 x 508	631 x 566.4 x 527.6 x 508		
600mm	PN10X-S-FX	PN16X-S-FX	PN25X-S-FX	PN40X-S-FX		
	698 x 675.4 x 634.6 x 610	737 x 675.4 x 634.6 x 610	734 x 675.4 x 634.6 x 610	750 x 675.4 x 634.6 x 610		

DIMENSIONS IN MILLIMETRES

The use of an inner ring is recommended for gaskets for use with PN25 and PN40 flanges

Inner rings may be fitted also to gaskets for use with PN10 and PN16 flanges

## RING TYPE JOINTS



The metallic Ring Type Joint is used in the petroleum industry, where high pressure applications necessitate the need for a high integrity seal.

All Flexitallic Ring Type Joints are manufactured in accordance with the industry standards API 6A, API 17D, ASME B16.20 or to specific customer requirements. Flexitallic produce these Ring Type Joints

from fully traceable materials and are supplied to NACE specifications upon request. Ring Type Joints manufactured to ASME B16.20 are permanently marked according to standard. Each Ring Type Joint manufactured to an API standard is identified by low stress stamping with style, ring number, API license number, material reference, Product Specification Level 4 (PSL-4), a unique Flexitallic material identification number, and month and year of manufacture. Such full and comprehensive traceability, from material source with mill certification to final supply, is an essential ingredient of the company's strict quality assurance procedures and exceed those demanded by the highest API 6A and 17D approvals.



Low stress stamping for identification & traceability

### Materials

The gasket material should be selected to suit the service conditions. It is always recommended that the gasket material be softer than the mating flanges. The more popular Ring Type Joint materials, with the stated maximum hardness and identification as specified in API 6A and ASME B16.20, are shown in the table below.

For more highly specialised applications, Ring Type Joints can be machined from Duplex steels and other exotic materials such as Inconel®, Incoloy®, and Hastelloy®. The Technical Department is available to advise on other materials.

### Protective Coating

In accordance with API Specifications, soft iron and low carbon steel Ring Type Joints are protected with electroplated zinc to a maximum thickness of 8µm. Alternative material coatings can be supplied on request.

MATERIAL	UNS NUMBER	MAXIMUM HARDNESS		IDENTIFICATION Note (b)	SPECIFYING BODY Note (c)
		BRINELL(BHN)	ROCKWELL(RB)		
Soft Iron	-	90	56	D	A, B
Low Carbon Steel - Note (a)	-	120	68	S	A, B
4 - 6% Chrome 1/2% Moly (F5)	K42544	130	75	F5	B
St. St. AISI 304	S30400	160	83	S304	A, B
St. St. AISI 316	S31600	160	83	S316	A, B
St. St. AISI 347	S34700	160	83	S347	A, B
St. St. AISI 410	S41000	170	86	S410	B
Alloy 600	N06600	200	92	UNS Number	C
Alloy 625	N06625	200	92	UNS Number	C
Alloy 800	N08800	200	92	UNS Number	C
Alloy 825	N08825	200	92	UNS Number	C
Alloy C276	N10276	200	92	UNS Number	C
SMO 254	S31254	180	89	UNS Number	C
Duplex	S31803	250	-	UNS Number	C
Super Duplex	S32760	200	92	UNS Number	C
Monel® 400 (M400)	N04400	200	92	UNS Number	C
Titanium Gr.2	R50400	215	94	UNS Number	C

#### NOTES:

(a) The maximum hardness values applied to Soft Iron may be required for Low Carbon Steel

(b) Material identification of RTJ's manufactured in accordance with API-6A will include '-4' immediately after the material identification. Eg. S316-4.

(c) The maximum hardness values listed are specified by the following bodies: A = API, B = ASME, c = Flexitallic.



## RING TYPE JOINTS



### Style R

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

#### Standard Style R Ring Type Joints

These are manufactured in accordance with ASME B16.20 or API 6A. Available in both oval and octagonal configurations, both types are interchangeable on the modern octagonal type grooved flanges.

*As with all solid metal Ring Type Joints including Style R, it is recommended to replace the ring when flanged connection is broken.*

#### STYLE R TOLERANCES

Dimension		Tolerances (mm)	
		API 6A & 17D	ASME B16.20
A	Width of ring	$\pm 0.20$	$\pm 0.20$
B, H	Height of ring	$\pm 0.5$	$+1.3/-0.5$
C	Width of flat	$\pm 0.20$	$\pm 0.20$
P	Average pitch diameter	$\pm 0.18$	$\pm 0.18$
23°	Angle of sealing face	$\pm 0^{\circ} 30'$	$\pm 0^{\circ} 30'$

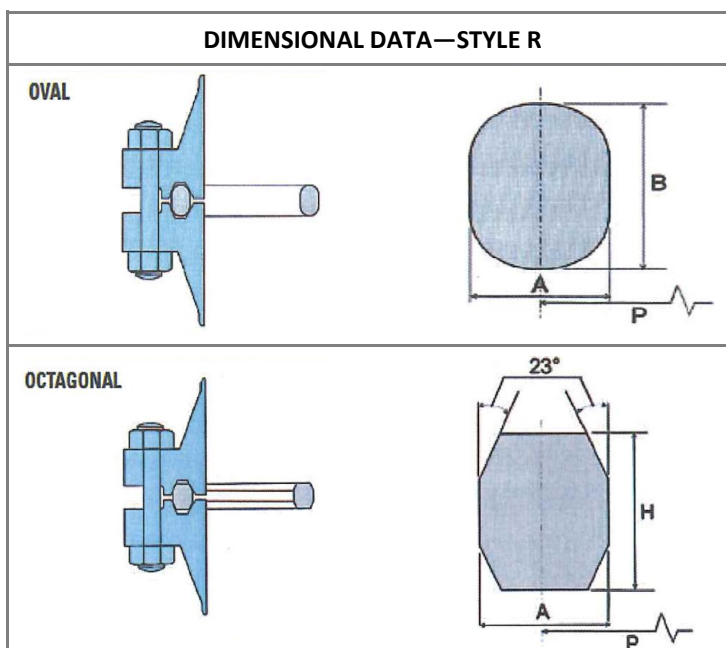
Surface finish of the Style R Ring Type Joint sealing faces (radiused ends of an Oval and the 23° angled faces of an Octagonal shape) shall not be greater than **1.6  $\mu\text{m}$  Ra / 63  $\mu\text{in}$  RMS**. Flexitallic Style R Ring Type Joints can be manufactured in accordance with all relevant standards to suit the following flange designations:

**API 6A**

**ASME B16.5**

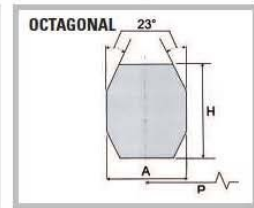
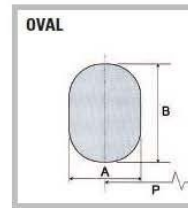
**ASME B16.47 SERIES A**

**BS1560**



# DIMENSIONAL DATA

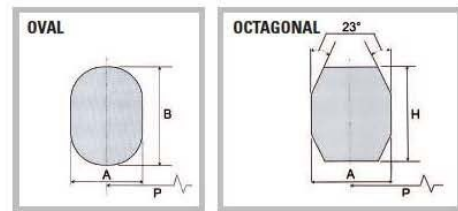
## RING TYPE JOINTS ASME B16.20 and API 6A Style R



RING NUMBER	PRESSURE CLASS RATINGS								PITCH DIA. OF RING	WIDTH OF RING	HEIGHT OF RING		APPROX DIST. BETWEEN MADE UP FLANGES
	ASME B16.5 & ASME B16.47 SERIES A					API 6A (psi)					OVAL	OCTAG	
	150	300/600	900	1500	2500	2000	3000	5000					
	NOMINAL PIPE SIZES												
									P	A	B	H	(mm)
R 11	-	1/2	-	-	-	-	-	-	34.14	6.35	11.2	9.7	-
R 12	-	-	1/2	1/2	-	-	-	-	39.70	7.95	14.2	12.7	-
R 13	-	3/4	-	-	1/2	-	-	-	42.88	7.95	14.2	12.7	-
R 14	-	-	3/4	3/4	-	-	-	-	44.45	7.95	14.2	12.7	-
R 15	1	-	-	-	-	-	-	-	47.63	7.95	14.2	12.7	-
R 16	-	1	1	1	3/4	-	-	-	50.80	7.95	14.2	12.7	-
R 17	1 1/4	-	-	-	-	1	1	1	57.15	7.95	14.2	12.7	-
R 18	-	1 1/4	1 1/4	1 1/4	1	1 1/4	1 1/4	1 1/4	60.33	7.95	14.2	12.7	-
R 19	1 1/2	-	-	-	-	-	-	-	65.10	7.95	14.2	12.7	-
R 20*	-	1 1/2	1 1/2	1 1/2	-	1 1/2	1 1/2	1 1/2	68.28	7.95	14.3	12.7	4.1
R 21	-	-	-	-	1 1/4	-	-	-	72.24	11.13	17.5	16.0	-
R 22	2	-	-	-	-	-	-	-	82.55	7.95	14.2	12.7	-
R 23*	-	2	-	-	1 1/2	-	-	-	82.55	7.95	17.5	15.9	4.8
R 24*	-	-	2	2	-	-	2	2	95.25	11.13	17.5	15.9	4.8
R 25	2 1/2	-	-	-	-	-	-	-	101.60	7.95	14.2	12.7	-
R 26*	-	2 1/2	-	-	2	2 1/2	-	-	101.60	11.13	17.5	15.9	4.8
R 27*	-	-	2 1/2	-	-	-	2 1/2	2 1/2	107.95	11.13	17.5	15.9	4.8
R 28	-	-	-	-	2 1/2	-	-	-	111.13	12.70	19.1	17.5	-
R 29	3	-	-	-	-	-	-	-	114.30	7.95	14.2	12.7	-
R 30 (a)	-	3	-	-	-	-	-	-	117.48	11.13	17.5	16.0	-
R 31*	-	3	3	-	-	3	3	-	123.83	11.13	17.5	15.9	4.8
R 32	-	-	-	-	3	-	-	-	127.00	12.70	19.1	17.5	-
R 33	3 1/2	-	-	-	-	-	-	-	131.78	7.95	14.2	12.7	-
R 34	-	3 1/2	-	-	-	-	-	-	131.78	11.13	17.5	16.0	-
R 35*	-	-	-	3	-	-	-	3	136.53	11.13	17.5	15.9	4.8
R 36	4	-	-	-	-	-	-	-	149.23	7.95	14.2	12.7	-
R 37*	-	4	4	-	-	4	4	3 1/2	149.23	11.13	17.5	15.9	4.8
R 38	-	-	-	-	4	-	-	-	157.18	15.88	22.4	20.6	-
R 39*	-	-	-	4	-	-	-	4	161.93	11.13	17.5	16.0	4.8
R 40	5	-	-	-	-	-	-	-	171.45	7.95	14.2	12.7	-
R 41*	-	5	5	-	-	5	5	-	180.98	11.13	17.5	15.9	-
R 42	-	-	-	-	5	-	-	-	190.50	19.05	25.4	23.9	-
R 43	6	-	-	-	-	-	-	-	193.68	7.95	14.2	12.7	-
R 44*	-	-	-	5	-	-	-	5	193.68	11.13	17.5	15.9	4.8
R 45*	-	6	6	-	-	6	6	-	211.15	11.13	17.5	15.9	4.8
R 46*	-	-	-	6	-	-	-	6	211.15	12.70	19.1	17.5	4.8
R 47*	-	-	-	-	6	-	-	6	228.60	19.05	25.4	23.9	4.1
R 48	8	-	-	-	-	-	-	-	247.65	7.95	14.2	12.7	-
R 49*	-	8	8	-	-	8	8	-	269.88	11.13	17.5	15.9	4.8
R 50*	-	-	-	8	-	-	-	8	269.88	15.88	22.4	20.6	4.1
R 51	-	-	-	-	8	-	-	-	279.40	22.23	28.7	26.9	-
R 52	10	-	-	-	-	-	-	-	304.80	7.95	14.2	12.7	-
R 53*	-	10	10	-	-	10	10	-	323.85	11.13	17.5	15.9	4.8
R 54*	-	-	-	10	-	-	-	10	323.85	15.88	22.4	20.6	4.1
R 55	-	-	-	-	10	-	-	-	342.90	28.58	36.6	35.1	-
R 56	12	-	-	-	-	-	-	-	381.00	7.95	14.2	12.7	-
R 57*	-	12	12	-	-	12	12	-	381.00	11.13	17.5	15.9	4.8

# DIMENSIONAL DATA

## RING TYPE JOINTS ASME B16.20 and API 6A Style R



RING NUMBER	PRESSURE CLASS RATINGS								PITCH DIA. OF RING	WIDTH OF RING	HEIGHT OF RING		APPROX DIST. BETWEEN MADE UP FLANGES
	ASME B16.5 & ASME B16.47 SERIES A					API 6A (psi)					OVAL	OCTAG	
	150	300/600	900	1500	2500	2000	3000	5000			B	H	
	NOMINAL PIPE SIZES										±0.50	±0.50	
R 58	-	-	-	12	-	-	-	-	381.00	22.23	28.7	26.9	-
R 59	14	-	-	-	-	-	-	-	381.88	7.95	14.2	12.7	-
R 60	-	-	-	-	12	-	-	-	406.40	31.75	39.6	38.1	-
R 61	-	14	-	-	-	14	14	-	419.10	11.13	17.5	16.0	-
R 62	-	-	14	-	-	-	-	-	419.20	15.88	22.4	20.6	-
R 63*	-	-	-	14	-	-	-	-	419.00	25.40	33.3	31.8	5.6
R 64	16	-	-	-	-	-	-	-	454.03	7.95	14.2	12.7	-
R 65*	-	16	-	-	-	16	-	-	469.90	11.13	17.5	15.9	4.8
R 66*	-	-	16	-	-	-	16	-	469.90	15.88	22.4	20.6	4.1
R 67	-	-	-	16	-	-	-	-	517.53	28.58	36.6	35.1	-
R 68	18	-	-	-	-	-	-	-	533.40	7.95	14.2	12.7	-
R 69*	-	18	-	-	-	18	-	-	533.40	11.13	17.5	15.9	4.8
R 70*	-	-	18	-	-	-	18	-	533.40	19.05	25.4	23.9	4.8
R 71	-	-	-	18	-	-	-	-	533.40	28.58	36.6	35.1	-
R 72	20	-	-	-	-	-	-	-	558.80	7.95	14.2	12.7	-
R 73*	-	20	-	-	-	20	-	-	584.20	12.70	19.1	17.5	3.3
R 74*	-	-	20	-	-	-	20	-	584.20	19.05	25.4	23.9	4.8
R 75	-	-	-	20	-	-	-	-	584.20	31.75	39.6	38.1	-
R 76	24	-	-	-	-	-	-	-	673.10	7.95	14.2	12.7	-
R 77	-	24	-	-	-	-	-	-	692.15	15.88	22.4	20.6	-
R 78	-	-	24	-	-	-	-	-	692.15	25.40	33.3	31.8	-
R 79	-	-	-	24	-	-	-	-	692.15	34.93	44.5	41.4	-
R 80	22	-	-	-	-	-	-	-	615.95	7.95	-	12.7	-
R 81	-	22	-	-	-	-	-	-	635.00	14.30	-	19.1	-
R 82*	-	-	-	-	-	-	-	-	57.15	11.13	-	15.9	4.8
R 84*	-	-	-	-	-	-	-	-	63.50	11.13	-	15.9	4.8
R 85*	-	-	-	-	-	-	-	-	79.38	12.70	-	17.5	3.3
R 86*	-	-	-	-	-	-	-	-	90.50	15.88	-	20.6	4.1
R 87*	-	-	-	-	-	-	-	-	100.03	15.88	-	20.6	4.1
R 88*	-	-	-	-	-	-	-	-	123.83	19.05	-	23.9	4.8
R 89*	-	-	-	-	-	-	-	-	114.30	19.05	-	23.9	4.8
R 90*	-	-	-	-	-	-	-	-	155.58	22.23	-	26.9	4.8
R 91*	-	-	-	-	-	-	-	-	260.35	31.75	-	38.1	4.1
R 92	-	-	-	-	-	-	-	-	228.60	11.13	17.5	16.0	-
R 93	-	26	-	-	-	-	-	-	749.30	19.05	-	23.9	-
R 94	-	28	-	-	-	-	-	-	800.10	19.05	-	23.9	-
R 95	-	30	-	-	-	-	-	-	857.25	19.50	-	23.9	-
R 96	-	32	-	-	-	-	-	-	914.40	22.23	-	26.9	-
R 97	-	34	-	-	-	-	-	-	965.20	22.23	-	26.9	-
R 98	-	36	-	-	-	-	-	-	1022.35	-	22.23	-	-
R 99*	-	-	-	-	-	8?	8?	-	234.95	11.13	-	15.9	4.8
R 100	-	-	26	-	-	-	-	-	749.30	28.58	-	35.1	-
R 101	-	-	28	-	-	-	-	-	800.10	31.75	-	38.1	-
R 102	-	-	30	-	-	-	-	-	857.25	31.75	-	38.1	-
R 103	-	-	32	-	-	-	-	-	914.40	31.75	-	38.1	-
R 104	-	-	34	-	-	-	-	-	965.20	34.93	-	38.1	-
R 105	-	-	36	-	-	-	-	-	1022.35	-	34.93	-	-

### NOTES

a) R30 Ring Type Joint used for lapped joint only.

Dimensions in mm. Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.

Tolerances: A = width of ring  $\pm 0.20$ . B, H = height of ring,  $+1.3$ ,  $-0.5$ . Variation in height throughout the entire circumference of any given ring shall not exceed 0.5 within these tolerances

P = average pitch diameter of ring  $\pm 0.18$ . R1 = radius in ring  $\pm 0.5$ . 23 deg = angle  $\pm 0$  deg 30 min



## RING TYPE JOINTS



### Style RX

The **Style RX** is an adaptation of the standard Style R which is energised when the assembly is pressurised. The RX is designed to fit the same groove design as a standard Style R, making the joints interchangeable, however consideration should be given to the difference in finished make up distance.

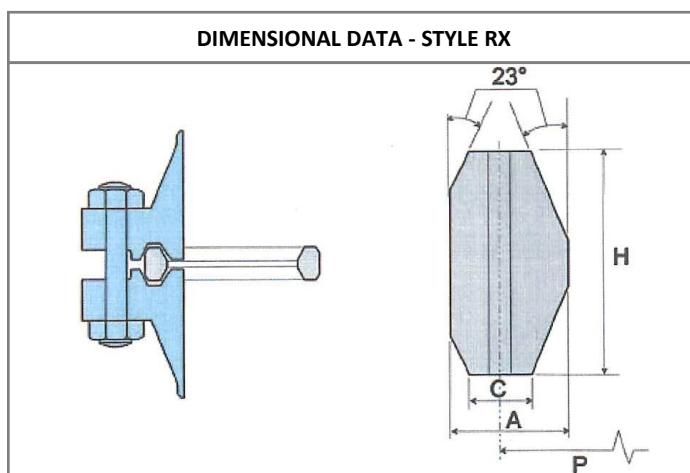
The geometry of this modified design induces a pressure energising effect when the assembly is pressurised, improving the efficiency of the seal.

Designs are also available for subsea applications on existing assets, however, current API 17D does not support use of SRX Ring Type Joints.

### STYLE RX TOLERANCES

Dimension		Tolerances (mm)	
		API 6A	ASME B16.20
A	Width of ring	+0.20/-0.0	+0.20/-0.00
C	Width of flat	+0.15/-0.0	+0.15/-0.00
D	Height of outside bevel	+0.0/-0.8	+0.0/-0.76
H	Height of ring	+0.20/-0.0	+0.20/-0.00
OD	Outside diameter	+0.5/-0.0	+0.51/-0.00
P	Average pitch diameter	±0.13	Not given
23°	Angle of sealing face	±0° 30'	±0° 30'

Surface finish of the Style RX Ring Type Joint sealing faces (23° angled faces) shall not be greater than **1.6 µm Ra / 63 µin RMS**.



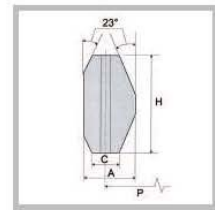
**NOTE 1:**

The pressure passage hole illustrated in the Ring Type Joint cross section ensures equalization of pressure that may be generated in the grooves when the flange assembly is closed. These pressure passage holes are mandatory in the ring sizes RX82 - 91 inclusive. Centre line of hole shall be located at mid point of dimension "C" (width of flat). Hole diameter shall be as follows:

- 1.5mm ±0.5 for rings RX82 through RX85;
- 2.3mm ±0.5 (2.4mm ±0.5 for API 6A) for rings RX86 through RX87;
- 3.0mm ±0.5 for rings RX88 through RX91.

# DIMENSIONAL DATA

## RING TYPE JOINTS ASME B16.20 and API 6A Style RX



RING NUMBER	PRESSURE CLASS RATINGS - API 6A (psi)			PITCH DIA. OF RING	OUTSIDE DIAMETER	WIDTH OF RING	WIDTH OF FLAT	HEIGHT OF OUTSIDE BEVEL	HEIGHT OF RING	HOLE SIZE (note 1 & 2)	APPROX DIST. BETWEEN MADE UP FLANGES (mm)
	2000	3000	5000								
	NOMINAL PIPE SIZE (inches)										
RX 20	1 1/12	1 1/12	1 1/2	68.26	76.20	8.74	4.62	3.18	19.05	-	9.7
RX 23	2	-	-	82.55	93.27	11.91	6.45	4.24	25.40	-	11.5
RX 24	-	2	2	95.25	105.97	11.91	6.45	4.24	25.40	-	11.5
RX 25	-	-	3 1/8	101.60	109.55	8.74	4.62	3.18	19.05	-	-
RX 26	2 1/2	-	-	101.60	111.91	11.91	6.45	4.24	25.40	-	11.9
RX 27	-	2 1/2	2 1/2	107.95	118.26	11.91	6.45	4.24	25.40	-	11.9
RX 31	3	3	-	123.83	134.54	11.91	6.45	4.24	25.40	-	11.9
RX 35	-	-	3	136.53	147.24	11.91	6.45	4.24	25.40	-	11.9
RX 37	4	4	-	149.23	159.94	11.91	6.45	4.24	25.40	-	11.9
RX 39	-	-	4	161.93	172.64	11.91	6.45	4.24	25.40	-	11.9
RX 41	5	5	-	180.98	191.69	11.91	6.45	4.24	25.40	-	11.9
RX 44	-	-	5	193.68	204.39	11.91	6.45	4.24	25.40	-	11.9
RX 45	6	6	-	211.15	221.84	11.91	6.45	4.24	25.40	-	11.9
RX 46	-	-	6	211.15	222.25	13.49	6.68	4.78	28.58	-	11.9
RX 47	-	-	8	228.60	245.26	19.84	10.34	6.88	41.28	-	18.3
RX 49	8	8	-	269.88	280.59	11.91	6.45	4.24	25.40	-	11.9
RX 50	-	-	8	269.88	283.36	16.66	8.51	5.28	31.75	-	11.9
RX 53	10	10	-	323.85	334.57	11.91	6.45	4.24	25.40	-	11.9
RX 54	-	-	10	323.85	337.34	16.66	8.51	5.28	31.75	-	11.93
RX 57	12	12	-	381.00	391.72	11.91	6.45	4.24	25.40	-	11.9
RX 63	-	-	14	419.10	441.73	27.00	14.78	8.46	50.80	-	21.3
RX 65	16	-	-	469.90	480.62	11.91	6.45	4.24	25.40	-	11.9
RX 66	-	16	-	469.90	483.39	16.66	8.51	5.28	31.75	-	11.9
RX 69	18	-	-	533.40	544.12	11.91	6.45	4.24	25.40	-	11.9
RX 70	-	18	-	533.40	550.06	19.84	10.34	6.88	41.28	-	18.3
RX 73	20	-	-	584.20	596.11	13.49	6.68	5.28	31.75	-	15.0
RX 74	-	20	-	584.20	600.86	19.84	10.34	6.88	41.28	-	18.3
RX 82 (1)	-	-	-	57.15	67.87	11.91	6.45	4.24	25.40	1.5	11.9
RX 84 (1)	-	-	-	63.50	74.22	11.91	6.45	4.24	25.40	1.5	11.9
RX 85 (1)	-	-	-	79.38	90.09	13.49	6.68	4.24	25.40	1.5	9.7
RX 86 (1)	-	-	-	90.50	103.58	15.09	8.51	4.78	28.58	2.3 (2.4)	9.7
RX 87 (1)	-	-	-	100.03	113.11	15.09	8.51	4.78	28.58	2.3 (2.4)	9.7
RX 88 (1)	-	-	-	123.83	139.29	17.48	10.34	5.28	31.75	3.0	9.7
RX 89 (1)	-	-	-	114.30	129.77	18.26	10.34	5.28	31.75	3.0	9.7
RX 90 (1)	-	-	-	155.58	174.63	19.84	12.17	7.42	44.45	3.0	18.3
RX 91 (1)	-	-	-	260.35	286.94	30.18	19.81	7.54	45.24	3.0	19.1
RX 99	8	8	-	234.95	245.67	11.91	6.45	4.24	25.40	-	11.9
RX 201	-	-	1 3/8	46.05	51.46	5.74	3.20	1.45 (3)	11.30	-	-
RX 205	-	-	1 13/16	57.15	62.31	5.56	3.05	1.83 (3)	11.10	-	-
RX 210	-	-	2 9/16	88.90	97.64	9.53	5.41	3.18 (3)	19.05	-	-
RX 215	-	-	4 1/16	130.18	140.89	11.91	5.33	4.24 (3)	25.40	-	-

### GENERAL NOTES:

Dimensions in mm. Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.

### Tolerances:

OD = outside diameter of ring, +0.51, 0.00. A = width of ring +0.20, -0.00 - Variation in width throughout the entire circumference of any ring shall not exceed 0.10 within these tolerances.

C = width of flat, +0.15, -0.00. D = height of outside bevel, +0.00, -0.76. H = height of ring, +0.20, -0.00 - Variation in height throughout the entire circumference of any ring shall not exceed 0.10 within these tolerances. R1 = radius of ring, +/- 0.5. 23 deg = angle, +/- 0 deg 30 min. E = hole size, +/- 0.5

### NOTES:

1. Rings RX82 through RX91 only require one pressure passage hole as illustrated. The centreline of the hole shall be located at the midpoint of dimension C.
2. Tolerance on these dimensions is +0.00, -0.38.



## RING TYPE JOINTS



### Style BX

The **Style BX** energised Ring Type Joints, manufactured in accordance with ASME B16.20, API 6A and API 17D, are designed for use on API 6BX flanges on pressure systems rated up to 20,000 psi.

When correctly fitted, the style BX gasket allows virtual face to face contact of the flange faces which means that the gasket is fully confined on both the inner and outer diameters.

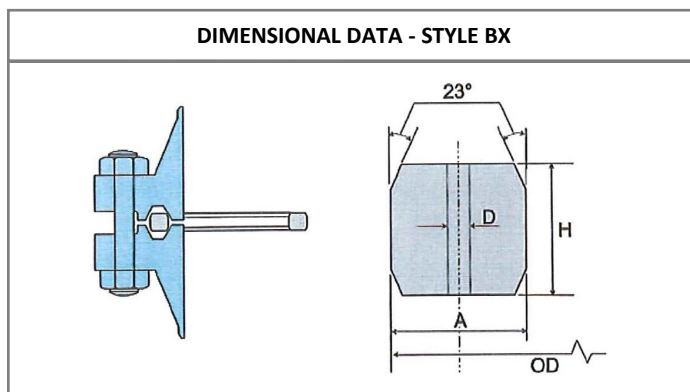
All BX gaskets incorporate a pressure balance hole to ensure equalization of pressure which may be generated in the grooves.

*Designs are also available for subsea applications.*

### STYLE BX TOLERANCES

Dimension		Tolerances (mm)	
		API 6A & 17D	ASME B16.20
A	Width of ring	+0.20/-0.0	+0.20/-0.00
C	Width of flat	+0.15/-0.0	+0.15/-0.00
D	Hole size	+0.5	+0.5
H	Height of ring	+0.20/-0.0	+0.20/-0.00
OD	Outside diameter	+0.0/-0.15	+0.00/-0.15
ODT	Outside diameter of flat	±0.05	±0.05
23°	Angle of sealing face	±0° 15'	±0° 15'

Maximum surface finish of the Style BX Ring Type Joint sealing faces (23° angled faces) shall not be greater than **0.8 µm Ra / 32 µin RMS**.

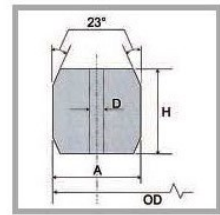


**NOTE 1:**

*Machined radii located between all 23° angled sealing facings and the top and bottom flat faces, shall be 8% to 12% of the ring height 'H'.*

# DIMENSIONAL DATA

## RING TYPE JOINTS ASME B16.20, API 6A and API 17D



RING NUMBER	NOMINAL SIZE	PRESSURE CLASS RATINGS - API 6BX FLANGES (psi)						OUTSIDE DIAMETER	HEIGHT OF RING	WIDTH OF RING	OUTSIDE DIAMETER OF FLAT	WIDTH OF FLAT	HOLE SIZE (note 1 & 2)
		2000	3000	5000	10000	15000	20000						
		NOMINAL PIPE SIZES (inches)											
								OD	H	A	ODT	C	D
BX 150	43	-	-	-	1 11/16	1 11/16	-	72.19	9.30	9.30	70.87	7.98	1.5 (1.6)
BX 151	46	-	-	-	1 13/16	1 13/16	1 13/16	76.40	9.63	9.63	75.03	8.26	1.5 (1.6)
BX 152	52	-	-	-	2 1/16	2 1/16	2 1/16	84.68	10.24	10.24	83.24	8.79	1.5 (1.6)
BX 153	65	-	-	-	2 9/16	2 9/16	2 9/16	100.94	11.38	11.38	99.31	9.78	1.5 (1.6)
BX 154	78	-	-	-	3 1/16	3 1/16	3 1/16	116.84	12.40	12.40	115.09	10.64	1.5 (1.6)
BX 155	103	-	-	-	4 1/16	4 1/16	4 1/16	147.96	14.22	14.22	145.95	12.22	1.5 (1.6)
BX 156	179	-	-	-	7 1/16	7 1/16	7 1/16	237.92	18.62	18.62	235.28	15.98	3.0 (3.2)
BX 157	228 (229)	-	-	-	9	9	9	294.46	20.98	20.98	291.49	18.01	3.0 (3.2)
BX 158	279	-	-	-	11	11	11	352.04	23.14	23.14	348.77	19.86	3.0 (3.2)
BX 159	346	-	-	-	13 5/8	13 5/8	13 5/8	426.72	25.70	25.70	423.09	22.07	3.0 (3.2)
BX 160	346	-	-	13 5/8	-	-	-	402.59	23.83	13.74	399.21	10.36	3.0 (3.2)
BX 161	425 (422)	-	-	16 3/4	-	-	-	491.41	28.07	16.21	487.45	12.24	3.0 (3.2)
BX 162	425 (422)	-	-	16 3/4	16 3/4	16 3/4	-	475.49	14.22	14.22	473.48	12.22	1.5 (1.6)
BX 163	476	-	-	18 3/4	-	-	-	556.16	30.10	17.37	551.89	13.11	3.0 (3.2)
BX 164	476	-	-	-	18 3/4	18 3/4	-	570.56	30.10	24.59	566.29	20.32	3.0 (3.2)
BX 165	540	-	-	21 1/4	-	-	-	624.71	32.03	18.49	620.19	13.97	3.0 (3.2)
BX 166	540	-	-	-	21 1/4	-	-	640.03	32.03	26.14	635.51	21.62	3.0 (3.2)
BX 167	679 (680)	26 3/4	-	-	-	-	-	759.36	35.86 (3)	13.11	754.28	8.03	1.5 (1.6)
BX 168	679 (680)	-	26 3/4	-	-	-	-	765.25	35.86 (3)	16.05	760.17	10.97	1.5 (1.6)
BX 169	130	-	-	-	5 1/8	-	-	173.51	15.85	12.93	171.27	10.69	1.5 (1.6)
BX 170	228 (168)	-	-	-	6 5/8	6 5/8	-	218.03	14.22	14.22	216.03	12.22	1.5 (1.6)
BX 171	279 (218)	-	-	-	8 9/16	8 9/16	-	267.44	14.22	14.22	265.43	12.22	1.5 (1.6)
BX 172	346 (283)	-	-	-	11 5/32	11 5/32	-	333.07	14.22	14.22	331.06	12.22	1.5 (1.6)
BX 303	762	30	30	-	-	-	-	852.75	37.95	16.97	847.37	11.61	1.5 (1.6)

### GENERAL NOTES:

- Dimensions in mm.
- Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.
- Radius R, shall be 8% to 12% of the gasket height H.
- Nominal sizes shown in parenthesis are as listed in ASME B16.20.

### Tolerances:

OD = outside diameter of ring, +0.00, -0.15

H = height of ring, +0.20, -0.00 - Variation in height throughout the entire circumference of any ring shall not exceed 0.10 within these tolerances

A = width of ring +0.20, -0.00 - Variation in width throughout the entire circumference of any ring shall not exceed 0.10 within these tolerances

ODT = outside diameter of flat, +/- 0.05

C = width of flat, +0.15, -0.00

D = hole size, +/- 0.5

R = radius of ring (see general note (c))

23 deg = angle, +/- 0 deg 15 min

### NOTE:

- One pressure passage hole is required per gasket as illustrated. The centreline of the hole shall be located at the midpoint of dimension C.

## OFF-SHORE INDUSTRY RING TYPE JOINTS



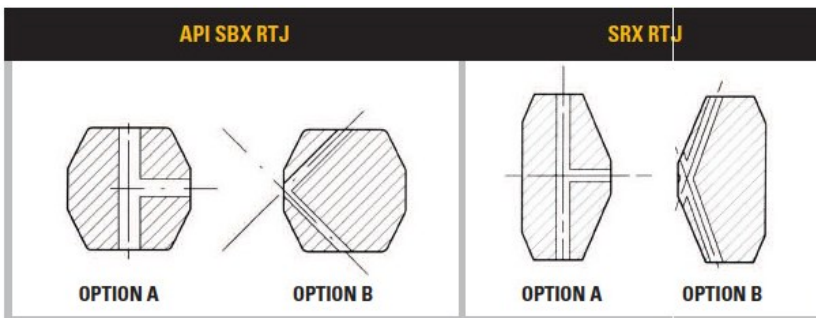
### Standard Subsea and Custom Manufactured Seals

#### Subsea Gaskets

Flexitallic is able to provide specialist machined seals that are designed for use in subsea wellhead, mudline and tree equipment within the scope of API 17D.

The Offshore Oil and Gas industry imposes demanding performance requirements on gasketed bolted connections. High pressures and temperatures along with the ever present possibility of corrosion and the need for sub-sea assembly, make the correct gasket style and material selection of crucial importance.

To distinguish subsea Ring Type Joints from those used topside, the suffix “S” is applied to indicate the additional pressure passage hole in the ring cross-section. This additional requirement is to prevent pressure lock occurring



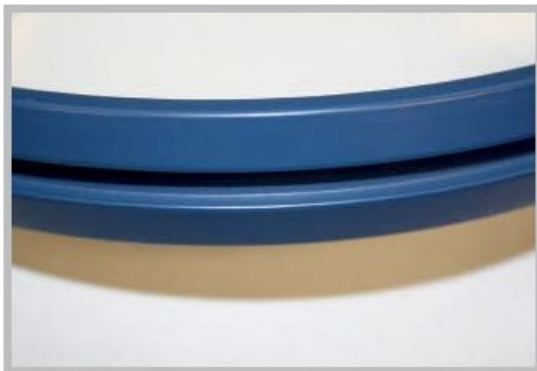
when connections are assembled underwater. API 17D provides two drilling options for the pressure passage holes, option A and option B as shown.

Other than the addition of the pressure passage holes, all other physical aspects of the API 17D SBX Ring Type Joint is the same as the API 6A BX Ring Type Joint.

It should be noted that API 17D no longer supports the use of SRX ring type joints (API 6A RX Ring Type Joints with subsea drillings), however, when opening flanges on existing equipment replacement SRX Ring Type Joints may be used.

### Custom Manufactured Seals

Flexitallic manufactures and supplies specialised machined components to suit various subsea and wellhead equipment such as Blow Out Preventers (BOP). These components are manufactured according to the original equipment manufacturers design and manufacturing procedures.



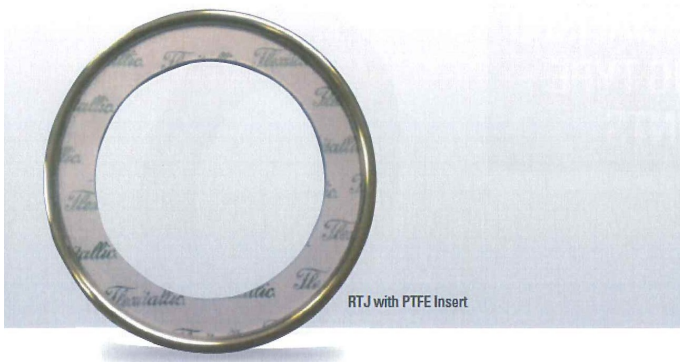
#### NORSOK L-005 'IX' Seal Rings

IX Seal Rings are designed for use in compact flange connections as detailed in the NORSOK standard. The compact flange design is such that when the flange connection is assembled the tightening / tensioning of the bolts pulls the flange onto the tapered sealing faces on the outside diameter of the IX Seal Ring. The compact flange assembly design has two seals, where the primary seal is the IX Seal Ring and the secondary seal is provided by the application of a seal seating stress at the flange heel.

As with the API ring type joints, the IX Seal Rings are manufactured to very fine tolerances and quality control requirements. Material selection is also very important to avoid corrosion issues. IX Seal Rings are colour coded to denote the metallurgy used.



## SPECIALISED RING TYPE JOINTS



### Rubber Coated Ring Type Joints

### Blind and Orifice Ring Type Joints

#### Rubber Coated Ring Type Joints

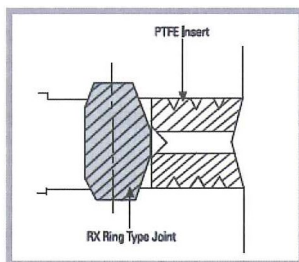
This is an oval Ring Type Joint totally enclosed in a nitrile rubber coating.

The Ring Type Joint material is usually soft iron or low carbon steel.

This type of gasket has three main functions:

- It is used in pressure testing to minimise damage to flanges.
- The rubber contact points provide additional seals while protecting the flange surfaces.
- It provides increased assurance against corrosion, which can occur between conventional Ring Type Joints and the engaged surfaces of the groove.

A wide range of standard sizes are available, with special sizes available upon request.



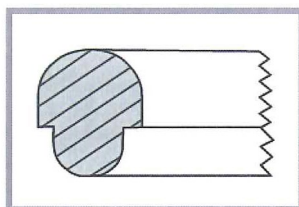
SECTION THROUGH RX RING  
WITH INSERT

#### Style R and RX with PTFE Inserts

Style R and RX Ring Type Joints can also be supplied with PTFE inserts, in order to reduce turbulent flow and eliminate gasket/flange erosion.

For the RX style Ring Type Joints, the insert is specially designed with radially drilled pressure passage holes so that the self energising performance of the RX Ring Joint is not impaired.

As can be seen in the sectional view, the insert is located between the inside diameter of the Ring Type Joint and the bore of the flange.



TRANSITION RING

On assembly, the insert is completely trapped between the make up of the flanges, filling the annular space between the flange bore and gasket.

#### Transition Ring Type Joints

These are combination rings which consist of two different sizes having the same pitch circle diameter. They are used for sealing Ring Type Joint flanges where the mating flanges have different ring groove geometry.

Transition Ring Type Joints can be manufactured from standard materials, as well as exotic alloys. Transition Ring Type Joints are available with either oval or octagonal facings and are not encompassed within the API or ASME specifications.

#### Blind and Orifice Ring Type Joints

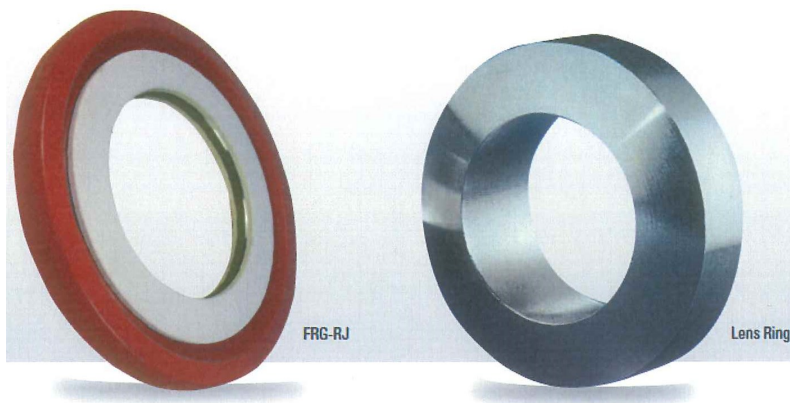
Blind Ring Type Joints can be manufactured to blank off flanges and pipework. They consist of standard Ring Type Joints with integral solid metal centres. The height of the standard Ring Type Joint section of the gasket is increased to allow for the solid centre to fit in between the two flanges and permit the sealing faces to locate correctly inside the ring grooves.

Orifice Ring Type Joints are used for either restricting and / or measuring fluid flow and are sized to customer requirements. As with the Blind Ring Type Joints the height of the Ring Type Joint section is increased to allow for the thickness of the orifice plate.

Blind Ring Type Joints can be supplied in all standard and exotic materials.

Unless instructed otherwise, Blind / Blank thicknesses are calculated in accordance with ASME B31.3.

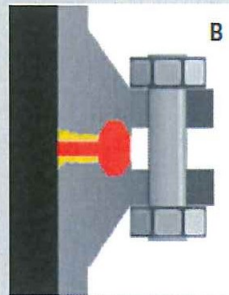
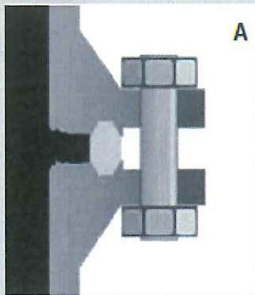
## SPECIALISED RING TYPE JOINTS



For Critical and Non-standard Applications, Flexitallic offers a Range of Specialised Ring Type Joints to Suit the Needs of the Oil & Gas and Petrochemical Industries

**A: Standard Octagonal RTJ** - liquid can get in between flanges and cause erosion / corrosion in this area.

**B: FRG-RJ** - inboard of the RTJ is filled with SIGMA PTFE on an integral metal support - fills the gap thus eliminating the problem.

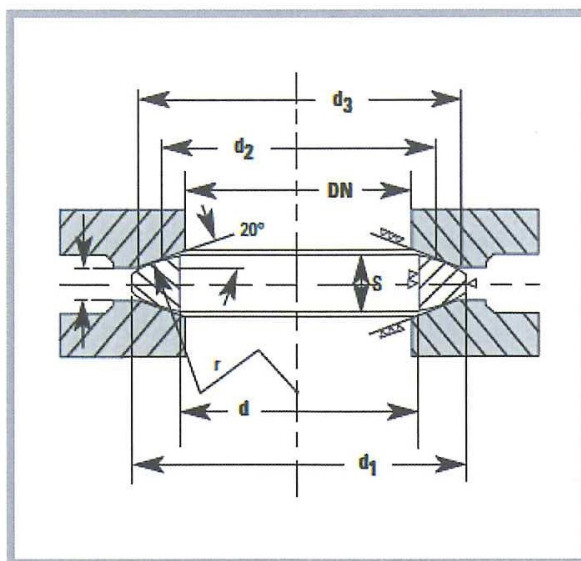


### FRG-RJ

The Flexitallic FRG-RJ is comprised of a standard geometry ring joint ensuring the primary seal is effected as originally designed, there is also an integrated secondary seal comprised of a high integrity serrated metal Flexpro core faced with Flexitallic's highly conformable re-structured microcellular PTFE.

This secondary seal is carefully dimensioned to fill any voids or crevices formed between the pipe-bore and the internal diameter of standard Ring Type Joint on flange closure. The highly conformable nature and optimized thickness of the inner secondary seal ensures that it is capable of adapting to extensively damaged flange sealing surfaces. Full closure of this corrosion / erosion sensitive area prevents fluid ingress mitigating the potential for further flange damage. This gasket design can also be used as part of a preventative maintenance programme.

## CROSS SECTION OF LENS RING



### Lens Rings

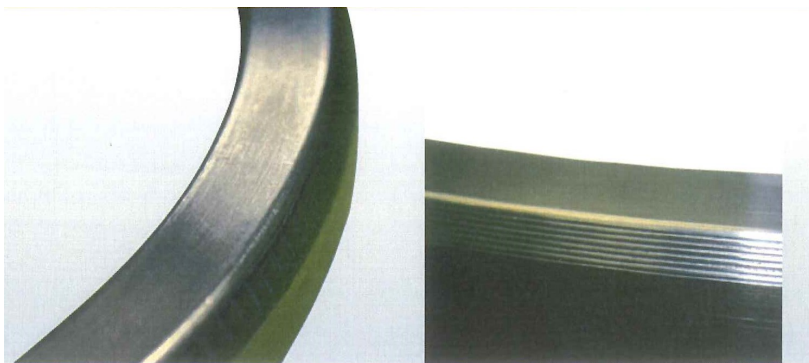
The Lens Ring is a metallic gasket design incorporating spherical seating faces designed to suit a specific mating flange profile, providing the user with a high integrity, high pressure / temperature metal to metal seal. Lens Ring gasket technology is covered solely by the DIN 2696 specification, however, other flange standards can be modified to accept the Lens Ring.

As with all metallic gaskets, the Lens Ring material should be specified softer than the flange material, thus ensuring applied compressive load leads to the elastic / plastic deformation of the lens ring and not the flange sealing face. The distribution of high compressive loads leads to the spread of the gasket facings, ensuring over stressing of the gasket is prevented.

In accordance with DIN 2696 general materials are limited to a range of specified carbon and stainless steel grades, although alternative grades are available upon request. Flexitallic requires a detailed drawing to be supplied when ordering non-standard Lens Rings.



## FLEXPRO™ FACED RTJ



For Use in Damaged Flanges or as Re-usable Ring Type Joints

Kamm-ORJ

Kamm-RX

### Flexpro™ Faced Ring Type Joint

The Flexitallic style Flexpro™ faced Ring Type Joints are suitable for use in high pressure applications where API or ASME ring groove style flanges are to be sealed.

The Ring Type Joint metallurgy is generally specified by the customer to match the flange material and to be suitable for the application media. The relevant 23° angled sealing faces of the Ring Type Joint are machined with concentric serrations to provide a low stress sealing face to which a soft sealing material is applied. This low stress sealing capability avoids the need to deform the metal of the Ring Type Joint. Standard Ring Type Joints can only be used once, however, after careful removal of the used soft facing material and inspection confirming the integrity and quality of the metal Ring Type Joint, the facing material is replaced and the Flexpro™ faced Ring Type Joint re-used.

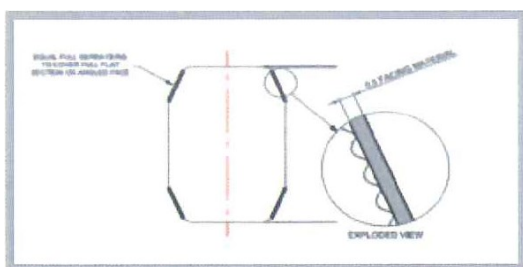
### Soft Sealing Materials

The soft materials that are applied to the sealing faces of the Flexpro™ faced Ring Type Joints are Flexicarb® or Thermiculite®. Maximum operating temperatures are dependent upon the metallurgy and the facing material selected:

<b>Flexicarb®</b>	<b>450°C (842°F)</b>
<b>Thermiculite®</b>	<b>980°C (1800°F)</b>

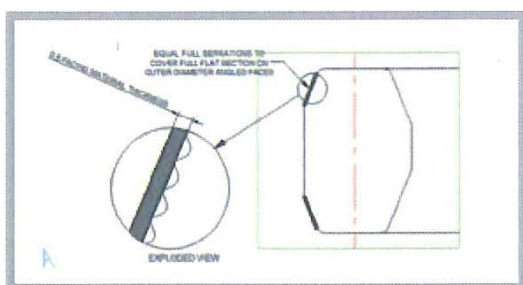
### Compliance

The underlying metallic Ring Type Joint conforms to the dimensional requirements of the relevant API or ASME standard. NACE compliant material can be supplied upon request.



### Kamm-ORJ

The Flexitallic Kamm-ORJ is a solid metallic style 'R' Octagonal Ring Type Joint with the soft sealing material applied to all four pre-serrated 23° angled sealing faces as shown.



### Kamm-RX

The Flexitallic Kamm-RX gasket (also known as KAMM-PEG) is a solid metallic style 'RX' Pressure Energised Ring Type Joint, where the top and bottom 23° angled sealing faces on the outer diameter are serrated and faced with a soft sealing material.

## FLEXITALLIC NON-ASBESTOS SHEET JOINTING

### Flexitallic SF2800



**Applications:** Suitable for use across a broad spectrum of industrial applications involving steam (including super-heated steam), water, oils, solvents, fuels, general chemicals, dilute acids and alkalis.

**Description:** A general purpose sheet material reinforced with aramid fibres and bound with nitrile rubber.

**Colour:** Green

**Thickness:** 0.5mm to 3mm

**Max. Temperature:** 400°C (750°F)

**Max. Pressure:** 12 MPa, 1740 psi, 120 bar

**Sheet Size:** 1.5M x 1.5M

**Specification**

**Compliance:** BS 7531 Grade Y

### Flexitallic SF3300



**Applications:** High pressure steam, water, gases, oils, solvents, mild acids and alkalis, food and pharmaceuticals.

**Description:** A premium quality sheet material reinforced with a blend of aramid and glass fibers and bound with nitrile rubber.

**Colour:** Light yellow (pigment free)

**Thickness:** 0.5mm to 3mm

**Max. Temperature:** 440°C (825°F)

**Max. Pressure:** 14 MPa, 2030 psi, 140 bar

**Sheet Size:** 1.5M x 1.5M

**Specification**

**Compliance:** BS 7531 Grade X

### Flexitallic SF5000



**Applications:** Steam, water, oils, fuels and dilute acids. Especially suitable for strong caustic liquors.

**Description:** NBR based, non-asbestos sheet sealing material, reinforced with carbon and aramid fibers.

**Colour:** Black

**Thickness:** 0.5mm to 3mm

**Max. Temperature:** 440°C (824°F)

**Max. Pressure:** 14 MPa, 2030 psi, 140 bar

**Sheet Size:** 1.5M x 1.5M

**Specification**

**Compliance:** BS 7531 Grade X

## FLEXITALLIC PTFE SHEET JOINTING

### Flexitallic SIGMA 500



Applications:	Suitable for sealing all chemicals across the whole pH range (0-14) with the exception of molten alkali metals, fluorine gas, hydrogen fluoride or materials which may generate these. Universal chemical resistance.
Description:	A high performance biaxially orientated filled sheet sealing material containing PTFE with hollow glass microspheres.
Colour:	Blue
Thickness:	0.75mm to 3.2mm
Max. Temperature:	260°C (500°F)
Max. Pressure:	8.5 MPa
Sheet Size:	1.5M x 1.5M
Specification Compliance:	Complies with the requirements of FDA regulations

### Flexitallic SIGMA 511



Applications:	Suitable for sealing all chemicals across the whole pH range (0-14) with the exception of molten alkali metals, fluorine gas, hydrogen fluoride or materials which may generate these. Acid resistant material.
Description:	A high performance sheet sealing material containing PTFE with silica filler.
Colour:	Pink
Thickness:	0.75mm to 3.2mm
Max. Temperature:	260°C (500°F)
Max. Pressure:	8.5 MPa
Sheet Size:	1.5M x 1.5M
Specification Compliance:	Complies with the requirements of FDA regulations

### Flexitallic SIGMA 533



Applications:	Suitable for sealing all chemicals across the whole pH range (0-14) with the exception of molten alkali metals, fluorine gas, anhydrous HF, and sulphuric acid at concentrations > 75% and at temperatures above 65°C.
Description:	A high performance sheet sealing material containing PTFE with barium sulphate filler.
Colour:	White
Thickness:	0.75mm to 3.2mm
Max. Temperature:	260°C (500°F)
Max. Pressure:	8.5 MPa
Sheet Size:	1.5M x 1.5M
Specification Compliance:	Complies with the requirements of FDA regulations

## FLEXITALLIC GRAPHITE SHEET JOINTING

### RGS1 Graphite Sheet



Applications:	Steam and most chemicals except oxidising agents; particularly recommended for ease of cutting.
Description:	High purity graphite laminate sheet with a Nickel foil reinforcement, with low Sulphur and Chloride content.
Colour:	Grey-Black
Thickness:	1.0mm to 3.0mm
Max. Temperature:	Oxidising media: -200°C to 500°C Inert or reducing media: to 1000°C
Max. Pressure:	20 MPa
Sheet Size:	1M x 1M

### RGS3 Graphite Sheet



Applications:	RGS3 can be used to seal a wide range of media at extremes of temperature and pressure, however the product is not recommended for sealing against strong chemical oxidising agents.
Description:	High purity graphite laminate reinforced with a tanged stainless steel core. The inclusion of the steel reinforced layers gives rise to a robust sheet.
Colour:	Grey-Black
Thickness:	1.0mm to 3.0mm
Max. Temperature:	Oxidising media: -200°C to 500°C Inert or reducing media: to 1000°C
Max. Pressure:	20 MPa
Sheet Size:	1M x 1M

### RGS4 Graphite Sheet



Applications:	RGS4 can be used to seal a wide range of media at extremes of temperature and pressure, however the product is not recommended for sealing against chemical oxidising agents. General applications requiring good handleability.
Description:	High purity graphite laminate reinforced with a flat stainless steel core.
Colour:	Grey-Black
Thickness:	1.0mm to 3.0mm
Max. Temperature:	Oxidising media: -200°C to 500°C Inert or reducing media: to 700°C
Max. Pressure:	20 MPa
Sheet Size:	1M x 1M



## THERMICULITE



A breakthrough in both heat and chemical resistance, Thermiculite High Temp gasket materials are rated for temperatures from cryogenic up to 1000°C and have passed the API 607 fire test.

Thermiculite sealing materials withstand high temperatures in critical service, corrosive environments and are free from oxidation.

Due to the unique formulation, we are able to offer Thermiculite as a sheet material, as a filler for spiral wound gaskets, as a facing for kammprofiles and also in many of our other product lines.

We have also developed a range of valve stem packings, which utilises Thermiculite technology.

Thermiculite is suitable for replacing aramid, glass, and carbon fibre; PTFE and graphite gaskets in a number of industrial applications.

### Thermiculite 815



**Applications:** High temperature requirements in turbo chargers and super chargers, diesel engine exhaust manifolds and oxidising services in the nitrogen fertiliser manufacturing process.

In addition, offshore and seawater cooling applications and in the Nuclear industry.

**Description:** High temperature, chemically resistant sheet sealing material comprised of chemically and thermally exfoliated vermiculite on a tanged 316 stainless steel core.

**Colour:** Golden Brown

**Thickness:** 0.75mm to 4.0mm

**Max. Temperature:** 1000°C

**Max. Pressure:** 20 MPa

**Sheet Size:** 1M x 1M



## FLEXITALLIC SHEET JOINTING

Part No.	Description	Sheet Size	Colour
SF280005HH	SF2800 0.5 mm	1500 x 1500	GREEN
SF2800075HH	SF2800 0.75 mm	1500 x 1500	GREEN
SF280010HH	SF2800 1.0 mm	1500 x 1500	GREEN
SF280015HH	SF2800 1.5 mm	1500 x 1500	GREEN
SF280020HH	SF2800 2.0 mm	1500 x 1500	GREEN
SF280030HH	SF2800 3.0 mm	1500 x 1500	GREEN
SFM240015HH	SF2400 1.5mm WIRE REINFORCED	1500 x 1500	GREEN
SFM240030HH	SF2400 3.0mm WIRE REINFORCED	1500 x 1500	GREEN
SF330005HH	SF3300 0.5mm	1500 x 1500	LIGHT YELLOW
SF3300075HH	SF3300 0.75mm	1500 x 1500	LIGHT YELLOW
SF330010HH	SF3300 1.0mm	1500 x 1500	LIGHT YELLOW
SF330015HH	SF3300 1.5mm	1500 x 1500	LIGHT YELLOW
SF330020HH	SF3300 2.0mm	1500 x 1500	LIGHT YELLOW
SF330030HH	SF3300 3.0mm	1500 x 1500	LIGHT YELLOW
SF5000075HH	SF5000 0.75mm	1500 x 1500	BLACK
SF500015HH	SF5000 1.5mm	1500 x 1500	BLACK
SF500020HH	SF5000 2.0mm	1500 x 1500	BLACK
SF500030HH	SF5000 3.0mm	1500 x 1500	BLACK

SI500075HH	SIGMA 500 0.75mm	1500 x 1500	BLUE
SI50015HH	SIGMA 500 1.5mm	1500 x 1500	BLUE
SI50020HH	SIGMA 500 2.0mm	1500 x 1500	BLUE
SI50030HH	SIGMA 500 3.0mm	1500 x 1500	BLUE
SI511075HH	SIGMA 511 0.75mm	1500 x 1500	PINK
SI51115HH	SIGMA 511 1.5mm	1500 x 1500	PINK
SI51120HH	SIGMA 511 2.0mm	1500 x 1500	PINK
SI51130HH	SIGMA 511 3.0mm	1500 x 1500	PINK
SI53315HH	SIGMA 533 1.5mm	1500 x 1500	WHITE
SI53330HH	SIGMA 533 3.0mm	1500 x 1500	WHITE

RGS110II	RGS1 1.0mm NICKEL GRAPHITE	1000 x 1000	BLACK
RGS115II	RGS1 1.5mm NICKEL GRAPHITE	1000 x 1000	BLACK
RGS120II	RGS1 2.0mm NICKEL GRAPHITE	1000 x 1000	BLACK
RGS130II	RGS1 3.0mm NICKEL GRAPHITE	1000 x 1000	BLACK
RGS310II	RGS3 1.0mm TANG S/S GRAPH	1000 x 1000	BLACK
RGS315II	RGS3 1.5mm TANG S/S GRAPH	1000 x 1000	BLACK
RGS320II	RGS3 2.0mm TANG S/S GRAPH	1000 x 1000	BLACK
RGS330II	RGS3 3.0mm TANG S/S GRAPH	1000 x 1000	BLACK
RGS410II	RGS4 1.0mm S/S GRAPHITE	1000 x 1000	BLACK
RGS415II	RGS4 1.5mm S/S GRAPHITE	1000 x 1000	BLACK
RGS420II	RGS4 2.0mm S/S GRAPHITE	1000 x 1000	BLACK
RGS430II	RGS4 3.0mm S/S GRAPHITE	1000 x 1000	BLACK
THM81515II	THERMICULITE 815 1.5mm	1000 x 1000	GOLDEN BROWN

# SHEET MATERIALS CHEMICAL COMPATIBILITY Chart

Key: A = Suitable  
 B = Depends on operating conditions \*\*  
 (B\* = Corrosion of SS316 core possible under certain conditions)  
 C = Not suitable

Revised to match Compressed Fiber & Graphite Sheet Brochure (US), and to reflect any possible attack on material binder (NBR, inc THERMICULITE). Now includes SF4300 & Corriculite.

**As a general guide, TH835 Spirals and TH845 Flexpros may be assumed to have the same compatibility as TH815; however, any variations in winding metal or core from standard SS316 must be taken into account.**

\*\* One or more components of material may be degraded. Higher temperature will exacerbate attack; higher concentration may exacerbate attack if viscosity of medium does not increase significantly with concentration; higher gasket load will mitigate attack (limited to edge in contact with media)

The given ratings apply only to materials adequately clamped between flanges, and not to freely—immersed samples

	SIGMA®					Thermiculite				Compressed Fiber				
										SF2401 SF2800 SF3300 SF3500 SF4300				
Medium	500/501	511	533	588	600	815	715	Corriculite	Flexicarb (FG)					
Abietic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Acetaldehyde	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetamide	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetic Acid (Crude, Glacial, Pure)	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetic Anhydride	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetonitrile	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetophenone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
2-Acetylaminofluorene	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acetylene	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Acrolein	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acrylamide	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acrylic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acrylic Anhydride	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Acrylonitrile	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Adipic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Adiponitrile	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Air	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Alkaline lye	B	B	A	A	A	B	B	B	A	B	B	A	A	B
Allyl Acetate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Allyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Allyl Methacrylate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Aluminum Chloride	A	A	A	A	A	B*	B	B*	A	B	B	B	A	B
Aluminum Fluoride	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Hydroxide (solid)	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Aluminum Nitrate	A	A	A	A	A	B	B	A	B	B	B	B	A	B
Aluminum Sulphate	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Alums	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
4-Aminodiphenyl	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ammonia, Gas, 65°C and below	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Gas, above 65°C	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Liquid, Anhydrous	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Ammonium Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Ammonium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Nitrate	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Ammonium Phosphate, Monobasic	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dibasic	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Tribasic	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ammonium Sulphate	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Amyl Acetate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Amyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Aniline, Aniline Oil	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Aniline Dyes	A	A	A	A	A	B	B	B	A	B	B	B	B	B
o-Anisidine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Antinomy Trichloride	A	A	A	A	A	B*	A	B*	A	B	B	B	A	B
Aqua Regia	A	A	A	A	A	B*	B	B*	C	C	C	C	B	C
Arsenic Acid	A	A	A	A	A	A	A	A	A	B	B	B	A	B
Arseneous Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Aroclors	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Asphalt	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Aviation Gasoline	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Barium Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Barium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Barium Sulphide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Baygon	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Beer	A	A	A	A	A	A	A	A	A	A	A	A	A	A

A = Suitable, B = Depends/consult Flexitallic, C = Unsuitable

## SHEET MATERIALS CHEMICAL COMPATIBILITY Chart

Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
Benzaldehyde	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Benzene, Benzol	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Benzene Sulphonic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Benzidine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Benzoic Acid	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Benzonitrile	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Benzoquinones	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Benzotrichloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Benzoyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Benzyl Alcohol	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Benzyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Biphenyl	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Bis(2-chloroethyl)ether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Bis(chloromethyl)ether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Bis(2-ethylhexyl)phthalate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Black Sulphate Liquor	B	B	A	A	A	A	B	A	A	B	B	A	A	B
Blast Furnace Gas	A	A	A	A	A	A	B	A	A	B	B	B	B	B
Bleaching Agents														
Calcium Hypochlorite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Chlorine Dioxide, Wet	A	A	A	A	A	B*	B	B*	B	C	C	C	B	C
Chlorine Water	A	A	A	A	A	B*	A	B*	A	B	B	B	A	B
Chlorite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Hydrosulphite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Lithium Hypochlorite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Peroxides Dilute	A	A	A	A	A	A	A	A	A	B	B	B	A	B
Sodium Hypochlorite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Boiler Feed Water	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Borax	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Boric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Brine (Sodium Chloride)	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Bromine	A	A	A	A	A	B	C	C	B	C	C	C	B	C
Bromine Trifluoride	C	C	C	B	B	C	C	C	A	C	C	C	C	C
Bromoform	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Bromomethane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Butadiene	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Butane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
2-Butanone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
iso-Butyl Acetate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
n-Butyl Acetate	A	A	A	A	A	A	A	A	A	B	B	B	B	B
n-Butyl Acrylate	A	A	A	A	A	A	A	A	A	B	B	B	A	B
Butyl Alcohol, Butanol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
n-Butyl Amine	A	A	A	A	A	B	B	B	A	B	B	B	A	B
tert-Butyl Amine	A	A	A	A	A	B	B	B	A	B	B	B	A	B
n-Butyl Methacrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Butyric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Bisulphite	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Chlorate	A	A	A	A	A	B*	A	B*	A	C	C	C	B	C
Calcium Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Calcium Cyanamide	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Calcium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Calcium Hypochlorite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Calcium Nitrate	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Calflo AF	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Calflo FG	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Calflo HTF	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Calflo LT	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Cane Sugar Liquors	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Caprolactam	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Captan	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Carbaryl	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Carbolic Acid, Phenol	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Carbon Dioxide, Dry	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Wet	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbon DiSulphide	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Carbon Monoxide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbon Tetrachloride	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Carbonic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Carbonyl Sulphide	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Castor Oil	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Catechol	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Caustic Soda	B	B	A	A	A	A	B	A	A	B	B	B	A	B

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Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
Caustic Potash	B	B	A	A	A	A	B	A	A	B	B	B	A	B
Cetane (Hexadecane)	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Chile saltpetre	A	A	A	A	A	A	A	A	B	B	B	B	A	B
China Wood Oil (Tung Oil)	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Chloramben	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chlorazotic Acid (Aqua Regia)	A	A	A	A	A	B*	B	B*	C	C	C	C	B	C
Chlordane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chlorinated hydrocarbons	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chlorinated Solvents, Dry	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chlorinated Solvents, Wet	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chlorine, Dry	A	A	A	A	A	A	A	B	A	C	C	C	A	C
Chlorine, Wet	A	A	A	A	A	B*	B	B*	A	C	C	C	B	C
Chlorine Dioxide	A	A	A	A	A	B	B	B	B	C	C	C	B	C
Chlorine Trifluoride	C	C	C	B	B	C	C	C	A	C	C	C	C	C
Chloro benzene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chloroacetic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
2-Chloroacetophenone	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Chlorobenzilate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chloroethane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chloroethylene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chloroform	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chloromethyl Methyl Ether	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Chloronitrous Acid (Aqua Regia)	A	A	A	A	A	B*	B	B*	C	C	C	C	B	C
Chloroprene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Chlorosulfonic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Chrome Plating Solutions	B	B	A	A	A	A	B	B	A	B	B	B	B	B
Chromic Acid	A	A	A	A	A	B*	B	B*	B	C	C	C	B	C
Chromic Anhydride	A	A	A	A	A	B*	B	B*	B	C	C	C	B	C
Chromium Trioxide	A	A	A	A	A	B*	B	B*	B	C	C	C	B	C
Citric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Coke Oven Gas	A	A	A	A	A	A	A	B	A	B	B	B	B	B
Copper Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Copper Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Corn Oil	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Cotton Seed Oil	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Creosote	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Cresols, Cresylic Acid	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Crotonic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Crude Oil	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Cumene	A	A	A	A	A	B	B	B	A	A	B	A	A	A
Cyclohexane	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Cyclohexanone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Cyclohexanone 2,4-D, Salts and Esters	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Cyclohexanol	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Detergent Solutions	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Diazomethane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dibenzofuran	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Dibenzylether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
1,2-Dibromo-3-chloropropane	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Dibromoethane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dibutyl Phthalate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Dibutyl Sebacate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
o-Dichlorobenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
1,4-Dichlorobenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
3,3-Dichlorobenzidene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dichloroethane (1,1 or 1,2)	A	A	A	A	A	B	B	B	A	B	B	B	B	B
1,1-Dichloroethylene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dichloroethyl Ether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dichloromethane	A	A	A	A	A	B	B	B	A	C	C	C	B	C
1,2-Dichloropropane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
1,3-Dichloropropene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dichlorvos	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Diesel Oil	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Diethanolamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
N,N-Diethylaniline	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Diethyl Carbonate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Diethyl Sulphate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
3,3-Dimethoxybenzidene	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Dimethylamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethylaminoazobenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethylamino Ethyl Acrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	C

A = Suitable, B = Depends/consult Flexitallic, C = Unsuitable

## SHEET MATERIALS CHEMICAL COMPATIBILITY Chart

Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
N,N-Dimethyl Aniline	A	A	A	A	A	B	B	B	A	B	B	B	B	B
3,3-Dimethylbenzidine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethyl Carbamoyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethyl Ether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethylformamide	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethyl Hydrazine, Unsymmetrical	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dimethyl Phthalate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Dimethyl Sulphate	A	A	A	A	A	B	B	B	A	B	B	B	A	B
4,6-Dinitro-o-Cresol and Salts	A	A	A	A	A	B	B	B	A	B	B	B	A	B
2,4-Dinitrophenol	A	A	A	A	A	B	B	B	A	B	B	B	A	C
2,4-Dinitrotoluene	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Dioxane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
1,2-Diphenylhydrazine	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Diphenyl DT	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowanol DB	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dowanol EB	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dowanol PM	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dowfax 2AO	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Dowfax 2A1	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Dowfrost	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dowfrost HD	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dowtherm 4000	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dowtherm A	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowtherm E	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowtherm G	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowtherm HT	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowtherm J	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowtherm Q	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Dowtherm SR-1	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Dye Liquor	A	A	A	A	A	A	B	B	A	B	B	B	A	B
Epichlorohydrin	A	A	A	A	A	B	B	B	A	B	B	B	B	B
1,2-Epoxybutane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Ethers	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Acetate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Acrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethylbenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Carbamate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Cellulose	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Ether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Hexacrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethyl Hexanol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethyl Hexanoate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
2-Ethylhexyl Acrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethylene	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Ethylene Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethylene Diamine	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Ethylene Bromide	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Ethylene Dibromide	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Ethylene Dichloride	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Ethylene ether	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Ethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ethyleneimine	A	A	A	A	A	B	B	C	A	B	B	B	B	B
Ethylene Oxide	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Ethylene Thiourea	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Ethylidene Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Fatty Acids	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Ferric Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Ferric Phosphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Ferric Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Fluorine, Gas	C	C	C	B	B	C	C	C	A	C	C	C	C	C
Fluorine, Liquid	C	C	C	A	A	C	C	C	A	B	C	C	C	C
Fluorine Oxide	C	C	C	B	B	C	C	C	B	C	C	C	C	C
Fluorosilicic acid	C	C	A	A	A	C	C	C	A	C	C	C	C	C
Formaldehyde	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Formic Acid 85%	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Formic Acid 10%	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Freons	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Fuel Oil	A	A	A	A	A	A	A	B	A	A	A	A	A	A

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Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
Fuel Oil, Acid	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Furfural	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Gasoline, Refined	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Sour Gas	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Gelatin	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glucose	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glue, Protein Base	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glycerine, Glycerol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glycol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Glyoxillic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Grain Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Grease, Petroleum Base	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Green Sulphate Liquor	B	B	A	A	A	A	B	A	A	B	B	A	A	B
Heating oil	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Heptachlor	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Heptane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Hexachlorobenzene	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Hexachlorobutadiene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hexachlorocyclopentadiene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hexachloroethane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hexadecane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Hexamethylene Diisocyanate	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Hexamethylphosphoramide	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hexane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Hexone	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hydraulic Oil, glycol	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Hydraulic Oil, Mineral	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Hydraulic Oil, phosphate ester	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Synthetic Oil	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Hydrazine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hydrocarbons (aromatic)	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hydrocarbons aliphatic (sat.)	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Hydrocarbons aliphatic (unsat.)	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Hydrobromic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Hydrochloric Acid	A	A	A	A	A	B*	B	B	A	B	B	B	A	B
Hydrocyanic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrofluoric Acid, up to Anhydrous, 65°C & below	C	C	A	A	A	C	C	C	A	C	C	C	C	C
Less than 65%, Above 65°C	C	C	B	A	A	C	C	C	A	C	C	C	C	C
65% to Anhydrous, Above 65°C	C	C	B	A	A	C	C	C	A	C	C	C	C	C
Anhydrous	C	C	B	A	A	C	C	C	A	C	C	C	C	C
Hydrofluorosilicic Acid	C	C	A	A	A	C	C	C	A	C	C	C	C	C
Hydrogen	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Hydrogen Bromide	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Hydrogen Chloride	A	A	A	A	A	B	B	B	A	C	C	C	A	C
Hydrogen Fluoride (Anhydrous, up to 65 oC)	C	C	A	A	A	C	C	C	A	C	C	C	C	C
Hydrogen Peroxide, 10%	A	A	A	A	A	B	B	B	B	B	B	B	A	B
10-90%	A	A	A	A	A	B	B	B	B	C	C	C	B	C
Hydrogen Sulphide, Dry or Wet	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Hydroquinone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Iodomethane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Isobutane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Isooctane	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Isophorone	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Isopropyl acetate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Isopropyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Jet Fuels (JP Types)	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Kerosene	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Lacquer Solvents	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Lacquers	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Lactic Acid, 65°C and below	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Above 65°C	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Lime	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lime Saltpeter (Calcium Nitrates)	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Lindane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Linseed Oil	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Lithium Bromide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Lithium, Elemental	C	C	C	C	C	C	C	C	A	C	C	C	C	C
Lubricating Oils, Mineral or Petroleum Types	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Refined	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Sour	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Lye	B	B	A	A	A	A	B	A	A	B	B	A	A	B

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## SHEET MATERIALS CHEMICAL COMPATIBILITY Chart

	SIGMA®					Thermiculite				Compressed Fiber				
										SF2401 SF2800 SF3300 SF3500 SF4300				
Medium	500/501	511	533	588	600	815	715	Corriculite	Flexicarb (FG)		SF2420	SF5000	TH714	AF2100
Machine oils	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Magnesium Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Magnesium Hydroxide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Magnesium Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Maleic Acid	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Maleic Anhydride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Mercuric Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Mercury	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Methacrylic Acid	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Methanol, Methyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Methoxychlor	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methyl Acrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
2-Methylaziridine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methyl Bromide	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Methyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methyl Chloroform	A	A	A	A	A	B	B	B	A	B	B	B	B	B
4,4 Methylene Bis(2-chloroaniline)	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Methylene Chloride	A	A	A	A	A	B	B	B	A	C	C	C	C	C
4,4-Methylene Dianiline	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Methylene Diphenyldiisocyanate	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Methyl Ethyl Ketone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Methyl Hydrazine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methyl Iodide	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Methyl Isobutyl Ketone (MIBK)	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Methyl Isocyanate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methyl Methacrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
N-Methyl-2-Pyrrolidone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Methyl Tert. Butyl Ether (MTBE)	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Methylene methacrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Milk	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Mineral Oils	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Mobiltherm 600	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Mobiltherm 603	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Mobiltherm 605	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Mobiltherm Light	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Molten Alkali Metals	C	C	C	C	C	C	C	C	A	C	C	C	C	C
Monoethylene Glycol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Monomethylamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
MultiTherm 100	A	A	A	A	A	A	A	B	A	A	B	A	A	A
MultiTherm 503	A	A	A	A	A	A	A	B	A	A	B	A	A	A
MultiTherm IG-2	A	A	A	A	A	A	A	B	A	A	B	A	A	A
MultiTherm PG-1	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Muriatic Acid (Hydrochloric Acid)	A	A	A	A	A	B*	B	B*	A	B	B	B	A	B
Naphtha	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Naphthalene	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Naphthols	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Natural Gas	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Nickel Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Nickel Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Nitric Acid, Less than 30%	A	A	A	A	A	A	A	A	A	B	B	B	A	C
Above 30%	A	A	A	A	A	A	B	A	B	C	C	C	B	C
Red Fuming	A	A	A	A	A	B	C	C	C	C	C	C	C	C
Nitrobenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	C
4-Nitrobiphenyl	A	A	A	A	A	B	B	B	A	B	B	B	B	C
2-Nitro-Butanol	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Nitrocalcite (Calcium Nitrate)	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Nitrogen	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Nitrogen Tetroxide	A	A	A	A	A	B	B	B	B	B	B	B	B	C
Nitrohydrochloric Acid (Aqua Regia)	A	A	A	A	A	B	B	B	C	C	C	C	B	C
Nitromethane	A	A	A	A	A	B	B	B	A	B	B	B	B	C
2-Nitro-2-Methyl Propanol	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Nitromuriatic Acid (Aqua Regia)	A	A	A	A	A	B	B	B	C	C	C	C	B	C
4-Nitrophenol	A	A	A	A	A	B	B	B	A	B	B	B	B	C
2-Nitropropane	A	A	A	A	A	B	B	B	A	B	B	B	B	C
N-Nitrosodimethylamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
N-Nitroso-N-Methylurea	A	A	A	A	A	B	B	B	A	B	B	B	B	B
N-Nitrosomorpholine	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Norge Niter (Calcium Nitrate)	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Norwegian Saltpeter (Calcium Nitrate)	A	A	A	A	A	A	A	A	B	B	B	B	A	B
N-Octadecyl Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A

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# SHEET MATERIALS CHEMICAL COMPATIBILITY Chart

Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
Octane	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Oil, Petroleum	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Oils, Animal and Vegetable	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Oleic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Oleum	A	A	C	A	A	B*	B	B*	C	C	C	C	B	C
Orthodichlorobenzene (1,2 - Dichlorobenzene)	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Oxalic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Oxygen, Gas	A	A	A	A	A	B	B	B	B	B	B	B	B	B
Ozone	A	A	A	A	A	B	B	B	B	B	C	B	B	C
Palmitic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Paraffin	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Paratherm HE	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Paratherm NF	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Parathion	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Para-xylene (p - Xylene)	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Pentachloronitrobenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Pentachlorophenol	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Pentane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Perchloric Acid	A	A	A	A	A	B*	B	B*	C	C	C	C	C	C
Perchloroethylene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Petroleum Oils, Crude	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Petrol (Gasoline)	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Phenol	A	A	A	A	A	B	B	B	A	C	C	C	B	C
p-Phenylenediamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Phosgene	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Phosphate Esters	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Phosphine	A	A	A	A	A	B	B	B	A	C	C	C	C	C
Phosphoric Acid, Crude	C	B	A	A	A	B	B	B	A	C	C	C	A	C
Pure, Less than 45%	B	A	A	A	A	B	B	B	A	B	B	B	A	C
Pure, Above 45%, 65°C and below	C	B	A	A	A	B	B	B	A	C	C	C	A	C
Pure, Above 45%, Above 65°C	C	B	A	A	A	B	B	B	A	C	C	C	B	C
Phosphorus, Elemental (white)	A	A	A	A	A	B	B	C	B	C	C	C	B	C
Phosphorus, Elemental (red)	A	A	A	A	A	A	A	C	A	A	A	A	A	C
Phosphorus Pentachloride	A	A	A	A	A	B	B	B	B	B	B	B	B	C
Phthalic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Phthalic Anhydride	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Picric Acid, Molten	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Water Solution	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Pinene	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Piperidine	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Plating Solutions														
Cadmium	B	B	A	A	A	B	B	B	A	B	B	B	A	B
Chrome	B	B	A	A	A	B	B	B	A	B	B	B	B	B
Copper	B	B	A	A	A	B	B	B	A	B	B	B	A	B
Gold	B	B	A	A	A	B	B	B	A	B	B	B	A	B
Silver	B	B	A	A	A	B	B	B	A	B	B	B	A	B
Tin	B	B	A	A	A	B	B	B	A	B	B	B	A	B
Zinc	B	B	A	A	A	B	B	B	A	B	B	B	A	B
Polyacrylonitrile	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Polychlorinated Biphenyls	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Potash, Potassium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Acetate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Bichromate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Chromate, Red	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Cyanide	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium Dichromate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potassium, Elemental	C	C	C	C	C	C	C	C	A	C	C	C	C	C
Potassium Hydroxide	B	B	A	A	A	A	B	A	A	B	B	A	A	C
Potassium Nitrate	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Potassium Permanganate	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Potassium Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Producer Gas	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Propane	A	A	A	A	A	A	A	B	A	A	A	A	A	A
1,3-Propane Sultone	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Beta-Propiolactone	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Propionaldehyde	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Propoxur (Baygon)	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Propyl Nitrate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Propylene	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Propylene Dichloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Propylene Oxide	A	A	A	A	A	B	B	B	A	B	B	B	B	C

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Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
1,2-Propylenimine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Prussic Acid, Hydrocyanic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Pyridine	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Quinoline	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Quinone	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Refrigerants														
10	A	A	A	A	A	B	B	B	A	B	B	B	B	C
11	A	A	A	A	A	B	B	B	A	B	B	B	B	B
12	A	A	A	A	A	B	B	B	A	B	B	B	B	B
13	A	A	A	A	A	B	B	B	A	B	B	B	B	B
13B1	A	A	A	A	A	B	B	B	A	B	B	B	B	B
21	A	A	A	A	A	B	B	B	A	B	B	B	B	C
22	A	A	A	A	A	B	B	B	A	B	B	B	B	B
23	A	A	A	A	A	B	B	B	A	B	B	B	B	C
31	A	A	A	A	A	B	B	B	A	B	B	B	B	C
32	A	A	A	A	A	B	B	B	A	B	B	B	B	B
112	A	A	A	A	A	B	B	B	A	B	B	B	B	B
113	A	A	A	A	A	B	B	B	A	B	B	B	B	B
114	A	A	A	A	A	B	B	B	A	B	B	B	B	B
114B2	A	A	A	A	A	B	B	B	A	B	B	B	B	B
115	A	A	A	A	A	B	B	B	A	B	B	B	B	B
123	A	A	A	A	A	B	B	B	A	B	B	B	B	C
124	A	A	A	A	A	B	B	B	A	B	B	B	B	C
125	A	A	A	A	A	B	B	B	A	B	B	B	B	C
134a	A	A	A	A	A	B	B	B	A	B	B	B	B	B
141b	A	A	A	A	A	B	B	B	A	B	B	B	B	B
142b	A	A	A	A	A	B	B	B	A	B	B	B	B	B
143a	A	A	A	A	A	B	B	B	A	B	B	B	B	C
152a	A	A	A	A	A	B	B	B	A	B	B	B	B	B
218	A	A	A	A	A	B	B	B	A	B	B	B	B	B
290	A	A	A	A	A	B	B	B	A	B	B	B	B	B
500	A	A	A	A	A	B	B	B	A	B	B	B	B	B
502	A	A	A	A	A	B	B	B	A	B	B	B	B	B
503	A	A	A	A	A	B	B	B	A	B	B	B	B	C
C316	A	A	A	A	A	B	B	B	A	B	B	B	B	B
C318	A	A	A	A	A	B	B	B	A	B	B	B	B	B
HP62	A	A	A	A	A	B	B	B	A	B	B	B	B	B
HP80	A	A	A	A	A	B	B	B	A	B	B	B	B	C
HP81	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Salt Water	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Saltpeter, Potassium Nitrate	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Sewage	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Silver Nitrate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Silicone oil	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Skydrols	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Soap Solutions	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Soda Ash, Sodium Carbonate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bicarbonate, Baking Soda	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulphate, Dry	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Bisulphite	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Sodium Chlorate	A	A	A	A	A	B*	A	B*	B	B	B	B	B	B
Sodium Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Sodium Cyanide	A	A	A	A	A	A	A	A	A	B	B	B	B	B
Sodium, Elemental	C	C	C	C	C	C	C	C	A	C	C	C	C	C
Sodium Hydroxide	B	B	A	A	A	A	B	A	A	B	B	A	A	C
Sodium Hypochlorite	A	A	A	A	A	B*	B	B*	A	B	B	B	A	B
Sodium Metaborate Peroxyhydrate	A	A	A	A	A	A	A	A	B	B	B	B	B	B
Sodium Metaphosphate	B	B	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Nitrate	A	A	A	A	A	A	A	A	B	B	B	B	A	B
Sodium Perborate	A	A	A	A	A	A	A	A	B	B	B	B	B	B
Sodium Peroxide	A	A	A	A	A	A	A	A	B	B	B	B	B	B
Sodium Phosphate, Monobasic	B	B	A	A	A	A	A	A	A	A	A	A	A	A
Dibasic	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Tribasic	A	A	A	A	A	A	A	A	A	B	B	A	A	B
Sodium Silicate	B	B	A	A	A	A	B	A	A	B	B	A	A	B
Sodium Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Sodium Sulphide	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Sodium Superoxide	B	B	A	A	A	A	B	A	A	B	B	B	B	C
Sodium ThioSulphate, "Hypo"	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Soybean Oil	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Starch	A	A	A	A	A	A	A	A	A	A	A	A	A	A

A = Suitable, B = Depends/consult Flexitallic, C = Unsuitable

## SHEET MATERIALS CHEMICAL COMPATIBILITY Chart

	SIGMA®					Thermiculite				Compressed Fiber				
										SF2401 SF2800 SF3300 SF3500 SF4300				
Medium	500/501	511	533	588	600	815	715	Corriculite	Flexicarb (FG)		SF2420	SF5000	TH714	AF2100
Stannic Chloride	A	A	A	A	A	B*	A	B*	A	B	B	B	A	B
Steam, Saturated, to 10 bar	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Stearic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Stearyl Methacrylate	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Stoddard Solvent	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Styrene	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Styrene Oxide	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Sulphur Chloride	A	A	A	A	A	B*	B	B*	A	C	C	C	B	C
Sulphur Dioxide	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Sulphur, Molten	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Sulphur Trioxide, Dry	A	A	A	A	A	B	B	B	A	C	C	C	A	C
Wet	A	A	A	A	A	B*	B	B*	A	C	C	C	A	C
Sulphuric Acid, 10%, 65°C and below	A	A	A	A	A	B*	A	B*	A	A	A	A	A	B
10%, Above 65°C	A	A	A	A	A	B*	A	B*	A	B	B	B	A	B
10-75%, 65°C and below	A	A	A	A	A	B*	A	B*	A	B	B	B	A	C
75-98%, 65°C and below	A	A	B	A	A	B*	B	B*	C	C	C	C	A	C
75-98%, 65°C to 260°C	A	A	B	A	A	B*	B	B*	C	C	C	C	B	C
Sulphuric Acid, Fuming	A	A	C	A	A	B	B	B	C	C	C	C	B	C
Sulphurous Acid	A	A	A	A	A	B*	A	B*	A	B	B	B	A	B
Syltherm 800	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Syltherm XLT	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Tall Oil	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Tannic Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Tar	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Tartaric Acid	A	A	A	A	A	A	A	A	A	A	A	A	A	A
2,3,7,8-TCDB-p-Dioxin	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Tertiary Butyl Amine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Tetrabromoethane	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Tetrachlorethane	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Tetrachloroethylene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Tetrahydrofuran, THF	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Tetra Isopropyl Titanate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol 44	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol 55	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Therminol 59	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol 60	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol 66	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol 75	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol D12	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Therminol LT	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol VP-1	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Therminol XP	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Thionyl Chloride	A	A	A	A	A	B*	B	B*	A	B	B	B	A	B
Titanium Sulphate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Titanium Tetrachloride	A	A	A	A	A	B*	B	B*	A	C	C	C	B	C
Toluene	A	A	A	A	A	A	A	B	A	A	B	A	A	A
2,4-Toluenediamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
2,4-Toluenediisocyanate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Toluene Sulfonic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
Towns gas	A	A	A	A	A	A	A	A	A	A	A	A	A	A
o-Toluidine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Toxaphine	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Transformer Oil (Mineral Type)	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Tributyl phosphate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Trichloroacetic Acid	A	A	A	A	A	B	B	B	A	B	B	B	A	B
1,2,4- Trichlorobenzene	A	A	A	A	A	B	B	B	A	B	B	B	B	C
1,1,2-Trichloroethane	A	A	A	A	A	B	B	B	A	C	C	C	B	C
Trichloroethylene	A	A	A	A	A	B	B	B	A	C	C	C	B	C
2,4,5-Trichlorophenol	A	A	A	A	A	B	B	B	A	B	B	B	A	C
2,4,6-Trichlorophenol	A	A	A	A	A	B	B	B	A	B	B	B	A	C
Tricresylphosphate	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Triethanolamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Triethyl Aluminum	A	A	A	A	A	B	B	B	C	C	C	C	C	C
Triethylamine	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Trifluralin	A	A	A	A	A	B	B	B	A	B	B	B	B	C
2,2,4-Trimethylpentane	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Tung Oil	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Turpentine	A	A	A	A	A	A	A	B	A	A	B	A	A	A
UCON Heat Transfer Fluid 500	A	A	A	A	A	A	A	A	A	A	A	A	A	A
UCON Process Fluid WS	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Urea	A	A	A	A	A	A	A	A	A	A	A	A	A	A

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Medium	SIGMA®					Thermiculite			Flexicarb (FG)	Compressed Fiber				
	500/501	511	533	588	600	815	715	Corriculite		SF2401 SF2800 SF3300 SF3500 SF4300	SF2420	SF5000	TH714	AF2100
Varnish	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Vegetable oil	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Vinegar	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Vinyl Acetate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Vinyl Bromide	A	A	A	A	A	B	B	B	A	B	B	B	B	C
Vinyl Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Vinylidene Chloride	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Vinyl Methacrylate	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Water	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Deionised	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Desalinated	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Distilled	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Mine	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Potable	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Return Condensate	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Seawater	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Whiskey and Wines	A	A	A	A	A	A	A	A	A	A	A	A	A	A
White spirit	A	A	A	A	A	A	A	B	A	A	B	A	A	A
Wood Alcohol	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Xceltherm 550	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Xceltherm 600	A	A	A	A	A	A	A	A	A	A	B	A	A	A
Xceltherm MK1	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Xceltherm XT	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Xylene	A	A	A	A	A	B	B	B	A	B	B	B	B	B
Zinc Chloride	A	A	A	A	A	B*	A	B*	A	A	A	A	A	A
Zinc Sulphate	A	A	A	A	A	A	A	A	A	A	A	A	A	A

A = Suitable, B = Depends/consult Flexitallic, C = Unsuitable

## SOFT-CUT GASKETS Part Number Listing

### SOFT CUT FLANGE GASKETS

Full face and raised face flange gaskets are available in a range of materials to suit almost every application of table D, E, H.

TABLE D & E Gaskets	
Part No.	Description
TDE015	15mm NB Table D-E
TDE020	20mm NB Table D-E
TDE025	25mm NB Table D-E
TDE032	32mm NB Table D-E
TDE040	40mm NB Table D-E
TDE050	50mm NB Table D-E
TDE065	65mm NB Table D-E
TDE080	80mm NB Table D-E
TD100	100mm NB Table D
TE100	100mm NB Table E
TDE125	125mm NB Table D-E
TD150	150mm NB Table D
TE150	150mm NB Table E
TD200	200mm NB Table D
TE200	200mm NB Table E
TD250	250mm NB Table D
TE250	250mm NB Table E
TD300	300mm NB Table D
TE300	300mm NB Table E
TDE350	350mm NB Table D-E
TDE400	400mm NB Table D-E
TD450	450mm NB Table D
TE450	450mm NB Table E
TDE500	500mm NB Table D-E
TDE600	600mm NB Table D-E

TABLE H Gaskets	
Part No.	Description
TH015	15mm NB Table H
TH020	20mm NB Table H
TH025	25mm NB Table H
TH032	32mm NB Table H
TH040	40mm NB Table H
TH050	50mm NB Table H
TH065	65mm NB Table H
TH080	80mm NB Table H
TH100	100mm NB Table H
TH125	125mm NB Table H
TH150	150mm NB Table H
TH200	200mm NB Table H
TH250	250mm NB Table H
TH300	300mm NB Table H
TH350	350mm NB Table H
TH400	400mm NB Table H
TH450	450mm NB Table H
TH500	500mm NB Table H
TH600	600mm NB Table H

## SOFT-CUT GASKETS Part Number Listing continued

ASME Class 150 Full Face Gaskets	
Part No.	Description
150FF015	15mm NB
150FF020	20mm NB
150FF025	25mm NB
150FF032	32mm NB
150FF040	40mm NB
150FF050	50mm NB
150FF065	65mm NB
150FF080	80mm NB
150FF100	100mm NB
150FF125	125mm NB
150FF150	150mm NB
150FF200	200mm NB
150FF250	250mm NB
150FF300	300mm NB
150FF350	350mm NB
150FF400	400mm NB
150FF450	450mm NB
150FF500	500mm NB
150FF600	600mm NB

ASME Class 150 Raised Face Gaskets (Ring Joint)	
Part No.	Description
150RF015	15mm NB
150RF020	20mm NB
150RF025	25mm NB
150RF032	32mm NB
150RF040	40mm NB
150RF050	50mm NB
150RF065	65mm NB
150RF080	80mm NB
150RF100	100mm NB
150RF125	125mm NB
150RF150	150mm NB
150RF200	200mm NB
150RF250	250mm NB
150RF300	300mm NB
150RF350	350mm NB
150RF400	400mm NB
150RF450	450mm NB
150RF500	500mm NB
150RF600	600mm NB


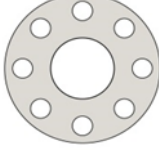
ASME Class 300 Full Face Gaskets	
Part No.	Description
300FF015	15mm NB
300FF020	20mm NB
300FF025	25mm NB
300FF032	32mm NB
300FF040	40mm NB
300FF050	50mm NB
300FF065	65mm NB
300FF080	80mm NB
300FF100	100mm NB
300FF125	125mm NB
300FF150	150mm NB
300FF200	200mm NB
300FF250	250mm NB
300FF300	300mm NB
300FF350	350mm NB
300FF400	400mm NB
300FF450	450mm NB
300FF500	500mm NB
300FF600	600mm NB

ASME Class 300 Raised Face Gaskets (Ring Joint)	
Part No.	Description
300RF015	15mm NB
300RF020	20mm NB
300RF025	25mm NB
300RF032	32mm NB
300RF040	40mm NB
300RF050	50mm NB
300RF065	65mm NB
300RF080	80mm NB
300RF100	100mm NB
300RF125	125mm NB
300RF150	150mm NB
300RF200	200mm NB
300RF250	250mm NB
300RF300	300mm NB
300RF350	350mm NB
300RF400	400mm NB
300RF450	450mm NB
300RF500	500mm NB
300RF600	600mm NB

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges

### ASME B16.21 Class 150


		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	48	21	89	60	4	16
3/4"	20mm	27	57	27	95	70	4	16
1"	25mm	33	67	33	108	79	4	16
1 1/4"	32mm	42	76	42	117	89	4	16
1 1/2"	40mm	48	86	48	127	98	4	16
2"	50mm	60	105	60	152	121	4	19
2 1/2"	65mm	73	124	73	178	140	4	19
3"	80mm	89	137	89	191	152	4	19
3 1/2"	90mm	102	162	102	216	178	8	19
4"	100mm	114	175	114	229	191	8	19
5"	125mm	141	197	141	254	216	8	22
6"	150mm	168	222	168	279	241	8	22
8"	200mm	219	279	219	343	298	8	25
10"	250mm	273	340	273	406	362	12	25
12"	300mm	324	410	324	483	432	12	29
14"	350mm	356	451	356	533	476	12	29
16"	400mm	406	514	406	597	540	16	32
18"	450mm	457	549	457	635	578	16	32
20"	500mm	508	606	508	699	635	20	32
24"	600mm	610	718	610	813	749	20	35



## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges


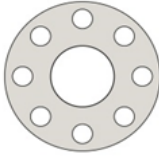
### ASME B16.21 Class 300

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	54	21	95	67	4	16
3/4"	20mm	27	67	27	117	83	4	19
1"	25mm	33	73	33	124	89	4	19
1 1/4"	32mm	42	83	42	133	98	4	19
1 1/2"	40mm	48	95	48	156	114	4	22
2"	50mm	60	111	60	165	127	8	19
2 1/2"	65mm	73	130	73	191	149	8	22
3"	80mm	89	149	89	210	168	8	22
3 1/2"	90mm	102	165	102	229	184	8	22
4"	100mm	114	181	114	254	200	8	22
5"	125mm	141	216	141	279	235	8	22
6"	150mm	168	251	168	318	270	12	22
8"	200mm	219	308	219	381	330	12	29
10"	250mm	273	362	273	445	387	16	29
12"	300mm	324	422	324	521	451	16	25
14"	350mm	356	486	356	584	514	20	32
16"	400mm	406	540	406	648	572	20	35
18"	450mm	457	597	457	711	629	24	35
20"	500mm	508	654	508	775	686	24	35
24"	600mm	610	775	610	914	813	24	41

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges


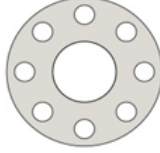
### ASME B16.21 Class 600

		 <b>Ring Joint</b>		 <b>Full Face</b>					
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter	
1/2"	15mm	21	54	21	95	67	4	16	
3/4"	20mm	27	67	27	117	83	4	19	
1"	25mm	33	73	33	124	89	4	19	
1 1/4"	32mm	42	83	42	133	98	4	19	
1 1/2"	40mm	48	95	48	156	114	4	22	
2"	50mm	60	111	60	165	127	8	19	
2 1/2"	65mm	73	130	73	191	149	8	22	
3"	80mm	89	149	89	210	168	8	22	
3 1/2"	90mm	102	162	102	229	184	8	25	
4"	100mm	114	194	114	273	216	8	25	
5"	125mm	141	241	141	330	267	8	29	
6"	150mm	168	267	168	356	292	12	29	
8"	200mm	219	321	219	419	349	12	32	
10"	250mm	273	400	273	508	432	16	35	
12"	300mm	324	457	324	559	489	20	35	
14"	350mm	356	492	356	603	527	20	38	
16"	400mm	406	565	406	686	603	20	41	
18"	450mm	457	613	457	743	654	20	44	
20"	500mm	508	683	508	813	724	24	44	
24"	600mm	610	791	610	940	838	24	51	

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges


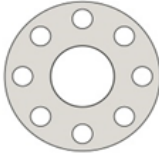
### ASME B16.47 SERIES A Class 150

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
22"	550mm	559	660	559	749	692	20	35
26"	650mm	660	775	660	870	806	24	35
28"	700mm	711	832	711	927	864	28	35
30"	750mm	762	883	762	984	914	28	35
32"	800mm	813	940	813	1060	978	28	41
34"	850mm	864	991	864	1111	1029	32	41
36"	900mm	914	1048	914	1168	1086	32	41
38"	950mm	965	1111	965	1238	1149	32	41
40"	1000mm	1016	1162	1016	1289	1200	36	41
42"	1050mm	1067	1219	1067	1346	1257	36	41
44"	1100mm	1118	1276	1118	1403	1314	40	41
46"	1150mm	1168	1327	1168	1454	1365	40	41
48"	1200mm	1219	1384	1219	1511	1422	44	41
50"	1250mm	1270	1435	1270	1568	1480	44	48
52"	1300mm	1321	1492	1321	1626	1537	44	48
54"	1350mm	1372	1549	1372	1683	1594	44	48
56"	1400mm	1422	1607	1422	1746	1651	48	48
58"	1450mm	1413	1664	1473	1803	1708	48	48
60"	1500mm	1524	1715	1524	1854	1759	52	48

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges

### ASME B16.47 SERIES A Class 300


		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
22"	550mm	559	705	559	838	743	24	41
26"	650mm	660	835	660	972	876	28	44
28"	700mm	711	899	711	1035	940	28	44
30"	750mm	762	953	762	1092	997	28	48
32"	800mm	813	1007	813	1149	1054	28	51
34"	850mm	864	1057	864	1207	1105	28	51
36"	900mm	914	1118	914	1270	1168	32	54
38"	950mm	965	1054	965	1168	1092	32	41
40"	1000mm	1016	1115	1016	1207	1156	32	44
42"	1050mm	1067	1165	1067	1289	1207	32	44
44"	1100mm	1118	1219	1118	1365	1264	32	48
46"	1150mm	1168	1273	1168	1416	1321	28	51
48"	1200mm	1219	1324	1219	1467	1372	32	51
50"	1250mm	1270	1378	1274	1530	1429	32	54
52"	1300mm	1321	1429	1324	1581	1480	32	54
54"	1350mm	1372	1492	1375	1657	1579	28	60
56"	1400mm	1422	1543	1426	1708	1600	28	60
58"	1450mm	1473	1594	1477	1759	1651	32	60
60"	1500mm	1524	1645	1524	1810	1702	32	60



## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges



### ASME B16.47 SERIES A Class 600

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
22"	550mm	559	733	559	870	778	24	48
26"	650mm	660	867	660	1016	914	28	51
28"	700mm	711	914	711	1073	965	28	54
30"	750mm	762	972	762	1130	1022	28	54
32"	800mm	813	1022	813	1194	1080	28	60
34"	850mm	864	1073	864	1245	1130	28	60
36"	900mm	914	1130	914	1314	1194	32	67
38"	950mm	965	1105	965	1270	1162	32	60
40"	1000mm	1016	1156	1016	1321	1213	32	60
42"	1050mm	1067	1219	1067	1403	1283	32	67
44"	1100mm	1118	1270	1118	1454	1334	32	67
46"	1150mm	1168	1327	1168	1511	1391	28	67
48"	1200mm	1219	1391	1219	1594	1461	32	73
50"	1250mm	1270	1448	1270	1670	1524	32	79
52"	1300mm	1321	1499	1321	1721	1575	32	79
54"	1350mm	1372	1556	1372	1778	1632	28	79
56"	1400mm	1422	1613	1422	1854	1695	28	86
58"	1450mm	1473	1664	1473	1905	1746	32	86
60"	1500mm	1524	1721	1524	1994	1810	32	92

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges



### ASME B16.47 SERIES B Class 150

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
26"	650mm	660	725	660	786	745	36	22
28"	700mm	711	776	711	837	795	40	22
30"	750mm	762	827	762	887	846	44	22
32"	800mm	813	881	813	941	900	48	22
34"	850mm	864	935	864	1005	957	40	25
36"	900mm	914	987	914	1057	1010	44	25
38"	950mm	965	1045	965	1124	1070	40	29
40"	1000mm	1016	1095	1016	1175	1121	44	29
42"	1050mm	1067	1146	1067	1226	1172	48	29
44"	1100mm	1118	1197	1118	1276	1222	52	29
46"	1150mm	1168	1256	1168	1341	1284	40	32
48"	1200mm	1219	1307	1219	1392	1335	44	32
50"	1250mm	1270	1357	1270	1443	1386	48	32
52"	1300mm	1321	1408	1321	1494	1437	52	32
54"	1350mm	1372	1464	1372	1549	1492	56	32
56"	1400mm	1422	1514	1422	1600	1543	60	32
58"	1450mm	1473	1580	1473	1675	1611	48	35
60"	1500mm	1524	1630	1524	1726	1662	52	35

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges


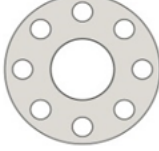
### ASME B16.47 SERIES B Class 300

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
26"	650mm	660	772	660	867	803	32	35
28"	700mm	711	826	711	921	857	36	35
30"	750mm	762	886	762	991	921	36	38
32"	800mm	813	940	813	1054	978	32	41
34"	850mm	864	994	864	1108	1032	36	41
36"	900mm	914	1048	914	1172	1089	32	44
38"	950mm	965	1099	965	1222	1140	36	44
40"	1000mm	1016	1149	1016	1273	1191	40	44
42"	1050mm	1067	1200	1067	1334	1245	36	48
44"	1100mm	1118	1251	1118	1384	1295	40	48
46"	1150mm	1168	1318	1168	1461	1365	36	51
48"	1200mm	1219	1368	1219	1511	1416	40	51
50"	1250mm	1270	1419	1270	1562	1467	44	51
52"	1300mm	1321	1470	1321	1613	1518	48	51
54"	1350mm	1372	1556	1372	1673	1578	48	51
56"	1400mm	1422	1594	1422	1765	1651	36	60
58"	1450mm	1473	1673	1473	1827	1713	40	60
60"	1500mm	1524	1705	1524	1878	1764	40	60

## Dimensions of Soft-Cut Gaskets

To suit ANSI Standard Flanges



### ASME B16.47 B SERIES Class 600

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
26"	650mm	660	765	660	889	806	28	44
28"	700mm	711	819	711	953	864	28	48
30"	750mm	762	879	762	1022	927	28	51
32"	800mm	813	933	813	1086	984	28	54
34"	850mm	864	997	864	1162	1054	24	60
36"	900mm	914	1048	914	1213	1105	28	60

## Dimensions of Soft-Cut Gaskets

To suit DIN Standard Flanges

### PN10



		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
3/8"	10mm	18	45	18	90	60	4	14
1/2"	15mm	22	50	22	95	65	4	14
3/4"	20mm	28	60	28	105	75	4	14
1"	25mm	35	70	35	115	85	4	14
1 1/4"	32mm	43	82	43	140	100	4	18
1 1/2"	40mm	49	92	49	150	110	4	18
2"	50mm	61	107	61	165	125	4	18
2 1/2"	65mm	77	127	77	185	145	8	18
3"	80mm	90	142	90	200	160	8	18
4"	100mm	115	162	115	220	180	8	18
5"	125mm	141	192	141	250	210	8	18
6"	150mm	169	218	169	285	240	8	22
8"	200mm	220	273	220	340	295	8	22
10"	250mm	274	328	274	395	350	12	22
12"	300mm	325	378	325	445	400	12	22
14"	350mm	356	438	356	505	460	16	22
16"	400mm	407	489	407	565	515	16	26
18"	450mm	458	539	458	615	565	20	26
20"	500mm	508	594	508	670	620	20	26
24"	600mm	610	695	610	780	725	20	30
28"	700mm	712	810	712	895	840	24	30
32"	800mm	813	917	813	1015	950	24	33
36"	900mm	915	1017	915	1115	1050	28	33
40"	1000mm	1016	1124	1016	1230	1160	28	36
44"	1100mm	1120	1231	1120	1340	1270	32	39
48"	1200mm	1220	1341	1220	1455	1380	32	39
56"	1400mm	1420	1548	1420	1675	1590	36	42
60"	1500mm	1520	1658	1520	1785	1700	36	42
64"	1600mm	1620	1772	1620	1915	1820	40	48
72"	1800mm	1820	1972	1820	2115	2020	44	48
80"	2000mm	2020	2182	2020	2325	2230	48	48



## Dimensions of Soft-Cut Gaskets

To suit DIN Standard Flanges


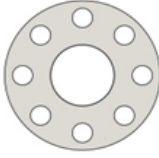
### PN16

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
3/8"	10mm	18	45	18	90	60	4	14
1/2"	15mm	22	50	22	95	65	4	14
3/4"	20mm	28	60	28	105	75	4	14
1"	25mm	35	70	35	115	85	4	14
1 1/4"	32mm	43	82	43	140	100	4	18
1 1/2"	40mm	49	92	49	150	110	4	18
2"	50mm	61	107	61	165	125	4	18
2 1/2"	65mm	77	127	77	185	145	8	18
3"	80mm	90	142	90	200	160	8	18
4"	100mm	115	162	115	220	180	8	18
5"	125mm	141	192	141	250	210	8	18
6"	150mm	169	218	169	285	240	8	22
8"	200mm	220	273	220	340	295	12	22
10"	250mm	274	329	274	405	355	12	26
12"	300mm	325	384	325	460	410	12	26
14"	350mm	356	444	356	520	470	16	26
16"	400mm	407	495	407	580	525	16	30
18"	450mm	458	555	458	640	585	20	30
20"	500mm	508	617	508	715	650	20	33
24"	600mm	610	734	610	840	770	20	36
28"	700mm	712	804	712	910	840	24	36
32"	800mm	813	911	813	1025	950	24	39
36"	900mm	915	1011	915	1125	1050	28	39
40"	1000mm	1016	1128	1016	1255	1170	28	42
44"	1100mm	1120	1228	1120	1355	1270	32	42
48"	1200mm	1220	1342	1220	1485	1390	32	48
56"	1400mm	1420	1542	1420	1685	1590	36	48
60"	1500mm	1520	1654	1520	1820	1710	36	56
64"	1600mm	1620	1764	1620	1930	1820	40	56
72"	1800mm	1820	1964	1820	2130	2020	44	56
80"	2000mm	2020	2168	2020	2345	2230	48	62

## Dimensions of Soft-Cut Gaskets

To suit DIN Standard Flanges


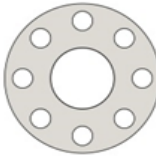
### PN25

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
3/8"	10mm	18	45	18	90	60	4	14
1/2"	15mm	22	50	22	95	65	4	14
3/4"	20mm	28	60	28	105	75	4	14
1"	25mm	35	70	35	115	85	4	14
1 1/4"	32mm	43	82	43	140	100	4	18
1 1/2"	40mm	49	92	49	150	110	4	18
2"	50mm	61	107	61	165	125	4	18
2 1/2"	65mm	77	127	77	185	145	8	18
3"	80mm	90	142	90	200	160	8	18
4"	100mm	115	162	115	220	180	8	18
5"	125mm	141	192	141	250	210	8	18
6"	150mm	169	218	169	285	240	12	22
8"	200mm	220	273	220	340	295	12	22
10"	250mm	274	329	274	405	355	12	26
12"	300mm	325	384	325	460	410	16	26
14"	350mm	356	444	356	520	470	16	26
16"	400mm	407	514	407	620	550	16	36
18"	450mm	458	564	458	670	600	20	36
20"	500mm	508	624	508	730	660	20	36
24"	600mm	610	731	610	845	770	20	39
28"	700mm	712	833	712	960	875	24	42
32"	800mm	813	942	813	1085	990	24	48
36"	900mm	915	1042	915	1185	1090	28	48
40"	1000mm	1016	1154	1016	1320	1210	28	56
44"	1100mm	1120	1254	1120	1420	1310	32	56
48"	1200mm	1220	1364	1220	1530	1420	32	56
56"	1400mm	1420	1578	1420	1755	1640	36	62
60"	1500mm	1520	1688	1520	1865	1750	36	62
64"	1600mm	1620	1798	1620	1975	1860	40	62
72"	1800mm	1820	2000	1820	2195	2070	44	70
80"	2000mm	2020	2230	2020	2425	2300	48	70

## Dimensions of Soft-Cut Gaskets

To suit DIN Standard Flanges


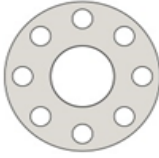
### PN40

		<div> Ring Joint</div>		<div> Full Face</div>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
3/8"	10mm	18	45	18	90	60	4	14
1/2"	15mm	22	50	22	95	65	4	14
3/4"	20mm	28	60	28	105	75	4	14
1"	25mm	35	70	35	115	85	4	14
1 1/4"	32mm	43	82	43	140	100	4	18
1 1/2"	40mm	49	92	49	150	110	4	18
2"	50mm	61	107	61	165	125	4	18
2 1/2"	65mm	77	127	77	185	145	8	18
3"	80mm	90	142	90	200	160	8	18
4"	100mm	115	168	115	235	190	8	22
5"	125mm	141	194	141	270	220	8	26
6"	150mm	169	224	169	300	250	8	26
8"	200mm	220	290	220	375	320	12	30
10"	250mm	274	352	274	450	385	12	33
12"	300mm	325	417	325	515	450	16	33
14"	350mm	356	474	356	580	510	16	36
16"	400mm	407	546	407	660	585	16	39
18"	450mm	458	571	458	685	610	20	39
20"	500mm	508	628	508	755	670	20	42
24"	600mm	610	747	610	890	795	20	48
28"	700mm	710	852	710	995	900	24	48
32"	800mm	820	974	820	1140	1030	24	56
36"	900mm	910	1084	910	1250	1140	28	56
40"	1000mm	1010	1194	1010	1360	1250	28	56

## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges


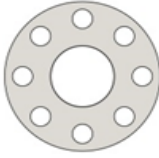
### TABLE A

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	52	21	95	67	4	14
3/4"	20mm	27	59	27	102	73	4	14
1"	25mm	34	68	34	114	83	4	14
1 1/4"	32mm	43	73	43	121	87	4	14
1 1/2"	40mm	48	84	48	133	98	4	14
2"	50mm	60	97	60	152	114	4	18
2 1/2"	65mm	76	110	76	165	127	4	18
3"	80mm	89	129	89	184	146	4	18
3 1/2"	90mm	102	148	102	203	165	4	18
4"	100mm	114	160	114	216	178	4	18
5"	125mm	140	192	140	254	210	4	18
6"	150mm	168	217	168	279	235	4	18
7"	180mm	194	243	194	305	260	8	18
8"	200mm	219	275	219	337	292	8	18
9"	230mm	244	306	244	368	324	8	18
10"	250mm	273	333	273	406	356	8	22
12"	300mm	324	384	324	457	406	8	22
13"	330mm	356	416	356	489	438	8	22
14"	350mm	381	445	381	527	470	8	25
15"	380mm	406	470	406	552	495	8	25
16"	400mm	432	495	432	578	521	12	25
17"	430mm	457	527	457	610	552	12	25
18"	450mm	483	559	483	641	584	12	25
19"	480mm	508	584	508	673	610	12	25
20"	500mm	533	616	533	705	641	12	25
21"	530mm	559	648	559	737	673	12	25
22"	560mm	584	670	584	762	699	12	29
23"	585mm	610	695	610	787	724	12	29
24"	600mm	635	727	635	826	756	12	29

## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges

### TABLE D


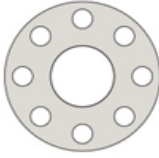
		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	52	21	95	67	4	14
3/4"	20mm	27	59	27	102	73	4	14
1"	25mm	34	68	34	114	83	4	14
1 1/4"	32mm	43	73	43	121	87	4	14
1 1/2"	40mm	48	84	48	133	98	4	14
2"	50mm	60	97	60	152	114	4	18
2 1/2"	65mm	76	110	76	165	127	4	18
3"	80mm	89	129	89	184	146	4	18
3 1/2"	90mm	102	148	102	203	165	4	18
4"	100mm	114	160	114	216	178	4	18
5"	125mm	140	192	140	254	210	8	18
6"	150mm	168	216	168	279	235	8	18
7"	180mm	194	243	194	305	260	8	18
8"	200mm	219	275	219	337	292	8	18
9"	230mm	244	306	244	368	324	8	18
10"	250mm	273	333	273	406	356	8	22
12"	300mm	324	384	324	457	406	12	22
13"	330mm	356	416	356	489	438	12	22
14"	350mm	381	445	381	527	470	12	25
15"	380mm	406	470	406	552	495	12	25
16"	400mm	432	495	432	578	521	12	25
17"	430mm	457	527	457	610	552	12	25
18"	450mm	483	559	483	641	584	12	25
19"	480mm	508	584	508	673	610	12	25
20"	500mm	533	616	533	705	641	16	25
21"	530mm	559	648	559	737	673	16	25
22"	560mm	584	670	584	762	699	16	29
23"	585mm	610	695	610	787	724	16	29
24"	600mm	635	727	635	826	756	16	29



## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges


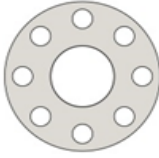
### TABLE E

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	52	21	95	67	4	14
3/4"	20mm	27	59	27	102	73	4	14
1"	25mm	34	68	34	114	83	4	14
1 1/4"	32mm	43	73	43	121	87	4	14
1 1/2"	40mm	48	84	48	133	98	4	14
2"	50mm	60	97	60	152	114	4	18
2 1/2"	65mm	76	109	76	165	127	4	18
3"	80mm	89	129	89	184	146	4	18
3 1/2"	90mm	102	148	102	203	165	8	18
4"	100mm	114	160	114	216	178	8	18
5"	125mm	140	192	140	254	210	8	18
6"	150mm	168	213	168	279	235	8	22
7"	180mm	194	238	194	305	260	8	22
8"	200mm	219	270	219	337	292	8	22
9"	230mm	244	302	244	368	324	12	22
10"	250mm	273	333	273	406	356	12	22
12"	300mm	324	381	324	457	406	12	25
13"	330mm	356	413	356	489	438	12	25
14"	350mm	381	445	381	527	470	12	25
15"	380mm	406	470	406	552	495	12	25
16"	400mm	432	495	432	578	521	12	25
17"	430mm	457	527	457	610	552	12	25
18"	450mm	483	559	483	641	584	16	25
19"	480mm	508	584	508	673	610	16	25
20"	500mm	533	616	533	705	641	16	25
21"	530mm	559	645	559	737	673	16	29
22"	560mm	584	670	584	762	699	16	29
23"	585mm	610	695	610	787	724	16	29
24"	600mm	635	724	635	826	756	16	32

## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges


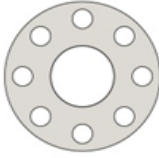
### TABLE F

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	52	21	95	67	4	14
3/4"	20mm	27	59	27	102	73	4	14
1"	25mm	34	70	34	121	87	4	18
1 1/4"	32mm	43	81	43	133	98	4	18
1 1/2"	40mm	48	86	48	140	105	4	19
2"	50mm	60	110	60	165	127	4	18
2 1/2"	65mm	76	129	76	184	146	8	18
3"	80mm	89	148	89	203	165	8	18
3 1/2"	90mm	102	160	102	216	178	8	18
4"	100mm	114	173	114	229	191	8	18
5"	125mm	140	213	140	279	235	8	22
6"	150mm	168	238	168	305	260	12	22
7"	180mm	194	270	194	337	292	12	22
8"	200mm	219	302	219	368	324	12	22
9"	230mm	244	330	244	406	356	12	25
10"	250mm	273	356	273	432	381	12	25
12"	300mm	324	413	324	489	438	16	25
13"	330mm	356	441	356	527	470	16	29
14"	350mm	381	467	381	552	495	16	29
15"	380mm	406	492	406	578	521	16	29
16"	400mm	432	524	432	610	552	20	29
17"	430mm	457	556	457	641	584	20	29
18"	450mm	483	578	483	673	610	20	32
19"	480mm	508	610	508	705	641	20	32
20"	500mm	533	641	533	737	673	24	32
21"	530mm	559	667	559	762	699	24	32
22"	560mm	584	692	584	787	724	24	32
23"	585mm	610	721	610	826	756	24	35
24"	600mm	635	746	635	851	781	24	35

## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges


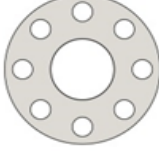
### TABLE H

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	65	21	114	83	4	18
3/4"	20mm	27	65	27	114	83	4	18
1"	25mm	34	70	34	121	87	4	18
1 1/4"	32mm	43	81	43	133	98	4	18
1 1/2"	40mm	48	87	48	140	105	4	18
2"	50mm	60	110	60	165	127	4	18
2 1/2"	65mm	76	129	76	184	146	8	18
3"	80mm	89	148	89	203	165	8	18
3 1/2"	90mm	102	160	102	216	178	8	18
4"	100mm	114	173	114	229	191	8	18
5"	125mm	140	213	140	279	235	8	22
6"	150mm	168	238	168	305	260	12	22
7"	180mm	194	270	194	337	292	12	22
8"	200mm	219	302	219	368	324	12	22
9"	230mm	244	330	244	406	356	12	25
10"	250mm	273	356	273	432	381	12	25
12"	300mm	324	413	324	489	438	16	25
13"	330mm	356	441	356	527	470	16	29
14"	350mm	381	467	381	552	495	16	29
15"	380mm	406	492	406	578	521	16	29
16"	400mm	432	524	432	610	552	20	29
17"	430mm	457	556	457	641	584	20	29
18"	450mm	483	578	483	673	610	20	32
19"	480mm	508	610	508	705	641	20	32
20"	500mm	533	641	533	737	673	24	32
21"	530mm	559	667	559	762	699	24	32
22"	560mm	584	692	584	787	724	24	32
23"	585mm	610	721	610	826	756	24	35
24"	600mm	635	746	635	851	781	24	35

## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges


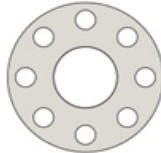
### TABLE J

		 <b>Ring Joint</b>		 <b>Full Face</b>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	65	21	114	83	4	18
3/4"	20mm	27	65	27	114	83	4	18
1"	25mm	34	70	34	121	87	4	18
1 1/4"	32mm	43	81	43	133	98	4	18
1 1/2"	40mm	48	87	48	140	105	4	18
2"	50mm	60	110	60	165	127	4	18
2 1/2"	65mm	76	129	76	184	146	8	18
3"	80mm	89	148	89	203	165	8	18
3 1/2"	90mm	102	160	102	216	178	8	18
4"	100mm	114	173	114	229	191	8	18
5"	125mm	140	213	140	279	235	8	22
6"	150mm	168	238	168	305	260	12	22
7"	180mm	194	270	194	337	292	12	22
8"	200mm	219	302	219	368	324	12	22
9"	230mm	244	330	244	406	356	12	25
10"	250mm	273	356	273	432	381	12	25
12"	300mm	324	413	324	489	438	16	25
13"	330mm	356	441	356	527	470	16	29
14"	350mm	381	467	381	552	495	16	29
15"	380mm	406	492	406	578	521	16	29
16"	400mm	432	524	432	610	552	20	29
17"	430mm	457	556	457	641	584	20	29
18"	450mm	483	578	483	673	610	20	32
19"	480mm	508	610	508	705	641	20	32
20"	500mm	533	641	533	737	673	24	32
21"	530mm	559	667	559	762	699	24	32
22"	560mm	584	692	584	787	724	24	32
23"	585mm	610	721	610	826	756	24	35
24"	600mm	635	746	635	851	781	24	35

## Dimensions of Soft-Cut Gaskets

To suit BS10 Flanges

### TABLE K

		<div> Ring Joint</div>		<div> Full Face</div>				
Nom. Bore Imperial	Nom. Bore Metric	ID	OD	ID	OD	PCD	No. of Holes	Hole Diameter
1/2"	15mm	21	65	21	114	83	4	18
3/4"	20mm	27	65	27	114	83	4	18
1"	25mm	34	78	34	127	95	4	18
1 1/4"	32mm	43	81	43	133	98	4	18
1 1/2"	40mm	48	92	48	152	114	4	22
2"	50mm	60	110	60	165	127	8	18
2 1/2"	65mm	76	124	76	184	146	8	22
3"	80mm	89	143	89	203	165	8	22
3 1/2"	90mm	102	159	102	229	184	8	25
4"	100mm	114	171	114	241	197	8	25
5"	125mm	140	210	140	279	235	12	25
6"	150mm	168	235	168	305	260	12	25
7"	180mm	191	264	191	343	292	12	29
8"	200mm	216	289	216	368	318	12	29
9"	230mm	241	327	241	406	356	16	29
10"	250mm	270	352	270	432	381	16	29
12"	300mm	321	400	321	489	432	16	29
13"	330mm	346	448	346	546	483	16	35
14"	350mm	371	473	371	572	508	16	35
15"	380mm	397	505	397	603	540	20	35



## FLEXITALLIC GLAND PACKINGS

### Flexitallic 26D



Applications	Chemical, food, pharmaceutical, oxygen, paint, petrochemical and brewing industries; recommended for aggressive chemicals, powerful oxidants or vacuum/gas sealing.
Description	Flexible Pure PTFE packing
Sealing type	Valve, static
Max. Temperature	-85°C up to 260°C (-120°F / 500°F)
Maximum Pressure	14 Mpa / 2030 psi
Limit of pH	0 - 14
Shaft Speed	3 m/s

### Flexitallic 26L



Applications	Petrochemical, chemical, food, pharmaceutical and brewing industries. Particularly suitable where extremes of pH or contamination is a factor.
Description	Pure PTFE yarn impregnated with PTFE dispersion and lubricant
Sealing type	Pump packing / valve stem seals
Max. Temperature	-85°C up to 260°C (-120°F / 500°F)
Maximum Pressure	7 Mpa / 1050 psi
Limit of pH	0 - 14
Shaft Speed	8 m/s (1575 fpm)

### Flexitallic 30



Applications	Particularly recommended for marine and hydraulic use.
Description	A traditional hemp packing, heavily greased
Sealing type	Pump packing / valve stem seals
Max. Temperature	120°C
Maximum Pressure	8 Mpa / 1160 psi
Limit of pH	6 - 9
Shaft Speed	5 m/s (980 fpm)

### Flexitallic 304



### CARBON YARN PACKING

Applications	Power generation, chemical and petrochemical industries.
Description	Black, flexible cross braid carbon yarn packing. A high quality packing of yarn treated with high performance lubricant, with Zinc corrosion inhibitors supported with an Inconel wire aiding removal. Usage on rotating equipment, in oxidising and reducing environment.
Sealing type	Pump packing / valve stem seals
Max. Temperature	-85°C up to 430°C **
Maximum Pressure	21 Mpa / 3045 psi
Limit of pH	0 - 14 (not recommended with strong oxidising agents)
Shaft Speed	20 m/s (3940 fpm)

\*\* General applications. Suitable for higher temperatures in non-oxidising/inert media.

## FLEXITALLIC GLAND PACKINGS CONTINUED

### Flexitallic 306

### EXFOLIATED GRAPHITE PACKING



Applications	Petrochemical, chemical and power generation industries.
Description	Black, flexible square braid graphite packing. A high quality packing of graphite supported with an Inconel wire aiding removal. 306TA L is approved to TA Luft specifications. Limited usage on rotating equipment with shaft speeds up to 2m/s in oxidising and reducing environment range ph 0 - 14.
Sealing type	Pump packing / valve stem seals
Max. Temperature	- 200°C up to 460°C
Maximum Pressure	30 Mpa / 4350 psi
Limit of pH	0 - 14 (not recommended with strong oxidising agents)
Shaft Speed	2 m/s

### Flexitallic 713L



Applications	Petrochemical, chemical, food, pharmaceutical, paint and brewing industries.
Description	Continuous filament FORTAGLAS packing, impregnated with PTFE dispersion and
Sealing type	Pump packing / valve stem seals
Max. Temperature	- 85°C / 290°C (-120°F / 554°F)
Maximum Pressure	14 Mpa / 2030 psi
Limit of pH	3 - 12
Shaft Speed	10 m/s (1970 fpm)

### Flexitallic 774



Applications	Petrochemical industry and general industrial use.
Description	Continuous filament FORTAGLAS packing, impregnated with PTFE dispersion and lubricated with mineral oil and graphite.
Sealing type	Pump packing / valve stem seals
Max. Temperature	-85°C / 480°C (-120°F / 896°F)
Maximum Pressure	14 Mpa / 2030 psi
Limit of pH	3 - 12
Shaft Speed	15 m/s (2950 fpm)

### Flexitallic 1065



Applications	Petrochemical, chemical, brewing, paper and pulp industries. Virtually all fluids can be handled with the exception of molten alkali metals, and strong oxidising agents such as oleum, aqua regia and fuming nitric acid.
Description	High quality packing made from lubricated and graphite impregnated PTFE yarn (GFO)
Sealing type	Pump packing / valve stem seals
Max. Temperature	-85°C / 260°C (-120°F / 500°F)
Maximum Pressure	20 Mpa / 2900 psi
Limit of pH	0 - 14 (not recommended with strong oxidising agents)
Shaft Speed	20 m/s (3940 fpm)

### Flexitallic 2001



Applications	Steel, chemical, paper, pulp and cement industries. Particularly recommended for pumping abrasive slurries.
Description	PTFE impregnated aramid packing treated with a high temperature lubricant.
Sealing type	Pump packing / valve stem seals
Max. Temperature	-85°C / 260°C (-120°F / 500°F)
Maximum Pressure	25 Mpa / 3635 psi
Limit of pH	2 - 12
Shaft Speed	15 m/s (2950 fpm)

## FLEXITALLIC GLAND PACKINGS

Part No.	Description		Size	Length
T26D05	T26D	PTFE YARN DRY	5.0mm	20M
T26D06.5	T26D	PTFE YARN DRY	6.5mm	8M
T26D08	T26D	PTFE YARN DRY	8.0mm	8M
T26D09.5	T26D	PTFE YARN DRY	9.5mm	8M

T26L05	T26L	PTFE YARN LUBE	5.0mm	20M
T26L06.5	T26L	PTFE YARN LUBE	6.5mm	8M
T26L08	T26L	PTFE YARN LUBE	8.0mm	8M
T26L09.5	T26L	PTFE YARN LUBE	9.5mm	8M
T26L12.5	T26L	PTFE YARN LUBE	12.5mm	8M
T26L16	T26L	PTFE YARN LUBE	16mm	8M

T3005	T30	HEMP HEAVY GREASE	5.0mm	20M
T3006.5	T30	HEMP HEAVY GREASE	6.5mm	8M
T3008	T30	HEMP HEAVY GREASE	8.0mm	8M
T3009.5	T30	HEMP HEAVY GREASE	9.5mm	8M
T3011	T30	HEMP HEAVY GREASE	11mm	8M
T3012.5	T30	HEMP HEAVY GREASE	12.5mm	8M
T3016	T30	HEMP HEAVY GREASE	16mm	8M
T3019	T30	HEMP HEAVY GREASE	19mm	8M
T3025	T30	HEMP HEAVY GREASE	25mm	8M

T301-05	T301	GRAPHITE YARN	5.0mm	4M
T301-09.5	T301	GRAPHITE YARN	9.5mm	4M
T301-12.5	T301	GRAPHITE YARN	12.5mm	4M

T30403	T304	CARBON YARN	3.0mm	20M
T30405	T304	CARBON YARN	5.0mm	4M
T30406.5	T304	CARBON YARN	6.5mm	4M
T30409.5	T304	CARBON YARN	9.5mm	4M
T30410	T304	CARBON YARN	10.0mm	4M

T30603	T306	EXFOLIATED GRAPHITE & WIRE	3.0mm	20M
T30605	T306	EXFOLIATED GRAPHITE & WIRE	5.0mm	20M
T30606	T306	EXFOLIATED GRAPHITE & WIRE	6.0mm	8M
T30608	T306	EXFOLIATED GRAPHITE & WIRE	8.0mm	8M
T30610	T306	EXFOLIATED GRAPHITE & WIRE	10.0mm	8M
T30612	T306	EXFOLIATED GRAPHITE & WIRE	12.0mm	8M
T30616	T306	EXFOLIATED GRAPHITE & WIRE	16.0mm	8M

T713L03	T713L	FORTAGLAS LUBE	3.0mm	20M
T713L05	T713L	FORTAGLAS LUBE	5.0mm	20M
T713L06.5	T713L	FORTAGLAS LUBE	6.5mm	8M
T713L08	T713L	FORTAGLAS LUBE	8.0mm	8M
T713L09.5	T713L	FORTAGLAS LUBE	9.5mm	8M
T713L11	T713L	FORTAGLAS LUBE	11mm	8M
T713L12.5	T713L	FORTAGLAS LUBE	12.5mm	8M
T713L16	T713L	FORTAGLAS LUBE	16mm	8M
T713L19	T713L	FORTAGLAS LUBE	19mm	8M
T713L25	T713L	FORTAGLAS LUBE	25mm	8M

## FLEXITALLIC GLAND PACKINGS CONTINUED

Part No.	Description		Size	Length
T77403	T774	FORTAGLAS GRAPHITE	3.0mm	20M
T77405	T774	FORTAGLAS GRAPHITE	5.0mm	20M
T77406.5	T774	FORTAGLAS GRAPHITE	6.5mm	8M
T77408	T774	FORTAGLAS GRAPHITE	8.0mm	8M
T77409.5	T774	FORTAGLAS GRAPHITE	9.5mm	8M
T77412.5	T774	FORTAGLAS GRAPHITE	12.5mm	8M
T77416	T774	FORTAGLAS GRAPHITE	16mm	8M
T77419	T774	FORTAGLAS GRAPHITE	19mm	8M

T1065-6.5	T1065	PTFE YARN GRAPH/IMPREGNATED	6.5mm	8M
T106508	T1065	PTFE YARN GRAPH/IMPREGNATED	8.0mm	8M
T1065-9.5	T1065	PTFE YARN GRAPH/IMPREGNATED	9.5mm	8M
T1065-12.5	T1065	PTFE YARN GRAPH/IMPREGNATED	12.5mm	8M

T200106.5	T2001	PTFE IMPREGNATED ARAMID	6.5mm	8M
T200108	T2001	PTFE IMPREGNATED ARAMID	8.0mm	8M
T200109.5	T2001	PTFE IMPREGNATED ARAMID	9.5mm	8M
T200112.5	T2001	PTFE IMPREGNATED ARAMID	12.5mm	8M
T200116	T2001	PTFE IMPREGNATED ARAMID	16.0mm	8M
T200119	T2001	PTFE IMPREGNATED ARAMID	19.0mm	8M
T200122	T2001	PTFE IMPREGNATED ARAMID	22.0mm	8M
T200125	T2001	PTFE IMPREGNATED ARAMID	25.0mm	8M

## BLISTER PACKS

BP110	T713L	FORTAGLAS LUBE, BLISTER PACK	11.0mm	1M
BP125	T713L	FORTAGLAS LUBE, BLISTER PACK	12.5mm	1M
BP140	T713L	FORTAGLAS LUBE, BLISTER PACK	14.0mm	1M
BP160	T713L	FORTAGLAS LUBE, BLISTER PACK	16.0mm	1M
BP30	T713L	FORTAGLAS LUBE, BLISTER PACK	3.0mm	1M
BP40	T713L	FORTAGLAS LUBE, BLISTER PACK	4.0mm	1M
BP50	T713L	FORTAGLAS LUBE, BLISTER PACK	5.0mm	1M
BP65	T713L	FORTAGLAS LUBE, BLISTER PACK	6.5mm	1M
BP80	T713L	FORTAGLAS LUBE, BLISTER PACK	8.0mm	1M
BP95	T713L	FORTAGLAS LUBE, BLISTER PACK	9.5mm	1M

T77403BP	T774	FORTAGLAS GRAPHITE, BLISTER PACK	3.0mm	1M
T77405BP	T774	FORTAGLAS GRAPHITE, BLISTER PACK	5.0mm	1M
T77406.5BP	T774	FORTAGLAS GRAPHITE, BLISTER PACK	6.5mm	1M
T77408BP	T774	FORTAGLAS GRAPHITE, BLISTER PACK	8.0mm	1M
T77409.5BP	T774	FORTAGLAS GRAPHITE, BLISTER PACK	9.5mm	1M
T77412.5BP	T774	FORTAGLAS GRAPHITE, BLISTER PACK	12.5mm	1M

# FLEXITALLIC GLAND PACKINGS

## APPLICATION / COMPATIBILITY GUIDE

	ARAMID	GRAPHITE LOADED PTFE	PTFE	GLASS	GRAPHITE	VEGETABLE
Acetic Acid Glacial	X	✓	✓	X	✓	X
Acetone	✓	✓	✓	✓	✓	X
Acetylene	✓	✓	✓	✓	✓	✓
Acrylic Acid	✓	✓	✓	X	✓	X
Acrylonitrile	✓	✓	✓	✓	✓	X
Air	✓	✓	✓	✓	✓	✓
Alkaline Lye	○	✓	✓	X	✓	X
Aluminium Chloride	○	✓	✓	✓	✓	✓
Ammonia Gas	✓	✓	✓	✓	✓	○
Ammonia	✓	✓	✓	✓	✓	X
Amyl Acetate	✓	✓	✓	✓	✓	✓
Amyl Alcohol	✓	✓	✓	✓	✓	✓
Aniline	✓	✓	✓	✓	✓	X
Aqua-Regia	X	X	✓	X	X	X
Aviation Fuel	✓	✓	✓	✓	✓	✓
Beer	✓	✓	✓	✓	✓	✓
Benzene	✓	✓	✓	✓	✓	○
Benzoyl Chloride	✓	✓	✓	✓	✓	X
Biphenyl	✓	✓	✓	✓	✓	X
Blast Furnace Gas	✓	✓	✓	✓	✓	X
Bleach (Solution)	✓	✓	✓	○	✓	○
Boiler Feed Water	✓	✓	✓	✓	✓	✓
Brine	✓	✓	✓	✓	✓	✓
Bromine	X	X	✓	X	X	X
n-Butyl Acetate	✓	✓	✓	✓	✓	✓
Calcium Chlorate	○	✓	✓	✓	✓	X
Caprolactam	✓	✓	✓	✓	✓	✓
Carbolic Acid	✓	✓	✓	✓	✓	X
Carbon Dioxide	✓	✓	✓	✓	✓	✓
Carbon Disulphide	X	✓	✓	✓	✓	X
Carbon Monoxide	✓	✓	✓	✓	✓	✓
Carbon Tetrachloride	✓	✓	✓	✓	✓	X
Chile Saltpetre	✓	✓	✓	✓	✓	✓
Chlorine Dry	X	✓	✓	✓	✓	X
Chlorine Wet	X	✓	✓	✓	✓	X
Chlorinated Hydrocarbons	✓	✓	✓	✓	✓	○
Chloroacetic Acid	○	✓	✓	X	✓	X
Chlorobenzene	✓	✓	✓	✓	✓	X
Chromic Acid	X	○	✓	X	○	X
Copper Sulphate	✓	✓	✓	✓	✓	✓
Creosote	✓	✓	✓	✓	✓	X
Cresol	✓	✓	✓	✓	✓	X
Crude Oil	✓	✓	✓	✓	✓	○
Cyclohexanol	✓	✓	✓	✓	✓	✓
1,4 Dichlorobenzene	✓	✓	✓	✓	✓	X
Diesel Oil	✓	✓	✓	✓	✓	○
Dowtherm	✓	✓	✓	✓	✓	X
Dye Liquor	○	✓	✓	X	✓	X
Ethyl Acetate	✓	✓	✓	✓	✓	X
Ethyl Alcohol	✓	✓	✓	✓	✓	✓
Ethylene Glycol	✓	✓	✓	✓	✓	✓
Ethylene Oxide	✓	✓	✓	✓	✓	X
Ethyl Ether	✓	✓	✓	✓	✓	✓

✓	Suitable
○	Application Dependent
X	Not Suitable

	ARAMID	GRAPHITE LOADED PTFE	PTFE	GLASS	GRAPHITE	VEGETABLE
Ethylene	✓	✓	✓	✓	✓	✓
Ethylene Chloride	✓	✓	✓	✓	✓	X
Fatty Acids	✓	✓	✓	✓	✓	✓
Ferric Chloride	✓	✓	✓	✓	✓	○
Fluorine	X	X	X	X	○	X
Fluorosilicic Acid	✓	✓	✓	X	✓	X
Formaldehyde	✓	✓	✓	✓	✓	○
Formic Acid (85%)	○	✓	✓	X	✓	X
Formic Acid (10%)	✓	✓	✓	✓	✓	○
Gas Oil	✓	✓	✓	✓	✓	○
Gasoline	✓	✓	✓	✓	✓	✓
Glucose	✓	✓	✓	✓	✓	✓
Heating Oil	✓	✓	✓	✓	✓	✓
Hydraulic Oil (Glycol)	✓	✓	✓	✓	✓	✓
Hydraulic Oil (Mineral)	✓	✓	✓	✓	✓	✓
Hydraulic Oil (Ester)	✓	✓	✓	✓	✓	○
Hydrazine	✓	✓	✓	✓	✓	X
Hydrocarbons (Aromatic)	✓	✓	✓	✓	✓	X
Hydrocarbons (Aliphatic S)	✓	✓	✓	✓	✓	○
Hydrocarbons (Aliphatic U)	✓	✓	✓	✓	✓	○
Hydrochloric Acid (37%)	X	✓	✓	✓	✓	X
Hydrofluoric Acid	X	✓	✓	X	✓	X
Hydrogen	✓	✓	✓	✓	✓	✓
Hydrogen Chloride	X	✓	✓	✓	✓	X
Hydrogen Fluoride	X	✓	✓	X	✓	X
Hydrogen Peroxide	X	✓	✓	✓	○	X
Hydrogen Sulphide	X	✓	✓	✓	✓	X
Isopropyl Acetate	✓	✓	✓	✓	✓	✓
Isopropyl Alcohol	✓	✓	✓	✓	✓	✓
Kerosene	✓	✓	✓	✓	✓	✓
Lime (Quick)	✓	✓	✓	✓	✓	X
Lubricating Oil	✓	✓	✓	✓	✓	○
Machine Oil	✓	✓	✓	✓	✓	○
Magnesium Sulphate	✓	✓	✓	✓	✓	✓
Malic Acid	✓	✓	✓	✓	✓	○
Methane	✓	✓	✓	✓	✓	✓
Methyl Acrylate	✓	✓	✓	✓	✓	X
Methyl Alcohol	✓	✓	✓	✓	✓	✓
Methyl Isobutyl Ketone	✓	✓	✓	✓	✓	○
Methyl Methacrylate	✓	✓	✓	✓	✓	○
Methylene Chloride	X	✓	✓	✓	✓	X
Mineral Oil	✓	✓	✓	✓	✓	○
Mobiltherm	✓	✓	✓	✓	✓	X
Naphthalene	✓	✓	✓	✓	✓	○
Natural Gas	✓	✓	✓	✓	✓	✓
Nitric Acid (50%)	X	X	✓	X	X	X
Nitric Acid (95%)	X	X	✓	X	X	X
Nitrogen	✓	✓	✓	✓	✓	✓
Oleum	X	X	✓	X	X	X
Oxygen	✓	✓	✓	✓	✓	X
Paraffin	✓	✓	✓	✓	✓	✓
Pentachlorophenol	X	✓	✓	○	✓	X
Perchloric Acid	X	X	✓	X	X	X

Aramid	=	2001
PTFE	=	26D, 26L
Graphite	=	304, 306
Vegetable	=	30
Glass	=	713L, 774
Graphite Loaded PTFE	=	1065

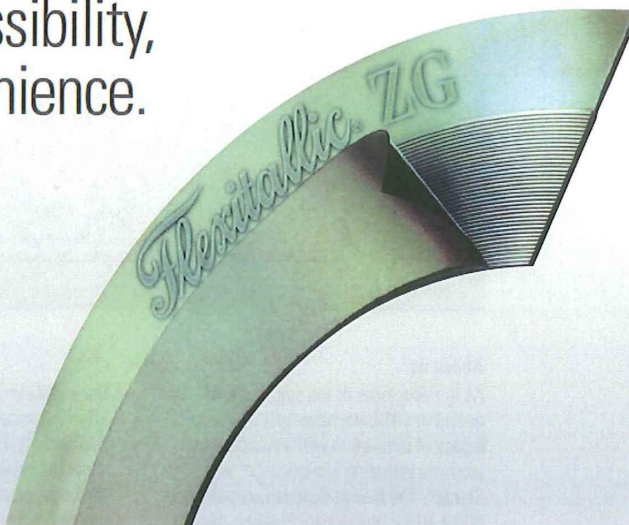
	ARAMID	GRAPHITE LOADED PTFE	PTFE	GLASS	GRAPHITE	VEGETABLE
Petrol	✓	✓	✓	✓	✓	✓
Phenol	X	✓	✓	○	✓	✓
Phosgene	✓	✓	✓	✓	✓	X
Phosphoric Acid (Conc)	X	✓	✓	X	✓	X
Phosphoric Acid (Dil)	○	✓	✓	○	✓	X
Phosphorous	X	✓	✓	✓	○	X
Phthalic Anhydride	✓	✓	✓	✓	✓	X
Potassium Hydroxide	○	✓	✓	X	✓	X
Potassium Nitrate	✓	✓	✓	✓	✓	✓
Potassium Permanganate	○	✓	✓	✓	✓	X
Producer Gas	✓	✓	✓	✓	✓	✓
Pyridine	✓	✓	✓	✓	✓	X
Rape Seed Oil	✓	✓	✓	✓	✓	✓
Silicone Oil	✓	✓	✓	✓	✓	✓
Soda Ash	✓	✓	✓	X	✓	✓
Sodium Bicarbonate	✓	✓	✓	✓	✓	✓
Sodium Carbonate	✓	✓	✓	X	✓	✓
Sodium Cyanide	✓	✓	✓	✓	✓	✓
Sodium Hydroxide (90%)	X	✓	✓	X	✓	X
Sodium Hydroxide (Dil)	○	✓	✓	○	✓	X
Sodium Hypochlorite	✓	✓	✓	○	✓	○
Sodium Nitrate	✓	✓	✓	✓	✓	✓
Starch	✓	✓	✓	✓	✓	✓
Steam	○	✓	✓	○	✓	X
Steam Condensate	✓	✓	✓	✓	✓	✓
Styrene	✓	✓	✓	✓	✓	X
Sulphur	✓	✓	✓	✓	✓	○
Sulphur Dioxide	X	✓	✓	✓	✓	○
Sulphur Trioxide	X	X	✓	X	X	X
Sulphuric Acid (Conc)	X	○	✓	X	○	X
Sulphuric Acid (Fuming)	X	X	✓	X	X	X
Tar	✓	✓	✓	✓	✓	X
Turpentine	✓	✓	✓	✓	✓	✓
Toluene	✓	✓	✓	✓	✓	X
Towns Gas	✓	✓	✓	✓	✓	✓
Transformer Oil	✓	✓	✓	✓	✓	○
Tributyl Phosphate	✓	✓	✓	✓	✓	✓
Triethanolamine	✓	✓	✓	✓	✓	✓
Urea	✓	✓	✓	✓	✓	✓
Vegetable Oil	✓	✓	✓	✓	✓	✓
Vinyl Acetate	✓	✓	✓	✓	✓	○
Vinyl Chloride	✓	✓	✓	✓	✓	○
Vinylidene Chloride	✓	✓	✓	✓	✓	○
Water	✓	✓	✓	✓	✓	✓
Water Condensate	✓	✓	✓	✓	✓	✓
Water Distilled	✓	✓	✓	✓	✓	X
Whisky	✓	✓	✓	✓	✓	✓
Wine	✓	✓	✓	✓	✓	✓
White Spirit	✓	✓	✓	✓	✓	✓
Xylene	✓	✓	✓	✓	✓	✓



*Flexitallic*

# FLEXPRO™ KAMMPROFILES

Flexpro™ - The versatile  
gasket with three key  
features: compressibility,  
low stress, convenience.



*Flexitallic*

## FLEXPRO™ KAMMPROFILES

Flexpro™ - The versatile gasket with three key features: compressibility, low stress, convenience.

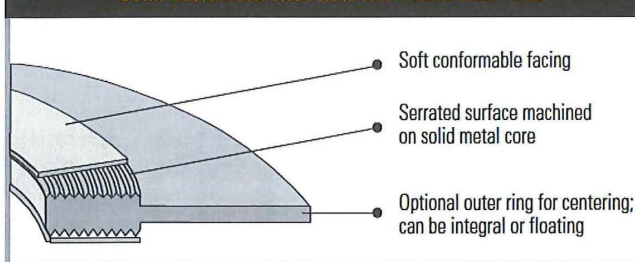
*Flexpro*

The FLEXPRO™ gasket has been providing an extremely tight, reliable seal in a wide range of applications globally since its development in Germany over 50 years ago.

The FLEXPRO™ gasket is comprised of a concentrically serrated solid metal core with a soft, conformable sealing material bonded to each face. The soft facing material provides low stress gasket seating, while the serrated geometry of the metal core enhances sealing performance by inducing stress concentrations on the sealing surfaces. The serrations minimise lateral movement of the facing material, while the metal core provides rigidity and blowout resistance.

The FLEXPRO™ gasket exhibits excellent compressibility and recovery characteristics, maintaining joint tightness under pressure and temperature fluctuations, temperature differential across the flange face, flange rotation, bolt stress relaxation, and creep. Suitable for vacuum to extremely high pressure applications.

### COMPOSITE CONSTRUCTION WITH SERRATED CORE

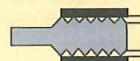


### STYLE PN



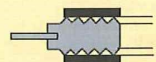
Style PN FLEXPRO™ gaskets are selected for use in confined locations, including male and female, tongue and groove, spigotted and/or recessed flange arrangements.

### STYLE ZG



Variation of the PN FLEXPRO™, utilises an integral outer locating ring for correct gasket positioning within the flange assembly bolt circle. Style ZG FLEXPRO™ gaskets are recommended for use in standard raised face and flat face flange assemblies.

### STYLE ZA



The Style ZA FLEXPRO™ is a slight variation of the Style ZG. The integral outer locating ring is replaced by a loose fitting independent ring which is preferred in applications where differential radial thermal expansion may be encountered.



## FLEXPRO™ KAMMPROFILES

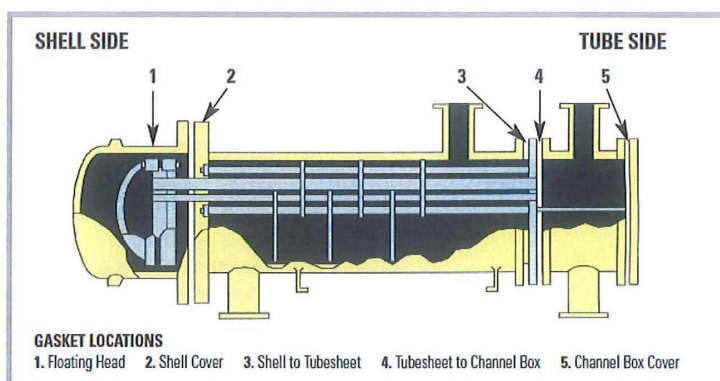
### Ideal for Shell and Tube style Heat Exchanger Flanges.

Although suitable for use on all standard pipeline flanges in a wide range of difficult applications, the FLEXPRO™ gasket is proving to be reliable, as a cost effective alternative to metal jacketed gaskets, that are commonly used in heat exchanger applications.

Use of the Flexitallic FLEXPRO™ gasket will ensure a reliable seal, from initial hydrotest through difficult operating conditions.

FLEXPRO™ gaskets are suitable for use on TEMA flanges, and when required, pass partition ribs can be supplied in any configuration.

The FLEXPRO™ gasket provides a high integrity, low seating stress seal, and is ideal for heat exchanger applications with limited bolt load or less rigid flanges.



### Standard Core Materials

Standard core thickness is 3.0mm; other thicknesses and materials are readily available to suit specific applications.

### Standard Facing Materials

Standard facing thickness is 0.5mm or 0.75mm (material dependent); other thicknesses and materials are readily available to suit specific applications.

### Flange Surface Finish Requirements

The ideal flange surface finish for use with Flexitallic FLEXPRO™ gaskets is 3.2 – 6.4µ – metre Ra (125 – 250 µ – inch Ra).

CORE MATERIAL	MAX. TEMPERATURE
Stainless Steel	535 - 870°C
Carbon Steel	535°C
Aluminium	425°C
Monel®	815°C
Nickel	650°C
Inconel®	1100°C
Titanium Gr.2	1095°C
Duplex 2205* (UNS S31803)	300°C

\*Duplex is subject to embrittlement between 350°C and 500°C

FACING MATERIAL	MAX. TEMPERATURE	SEATING STRESS AT ROOM TEMP	
		MIN. PSI (MPa)	MAX. PSI (MPa)
Thermiculite®	1000°C	2500 (17)	72500 (500)*
Flexicarb® Flexible Graphite	450°C	2500 (17)	72500 (500)*
Sigma®	260°C	2500 (17)	72500 (500)*
Virgin PTFE	260°C	2500 (17)	72500 (500)*
Soft Metals	Per material	Per material	Per material

\*While high stresses have been utilised, Flexitallic Engineering should be contacted for operating stresses above 40,000 psi.

**Flexitallic**

## FLEXPRO™ KAMMPROFILES

Independent PVRC testing confirms superior tightness, room temperature tightness (ROTT), behaviour characterisation.

### ROTT test procedure

The ROTT test includes a gasket load sequence (5 stress levels, S1 to S5), called Part A, which represents the initial joint tightening and gasket seating. The maximum stress level (S5) is 15160 psi for semi-metallic gaskets. Part A is interrupted at its three highest stress levels to run unload-reload sequences, called Parts B1, B2, B3 which simulate joint relaxation and re-tightening. At each stress level, helium leakage is measured (for two pressures in Part A and one pressure in Part B).

ROTT test data are plotted in the form of Gasket Stress,  $S_g$ , vs. Tightness Parameter,  $T_p$ , on a log-log scale. The tightness parameter,  $T_p$ , is a measure of the ability of an installed gasket to control its leakage performance in a pressurised flange joint.  $T_p$  is proportional to the pressure causing a small leak and inversely proportional to the square of the leak. Higher the  $T_p$  value, the tighter the joint. A joint that is 10 times tighter than another leaks 100 times less (at the same pressure).

### Gaskets constants

The calculated gasket constants are reported in the table below, along with computed values of  $S_{100}$ ,  $S_{1000}$  and the maximum  $T_p$  value obtained in the ROTT tests.

TABLE 1: PVRC CONSTANTS					
Gb	a	Gs	$S_{100}$	$S_{1000}$	$T_p$ MAX
387 psi	0.334	14 psi	1802 psi	3888 psi	55000

TABLE 2: ASME CONSTANTS	
m	y
2	2500 psi

The ROTT behavior characterisation of a gasket consists of:

- Performing a minimum of two ROTT tests on NPS 4" samples
- Treating and reporting ROTT data on the basis of the Tightness Parameter concept
- Calculating the PVRC Gasket constants, Gb, "a" and Gs, according to the proposed ASTM Standard
- Reporting the gasket constants and characteristics

### Constants Gb, "a", and Gs

The PVRC tightness based gasket constants are determined from the results of two or more ROTT tests. Constants Gb and "a" together define an initial seating performance line. The combined effect of Gb, and "a" is best represented by the value of  $ST_p = T_p \times G_b \times "a"$  calculated for typical values of  $T_p$  such as 100 or 1000. For example  $S_{100} = G_b (100)^a$ . Constant Gs independently represents operation. Low values of Gb, "a", Gs,  $S_{100}$  and  $S_{1000}$  are favourable.

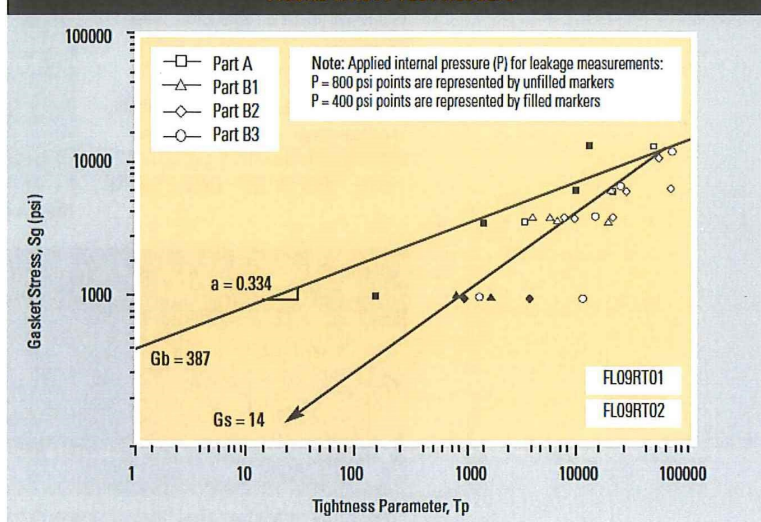
### Performance in ROTT tests

The results of two ROTT tests conducted at TTRL<sup>1</sup> on Flexitallic FLEXPRO™ gaskets are shown in Figure 1.

At the highest Part A stress level (S5 - 15160 psi),  $T_p$  values above 55000 were obtained. A  $T_p$  of 55000 corresponds to a Helium leak rate of approximately  $1 \times 10^{-6}$  mg/s at a test pressure of 800 psi.

Part B test data indicates that this gasket maintains superior tightness during stress cycling.

FIGURE 1: ROTT TEST RESULTS



<sup>1</sup>Tightness Testing and Research Laboratory - Ecole Polytechnique of Montreal



## FLEXPRO™ KAMMPROFILES

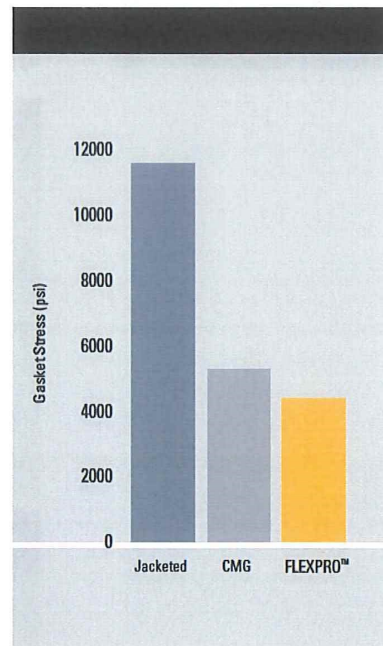
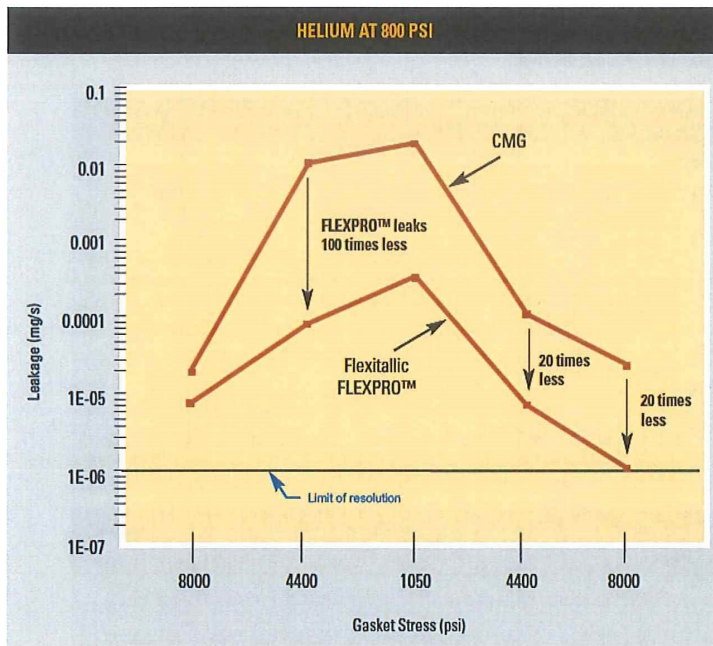
### Cyclic Service Comparison

During operation, unloading of a bolted-gasketed joint can occur due to pressurisation, fluctuation in pressure and temperature, thermal effects, joint relaxation, etc. PVRC test data confirms the superior ability of the FLEXPRO™ gasket to maintain tightness under these cyclic loading conditions. As shown in the graph, when gasket stress is reduced from 8000 psi to 4400 psi, the FLEXPRO™ gasket leaks 100 times less than a comparable corrugated metal graphite gasket (CMG).

**A tighter joint is a safer joint!**

### T3 Tightness

The PVRC developed method for characterising gasket performance specifies three classes of tightness. T1 (economy), T2 (standard), and T3 (tight). A tightness class of T3 represents a mass leak rate of helium per unit diameter, of 0.00002 mg/sec-mm. This graph shows that the Flexitallic FLEXPRO™ gasket achieves a tightness class of T3 at the lowest seating stress when compared to other types of gaskets. Results are based on PVRC test data, using a gasket with dimensions of 20" ID x 20.5" OD, with 20 x 1" diameter bolts and an assembly efficiency of 0.75. The Flexitallic FLEXPRO™ gasket is ideal for use in applications where limited bolt load and/or tight weight flanges are used.



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## FLEXPRO™ KAMMPROFILES



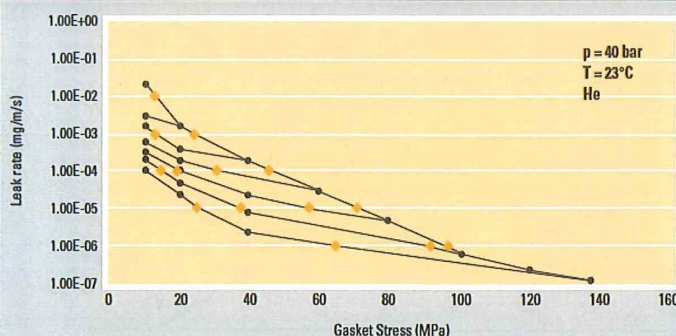
### Flange Calculations and Gasket Parameters – EN 1591-1 and EN 13555

Driven by national requirements within the European Union for increasing plant efficiency and reducing fugitive emissions the European Standard EN 1591-1 was first published in 2001. The Standard outlines a calculation method in which strength criteria of the individual mechanical components in a bolted joint namely; flanges, bolts and gasket, and importantly leakage criteria are satisfied for a particular application. The calculation method adopts the premise that all gasketed bolted flanged connections leak and requires the user to specify what a permissible level of leakage is for a particular application. This is done via the introduction of the concept of the tightness class. At the time of writing EN 1591-1 is the only stand alone standardised calculation method that includes both stress analysis and tightness proof of a bolted connection.

The calculation requires the input of data specific to the particular application in question. The required gasket characteristics are generated in accordance with the European standard EN 13555. The test protocol outlined in EN 13555 is complex and requires the use of costly sophisticated test equipment.

As the leading supplier of technical solutions in the field of industrial sealing Flexitallic makes use of the latest innovative materials technologies and calculation methodologies to ensure the highest levels of joint integrity. Gasket characteristics in accordance with EN13555 are available for wide selection of Flexitallic static sealing products. Alternatively Flexitallic can undertake flange calculations in accordance with EN1591-1 on behalf of the end user.

LEAKAGE CURVE - KAMM 316L FG 154x124x4.78mm. Test number 07-133



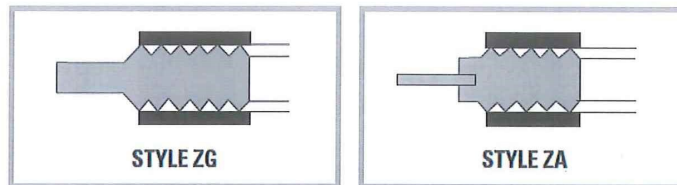
### GASKET CHARACTERISTICS ACROSS A RANGE OF TEMPERATURES, STRESSES AND PRESSURES, RELATING TO THE FOLLOWING PROPERTIES ARE GENERATED:

$Q_{Smax}$	Maximum surface pressure that can be imposed on a gasket before failure occurs		
$Q_{min(L)}$	Minimum gasket surface pressure required for leakage class (L) on initial loading		
$Q_{Smin(L)}$	Minimum gasket surface pressure required for leakage class (L) after off-loading		
$L_N$	Leakage tightness classes: Tightness Class LN: Specific Leakage Rate ( $mg.s^{-1}.m^{-1}$ ):		
	$L_{1.0}$	$L_{0.1}$	$L_{0.01}$
	$\leq 1.0$	$\leq 0.1$	$\leq 0.01$
$P_{QR}$	Creep relaxation factor. Ratio of the original and final surface pressures		
$\Delta_{eGc}$	Change in gasket thickness due to creep		
$E_G$	Elastic unloading modulus		
$\alpha_G$	Coefficient of axial thermal expansion		
$\mu_G$	Static friction factor between the gasket and contacting flange face.		



## DIMENSIONAL DATA

### FLEXPRO™ KAMMPROFILES ASME B16.20



NOMINAL BORE		SEALING INNER DIAMETER	SEALING OUTER DIAMETER	CENTERING RING OUTER DIAMETER						
INCHES	MM			150 Class	300 Class	400 Class	600 Class	900 Class	1500 Class	2500 Class
½	15	23.1	33.3	47.8	54.1	Note (2)	54.1	Note (3)	63.5	69.9
¾	20	28.7	39.6	57.2	66.8	Note (2)	66.8	Note (3)	69.9	76.2
1	25	36.6	47.5	66.8	73.2	Note (2)	73.2	Note (3)	79.5	85.9
1 ¼	32	44.5	60.2	76.2	82.6	Note (2)	82.6	Note (3)	88.9	104.9
1 ½	40	52.3	69.9	85.9	95.3	Note (2)	95.3	Note (3)	98.6	117.6
2	50	69.9	88.9	104.9	111.3	Note (2)	111.3	Note (3)	143.0	146.1
2 ½	65	82.6	101.6	124.0	130.3	Note (2)	130.3	Note (3)	165.1	168.4
3	80	98.3	123.7	136.7	149.4	Note (2)	149.4	168.4	174.8	196.9
4	100	123.7	153.9	174.8	181.1	177.8	193.8	206.5	209.6	235.0
5	125	150.9	182.6	196.9	215.9	212.9	241.3	247.7	254.0	279.4
6	150	177.8	212.6	222.3	251.0	247.7	266.7	289.1	282.7	317.5
8	200	228.6	266.7	279.4	308.1	304.8	320.8	358.9	352.6	387.4
10	250	282.7	320.8	339.9	362.0	358.9	400.1	435.1	435.1	476.3
12	300	339.6	377.7	409.7	422.4	419.1	457.2	498.6	520.7	549.4
14	350	371.6	409.7	450.9	485.9	482.6	492.3	520.7	577.9	Note (4)
16	400	422.4	466.6	514.4	539.8	536.7	565.2	574.8	641.4	Note (4)
18	450	479.3	530.1	549.4	596.9	593.9	612.9	638.3	704.9	Note (4)
20	500	530.1	580.9	606.6	654.1	647.7	682.8	698.5	755.7	Note (4)
24	600	631.7	682.5	717.6	774.7	768.4	790.7	838.2	901.7	Note (4)

#### GENERAL NOTES

Dimensions in mm. Tolerances in mm.

Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.

#### NOTES

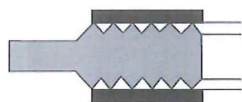
- 1) Tolerances +/- 0.8mm for all diameters
- 2) There is no Class 400 flanges in NPS ½" through NPS 3" (use Class 600)
- 3) There is no Class 900 flanges in NPS ½" through NPS 2 ½" (use Class 1500)
- 4) There is no Class 2500 flanges in NPS 14" and larger

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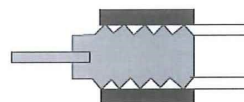
## DIMENSIONAL DATA

### FLEXPRO™ KAMMPROFILES

Covered Serrated Metal Gaskets for Type A and Type B Flanges.  
EN1514-6



STYLE ZG



STYLE ZA

OUTER DIAMETER					CENTERING RING OUTER DIAMETER									
NOMINAL BORE	SEALING INNER DIAMETER	SEALING OUTER DIAMETER			PN10	PN16	PN25	PN40	PN64	PN100	PN160	PN250	PN320	PN400
DN		PN10/40	PN64/160	PN250/400										
10	22	-	See	36	46	46	46	46	56	56	56	67	67	67
15	26	-	PN250	42	51	51	51	51	61	61	61	72	72	-
20	31	-	to	47	61	61	61	61	-	-	-	-	-	-
25	36	-	PN400	52	71	71	71	71	82	82	82	83	92	104
32	46	See	62	66	82	82	82	82	-	-	-	-	-	-
40	53	PN64	69	73	92	92	92	92	103	103	103	109	119	135
50	65	to	81	87	107	107	107	107	113	119	119	124	134	150
65	81	PN160	100	103	127	127	127	127	137	143	143	153	170	192
80	95	-	115	121	142	142	142	142	148	154	154	170	190	207
100	118	-	138	146	162	162	168	168	174	180	180	202	229	256
125	142	-	162	178	192	192	194	194	210	217	217	242	274	301
150	170	-	190	212	217	217	224	224	247	257	257	284	311	348
175	195	-	215	245	247	247	254	265	277	287	284	316	358	402
200	220	240	248	280	272	272	284	290	309	324	324	358	398	442
250	270	290	300	340	327	328	340	352	364	391	388	442	488	-
300	320	340	356	400	377	383	400	417	424	458	458	536	-	-
350	375	395	415	-	437	443	457	474	486	512	-	-	-	-
400	426	450	474	-	489	495	514	546	543	572	-	-	-	-
450	480	506	-	-	539	555	-	571	-	-	-	-	-	-
500	530	560	588	-	594	617	624	628	657	704	-	-	-	-
600	630	664	700	-	695	734	731	747	764	813	-	-	-	-
700	730	770	812	-	810	804	833	852	879	950	-	-	-	-
800	830	876	886	-	917	911	942	974	988	-	-	-	-	-
900	930	982	994	-	1017	1011	1042	1084	1108	-	-	-	-	-
1000	1040	1098	1110	-	1124	1128	1154	1194	1220	-	-	-	-	-
1200	1250	1320	1334	-	1341	1342	1364	1398	1452	-	-	-	-	-
1400	1440	1522	-	-	1548	1542	1578	1618	-	-	-	-	-	-
1600	1650	1742	-	-	1772	1764	1798	1830	-	-	-	-	-	-
1800	1850	1914	-	-	1972	1964	2000	-	-	-	-	-	-	-
2000	2050	2120	-	-	2182	2168	2230	-	-	-	-	-	-	-
2200	2250	2328	-	-	2384	2378	-	-	-	-	-	-	-	-
2400	2460	2512	-	-	2594	-	-	-	-	-	-	-	-	-
2600	2670	2728	-	-	2794	-	-	-	-	-	-	-	-	-
2800	2890	2952	-	-	3014	-	-	-	-	-	-	-	-	-
3000	3100	3166	-	-	3228	-	-	-	-	-	-	-	-	-

#### GENERAL NOTES

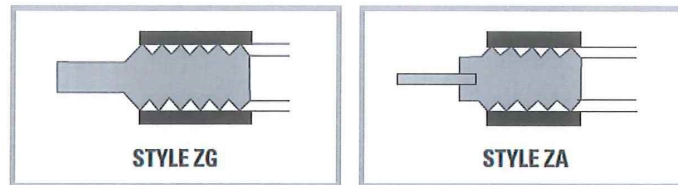
Diameter tolerances for Table 1. Up to DN 1000:  $\pm 0.4\text{mm}$ . ID  $\pm 0.4\text{mm}/-0$ . Above DN 1000: OD  $\pm 1.0\text{mm}$ . ID  $\pm 1.00\text{mm}/-0$

Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.



## DIMENSIONAL DATA

### FLEXPRO™ KAMMPROFILES ASME B16.20 Series A



NOMINAL BORE		SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	CENTERING RING OUTER DIAMETER				
INCHES	MM	150	150	300	300	400	400	600	600	900	900	150	300	400	600	900
26	650	673.1	704.9	685.8	736.6	685.8	736.6	685.8	736.6	685.8	736.6	774.7	835.2	831.9	866.9	882.7
28	700	723.9	755.7	736.6	787.4	736.6	787.4	736.6	787.4	736.6	787.4	831.9	898.7	892.3	914.4	946.2
30	750	774.7	806.5	793.8	844.6	793.8	844.6	793.8	844.6	793.8	844.6	882.7	952.5	946.2	971.6	1009.7
32	800	825.5	860.6	850.9	901.7	850.9	901.7	850.9	901.7	850.9	901.7	939.8	1006.6	1003.3	1022.4	1073.2
34	850	876.3	911.4	901.7	952.5	901.7	952.5	901.7	952.5	901.7	952.5	990.6	1057.4	1054.1	1073.2	1136.7
36	900	927.1	968.5	955.8	1006.6	955.8	1006.6	955.8	1006.6	958.9	1009.7	1047.8	1117.6	1117.6	1130.3	1200.2
38	950	977.9	1019.3	977.9	1016.0	971.6	1022.4	990.6	1041.4	1035.1	1085.9	1111.3	1054.1	1073.2	1104.9	1200.2
40	1000	1028.7	1070.1	1022.4	1070.1	1025.7	1076.5	1047.8	1098.6	1098.6	1149.4	1162.1	1114.6	1127.3	1155.7	1251.0
42	1050	1079.5	1124.0	1073.2	1120.9	1076.5	1127.3	1104.9	1155.7	1149.4	1200.2	1219.2	1165.4	1178.1	1219.2	1301.8
44	1100	1130.3	1178.1	1130.3	1181.1	1130.3	1181.1	1162.1	1212.9	1206.5	1257.3	1276.4	1219.2	1231.9	1270.0	1368.6
46	1150	1181.1	1228.9	1178.1	1228.9	1193.8	1244.6	1212.9	1263.7	1270.0	1320.8	1327.2	1273.3	1289.1	1327.2	1435.1
48	1200	1231.9	1279.7	1235.2	1286.0	1244.6	1295.4	1270.0	1320.8	1320.8	1371.6	1384.3	1324.1	1346.2	1390.7	1485.9
50	1250	1282.7	1333.5	1295.4	1346.2	1295.4	1346.2	1320.8	1371.6	Note (4)	Note (4)	1435.1	1378.0	1403.4	1447.8	Note (4)
52	1300	1333.5	1384.3	1346.2	1397.0	1346.2	1397.0	1371.6	1422.4	Note (4)	Note (4)	1492.3	1428.8	1454.2	1498.6	Note (4)
54	1350	1384.3	1435.1	1403.4	1454.2	1403.4	1454.2	1428.8	1479.6	Note (4)	Note (4)	1549.4	1492.3	1517.7	1555.8	Note (4)
56	1400	1435.1	1485.9	1454.2	1505.0	1454.2	1505.0	1479.6	1530.4	Note (4)	Note (4)	1606.6	1543.1	1568.5	1612.9	Note (4)
58	1450	1485.9	1536.7	1511.3	1562.1	1505.0	1555.8	1536.7	1587.5	Note (4)	Note (4)	1663.7	1593.9	1619.3	1663.7	Note (4)
60	1500	1536.7	1587.5	1562.1	1612.9	1568.5	1619.3	1593.9	1644.7	Note (4)	Note (4)	1714.5	1644.7	1682.8	1733.6	Note (4)

#### GENERAL NOTES

Dimensions in mm. Tolerances in mm.

Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.

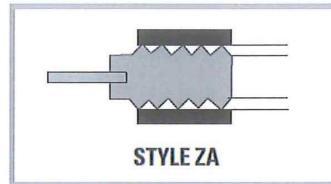
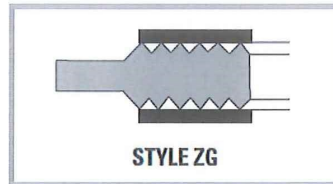
#### NOTES

- 1) Sealing ID Nom Bore 26 to 34 tolerances +/- 0.8mm and Nom Bore 36 to 60 +/- 1.5mm
- 2) Sealing OD Nom Bore 26 to 60 tolerances +/- 1.5mm
- 3) Centering Ring OD tolerances +/- 0.8mm
- 4) There is no Class 900 Flange in NPS 50 and above.

# Flexitallic®

## DIMENSIONAL DATA

### FLEXPRO™ KAMMPROFILES ASME B16.20 Series B



NOMINAL BORE		SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	SEALING INNER DIAMETER	SEALING OUTER DIAMETER	CENTERING RING OUTER DIAMETER				
INCHES	MM	150	150	300	300	400	400	600	600	900	900	150	300	400	600	900
26	650	673.1	698.5	673.1	711.2	666.8	698.5	663.7	714.5	692.2	749.3	725.4	771.7	746.3	765.3	838.2
28	700	723.9	749.3	723.9	762.0	714.5	749.3	704.9	755.7	743.0	800.1	776.2	825.5	800.1	819.2	901.7
30	750	774.7	800.1	774.7	812.8	765.3	806.5	778.0	828.8	806.5	857.3	827.0	886.0	857.3	879.6	958.9
32	800	825.5	850.9	825.5	863.6	812.8	860.6	831.9	882.7	863.6	914.4	881.1	939.8	911.4	933.5	1016.0
34	850	876.3	908.1	876.3	914.4	866.9	911.4	889.0	939.8	920.8	971.6	935.0	993.9	962.2	997.0	1073.2
36	900	927.1	958.9	927.1	965.2	917.7	965.2	939.8	990.6	946.2	997.0	987.6	1047.8	1022.4	1047.8	1124.0
38	950	974.9	1009.7	1009.7	1047.8	971.6	1022.4	990.6	1041.4	1035.1	1085.9	1044.7	1098.6	1073.2	1104.9	1200.2
40	1000	1022.4	1063.8	1060.5	1098.6	1025.7	1076.5	1047.8	1098.6	1098.6	1149.4	1095.5	1149.4	1127.3	1155.7	1251.0
42	1050	1079.5	1114.6	1111.3	1149.4	1076.5	1127.3	1104.9	1155.7	1149.4	1200.2	1146.3	1200.2	1178.1	1219.2	1301.8
44	1100	1124.0	1165.4	1162.1	1200.2	1130.3	1181.1	1162.1	1212.9	1206.5	1257.3	1197.1	1251.0	1231.9	1270.0	1368.6
46	1150	1181.1	1224.0	1216.2	1254.3	1193.8	1244.6	1212.9	1263.7	1270.0	1320.8	1255.8	1317.8	1289.1	1327.2	1435.1
48	1200	1231.9	1270.0	1263.7	1311.4	1244.6	1295.4	1270.0	1320.8	1320.8	1371.6	1306.6	1368.6	1346.2	1390.7	1485.9
50	1250	1282.7	1325.6	1317.8	1355.9	1295.4	1346.2	1320.8	1371.6	Note (4)	Note (4)	1357.4	1419.4	1403.4	1447.8	Note (4)
52	1300	1333.5	1376.4	1368.6	1406.7	1346.2	1397.0	1371.6	1422.4	Note (4)	Note (4)	1408.2	1470.2	1454.2	1498.6	Note (4)
54	1350	1384.3	1422.4	1403.4	1454.2	1403.4	1454.2	1428.8	1479.6	Note (4)	Note (4)	1463.8	1530.4	1517.7	1555.8	Note (4)
56	1400	1444.8	1478.0	1479.6	1524.0	1454.2	1505.0	1479.6	1530.4	Note (4)	Note (4)	1514.6	1593.9	1568.5	1612.9	Note (4)
58	1450	1500.6	1528.8	1535.2	1573.3	1505.0	1555.8	1536.7	1587.5	Note (4)	Note (4)	1579.6	1655.8	1619.3	1663.7	Note (4)
60	1500	1557.3	1586.0	1589.0	1630.4	1568.5	1619.3	1593.9	1644.7	Note (4)	Note (4)	1630.4	1706.6	1682.8	1733.6	Note (4)

#### GENERAL NOTES

Dimensions in mm. Tolerances in mm.

Figures stated are for information only. Please refer to the current version of the original standards for dimensional information.

#### NOTES

1) Sealing ID Nom Bore 26 to 34 tolerances +/- 0.8mm and Nom Bore 36 to 60 +/- 1.5mm

2) Sealing OD Nom Bore 26 to 60 tolerances +/- 1.5mm

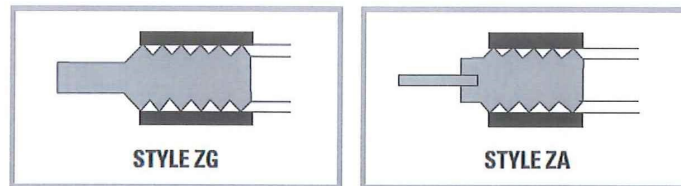
3) Centering Ring OD tolerances +/- 0.8mm

4) There are no Class 900 flanges NPS 50" and above.



## DIMENSIONAL DATA

### FLEXPRO™ KAMMPROFILES EN 12560-6



NOMINAL PIPE SIZE		SEALING ELEMENT		CENTERING RING OUTER DIAMETER						
INCHES	MM	INNER DIAMETER	OUTER DIAMETER	150 Class	300 Class	400 Class	600 Class	900 Class	1500 Class	2500 Class
1/2	15	23.0	33.3	44.4	50.8	50.8	50.8	60.3	60.3	66.7
3/4	20	28.6	39.7	53.9	63.5	63.5	63.5	66.7	66.7	73.0
1	25	36.5	47.6	63.5	69.8	69.8	69.8	76.2	76.2	82.5
1 1/4	32	44.4	60.3	73.0	79.4	79.4	79.4	85.7	85.7	101.6
1 1/2	40	52.4	69.8	82.5	92.1	92.1	92.1	95.2	95.2	114.3
2	50	69.8	88.9	101.6	108.0	108.0	108.0	139.7	139.7	142.8
2 1/2	65	82.5	101.6	120.6	127.0	127.0	127.0	161.9	161.9	165.1
3	80	98.4	123.8	133.4	146.1	146.1	146.1	165.1	171.5	193.7
3 1/2	90	111.1	136.5	158.8	161.9	158.7	158.7	-	-	-
4	100	123.8	154.0	171.5	177.8	174.6	190.5	203.2	206.4	231.7
5	125	150.8	182.6	193.7	212.7	209.5	238.1	244.5	250.8	276.2
6	150	177.8	212.7	219.1	247.7	244.5	263.5	285.8	279.4	314.3
8	200	228.6	266.7	276.2	304.8	301.6	317.5	355.6	349.3	384.1
10	250	282.6	320.7	336.5	358.8	355.6	396.9	431.8	431.8	473.0
12	300	339.7	377.8	406.4	419.1	415.9	454.0	495.3	517.5	546.1
14	350	371.5	409.6	447.7	482.6	479.4	488.9	517.5	574.7	-
16	400	422.3	466.7	511.2	536.6	533.4	561.9	571.5	638.1	-
18	450	479.4	530.2	546.1	593.7	590.5	609.6	635.0	701.7	-
20	500	530.2	581.0	603.2	650.9	644.5	679.5	695.3	752.4	-
22	550	581.0	631.8	657.2	701.7	698.5	730.3	-	-	-
24	600	631.8	682.6	714.4	771.5	765.2	787.4	835.0	898.5	-

#### GENERAL NOTES

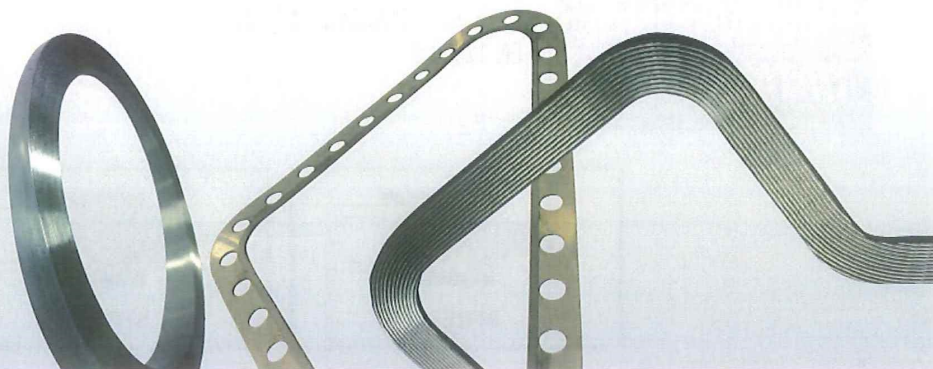
Diameter tolerances:

Up to 1000mm OD +0/-0.4mm  
ID +0.4mm/-0

Above 1000mm OD +0/-10mm  
ID +1.0mm/-0

**Flexitallic**

## HYBRID AND SPECIAL DESIGNS



### Standard Flexpro™ Design Profile

Whenever possible Flexitallic recommend the use of a single piece construction serrated core (no welds), however, in many instances the size of gasket required is larger than the standard commercially available sheet material. In these instances, strip material is ring rolled and welded together using the minimum number of welds possible. Flexitallic ensure that the ends of the ring-rolled metal strip are carefully aligned, both vertically and horizontally, before full penetration fusion welding. This process eliminates any potential leakage paths in the weld location and minimises the heat affected zone.

After careful dressing of the weld concentric serrations are machined on the ring. This eliminates any potential high and/or low spots in the weld area.

Lower cost manufacturing routes involving ring-rolling and welding of pre-serrated metal strip, can result in the integrity of the gasket being compromised (leakage paths at weld locations).

### Serration Profiles

Flexitallic can manufacture Flexpro™ gaskets with various serration profiles. The standard Flexitallic shallow profile has been designed to effect a high integrity seal when covered with any one of a range of facing materials and thicknesses. Other serration profiles as defined by different international or customer standards are available.

### Special Shapes

Flexitallic have designed and built a number of serration profiling machine tools that provide the capability of machining complex shapes while maintaining the concentric serrations on the sealing faces. These shapes can include oval, obround, rectangular and irregular shapes which are often required for manholes, special access door seals and fin fan cooler box covers. The Flexpro™ core can be supplied in a wide range of thicknesses from 2.0mm upwards.

The Flexpro™ design is especially suited for use in connections with narrow radial widths commonly found in fin fan plug gaskets and other applications where space is limited such as floating head and valve body and bonnet locations.

In addition to complex shapes, Flexitallic have successfully provided Flexpro™ kammprofile gaskets for use on misaligned flanged connections. These 'wedge' shaped gasket are machined to meet a specific misalignment angle.

### Pass Bars

The Flexpro™ kammprofile section is commonly supplied in pass bar form and incorporated into the tube side of multi-pass heat exchanger gaskets.

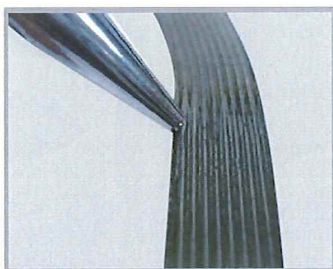
### Hybrid Designs

For difficult sealing applications, hybrid technology can be applied to provide a high integrity assembly. Flexitallic can provide sealing solutions where Flexpro™ sealing technology is combined with other gasket styles such as spiral wound and Change gaskets. The metal core of the Flexpro™ section of the gasket provides additional seal integrity, compression limitation and rigidity.

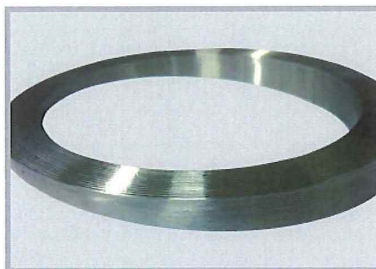
For difficult and special applications please contact the Flexitallic Applications Engineering team.

### Re-Facing Flexpro™ Gaskets

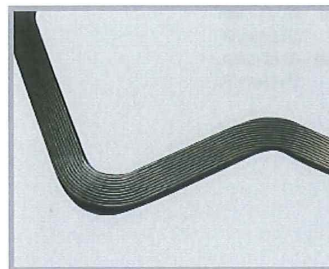
Typically a gasket is used only once, however, when using large diameter or expensive core material it may be cost effective to re-face and re-use the Flexpro™ gasket. This service can be provided by Flexitallic or undertaken on site by suitable personnel following appropriate training.



*Flexitallic processes eliminate potential leakage paths at weld location.*



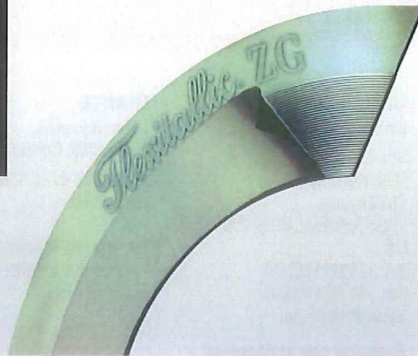
*Special shapes.*



*Special shapes.*



## SUPERIOR PERFORMANCE BY DESIGN

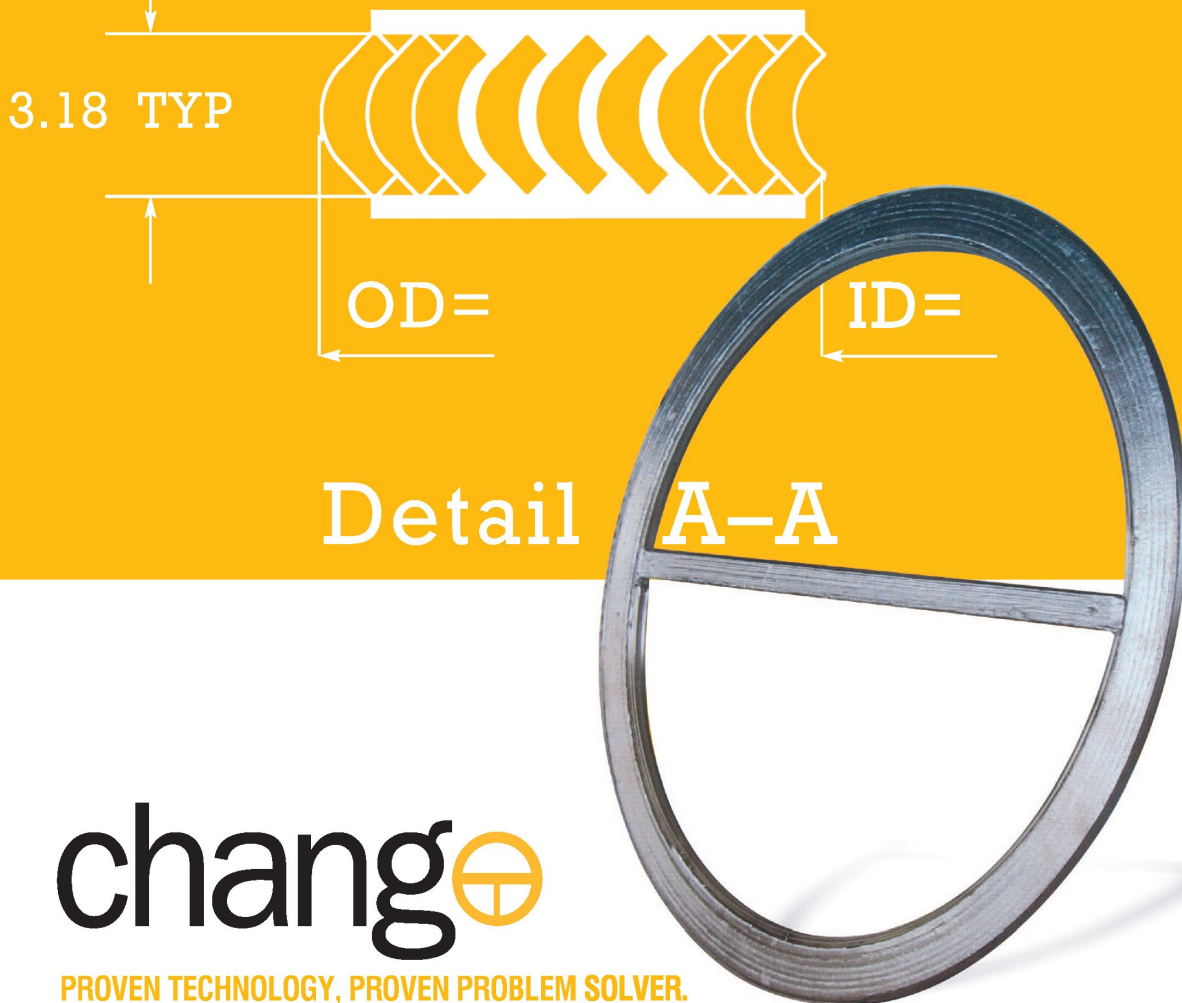


### WHY FLEXPROM™ KAMMPROFILE GASKETS?

<b>Proven Design</b>	Many years of proven success in sealing difficult applications.
<b>Superior Sealing Tightness and Safety</b>	Correct material selection provides longer service life, no need to 'hot torque', reduced emissions and reduced maintenance requirements.
<b>Low Seating Stress</b>	Ideal for light flanges with limited bolt load, as well as highly loaded flanges.
<b>Different Shapes</b>	Flexitallic production methods provide the capability of manufacturing a wide range of sizes in circular and non-circular shapes to suit a wide range of flange types.
<b>Wide Range of Materials</b>	Flexpro™ gasket metal cores and soft facings are selected from a wide range of materials to suit specific applications.
<b>Wide Pressure Range</b>	Suitable for use on all standard flange pressure classes and norms.
<b>Wide Temperature Range</b>	Suitable for use in cryogenic service up to 1000°C
<b>Conformable Sealing Surfaces</b>	The soft conformable sealing faces of the Flexpro™ gaskets, are more tolerant to smooth and or damaged flange sealing faces.
<b>Reproducible Construction</b>	The Flexitallic manufacturing processes provide a highly repeatable process from one manufacturing batch to another.
<b>Easy to Handle and Install</b>	The rigid and stable core of the Flexpro™ gasket facilitates easy handling and installation, with reduced risk of damage to the gasket.
<b>Fire Safe</b>	Material specific, Flexpro™ gaskets are API-6FB Fire Safe.
<b>Re-usable</b>	Flexpro™ gaskets can be re-faced and re-used.
<b>Replaces Double Jacketed Gaskets</b>	Flexpro™ gaskets are a direct replacement for double jacketed gaskets. Note: Where Nubbins (stress raisers) are present, please check with Flexitallic Applications Engineering Team.
<b>Space Limitations</b>	Flexpro™ gaskets can be manufactured with narrow seal land widths
<b>Cost Effective</b>	Longer service life, less maintenance, reduced emissions.

# THE ONE CONSTANT IS CHANGE

*Flexitallic*<sup>®</sup>



# CHANGE HISTORY

IT'S MADE LIKE NO OTHER,  
SEALS LIKE NO OTHER,  
AND PERFORMS 60% LONGER!

**CHANGE, IT'S SAFE.**

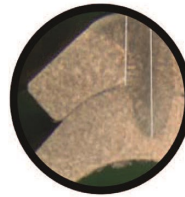


## THE CHANGE GASKET. UNIQUELY MANUFACTURED.



### SHAPE

- > + 5X Thickness Change
- > 304 - 316L & Others
- > Develops a Uniquely
- > Solid Gasket



### LASER WELDED

- > Higher unit adhesion
- > Pin point accuracy
- > Solid unit construction

## ENGINEERED LIKE NOTHING ELSE. TO PERFORM LIKE NOTHING ELSE.

When we invented the spiral wound gasket in 1912 there was nothing like it. 100 years later, we introduced the Change gasket, an incredibly resilient metal-wound heat exchanger gasket that's designed to deliver a seal with the most dynamic recovery. Today there are thousands of Change gaskets in service. Change is manufactured with proprietary equipment, using a 5 x thicker metal spiral and a unique laser welding process that penetrates completely through the winding wire so it requires no outer ring. Best of all, it's proven to perform without fail at least 60% longer than any other heat exchanger gasket, CGI spiral wound, double jacketed, CMG, or kammprofile.

### AND THAT'S A GAME CHANGER.

THE Change GASKET IS  
AVAILABLE WITH A LOCATING  
RING IN ALL SIZES—  
UPON REQUEST





## CHANGE GASKET BENEFITS

Features/Benefits	Spiral Wound Gasket	Flexpro (kammprofile)	CHANGE Gasket
Blowout Resistant	●	●	●
Excellent Tightness	●	●	●
Excellent Recovery	Yes, improved with HT Inc X750	●	●
Cyclic Conditions	Yes, HT Inc X-750 Recommended	●	●
Good Handleability	●	●	●
Low Seating Stress	Not in all sizes/Pressure Ratings	●	●
Use on Nubbin, when centred	●	●	●
Flexibility Sealing Pipe Flanges	●	Potential Issue	●
<b>Potential to:</b> Reduce Complexity by Eliminating Spring Washers	Only with HT Inc X750	●	●
<b>Potential to:</b> Reduce Man Hours Required for Re-Torque	Only with HT Inc X750	●	●
<b>Potential to:</b> Reduce Man Hours by Eliminating Hot Torquing	Only with HT Inc X750	●	●

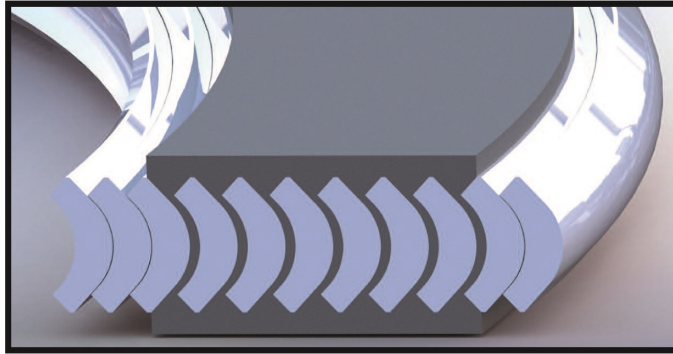
### COMPRESSION VS. RECOVERY AT 124MPa (18,000 psi) GASKET STRESS

Gasket Style	% compression	% recovery
Change	30	34
CGI X-750HT	24	34
CGI, 316SS	30	26
DJ	28	7
Kammprofile	25	6

# change

The high level of stored energy gives the Change gasket extremely high recovery. In a compression test against other gaskets, the Change gasket recovered almost five-times better than Kammprofile and DJ gaskets.

## CROSS SECTIONAL CUTAWAY



Wound like a spiral. Faced like a kammprofile.

## GASKET CONSTANTS

<b>ASME m</b>	2.5
<b>ASME Y</b>	6,400 psi (44.1 MPa)
<b>PVRC Gb*</b>	1,124 psi (7.75 MPa)
<b>PVRC a*</b>	0.25
<b>PVRC Gs*</b>	16.1 psi (0.11 MPa)

\*Austenitic St.St. 300 series/FG

<b>Available Materials</b>	<b>Winding Materials</b>	304, 316L, 347SS & Inconel 625 available in 3.20mm (0.125") and 4.50mm (0.177")
		Model and Inconel X750 are available in 3.20mm (0.125") only
	<b>Filler &amp; Facing Materials</b>	Flexicarb SEL (other grades of flexible graphite available on request)
		PTFE and Thermiculite® (TH855) also available
<b>Locating</b>	<b>Carbon Steel outer guide ring - other metals available</b>	
<b>Dimensions</b>	<b>Minimum Diameter</b>	25.4mm (1") ID
	<b>Maximum Diameter</b>	2540mm (100") ID - for larger diameters contact Applications Engineering
<b>Thickness across wire</b>	<b>3.20 up to 600mm Dia (0.125" up to 24")</b>	
	<b>4.50 above 600mm Dia (0.177" above 24")</b>	
<b>Maximum Recommended Radial Width</b>	<b>25.4mm (1") for larger widths contact Applications Engineering</b>	
<b>Minimum Radial Width</b>	<b>9.5mm (3/8") for narrower widths contact Applications Engineering</b>	
<b>Shapes</b>	<b>Round up to 2540mm (100") or small oval up to 600mm (24")</b>	



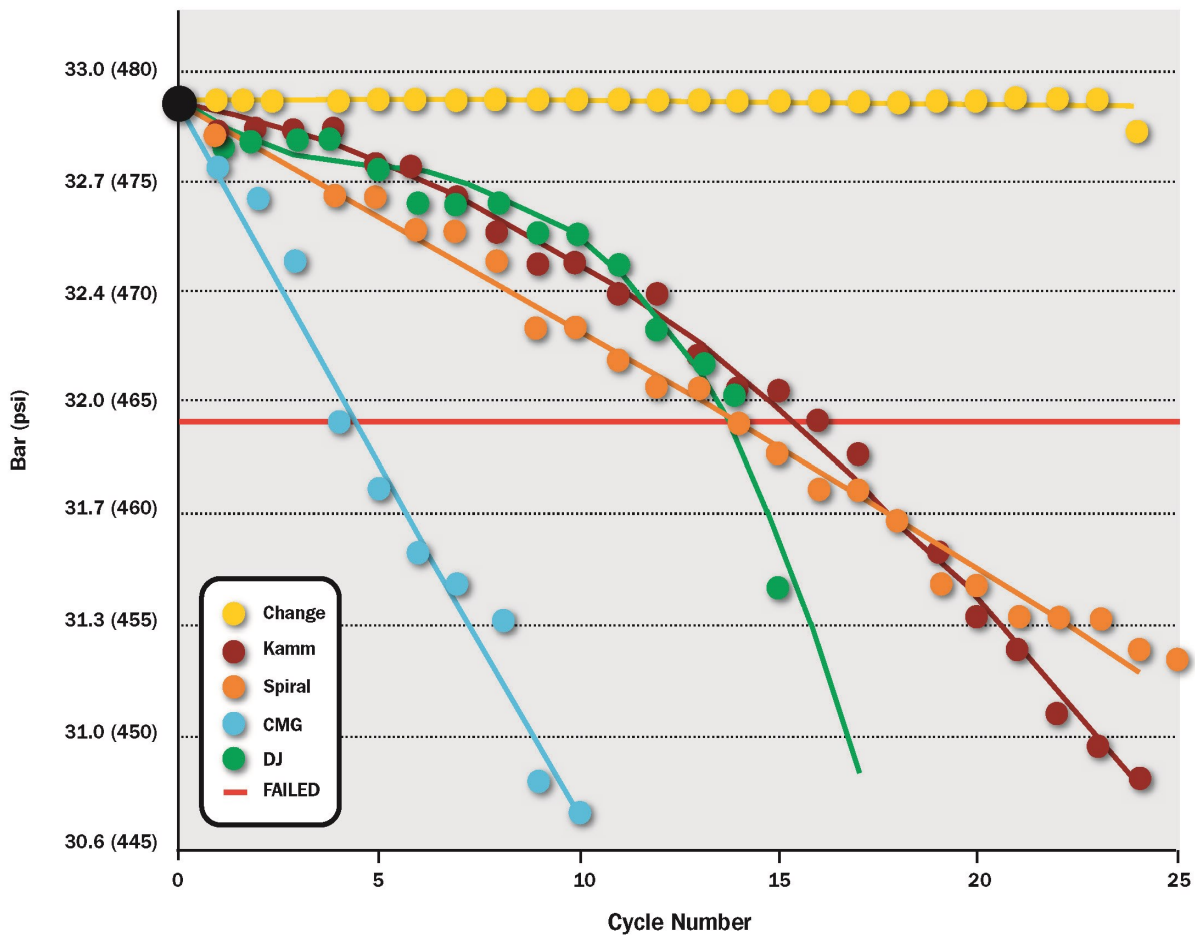
## THERMAL TEST CYCLE - 24 CYCLES

USA Refinery specified rig and test represents the potential typical number of temperature fluctuations on a refinery over 4 years with no re-torque.

- 4" Class 300, ANSI B16.5 WNRF, ASTM A B16 Studs
- Thermal Cycle Phase
  - Purge and Heat up to 302°C (608°F) at 3.5°F/ min (temp chosen so oxidation would not skew results)
  - Pressurize to 480 psi (33 bar)
  - Hold 1 hr and measure pressure decay
  - Unassisted Cooling to Ambient
  - Re-heat up to 302°C
  - Repeat 24 times unless gross failure occurs
  - Approximately 24 hours per cycle
- Max allowable P drop: 14.5 psi (1 bar) over the full test

## PRESSURE VS. CYCLE NUMBER

Across a 24-day, 24-cycle pressure vs thermal cycle test at 302°C (608°F) replicating industry application conditions, the Change gasket lost a total of 1.5 psi (0.1 bar), comfortably meeting the test pass rate, and outperforming every other gasket material. See graph below.





# change<sup>+</sup>STORY

## SUCCESSFUL APPLICATION, FERTILIZER INDUSTRY

- Superheat Exchanger
- Change gaskets installed October 2013 and “have withstood” 15 thermal cycles from ambient to 462°C (865°F) during the first 9 months of service
- Per Operations, they are “still performing well and remain in service”
- No re-torquing or hot torquing has been required
- NOx Gas & Steam
- Continuous Operating Conditions: 462°C (865°F), 1.04 MPa (150 psi)
- 36" (914.4mm) OD, 304 SS wire, Thermiculite
- Replaced Double Jacketed style that failed after 3 cycles

## SUCCESSFUL APPLICATION, REFINING

- Application cycles from ambient to 379°C (715°F)
- Typically experience 28 thermal cycles between major outages requiring several gasket replacements
- Change in service since April 2013 with no issues to date and has already out-performed all previously attempted gaskets
- 63" (1600mm) diameter Change gasket, 3.52 MPa (510 psi)

## SUCCESSFUL APPLICATION, CHEM PROCESSING

- Molten Sodium
- Operating Conditions: 0.104 MPa (15 psi), 182°C (360°F) with short term cycling to 815°C (1500°F)
- Flexible graphite tanged sheet caused a fire
- Change gasket safely and effectively sealing several WNRF to Lap Joint NPS flanged connections since November 2013

## SUCCESSFUL APPLICATION, BOILER MANWAYS

- This Steel Mill converted all Boiler Manways to Change gaskets in March 2012
- The inherent resiliency of a Change gasket reacts ideally to changing loads when a boiler ramps up or down, expected or not
- Improved handling on larger diameter gaskets
- Replacing graphite spirals & tanged sheet

## SUCCESSFUL APPLICATION, STEAM PIPING SYSTEM2

- Change gasket sealing all steam piping and headers since February 2013 in this Pulp & Paper Mill 427°C (800°F), 0.62 MPa - 1.48 MPa (90psi - 215psi)
- Replaced standard spiral wound gaskets

## SUCCESSFUL APPLICATION, SEALING OVER NUBBIN

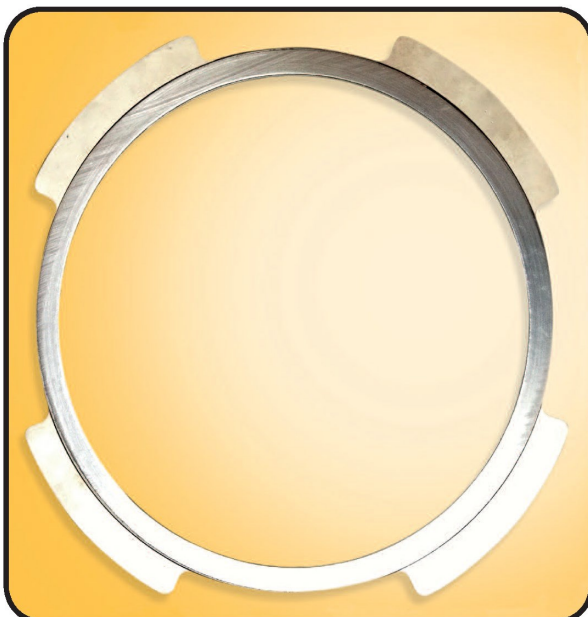
- Double Jacketed (DJ) gasket continuously leaked in this exchanger sealing Steam at 343°C (650°F), 2.24 MPa (325 psi)
- Change gasket dimensioned to centre and seal over existing nubbin
- Per the refinery's Sr. Maintenance Engineer, it has been “working without leaks” since July 2013

*Flexitallic*®



## CHANGE SUMMARY

- Construction is more robust than a spiral and kammprofile
- Compression is more consistent than a spiral and kammprofile
- Creep is VERY low
- Recovery is VERY high
- Seals extremely well, especially thermal cycles
- Crush resistant; no inner ring/compression stop required
- Fits most – if not all – flange arrangements
- Available in most industrial metals
- Fire safe to API 6FB
- TA LUFT approved (in accordance with VDI Guideline 2440)



**A GASKET THAT'S  
BETTER THAN ANY GASKET ON THE MARKET.  
EVEN OURS!**

**chang**⊕



*Flexitallic*



innovate / customize / educate

# FLANGE RESCUE GASKET



Proactive and reactive  
sealing solutions that  
save you time and money.

# SHUT DOWNS COST INDUSTRY MILLIONS

## PROTECTION FOR YOUR PLANT IS NOW HERE

When corrosion or damage occurs to flange faces, impact on operating costs due to downtime repairs can be significant. So what if you could fit a product to new assets, that not only extends the life of equipment, but also offers additional corrosion inhibiting properties?

The Flange Rescue Gasket (FRG) can be used for **remedial repairs** on corroded equipment AND as a **preventative solution** on new equipment to prolong its life and avoid costly shutdowns. The FRG is also easy to install.

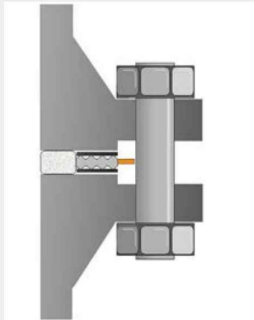
## COST EFFECTIVE SOLUTIONS FOR FLANGE CORROSION

A direct response to the oil and gas industry's requirement for effective closure on damaged flange faces, a full range of cost-effective FRG products is available for a wide range of hostile environments for use in:

- Oil and gas
- Chemical
- Power generation
- Petrochemical



## THE WORLDS ONLY FLANGE RESCUE GASKET



The FRG enables bolted joints to be easily and effectively sealed to prevent internal corrosion. The soft SIGMA inner ring of the FRGs conform seamlessly to the flange face, even if already damaged to:

- Save you time and reduce lost production
- Provide a major cost saving when compared with replacing flanges, welding and machining
- Gets you back up and running within a day.





# FLANGE RESCUE GASKET



## FIRE SAFE. GUARANTEED

### FRG-FS

The FRG-FS is a fire-safe gasket that uses our exclusive, insulating, fire resistant material, **Thermiculite®**, to effectively seal damaged flanges even at high temperatures.

Thermiculite® is certified to the API 6FB fire test which means it is ideal for use on Hydrocarbon systems. Unlike graphite, Thermiculite is inert and inorganic so doesn't promote corrosion especially in offshore environments.

FRG gaskets are sized to suit standard ASME B16.5 flanges, therefore there is no need for alterations or special adaptations, however if you have a bespoke application we can design and manufacture to suit your requirements.



We can also provide a Subsea FRG which features a unique identification handle for easy and safe installation.



#### IDEAL FOR:

- Topside & subsea applications
- Seawater pipework
- Vessel & equipment nozzle connections
- Hydrocarbon systems
- Cooling water applications
- Raised face to RTJ connections

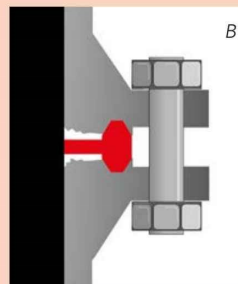
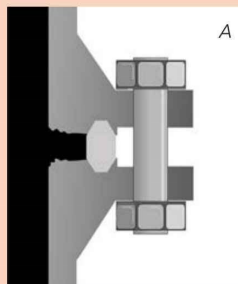
# RING JOINT



## SPECIALIST SEALING AT HIGH PRESSURE

**FRG-RJ**

Ring type joints are used extensively in the oil and gas industry or where very high pressures are used. Traditional RTJ flanges corrode and erode due to the stand-off between the flanges creating a crevice. The FRG-RJ fills this gap so preventing and repairing leaking flanges. The design is matched to the pipe bore to ensure a smooth internal diameter even at the flange.



A: standard Octagonal RTJ  
- liquid can get in between flanges and cause erosion/ corrosion in this area.

B: FRG-RJ - inboard of the RTJ is filled with SIGMA PTFE on an integral metal support  
- fills the gap thus eliminating the problem.

### IDEAL FOR:

- High pressure applications
- Topside & subsea pipework
- Hydrocarbon & seawater systems
- Matched to pipe bore to:
  - Ensure successful pigging operations
  - Minimise turbulent flow



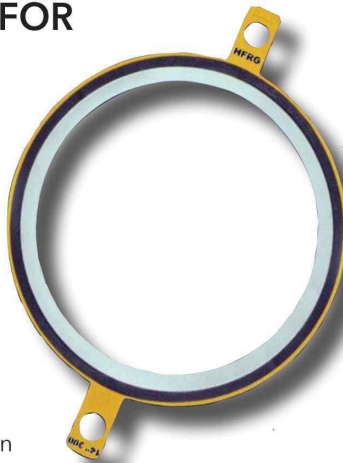
# HF ALKYLATION



## ULTIMATE SEALING FOR CRITICAL SERVICES

### FRG-HF

Typical refinery HF Alkylation units are plagued with flange corrosion because traditional gasket solutions leave crevices and gaps. The FRG-HF is designed to eliminate all crevices and prevent the onset of corrosion ensuring reliable and leak free operations. Alternative materials can be selected to suit other chemical applications if required.



#### BENEFITS:

- Eliminates costly, time consuming repairs
- Avoid the use of sealing clamps
- Capable of sealing against partial existing corrosion

## FRG-HF Success Story

### UOP Licensed HF Alkylation Unit

- Flanges that chronically develop leaks after start-up requiring subsequent clamps have sealed with the FRG-HF with no leaks or clamps to date since January 2012.
- Most FRG-HF gaskets are in the most difficult service - the Depropanizer.
- Most FRG-HF is sealing against repaired as well as damaged surfaces.
- No changes or Improvements were made to installation procedures. Success is truly from the gasket as opposed to improved installation or controlled torquing.

***"Maintenance and Operations love the new gasket and want to use it everywhere"***

# UNCOMPROMISING SOLUTIONS FOR UNCOMPROMISING CONDITIONS

## THE FRG PRODUCT RANGE



### FLANGE RESCUE GASKET - ORIGINAL

- Restructured Sigma® PTFE bonded to high integrity metal core
- Leak-free seal and blow out resistance
- Bright & easily identifiable for inspection
- Corrosion resistant coating.



### FIRE SAFE

- Thermiculite® high temperature insulating corrosion resistant material
- Certified to API 6FB for fire-safe applications.



### HF ALKYLATION

- Low stress sealing Sigma® - a tighter seal
- Fire-safe graphite faced serrated metal core
- Designed for ease of identification with problematic connections on HF Acid Plants.



### HIGH PRESSURE

- Stops turbulent media flow to prevent erosion, corrosion and flange degradation
- Available in Style R Oval, R Octag, RX and SRX
- Ideal for topside or sub-sea applications.



### CRYOGENIC

- Aluminium core as standard
- Core material can be adapted to match the flange materials
- PTFE ring performs in temperatures from cryogenic to 260°C.



### FRG SUBSEA

- Easy sub-sea installation with integrated removable handle
- Use to connect RTJ & RF flanges.



*Flexitallic*

The superior sealing  
material for proactive  
corrosion prevention.

*Flexitallic*

[www.corriculite.com](http://www.corriculite.com)

**CORRICULITE**  
Protection. Sealed in.



#### THE BENEFITS OF CORRICULITE ARE CLEAR

- Fire Safe to API 6FB
- Reduced maintenance costs
- Reduces costly shutdowns
- Maintains seal integrity
- Extends equipment life
- Eliminates safety & environmental risks



Corrosion caused by use of conventional graphite gaskets

**CORRICULITE**  
 Protection. Sealed in.

### Corriculite: the new industry standard for sealing solutions in corrosive environments.

#### Superior sealing solutions since 1912

Responding to customer demands for an improved material with strong anti-corrosion characteristics Flexitallic has created **Corriculite** - a filler material for spiral wound gaskets specifically designed for use in corrosion-sensitive environments, such as seawater and hydrocarbon services, across a number of industries, including oil and gas, power and marine.

This revolutionary, non-conductive filler material provides sealing performance and corrosion resistance unlike any other gasket material on the market. Comparative tests show **Corriculite** delivers corrosion protection and sealing properties that far exceed other materials currently available.

Conventional graphite gaskets for instance, promote the initiation and propagation of corrosion of flanges due to graphite's electrical conductivity and position in the galvanic series, leading to premature failure and leakage.

#### Next generation of flange protection

Choosing the right gasket is crucial to avoid the onset of corrosion and subsequent unwanted costs, disruption and safety concerns. **Corriculite** is an inert, non-conductive filler material that remains inactive in corrosion mechanisms and prevents galvanic corrosion, to ensure seals maintain their integrity.

A winning combination of optimum sealing and anti-corrosion properties. When it comes to gasket use in corrosion sensitive environments, there really is no material like **Corriculite** for cost-effective, flange corrosion management.

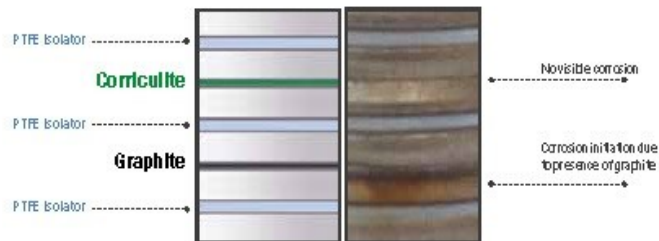


Joints in seawater and hydrocarbon services are vulnerable to gasket degradation and flange face corrosion, which results in increased costs, lost production as well as safety and environmental concerns, unscheduled downtime and reduced plant availability.

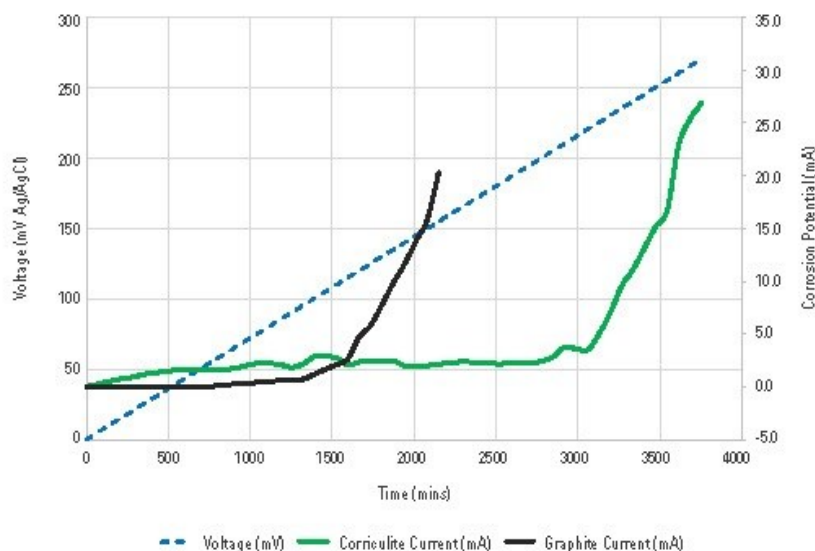


## Corriculite: 100 times tighter than graphite

For sealing reliability and corrosion protection, nothing beats **Corriculite** - The new and advanced sealing material for corrosion sensitive environments



**Corrosion testing (Graph 1):** Plot comparing graphite and **Corriculite** gaskets with increasing applied voltage.



### A proven solution

A number of benchmark tests have been carried out to validate the performance of **Corriculite** as a sealing material in corrosion sensitive conditions:

### Corrosion testing (Graph 1)

This testing covers the evaluation of gasket sealing materials when exposed to a salt water environment over time. Corrosion was not seen in the **Corriculite** test cells whereas with graphite, corrosion had been initiated and was clearly visible. Electrochemical evaluation showed **Corriculite** to be significantly better when compared to graphite under the same conditions.

### EN13555 sealing testing (Graph 2)

Measures leakage rates at different gasket seating stresses and showed **Corriculite** to have superior sealing performance compared to graphite.

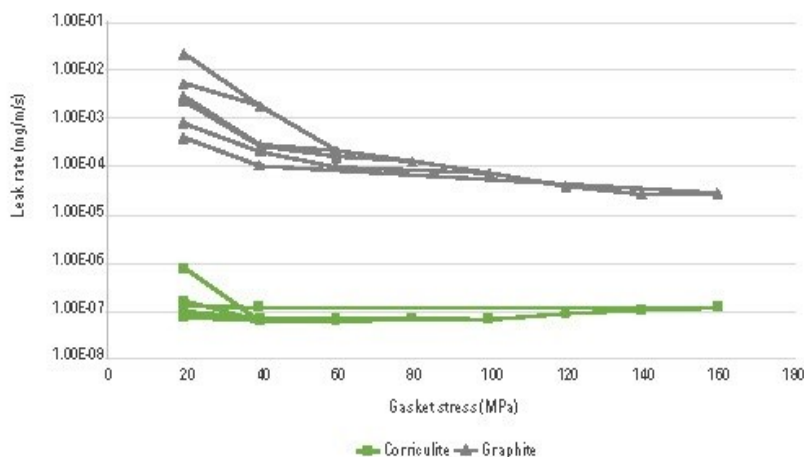
### Submerged testing

Used to evaluate sealing capacity under real world conditions, results showed a loss of pressure of only 1% for **Corriculite** compared to 17% in the graphite gasket.

### Thermal cycle testing

Used to evaluate gaskets' sealing performance under thermal cyclic loading. **Corriculite** lost less than 1bar of pressure over 10 cycles, successfully exceeding the test requirements.

**Sealing testing (Graph 2):** Leakage comparison at room temperature, a flat line indicates no change in sealing performance.



# Flexitallic®

## PRODUCT DATASHEET

### CORRICULITE® 235



Corriculite is a specially formulated spiral wound filler material developed for use in sealing applications where flange corrosion is a concern; especially in upstream oil and gas operations where sea water may be present.

**CORRICULITE®**  
Protection. Sealed in.

This Data Sheet refers to the material as supplied. The information contained herein is given in good faith, but no liability will be accepted by the Company in relation to same.

We reserve the right to change the details given on this Data Sheet as additional information is acquired. Customers requiring the latest version of this Data Sheet should contact our Applications Engineering Department.

The information given and, in particular, any parameters, should be used for guidance purposes only. The Company does not give any warranty that the product will be suitable for the use intended by the customer.

#### Health & Safety

For further Health and Safety information please see the relevant Material Safety Datasheets or contact Flexitallic Ltd.

#### Service

Flange face corrosion at the flange gasket interface is well documented in seawater and hydrocarbon services typically found in upstream hydrocarbon processing and storage, power generation and desalination applications.

Flexitallic Corriculite uses the unique properties of vermiculite to create a non-conductive, corrosion preventing material to combat the problem of galvanic corrosion associated with graphite filled gaskets.

The spiral wound gasket is a proven design, providing reliable sealing performance and high levels of gasket resilience. When used in combination with Corriculite filler it provides a high integrity, tight seal which is also fire safe according to the API 6FB test.

Corriculite filled gaskets are available to suit both standard pipeline and specially designed vessel flanges.

Gasket configuration and metal selection are based on application details.

#### Fire Safety:

API 6FB fire test pass

#### Temperature Range:

-40°C (-40°F) to 225°C (437°F)

#### Maximum Service Pressure:

ASME B16.5 Class 2500

#### Filler Material: CR235

#### Gasket Configurations:

CG & CGI - Raised & flat face flanges

RIR – Spigot/recess flanges

R – Flat/groove, tongue/groove flanges

Sealing Element	R
Outer Ring Only	CG
Outer & Inner Ring	CGI
Inner Ring Only	RIR

#### Availability

Gasket size: Up to 3000 mm

Thickness range: 4.5mm to 7.2mm

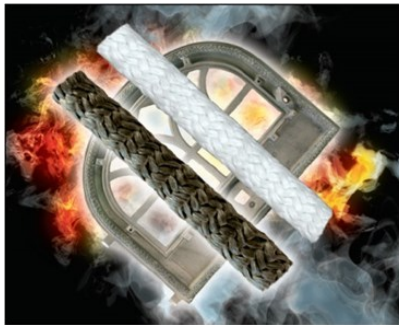
#### ASME Constants

m	3
Y	10,000 psi

#### Typical Physical Properties

Leachable sulphur	ppm	<75
Leachable fluoride ion content	ppm	<30
Leachable chloride ion content	ppm	<50

## PYROGLASS GLASS FIBRE ROPES, LAGGINGS & TAPES



**Ropes**



**Tapes**



**Lagging**

High temperature sealing and insulation materials for use in solid fuel, oil and gas fired burners, boilers and stoves. Typical applications are boiler casing seals, heat exchanger seals, combustion door seals, flue seals and window seals.

Suitable for operation in applications up to 600°C. Pyroglass products are resistant to oils, most chemicals and solvents, will not rot and is unaffected by bacterial growth.

PYROTAPE is available in plain and ladder form. A double-sided adhesive tape can be applied to both types to assist location.

Part No.	Description	Size	Colour	Roll length
PG103	P/G SQUARE SEAL	6mm	WHITE	100M
PG100	P/G SQUARE SEAL	10mm	WHITE	50M
PG101	P/G SQUARE SEAL	12mm	WHITE	50M
PG158	P/G SQUARE SEAL	15mm	WHITE	50M
PG102	P/G SQUARE SEAL	25mm	WHITE	30M

PG112	P/G ROPE LAGGING	6mm	WHITE	30M
PG113	P/G ROPE LAGGING	8mm	WHITE	30M
PG104	P/G ROPE LAGGING	10mm	WHITE	30M
PG105	P/G ROPE LAGGING	12mm	WHITE	30M
PG106	P/G ROPE LAGGING	15mm	WHITE	30M
PG107	P/G ROPE LAGGING	20mm	WHITE	30M
PG108	P/G ROPE LAGGING	25mm	WHITE	30M
PG109	P/G ROPE LAGGING	30mm	WHITE	30M
PG110	P/G ROPE LAGGING	40mm	WHITE	30M
PG111	P/G ROPE LAGGING	50mm	WHITE	30M

PG123	P/G PGS.10 ROPE	5mm	WHITE	50M
PG124	P/G PGS.10 ROPE	6mm	WHITE	50M
PG125	P/G PGS.10 ROPE	8mm	WHITE	50M
PG116	P/G PGS.10 ROPE	10mm	WHITE	50M
PG117	P/G PGS.10 ROPE	13mm	WHITE	50M
PG118	P/G PGS.10 ROPE	14mm	WHITE	50M
PG119	P/G PGS.10 ROPE	15mm	WHITE	50M
PG120	P/G PGS.10 ROPE	16mm	WHITE	50M
PG121	P/G PGS.10 ROPE	20mm	WHITE	50M
PG164	P/G PGS.10 ROPE	20mm	BLACK	30M
PG122	P/G PGS.10 ROPE	25mm	WHITE	50M

## PYROGLASS GLASS FIBRE ROPES, LAGGINGS & TAPES CONTINUED

Part No.	Description	Size	Colour	Roll length
PG126	P/G PGS.11 ROPE	13mm	WHITE	50M
PG127	P/G PGS.11 ROPE	16mm	WHITE	50M
PG128	P/G PGS.11 ROPE	20mm	WHITE	50M

PG129	P/G TAPE PLAIN	3 x 10mm	BLACK	50M
PG130	P/G TAPE PLAIN	3 x 20mm	BLACK	50M

PG141	P/G TAPE PLAIN	3 x 25mm	WHITE	50M
PG142	P/G TAPE PLAIN	3 x 40mm	WHITE	30M
PG143	P/G TAPE PLAIN	3 x 50mm	WHITE	50M
PG144	P/G TAPE PLAIN	3 x 75mm	WHITE	50M
PG145	P/G TAPE PLAIN	6 x 38mm	WHITE	15M
PG146	P/G TAPE PLAIN	6 x 50mm	WHITE	15M
PG148	P/G TAPE PLAIN	3 x 100mm	WHITE	25M
PG149	P/G TAPE PLAIN	3 x 125mm	WHITE	25M
PG161	P/G TAPE PLAIN	3 x 50mm	BLACK	50M

PG131	P/G TAPE ADHESIVE BACKED	2 x 20mm	BLACK	50M
PG132	P/G TAPE ADHESIVE BACKED	3 x 10mm	BLACK	100M
PG133	P/G TAPE ADHESIVE BACKED	3 x 15mm	BLACK	50M
PG134	P/G TAPE ADHESIVE BACKED	3 x 20mm	BLACK	50M
PG135	P/G TAPE ADHESIVE BACKED	3 x 25mm	BLACK	50M
PG136	P/G TAPE ADHESIVE BACKED	5 x 15mm	BLACK	50M

PG147	P/G TAPE ADHESIVE BACKED	2 x 25mm	WHITE	50M
PG150	P/G TAPE ADHESIVE BACKED	3 x 25mm	WHITE	50M
PG151	P/G TAPE ADHESIVE BACKED	3 x 50mm	WHITE	25M
PG152	P/G TAPE ADHESIVE BACKED	3 x 75mm	WHITE	25M

PG137	P/G LADTAPE ADHESIVE BACKED	3 x 20mm	BLACK	50M
PG138	P/G LADTAPE ADHESIVE BACKED	3 x 25mm	BLACK	50M
PG153	P/G LADTAPE ADHESIVE BACKED	6 x 30mm	BLACK	25M
PG139	P/G LADTAPE ADHESIVE BACKED	6 x 40mm	BLACK	25M
PG163	P/G LADTAPE ADHESIVE BACKED	3 x 50mm	WHITE	25M

PG140	P/G LADTAPE PLAIN	3 x 40mm	WHITE	50M
PG156	P/G LADTAPE PLAIN	3 x 50mm	WHITE	25M
PG157	P/G LADTAPE PLAIN	3 x 75mm	WHITE	25M



## PYROGLASS GLASS FIBRE ROPES, LAGGINGS & TAPES CONTINUED



PGS.10 ROPE



PGS.11 ROPE



ROPE LAGGING



TAPE PLAIN



LADDER TAPE



SQUARE SEAL

# ADVANCED MARINE BEARINGS

*Reinforcing Naval Defence*



**TENMAT** FEROFORM and RAILKO reinforced composite bearings are installed on the surface vessels and submarines of over 30 navies world-wide for their high performance in water-lubricated environment, tolerance to shaft misalignment and their vibration dampening properties. Applications include:

- Propeller Shaft Bearings
- A & P Bracket Bearings
- Rudder & Steering Gear Bearings
- Deck Equipment Bearings
- Lifeboat System Bearings
- Periscope Bearings
- And many others!



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## **FEROFORM T14**



FEROFORM T14 is a composite material made from woven fibre bonded with resin.

FEROFORM T14 has strength, durability, dimensional stability, and excellent wear characteristics and is used in Marine applications for sterntube and rudder bearings.

## **FEROFORM T814**



FEROFORM T814 is a composite material made from woven fibre bonded with resin with PTFE as a friction modifier.

FEROFORM T814 has strength, durability, dimensional stability, low friction, and excellent wear characteristics. It has the ability to run both dry and wet with water lubrication making it extremely useful in Hydro and Marine applications.

In Hydro Electric Power applications FEROFORM T814 replaces traditional grease lubricated bearings to provide a "fit and forget" solution, promoting a cleaner environment whilst reducing operating costs.

Marine bearing applications for FEROFORM T814 include davits, stern rollers, winches, cranes and deck machinery.



## TENMAT FIELD APPLICATIONS

### HYDRO



The ability of TENMAT bearings to work in both dry and wet conditions without grease lubrication means they are used in a wide variety of applications within the Hydropower industry. FEROFORM and FEROGLIDE bearings have been used around the world for many years and there are long lists of references in Francis, Kaplan and Pelton turbines as also in the associated mechanical equipment.

FEROFORM T814 has a low coefficient of friction in both wet and dry conditions. It is used for wicket gates in the upper, intermediate and lower positions, as well as in control linkages. FEROFORM T814 is resistant to abrasive conditions such as water containing silt, which gives high performance in main guide bearings.

FEROGLIDE bearings have the ability to take high loads and are used in oscillating applications such as regulating rings, valve bearings and wicket gate bearings.

### MARINE



FEROFORM and RAILKO bearings offer ship owners, shipyards, designers and OEM's considerable benefits in terms performance, reliability, ease of use, availability and design. They can be supplied in various forms including bushes, fully machined bearings, staves etc.

FEROFORM and RAILKO bearings provide high compressive strength, durability, dimensional stability, and low friction.

Their excellent wear characteristics promote long life, especially in arduous abrasive and sand laden waters. Thus reducing maintenance costs for the end users.

Merchant fleets around the world use FEROFORM T14 for their stern tube and rudder bearing applications, and it has been fitted in more than 8000 vessels worldwide.

FEROFORM T11 and T814 are high wear resistant materials offering low friction rates and are able to operate without need for lubrication, thereby reducing operational and maintenance costs. They are a "fit and forget" solution for applications such as hatch cover pads, slipway pads, stern rollers, davits, deck machinery and marine cranes.

FEROFORM T12 and RAILKO NF21/NF22 are approved and used by Navies worldwide for propeller shaft and rudder bearings, offering reduced stick slip, improved fuel efficiency, lower vibration and reduced wear.

RAILKO NF21 and RAILKO NF22 have been specified and used as water lubricated stern tube bearings for both surface vessels and submarines. RAILKO marine bearings are made out of a hard wearing material that outlives rubber and thermoplastic bearings alike. RAILKO NF materials have been proven to be kind to the shaft counter face even in sediment rich waters. Benefits of RAILKO marine grades include reduced noise, stick slip and shaft wear.

FEROFORM PR18 is an excellent addition to the well established FEROFORM T grade range of bearing materials. FEROFORM PR18 has been fitted on many merchant vessels worldwide and is approved for rudder bearings by all the major marine classification societies. FEROFORM PR18 is the new name for RAILKO RG22. FEROFORM PR grades provide an economical solution to many marine applications including deck machinery, davits, cranes and many more.

## TENMAT FIELD APPLICATIONS CONTINUED

### MARINE CONTINUED

FEROFORM F3637 is used for tank insulation pads for asphalt, sulphur, and bitumen carriers. It has a combination of high insulation, high strength, and controlled friction that means the tanks can expand freely without damage when the tanks are filled and emptied. FEROFORM F3637 pads are a fit and forget solution requiring no maintenance after installation.

Other marine applications for TENMAT materials include hatch cover pads, cutter head bearings, slipway pads, capstans, davit bearings, winches, anchor sheave bushes, and derricks.

### OFFSHORE



The ability of FEROFORM bearings to work with sea water in dirty abrasive environments gives design engineers robust bearing and wear pad solutions for the offshore industries.

FEROFORM T814 is used on Floating Production and Storage Operation (FPSO) turrets horizontal and vertical slide pads due to its low level of friction and resistance to wear. Other applications are for windlasses, jack lift guides, drill string support pivots, fairleads, sheaves, and mooring systems.

FEROFORM PR82 can be used as fingerboard bushes, crane pivot point bearings, stinger roller bearings, fairleads, winches and much more. A self lubricating material, PR82 is often used in place metal bearings offering a cost saving to equipment manufacturers by eliminating complex lubrication systems.

### RENEWABLE ENERGIES



FEROFORM T814 bearings are used in a variety of applications for renewable power such as main turbine shaft bearings and actuation linkages.

For wave and tidal power applications the ability to work well in an aggressive seawater environment is a key reason why designers choose FEROFORM T814.

Other applications include sliding pads and bushes in wind turbines.

### VALVES



FEROGLIDE bearings are used extensively by valve manufacturers as the bearings carry high load whilst maintaining low friction. FEROGLIDE bearings have a metal backing and a composite self lubricating face. This gives a combination of high strength, excellent chemical resistance, and low coefficient of friction which means that FEROGLIDE is the material of choice for oil and gas valves in sub-sea and platform applications.

FEROGLIDE bearings are used in ball valves and butterfly valves for the trunnion guide bushes and stem bearings. Standard and special size FEROGLIDE bearings are supplied in Inconel stainless steel and duplex steel.

FEROFORM T814 bearings are used in applications for clean and waste water. This is due to FEROFORM T814 demonstrating low friction performance and almost no stick slip.



## TENMAT MARINE BEARINGS T14 TUBE

FEROFORM™ T grades were developed to offer the highest performance in all marine applications. All types of vessels from water taxis to super tankers have provided years reliable service fitted with FEROFORM™ rudder and stern bearings in all sea conditions from shallow coastal waters to deep seas, from the Arctic to the Arabian Gulf.

T14 is a cured phenolic resin matrix reinforced with a woven synthetic fibre cloth. A general-purpose grade especially developed for water lubricated applications without the risk of electrolytic corrosion. Has many Marine Classification Society (and high pressure) approvals. Good dry, oil/grease lubricated performance.

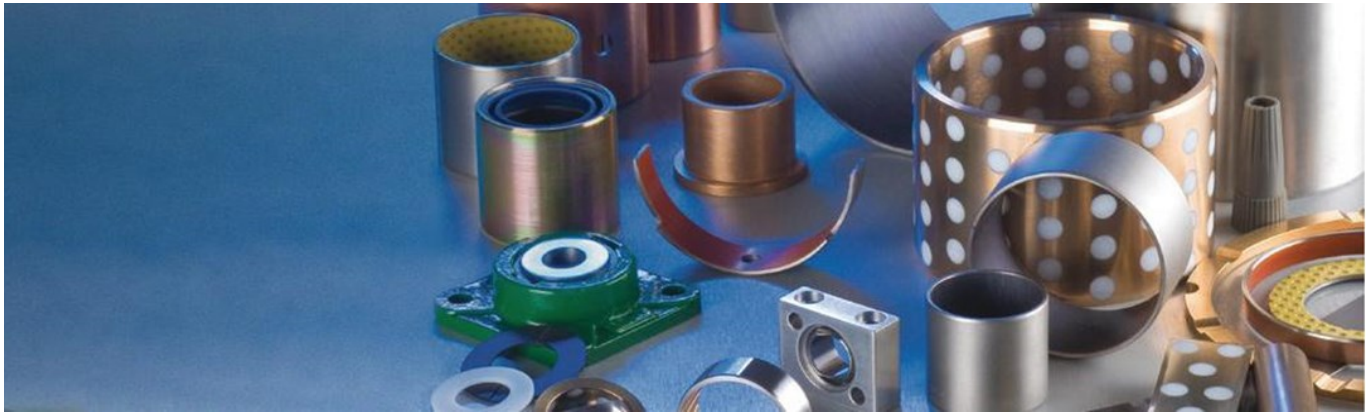
Other grades are available on an indent basis.

PART No.	DESCRIPTION	ID x OD
T11T60-100	T11 FEROFORM TUBE	60 x 100

T12T100-150	T12 FEROFORM TUBE	100 x 150
T12T135-200	T12 FEROFORM TUBE	135 x 200
T12T30-70	T12 FEROFORM TUBE	30 x 70
T12T60-100	T12 FEROFORM TUBE	60 x 100

T14T20-60	T14 FEROFORM TUBE	20 x 60
T14T25-70	T14 FEROFORM TUBE	25 x 70
T14T30-70	T14 FEROFORM TUBE	30 x 70
T14T40-80	T14 FEROFORM TUBE	40 x 80
T14T50-90	T14 FEROFORM TUBE	50 x 90
T14T60-100	T14 FEROFORM TUBE	60 x 100
T14T70-110	T14 FEROFORM TUBE	70 x 110
T14T80-120	T14 FEROFORM TUBE	80 x 120
T14T90-130	T14 FEROFORM TUBE	90 x 130
T14T100-150	T14 FEROFORM TUBE	100 x 150
T14T120-175	T14 FEROFORM TUBE	120 x 175
T14T140-205	T14 FEROFORM TUBE	140 x 205
T14T165-125	T14 FEROFORM TUBE	125 x 165

## GLACIER PLAIN BEARINGS & WASHERS



### Glacier DU



Glacier DU bearings take advantage of the outstanding dry bearing properties of PTFE and combines them with strength, stability, good wear resistance, excellent heat conductivity and low thermal expansion.

Glacier DU consists of three bonded layers: a steel backing strip and a porous bronze matrix, impregnated and overlaid with the PTFE/lead bearing material. Glacier DU can be supplied with a bronze backing strip to provide high corrosion resistance.

- Suitable for rotating, oscillating, reciprocating and sliding movements
- Requires no lubrication
- Provides maintenance free operation
- High static and dynamic load capacity
- Low wear rate
- Seizure resistant
- Suitable for temperatures from -200°C to +280°C
- Good frictional properties with negligible stick slip
- Resists solvents
- No water absorption and therefore dimensionally stable
- Electrically conductive and shows no electrostatic effects
- Good embedability and tolerant of dusty conditions
- Compact and light
- Glacier DU bearings are pre-finished and require no machining after assembly

### Glacier DX



Glacier DX is a composite bearing material developed specifically to operate with marginal lubrication and consists of three bonded layers - a steel backing strip and a sintered porous bronze matrix, impregnated overlaid with a pigmented acetal copolymer bearing material.

- Suitable for rotating, oscillating, reciprocating and sliding movements
- Provides maintenance free operation
- High static and dynamic load capacity

## Glacier DX continued

- Low wear rate
- Seizure resistant
- Suitable for temperatures from -40°C to +120°C
- Good frictional properties
- No water absorption and therefore dimensionally stable
- Compact and light
- Glacier DX bearings are pre-finished and require no machining after assembly. Bushes with an allowance for machining are available on request.

### Basic forms available:

#### Glacier DU

Cylindrical bushes  
Thrust washers  
Strip material  
Flanged bushes (metric sizes only)  
Flanged washers (metric sizes only)

#### Glacier DX

Cylindrical bushes  
Thrust washers  
Strip material

## GLACIER PLAIN BEARINGS & WASHERS

### DU Imperial Bushes & Washers

Part No.	Description	
02DU02	1/8"x3/16"x1/8"	DU BUSH IMPERIAL
03DU04	3/16"x1/4"x1/4"	DU BUSH IMPERIAL
03DU06	3/16"x1/4"x3/8"	DU BUSH IMPERIAL
04DU04	1/4"x5/16"x1/4"	DU BUSH IMPERIAL
04DU06	1/4"x5/16"x3/8"	DU BUSH IMPERIAL
05DU06	5/16"x3/8"x3/8"	DU BUSH IMPERIAL
05DU08	5/16"x3/8"x1/2"	DU BUSH IMPERIAL
06DU06	3/8"x16/32"x3/8"	DU BUSH IMPERIAL
06DU08	3/8"x15/32"x1/2"	DU BUSH IMPERIAL
06DU12	3/8"x15/32"x3/4"	DU BUSH IMPERIAL
07DU08	7/16"x17/32"x1/2"	DU BUSH IMPERIAL
07DU12	7/16"x17/32"x3/4"	DU BUSH IMPERIAL
08DU06	1/2"x16/32"x3/8"	DU BUSH IMPERIAL
08DU08	1/2"x19/32"x1/2"	DU BUSH IMPERIAL
08DU10	1/2"x19/32"x5/8"	DU BUSH IMPERIAL
08DU14	1/2"x19/32"x7/8"	DU BUSH IMPERIAL
09DU08	9/16"x21/32"x1/2"	DU BUSH IMPERIAL
09DU12	9/16"x21/32"x3/4"	DU BUSH IMPERIAL
10DU08	5/8"x23/32"x1/2"	DU BUSH IMPERIAL
10DU10	5/8"x23/32"x5/8"	DU BUSH IMPERIAL
10DU12	5/8"x23/32"x3/4"	DU BUSH IMPERIAL
10DU14	5/8"x23/32"x7/8"	DU BUSH IMPERIAL
11DU14	11/16"x25/32"x7/8"	DU BUSH IMPERIAL
12DU08	3/4"x7/8"x1/2"	DU BUSH IMPERIAL
12DU12	3/4"x7/8"x3/4"	DU BUSH IMPERIAL
12DU16	3/4"x7/8"x1"	DU BUSH IMPERIAL
14DU12	7/8"x1"x3/4"	DU BUSH IMPERIAL
14DU16	7/8"x1"x1"	DU BUSH IMPERIAL
16DU12	1"x1.1/8"x3/4"	DU BUSH IMPERIAL
16DU16	1"x1.1/8"x1"	DU BUSH IMPERIAL
16DU24	1"x1.1/8"x1.1/2"	DU BUSH IMPERIAL
18DU12	1.1/8"x1.9/32"x3/4"	DU BUSH IMPERIAL
18DU16	1.1/8"x1.9/32"x1"	DU BUSH IMPERIAL
20DU12	1.1/4"x1.13/32"x3/4"	DU BUSH IMPERIAL
20DU16	1.1/4"x1.13/32"x1"	DU BUSH IMPERIAL
20DU20	1.1/4"x1.13/32"x1.1/4"	DU BUSH IMPERIAL
20DU28	1.1/4"x1.13/32"x1.3/4"	DU BUSH IMPERIAL
22DU16	1.3/8"x1.17/32"x1"	DU BUSH IMPERIAL
22DU28	1.3/8"x1.17/32"x1.3/4"	DU BUSH IMPERIAL
24DU16	1.1/2"x1.21/32"x1"	DU BUSH IMPERIAL
24DU20	1.1/2"x1.21/32"x1.1/4"	DU BUSH IMPERIAL
24DU24	1.1/2"x1.21/32"x1.1/2"	DU BUSH IMPERIAL
24DU32	1.1/2"x1.21/32"x2"	DU BUSH IMPERIAL
26DU16	1.5/8"x1.25/32"x1"	DU BUSH IMPERIAL
26DU24	1.5/8"x1.25/32"x1.1/2"	DU BUSH IMPERIAL



## GLACIER PLAIN BEARINGS & WASHERS

### DU Imperial Bushes & Washers continued

Part No.	Description	
28DU16	1.3/4"x1.15/16"x1"	DU BUSH IMPERIAL
28DU24	1.3/4"x1.15/16"x1.1/2"	DU BUSH IMPERIAL
28DU32	1.3/4"x1.15/16"x2"	DU BUSH IMPERIAL
30DU16	1.7/8"x2.1/16"x1"	DU BUSH IMPERIAL
30DU36	1.7/8"x2.1/16"x2.1/4"	DU BUSH IMPERIAL
32DU16	2"x2.3/16"x1"	DU BUSH IMPERIAL
32DU24	2"x2.3/16"x1.1/2"	DU BUSH IMPERIAL
32DU32	2"x2.3/16"x2"	DU BUSH IMPERIAL
32DU40	2"x2.3/16"x2.1/2"	DU BUSH IMPERIAL
36DU32	2.1/4"x2.7/16"x2"	DU BUSH IMPERIAL
36DU36	2.1/4"x2.7/16"x2.1/4"	DU BUSH IMPERIAL
36DU40	2.1/4"x2.7/16"x2.1/2"	DU BUSH IMPERIAL
36DU48	2.1/4"x2.7/16"x3"	DU BUSH IMPERIAL
40DU32	2.1/2"x2.11/16"x2"	DU BUSH IMPERIAL
40DU40	2.1/2"x2.11/16"x2.1/2"	DU BUSH IMPERIAL
40DU48	2.1/2"x2.11/16"x3"	DU BUSH IMPERIAL
40DU56	2.1/2"x2.11/16"x3.1/2"	DU BUSH IMPERIAL
44DU32	2.3/4"x2.15/16"x2"	DU BUSH IMPERIAL
44DU48	2.3/4"x2.15/16"x3"	DU BUSH IMPERIAL
44DU56	2.3/4"x2.15/16"x3.1/2"	DU BUSH IMPERIAL
48DU32	3"x3.3/16"x2"	DU BUSH IMPERIAL
48DU48	3"x3.3/16"x3"	DU BUSH IMPERIAL
56DU40	3.1/2"x3.11/16"x2.1/2"	DU BUSH IMPERIAL
56DU60	3.1/2"x3.11/16"x3.3/4"	DU BUSH IMPERIAL
64DU48	4"x4.3/16"x3"	DU BUSH IMPERIAL
64DU60	4"x4.3/16"x3.3/4"	DU BUSH IMPERIAL
64DU76	4"x4.3/16"x4.3/4"	DU BUSH IMPERIAL
80DU48	5"x5.3/16"x3"	DU BUSH IMPERIAL
80DU60	5"x5.3/16"x3.3/4"	DU BUSH IMPERIAL
96DU48	6"x6.3/16"x3"	DU BUSH IMPERIAL
96DU60	6"x6.3/16"x3.3/4"	DU BUSH IMPERIAL

DU06	0.5x0.875x0.063"	DU THRUSTWASHER IMPERIAL
DU07	0.562x1.0x0.063"	DU THRUSTWASHER IMPERIAL
DU08	0.625x1.125x0.063"	DU THRUSTWASHER IMPERIAL
DU09	0.687x1.187x0.063"	DU THRUSTWASHER IMPERIAL
DU10	0.75x1.25x0.063"	DU THRUSTWASHER IMPERIAL
DU12	0.875x1.5x0.063"	DU THRUSTWASHER IMPERIAL
DU14	1.0x1.75x0.063"	DU THRUSTWASHER IMPERIAL
DU16	1.125x2.0x0.063"	DU THRUSTWASHER IMPERIAL
DU18	1.25x2.125x0.063"	DU THRUSTWASHER IMPERIAL
DU20	1.375x2.25x0.063"	DU THRUSTWASHER IMPERIAL
DU22	1.5x2.5x0.063"	DU THRUSTWASHER IMPERIAL
DU24	1.625x2.625x0.063"	DU THRUSTWASHER IMPERIAL
DU28	2.0x3.0x0.093"	DU THRUSTWASHER IMPERIAL
DU30	2.125x3.125x0.093"	DU THRUSTWASHER IMPERIAL
DU32	2.25x3.25x0.093"	DU THRUSTWASHER IMPERIAL

## GLACIER PLAIN BEARINGS & WASHERS

### DU Metric Bushes & Washers

Part No.	Description	
FMB0608DU	6x8x12x8mm	FLANGED DU BUSH
FMB0810DU	8x10x15x10mm	FLANGED DU BUSH
FMB1007DU	10x12x18x7mm	FLANGED DU BUSH
FMB1009DU	10x12x18x9mm	FLANGED DU BUSH
FMB1012DU	10x12x18x12mm	FLANGED DU BUSH
FMB1017DU	10x12x18x17mm	FLANGED DU BUSH
FMB1207DU	12x14x20x7mm	FLANGED DU BUSH
FMB1209DU	12x14x20x9mm	FLANGED DU BUSH
FMB1209DU-B	12x14x20x9mm	FLANGED DU BUSH - BRONZE
FMB1217DU	12x14x20x17mm	FLANGED DU BUSH
FMB1412DU	14x16x22x12mm	FLANGED DU BUSH
FMB1509DU	15x17x23x9mm	FLANGED DU BUSH
FMB1517DU	15x17x23x17mm	FLANGED DU BUSH
FMB1612DU	16x18x24x12mm	FLANGED DU BUSH
FMB1617DU	16x18x24x17mm	FLANGED DU BUSH
FMB1812DU	18x20x26x12mm	FLANGED DU BUSH
FMB1817DU	18x20x26x17mm	FLANGED DU BUSH
FMB1822DU	18x20x26x22mm	FLANGED DU BUSH
FMB2011.5DU	20x23x30x11.5mm	FLANGED DU BUSH
FMB2017DU	20x23x30x16.5mm	FLANGED DU BUSH
FMB2022DU	20x23x30x21.5mm	FLANGED DU BUSH
FMB2511.5DU	25x28x35x11.5mm	FLANGED DU BUSH
FMB2522DU	25x28x35x21.5mm	FLANGED DU BUSH
FMB3026DU	30x34x42x26mm	FLANGED DU BUSH
MB0410DU	4x5.5x10mm	DU BUSH
MB0505DU	5x7x5mm	DU BUSH
MB0510DU	5x7x10mm	DU BUSH
MB0606DU	6x8x6mm	DU BUSH
MB0608DU	6x8x8mm	DU BUSH
MB0610DU	6x8x10mm	DU BUSH
MB0710DU	7x9x10mm	DU BUSH
MB0808DU	8x10x8mm	DU BUSH
MB0810DU	8x10x10mm	DU BUSH
MB0812DU	8x10x12mm	DU BUSH
MB1006DU	10x12x6mm	DU BUSH
MB1008DU	10x12x8mm	DU BUSH
MB1010DU	10x12x10mm	DU BUSH
MB1012DU	10x12x12mm	DU BUSH
MB1015DU	10x12x15mm	DU BUSH
MB1020DU	10x12x20mm	DU BUSH
MB1208DU	12x14x8mm	DU BUSH
MB1210DU	12x14x10mm	DU BUSH
MB1212DU	12x14x12mm	DU BUSH
MB1215DU	12x14x15mm	DU BUSH

## GLACIER PLAIN BEARINGS & WASHERS

### DU Metric Bushes & Washers continued

Part No.	Description	
MB1220DU	12x14x20mm	DU BUSH
MB1225DU	12x14x25mm	DU BUSH
MB1310DU	13x15x10mm	DU BUSH
MB1410DU	14x16x10mm	DU BUSH
MB1410DU-B	14x16x10mm	DU BUSH - BRONZE BACKED
MB1412DU	14x16x12mm	DU BUSH
MB1415DU	14x16x15mm	DU BUSH
MB1415DU-B	14x16x15mm	DU BUSH - BRONZE BACKED
MB1420DU	14x16x20mm	DU BUSH
MB1425DU	14x16x25mm	DU BUSH
MB1515DU	15x17x15mm	DU BUSH
MB1525DU	15x17x25mm	DU BUSH
MB1612DU	16x18x12mm	DU BUSH
MB1615DU	16x18x15mm	DU BUSH
MB1620DU	16x18x20mm	DU BUSH
MB1625DU	16x18x25mm	DU BUSH
MB1720DU	17x19x20mm	DU BUSH
MB1815DU	18x20x15mm	DU BUSH
MB1820DU	18x20x20mm	DU BUSH
MB1825DU	18x20x25mm	DU BUSH
MB2015DU	20x23x15mm	DU BUSH
MB2020DU	20x23x20mm	DU BUSH
MB2025DU	20x23x25mm	DU BUSH
MB2030DU	20x23x30mm	DU BUSH
MB2215DU	22x25x15mm	DU BUSH
MB2220DU	22x25x20mm	DU BUSH
MB2225DU	22x25x25mm	DU BUSH
MB2230DU	22x25x30mm	DU BUSH
MB2430DU	24x27x30mm	DU BUSH
MB2520DU	25x28x20mm	DU BUSH
MB2525DU	25x28x25mm	DU BUSH
MB2525DU-B	25x28x25mm	DU BUSH - BRONZE BACKED
MB2530DU	25x28x30mm	DU BUSH
MB2820DU	28x32x20mm	DU BUSH
MB2830DU	28x32x30mm	DU BUSH
MB3015DU	30x34x15mm	DU BUSH
MB3025DU	30x34x25mm	DU BUSH
MB3030DU	30x34x30mm	DU BUSH
MB3040DU	30x34x40mm	DU BUSH
MB3220DU	32x36x20mm	DU BUSH
MB3230DU	32x36x30mm	DU BUSH
MB3240DU	32x36x40mm	DU BUSH
MB3520DU	35x39x20mm	DU BUSH
MB3530DU	35x39x30mm	DU BUSH
MB3550DU	35x39x50mm	DU BUSH

## GLACIER PLAIN BEARINGS & WASHERS

### DU Metric Bushes & Washers continued

Part No.	Description	
MB3550DU-B	35x39x50mm	DU BUSH - BRONZE BACKED
MB3720DU	37x41x20mm	DU BUSH
MB4020DU	40x44x20mm	DU BUSH
MB4030DU	40x44x30mm	DU BUSH
MB4040DU	40x44x40mm	DU BUSH
MB4050DU	40x44x50mm	DU BUSH
MB4530DU	45x50x30mm	DU BUSH
MB4540DU	45x50x40mm	DU BUSH
MB4550DU	45x50x50mm	DU BUSH
MB5020DU	50x55x20mm	DU BUSH
MB5030DU	50x55x30mm	DU BUSH
MB5040DU	50x55x40mm	DU BUSH
MB5050DU	50x55x50mm	DU BUSH
MB5060DU	50x55x60mm	DU BUSH
MB5540DU	55x60x40mm	DU BUSH
MB6020DU	60x65x20mm	DU BUSH
MB6030DU	60x65x30mm	DU BUSH
MB6040DU	60x65x40mm	DU BUSH
MB6060DU	60x65x60mm	DU BUSH
MB6070DU	60x65x70mm	DU BUSH
MB6550DU	65x70x50mm	DU BUSH
MB6570DU	65x70x70mm	DU BUSH
MB7040DU	70x75x40mm	DU BUSH
MB7050DU	70x75x50mm	DU BUSH
MB7070DU	70x75x70mm	DU BUSH
MB7560DU	75x80x60mm	DU BUSH
MB7580DU	75x80x80mm	DU BUSH
MB8060DU	80x85x60mm	DU BUSH
MB80100DU	80x85x100mm	DU BUSH
MB8530DU	85x90x30mm	DU BUSH
MB8560DU	85x90x60mm	DU BUSH
MB9060DU	90x95x60mm	DU BUSH
MB9560DU	95x100x60mm	DU BUSH
MB10060DU	100x105x60mm	DU BUSH
MB100115DU	100x105x115mm	DU BUSH
MB105115DU	105x110x115mm	DU BUSH
MB11060DU	110x115x60mm	DU BUSH
MB11550DU	110x115x115mm	DU BUSH
MB11570DU	115x120x70mm	DU BUSH
MB12060DU	120x125x60mm	DU BUSH
MB120100DU	120x125x100mm	DU BUSH
MB130100DU	130x135x100mm	DU BUSH
MB13580DU	135x140x80mm	DU BUSH
MB140100DU	140x145x100mm	DU BUSH
MB150100DU	150x155x100mm	DU BUSH



## GLACIER PLAIN BEARINGS & WASHERS

### DU Metric Bushes & Washers continued

Part No.	Description	
MB160100DU	160x165x100mm	DU BUSH
MB180100DU	180x185x100mm	DU BUSH
WC08DU	10X20X1.5mm	DU THRUSTWASHER
WC10DU	12x24x1.5mm	DU THRUSTWASHER
WC12DU	14x26x1.5mm	DU THRUSTWASHER
WC14DU	16x30x1.5mm	DU THRUSTWASHER
WC16DU	18x32x1.5mm	DU THRUSTWASHER
WC18DU	20x36x1.5mm	DU THRUSTWASHER
WC20DU	22x38x1.5mm	DU THRUSTWASHER
WC22DU	24x42x1.5mm	DU THRUSTWASHER
WC24DU	26x44x1.5mm	DU THRUSTWASHER
WC25DU	28x48x1.5mm	DU THRUSTWASHER
WC30DU	32x54x1.5mm	DU THRUSTWASHER
WC35DU	38x62x1.5mm	DU THRUSTWASHER
WC40DU	42x66x1.5mm	DU THRUSTWASHER
WC45DU	48x74x1.95mm	DU THRUSTWASHER
WC50DU	52x78x1.95mm	DU THRUSTWASHER

### DX Imperial Bushes & Washers

12DX12	3/4"x7/8"x0.760"	DX BUSH IMPERIAL
12DX16	3/4"x7/8"x1.010"	DX BUSH IMPERIAL
14DX16	7/8"x1"x1.010"	DX BUSH IMPERIAL
16DX16	1"x1.1/8"x1"	DX BUSH IMPERIAL
16DX24	1"x1.1/8"x1.51"	DX BUSH IMPERIAL
18DX16	1.1/8"x1.9/32"x1.010"	DX BUSH IMPERIAL
20DX16	1.1/4"x1.13/32"x1.01"	DX BUSH IMPERIAL
20DX20	1.1/4"x1.13/32"x1.26"	DX BUSH IMPERIAL
22DX28	1.3/8"x1.17/32"x1.76"	DX BUSH IMPERIAL
24DX20	1.1/2"x1.21/32"x1.26"	DX BUSH IMPERIAL
24DX32	1.1/2"x1.21/32"x2.01"	DX BUSH IMPERIAL
26DX24	1.5/8"x1.25/32"x1.51"	DX BUSH IMPERIAL
28DX24	1.3/4"x1.15/16"x1.51"	DX BUSH IMPERIAL
28DX28	1.3/4"x1.15/16"x1.3/4"	DX BUSH IMPERIAL
28DX32	1.3/4"x1.15/16"x2.01"	DX BUSH IMPERIAL
30DX30	1.7/8x2.1/16x1.78"	DX BUSH IMPERIAL
30DX36	1.7/8x2.1/16x2.26"	DX BUSH IMPERIAL
32DX24	2"x2.3/16"x1.51"	DX BUSH IMPERIAL
32DX40	2"x2.3/16"x2.51"	DX BUSH IMPERIAL
36DX36	2.1/4"x2.7/16"x2.26"	DX BUSH IMPERIAL
40DX40	2.1/2"x2.11/16"x2.51"	DX BUSH IMPERIAL
44DX40	2.3/4"x2.15/16"x2.51"	DX BUSH IMPERIAL
44DX48	2.3/4"x2.15/16"x3.01"	DX BUSH IMPERIAL
48DX48	3"x3.3/16"x3.01"	DX BUSH IMPERIAL

## GLACIER PLAIN BEARINGS & WASHERS

### DX Imperial Bushes & Washers continued

Part No.	Description	
DX10	0.76"x1.25"	DX THRUSTWASHER IMPERIAL
DX11	0.82"x1.375"	DX THRUSTWASHER IMPERIAL
DX12	0.88"x1.5"	DX THRUSTWASHER IMPERIAL
DX14	1.01"x1.75"	DX THRUSTWASHER IMPERIAL
DX16	1.13"x2.0"	DX THRUSTWASHER IMPERIAL
DX18	1.26"x2.125"	DX THRUSTWASHER IMPERIAL
DX20	1.385"x2.25"	DX THRUSTWASHER IMPERIAL

### DX Metric Bushes & Washers

Part No.	Description	
PM0808DX	8x10x8mm	DX BUSH METRIC
PM1212DX	12x14x12.25mm	DX BUSH METRIC
PM1415DX	14x16x15.25mm	DX BUSH METRIC
PM1620DX	16x18x20mm	DX BUSH METRIC
PM1625DX	16x18x25mm	DX BUSH METRIC
PM1825DX	18x20x25.5mm	DX BUSH METRIC
PM2010DX	20x23x10.25mm	DX BUSH METRIC
PM2020DX	20x23x20.25mm	DX BUSH METRIC
PM2030DX	20x23x30.25mm	DX BUSH METRIC
PM2220DX	22x25x20.25mm	DX BUSH METRIC
PM2230DX	22x25x30.25mm	DX BUSH METRIC
PM2430DX	24x27x30.25mm	DX BUSH METRIC
PM2520DX	25x28x20.25mm	DX BUSH METRIC
PM2525DX	25x28x25.25mm	DX BUSH METRIC
PM2530DX	25x28x30.25mm	DX BUSH METRIC
PM2830DX	28x32x30.25mm	DX BUSH METRIC
PM3020DX	30x34x20.25mm	DX BUSH METRIC
PM3040DX	30x34x40.25mm	DX BUSH METRIC
PM3220DX	32x36x20.25mm	DX BUSH METRIC
PM3240DX	32x36x40.25mm	DX BUSH METRIC
PM3530DX	35x39x30.25mm	DX BUSH METRIC
PM3550DX	35x39x50.25mm	DX BUSH METRIC
PM3635DX	36x40x35.25mm	DX BUSH METRIC
PM3720DX	37x41x20.25mm	DX BUSH METRIC
PM4020DX	40x44x20.25mm	DX BUSH METRIC
PM4030DX	40x44x30.25mm	DX BUSH METRIC
PM4050DX	40x44x50.25mm	DX BUSH METRIC
PM4520DX	45x50x20.25mm	DX BUSH METRIC
PM4540DX	45x50x40.25mm	DX BUSH METRIC
PM4550DX	45x50x50.25mm	DX BUSH METRIC
PM5040DX	50x55x40.25mm	DX BUSH METRIC
PM5060DX	50x55x60.25mm	DX BUSH METRIC
PM5520DX	55x60x20.25mm	DX BUSH METRIC

## GLACIER PLAIN BEARINGS & WASHERS

### DX Metric Bushes & Washers continued

Part No.	Description	
PM5530DX	55x60x30.25mm	DX BUSH METRIC
PM5560DX	55x60x60.25mm	DX BUSH METRIC
PM6040DX	60x65x40.25mm	DX BUSH METRIC
PM6060DX	60x65x60mm	DX BUSH METRIC
PM6070DX	60x65x70mm	DX BUSH METRIC
PM6540DX	65x70x40.25mm	DX BUSH METRIC
PM6560DX	65x70x60.25mm	DX BUSH METRIC
PM7050DX	70x75x50.25mm	DX BUSH METRIC
PM7065DX	70x75x65mm	DX BUSH METRIC
PM7080DX	70x75x80.25mm	DX BUSH METRIC
PM7540DX	75x80x40.25mm	DX BUSH METRIC
PM7560DX	75x80x60.5mm	DX BUSH METRIC
PM7580DX	75x80x80.25mm	DX BUSH METRIC
PM8040DX	80x85x40.5mm	DX BUSH METRIC
PM8540DX	85x90x40.5mm	DX BUSH METRIC
PM8560DX	85x90x60.5mm	DX BUSH METRIC
PM8580DX	85x90x80.5mm	DX BUSH METRIC
PM80100DX	80x85x100.5mm	DX BUSH METRIC
PM9040DX	90x95x40.5mm	DX BUSH METRIC
PM9090DX	90x95x90.5mm	DX BUSH METRIC
PM90100DX	90x95x100.5mm	DX BUSH METRIC
PM95100DX	95x100x100mm	DX BUSH METRIC
MB10025DX	100x105x25mm	DX BUSH METRIC
MB10040DX	100x105x40mm	DX BUSH METRIC
MB10050DX	100x105x50mm	DX BUSH METRIC
PM11550DX	115x120x50mm	DX BUSH METRIC

WC18DX	20x36x1.58mm	DX THRUSTWASHER METRIC
WC20DX	22x38x1.58mm	DX THRUSTWASHER METRIC
WC22DX	24x42x1.58mm	DX THRUSTWASHER METRIC
WC24DX	26x44x1.58mm	DX THRUSTWASHER METRIC
WC25DX	28x48x1.58mm	DX THRUSTWASHER METRIC
WC30DX	32x54x1.58mm	DX THRUSTWASHER METRIC
WC35DX	38x62x1.58mm	DX THRUSTWASHER METRIC
WC40DX	42x66x1.58mm	DX THRUSTWASHER METRIC

## NON-ASBESTOS SHEET JOINTING

### Durlon® 7900 Aramid/NBR



#### Application:

An economy grade general service compressed sheet with NBR rubber binder for mild service in piping and equipment and OEM applications in steam, hydrocarbons and refrigerants. An economical alternative when service ranges and applications are not severe.

#### Composition:

DURLON® 7900 contains high-strength aramid fibres bonded with high-grade nitrile (NBR) rubber.

#### Anti-stick Properties:

Much effort has gone into improving the anti-stick release agents of all compressed DURLON® products. All DURLON® compressed gasket materials have passed the MIL-G-24696B Navy Adhesion Test (366°F/48 hrs).

#### Typical Physical Properties:

Colour	7900 – Off-White
Fibre System	Aramid-Inorganic
Binder	NBR
Temperature	
Min	-73°C (-100°F)
Max	371°C (700°F)
Max, continuous	260°C (500°F)
Pressure, max, bar (psi)	83 (1,200)
Density, g/cc (lbs/ft <sup>3</sup> )	1.7 (106)
Compressibility, % ASTM F36	7 - 17
Recovery, % ASTM F36	40
Creep Relaxation, % ASTM F38	20
Tensile Strength across grain ASTM F152, MPa (psi)	11.7 (1,700)
pH Range, Room temp	3 - 11
Fluid Resistance, ASTM F 146, IRM 903 Oil 5 hours at 149°C (300°F)	
Thickness Increase, %	0 - 15
Weight Increase, %	15
ASTM Fuel B 5 hours at 21°C (70°F)	
Thickness Increase, %	0 - 10
Weight Increase, %	12
Nitrogen Sealability, cc/min ASTM F2378	0.05
Volume Resistivity, ohm-cm ASTM D257	4.2 x 10 <sup>13</sup>
Dielectric Breakdown, kV/mm ASTM D149	11.7
Gasket Factors	<u>1/16"</u> <u>1/8"</u>
m	3.0 3.2
Y, psi	3,347 3,385
Gb, psi	650 400
a	0.33 0.35
Gs, psi	200 20
Flexibility, ASTM F147	10x

\* ASTM Testing



## NON-ASBESTOS SHEET JOINTING

### Durlon® 8300 Carbon/NBR



#### Application:

DURLON®8300 is premium grade compressed sheet gasket material that is excellent in steam and hydrocarbon services in the refining, petrochemical and power generation industries. Other applications include oil, water, mild alkalis, mild acids and solvents.

#### Composition:

DURLON® 8300 contains high-strength carbon fibres bonded with nitrile (NBR) synthetic rubber. A release agent on both sides provides good anti-stick properties.

#### Anti-stick Properties:

Much effort has gone into improving the anti-stick release agents of all compressed DURLON® products. All DURLON® compressed gasket materials have passed the MIL-G-24696B Navy Adhesion Test (366°F/48 hrs).

#### Typical Physical Properties:

Colour	Black
Fibre System	Carbon
Binder	NBR
Temperature	
Min	-73°C (-100°F)
Max	427°C (800°F)
Max, continuous	315°C (600°F)
Pressure, max, bar (psi)	103 (1,500)
Density, g/cc (lbs/ft <sup>3</sup> )	1.6 (100)
Compressibility, % ASTM F36	8 - 16
Recovery, % ASTM F36	50
Creep Relaxation, %	18
Tensile Strength across grain ASTM F152, MPa (psi)	12.4 (1,800)
pH Range, Room temp	3 - 11
Fluid Resistance, ASTM F 146 IRM 903 Oil 5 hours at 149°C (300°F)	
Thickness Increase, %	0 - 10
Weight Increase, %	10
ASTM Fuel B 5 hours at 21°C (70°F)	
Thickness Increase, %	0 - 10
Weight Increase, %	12
Leachable Halides, max, ppm	500
Leachable Chlorides, max, ppm	200
Nitrogen Sealability, cc/min ASTM F2378	0.05
Volume Resistivity, ohm-cm ASTM D257	5 x 10 <sup>9</sup>
Dielectric Breakdown, kV/mm ASTM D149	0.04
Gasket Factors	<u>1/16"</u> <u>1/8"</u>
m	3.7 3.0
Y, psi	3,515 4,014
Gb, psi	512 1,716
a	0.36 0.21
Gs, psi	13 0.7
Flexibility, ASTM F147	10x

\* ASTM Testing

## NON-ASBESTOS SHEET JOINTING

### Durlon® 8400 Phenolic/NBR



#### Application:

With an extremely wide pH application range, DURLON® 8400 can be used in process piping and equipment in chemical, pulp and paper, and other general industrial applications. A unique high-performance compressed sheet DURLON® 8400 is an excellent gasket material for use in steam, mild caustics and acids in Class 150 and 300 service.

#### Composition:

DURLON® 8400 contains high temperature phenolic fibres and minerals combined with high-grade nitrile (NBR) rubber. It exhibits higher temperature limits than aramid based materials and the handling and cutting characteristics are greatly improved over carbon and glass fibre products.

#### Anti-stick Properties:

Much effort has gone into improving the anti-stick release agents of all compressed DURLON® products. All DURLON® compressed gasket materials have passed the MIL-G-24696B Navy Adhesion Test (366°F/48 hrs).

#### Ph Range:

DURLON® 8400 has a pH application range of 2 to 13 at room temperature, the widest any compressed sheet gasket material produced today. This makes DURLON® 8400 especially suitable in pulp and paper, and chemical plant applications.

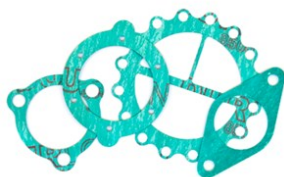
#### Typical Physical Properties:

Colour	Gold
Fibre System	Phenolic
Binder	NBR
Temperature	
Min	-73°C (-100°F)
Max	427°C (800°F)
Max, continuous	290°C (554°F)
Pressure, max, bar (psi)	103 (1,500)
Density, g/cc (lbs/ft <sup>3</sup> )	1.7 (106)
Compressibility, %	8 - 16
ASTM F36	
Recovery, %	50
ASTM F36	
Creep Relaxation, %	25
ASTM F38	
Tensile Strength across grain	12.4 (1,800)
ASTM F152, MPa (psi)	
pH Range, Room temp	2 - 13
Fluid Resistance, ASTM F146	
IRM 903 Oil 5 hours at 149°C (300°F)	
Thickness Increase, %	0 - 15
Weight Increase, %	15
ASTM Fuel B 5 hours at 21°C (70°F)	
Thickness Increase, %	0 - 10
Weight Increase, %	15
Leachable Halides, max, ppm	1,000
Leachable Chlorides, max, ppm	400
Nitrogen Sealability, cc/min	0.03
ASTM F2378	
Volume Resistivity, ohm-cm	3.1 x 10 <sup>13</sup>
ASTM D257	
Dielectric Breakdown, kV/mm	14.6
ASTM D149	
Gasket Factors	<u>1/16"</u> <u>1/8"</u>
m	2.9 4.5
Y, psi	2,410 3,967
Gb, psi	2,000 1076
a	0.194 0.29
Gs, psi	340 94
Flexibility,	8x
ASTM F147	

\* ASTM Testing

## NON-ASBESTOS SHEET JOINTING

### Durlon® 8500 Aramid-Inorganic/NBR



#### Application:

Our workhorse material, DURLON® 8500 is excellent in steam, natural gas, soybean processing and with new generation refrigerants. A high quality general service gasket material for use in a wide range of services in pulp and paper, food, beverage, pharmaceutical, chemical, refinery, gas pipeline and general industry. DURLON® 8500 exhibits good compressibility and recovery, excellent sealability, flexibility and cutting characteristics.

#### Composition:

DURLON® 8500 contains high-strength aramid and inorganic fibres bonded with high-grade nitrile (NBR) rubber.

#### Fire Testing:

DURLON® 8500 has successfully passed a modified version of the API 607 fire test. The duration of the direct flame portion of the test is 30 minutes and the flange temperature must reach 1200°F in the first 15 minutes. The internal pressure is held at a constant 30 psig. After the flame is shut off, the fixture is immediately water quenched with an overhead water blast. Leakage must not exceed 100 ml/min after a 6 minute cool down to successfully pass the test. Subsequent leakage testing is also performed.

#### Anti-stick Properties:

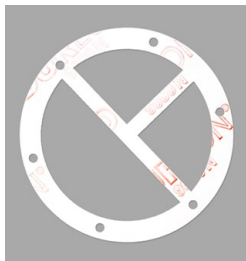
Much effort has gone into improving the anti-stick release agents of all compressed DURLON® products. All DURLON® compressed gasket materials have passed the MIL-G-24696B Navy Adhesion Test (366°F/48 hrs).

#### Typical Physical Properties:

Colour	Green	
Fibre System	Aramid-Inorganic	
Binder	NBR	
Temperature		
Min	-73°C (-100°F)	
Max	371°C (700°F)	
Max, continuous	290°C (548°F)	
Pressure, max, bar (psi)	103 (1,500)	
Density, g/cc (lbs/ft <sup>3</sup> )	1.7 (106)	
Compressibility, % ASTM F36	8 - 16	
Recovery, % ASTM F36	50	
Creep Relaxation, % ASTM F38	20	
Tensile Strength across grain ASTM F152, MPa (psi)	13.8 (2,000)	
pH Range, Room temp	3 - 11	
Fluid Resistance, ASTM F 146 IRM 903 Oil 5 hours at 149°C (300°F)		
Thickness Increase, %	0 - 15	
Weight Increase, %	15	
ASTM Fuel B 5 hours at 21°C (70°F)	0-10	
Thickness Increase, %	0 - 10	
Weight Increase, %	10	
Leachable Halides, max, ppm	1,000	
Leachable Chlorides, max, ppm	100	
Nitrogen Sealability, cc/min ASTM F2378	0.03	
Volume Resistivity, ohm-cm ASTM D257	4.2 x 10 <sup>13</sup>	
Dielectric Breakdown, kV/mm ASTM D149	11.7	
Gasket Factors	1/16"	1/8"
m	2.7	4.2
Y, psi	2,359	2,931
Gb, psi	650	400
a	0.33	0.35
Gs, psi	200	20

\* ASTM Testing

## PTFE SHEET JOINTING



### Durlon® 9000N Inorganic/PTFE

#### Application:

DURLON® 9000N is used extensively in chemical, pulp and paper, food and beverage and the railroad tank car industries. It has been tested and approved for liquid chlorine, caustics, liquid oxygen, and high purity applications in the pharmaceutical industry (9000N for blood components manufacturing). DURLON® 9000N is designed for applications where resistance to highly aggressive chemicals is required. Available in unpigmented white as style 9000N, (including branding) conform to FDA requirements.

DURLON® 9000 has been proven through the "Test Protocol" of the Chlorine Institute and is listed as an acceptable gasket material for dry chlorine service (both liquid and gaseous) in Pamphlet 95, Edition 3 of the Chlorine Institute. Additionally, DURLON® 9000 was independently tested and approved for caustics service by a major chemical/chlorine manufacturer. Unlike generic glass fibre-filled PTFE, the shape of the fillers used in DURLON® 9000 do not allow wicking which can cause corrosion on flange faces.

DURLON® 9000/9000N has been independently tested and certified (BAM) for oxygen service at pressures up to 585 psi (40 bar) and temperatures up to 392°F (200°C), and for service in liquid oxygen. Gaskets for oxygen service can be supplied from distributor stocks, providing proper cleaning procedures for oxygen service are followed before installation.

#### Composition:

Various shapes of inorganic fillers have been homogeneously blended with pure PTFE resins to give DURLON® 9000 its physical and mechanical properties. It is suitable for use in steel flanges and will not exhibit the cold flow problems associated with virgin PTFE or the hardness problems of some other filled PTFE products. It cuts easily and separates cleanly from flanges after use.

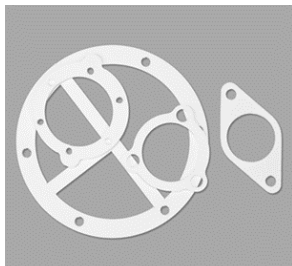
#### Typical Physical Properties:

Colour	9000N – White	
Filler System	Inorganic	
Resin System	Pure PTFE	
Temperature		
Min	-212°C (-350°F)	
Max	271°C (520°F)	
Max, continuous	260°C (500°F)	
Pressure, max, bar (psi)	103 (1,500)	
Density, g/cc (lbs/ft <sup>3</sup> )	2.2 (138)	
Compressibility, %	8 - 16	
ASTM F36		
Recovery, %	40	
ASTM F36		
Creep Relaxation, %	30	
ASTM F38		
Tensile Strength across grain		
ASTM F152, MPa (psi)	13.8 (2,000)	
pH Range, Room temp	0 - 14	
Nitrogen Sealability, cc/min	0.01	
ASTM F2378		
Volume Resistivity, ohm-cm	1.0 x 10 <sup>5</sup>	
ASTM D149		
Dielectric Breakdown, kV/mm	16	
ASTM D149		
Gasket Factors	<u>1/16"</u>	<u>1/8"</u>
m	2.2	4.6
Y, psi	1,937	1,639
Gb, psi	639	495
a	0.22	0.262
Gs, psi	55	65
TA-Luft (VDI Guideline 2440) Approved		
temperature of exposure:	180°C (356°F)	
period of exposure:	48 hrs.	
test pressure (hellum):	1 bar (14.5 psig)	
leak rate:	7.55E-6 mbar*(l(m*s)	
period of leak rate measured:	24 hrs	
BAM – Oxygen Testing		
a) Gaseous oxygen:	Up to 52 bar (754 psig)	
b) Liquid Oxygen:	260°C(500°F)	
Pamphlet 95, The Chrome Institute	Listed table 3-1 for dry chlorine service and Table 3-3 for wet chlorine service	
FDA	Conforms to the requirements of 21 CFR 177.1550 for food and drug contact	
DNL-GL	Certificate NO. 13 560 – 14HH	

\* ASTM Testing



## PTFE SHEET JOINTING



### Durlon® 9600 Expanded PTFE

#### Application:

DURLON® 9600 is an expanded PTFE gasket material designed for use in process piping and equipment in chemical, pulp and paper, food and beverage and other general industrial applications where resistance to highly aggressive chemicals is required.

DURLON® 9600 is suitable for use in steel flanges and flanges with irregular surfaces. Durlon® 9600 (including branding) conforms to FDA requirements.

#### Composition:

DURLON® 9600 is made with only pure PTFE resins. It is suitable for use in steel flanges and as well as flanges where a highly compressible gasket is required. DURLON® 9600 is also suitable for sealing flanges with irregular surfaces. It will not exhibit the cold flow problems associated with virgin PTFE or the hardness problems of some other filled PTFE products. It has excellent sealability, cuts easily and separates cleanly from flanges after use.

#### Typical Physical Properties:

Colour	White	
Resin System	Pure PTFE	
Binder	NBR	
Temperature		
Min	-212°C (-350°F)	
Max	316°C (600°F)	
Max, continuous	260°C (500°F)	
Pressure, max, bar (psi)	124 (1,800)	
Density, g/cc (lbs/ft <sup>3</sup> )	0.8 (49.9)	
Compressibility, % ASTM F36	40-60	
Recovery, % ASTM F36	12	
Creep Relaxation, % ASTM F38	30	
pH Range, Room temp	0 - 14	
Nitrogen Sealability, cc/min ASTM F2378	0.01	
Gasket Factors	<u>1/16"</u>	<u>1/8"</u>
Gb, psi	1,200	1,400
a	0.2	0.2
Gs, psi	3.5	1.5
FDA	Conforms to the requirements of 21 CFR 177.1550 for food and drug contact	
ABS-PDA Certificate	American Bureau of Shipping	

\* ASTM Testing

## NON-ASBESTOS AND PTFE SHEET JOINTING

Part No.	Description	Sheet Size	Colour
D790008HH	DURLON 7900 0.8mm	60" x 63"	OFF WHITE
D790015HH	DURLON 7900 1.5mm	60" x 63"	OFF WHITE
D790020HH	DURLON 7900 2.0mm	60" x 63"	OFF WHITE
D830008HH	DURLON 8300 0.8mm	60" x 63"	BLACK
D830015HH	DURLON 8300 1.5mm	60" x 63"	BLACK
D830020HH	DURLON 8300 2.0mm	60" x 63"	BLACK
D830030HH	DURLON 8300 3.0mm	60" x 63"	BLACK
D840005HH	DURLON 8400 0.5mm	60" x 63"	GOLD
D840008HH	DURLON 8400 0.8mm	60" x 63"	GOLD
D840010HH	DURLON 8400 1.0mm	60" x 63"	GOLD
D840015HH	DURLON 8400 1.5mm	60" x 63"	GOLD
D840020HH	DURLON 8400 2.0mm	60" x 63"	GOLD
D840030HH	DURLON 8400 3.0mm	60" x 63"	GOLD
D850005HH	DURLON 8500 0.5mm	60" x 63"	GREEN
D850008HH	DURLON 8500 0.8mm	60" x 63"	GREEN
D850015HH	DURLON 8500 1.5mm	60" x 63"	GREEN
D850020HH	DURLON 8500 2.0mm	60" x 63"	GREEN
D900015HH	DURLON 9000N 1.5mm	60" x 60"	WHITE
D900030HH	DURLON 9000N 3.0mm	60" x 60"	WHITE
D960015HH	DURLON 9600 EXPANDED PTFE 1.5mm	60" x 60"	WHITE
D960030HH	DURLON 9600 EXPANDED PTFE 3.0mm	60" x 60"	WHITE

# SHIM

## Brass Shim

Part No.	Description	Metric Thickness	Imperial Thickness	Roll Width (mm)
BS05ZT	BRASS SHIM	0.05mm	0.002"	152
BS08ZV	BRASS SHIM	0.076mm	0.003"	305
BS10ZV	BRASS SHIM	0.101mm	0.004"	305
BS12ZV	BRASS SHIM	0.127mm	0.005"	305
BS20ZV	BRASS SHIM	0.20mm	0.008"	305
BS25ZV	BRASS SHIM	0.25mm	0.010"	305
BS40ZV	BRASS SHIM	0.381mm	0.015"	305
BS50ZV	BRASS SHIM	0.51mm	0.020"	305

## Brass Shim Assortment Packs



<b>HL299-IND BRASS SHIM ASSORTMENT 150 X 450</b>			
1 SHEET BRASS	0.05mm	0.002"	150mm x 450mm
1 SHEET BRASS	0.076mm	0.003"	150mm x 450mm
1 SHEET BRASS	0.101mm	0.004"	150mm x 450mm
1 SHEET BRASS	0.127mm	0.005"	150mm x 450mm
1 SHEET BRASS	0.25mm	0.010"	150mm x 450mm



<b>SA100 BRASS SHIM ASSORTMENT 150 x 150</b>			
1 SHEET BRASS	0.05mm	0.002"	150mm x 150mm
1 SHEET BRASS	0.076mm	0.003"	150mm x 150mm
1 SHEET BRASS	0.101mm	0.004"	150mm x 150mm
1 SHEET BRASS	0.127mm	0.005"	150mm x 150mm
1 SHEET BRASS	0.25mm	0.010"	150mm x 150mm



<b>SA120 BRASS SHIM ASSORTMENT 60mm wide, 5 sizes</b>			
1 SHEET BRASS	0.05mm	0.002"	900mm x 60mm
1 SHEET BRASS	0.076mm	0.003"	900mm x 60mm
1 SHEET BRASS	0.101mm	0.004"	900mm x 60mm
1 SHEET BRASS	0.127mm	0.005"	1200mm x 60mm
1 SHEET BRASS	0.25mm	0.010"	1200mm x 60mm

# SHIM

## Stainless Steel Shim

Part No.	Description	Metric Thickness	Imperial Thickness	Roll Width (mm)
SSS001-12.00	Stainless Steel 316	0.025mm	0.001"	305
SSS002-12.00	Stainless Steel 316	0.05mm	0.002"	305
SSS003-12.00	Stainless Steel 316	0.076mm	0.003"	305
SSS004-12.00	Stainless Steel 316	0.101mm	0.004"	305
SSS005-12.00	Stainless Steel 316	0.127mm	0.005"	305
SSS006-12.00	Stainless Steel 316	0.15mm	0.006"	305
SSS008-12.00	Stainless Steel 316	0.203mm	0.008"	305
SSS010-12.00	Stainless Steel 316	0.254mm	0.010"	305
SSS012-12.00	Stainless Steel 316	0.305mm	0.012"	305
SSS015-12.00	Stainless Steel 316	0.381mm	0.015"	305
SSS020-12.00	Stainless Steel 316	0.51mm	0.020"	305
SSS025-12.00	Stainless Steel 316	0.63mm	0.025"	305

## Stainless Steel Shim Assortment Packs



<b>HS001</b> STAINLESS STEEL 316 SHIM ASSORTMENT 305 x 500			
1 SHEET S/S 316	0.05mm	0.002"	305mm x 500mm
1 SHEET S/S 316	0.076mm	0.003"	305mm x 500mm
1 SHEET S/S 316	0.127mm	0.005"	305mm x 500mm
1 SHEET S/S 316	0.254mm	0.010"	305mm x 500mm



<b>SA300</b> STAINLESS STEEL 316 SHIM ASSORTMENT 150 x 150			
1 SHEET S/S 316	0.05mm	0.002"	150mm x 150mm
1 SHEET S/S 316	0.076mm	0.003"	150mm x 150mm
1 SHEET S/S 316	0.101mm	0.004"	150mm x 150mm
1 SHEET S/S 316	0.127mm	0.005"	150mm x 150mm
1 SHEET S/S 316	0.25mm	0.010"	150mm x 150mm



# SHIM

## Steel Shim

Part No.	Description	Metric Thickness	Imperial Thickness	Roll Width (mm)
SS05ZV	STEEL SHIM	0.05mm	0.002"	305
SS08ZV	STEEL SHIM	0.076mm	0.003"	305
SS10IV	STEEL SHIM	0.101mm	0.004"	305
SS12ZV	STEEL SHIM	0.127mm	0.005"	305
SS20ZV	STEEL SHIM	0.203mm	0.008"	305
SS25ZV	STEEL SHIM	0.254mm	0.010"	305
SS40ZV	STEEL SHIM	0.38mm	0.015"	305
SS50ZV	STEEL SHIM	0.51mm	0.020"	305
SS63ZV	STEEL SHIM	0.61mm	0.024"	305

## Steel Shim Assortment Packs



HR176 STEEL SHIM ASSORTMENT 305 x 500			
1 SHEET STEEL	0.05mm	0.002"	305mm x 500mm
1 SHEET STEEL	0.076mm	0.003"	305mm x 500mm
1 SHEET STEEL	0.127mm	0.005"	305mm x 500mm
1 SHEET STEEL	0.254mm	0.010"	305mm x 500mm



SA200 STEEL SHIM ASSORTMENT 150 x 150			
1 SHEET STEEL	0.05mm	0.002"	150mm x 150mm
1 SHEET STEEL	0.076mm	0.003"	150mm x 150mm
1 SHEET STEEL	0.101mm	0.004"	150mm x 150mm
1 SHEET STEEL	0.127mm	0.005"	150mm x 150mm
1 SHEET STEEL	0.25mm	0.010"	150mm x 150mm



SA220 STEEL SHIM ASSORTMENT 60mm wide, 5 sizes			
1 SHEET STEEL	0.05mm	0.002"	900mm x 60mm
1 SHEET STEEL	0.076mm	0.003"	900mm x 60mm
1 SHEET STEEL	0.127mm	0.005"	1200mm x 60mm
1 SHEET STEEL	0.25mm	0.010"	1200mm x 60mm

# SHIM

## Plastic Shim

Part No.	Description	Metric Thickness	Imperial Thickness	Sheet Size	Colour
PS0025GB	PLASTIC SHIM POLYESTER	0.025mm	0.001"	610 x 1220	PURPLE
PS005HB	PLASTIC SHIM POLYESTER	0.05mm	0.002"	610 x 1500	BLUE
PS0075HB	PLASTIC SHIM POLYESTER	0.076mm	0.003"	610 x 1500	GREEN
PS010HB	PLASTIC SHIM POLYESTER	0.101mm	0.004"	610 x 1500	AMBER
PS0125HB	PLASTIC SHIM POLYESTER	0.127mm	0.005"	610 x 1500	SLATE
PS015HB	PLASTIC SHIM POLYESTER	0.152mm	0.006"	610 x 1500	CLEAR
PS020HB	PLASTIC SHIM POLYESTER	0.203mm	0.008"	610 x 1500	TINT BLUE
PS025HB	PLASTIC SHIM POLYESTER	0.254mm	0.010"	610 x 1500	BLACK
PS030HB	PLASTIC SHIM POLYESTER	0.305mm	0.012"	610 x 1500	BROWN
PS038HB	PLASTIC SHIM POLYESTER	0.38mm	0.015"	610 x 1500	RED
PS050GB	PLASTIC SHIM POLYPROPYLENE	0.51mm	0.020"	610 x 1220	YELLOW
PS064GB	PLASTIC SHIM POLYPROPYLENE	0.635mm	0.025"	610 x 1220	GREY
PS075GB	PLASTIC SHIM POLYPROPYLENE	0.762mm	0.030"	610 x 1220	BLUE
PS10GB	PLASTIC SHIM POLYPROPYLENE	1.016mm	0.040"	610 x 1220	BLACK

## Plastic Shim Assortment Pack



HP093 PLASTIC ASSORTMENT 150 x 200					
2 SHEETS PLASTIC SHIM	0.05mm	0.002"	150 x 200	BLUE	
2 SHEETS PLASTIC SHIM	0.076mm	0.003"	150 x 200	GREEN	
2 SHEETS PLASTIC SHIM	0.127mm	0.005"	150 x 200	SLATE	
2 SHEETS PLASTIC SHIM	0.254mm	0.010"	150 x 200	BLACK	
1 SHEET PLASTIC SHIM	0.38mm	0.015"	150 x 200	RED	
1 SHEET PLASTIC SHIM	0.51mm	0.020"	150 x 200	YELLOW	

## RUBBER GASKET MATERIALS



### Natural Rubber Insertion

**Description:**

A low cost rubber sheeting with cloth insertion.  
Suitable for washers and gaskets.

**Colour:**

Black

**Service:**

Excellent for use in non-aggressive media, such as water and effluent. Not recommended for oils & fuels. It has limited UV resistance. Insertion rubber has the same appearance of solid neoprene but is a more cost effective option, ideal for when oil sealing properties of neoprene are non critical. Insertion rubber has a cloth braiding through the centre that makes it more tear resistant.

Uses : Ideal for gaskets. Cloth Insertion layer gives higher compression strength.

**Specification:**

Tensile Strength (Mpa) : 3.0  
Elongation at Break (%) : 200  
Hardness (Shore A) : 65  
Compression Set (%) : 28  
Specific Gravity : 1.51  
Max. Temperature: 90°C

Part No.	Description	Thickness	Roll Width	Roll Length
NRI15Z	NATURAL RUBBER INSERTION	1.5mm	1200mm	10M
NRI30Z	NATURAL RUBBER INSERTION	3.0mm	1200mm	10M
NRI45Z	NATURAL RUBBER INSERTION	4.5mm	1200mm	10M
NRI60Z	NATURAL RUBBER INSERTION	6.0mm	1200mm	10M
NRI15ZG	NATURAL RUBBER INSERTION	1.5mm	1200mm	1M
NRI30ZG	NATURAL RUBBER INSERTION	3.0mm	1200mm	1M
NRI45ZG	NATURAL RUBBER INSERTION	4.5mm	1200mm	1M
NRI60ZG	NATURAL RUBBER INSERTION	6.0mm	1200mm	1M

## RUBBER GASKET MATERIALS



### Natural Rubber 40 / 45 Shore A

**Description:**

Suitable for applications where a higher wear resistance is required.

**Colour:**

Black

**Specification:**

Tensile Strength (Mpa) : 18.0  
 Elongation at Break (%) : 500  
 Hardness (Shore A) : 40 / 45  
 Specific Gravity : 1.51

Part No.	Description	Thickness	Roll Width	Roll Length
NRB15Z	NATURAL RUBBER	1.5mm	1200mm	10M
NRB30Z	NATURAL RUBBER	3.0mm	1200mm	10M
NRB45Z	NATURAL RUBBER	4.5mm	1200mm	10M
NRB60Z	NATURAL RUBBER	6.0mm	1200mm	10M
NRB15ZG	NATURAL RUBBER	1.5mm	1200mm	1M
NRB30ZG	NATURAL RUBBER	3.0mm	1200mm	1M
NRB45ZG	NATURAL RUBBER	4.5mm	1200mm	1M
NRB60ZG	NATURAL RUBBER	6.0mm	1200mm	1M



## RUBBER GASKET MATERIALS



### Neoprene Insertion-1 Ply Nylon

**Description:**

A rubber sheeting with excellent mechanical and abrasion properties without reinforcing fillers.

**Colour:**

Black

**Service:**

**BLACK NEOPRENE INSERTION RUBBER**

Provides moderate resistance to oils and fuels, also resistant to UV and effluent. Max. Temperature 87°C (approx). Hardness 60 + or -5 Duro. Solid neoprene rubber is one of the most popular forms of rubber due to its excellent sealing and oil resistance capabilities. Often used for seals and gaskets or in any application where oil, water or air is to be sealed. Its ozone resistance makes it highly suitable in the civil engineering field.

This product has a 1-ply Cloth Insertion for higher compression strength.

Resistant to: Mineral oils and greases, LPG, fuel oils, water, dilute acids, water and glycol-based hydraulic fluids, vegetable oils.

Not suitable for: Aromatic hydrocarbons (benzene, high octane gasoline, etc.), polar solvents, glycol-based brake fluid, ozone and weather ageing, strong acids, high temperatures.

**Specification:**

Tensile Strength (Mpa) :	5.0
Elongation at Break (%) :	250
Hardness (Shore A) :	65
Compression Set (%) :	25
Specific Gravity :	1.6

Part No.	Description	Thickness	Roll Width	Roll Length
NEPI15Z	NEOPRENE INSERTION 1 PLY NYLON	1.5mm	1000mm	10M
NEPI30Z	NEOPRENE INSERTION 1 PLY NYLON	3.0mm	1000mm	10M
NEPI45Z	NEOPRENE INSERTION 1 PLY NYLON	4.5mm	1000mm	10M
NEPI60Z	NEOPRENE INSERTION 1 PLY NYLON	6.0mm	1000mm	10M
NEPI15ZG	NEOPRENE INSERTION 1 PLY NYLON	1.5mm	1000mm	1M
NEPI30ZG	NEOPRENE INSERTION 1 PLY NYLON	3.0mm	1000mm	1M
NEPI45ZG	NEOPRENE INSERTION 1 PLY NYLON	4.5mm	1000mm	1M
NEPI60ZG	NEOPRENE INSERTION 1 PLY NYLON	6.0mm	1000mm	1M

## RUBBER GASKET MATERIALS



### Neoprene Rubber

#### Description:

A rubber sheeting with excellent mechanical and abrasion properties with reinforcing fillers. It has resistance to mild inorganic chemical products, except oxidizing acids and halogens.

#### Colour:

Black

#### Service:

It has resistance to mild inorganic chemical products, except oxidising acids and halogens. Solid neoprene rubber is one of the most popular forms of rubber due to its excellent sealing and oil resistance capabilities. Often used for seals and gaskets or in any application where oil, water or air is to be sealed. Smooth both sides. It can handle oils and has a good high temperature resistance, good resistance to ozone and weather.

#### Specification:

Tensile Strength (Mpa) :	5.0
Elongation at Break (%) :	250
Hardness (Shore A) :	65
Compression Set (%) :	25
Specific Gravity :	1.55

Part No.	Description	Thickness	Roll Width	Roll Length
NEP15Z	NEOPRENE RUBBER	1.5mm	1200mm	10M
NEP30Z	NEOPRENE RUBBER	3.0mm	1200mm	10M
NEP45Z	NEOPRENE RUBBER	4.5mm	1200mm	10M
NEP60Z	NEOPRENE RUBBER	6.0mm	1200mm	10M
NEP15ZG	NEOPRENE RUBBER	1.5mm	1200mm	1M
NEP30ZG	NEOPRENE RUBBER	3.0mm	1200mm	1M
NEP45ZG	NEOPRENE RUBBER	4.5mm	1200mm	1M
NEP60ZG	NEOPRENE RUBBER	6.0mm	1200mm	1M

## RUBBER GASKET MATERIALS



### Nitrile Rubber Black

**Description:**

A rubber sheeting with good mechanical properties and good resistance to oil and inorganic chemical products, except antioxidant agents and chlorine.

**Colour:**

Black

**Service:**

Nitrile is a high quality rubber. It is resistant to Petrol, Animal and Vegetable Oils. It can handle a good temperature range and has good wear resistance. Black Nitrile cannot be used with polar liquids, such as, ketones and ethers.

**Specification:**

Tensile Strength (Mpa) :	5.0
Elongation at Break (%) :	280
Hardness (Shore A) :	65
Compression Set (%) :	25
Specific Gravity :	1.55
Temperature Range (°C):	-55 to +70

Part No.	Description	Thickness	Roll Width	Roll Length
NITL15Z	NITRILE RUBBER	1.5mm	1200mm	10M
NITL30Z	NITRILE RUBBER	3.0mm	1200mm	10M
NITL45Z	NITRILE RUBBER	4.5mm	1200mm	10M
NITL60Z	NITRILE RUBBER	6.0mm	1200mm	10M
NITL15ZG	NITRILE RUBBER	1.5mm	1200mm	1M
NITL30ZG	NITRILE RUBBER	3.0mm	1200mm	1M
NITL45ZG	NITRILE RUBBER	4.5mm	1200mm	1M
NITL60ZG	NITRILE RUBBER	6.0mm	1200mm	1M

## RUBBER GASKET MATERIALS



### Nitrile Rubber White

**Description:**

Nitrile compounds are very widely used general purpose sealing materials with good mechanical properties, reasonable resilience, good wear properties and resistance to most mineral-based oils and greases. Also suitable for use with water, fire resistant hydraulic fluids, many dilute acids, LPG, diesel fuel and other fuel oils.

**Colour:**

White

**Service:**

Resistant to: Mineral oils and greases, LPG, fuel oils, water, dilute acids, water and glycol-based hydraulic fluids, vegetable oils.

Not suitable for: Aromatic hydrocarbons (benzene, high octane gasoline, etc.), polar solvents, glycol-based brake fluid, ozone and weather ageing, strong acids, high temperatures.

**Specification:**

Tensile Strength (Mpa) : 5.0  
 Elongation at Break (%) : 300  
 Hardness (Shore A) : 65 +/-5

Part No.	Description	Thickness	Roll Width	Roll Length
NITLW15Z	NITRILE WHITE	1.5mm	1200mm	10M
NITLW30Z	NITRILE WHITE	3.0mm	1200mm	10M
NITLW45Z	NITRILE WHITE	4.5mm	1200mm	10M
NITLW60Z	NITRILE WHITE	6.0mm	1200mm	10M
NITLW15ZG	NITRILE WHITE	1.5mm	1200mm	1M
NITLW30ZG	NITRILE WHITE	3.0mm	1200mm	1M
NITLW45ZG	NITRILE WHITE	4.5mm	1200mm	1M
NITLW60ZG	NITRILE WHITE	6.0mm	1200mm	1M

## RUBBER GASKET MATERIALS



### Nitrile Rubber White Food Grade

**Description:**

U.S. FDA Approved White Nitrile Food Grade Rubber.  
Used in applications where high quality food grade rubber is required. Nitrile rubber has good resistance to animal and vegetable oils. FDA Certificate available.

**Colour:**

White

**Service:**

Nitrile rubber has good resistance to animal and vegetable oils.

**Specification:**

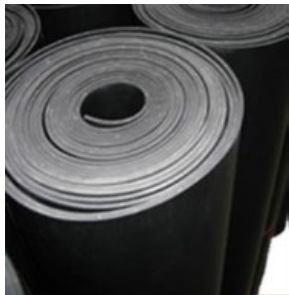
Tensile Strength (Mpa) : 3.0  
Elongation at Break (%) : 250 +/-10  
Hardness (Shore A) : 65 +/-5  
Specific Gravity : 1.55  
Temperature Range (°C): -55 to +70

Part No.	Description	Thickness	Roll Width	Roll Length
NITLWFG30Z	NITRILE WHITE F.G	3.0mm	1200mm	10M
NITLWFG30ZG	NITRILE WHITE F.G	3.0mm	1200mm	1M

Also available on indent in 1.5mm, 4.5mm, 6mm, 10mm



## RUBBER GASKET MATERIALS



### EPDM

#### Description:

This rubber sheeting is recommended for outdoor use as it is extremely resistant to oxidation, UV rays and ozone. It shows a good resistance to many chemicals, solvents and many corrosive chemicals, however, EPDM does not have good oil resistance.

The ethylene propylene based materials are extremely useful elastomers that have a wide temperature range and are very resistant to some fluids that cause problems with most other elastomers.

EPDM provides excellent resistance to hot water, steam, and phosphate ester hydraulic fluids. It can also be used with synthetic ester lubricants that are used for low temperature applications such as refrigerant compressors.

Smooth both sides; great gasket rubber; excellent resistance to high temperatures up to 140C; good wear resistance; ozone and weather resistance.

#### Colour:

Black

#### Service:

Resistant to: Water, steam, phosphate esters, silicone oil and grease, some polar solvents, some acids and alkalis, ozone and air ageing.

Not suitable for: Mineral hydrocarbon oils, greases and fuels, air ageing and ozone at temperature (130°C+).

#### Specification:

Elongation at Break (%) : 300

Hardness (Shore A) : 65

Compression Set (%) : 25

Part No.	Description	Thickness	Roll Width	Roll Length
EPDM15Z	EPDM BLACK	1.5mm	1200mm	10M
EPDM30Z	EPDM BLACK	3.0mm	1200mm	10M
EPDM45Z	EPDM BLACK	4.5mm	1200mm	10M
EPDM60Z	EPDM BLACK	6.0mm	1200mm	10M
EPDM15ZG	EPDM BLACK	1.5mm	1200mm	1M
EPDM30ZG	EPDM BLACK	3.0mm	1200mm	1M
EPDM45ZG	EPDM BLACK	4.5mm	1200mm	1M
EPDM60ZG	EPDM BLACK	6.0mm	1200mm	1M

## CHEMICAL RESISTANCE CHARTS FOR INDUSTRIAL RUBBER PRODUCTS:

These charts should be used as a general guide only. ACL INDUSTRIAL SEALING assumes no liability for the information supplied.

If your chemical resistance requirement is not listed please contact us at any time

	1 = Suitable for application 2 = Suitability depends on conditions				3 = Doubtful 4 = Not suitable					
	NATURAL INSERTION	NEOPRENE	NITRILE	NITRILE WHITE	EPDM	LINATEX	EPDM WHITE	VITON	SILICONE	NATURAL RED
Acetaldehyde	3	3	3	3	2	2	2	4	2	2
Acetamide	4	1	1	1	1	4	1	3	2	4
Acetic Acid 5%	2	1	2	2	1	2	1	1	1	2
Acetic Acid Glacial	2	4	2	2	2	2	2	4	2	2
Acetic Anhydride	4	2	4	4	2	2	2	4	2	2
Acetone	4	4	4	4	1	4	1	4	4	4
Acetonitrile	3	4	4	4	4	3	4	3	4	3
Acetyl Chloride	4	4	4	4	4	4	4	1	3	4
Acetylene	2	2	1	1	1	2	1	1	2	2
Air	2	1	1	1	1	2	1	1	1	2
Alum	1	1	1	1	1	1	1	1	1	1
Aluminium Acetate	4	2	2	2	1	1	1	4	4	1
Aluminium Chloride	1	1	1	1	1	1	1	1	2	1
Aluminium Sulphate	2	1	1	1	1	1	1	1	1	1
Ammonia Gas (Anhydrous)	4	1	2	2	1	4	1	4	2	4
Ammonia Gas (cold)	1	1	1	1	1	1	1	4	1	1
Ammonia Gas (hot)	4	2	4	4	2	4	2	4	1	4
Ammonium Chloride	1	1	1	1	1	1	1	4	4	1
Ammonium Hydroxide - 3 Molar	3	1	1	1	1	2	1	2	1	2
Ammonium Sulphate	2	1	1	1	1	1	1	4	4	1
Amyl Acetate	4	4	4	4	1	4	1	4	4	4
Amyl Alcohol	2	2	2	2	1	2	1	2	4	2
Aniline	4	4	4	4	2	4	2	3	4	4
Aqua Regia	4	4	4	4	3	4	3	2	4	4
Asphalt	4	2	2	2	4	4	4	1	4	4
Barium Chloride	1	1	1	1	1	1	1	1	1	1
Benzaldehyde	4	4	4	4	1	4	1	4	4	4
Benzene	4	4	4	4	4	4	4	1	4	4
Benzoic Acid	4	4	4	4	4	4	4	1	4	4
Benzyl Alcohol	4	2	4	4	2	4	2	1	4	4
Benzyl Chloride	4	4	4	4	4	4	4	1	4	4
Blast Furnace Gas	4	4	4	4	4	4	4	1	1	4
Bleach (solution)	4	4	4	4	1	4	1	1	2	4
Borax	2	4	2	2	1	2	1	1	2	2
Boric Acid	1	1	1	1	1	1	1	1	1	1
Bromine	4	4	4	4	4	4	4	1	4	4
Butadiene	4	4	4	4	4	4	4	1	4	4
Butane	3	1	1	1	4	4	4	1	4	4
Butanol	1	1	1	1	2	1	2	1	2	1
Butyl Acetate	4	4	4	4	2	4	2	4	4	4
Butyl Alcohol	1	1	1	1	2	1	2	1	2	1
Butyric Acid	4	4	4	4	2	4	2	2	4	4

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	1 = Suitable for application 2 = Suitability depends on conditions				3 = Doubtful 4 = Not suitable					
	NATURAL INSERTION	NEOPRENE	NITRILE	NITRILE WHITE	EPDM	LINATEX	EPDM WHITE	VITON	SILICONE	NATURAL RED
Calcium Chloride	1	1	1	1	1	1	1	1	1	1
Calcium Hydroxide	1	1	1	1	1	1	1	1	4	1
Calcium Sulphate	2	1	1	1	1	2	1	1	1	2
Carbolic Acid	4	4	4	4	2	4	2	1	4	4
Carbon Dioxide	2	2	1	1	2	2	2	2	2	2
Carbon Disulphide	4	4	4	4	4	4	4	1	4	4
Carbon Monoxide	2	2	1	1	1	2	1	1	1	2
Carbon Tetrachloride	4	4	2	2	4	4	4	1	4	4
Castor Oil	1	1	1	1	2	1	2	1	1	1
Chlorine - Dry	4	4	4	4	4	4	4	1	4	4
Chlorine - Liquid	4	4	4	4	4	4	4	1	4	4
Chlorine - Wet	4	4	4	4	4	4	4	1	4	4
Chlorine Dioxide	4	4	4	4	3	4	3	1	4	4
Chlorobenzene	4	4	4	4	4	4	4	1	4	4
Chloroform	4	4	4	4	4	4	4	1	4	4
Chromic Acid	4	4	4	4	2	4	2	1	3	4
Citric Acid	1	1	1	1	1	1	1	1	1	1
Condensation Water	1	2	1	1	1	1	1	2	1	1
Copper Acetate	4	2	2	2	1	1	1	4	4	1
Copper Sulphate	2	1	1	1	1	2	1	1	1	2
Creosote	4	2	1	1	4	4	4	1	4	4
Cresol	4	4	4	4	4	4	4	1	4	4
Crude Oil	4	4	2	2	4	4	4	1	4	4
Cyclohexane	4	3	1	1	4	4	4	1	4	4
Cyclohexanol	4	2	1	1	4	4	4	1	4	4
Cyclohexanone	4	4	4	4	2	4	2	4	4	4
Dibenzyl Ether	4	4	4	4	2	4	2	4	4	4
Dibutyl Phthalate	4	4	4	4	2	4	2	3	4	4
Diesel Oil	4	3	1	1	4	4	4	1	4	4
Diethylamine	2	2	2	2	2	2	2	4	2	2
Dimethyl Formamide	4	4	2	2	3	4	3	2	1	4
Dioxane	4	4	4	4	2	4	2	4	4	4
Diphyl (Dowtherm A)	4	4	4	4	4	4	4	1	4	4
Ethane	4	2	1	1	4	4	4	1	4	4
Ethanol	1	1	1	1	1	1	1	3	1	1
Ethyl Acetate	4	4	4	4	2	4	2	4	2	4
Ethyl Acrylate	4	4	4	4	2	4	2	4	2	4
Ethyl Alcohol	1	1	1	1	1	1	1	3	1	1
Ethyl Chloride (Dry)	2	1	1	1	1	1	1	1	4	1
Ethyl Ether	4	4	3	3	3	4	3	4	4	4
Ethylbenzene	4	4	4	4	1	4	1	1	4	4
Ethylene Chloride	4	4	4	4	4	4	4	2	4	4

## CHEMICAL RESISTANCE CHARTS FOR INDUSTRIAL RUBBER PRODUCTS:

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	NATURAL INSERTION	NEOPRENE	NITRILE	NITRILE WHITE	EPDM	LINATEX	EPDM WHITE	VITON	SILICONE	NATURAL RED
Ethylene Glycol	1	1	1	1	1	1	1	1	1	1
Fomaldehyde	3	3	3	3	2	2	2	4	2	2
Freons (see Refrigerants)										
Fuel Oil	4	2	1	1	4	4	4	1	4	4
Gasoline	4	4	1	1	4	4	4	1	4	4
Glucose	1	1	1	1	1	1	1	1	1	1
Glycerine	1	1	1	1	1	1	1	1	1	1
Glycol	1	1	1	1	1	1	1	1	1	1
Heptane	4	2	1	1	4	4	4	1	4	4
Hexane	4	2	1	1	4	4	4	1	4	4
Hydraulic Oil	4	2	1	1	4	4	4	1	2	4
Hydrochloric Acid 20%	3	3	3	3	1	3	1	1	4	3
Hydrochloric Acid 37%	4	4	4	4	3	4	3	1	4	4
Hydrofluoric Acid < 65% - cold	2	1	3	3	1	4	1	1	4	4
Hydrofluoric Acid > 65%	4	4	4	4	4	4	4	3	4	4
Hydrofluorosillic Acid	2	2	2	2	1	1	1	1	4	1
Hydrogen	2	1	1	1	1	2	1	1	3	2
Hydrogen Peroxide 6%	3	1	2	2	2	2	2	1	1	2
Hydrogen Sulphide - Dry, Cold	1	1	1	1	1	1	1	4	3	1
Iso-Octane	4	2	1	1	4	4	4	1	4	4
Isopropyl Acetate	4	4	4	4	2	4	2	4	4	4
Isopropyl Alcohol	2	2	2	2	1	1	1	1	1	1
Isopropyl Ether	4	3	2	2	4	4	4	4	4	4
Kerosene	4	2	1	1	4	4	4	1	4	4
Lactic Acid - Cold	1	1	1	1	1	1	1	1	4	1
Lactic Acid - Hot	4	4	4	4	4	4	4	1	4	4
Linseed Oil	4	3	1	1	3	4	3	1	1	4
Liquid Petroleum Gas (LPG)	4	2	1	1	4	4	4	1	3	4
Lubricating Oil	4	2	1	1	4	4	4	1	4	4
Magnesium Sulphate	2	1	1	1	1	2	1	1	1	2
Maleic Acid	4	4	4	4	4	4	4	1	4	4
Maleic Anhydride	4	4	4	4	4	4	4	1	4	4
Methane	4	2	1	1	4	4	4	1	4	4
Methanol	1	1	1	1	1	1	1	4	1	1
Methyl Alcohol	1	1	1	1	1	1	1	4	1	1
Methyl Chloride	4	4	4	4	3	4	3	1	4	4
Methyl Ethyl Ketone (MEK)	4	4	4	4	1	4	1	4	4	4
Methyl Methacrylate	4	4	4	4	4	4	4	4	4	4
Mobiltherm 600	4	2	1	1	4	4	4	1	4	4
Naphtha	4	4	2	2	4	4	4	1	4	4
Naphthalene	4	4	4	4	4	4	4	1	4	4
Natural Gas	2	1	1	1	4	2	4	1	1	2

## CHEMICAL RESISTANCE CHARTS FOR INDUSTRIAL RUBBER PRODUCTS:

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	1 = Suitable for application 2 = Suitability depends on conditions				3 = Doubtful 4 = Not suitable					
	NATURAL INSERTION	NEOPRENE	NITRILE	NITRILE WHITE	EPDM	LINATEX	EPDM WHITE	VITON	SILICONE	NATURAL RED
Nickel Chloride	1	2	1	1	1	1	1	1	1	1
Nickel Sulphate	2	1	1	1	1	2	1	1	1	2
Nitric Acid < 30%	4	4	4	4	2	4	2	1	4	4
Nitric Acid > 30%	4	4	4	4	4	4	4	1	4	4
Nitric Acid Red Fuming	4	4	4	4	4	4	4	2	4	4
Nitrogen	1	1	1	1	1	1	1	1	1	1
Octane	4	4	2	2	4	4	4	1	4	4
Oleic Acid	4	4	3	3	4	4	4	2	4	4
Oleum	4	4	4	4	4	4	4	1	4	4
Oxalic Acid	2	2	2	2	1	2	1	1	2	2
Oxygen - Cold	4	1	2	2	1	2	1	1	1	2
Palmitic Acid	2	2	1	1	2	2	2	1	4	2
Pentane	4	2	1	1	4	4	4	1	4	4
Perchloric Acid	4	2	4	4	2	4	2	1	4	4
Perchloroethylene	4	4	2	2	4	4	4	1	4	4
Petroleum	4	3	3	3	4	4	4	1	4	4
Phenol	4	4	4	4	4	4	4	1	4	4
Phosphoric Acid <45%	2	3	4	4	1	2	1	1	2	2
Phosphoric Acid >45%	3	4	4	4	2	3	2	1	3	3
Potassium Acetate	4	2	2	2	1	1	1	4	4	1
Potassium Chloride	1	1	1	1	1	1	1	1	1	1
Potassium Cyanide	1	1	1	1	1	1	1	1	1	1
Potassium Dichromate <20%	1	1	1	1	1	1	1	1	1	1
Potassium Hydroxide < 50%	2	2	2	2	1	2	1	4	3	2
Potassium Nitrate	1	1	1	1	1	1	1	1	1	1
Producer Gas	4	2	1	1	4	4	4	1	2	4
Propane	4	2	1	1	4	4	4	1	4	4
Pyridine	4	4	4	4	2	4	2	4	4	4
Rape Seed Oil	4	2	2	2	1	4	1	1	4	4
Refrigerant R11	4	4	2	2	4	4	4	2	4	4
Refrigerant R112	4	2	2	2	4	4	4	1	4	4
Refrigerant R113	2	1	1	1	4	4	4	2	4	4
Refrigerant R114	1	1	1	1	1	1	1	1	4	1
Refrigerant R114B2	4	1	2	2	4	4	4	2	4	4
Refrigerant R115	1	1	1	1	1	1	1	1	4	1
Refrigerant R12	1	1	1	1	2	2	2	1	4	2
Refrigerant R13	1	1	1	1	1	1	1	1	4	1
Refrigerant R13B1	1	1	1	1	1	1	1	1	4	1
Refrigerant R152A	1	1	1	1	1	1	1	4	4	1
Refrigerant R22	1	1	4	4	1	1	1	4	4	1
Refrigerant R502	1	1	2	2	1	1	1	2	4	1
Salicylic Acid	2	4	2	2	1	1	1	1	4	1



## CHEMICAL RESISTANCE CHARTS FOR INDUSTRIAL RUBBER PRODUCTS:

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If your chemical resistance requirement is not listed please contact us at any time

	1 = Suitable for application 2 = Suitability depends on conditions				3 = Doubtful 4 = Not suitable					
	NATURAL INSERTION	NEOPRENE	NITRILE	NITRILE WHITE	EPDM	LINATEX	EPDM WHITE	VITON	SILICONE	NATURAL RED
Sea Water	1	2	1	1	1	1	1	4	1	1
Silicone Oil	1	1	1	1	1	1	1	1	3	1
Silver Nitrate	1	1	2	2	1	1	1	1	1	1
Soap	2	2	1	1	1	2	1	1	1	2
Sodium Bicarbonate	1	1	1	1	1	1	1	1	1	1
Sodium Bisulphite	2	1	1	1	1	1	1	1	1	1
Sodium Chloride	1	1	1	1	1	1	1	1	1	1
Sodium Hydroxide < 25%	2	2	2	2	1	1	1	2	1	1
Sodium Silicate	1	1	1	1	1	1	1	1	4	1
Sodium Sulphate	2	1	1	1	1	2	1	1	1	2
Sodium Sulphide	2	1	1	1	1	2	1	1	1	2
Steam	4	4	4	4	1	4	1	4	3	4
Stearic Acid	2	2	2	2	2	2	2	4	2	2
Styrene	4	4	4	4	4	4	4	2	4	4
Sugar	1	2	1	1	1	1	1	1	1	1
Sulphur	4	1	4	4	1	4	1	1	4	4
Sulphur Dioxide	2	4	4	4	1	2	1	4	2	2
Sulphuric Acid 30%	3	3	4	4	2	3	2	1	4	3
Sulphuric Acid 50%	4	4	4	4	4	4	4	1	4	4
Sulphuric Acid 96%	4	4	4	4	4	4	4	1	4	4
Sulphurous Acid	2	2	2	2	2	2	2	1	4	2
Tannic Acid	2	2	1	1	1	1	1	1	2	1
Tar	4	3	2	2	4	3	4	1	2	3
Tartaric Acid	2	2	1	1	2	1	2	1	1	1
Tetrachloroethylene	4	4	4	4	4	4	4	1	4	4
Toluene	4	4	4	4	4	4	4	1	4	4
Transformer Oil	4	2	1	1	4	4	4	1	2	4
Transmission Fluid (Type A)	4	2	1	1	4	4	4	1	2	4
Trichloroethylene	4	4	3	3	4	4	4	1	4	4
Triethanol Amine	2	2	3	3	2	2	2	4	4	2
Turpentine	4	4	1	1	4	4	4	1	4	4
Vegetable Oil	4	3	1	1	3	4	3	1	1	4
Water	1	2	1	1	1	1	1	2	1	1
White Spirit	1	1	1	1	1	1	1	1	1	1
Xylene	4	4	4	4	4	4	4	1	4	4
Zinc Chloride	1	1	1	1	1	1	1	1	4	1
Zinc Sulphate	2	1	1	1	1	2	1	1	1	2

## CORK SHEETING



### NL62 (AMORIN MR31)

#### Description:

A cost effective mechanical grade cork sealing material compounded with Styrene Butadiene (SBR) Rubber. It has a high compressibility and moderate resistance to most oils. Not suitable for unleaded petrol or low sulphur diesel fuel.

A good general purpose gasket material where lower sealing pressures are required.  
Maximum temperature 110°C.

#### Service:

This is a high compressible SBR bonded material suitable for low/medium bolt pressure, with good flexibility and resilience. The physical characteristics along with fuel, solvent and oil resistance, make this a qualified material for industrial and automotive gaskets, but not suitable for unleaded petrol or low sulphur diesel fuel.

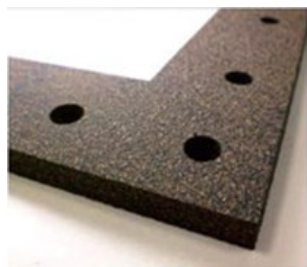
#### Specification:

Binder: Styrene Butadiene (SBR) Rubber

Test Method	Property	
ASTM F 1315	Density (kg/m <sup>3</sup> ):	560 - 760
ASTM D 2240	Hardness (Shore A):	50 - 70
ASTM F 36	Compressibility at 400 psi (%):	30 - 55
ASTM F 36	Recovery at 400 psi (min) (%):	75
ASTM F 152	Tensile strength (min) (MPa):	0.96
ASTM F 147	Flexibility,	
	Original (F=5):	No cracks
	Oven aged, 70h at 100°C (F=16):	No cracks
	ASTM N°1 Oil, 70h at 100°C (F=16):	No cracks
ASTM F 146	Volume Change after Immersion (%)	
	ASTM N°1 Oil, 70h at 100°C:	-10 to +10
	IRM 903 Oil, 70h at 100°C:	+5 to +40
	Fuel A, 22h at RT:	0 to +15
ASTM F 146	Thickness Change,	
	IRM 903 Oil, 70h at 100°C (%):	-2 to +15
ASTM D 395	Compression Set,	
	Method A, 22h at 70°C (max.) (%):	55

Part No.	Description	Thickness	Sheet Width	Sheet Length
NL6210II	NL62	1.0mm	1000mm	1000mm
NL6216II	NL62	1.6mm	1000mm	1000mm
NL6224II	NL62	2.4mm	1000mm	1000mm
NL6232II	NL62	3.2mm	1000mm	1000mm
NL6248II	NL62	4.8mm	1000mm	1000mm
NL6264II	NL62	6.4mm	1000mm	1000mm

## CORK SHEETING



### ACN60

#### Description:

Sealing – Gaskets and Vibration Control

Proven long term performance in extreme operating temperatures.

Tolerant to extreme surface finish conditions and high out-of-flatness flanges. Designed gaskets for multiple industries and applications, including transformers. Internal and external pads for distribution transformers.

#### Service:

A firm nitrile material suitable for high/medium bolt pressure with good flexibility and resilience. The physical characteristics along with good fuel, solvent and oil resistance make this a high qualified material for automotive, industrial and transformer gaskets.

Maximum temperature 125°C.

#### Specification:

Binder:	Nitrile
Density (kg/m <sup>3</sup> ) ASTM D297 :	950
Hardness ( Shore A) ASTM D2240 :	75
Elongation (%) ASTM D412 :	50
Temperature range (°C) :	-30 to 125
Stress range (Mpa) :	5.5 to 20
Compressive Strength (Mpa) :	> 70

Part No.	Description	Thickness	Sheet Width	Sheet Length
ACN6016QI	ACN60	1.6mm	1270mm	1040mm
ACN6024QI	ACN60	2.4mm	1270mm	1040mm
ACN6032QI	ACN60	3.2mm	1270mm	1040mm
ACN6048QI	ACN60	4.8mm	1270mm	1040mm
ACN6064QI	ACN60	6.4mm	1270mm	1040mm
ACN6095QI	ACN60	9.5mm	1270mm	1040mm

## OIL JOINTING



### Flexoid

#### Description:

A cellulose based material. A very cost effective gasket material.

Excellent oil and fuel resistance. Not suitable for use with alkalis, acids or steam. Applications include automotive carburettor, fuel pump, oil pump, water pump, timing cover, etc.

Maximum temperature 120°C.

#### Service:

Used extensively in automotive applications such as carburettor, fuel pump, front plate, oil filter, side cover, timing cover, thermostat, water pump. Limited uses in industrial markets because of relatively low heat and chemical resistance compared with non-asbestos materials.

#### Specification:

Maximum Service Temperature (°C) :	120°C
Colour :	Brown
Compressibility at 70kg/cm & sup2; (1000 psi) :	25%- 40%
Recovery :	40% Min
Tensile Strength across grain :	13.79MN/m <sup>2</sup> Min

Fluid Resistance Properties after 22 hours at 21°C to 30°C :

Fluid ASTM	Thickness Change %	Weight Change %
Oil 3	5	15
Fuel B	5	15
Coolant	30	90

Part No.	Description	Thickness	Roll Width	Roll Length
FLX015ZI	FLEXOID	0.15mm	1000mm	200M
FLX025ZI	FLEXOID	0.25mm	1000mm	200M
FLX050ZI	FLEXOID	0.50mm	1000mm	150M
FLX080ZI	FLEXOID	0.80mm	1000mm	100M
FLX120ZI	FLEXOID	1.20mm	1000mm	50M
FLX160ZI	FLEXOID	1.60mm	1000mm	50M
FLX320ZI	FLEXOID	3.20mm	1000mm	25M

Flexoid can be supplied in roll or cut to length

## OIL JOINTING



### N8094

#### Description:

N8094 is a cellulose fibre based beater sheet material with fully cured nitrile butadiene binder.

N8092 is used in automotive, small engine, and compressor applications. It has excellent crush resistance at high flange pressures, and excellent sealing properties with oil, fuel, and water. It can be used up to 180°C for short duration.

#### Specification:

Density (g/cm <sup>3</sup> ) :	0.87	ASTM F1315
Compressibility at 34.5 MPa (%) :	28 - 42	ASTM F36
Recovery (%) :	20.0 min.	ASTM F36
Tensile Strength (MPa) :	8.62 min.	ASTM F152

Fluid Resistance (IRM903 oil)		ASTM F146
Change in Thickness (%) :	7 max.	
Change in Tensile Strength (%) :	30 max.	
Change in Compressibility (%) :	30 - 45	

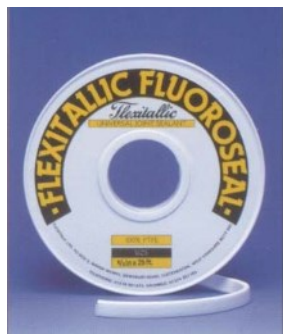
Fluid Resistance (Fuel B)		ASTM F146
Change in Thickness (%) :	7 max.	
Change in Weight (%) :	25 - 50	

Part No.	Description	Thickness	Roll Width
N809405ZI	N8094	0.5mm	1000mm
N809408ZI	N8094	0.8mm	1000mm
N809410ZI	N8094	1.0mm	1000mm
N809415ZI	N8094	1.6mm	1000mm

N8094 can be supplied in roll or cut to length



## FLEXITALLIC FLUOROSEAL - Expanded PTFE with Adhesive Backing



### Description:

FLEXITALLIC FLUOROSEAL is a universal joint sealant manufactured from 100% expanded PTFE and combined with a self-adhesive backing for easy application. Thanks to its unique properties, it can be compressed into a thin, wide ribbon which conforms to all surface irregularities, leaving a strong, inert, tough and universal sealant which resists high temperatures, pressures and corrosive environments. FDA suitable (FDA CRR177.1550).

### FOR LONG LIFE, TROUBLE-FREE SEALS

- Excellent weathering resistance - will not deteriorate with age
- Withstands high pressures - up to 3000 psi
- Wide temperature range from -400°F to +500°F
- Effective seal on uneven or damaged surfaces
- Will not contaminate flow products
- Resistant to creep - joints remain leak free
- pH range 1-14
- 100% PTFE - inert and resistant to chemicals and corrosive environments

### QUICK, EASY, EFFICIENT INSTALLATION

- Simple to use
- Soft and flexible - easily follows irregular contours
- Self-adhesive strip allows accurate positioning
- Just cut to length, press into position and form into closed envelope by overlapping the two ends
- Low bolting torques

### LABOUR-SAVING DEVICE THAT CUTS DOWNTIME

- Clean, convenient, timesaving
- No waiting for conventional gaskets to be cut
- Effective seal on rough, warped or damaged surfaces extends useful life of equipment
- Seals large diameters where conventional cut gaskets are inaccessible
- Flanges part easily and need minimal cleaning before resealing

### ECONOMICAL TO STOCK AND TO USE

- Unlimited shelf life
- A few sizes satisfy all requirements - inventory savings
- Compact packages store easily
- Just cut to length - no waste, no scrap

### USED WORLDWIDE IN DEMANDING ENVIRONMENTS

- Hydraulic, pneumatic and water supply systems
- Steam vessel, pressure vessel and pipe flanges
- Fan housings, ventilation and fume ducts
- Manway flanges, manhole covers, concrete lids, cofferdam lids, porthole gaskets
- Pump and compressor housing flanges Heat exchangers, condensers, turbine and engine case doors, fuel injector gaskets
- Joints in glass, ceramic, plastic and reinforced plastic, vessels, pipes and components
- Suitable for use in the following industries: food and drink, pharmaceutical, water and gas supply, petroleum, chemical building, agricultural, automotive, marine and power

### SIZES TO MEET EVERY APPLICATION

- Fluoroseal is available with a self-adhesive fixed backing in a range of sizes as shown in the above table (all dimensions nominal)
- Any of the sizes above can be supplied without the adhesive backing or as bulk coils, to special order

### Specification:

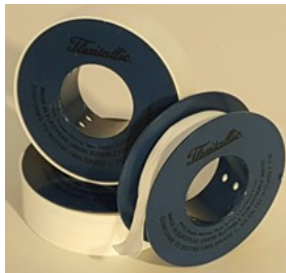
Recommended temperature range : 0.87

Maximum recommended pressure : 14 MPa

These temperature and pressure guides cannot necessarily be used simultaneously. Do not use gasket pastes.

Part No.	Description
F03-PF	FLUOROSEAL 3.0mm x 1.5mm x 30 Metres
F05-PF	FLUOROSEAL 5.0mm x 3.0mm x 25 Metres
F07-PF	FLUOROSEAL 7.0mm x 2.5mm x 20 Metres
F10-PF	FLUOROSEAL 10.0mm x 3.0mm x 10 Metres
F12-PF	FLUOROSEAL 12.0mm x 4.0mm x 6 Metres
F14-PF	FLUOROSEAL 14.0mm x 5.0mm x 5 Metres
F17-PF	FLUOROSEAL 17.0mm x 6.0mm x 5 Metres
F20-PF	FLUOROSEAL 20.0mm x 7.0mm x 5 Metres

## FLEXITALLIC PTFE THREAD SEAL TAPE



### Description:

Flexitallic Thread Seal Tape is a high quality PTFE thread seal tape complying with the requirements of BS 7786 Grade L. It is manufactured from 100% virgin PTFE and is WRC approved for use with potable water.

The residual lubricant content is less than 0.1 % by weight in accordance with BS 7786 this means that the tape is suitable for use in oxygen service.

Applications include pipe thread sealing against water, steam, gases, acids, solvents and chemical services.

### Colour:

White

### Service:

Flexitallic Thread Seal Tape is resistant to attack from a wide range of chemical media including strong acids, alkalis and organic solvents. It is suitable for use on threaded connections of any material up to 15mm nominal bore. Flexitallic Thread Seal Tape has been specially formulated to seal both gaseous and liquid media. It is recommended for sealing against compressed air, nitrogen, oxygen, saturated steam and potable water. Flexitallic Thread Seal Tape satisfies the requirements of BS 7786 Grade L and complies with BS 4375 (29 bar/1/4" BSP single wrap).

Recommended temperature range : -240°C to 260°C

WRC Approved for use with potable water : Approval No. 9810505

Part No.	Description
PTFE12	PTFE SEAL TAPE 0.075mm x 12mm x 12M
PTFE19	PTFE SEAL TAPE 0.075mm x 19mm x 15M
PTFE25	PTFE SEAL TAPE 0.075mm x 25mm x 15M

## FLEXIGAUGE



### Description:

Precision manufactured plastic strip used to check clearances of bearings and shafts. Suitable for automotive, marine and industrial applications. Flexigauge is supplied by the box, which contains ten 12" long strips packed in individual envelopes. Measurement is in either millimetres or inches. Size range 0.025 – 0.406mm (.001" - .016")

Part No.	Description
AG-1	FLEXIGAUGE, BOX, GREEN (.001-.003in / .025-.076mm)
AR-1	FLEXIGAUGE, BOX, RED (.002-.006in / .051-.152mm)
AB-1	FLEXIGAUGE, BOX, BLUE (.004-.009in / .012-.229mm)
AY-1	FLEXIGAUGE, BOX, YELLOW (.008-.016in / .203-.406mm)
AM-1	<p>FLEXIGAUGE MULTI PACK</p> <p><u>Contains:</u></p> <p>Green x 4 Strips</p> <p>Red x 3 Strips</p> <p>Blue x 2 Strips</p> <p>Yellow x 1 Strip</p>

## MATERIAL PACKS



### Flexoid Material Packs

**Description:**

Cellulose Fibre POJ Gasket Material suitable for sealing water, oil and fuel.

Temperature up to 120°C

Part No.	Description	Thickness	Sheet Width	Sheet Length
HR100	Flexoid	0.5mm	500mm	1000mm
HR101	Flexoid	0.8mm	500mm	1000mm
HR102	Flexoid	1.6mm	500mm	1000mm
HR103	Flexoid	0.5mm	250mm	250mm
HR104	Flexoid	0.8mm	250mm	250mm
HR105	Flexoid	1.6mm	250mm	250mm
POJ042301	Flexoid	0.5mm	230mm	1000mm
POJ12301	Flexoid	0.8mm	230mm	1000mm



### N8094 Material Packs

**Description:**

Reinforced Cellulose Gasket Material with fully cured Nitrile butadiene binder.

Temperature up to 180°C

Part No.	Description	Thickness	Sheet Width	Sheet Length
HR400	N8094	0.5mm	500mm	1000mm
HR401	N8094	0.8mm	500mm	1000mm
HR402	N8094	1.6mm	500mm	1000mm

## MATERIAL PACKS



### Manifold Gasket Material Packs

**Description:**

General purpose (Double sided manifold material with steel core).

Suitable for exhaust manifold, exhaust flange, head gaskets and heat shields.

Temperature up to 450°C

Part No.	Description	Thickness	Sheet Width	Sheet Length
HR420	DSM	1.8mm	330mm	330mm
HR421	DSM	1.8mm	330mm	1000mm



### Exhaust Manifold Gasket Material Packs

**Description:**

General purpose (Double sided steel material with composite core).

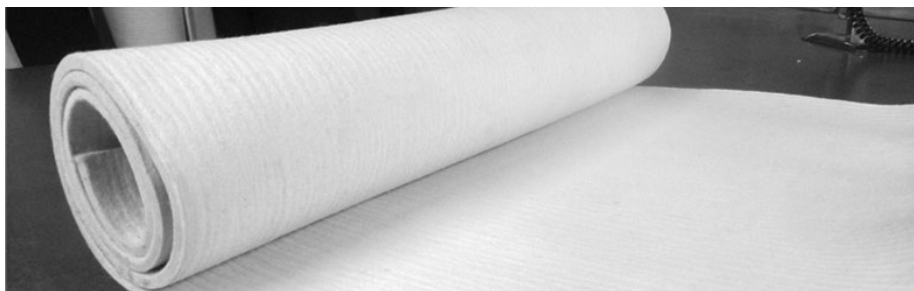
Suitable for exhaust manifold, exhaust flange, head gaskets and heat shields.

Temperature up to 450°C

Part No.	Description	Thickness	Sheet Width	Sheet Length
HR430	DSF	1.4mm	330mm	1000mm



## INDUSTRIAL FELT



### Properties and Functions of Felt:

Felt has become an important industrial and general purpose material, with a legion of uses.

- **FELT IS VERSATILE**  
Felt can be manufactured to conform to a specific thickness, resilience, shape, absorption or density. It can be bought to almost any consistency of hardness or softness. It can be successfully proofed against moths, flame, water, fungi and corrosion.
- **A SEAL**  
The sealing property of felt, its ability to prevent oil, greases and gases from escaping, is put to good use, as in washers for industrial equipment and motor parts.
- **A SHIELD**  
A concomitant of felts sealing ability is its shielding capacity. It excludes materials like dust and abrasive particles from bearings and other sensitive machine parts. It also shields and protects fine objects from bumps and scratches during transport.
- **AN ISOLATOR**  
Felt lessens and isolates vibration, absorbs shocks and deadens noise. It acts as a cushion under the base of machinery.
- **AN INSULATOR**  
Insulation from vibration, noise, heat and cold is one of the standard applications for felt.
- **A WICK**  
Felt's high capillary nature, long-life, non-fray construction, absorption capacity and resiliency make it excellent for wicks. It stores, filters, circulates or delivers oil, ink and other liquids in a number of outlets which range from marking pen nibs to automobile lubricating wicks.
- **A FILTER**  
The wicking and porous qualities of felt combine with its ruggedness and durability in a variety of liquid and vapour filters used by industry.
- **A CARRIER**  
The sponginess of felt makes it a suitable pad for carrying inks and other solutions, in office equipment for instance. It can also be impregnated for various purposes with natural and synthetic substances like asphalt and resins.
- **A LAMINATE**  
Felt can be strongly cemented and bonded to surfaces of all kinds, is easily laminated with other materials.
- **A FRICTION MATERIAL**  
Felt holds, drags, clutches and breaks, reduces friction against glass, wood and metal. It also rubs and wipes, grinds and polishes, as in metal roller wipes and polishing wheels of all kinds.
- **WON'T FRAY**  
Felt does not ravel shred or fray. It can be cut accurately with a clean edge by die, knife or shears. It can be punched, perforated, chiselled, turned or ground.
- **RESILIENCE AND ELASTICITY**  
Wool fibres are natural springs, and felt materials embody their resilience. Felt does not crumble when placed under a load, and recovers rapidly when the load is removed. A high degree of elasticity is also characteristic of felt, which has a high breaking point.
- **DURABILITY**  
Felt possesses exceptional qualities of toughness and endurance. Exposure to the atmosphere, moisture, sun, heat and cold hardly affect it. It resists wear, age, deterioration and many acids and chemicals.

Part No.	Description	Thickness	Sheet Width	Sheet Length
FWF020EI	Grade A Engineers Felt	2.0mm	1000mm	1800mm
FWF320EI	Grade A Engineers Felt	3.2mm	1000mm	1800mm
FWF480EI	Grade A Engineers Felt	4.8mm	1000mm	1800mm
FWF640EI	Grade A Engineers Felt	6.4mm	1000mm	1800mm
FWF790EI	Grade A Engineers Felt	7.9mm	1000mm	1800mm
FWF960EI	Grade A Engineers Felt	9.5mm	1000mm	1800mm
FWF127EI	Grade A Engineers Felt	12.7mm	1000mm	1800mm
FWF159EI	Grade A Engineers Felt	15.9mm	1000mm	1800mm
FWF191EI	Grade A Engineers Felt	19.1mm	1000mm	1800mm
FWF254EI	Grade A Engineers Felt	25.4mm	1000mm	1800mm
FELT can be supplied in sheet or cut to length				

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100%  
NEW ZEALAND  
OWNED

## ACL RACE SERIES HEAT SHIELD

### HD-5000 Heat Shield Aluminised Steel

Keeping heat to a minimum is just one more thing that can add to performance. For use near turbochargers, exhaust systems, manifolds and other hot spots. Our revolutionary heat shield material also keeps components cooler.

ACL Race Series Heat Shield has a unique double corrugation design that allows the material to be formed into complex shapes and ensures exceptional rigidity. This material provides excellent performance in high temperature noise sensitive applications and is available in two ready-to-use sizes

Consisting of a ceramic insert sandwiched between two aluminised steel sheets, ACL Race Series Heat Shield gives racers a very efficient high temperature thermal barrier suitable for a wide variety of automotive and industrial applications.

#### Performance applications:

For use near turbochargers, catalytic converters, exhaust systems, manifolds and other hot spots

#### Benefits:

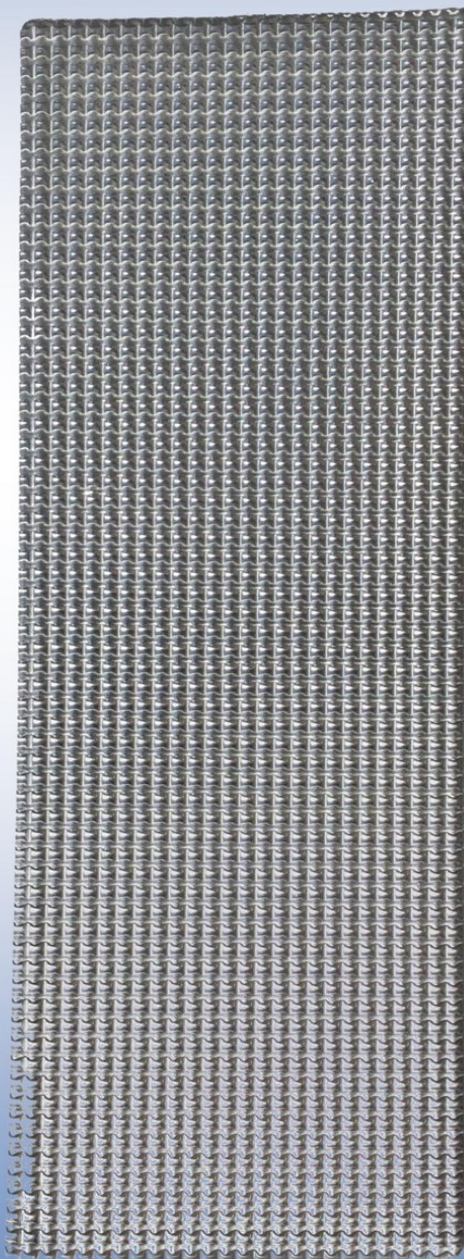
Lightweight, acts as a sound dampener, thermally efficient, easily formed and recyclable.

#### Maximum temperature range:

850°C - 900°C

HD-5000-SML sheet size 700mm x 275mm

HD-5000-LGE sheet size 700mm x 550mm



## HD5000 - HEAT SHIELD MATERIAL



### Description:

HD-5000 is a composite material constructed with dual layers of ACMS sheet (0.15mm) with a ceramic paper insert. The material offers exceptional strength, whilst maintaining a high heat resistance. The product is suitable for operating at temperatures up to 900°C. Suitable for mounting directly onto manifolds and turbo chargers.

### Temperature Range:

Minimum Continuous	-60°C
Maximum Continuous	900°C
Melting Point	950°C

**Thickness:** 3.5mm

**Weight:** 3.45kg/m<sup>2</sup>

**Flexibility:** Good

**Flammability Rating:** Non Flammable

**Ignition Temperature (flash point):** No potential for ignition

**RoHS:** Yes

**Halogen Free:** Yes

**Toxicity:** Nil

**Binders:** No

Thermal Performance (static):	Temperature Before (°C)	Temperature After (°C)
	100	27.8
	125	28.3
	150	28.9
	175	29.5
	200	30.5
	225	31.6
	250	34.5
	275	39.1
	300	46.6
	325	63.9

Part No.	Description
HD-5000-SML	700mm x 275mm
HD-5000-LGE	700mm x 550mm