

PILLAR GASKETS

Spiral Wound Gasket	P1 - 2
• General purpose type	
No. 2600 Pillarfoil® Expanded Graphite Spiral Wound Gasket	
No. 2300 Pilaflon® PTFE Spiral Wound Gasket	
No. 2700 Spiral Wound Gasket For High Temperature	
Spiral Wound Gasket For Specific Use	
No. 2600 LT/LTL For Low Tightening Stress and High Density	
No. 2502LT/EOS General Use Thin Type Gasket For Joint Sheet Replacement	
Joint Sheet Gasket	P3
No. 5600 Technograph® Sheet (Non-Asbestos Joint Sheet)	
No. 5611 General Purpose Non-Asbestos Joint Sheet	
Rubber Sheet Gasket	P4
No. 5003-NBR Aramid Fiber Composite Rubber Sheet Gasket	
No. 5002 Rubber Sheet With Cloth Gasket	
No. 5001 Rubber Sheet Gasket	
Pilaflon® Gasket	P5 - 6
No. 4400 · 4401 Pilaflon® PTFE Solid Gasket	
No. 4001· 4002· 4003 Low Creep PTFE Sheet Gasket	
No. 44 ** AF, 44 ** FH Pilaflon® PTFE Jacket Gasket	
Pillarfoil® Sheet Gasket	P7
No. 6633 Expanded Graphite Sheet Gasket with Metal Foil	
No. 6631 Expanded Graphite Sheet Gasket with Metal Plate	
No. 6630 Expanded Graphite Sheet Gasket	
Metal Gasket	P8
Semi-Metallic Gasket	P9-10
No.1200G-H Expanded Graphite Coated Metal Corrugated Gasket	
Metal Jacket Gasket	
ePTFE Gasket	P11
No 3300-F PTFF Joint Sealant	

No. 3356 Clean Sanitary Ferrule Gasket

Spiral Wound Gasket

The spiral wound gasket is a gasket wrapped in a spiral shape and overlapped by a tape-shaped thin metal plate (hoop). The wound is molded in a V-shaped cross section and a nonmetallic material that combines cushioning and sealing properties.

We are offering not only standard spiral wound gaskets using expanded graphite and PTFE filler but also spiral wound gasket specialized for some products and optimized for a wide range of applications.

Spiral Wound Gasket For General Use

2600 Pillarfoil[®] Expanded Graphite Spiral Wound Gasket

Pillar No.2600 stands for the Spiral Wound Gasket using Pillarfoil (expanded graphite) tape for the filler.

In addition to sealing performance and pressure resistance, this spiral wound gasket has other characteristics such as demonstrating of a high balance reliability and wide temperature range resistance that improve its performance.

**Almost all 2603-EEE sizes, with ANSI 150~1500LB and JIS10~63K, are available and can be immediately supplied.

It is used for pipe flange of most lines requiring high reliability including high temperature · high pressure steam · ammonia etc.

2300 Pilaflon® PTFE Spiral Wound Gasket

Pillar No.2300 filler is characterized by the use of 100% PTFE soft tape that has an outstanding chemical resistance and is soft and elastic.

**Almost all 2303-EEE sizes, with ANSI 150~600LB and JIS is 10~40K, are available and can be immediately supplied.

General chemicals, corrosive gases, Chemical resistance required line pipe flange, valve hood etc.

2700 Spiral Wound Gasket For High Temperature

Pillar No.2700 has Pillarfoil (expanded graphite) tape placed in the middle layer of the filler, it has inorganic-fiber tape rich in resilience and arranged in the inner and outer layers. It is especially resistant to a temperature that can reach 450°C or more (in the presence of oxygen), temperatures that are difficult to handle with No.2600.

*Depending on its application, the inorganic-fiber tape can be arranged in the inner or outer layer.

Main applications High temperature / high-pressure steam etc. that is difficult to handle with No.2600

Gaskets for special applications such as Compression Gauge Spiral Wound Gasket (Pillar No. 2620) or Spiral Wound Gasket for oxygen (Pillar No. 2300 S) are also available. Please contact us for any other special application.

Pillar No.	2300	2600	2700	2600LT	2600LTL
Operating temperature (°C)	-200~+260	-200~+600 _{*1}	-200~+650	-104~+300	-200~+300
Max. pressure (MPaG)	15.5(Class 900)	43.1(Class 2500)	43.1(Class 2500)	15.5(Class 900)	15.5(Class 900)
Min. designed tightening stress y (N/ mm²)	68.9	68.9	68.9	44.8	44.8
Gasket factor m	3	3	3	2	2
Min. tightening stress Y (N/mm²) *2	39.2	39.2	78.5	29.4	29.4

%1 For use under an oxidizing atmosphere, it is ~ 450 ℃.

%2 "Y"is the necessary minimum tightening stress which takes account of the contact area of the gasket.

Spiral Wound Gasket For Specific Use

2600LT/LTL For Low Tightening Stress and High Density

It is a spiral wound gasket that adopts Pillarfoil tape after special processing, as a filler material, which greatly enhances sealing performance. Therefore, the sealing performance will be continued even when it comes to low tightening surface stress, No. 2600 LTL shows excellent seal performance with cryogenic fluid (LNG · LPG) etc. where a reduction in tightening stress can not be avoided.

Used for Fluids that require strict sealing performance, such as fluids that vaporize and leak (LNG \cdot LPG), for piping with low-temperature thermal cycle load applied such as the use in an extremely low-temperature range, etc.

2502LT-EOS General Use Thin Type Gasket for Joint Sheet Replacement

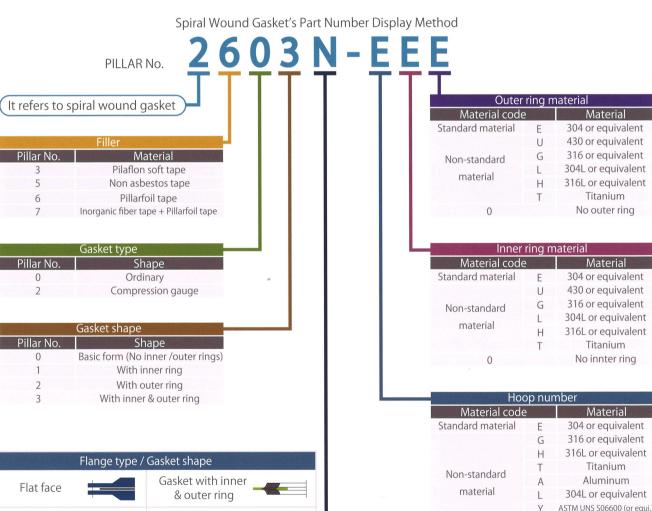
This gasket is developed to obtain further long-term stability and reliability in general-purpose line such as steam in which joint sheet is heavily used. It is designed so that replacement from the joint sheet gasket can be performed without placing design changes on the piping or the joint side, and by simply applying this product to the existing piping. This gasket can be used in various applications such as the expansion of applicable range.

Specifications

Size: JIS10K10A~250A (Product thikness 3.2mm) Max. pressure: 1.4MPaG (JIS10K) Operating temperature: -50~450°C

Gasket factor (m): 2

Min. designed tightening stress (y): 25.5N/mm² Min. tightening stress (Y): 29.4N/mm²



Flat face	Gasket with inner & outer ring
Raised face	Gasket with inner & outer ring
Male-female	Gasket with inner ring
ongue & groove	Basic type gasket Gasket with inner ring
Groove to flat	Basic type gasket Gasket with inner ring

Application For general use LT/LTL Low tightening stress high density type For nuclear (2600 type only) For oxygen (2300 type only) With rib

321 or equivalent 347 or equivalent

Spiral Wound

Gasket

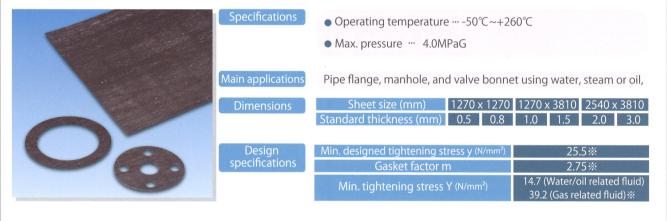
Joint Sheet Gasket

The joint sheet gasket is a gasket made from a fibrous material or expanded graphite as the main raw material, rubber is uniformly mixed as a binder, and then stretched by a heating roll. The size of the original plate is large so that it can be applied to a large diameter. It can be customized and cut at the site to meet requested dimensions and shapes.

This is suitable for general-purpose services such as water, steam, oil, etc., therefore, it is widely used in a wide range of industries.

5600 Technograph® Sheet (Non-Asbestos Joint Sheet)

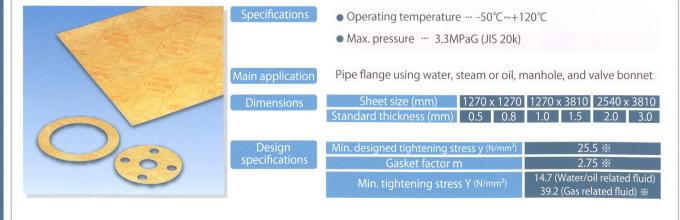
Pillar No. 5600 is a sheet gasket composed of expanded graphite and inorganic fiber as a main raw material, ensuring strength with aramid fiber and composing with a rubber binder. In addition to its excellent sealability under high-temperature steam conditions, it has an excellent flexibility in handling properties, a lineup with large plate size which can correspond to large diameter equipment. (Standard and customized size products are available).



XThe value depends on the gasket thickness, it shows the typical value (when t = 1.5).

5611 General Purpose Non-Asbestos Joint Sheet

Pillar NO. 5611 is a general-purpose joint sheet composed of inorganic and aramid fiber and combined with a rubber binder. It is characterized by a high elasticity, less creep and smooth surface, which makes it well-fitted to the flange surface and gives it an excellent sealing performance. (Standard and customized size products are available).



%The value depends on the gasket thickness, it shows the typical value (when t=1.5).

Rubber Sheet Gasket

Rubber sheet gasket is a gasket utilizing rubber's rich elasticity and chemical resistance.

Number Display Method

Pillar Number 5002 - NBR

Product No. Rubber material code

5003-NBR Aramid Fiber Composite Rubber Sheet Gasket

Pillar No.5003 is a composite reinforced rubber sheet gasket with aramid short fibers in NBR. It shows excellent pressure resistance, creep resistance and corrosion resistance.

Specifications

- Operating temperature ··· -30°C∼+120°C
- Max. pressure ··· 2.6M PaG

Main applications

Seawater pipe flange, high-rise building clean water pipe, hydrostatic test gasket, insulation gasket.

Dimensions

 Sheet size (mm)
 1270x1270

 Standard thickness (mm)
 1.5
 2.0
 3.0
 6.0

5002 Rubber Sheet With Cloth Gasket

Pillar No.5002 is a rubber sheet gasket reinforced, higher than No.5001, with a special fiber cloth For rubber materials (NBR and CR) are prepared as standard.

Specification

- Operating temperature
 … 0 °C~+100°C
- Max. pressure … 1.0M PaG

Main application

Seawater pipe flange, high-rise building clean water pipe, hydrostatic test gasket.

5001 Rubber Sheet Gasket

Pillar No.5001 is a sheet gasket of rubber alone, general purpose seat gasket. it can be sealed even with a low tightening stress. It can be manufactured using NBR, CR, CSM, EPDM, FKM, VR, SBR, and SI.

Specification

- Operating temperature ··· 0 °C∼+100°C (NBR)
- Max. pressure … 1.0M PaG

Main applications

Water, oil and gas pipe flange.

Pilaflon® Gasket

Pilaflon gasket is made from PTFE resin simple substance, various filler mixing, and a combination with other materials. It is a gasket that makes the most of the excellent properties of PTFE resin.

Therefore, it has many characteristics such as chemical resistance, flame resistance, cleanliness, and electricity resistance. it is widely used from general-purpose chemical industry such as petrochemical, soda, papermaking etc. it is used in industrial field, food industries, and medicine.

4400 • 4401 Pilaflon® PTFE Solid Gasket

Pillar No. 4400 · 4401 is a gasket made by parts filled by PTFE or unfilled parts after cutting, molding, and machining. Unfilled gaskets are clean and very resistant to the chemical. Gaskets with filler are excellent for mechanical strength.

No.4400 manufactured by punching/lathe processing and NO 4401 manufactured by knife processing are used.

Number Display Method
Pillar No. 4400 - G2 Product No. Material code

Material					
Material	Main filler	Features			
W2	Unfilled	Excellent chemical resistance and cleanliness			
G2	Glass fiber	Excellent cold flow resistance.			
R4	Carbon fiber	Excellent creep resistance at high temperature			

**PTFE filler can be manufactured according to the application.

Specifications

- Operating temperature ··· -100°C~+100°C
- Max. pressure ··· 2.0M PaG

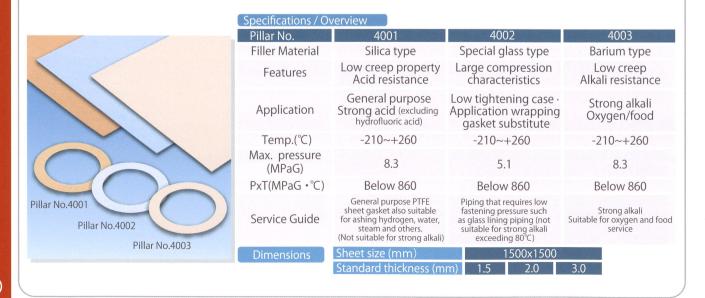
Main applications

Various instruments requiring chemical resistance \cdot Pipe flanges Resin coated equipment which needs to be protected from contamination.

4001 • 4002 • 4003 Low Creep PTFE Sheet Gasket

Pillar No. 4001 • 4002 • 4003 prepared the filler with PTFE as the main raw material and proprietary manufacturing method, improving the creep characteristic which becomes a problem mainly with the PTFE gasket.

(We also prepare standard and special size processed products)



Pilaflon® Gasket

Pilaflon® PTFE Jacket Gasket

Pilaflon PTFE jacket type gasket is a gasket wrapped around core material with non-asbestos sheet between pilaflon sheets.

Pilaflon's chemical resistance and sealability combined with the elasticity of the core demonstrate superior performance. Compared to the Pilaflon solid gasket, stress relaxation is small even at high load, it demonstrates an excellent performance thanks to relatively low thickness of Pilaflon.



Number Display Method

Pillar No. 4430 - AF

Product No. Shape symbol

Main applications

- Maintenance hatch of oil refinery / chemical plant / tank cover
- Pipe flange of glass / resin / porcelain lining
- Pipe flange using corrosive chemical (liquid / gas)
- Other, pipe flanges requiring insulation

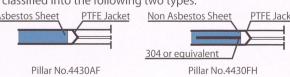
Product No.					
Pillar No.	Name	Shape	Horizontal construction	Spec.	Standard size
4410	Turning type Pilaflon jacket type gasket	, , , , , , , , , , , , , , , , , , ,	It is a jacket type gasket that shapes the Pilaflon material into right angles which makes the	-80~+120°C 2.0MPaG ※	Ø30~Ø500
4411	Turning type Pilaflon jacket type gasket		following cross section shape:	Z.UIVIPAG %	
4420	Crimp style Pilaflon jacket type gasket		It is covered by Plaflon tape from the inside and heat sealed at one place. It is suitable for large		JIS standard 5K
4421	Crimp style Pilaflon jacket type gasket		diameters (Ø 200 or more) and for irregular shapes.		10K 16K
4430	Lip shaped Pilaflon jacket type gasket		It is a jacketed gasket with a notch in a 1 mm	-80~+120°C 2.0MPaG※	20K 30K
4431	Lip shaped Pilaflon jacket type gasket		thick Pilaflon disk, with a center core.		ASME standard
4432	Lip shaped Pilaflon jacket type gasket				Class 75 Class150
4432 S	Pilaflon soft jacket type gasket		To makes more local surface pressure, inner core's inner side is made thicker than the one of No.4432.	-30~+120℃ 2.0MPaG※	Class300

%FH: 5.4 MPaG

Shape symbol

Depending on the configuration of the core material, the shape is classified into the following two types:

AF	The core material is composed only of the joint sheet.
FH	304 (or equivalent) is inserted between the core.



Pillarfoil® Sheet Gasket

The Pillarfoil sheet gasket is a gasket utilizing expanded graphite's excellent flame resistance, chemical resistance, sealing property, elasticity, etc.

There are features such as flexible material, good fit with flange surface, usable from cryogenic temperature to high temperature, etc. It is used in a wide range of industries.

6633 Pillarfoil® Expanded Graphite Sheet Gasket with Metal Foil Hylamina®

Pillar No. 6633 is an expanded graphite sheet gasket in which 316 L (or equivalent) metal foil is laminated in a pillar foil.

This gasket is excellent in handleability which improves the breakage resistance and tear resistance, while maintaining the excellent characteristics of the expanded graphite sheet.

We also have a lineup of Pillar No.6633N for nuclear power.

Dimensions

 Sheet size (mm)
 1000x1000

 Standard thickness (mm)
 0.5
 0.8
 1.0
 1.5
 2.0
 3.0

6631 Pillarfoil® Expanded Graphite Sheet Gasket with Metal Plate

Pillar No. 6631 is an expanded graphite sheet gasket reinforced with stainless steel thin plate. It can be used with higher pressure than Pillar No. 6630.

Please consult us for further information about: Thickness, stainless steel specification (thickness · material)

6630 Pillarfoil® Expanded Graphite Sheet Gasket

Free sized adhesive (one side) expanded graphite Pillarfoil sheet gasket.

Dimensions

 Sheet size (mm)
 600x600
 1000x1000

 Standard thickness (mm)
 0.38
 0.5
 0.76
 1.0
 1.5
 2.0
 3.0

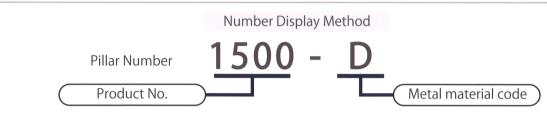
**Free size with adhesive (one side) Expanded graphite tape Pillar No. 6660 · Pillar No. 6670 is also available. Please use it for repairing on-site repair etc.

Pillarfoil® sheet gasket specifications

Physical properties		Pillar No.6633	Pillar No.6631	Pillar No.6630
Gasket factor m		2	2	2
Min. tightening stress Y(N/mm²)		24.5	24.5	24.5
Pressure rating		ASME class 300	ASME class 300	JIS 16K
Operating temperature (under oxidizi	ng atmosphere) °C	-200~+400	-200~+400	-200~+400
Thermal conductivity (W/w •°C)	Horizontal	138	147	173
(Normal temperature)	Vertical	5.0	3.5	5.2
Electric resistance ($\Omega \cdot$ m)	Horizontal	7.0x10 ⁻⁶	4.6x10 ⁻⁶	4.6x10 ⁻⁶
Electric resistance (12 • 111)	Vertical	0.50	0.904	0.904
Main applications			water, steam, oil, solvent, a	cid and alkali,

Metal Gasket

The metal gasket used under severe conditions was manufactured to withstand high temperature, high pressure, and chemicals according to the characteristics of various metals under strict quality control. Soft steel, pure iron, copper, stainless steel, etc. are used as metal materials. Generally, the appropriate difference in hardness between the metal gasket and the flange is about HB30.



• Metal gasket cross-sectional shape · Metal material list

							r No.				
Sectional	Name					Mat	erial				
shape	Name	Aluminum	Copper	Pure iron	Extremely mild steel	304 or equivalent	304L or equivalent	316 or equivalent	316L or equivalent	321or equivalent	F5
~~	Corrugated gasket		1200-C		1200-S	1200-E					
***	Serration gasket		1300-C		1300-S	1300-E	1300-L	1300-G	1300-H		
	Plain metal gasket	1400-A	1400-C		1400-S	1400-E	1400-L	1400-G	1400-H	1400-J	
	Octagonal ring joint gasket			1500-D	1500-S	1500-E	1500-L	1500-G	1500-H		1500-F
	Oval ring joint gasket			1501-D	1501-S	1501-E	1501-L	1501-G	1501-H		1501-
	Pressure seal ring gasket			1502-D	1502-S	1502-E	1502-L	1502-G	1502-H	1502-J	1502-
	Lens ring gasket			1503-D	1503-S	1503-E	1503-L	1503-G	1503-H		1503-l
1	Delta ring gasket			1504-D	1504-S	1504-E	1504-L	1504-G	1504-H		1504-
0	Metal hollow O-ring					1700-E				1700-J	

Specifications

The metal gasket has different performance depending on its shape. Refer to the table below and select the gasket shape. (Note: Table below presents the material in the case of stainless steel)

Pillar No.	Name	Max. pressure (ASME class)	Min. designed tightening stressy (N/mm²)	Gasket factor m	Flange surface roughness (µmRa)
1200	Corrugated gasket	300	52.4	3.75	0.8
1300	Serration gasket	900	69.6	4.25	1.6
1400	Plain metal gasket	2000			
1500	Octagonal ring joint gasket	4500			
1500RX	Octagonal ring joint gasket for high pressure	5000			
1500BX	Octagonal ring joint gasket for ultrahigh pressure	20000	179.3	6.50	0.8
1501	Oval ring joint gasket	4500			
1502	Pressure seal ring gasket	2500			
1503	Lens ring gasket	15000			
1504	Delta ring gasket	2000			
1700	Metal hollow O-ring	4500			

Material

Metal gaskets are made from the materials shown in the table below. Select the optimal material according to the hardness difference between the operating temperature and the flange.

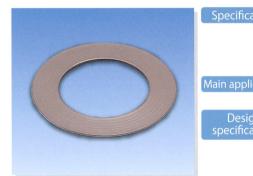
	Material	C. J.	Harc	lness	Max.
Sorting	Name	Code	НВ	HRB	Temp.(℃)
Carbor	Xtrm mild steel	S	120	70	540
stéel	Pure iron	D	90	-	540
	304 or equivalent	E	160	84	800
Stainles	304L or equivalent	L	150	81	800
steel	5Cr-0.5Mo steel(F5)	F	130	74	650
	316 or equivalent	G	160	84	800
	316L or equivalent	Н	150	81	800
Non ferrous	Copper	C	50	-	350
metal	Aluminum	Α	30	-	430
Stainles	321 or equivalent	J	160	84	870
steel	347 or equivalent	K	160	84	870
Non	Monel	M	150	74	815
ferrous metal	Titanium	Т	160	77	800

Semi Metallic Gasket

Semi-metallic gaskets are gaskets that combine metallic materials with non-metallic materials such as expanded graphite and millboard. Using cushion of composite material, we have both heat resistance close to that of metal gasket and high sealability. Expanded graphite coated metal corrugated gaskets and metal jacketed gaskets are available and are used in a very wide industrial fields range.

1200G-H Expanded Graphite Coated Metal Corrugated Gasket

Pillar No.1200G-H is a gasket with a structure in which both surfaces of a metal plate (316L or equivalent) and the one subjected to corrugated (corrugated) are laminated with a PILLARFOIL® sheet. It has many excellent features such as high sealability at low tightening, high compression amount, and high followability respecting equipment precision.



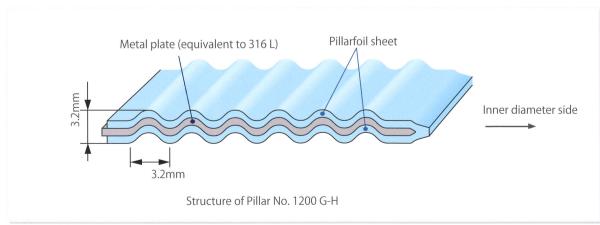
 Operating temperature ··· -200 °C~+450°C (In the case of oxidizing atmosphere, ~ 400°C)

Max. pressure -- 5.2MPaG (Class 300)

Pipe flange / valve bonnet used for high temperature steam, oil etc.

Min. designed tightening stress y(N/mm²)	25.5
Gasket factor m	2
Min. tightening stress Y(N/mm²)	39.2*

* "Y" indicates the necessary minimum tightening stress which takes account of the contact area of the gasket.



*Please contact us for enquiries regarding 1.6 mm thickness lineup.

Semi Metallic Gasket

Metal Jacket Gasket

The metal jacket gasket is a semi-metallic gasket in which the outer side of the mill board material, heat resistant thread etc., is covered with a thin metal plate. It can also cope with complicated plane shape and large diameter. Metal jacketed gasket with a superior sealing performance, surface treated with Pillarfoil is availabe.

• Cross-sectional shape of metal jacket gasket · List of metal materials Metal jacket gaskets are characterized by their coated metallic materials. The gasket characteristics of each material are shown in the table below.

	Material		Pillar No.	Flange surface roughness(μ mRa)	Max. temp. (℃)	Max. pressure (MPaG)	Min. designed tightening stress y(N/mm²)	Gasket factor m
Standard goods	Stainless steel	304 or equivalent	Е		530		62.1	3.75
		316 or equivalent	G					
	Non ferrous Metal	Copper	C		400		44.8	3.50
	Carbon steel	Extreme mild steel	S	1.6	530	4.9	52.4	3.75
Nonstandard goods	Stainless steel	304L or equivalent	L	7		4.9		
		316 or equivalent	Н				62.1	3.75
		316L or equivalent	F					
	Non ferrous metal	Aluminum	Α		400		37.9	3.25
Pillarfoil application (1650/1654)				6.3	%530	9.8	39.2	3.00

¾400 °C in case of oxidizing atmosphere

Metal material code

304 or equivalent

316 or equivalent

Copper

Extreme mild steel

Number Display Method

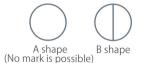
Pillar Number

Pillar No. Single Double Corrugated Round Single coating Double coating with Pillarfoil with Pillarfoil coating coating coating Shape Standard Heat Millboard Millboard resistant varn Surface Pillarfoil Pillarfoil None None

(Note) Please consult us in case of using special core materials other than the combinations above

Planar shape and shape symbol

Product No.





























ePTFE Gasket

ePTFE is a unique material produced by processing polytetrafluoroethylene resin (PTFE) into a marshmallow shape having a fine continuous porous structure by special stretching processing. These gaskets make full use of ePTFE's chemical resistance, heat resistance, and flexibility, as a material to meet the demands of new industrial fields such as cushioning materials, heat insulating materials and insulation materials used in clean rooms. ePTFE's contamination-free properties make it a polyvalent and a largely used material.

3300-F PTFE Joint Sealant

It is a product of rod type (Pillar No. 3300-F) of uniaxially stretched ePTFE with adhesive on one side. Because it is a reel winding, it is economical to cut it to the required dimensions and use it. It has been used as a product for various purposes such as emergency maintenance gaskets in areas requiring chemical resistance such as chemical plants and various applications utilizing the characteristics of ePTFE in clean rooms.



3356 Clean Sanitary Ferrule Gasket

It is an ePTFE made gasket molded for sanitary piping clamp. It is superior in heat resistance, flexibility and sealing performance, it is a gasket that can reduce maintenance cost compared with silicone rubber gasket.



* Pillar No. 3356-U (made of PFA) is available for Sanitary Screws Union Fittings.

