Spiral Wound Gasket

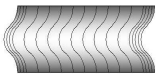
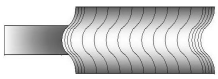
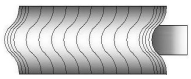
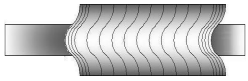
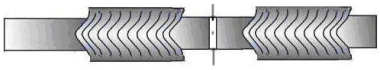
Spiral Wound Gasket is made of alternate piles of V-preformed hoop and soft filler that are tightly and spirally wound together. According to the need of the mating flange, the gasket is provided with an outer ring, an inner ring or both outer and inner rings.

The outer ring serves as a compression stop, anti-blowout device, which properly centers the gasket on the flange. The inner ring acts as a compression stop and is used to fill the annular space between the flange bores and the gasket inside diameter to minimize trubulence of process fluids and erosion of flanges faces.

The spiral wound outer or inner rings are used primarily as reinforcement and are chosen instead of a solid metal ring, because of lower costs or because of limited space when the use of a solid metal ring would be prohibited due to the difficulty in fabrication or usage. ZW spiral wound gaskets can be manufactured in accordance with all relevant gasket standards to suit various flange designation such as ASME/ANSI B16.5, API 605 (ASME B16.47 Series B), MSS SP-44 (ASME B16.47 Series A), AWWA, CNS, DIN and JIS. The size is available from OD 1/2" to 5000mm. Please note the gaskets for non-standard flanges or heat exchanger with partitions are also readily available. Low stress spiral wound gasket could replace normal non-metallic gasket in ANSI 150#/300# Flange under lower torque, about only 60% of traditional spiral wound gasket.

®

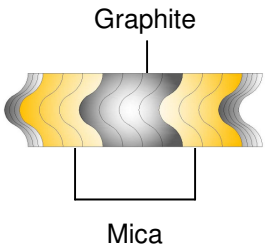
●Style

Style	Profile	Soft Filler Material			
		Graphite	ePTFE	Non-Asbestos	Complex
Basic		ZW#6590	ZW#7590	ZW#8590	ZW#9590
With Outer Ring		ZW#6591	ZW#7591	ZW#8591	ZW#9591
With Inner Ring		ZW#6592	ZW#7592	ZW#8592	ZW#9592
With Inner and Outer Ring		ZW#6596	ZW#7596	ZW#8596	ZW#9596
Double Spiral		Custom-made			

※ZW#6596 had approved by API 6FB fire test

Complex means customize by two soft filler materials as the following, e.g.: Graphite, ePTFE, Non-Asb., Mica, Ceramic…etc.

Standard

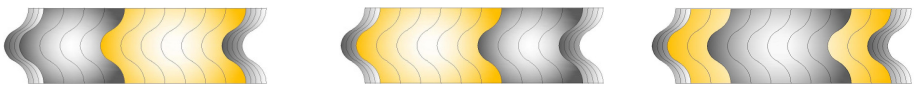


e.g. : ZW#9596 – Mica / Graphite / Mica

The complex soft filler, e.g. Mica , then Graphite, and then Mica, the construct designed for Mica filler covered the outside of Graphite filler to isolate oxygen. Graphite is flexible to meet the flange surface and allow the use of high temperature in the non-oxidizing space, and Graphite will not pollute the media.

※ **Below Special styles are also available as per customer's requirement**

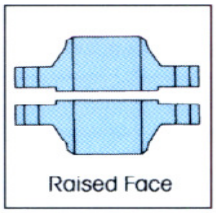
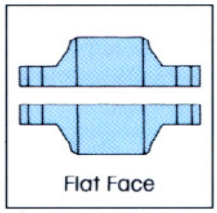
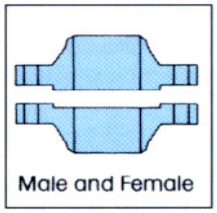
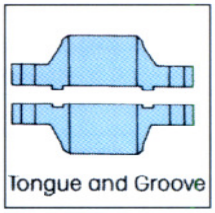
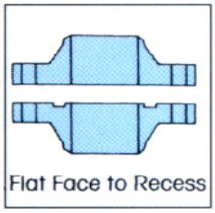
Special



●Working Range

Filler Material	Temperature (˚C)	Pressure (bar)
Graphite	-200~450(air) 650(reducing atmosphere)	300
Expanded PTFE	-200~260	200
Non-Asbestos	-150~250	300
Mica / Graphite / Mica	-100~750	100

●Selection Guide

Flange Face					
	Unsuitable	Unsuitable	Suitable 1/2”~24” 150#~600#	Suitable 1/2”~60” 300#~1500#	Suitable 1/2”~60” 300#~1500#
	Unsuitable	Unsuitable	Suitable 1/2”~60” 150#~1500#	Unsuitable	Unsuitable
	Suitable 1/2”~24” 150#~600#	Suitable 1/2”~24” 150#~600#	Unsuitable	Unsuitable	Unsuitable
	Suitable 1/2”~60” 150#~1500#	Suitable 1/2”~60” 150#~1500#	Unsuitable	Unsuitable	Unsuitable

●Standard Thickness Selection

Gasket Thickness	Flange Nominal Size
3.2 mm (0.125 in)	< φ 1500 mm
4.5 mm (0.175 in)	< φ 3000 mm
6.4 mm (0.250 in)	< φ 3500 mm
7.2 mm (0.285 in)	< φ 5000 mm

The Identification of Metallic Winding Materials and Fillers

The Color Coding on Outer Ring

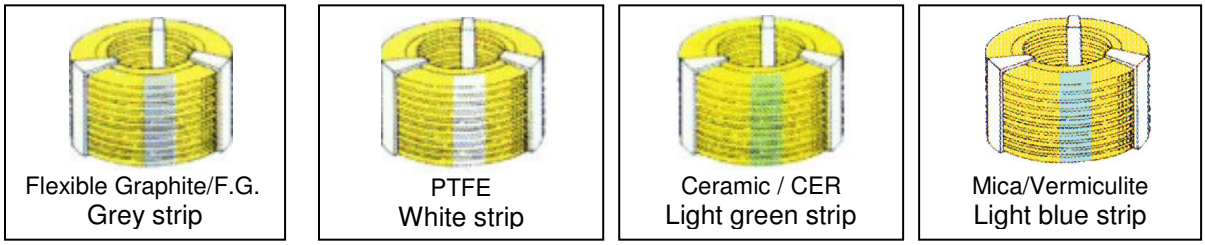
For clear identification, ZW spiral wound gaskets nominate a color-coding system around the outside edge of the outer ring, thus allowing full identification of both the winding strip and filler materials in according to ASME B16.20.

●Metallic Winding Materials

The metallic winding material is designated by solid color identification around the outside edge of the outer ring

●Non-Metallic Fillers Materials

The gasket filler materials are designated by a number of strips marked at equal intervals around the outside edge of the outer ring



* Hastelloy® is a registered trademark of Haynes International.
INCOLOY® and INCONEL® are registered trademarks of Inco Alloys International, Inc.
MONEL® is a registered trademark of International Nickel.

Spiral Wound Gasket

Order Code

ZW # 6 5 9 0 – M M E

Filler Material	
6	Flexible Graphite
7	PTFE
8	Non-Asbestos
9	Complex

Style	
0	Basic
1	With Outer Ring
2	With Inner Ring
6	With Inner and Outer Ring

Inner Ring Material			
S	Low Carbon Steel	Y	Inconel 600, 625
E	304SS	Y1	Inconel X750
L	304LSS	W	Incolel 800(H), 825
G	316SS	T	Titanium
H	316LSS	X1	Hastelloy B2,B3
O	310SS	X2	Hastelloy C276
P	316Ti SS	X3	Hastelloy C22
Q	317LSS	A	Aluminum
J	321SS	C	Copper
K	347SS	B	Bronze
R	410SS	Z	Zirconium 702
U	430SS	I1	Duplex S31803/S32205
F	904LSS	I2	Alloy 20
M	Monel 400	I3	Super Duplex S32750
N	Nickel 200		

Outer Ring Material			
S	Low Carbon Steel	Y	Inconel 600, 625
E	304SS	Y1	Inconel X750
L	304LSS	W	Incolel 800(H), 825
G	316SS	T	Titanium
H	316LSS	X1	Hastelloy B2,B3
O	310SS	X2	Hastelloy C276
P	316Ti SS	X3	Hastelloy C22
Q	317LSS	A	Aluminum
J	321SS	C	Copper
K	347SS	B	Bronze
R	410SS	Z	Zirconium 702
U	430SS	I1	Duplex S31803/S32205
F	904LSS	I2	Alloy 20
M	Monel 400	I3	Super Duplex S32750
N	Nickel 200		

Winding Strip Material			
E	304SS	Y	Inconel 600, 625
L	304LSS	Y1	Inconel X750
G	316SS	W	Incolel 800(H), 825
H	316LSS	T	Titanium
O	310SS	X1	Hastelloy B2,B3
P	316Ti SS	X2	Hastelloy C276
Q	317LSS	X3	Hastelloy C22
J	321SS	A	Aluminum
K	347SS	C	Copper
R	410SS	B	Bronze
U	430SS	Z	Zirconium 702
F	904LSS	I1	Duplex S31803/S32205
M	Monel 400	I2	Alloy 20
N	Nickel 200	I3	Super Duplex S32750

※ Order example: ZW 6596 MME stands for a combination of Monel 400 & Graphite winding, Monel 400 inner ring, and 304SS outer ring.
※ The material of Inner ring should match the winding material.
※ Winding metal strip thickness 0.15mm~0.23mm

● Gasket Marking/Stamp follow ASME B16.20