

A Guide to Spiral Wound Gaskets

Technical Specifications, Ordering & Installation Guide

Construction & Materials

Core Components

Part	Material Options	Function
Metal Winding	SS304, SS316, Inconel 625, Monel	Provides structural strength.
Filler Material	Graphite, PTFE, Mica, Ceramic	Ensures leak-tight sealing.
Inner Ring	Carbon Steel, Stainless Steel	Prevents over-compression.
Outer Ring	CS/SS (optional)	Prevents gasket blowout.

Temperature & Pressure Limits

Filler Type	Max Temp (°C)	Max Pressure (Bar)
Graphite	650°C (oxidizing)	420 (Class 2500)
PTFE	260°C	150 (Class 900)
Mica	1000°C	250 (Class 1500)

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Standards & Dimensions

Compliance

- ASME B16.20 (Metallic Gaskets for Pipe Flanges)
- ASME B16.5/B16.47 (Flange Dimensions)
- API 601 (Refinery Service)
- EN 1514-2 (European Standard)

Size Range

Flange Class	NPS Range	Thickness (mm)
150 – 2500	½" to 60"	3.2, 4.5, 6.4

(Custom sizes available for non-standard flanges.)

Colour Coding & Identification

Filler Material	Outer Ring Colour	Strip Marking
Graphite	None (Natural)	"G"
PTFE	Blue	"PTFE"
Mica	Yellow	"MICA"
Ceramic	Green	"CER"

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Ordering Information

Required Details

1. Flange Standard (e.g., ASME B16.5, API 6A).
2. Nominal Size & Class (e.g., NPS 12", Class 300#).
3. Material Combination:
 - Metal Winding: _____ (e.g., SS316).
 - Filler: _____ (e.g., Graphite).
4. Ring Type: Inner (Y/N), Outer (Y/N).
5. Special Requirements: _____ (e.g., Serrated, Anti-corrosion coating).

Sample Order Code

SWG-B16.5-8"-600#-SS316/GRAPHITE-IR+OR

Handling & Storage

Best Practices

- ✓ Storage: Lay flat in dry, cool conditions (avoid UV/moisture).
- ✓ Handling: Use gloves to prevent contamination.
- ✓ Shelf Life: 2 years (graphite), 5 years (PTFE).

Avoid

- ✗ Stacking heavy objects on gaskets.
- ✗ Exposure to oils/greases (degrades filler).

Installation Guidelines

Step-by-Step Procedure

1. Inspect Flanges: Ensure surfaces are clean, undamaged ($Ra \leq 6.3 \mu m$).
2. Align Gasket: Center using inner ring (if present).
3. Bolt Tightening:
 - Use cross-pattern (star sequence).
 - Torque in 3 stages (30% → 70% → 100% of recommended value).

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4. Post-Installation Check: Verify uniform compression.

Torque Values (Example)

Bolt Size	Class 150 (Nm)	Class 300 (Nm)
½"	25	50
1"	120	240

(Refer to ASME PCC-1 for full torque tables.)

Troubleshooting Common Issues

Problem	Possible Cause	Solution
Leakage	Under-torqued bolts	Re-tighten in correct sequence.
Gasket Blowout	Over-compression	Replace with thicker gasket.
Filler Degradation	Chemical attack	Switch filler material.

Applications

- Oil & Gas: Pipeline flanges, wellheads.
- Power Generation: Steam turbines, boilers.
- Chemicals: Reactors, heat exchangers.

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