

SEALGOOD

FLANGE ISOLATION GASKET KITS

SEALGO[®]

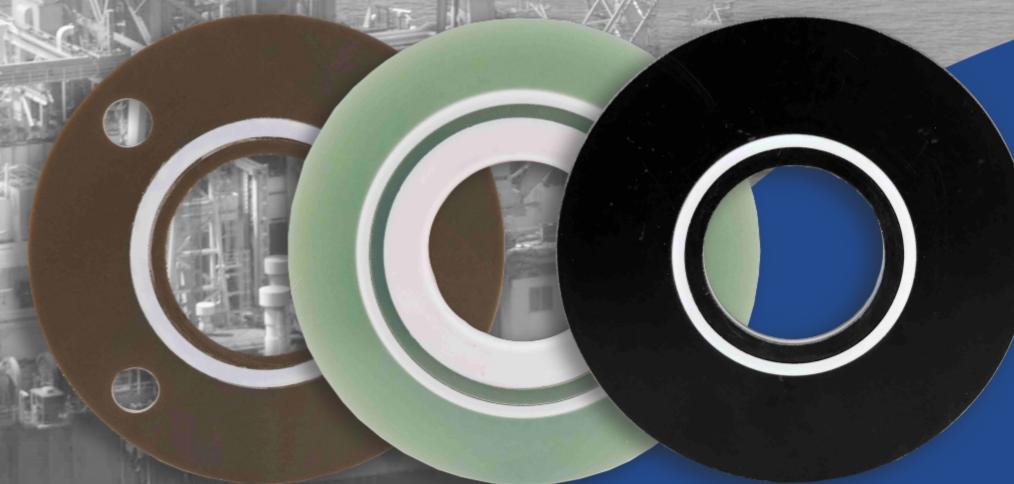
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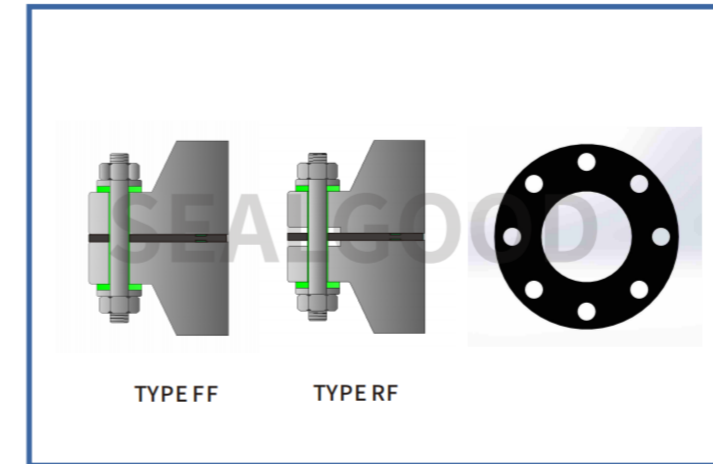
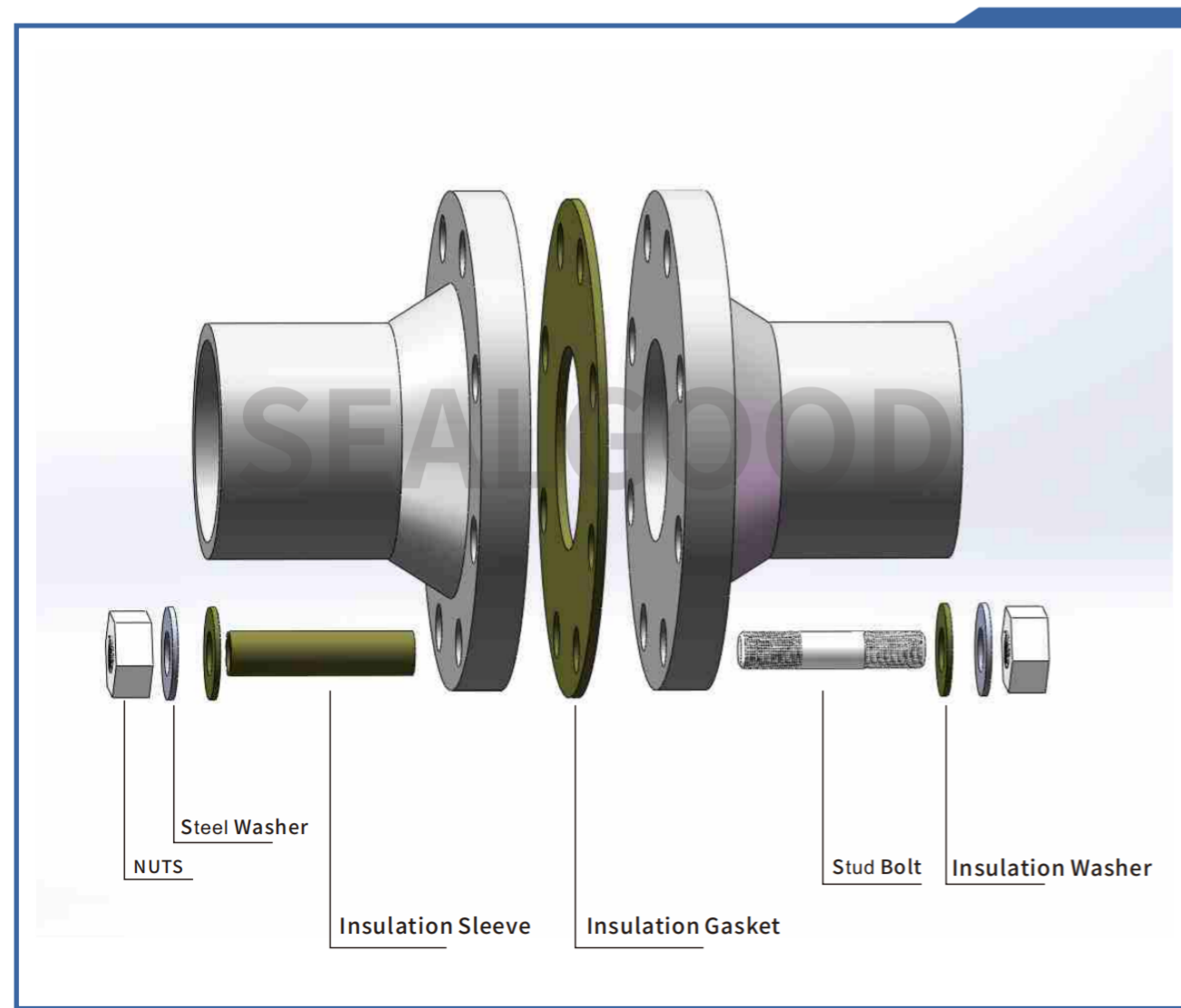
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Introduction

Shaoxing Sealgood Gasket And Sealing Co.,Ltd. is a professional manufacturer specialized in the design and production of static seals and flange insulation kits. With over 10 years of focus on this field, we provide solutions to customers' sealing and insulation challenges.

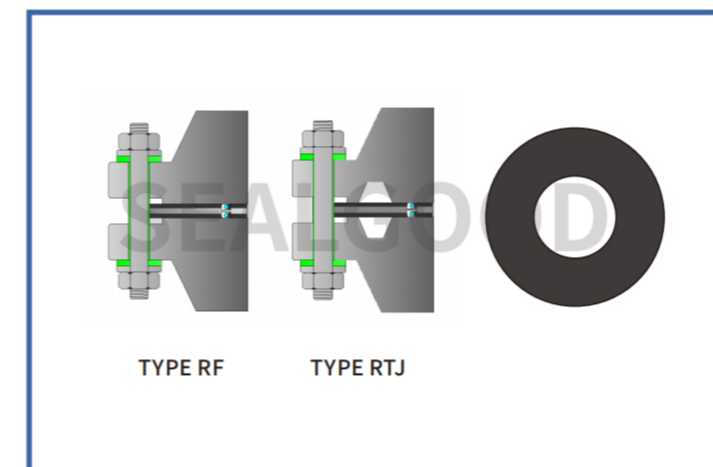
A flange insulation kits consists of flange Insulation gaskets, Insulation sleeves, Insulation washers and steel washers. It is mainly applied in industries such as oil drilling platforms and natural gas pipeline transportation. Serving as sealing gaskets between flanges of different materials, it achieves cathodic isolation, eliminates direct metal-to-metal contact, effectively suppresses stray current, and provides both corrosion prevention and cathodic protection for flanges.

Our flange insulation assemblies are designed and manufactured in compliance with standards including ASME/ANSI B16.5, API 6A, JIS B2220, HG/T20615 and HG/T20592, and can be installed without any modifications to the flanges. Flange Insulation gaskets are classified into Type E, Type F and Type D.



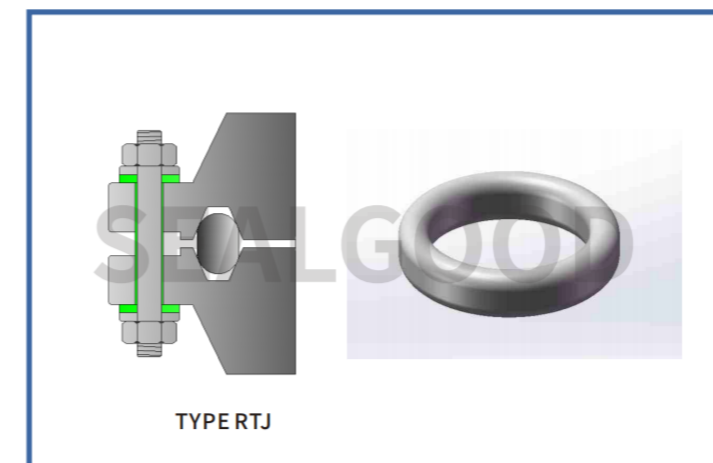
TYPE E

Type E Insulation gaskets are applicable to FF and RF flange sealing faces, with bolt holes fully matching those of the flanges. This structural design ensures accurate alignment during installation and effectively prevents foreign matter from impairing the flange isolation performance. All types of Insulation gaskets can be manufactured to Type E specifications.



TYPE F

Type F Insulation gaskets are suitable for RF and RTJ flange sealing faces. The gasket outer diameter matches the inner diameter of flange bolt holes, enabling precise self-alignment. All types of Insulation gaskets can be manufactured to Type F specifications.

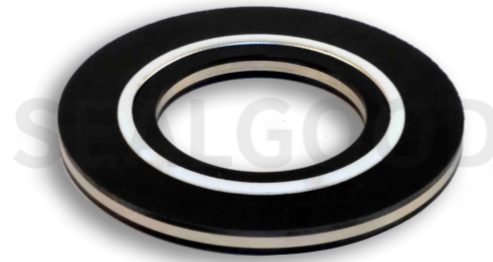


TYPE D

Type D Insulation gaskets are specially designed for RTJ flange sealing faces, with dimensions generally matching those of metal oval ring gaskets. For high-pressure flange service conditions, SEALGO® SEI stainless steel-epoxy composite Insulation gaskets are a better alternative.

SEALGO® SEI

SEALGO® SEI Insulation Gasket, a stainless steel-epoxy composite Insulation gasket, is widely used in the oil and gas industry. Its Insulation substrate consists of a stainless steel plate bonded with epoxy glass plates on both sides: steel plate thickness 3mm, epoxy plate thickness 2mm, and total thickness 7mm. The gasket is equipped with a spring-energized seal (SES), ensuring excellent performance under cyclic pressure conditions. The seal groove is designed to reach the steel plate directly, preventing medium leakage through composite plate gaps and enabling adaptation to medium-high pressure service. Epoxy glass plates can be selected from G10 or G11; core metal plates are available in SS316L, SS31803, SS32750, HAST C-276, INCONEL 625, etc.; spring materials for the SES can be 316 or INCONEL 718, etc. SEALGO® SEI Insulation Gasket is suitable for 150LB~2500LB RF/FF/RTJ flanges, with a maximum manufacturing diameter of Φ 1500mm.



SEALGO® FSI

SEALGO® FSI Fire-resistant Insulation Gasket is specially designed for fire-resistant service conditions. Based on the SEALGO® FSI Insulation Gasket, it is fitted with high-temperature resistant fireproof Insulation composite seals on both sides, a design that ensures excellent sealing performance during fire incidents. This gasket is suitable for 150LB~2500LB RF/FF/RTJ flanges. The epoxy glass laminates can be selected from G10 or G11; the core metal plates are available in SS316L, SS31803, SS32750, HAST C-276, INCONEL 625, etc.; the springs of the spring-energized seals can be made of 316, INCONEL 718, and other materials. SEALGO® FSI Insulation Gasket has obtained API 6FB (Fourth Edition 2019) and TÜV fire-resistance certifications.



SEALGO® PEI

SEALGO® PEI Insulation Gasket is specially designed for highly corrosive service conditions. A PTFE bushing is installed inside the gasket; the outstanding corrosion resistance of PTFE makes it suitable for most chemical media. Meanwhile, a metal seal ring is built into the PTFE bushing, enabling the gasket to adapt to high-pressure service and cover a pressure range of 150LB~2500LB. Equipped with a spring-energized seal (SES), this gasket delivers excellent performance under cyclic pressure conditions. The Insulation substrate can be selected from G10, G11 or G7 based on service temperatures, with a total gasket thickness of 6mm. SEALGO® PEI Insulation Gasket is an economical alternative to SEALGO® SEI special alloy Insulation gaskets, featuring broader temperature adaptability and a maximum manufacturing diameter of Φ 1500mm.



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SEALGO® LEIT

SEALGO® LEIT Insulation Gasket is one of the most commonly used Insulation gaskets. Its Insulation substrate can be G10, G11 or G7, with a typical substrate thickness of 3mm and an overall gasket thickness of 4mm. Seals are embedded in grooves on both sides, and can be made of PTFE or RPTFE. This gasket features excellent corrosion resistance and reliable sealing performance. It is suitable for 150LB~600LB RF/FF flanges, with a maximum manufacturing diameter of Φ 2000mm. The combination of Insulation substrate and seals shall be selected in consideration of the temperature limits of the materials.



SEALGO® LEIR

SEALGO® LEIR Insulation Gasket — its Insulation substrate can be G10, G11 or G7, with a thickness of 3 or 5mm. Seals are rubber O-rings or flat gaskets embedded in grooves on both sides. Rubber O-rings are typically made of FKM (VITON). When flat gaskets are used as seals, double seals can be configured to enhance sealing performance, with material options including neoprene, NBR and EPDM. This gasket offers excellent resilience and reliable sealing performance. It is suitable for 150LB~300LB RF/FF flanges, with a maximum manufacturing diameter of Φ 1500mm.



SEALGO® LEIV

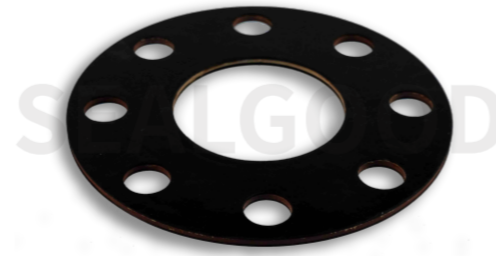
SEALGO® LEIV Insulation Gasket — G10, G11 or G7 can be selected as the Insulation substrate, with a thickness of 3 or 5mm, and the total gasket thickness is 4 or 6mm. It is fitted with spring-energized seals (SES) embedded in grooves on both sides; due to the size limitation of sealing surfaces, the seal dimensions on the two sides are different. This gasket features excellent resilience and reliable sealing performance. It is suitable for 150LB~600LB RF/FF flanges, with a maximum manufacturing diameter of Φ 1500mm.



SEALGO® LEIN

SEALGO® LEIN Insulation Gasket, a phenolic rubber composite Insulation gasket, is widely used in the oil and gas industry. Its Insulation substrate is typically a phenolic resin plate bonded with neoprene on both sides, with an overall thickness of 5mm.

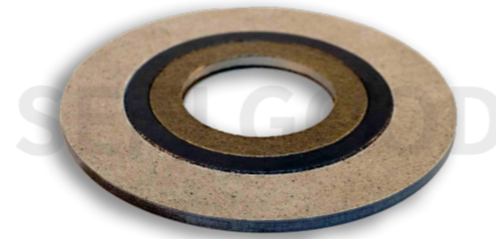
This gasket boasts good resilience and reliable sealing performance, and is a cost-effective Insulation gasket option. It is suitable for 150LB~300LB RF/FF flanges, with a maximum manufacturing diameter of $\Phi 1200\text{mm}$.



SEALGO® HTI

SEALGO® HTI Insulation Gasket is specially designed for high-temperature service, with a maximum temperature resistance of 500°C. Its Insulation substrate is a high-temperature resistant mica plate. A high-temperature resistant Insulation composite seal is installed inside the gasket, and a high-temperature resistant asbestos-free seal is used as the secondary seal to enhance sealing performance under high temperatures.

SEALGO® HTI Insulation Gasket is suitable for a pressure range of 150LB~2500LB. It usually needs to be matched with mica sleeves and mica Insulation washers to adapt to high-temperature service conditions.



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SEALGO® DTI

SEALGO® DTI Insulation Gasket is designed for RTJ flange sealing faces. Made of phenolic resin or epoxy resin plates, it is generally dimensionally identical to metal oval ring gaskets, and can also be supplied as octagonal, RX or BX type ring gaskets. If epoxy resin plates are selected as the Insulation material, auxiliary seals are required due to their limited sealing performance.

This gasket is suitable for 150LB~2500LB RTJ flanges. For high-pressure flange service conditions, SEALGO® SEI stainless steel-epoxy composite Insulation gaskets are a better alternative.



- INSULATION SLEEVES
- INSULATION WASHERS

● Insulation sleeves are used to isolate the contact between bolts and flange bolt holes. In each flange Insulation gasket assembly, the number of Insulation sleeves is equal to that of flange bolt holes. The wall thickness of Insulation sleeves is typically 0.7mm, and can also be customized per user requirements. Insulation sleeves are generally designed not to pass through Insulation washers, and solutions for through-washer designs are also available.

The dimensions of Insulation sleeves are adapted to the bolt hole diameters and bolt diameters of different flange series, including major standards: imperial series ASME/ANSI B16.5, API 6A; metric series HG/T 20615, HG/T 20592, EN 1092, JIS B2220, etc.

Available materials for Insulation sleeves:
G10, G11, PTFE, Mylar, MICA

● Insulation washers are used to isolate the contact between nuts and flanges. In each flange Insulation gasket assembly, the quantity of Insulation washers and steel washers is twice that of Insulation sleeves. Insulation washers typically have a thickness of 3mm, with available materials including G10, G11, G7, MICA and PH. For fire-resistant Insulation gasket assemblies, hardened steel washers coated with Insulation layers are provided as Insulation washers to reduce bolt stress loss of conventional Insulation washers during fire incidents.

Available materials for steel washers include: zinc-plated flat washers (ZPS), stainless steel (SS304/SS316L), insulated coated hardened steel washers (DCS) and insulated coated stainless steel washers (DSS).

● MATERIAL

MATERIAL	UNIT	PH	G10	G11	G7	MICA
DIELECTRIC STRENGTH	Volts/Mil	500	550	550	350	500
DIELECTRIC STRENGTH	KV/MM	20	22	22	14	20
COMPRESSION STRENGTH	psi	25000	60000	55000	40000	45000
COMPRESSION STRENGTH	MPa	172	414	379	276	310
TENSILE STRENGTH	psi	20000	50000	45000	25000	22000
TENSILE STRENGTH	MPa	138	345	310	172	152
WATER ABSORPTION	%	1.6	0.1	0.1	0.35	0.65
OPERATING TEMPERATURE	°C	-54~105	-129~150	-129~205	-59~220	-50~500
OPERATING TEMPERATURE	°F	-65~221	-200~302	-200~401	-74~428	-58~932



● SEALING ELEMENTS

SEALING ELEMENTS	UNIT	NE	EPDM	Viton	PTFE	RPTFE
OPERATING TEMPERATURE	°C	-40~100	-45~140	-15~200	-196~230	-196~230
OPERATING TEMPERATURE	°F	-40~212	-49~284	5~392	-321~446	-321~446

● INSULATION SLEEVES

INSULATION SLEEVES	UNIT	G10	G11	Mylar	PTFE	MICA
DIELECTRIC STRENGTH	Volts/Mil	550	550	4000	350	305
DIELECTRIC STRENGTH	KV/MM	22	22	157	14	12
WATER ABSORPTION	%	0.1	0.1	0.8	0.01	1.0
OPERATING TEMPERATURE	°C	-129~150	-129~205	-59~150	-196~230	-50~500
OPERATING TEMPERATURE	°F	-200~302	-200~401	-74~302	-321~446	-58~932



To Order Flange Insulation Gasket Kits, Please Provide the Following Information

Flange Standard and Type

Standards: ASME B16.5, ASME B16.47A/B, API 6A, JIS B2220, HG/T20615, HG/T20592, etc.

Types: WN, PL, SO, etc.

Flange Size, Pressure Class and Sealing Face

Example: 2"-150FF, 2"-150RF, 2"-900RTJ

Gasket Type

Type E, Type F, Type D

Gasket Material

PH, G10, G11, G7, MICA, G10+316L, G11+316L, etc.

Seal Ring Material

NE, FKM (Viton), EPDM, PTFE, RPTFE, Spring-Energized Seal (SES), etc.

Insulation Sleeve Material

G10, G11, Mylar, PTFE, MICA

For non-standard or thickened flanges, please provide sleeve length or specific parameters.

Insulation Washer Material

PH, G10, G11, PTFE, MICA

Steel Washer Material

ZPS, 304, 316L, DCS, DSS

Other Information

If unsure about the selection of flange insulation gasket Kits, please provide parameters such as temperature, medium and pressure class, and we will assist with the selection.

Installation Instructions for Flange Insulation Kits

- 1) Clean all residues (paint, grease, protective coating, dirt, etc.) on the flange sealing surface with tools or suitable solvents.
- 2) Verify the flange type (including sealing face, dimensions, pressure rating, etc.) in accordance with technical documents. Check the flange surface for warping, radial scratches, indentations or any defects that may affect gasket installation.
- 3) Inspect the integrity of Insulation gaskets, washers and sleeves; confirm the correct model and quantity of the insulation assembly.
- 4) Ensure accurate alignment of the two flanges without misalignment. Carefully insert the Insulation gasket between the flanges and center it properly. Mount the insulation kit onto the bolts, with steel washers placed outside the Insulation washers. Butt the flanges together, making sure that insulation materials (Insulation sleeves, washers and seals) are not crushed or damaged. After installation, confirm no components are missing.



5) Bolt Tightening

Tighten bolts in a criss-cross sequence with a torque wrench, following the steps below:

- a. Manually turn the nuts with a short wrench until they contact the flange surface, ensuring the number of exposed threads on each bolt end beyond the nut is identical.
- b. Tighten bolts to 30% of the specified installation load in criss-cross order; check that the flange face gap is uniform around the circumference.
- c. Repeat step b) to tighten bolts to 50%–70% of the specified installation load; recheck the uniformity of the flange face gap.
- d. Repeat step b) to tighten bolts to 100% of the specified installation load; confirm the flange face gap remains uniform.
- e. Tighten each bolt sequentially to 100% of the specified installation load in a clockwise direction; check that all nuts are secure.

6) Protection

After installation, fit a protective cover over the insulation Kits to prevent rain erosion in wet conditions, and provide extra protection for buried applications. Special moisture-proof measures are required especially when mica is used as the insulation material.

