# **Accessories for pipes**

# **Flanges**

Impresit supplies standard flanges slip-on, welding neck, socket welding, blind, thread, lap joint, spades, spectacles, blank, screwed, laped flanges and special flanges long welding neck, anchor, orifice, swivel/drip rings, hub flanges but welds, expander, etc...

Products range standard flanges up to 80" Products range special flanges up to 24"

Pressure rate: 150Lb, 300Lb, 400Lb, 60Lb, 900Lb, 1500Lb, 2500Lb

### Flange Standards:

ASME B16.5, ASME 16.34, ASME B16.36, ASME B16.47 Series A & B (MSS-SP-44) and (API 605), ASME **B16.48, API6A**, API 590 BS SERIES ASTM A234, A403, A420, A53, A105, A106, A181, A182, A350, A815, A 860 AWWA C207 flanges in Class B, Class D, Class E, Class F, Ring, Blind & Hub;

UNI 2223, UNI 6100, UNI 2280, UNI 2281, UNI 2282, UNI 2283, UNI 2284, UNI 2285, UNI 2286, UNI 6085, UNI 6091, UNI 6092, UNI 6093, UNI 6094, UNI 6095, UNI 6096, UNI 6097, UNI 6098, UNI 6099, UNI 2229 DIN 2627, DIN 2630, DIN 2631, DIN 2632, DIN 2633, DIN 2634, DIN 2635, DIN 2636, DIN 2637, DIN 2638, DIN 2641, DIN 2642, DIN 2527, DIN 2543, DIN 2544, DIN 2545, DIN 2573, DIN 2576, DIN 86029, DIN 86030

EN 1092-1 KS B1503 JIS B2220, JIS B2216, KSB1502 JIS B2203, GOST 12820-80, GOST 12821-80, GOST 12815-80 in pressure PN 0.6 MPa to PN 10MPa; SABS 1123 / SANS 1123 in Class 600kPa to 4000kPa.

## Materials grade:

Carbon Steel for moderate temperature: ASTM A105

High Yeld carbon steel for pipeline and offshore: ASTM694 F42, F46, F48, F50, F52, F56, F60, F65, F70, ASTM707L3, ASTM707L5, LF6

<u>Carbon steel for low temperature:</u> ASTM350 LF1, LF2 CL1/CL2, LF3 CL1/CL2, LF6, MSS SP44&ASTM694F42, F46, F48, F50, F52, F56, F60, F65, F70

Carbon nickel steel for low temperature: ASTM 350 LF3

Carbon molybdenum steel: ASTM A 182 F1

Chromium molybdenum steel: ASTM A 182 F1, F5, F9, F11, F12, F22, F91

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<u>Austenic Stainless Steel:</u> ASTM A182 F304, F304L, F304H, F310, F316, F316H, F316TI, F316L, F316UREA, F317, F317L, F321 F321H, F347, F347H, F348, F51, F53, OCr19Ni9, OCr18Ni9Ti, 1Cr18Ni9Ti, OCr18Ni12Mo2Ti, OOCr18Ni10, OOCr19Ni11, OOCr17Ni14Mo2, DIN 17440 1.451, 1.4571, 1.4301, 1.4406, 1.4541, 1.4306, 1.4404, 1.4435

Nickel and nickel alloy: ASTM B366

Ferritic stainless steel: (DUPLEX): ASTM A 182 F1,F2,F5,F6,F9,F11,F12,F22, DIN 1.5415 16Mo3

Ferritic/austenic steel: (DUPLEX-SUPERDUPLEX): ASTM A182 F51 (DUPLEX), ASTM SA 182 F53, F55 (SUPERDUPLEX),

UNS S31803(DUPLEX) (00Cr22Ni5Mo3) – UNS S32750(00Cr25Ni7Mo4N)-S32760-S32550(SUPERDUPLEX)

Martensitic steel: ASTM 815 WP410

<u>Superalloys:</u> F44, ALLOY20, ALLOY600, CUNI9010, ALLOY800, ALLOY625, MONEL400, ALLOY825, HASTELLOY C276, ASTM 815 WP410

Titanium alloy: ASTM B363, ASTM B/SB 348, ASTM B381, Gr. 1/2



# Seamless and welded butt welding fittings

Impresit supplies standard fittings elbows, equal and reducing tees, concentric and eccentric reducers, caps and special fittings reducing elbows, bends special radius (2,5D-3D-4D-5D-10D), barred tees, special flow tees, equal and reducing crosses, equal and reducing laterals, stub ends, header and extruder manifolds, reinforcement saddles, split tees, slug catchers, "Y" pieces.

Products range standard fittings up to 102" Products range special fittings up to 60"

**Butt weldings fitting Standards:** ASME B16.5, ASME B16.9, ASME B16.11, ASME B16.25, ASME 16.28, ASME B16.31.1, ASME B16.31.3, ASME B16.31.4, ASME B 16.31.8 ASME B 16.49

MSS SP-43, SP-75, SP-79, SP-83, SP-87

JIS B2311/B2312/B2313/B2316, SY/T0510,

DIN 2413, DIN2605, DIN 2606, DIN 2609 DIN 2615, DIN 2616, DIN 2617, DIN 28011,

EN 10253-1, EN 10253-2

BS 1640, BS 1965, BS5500

ASTM A234, A403, A420, A53, A105, A106, A181, A182, A350, A815, A 860

API 5L, API 5LX

IPS-M-PI-150

GOST 17374, 17375, 17376, 17377, 17378, 17379, 17380

### **Butt welding fitting Materials:**

<u>Carbon steel for moderate temperature:</u> ASTM/ASME A/SA234: WPB-WPC-WP1-WP11-WP12-WP5-WP22-WP9-WP91-WP92 EN 10216-2: P195GH, P235GH, P265GH, 20MnNb6, 16Mo3, 8MoB5-4, 14MoV63, 10CrMo5-5, 13CrMo4-5, 10CrMo9-10, 15NiCuMoNb5-6-4, X11CrMo5, X11CrMo9-1, X10CrMoVNb9-1, X10CrWMoVNb9-2, X20CrMoV11-1 (former Bs-DIN-AFNOR equivalent grades)

DIN 17175: ST.35.8-ST.45.8-17Mn3-19Mn3-19Mn5-15Mo3-13CrMo44, 15NiCuMoNb5.6.4(WB36)-10CrMo910-10CrMo910V-14MoV63-X20CrMoV121-X10CrMoVNb9.1 grades BS equivalent grades

High Yeld carbon steel for pipeline and offshore: ASTM A860/MSS SP-75: WPHY 42, WPHY 46, WPHY 52, WPHY 60, WPHY 65, WPHY 70, WPHY 80 grades.

EN 10208-2: L245NB, L290NB, L360NB, L415NB, L360QB, L415QB, L450QB, L485QB, L555QB, DIN 17172: STE290.7 – STE320.7 – STE360.7 – STE385.7 – STE415.7 – STE460.7 – STE500.7

Carbon steel for low temperature: ASTM A420 WPL6, WPL3

Carbon nickel steel for low temperature: ASTM/ASME A/SA420 WPL3, WPL6, WPL9

Carbon molybdenum steel: ASTM A 234 WP1

Chromium molybdenum steel: ASTM A 234 WP5-9-11-12-22

<u>Austenitic Stainless steel:</u> ASTM/ASME A/SA403 WP304-WP304L-WP304H-WP304LN-WP304N-WP316L-WP316L-WP316H-WP316LN-WP316N-WP317-WP317L-WP321-WP321H-WP347-WP347H-WPS31254,

**ASTM A774 ALL GRADES** 

EN 10253-4, EN 10253-4

EQUIVALENT GRADES OF AFNOR-DIN and B.S. materials

<u>Nickel and nickel alloys</u>: ASTM/ASME B/SB366: UNS N04400 - UNS N06600 - UNS N06625 - UNS N08020 - UNS N08800 - UNS N08811 - UNS N08825 - UNS N10276

<u>Ferritic/Austenitic stainless steel</u>: ASTM/ASME A/SA815: UNS S31803(DUPLEX) (00Cr22Ni5Mo3) – UNS S32750(00Cr25Ni7Mo4N)-S32760-S32550(SUPERDUPLEX and EQUIVALENT)

Martensitic steel: ASTM/ASME A815 WP410

Alloy steel: 12CrMo, 12CrMoV, 15CrMo, 10CrMo910, WP1, WP5, WP9, WP11, WP22, WP91 Copper alloy: ASTM/ASME B/SB466: UNS C 706000 (CuNi90/10), UNS C 71500 (CuNi 70/30)

Titanium alloy: ASTM B363 WPT2-WPT12, ASTM B/SB 348, ASTM B381, Gr. 1/2

Alluminium alloy: ASTM/ASME B361: 3003 and 6061 grades



## Coating:

Fusion Bonded Epoxy: Single, dual layer

Polyethylene: dual, three layer Polypropylene: dual, three layer Solventless: epoxy polyurethane

Anticorrosion: primer Intermediates and finishes

Temporary: wax, dry, oils etc..

## Forged fittings (SW, BW, THRD)

Impresit supplies elbows, tees and crosses, couplings, reducing couplings, half couplings and caps, weldolets, sockolets, threadoles, nipolets, sweepolets, elbolets, latrolets, THRD bushings and plugs, seamless/hexagon and swage nipples, SW and THRD pipe unions, SW and THRD outlets, SW and THRD outlets, BW outlets, lateral outlets on pipes and bends.

#### Standards:

ANSI/ASME B16.11, DIN, GB/T 14626/14383, SH 3410, HG/T 21634, JIS B2316, MSS SP 83, MSS SP 79, MSS SP-95/97, BS 3799

### Materials:

Carbon Steel: A105, A350 LF1/LF2/LF3, MSS SP44&A694, F42/46/52/60/65/70

Stainless steel: 0Cr19Ni9, 0Cr18Ni9Ti, 1Cr18Ni9Ti, 0Cr18Ni12Mo2Ti, 00Cr18Ni10, 00Cr19Ni11, 00Cr17Ni14Mo2,

ASTM A182 F304/304L, F316/316L, F321, F321H, F317L, F310, A182, F44(UNS31254) <u>Duplex&super stainless steel:</u> A182F51/UNS31803, F53/UNS32750, F55/UNS32760

Alloy steel: ASTM A182 F1/F5a/F9/F11/F12/F22/F91

Others: Copper-nichel, titanium, aluminum, monel, inconel, hastelloy and other special materials

### Coating:

Fusion Bonded Epoxy: Single, dual layer

Polyethylene: dual, three layer Polypropylene: dual, three layer Solventless: epoxy polyurethane

Anticorrosion: primer Intermediates and finishes

Temporary: wax, dry, oils etc..

## **Valves**

Impresit has always been totally devoted to offering products and services that not only meet, but exceed customer expectations. All Impresit valves are designed and manufactured in Europe using only European materials, with emphasis on low emissions, safety, simple maintenance, ease of operation and above all long and reliable service life.

In case your process flow condition requires to design and to manufacture custom-tailored solution, you can count on our engineering service which will analyze yours data and engineer the valve suitable to your specific conditions.

### Ball valves

A wide range of full and reduce bore, trunnion and floating type, soft and metal seated, three, four, way. Buried execution.

**Gate Valves** 

Bolted Bonnet, Pressure Seal, Cryogenic, standard or parallel side type

Globe valves

Bolted Bonnet, Pressure Seal, Cryogenic, straight through, Y pattern and needle type

Check valves

Bolted Bonnet, Pressure Seal, Cryogenic, swing, piston, ball type



### Line break valves

Forged ball valves equipped with gas over oil/pneumatic actuator and line break device

Through conduit valves

Slab gate and expanding gate Double block and bleed valves

Ball, Gate, check combination

Pressure safety valves

The production include a wide range of spring loaded full nozzle, conventional and balanced type

Plug valves

Lubrificated and non lubrificated, balanced inverted type, and high performance. Buried execution.

**Chocke valves** 

Angle, positive and adjustable type.

Wellhead valves

Rising and non rising stem, slab gate and expanding gate.

Size: from 3/4" up to 72"

Pressure class: from 150-2500, API 3.000-15.000

Execution: Cast or forged

Materials: Carbon steel, stainless steel, duplex or super duplex, monel, alloys, inconel, incolloy, hastelloy, and wide range of

exotics material.

Casting:

Carbon steel: ASTM A126, A216 WCB-WCC Low temperature carbon: ASTM A352 LCB-LCC

Low alloy: ASTM A352 LC3

Martensitic stainless steel: ASTM A217 CA15, A487 CA6NM

Austenitic stainless steel: ASTM A351 CF8, CF3, CF8M, CF3M, CF8C, A351 Gr. Ck3MCuN

Duplex stainless steel: ASTM A995-4A (UNS J92205), A995-6A (UNS J93380) NI-Alloy: ASTM A494 CU5MCuC – UNS N08826, A494 CW6MC – UNS N26625

Titanium: B367 Gr. C5

Forging:

Carbon steel: ASTM A105

Low temperature carbon: ASTM A350LF2 Low alloy: AISI4140, A694F52/F70, A350 LF3

Martensitic stainless steel: ASTM A182 F6A, A182 F6NM

Austenitic stainless steel: A182 F304, F304L, F316L, F316LN, F321, F347, F44 (6% Mo), FXM-19 (Nitronic 50)

Precipitation hardening SS: ASTM A564 Gr. 630 H1150M (17 4-PH)

Duplex stainless steel: ASTM A182 F51, F53, F55

NI-Alloy: B564 N08825, B564 N06625, Monel 400, Monel K-500, B637 N07718, B654 N10276

Titanium: B381 Gr.F2, B348 Gr. 5

Coating: Stellite, Tungsten Carbide, ENP etc...

Actuators: diaphragm, electric, gas over oil, hydraulic, pneumatic

Design and manufacturing standards:

ASME B16.10, ASME B16.34, ASME B16.5, ASME B16.25, ASME B16.47 A-B, ASME SEC. IX, ASME SEC. VIII DIV.1,

ANSI B16.10

API 594, API 599, API 600, API 6D, API 6A

BS 1414, BS 1873, BS 2080, BS 6364, BS 1868, BS3293, BS5351, BS 5500, BS 51868

MSS SP 44 DIN3202 PED, NACE

Quality assurance: all the components will be supplied in accordance ISO 9001 Material cert.: all the components will be supplied with a EN 10201.3.1B Certificate



# Sealing products

All types of sealing materials and gaskets for industrial flanges, pressure vessels, valves, pumps, furnace doors, etc...

### Gasket materials

Compressed synthetic fibre gasket sheets

Highly versatile gasket materials, widely used with pipes and pressure vessels all over the world, thanks to their ability to effectively seal over an extremely broad range of service conditions.

### Sheet dimensions:

Standard: 1500 x 1500 mm.

Upon request: 1500 x 3000, 1500 x 4500, 2000 x 4000 mm

Sheet thickness: 0.3 ÷ 5 mm

**Available surface finish:** 4AS anti-stick coating on both sides is standard in most styles. PTFE, graphite or silicone coating is also available upon request.

**Flexible graphite sealing products:** is a highly conformable material, free of organic components, used for sealing service at high temperatures, in the presence of mechanical and thermal cycles, steam, hydrocarbons, and most chemicals.

### Product range:

Gasket sheets Rolls and tapes Packing Rings Textiles Gaskets

**PTFE-based gasket sheets:** this line includes several types of PTFE-based gasket sheet materials, that are designed mainly for application in the chemical, petrol-chemical, food and pharmaceutical industry.

Standard sheet size: 1200x1220 mm and 1500x1500 mm.

**Sheet thickness:** 1.0 - 1.5 - 2.0 - 3.0 - 6.0 mm

Sheet marking: available according to individual customer requirements.

**Mica compound sealing products:** Flexible sheets with excellent thermal, chemical and electrical resistance for very high temperature application, also in the presence of oxidizing media. Suitable for exhaust manifolds, gas and oil burners, gas turbines, and heat exchangers

Sheet size: Standard dimensions: 1000 x 1000 mm.

Sheet thickness: 0.3 ÷ 3 mm Beater addition jointing rolls Laminated jointing for engine gaskets Millboards and papers

**Rubber sheets and rolls:** Rubber sheets , rolls and profiles for sealing applications. NBR, SBR, CR, NR, EPDM, CSM, SI, FPM, FKM, etc



### Gaskets

**Non-metallic gaskets:** For low to medium pressure and temperature service conditions. Fabricated by either die-cutting, from gasket sheet materials, beater addition, solid and cellular rubber, cardboard, felt, cork, etc

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**Semi-metallic gaskets:** They are combinations of suitable metals in connection with graphite, PTFE, mica, rubber or other sealing materials.

Advantage: Functional separation of "supporting" and "sealing".

Depending on the operating conditions spiral wound gaskets, enveloped or jacketed gaskets, grooved profile gaskets with layers (CAM-profile), corrugated gaskets, rubber-steel gaskets, are used preferably in the main or high load application. Product range:

- Spiral-wound gaskets
- Metal jacketed gaskets
- Camprofile gaskets

Spiral-wound gaskets are suitable across a wide range of fluctuating service pressure – up to 250 bar – and temperature – from -200°C to 1000°C – depending on their construction. The sealing element consists of a V-shaped metal strip spirally wound in combination with a soft sealing material filler. The metal strip provides outstanding resilience, while the flexible sealing filer guarantees excellent sealing. An outer metallic guide ring, when present, serves to locate the spiral element centrally on the flange faces, to prevent blow-out and, acting as a compression limiter, to prevent overloading of the sealing element. An inner metallic ring, when present, prevents radial flow (buckling) of soft the filler, minimises flow resistance and crevice corrosion, acts as a heat shield in presence of high temperature.

Metal Jacketed gaskets, as the name suggests, consist of a metallic outer shell with non-metallic filler. The filler material gives the gasket resilience, while the metal jacket protects the filler and resists pressures, temperatures and corrosion. Metal Jacketed gaskets are available in a wide range of sizes and configurations. They are traditionally used for heat exchanger applications, pumps and valves, however the resilience and recovery properties of these gaskets are limited. Metal Jacketed gaskets require smooth flange surface finishes, high bolt loads and flange flatness in order to seal effectively.

Camprofile gaskets consist of a metal core (usually stainless steel) with concentric grooves on either side, topped by sealing materials. Depending on the service, the sealing layers are typically graphite or PTFE. Cam profiles have a very wide seating stress range, which makes them highly suitable for varying temperature and pressure services, for light as well as heavily constructed flanges. Other benefits of camprofiles are very low leakage rate, due to the minimum thickness of the sealing layers, low sensitivity to essembly faults, and the possibility to re-use the metal cores after cleaning

**Metal gaskets:** The technically optimal solution for difficult sealing problems with large-scale pipe forces and moments, high pressures, vacuum and/or high temperatures with the smallest leakage as well as radially different expansion. Used as metal flat gasket, ring-joint gasket, lens gasket and special profile gasket with or without galvanic coating or as membrane welding gasket and weld-ring gasket. We offer a wide variety of suitable materials from our extensive stock of primary materials such as: - Low-alloy and high-alloy ferritic and austenitic steels

**Weaveline gaskets:** Heavy-duty gaskets composed of flexible graphite layers and tanged stainless steel sheets, reinforced with stainless steel inner and outer eyelet rings. Weave line gaskets exhibit excellent creep strength. Their specific advantages with respect to traditional graphite gaskets are:

- Greater safety against blow-out and operating pressure and temperature surge;
- Greater protection against chemical and physical attack of the confined media;
- No risk of damaging during transportation and stockage;
- Easy handling, assembly and removal of the gaskets;
- Higher safety in case of fire.

Ideal for a wide range of applications, including pipe flanges according to ANSI B 16.5, class up to 600 lbs.; in presence of high temperature and pressure, mechanical and thermal cycles and shocks, situations where assembly procedures and service conditions cannot be adequately controlled.



**Textile gaskets:** Tapes, ropes and braids, made from various types of fibres such as glass, silica, ceramics, aramid, carbon, etc. For sealing of furnace, boiler and chimney doors. Circular and oval rings, listing tapes, tadpole tapes, made of high-strength, thermally and chemically resistant fibres, with or without metal insertion, treated with graphite powder. For sealing flanges with high surface roughness, such as manholes, headholes, inspection ports. Suitable for steam, oils, weak alkalis, and acids

## EMI gaskets:

Conductive elastomer gaskets Low closure force foam gaskets Metal EMI gaskets Form-in-place gaskets

## **Cut and preformed rings**

Seals: O-ring seals Lip seals Oil seals Anti-extrusion rings Energized seals Extruded seal profiles

