



What is a flange?

PE flange:

Flanges are used in piping as part of a fitting for the purpose of redirecting or changing pipes diameter. They are usually produced during the process of casting machinery components and molding.

They are connectors of pipes, valves & equipments. Gaskets seal two flanges. They are actually placed between them.

According to standards, characteristics of PE flanges- included as following- should be engraved of them.

- 1- Brand of manufacturer
- 2- Nominal pipe size- interior diameter of PE pipe which the PE flanges will be welded on it.
- 3- Pressure tolerance of the PE flange- also known as pressure classes of flange.
- 4- Flange surface – flange surface as the most important part of it.
- 5- Holes- also known as the wall thickness
- 6- Flange material- according to ASTM international each number declares the profile of raw material used in flanges production.
- 7- A code indicating the temperature process applied on flange.

Generally there are five types of PE flanges applied in butt welding:

- 1- Weld neck flanges
- 2- Slip-on flanges
- 3- Reducing Flanges
- 4- Increaser Flanges
- 5- Lap-joint Flanges, Van Stone

Flange types:

1. Flat face Flange :

In this type one of the faces of flange, lying against the other face, is flat. This type is usually made of cast iron or steel & is used in low pressures.

2. Raised face Flanges:

In this type one surface of flange, lying against the other, has a gasket & therefore is more prominent. Based on standards for all sizes of class 150 & 300, prominence equals with 1.6mm & for higher class it will be 6.4mm.

The raised part may be either smooth finished or serrated finish. These grooves also may be spiral or concentric. Manufacturing procedure is defined in mss-sp-6. (Groove depth usually 0.4mm with space of 0.8mm in between.)

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3. Male - Female flange:

This type of flanges has paired surfaces on one of which there is bump (6.4mm height) and on the other indentation (5mm depth).

4. Tongue & groove facing flange:

These types like male-female ones are in pair, however the inner diameter of tab & the groove does not continue till the flange hole (path) thus the gasket is kept on the inner & outer diameter which protects it from corrosion and burnout. The construction of tab & slot forms the minimum surface of flat type gasket therefore it leads to the maximum joint efficiency & minimum load when under pressure of bolts. Bumps of this kind are 6.4mm & the depth of grooves is 5mm.

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