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Lap-joint flanges for stainless steel and PEAD collars

As it was highlighted in the previous article "Pressed flanges: the best option for pipe assembly", **lap-joint flanges** are a great solution for the creation of stainless steel pipes and manifolds.

In addition to the pressed flanges, which have been already mentioned and examined, free flanges (or sliding flanges) can also be built by using steel and aluminium and by complying with other reference standards.

In particular, our warehouse stock includes **stainless steel sliding flanges** and **aluminium free flanges**.

The first kind, once **UNI 6089** (**PN 10**) and **UNI6090** (**PN 16**) and now unified into **EN1092-1 TYPE 02A** standard, is usually supplied as **PN 10** or **PN 16**, according to their size and joints with the valves and pumps on the line. It is built together with short collars that guarantee limited flexibility and optimal sealing.

AISI 304/304L (forged/casted) is the most common grade as the presence of the collar isolates the flange from the passage of the product inside the pipe. As a consequence, if highly corrosive products (acids, saline solutions) are supposed to flow inside the pipe, it is appropriate to build the joint with **AISI 316L** collars and **AISI 304/304L free flanges**. Instead, if corrosive agents are present also outside the pipe *(salt spray* or *acid vapours*) it is advisable to use both **AISI 316L free flanges** and **AISI 316L collars**.

The second kind, whose dimensions comply with **UNI 2223-67** reference standard, is suitable when it comes to not very corrosive agents and atmosphere. This solution allows to both lighten the *piping* and to reduce costs.

Aluminium free flanges are supplied standard with raw finish (*aluminium alloy in continuous casting* **EN AB47000**) as aluminium has a tendency to passivate, thus leading to the creation of a very resistant outer surface. Yet, if required by the customer, they can be coated – by means of an epoxy process and the use of an oven – in order to improve their resistance to external agents. There exist different kinds of coating depending on the application.

As far as their assembly is concerned, three of the most common aluminium flanges are made by means of short collars:

- *Collars for stainless steel ISO pipes*
- *Collars for stainless steel metric pipes*
- *Collars for PEAD pipes (polyethylene)*

Flanges belonging to different categories have different dimensions and diameters. Those meant to be used for PEAD collars also have a stiffening rib by virtue of the greater thickness of collars made out of plastic materials.