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Nominal diameter (DN) and nominal pressure (PN)

As it was explained in the previous article [Differences and comparison between ISO and ASME Standards](#), the **nominal diameter (DN)** is a conventional indicator used as reference for assessing the size of those elements that can be coupled in stainless steel pipes (flanges, fittings, valves).

Knowing the DN is essential for calculating components' working pressure.

Indeed, only elements having the same DN and the same **nominal pressure (PN)** can be coupled.

A pipe's nominal pressure describes the maximum internal pressure that the pipe and its joints are capable of withstanding and it is expressed in bars.

But how do you calculate the PN value? And what does it mean?

The nominal pressure is a scale of values roughly following a Renard series with common difference of 5: 2;5;6;10;16;20;25;40;50;64;100;150;250;320;420,640.

The PN classification includes both mechanical and dimensional characteristics and it does not represent any physical quantity in any specific unit of measurement. A pipe's nominal pressure describes the working pressure in bars, only for the involvement of water at maximum 20°C. When the temperature increases, the nominal pressure decreases according to the specific standards of each and every kind of fluid.

Furthermore, it is interesting to highlight the correlation between ISO and ANSI standards. When it comes to ANSI flanges (slip-one, welding neck and blind ones), the nominal pressure is expressed in pounds (**150lb, 300lb**). Yet, those values have corresponding values in the PN classification (in the aforesaid examples, these would be **PN 20** and **PN 50**).

Our products are mostly suitable for low pressure pipes' fittings, and they include stainless steel flanges and joints PN 6, PN 10, PN 16, PN 40, PN 64 as well as ANSI flanges 150lb and 300lb. These are the first values of a Renard's series, quite widespread in our industry.