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METAL CLAD GASKETS

PROPERTIES AND APPLICATIONS

Heat Exchanger Gasket or metal clad gasket is a term that has been given to gaskets used in heat exchangers. The structure of the gasket or its type varies according to the operating conditions of the exchangers. The heat exchanger gaskets come in a wide spectrum of types including single or double jacketed, corrugated, plain metal, soft and many others. A large selection of different materials allows heat exchangers to operate at temperatures beyond the capabilities of most soft gasket materials.

ADVANTAGES

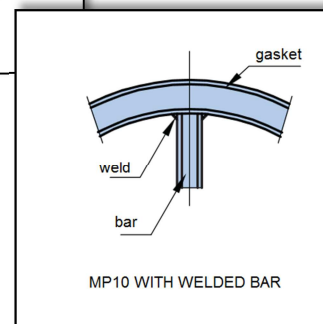
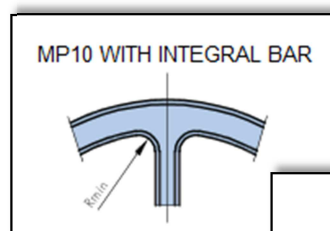
Available in wide range of materials, since they are all custom made. There are few limitations regarding size and shape. The Metal jacket provides mechanical strength to contain the filler and improves chemical resistance. Unique construction provides stability and ensures trouble-free handling and installation.

SHAPE AND CONSTRUCTION

Traditionally double-jacketed gaskets for heat exchangers are manufactured with integrated bars. There is a radius between the bars and an internal diameter of the gaskets.

The values of the corresponding radius for the most commonly used metals and alloys are shown in the following table. If a radius is less than R min, the material can crack, reducing the sealing properties of the gaskets.

| GASKET MATERIALS and R minimum | |
|---------------------------------------|-------|
| Gasket material | Rmin |
| Copper | 8m |
| Soft iron (CS) | 8 mm |
| Brass, Monel | 10 mm |
| Stainless steel | 10 mm |



Gaskets with welded bars

Gaskets with welded bars have eliminated one of the greatest problems of conventional gaskets, namely cracks in the radius area. Metal or alloys are commercially available in sheets or rolls of 1000 mm width. The primary and secondary seals are continuous all around the gasket. The gasket has excellent sealability, reducing leaks to the environment. The bars which seal between the heat exchangers passages are plasma or TIG welded with spot welds at each end. These welds should be soft and small to avoid areas of increased resistance to seating.

Materials For Heat Exchanger Gaskets & Standard Dimensions

The selection of the jacket material depends on operating conditions. The standard filler is Flexible Graphite, but ceramic, calendered sealing materials are also available to suit other application areas.

| MATERIAL | ASTM | EN (DIN) Material No. |
|------------------|-----------------|-----------------------|
| Low Carbon Steel | Soft iron (CS) | 1.0333 |
| Stainless steel | AISI 304 | 1.4301 |
| Stainless steel | AISI 316, 316 L | 1.4401, 1.4404 |
| Stainless steel | AISI 321 | 1.4541 |
| Stainless steel | AISI 316 Ti | 1.4571 |
| Monel (NiCu30Fe) | Alloy 400 | 2.4360 |
| Copper | Copper | 2.0090 |
| Brass | Brass Ms 63 | 2.0321 |
| Titanium | B348 Gr.1 | 3.7025 |

| STANDARD DIMENSIONS | |
|---------------------|------------------|
| gasket thickness | 3.2 mm |
| gasket width | 10, 13 and 16 mm |
| bar width | 8, 10 and 13 mm |

