

1998

SIGRAFLEX®
50
1972
2022

SIGRAFLEX® MF® Gasket sheet for minimum leakage, best antistick behavior and safety

End users are familiar with this situation: maintenance work is due, and the flat gasket sticks to the flange when it is replaced. If possible, without damaging the flange, the gasket then has to be removed by hand in a laborious and time-consuming process. However, downtimes are an extreme cost factor in every plant and for every operator. The aim is therefore to keep maintenance work as short as possible.

Since the 1980s, SGL Carbon has done research to find coatings which improve the release properties of the SIGRAFLEX graphite sheet surface.

The first major success was achieved with an antistick impregnation. The first product on the market equipped with this technology was SIGRAFLEX STANDARD. Over the years, numerous other antistick graphite sealing sheets followed for which SGL Carbon uses this technology, such as the SIGRAFLEX SELECT, UNIVERSAL or HOCHDRUCK. Until today, impregnated SIGRAFLEX graphite sheets have been used by many well-known chemical companies because of their superior antistick properties.

With SIGRAFLEX MF nothing sticks to the flanges, whether at room temperature or at 300 °C (572 °F).

In the 1990s, SIGRAFLEX research also focused on the development of new graphite sheets with particularly low leakage, i. e. highly tight products. For this purpose, special attention was paid to materials that had already proven themselves as sealing materials, and their use and performance in combination with graphite foil was investigated.

The work of Silvia Mechen and Otto Mederle, initially led by Mike Roemmler and later by Oswin Oettinger, eventually resulted in a completely new product with unique properties: SIGRAFLEX MF.

SIGRAFLEX MF is a three-component gasket sheet made of SIGRAFLEX flexible graphite foil, stainless steel and PTFE foil. The sheet combines the outstanding sealing properties



SIGRAFLEX MF flat gaskets with inner eyelet

of the three materials in one product. It is the only sheet, which offers minimum leakage (TA Luft compliant) at best antistick behavior and safety.

Owing to its SIGRAFLEX flexible graphite foil core it displays high long-term stability, and adapts well to uneven flanges. The stainless steel reinforcement – the sheet is available with steel foil or tanged steel enforcement – ensures the high mechanical strength of the gasket. Due to the stainless steel/PTFE top layers, SIGRAFLEX MF separates with ease from flanges and leaves no residue. With SIGRAFLEX MF nothing sticks to the flanges, whether at room temperature or at 300 °C (572 °F). Moreover, the top layers together with an inner eyelet provide excellent sealing properties.

There is no time-consuming cleaning of the flanges when using SIGRAFLEX MF. Maintenance time and the risk of scratching the flange faces reduces significantly. The end user saves time and money with every gasket change.

The launch of SIGRAFLEX MF in 1998 thus marked a milestone in the ability to reduce both emissions and total cost of ownership through the use of graphite flat gaskets. To this day, the sheet is best-in-class when it comes to tightness and antistick properties at temperatures up to 300°C. It also meets high requirements for process hygiene and product purity (FDA compliance) and can therefore also be used in

the pharmaceutical and food industries, for example.

Back in 1999, SGL Carbon also filed a patent application with the European Patent Office for the SIGRAFLEX MF layer bond

and the eyeleted gasket. Both patents were granted in 2004 (Metal reinforced graphite laminate; Laminate seal with edge member).