



EMBOSSED GASKETS

Embossments on these gaskets localize available loading to a point-line contact stress seal compared to the area seal methods of a previous generation of sealing products.

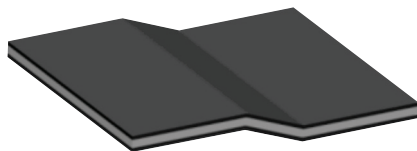
- **General Applications** utilize full embossments on a cold rolled steel core, the rubber coating type being specific to media sealed.
- **Severe Applications** consist of half embossments on a stainless steel core, with rubber coating type specific to media sealed.
- **High Pressure Applications** utilize full embossments on stainless steel core, with rubber coating type specific to media sealed.
- **High Temperature Applications** consist of half or full embossments using high-temperature alloy core material, with friction reducing coatings available.

VALUES FOR THE CUSTOMER

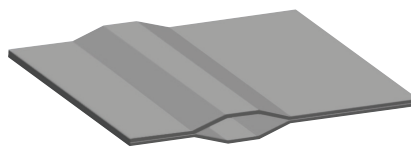
Superior customer service is available in all customer contact areas. We deliver consistent and excellent service, starting from our engineering team members commitment to design and validation support, through all aspects of production, quality verifications, and order scheduling.

We provide world-class manufacturing processes which capitalize the process developments of the stamped gaskets business to achieve production repeatability and the consistent quality of our gasket products.

Freudenberg Sealing Technologies continues to develop unique materials for individual customer requirements and specific applications, in addition to offering industry standard materials.



Half emboss single-layer coated steel



Full emboss multi-layered steel





FEATURES AND BENEFITS

Characteristic	Effect	Result for customer
Higher strengths vs. fiber	<ul style="list-style-type: none"> • Base metal has significantly higher tensile strengths • Thin cross-sectional area reduces radial blowout forces 	<ul style="list-style-type: none"> • Dramatically improved blowout resistance
Increased part rigidity vs. fiber	<ul style="list-style-type: none"> • Can incorporate integrated bolt retention and gasket location features • Can form additional features such as external clips 	<ul style="list-style-type: none"> • Easier assembly • Better positioning of embossments on hardware • Better retention on sub-assemblies during shipping
Coating adaptability to flange surface conditions	<ul style="list-style-type: none"> • Variety of surface sealing materials and thickness available 	<ul style="list-style-type: none"> • Eliminates changes needed to production machining
Predictable emboss loading and improved torque retention	<ul style="list-style-type: none"> • Accurate prediction of performance in FEA modelling • Highest long term retained assembly loads 	<ul style="list-style-type: none"> • Minimizes redesign loop often resulting in the initial prototyped design released at production launch
Higher thermal, fatigue and forming limits using high temperature alloys	<ul style="list-style-type: none"> • Dramatically extends temperature limit at sealing flange vs. stainless steels • Extends fatigue strength and elongation capability limits vs. stainless steels 	<ul style="list-style-type: none"> • Enables higher engine thermal limits • Reduced total layer count • Accommodates less rigid structures for reduced hardware costs • Eliminates fatigue cracking issues

A range of materials are available for substrates and coatings as listed here:

Substrates

- SAE 1010 ¼ hard temper cold rolled steel
- SAE 1010 ½ hard temper cold rolled steel
- SAE 5052 H38 grade aluminum
- SAE 301 full hard stainless steel
- Others types also available

Coatings

- Nitrile rubber (NBR), 75 durometer
- Expanded closed cell foam NBR, 50 durometer
- Acrylic rubber (ACM), 70 durometer
- Fluoroelastomer rubber (FKM), 70 durometer
- Expanded closed cell foam FKM, 70 durometer
- Other types also available

The information contained herein is believed to be reliable, but no representation, guarantees or warranties of any kind are made to its accuracy or suitability for any purpose. The information presented herein is based on laboratory testing and does not necessarily indicate end product performance. Full scale testing and end product performance are the responsibility of the user.

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