



ROBCO WHITE PAPER

CHOOSING A GASKET MATERIAL

Tips on what you should know when selecting a gasket material for a specific application



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Abstract / Introduction

Gaskets are everywhere. They prevent the leak of fluid, air, steam and gas and can be found in every industrial application, whether in engines, machinery, boilers, valves, piping and so much more, one thing is certain; it's critical to select the right gasket material for each application. For this, you need to know the answer to these important questions:

What's the application?

Knowing the end-use of the material is the first step. It will help you define the right questions to ask for the initial selection and research the potential threats related with the application's medium that can occur to the material. Temperature, pressure, abrasion, corrosion and potential incompatibility or reactivity to a certain medium are vital factors to consider when choosing a gasket material.

Where will it be located?

The gasket's environment will also be a factor in the chosen material. Will it be used indoor or outdoor? Will it be subjected to hot or freezing temperatures, rain, UV rays or a chemical environment?



What is the flange surface like?

Gasket failures occur when uneven pressure, stress relaxation, temperature and loss of torque on bolts are not addressed. There are three important categories of factors to take into consideration when choosing a gasket material.

Gasket Related Considerations	Temperature, Pressure, Fluid, Gasket Thickness, Gasket Stress.
Flange Related Considerations	Flange Type, Flange Surface Finish, Flange Compatibility with the Gasket
Fastener Related Considerations	Bolts/Studs, Washers, Stainless Steel

Other factors that could influence your choice include: Budget/cost target, and regulatory requirements (Industry specification, FDA, NSF, Flame retardant, etc.)

Which materials can I use and what are their general benefits?

Gasket materials are divided into the following categories:

Metallic and semi-metallic



- Made from a single metal or combination of metal and/or another material
- Include: Spiral wound, metal jacketed, corrugated metal, maxiprofile, ring joint.
- Benefits: Great for high temperature and pressure applications.

Soft or non-metallic



Compressed sheet

- Used in pipe flanges, heat exchangers, and compressor valve gaskets.
- Benefits: easily compressed under a low bolt load. Tolerates some abuse and forgiving.



Fibrous

- Many different types all with unique properties including, Carbon Fiber, MMMF, Glass, Mica, Cork, PTFE (Teflon).



Elastomeric

- Incompressible, extensible, impermeable, and elastic.
- Can be deformed but never reduced in volume.
- Various materials including CP, EP, IIR, neoprene, and natural rubber.



Robco's Gary Manning has helped his customers select the right gasket for 35 years.

How can I be sure I'm making the right choice?

This could be the most important tip that is often overlooked: Talk to a gasket specialist. The input of a trained engineer, gasket design specialist or experienced gasket guru (see photo) can be invaluable in the hunt for the best gasket solution while avoiding costly pitfalls.

Conclusion

The best gasket manufacturers will not only sell you a gasket on demand, but inquire about the application and its parameters and guide you to make the optimal choice, provide technical data and expertise. Leave nothing to chance, trust the experts.

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