

Different Types of Rubber Gaskets and Applications

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A variety of unique sealing components fall under the umbrella category of “seal,” such as gaskets as well as other sealing solutions that can accommodate dynamic applications, curved surfaces, and more in components like pumps, shafts, and rotating engines. Rubber gaskets specifically are a type of mechanical seal located in between mated parts, typically in static applications with flat surfaces like joints. Their design prevents fluids from leaking out while blocking contaminants from entering and damaging a system. Sometimes, they also function by separating parts that should not come into contact.

Numerous industries use rubber gaskets, including automotive, agriculture, construction, food and beverage, energy, mining, plumbing, wire and cable, military and defense, marine, healthcare, and more. With a range of materials and manufacturing techniques available, rubber molded parts like gaskets are easily customized to meet the needs of diverse applications. Fournier Rubber & Supply Company can help you choose the right rubber gasket for your project.



Different Types of Rubber Gaskets by Material

Manufacturers produce gaskets in a range of shapes, sizes, and materials to offer flexibility in accommodating specific applications. Some of the most common material choices include:



Chloroprene

Versatile and strong, chloroprene gaskets are resistant to oils, petroleum solvents, and even the harshest conditions and climates.

Ethylene Propylene Diene Monomer (EPDM)

These durable gaskets are useful in outdoor applications because they can withstand UV light, heat, and weather while maintaining their color and structural integrity. They also offer excellent noise and thermal insulation. EPDM gaskets are trustworthy in standard and heavy-duty applications in industries like electrical, medical, construction, automotive, appliances, and more.

Silicone

As a high-performance rubber, silicone holds up against extreme heat and cold. Solid silicone is great with metal surfaces, while foam and sponge silicone gaskets can create a seal without a lot of pressure. Silicone resists moisture and UV light for exceptional waterproofing and protection in industries like construction, aviation, and healthcare products.

Natural Rubber

With good tear, abrasion, cold, and shear resistance, natural rubber offers excellent elasticity and sealing capabilities against metal surfaces.

Neoprene

Gaskets composed of neoprene can withstand chemicals, oil, and oxidation degradation, and they are also available in fire-resistant options.

Nitrile

Also called Buna-N or acrylonitrile butadiene rubber (NBR), nitrile offers excellent resistance to oils and solvents. Nitrile gaskets are common in automotive, oil and gas, marine, and aerospace applications.

Poron®

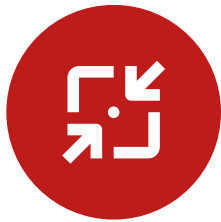
Poron® has a low compression set, making it a great choice in tasks that face vibration, shock, and impact. Its porous nature also lends it to applications in thermal insulation.

Polyurethane

This is a good material for gaskets in hydraulic cylinders, pipes, and other places that require abrasion resistance. Manufacturers can blend it with additional materials, allowing for versatility in its characteristics.

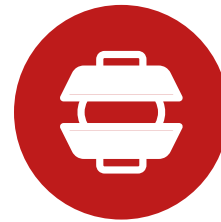
With so many options, it can be hard to choose a gasket material as you weigh the physical and mechanical advantages of each one. Choosing the wrong material can result in a poor seal or excessive wear and tear, which leads to more frequent maintenance and gasket replacement.

There are a variety of factors that will help you determine which type of gasket is right for you. From there, your rubber extrusion experts can help you refine your choice to ensure you're getting the best solution for your application. If standard gaskets won't do, you can create a custom part to get the seal you're looking for. Consider the following:



Compressibility

The gasket must compress appropriately to offer a seal against the pressure of the fluid as well as fill any surface imperfections or unevenness.



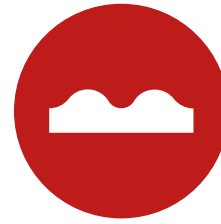
Force

How much force will the gasket face from each of the two surfaces? Can your chosen material effectively resist that force, and for how long before you will need to replace it?



Fluids and Contaminants

Some materials offer better resistance to specific fluids and contaminants, like grease, acid, water, and more. Natural rubber will weaken if exposed to oils and solvents, for example, while nitrile offers excellent resistance to those substances.



Surface Evenness

The more uneven the surface, the thicker the gasket may need to be to accommodate those inconsistencies and create a tight seal.



Advantages of Rubber Gaskets

Gaskets can consist of a variety of materials, including stainless or low carbon steel, Inconel, graphite, Teflon, cork, glass, and more, and each has its place in certain applications. In many cases, rubber gaskets offer some distinct advantages over the other options:

Cost

Some types of rubber are more expensive than others, but rubber gaskets are generally more affordable than metal ones. This also makes them less expensive to replace when they finally wear out.

Ease of Manufacturing

The rubber gasket manufacturing process uses low heat, low pressure, and inexpensive tooling, allowing for reduced labor and energy usage for an economical production process.

Exceptional Sealing Strength

The unique elastic properties of rubber allow for compression and stretching without impairment, providing a tight seal without altering the integrity of the gasket. This also helps ensure a long service life for the gasket.

Chemical and Temperature Resistance

Rubber is stable and can resist a variety of elements, including acids, water, oxygen, UV light, extreme heat, and more—conditions that could damage gaskets made of another material.

Versatile Physical Characteristics

Using different materials and compounds, you can create the ideal balance of compressibility, hardness, and environmental resistance to meet the demands of your application.

Customization

Via hand cutting, die cutting, laser cutting, waterjet cutting, and other machining techniques, manufacturers can easily customize gaskets to your required shape and size. Also, when aesthetics matter, rubber gaskets are available in a variety of colors.

Food Safety

The FDA has approved certain rubber compounds that have proven to be non-toxic and safe for contact with food items. They typically offer a natural resistance to mold and bacterial growth while being easy to clean, tasteless, odorless, and free from allergens. These include EPDM, silicone, nitrile, and neoprene, which are common materials for food and beverage processing operations.

Industrial Applications of Rubber Gaskets

At Fournier Rubber, we make our gaskets for reliable sealing and exceptional resilience in low-temperature, low-pressure, and mild chemical environments. Over the years, we've worked with clients in a range of industries:



Industrial Piping & Pipe Fittings

Industrial facilities regularly use rubber gaskets in low- and medium-pressure utility lines and chemical processing lines.



Aerospace

Rubber gaskets seal components in various aircraft systems, including fuel supply, propellant, hydraulic, and oxidizer systems.



Automotive

Our rubber gaskets are trustworthy for engines, transmissions, and anywhere that requires a low-pressure seal for passive components.



Water Utility & Plumbing

As they're affordable and resistant to corrosion, water, chlorides, and more, rubber gaskets are the go-to seal in plumbing applications.

Turn to the Experts at Fournier Rubber for Quality Rubber Gaskets

Professionals in various industries from consumer goods, cars, and airplanes to industrial fluid systems and manufacturing trust rubber gaskets for their applications. While various sizes, shapes, materials, and gasket manufacturing techniques allow for extreme versatility, those options also make it harder to determine which type of gasket is best for you.

Fournier Rubber is here to help. With years of experience with both natural and synthetic rubbers and a highly trained and skilled manufacturing team, we can assess your needs and offer expert advice as we manufacture a rubber gasket that's perfectly suited to your application. Since 1933, we've been offering high-quality products at a fair price, and we do it with a streamlined process that makes it easy for you to partner with us on your project.

We're proud to be a leading fabricator of gaskets as well as custom O-rings, plastic tubing, hose assemblies, industrial duct systems, and more. Visit our [About Us](#) page to learn more about our company history and experience, and [contact us](#) if you have any questions about our rubber gasket solutions. For pricing details or to get started on your project, [request a quote](#) today.

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