



ESSENTIAL INSIGHTS FOR DESIGNING

HIGH-PERFORMANCE GASKETS: A QUICK GUIDE

Before contacting a custom gasket manufacturer, clearly define your project requirements. This will ensure efficient communication and accurate solutions.

Essential Considerations

- ➔ **Gasket purpose and environment:** Clearly communicate the gasket's function and operating conditions:
 - **Temperature:** Specify the range your gasket needs to withstand (e.g., -40°C to 200°C) to avoid material failures and ensure durability.
 - **Pressure/Compression:** Determine the pressure levels (e.g., low, medium, high) your gasket will encounter and how much compression is expected, as this is important to preventing leaks and ensuring a secure seal.
 - **Chemicals/Moisture:** Identify any chemicals (e.g., acids, oils, solvents) or other liquids the gasket may encounter to avoid material degradation and potential failure.
 - **Ingress:** Define the type of materials (water, dirt, etc) you are need to prevent from entering your container or enclosure.
- ➔ **Material selection:** Identify suitable materials based on factors like temperature, chemicals, compression, and ingress prevention. Consider the following options:
 - **Rubber:** Versatile, cost-effective, good for general-purpose applications.
 - **Silicone:** Excellent heat and chemical resistance, flexibility, and durability.
 - **PTFE (Teflon):** Exceptional chemical resistance, low friction, and high-temperature tolerance.
 - **Polyurethane:** Cost effective for general sealing, good temperature performance, some flame ratings for safety and compliance, wide range of thicknesses and densities.
 - **Composites:** Combines properties of different materials for specific needs.

- ➔ **Performance criteria:** Defining the essential properties of your gasket, such as sealing strength, durability, and longevity, is critical for ensuring it meets your exact performance needs.
 - **Example:** A gasket for a high-pressure hydraulic system would require excellent sealing strength and resistance to compression set, ensuring safety and efficiency in operation.
- ➔ **Gasket type:** Selecting the right gasket type is important to achieving a perfect fit and optimal performance.
 - **O-rings:** Circular cross-section, ideal for static sealing.
 - **Flat gaskets:** Compressed between two surfaces, versatile for various applications.
 - **Composite gaskets:** Combine different materials for specific properties.

By asking these questions at the beginning of your project you are setting a course for success. Understanding what you need the gasket to do is critical in determining the right materials & solutions to prevent failure. Start with these simple but important details to ensure a robust and reliable result for your next gasket.

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