There are countless pipe connections for different market segments. To find out which is the right seal for your needs, a number of aspects need to be considered. What is particularly important is how frequently the connections will need to be opened as well as the approvals that are required. Essentially, these aspects determine whether a simple flat gasket is sufficient or whether a different sealing element needs to be used to secure your processes.

There are four types of pipe connections for you to choose from, depending on your application:

- Classic seals for dairy coupling in line with DIN 11851
- Flat gaskets in line with DIN 28091-2 and DIN 28091-3
- Clamp seals in line with DIN 32676 and ISO 2852
- O-rings for aseptic clamp connections in line with DIN 11864

Function and areas of use for classic dairy couplings
Piping for fluid media can be connected and sealed very easily with seals for dairy couplings. They are standardized to DIN 11851 and are widespread in the food industry. Their key advantage is that they can be fitted exceedingly quickly and easily thanks to simple separation from the flange. This allows you to carry out frequent assemblies without any problems. Dairy couplings are a low-cost solution and are particularly well suited for smaller plants that are not run in continuous operation. It should be noted that they are a component for less demanding uses. They do not meet hygienic design requirements, as the compression is not defined by a stop.

Flat gaskets for connecting different plant elements
Flat gaskets are used to join together different plant elements while at the same time sealing pipe joints securely. The flat gaskets are placed between the flanges which are connected using screws. Not only do they even out macro-irregularities in the pipe surface, they are also resistant to the media flowing through the pipes and create a reliable seal between the individual elements. A virtually inert material is required both in the food industry (due to cleaning agents) and in the pharmaceutical and chemical industries (due to aggressive solvents and chemicals). Flat gaskets are mostly used to connect plant elements like valves, fittings, piping, and pumps.

Clamp seals for continuously operated equipment
Clamp seals are the optimal pipe connection for use in continuously operated plant equipment. They were developed specifically for this purpose. Symmetrically designed flanges enable particularly simple installation. The key advantage is this: the seal does not need to be fitted in a particular direction. Furthermore, it is standardized to ISO 2852 and DIN 32676 and is available at low cost from stock. The only risk with the clamp seal is if it is compressed with too much force. In this case it could become damaged and allow the product to leak through.

Aseptic O-rings – the hygienic alternative for pipe connections
Clamp seals with aseptic O-rings were developed to enable hygienic sealing for pipe connections. What’s special about them is this: they combine the benefits of easy assembly with dead-space-free sealing, thereby guaranteeing a hygienically sound manufacturing process. DIN 11864 recommends these seals, which are available from Freudenberg Sealing Technologies in high performance materials and possess the approvals required in the food and pharmaceutical industries.

Benefit from our know-how
Thanks to many years of experience, research and work in associations, Freudenberg Sealing Technologies possesses unique technical knowledge concerning the special requirements and materials that are indispensable in the process industry. If there are specific cases in which we do not currently have any empirical values, our in-house test plant is available to you for performing tests. Your individual pipe connections and process media can be tested here. So we can always find the right sealing solution for your pipe connection.
Application information for pipe connections in the process industry

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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