Rubber Fab

a Garlock Hygienic Technologies company

Rubber Fab's Sanitary Gasket Guidelines

- **Tuf-Flex**® is the world's first **unitized gasket**, setting new standards for purity, performance and flexibility. A Tuf-Flex® Gasket's contact surface is PTFE unitized to an EPDM rubber inner core. This **totally bonded** construction provides a PTFE gasket with the mechanical characteristics, including memory, of an elastomer gasket. Designed to meet critical requirements in biopharmaceutical, ultra-pure water, WFI (water for injection) and difficult food and beverage processing.
- **Tuf-Steel**® is composed of a unique 50/50 blend of non-pigmented PTFE and 316L passivated and atomized stainless steel. **Testing and seven years of documented application usage** has demonstrated that Tuf-Steel® is the choice for **perfect surface performance**, **outstanding durability and extended service life** in both SIP (steam in place) and WFI (water for injection) applications. Tuf-Steel® is **ideal for sanitary steam pipe connections** in extreme temperatures ranging from -320°F to 550°F. The **superior strength** of Tuf-Steel® **eliminates creep** and **cold flow providing a leak-free seal** and preventing maintenance problems and system downtime.
- **PTFE** is the material of choice whenever low temperature flexibility or gasket memory is not required and can remain in service for longer periods of time in both water and steam applications. PTFE is not recommended with large temperature variations due to creep and cold flow. PTFE has minimal extractables, has a low absorption rate and excellent resistance to process fluids.
- **Platinum Cured Silicone** is the material of choice in sanitary water systems when PTFE is not feasible due to severely misaligned fittings, or if the cost of high pressure clamps does not outweigh the benefits of PTFE (extended service life). See Rubber Fab's Platinum Silicone Hygienic Seal literature for more information.
- **FKM Fluoroelastomer** and **EPDM** compounds are specified by many of our process equipment manufacturers. They are generally suitable for these applications, however, service life must be considered and a preventative maintenance program be implemented to mitigate degradation.
- **Buna** is the last choice in most applications due to temperature limitations and does not pass U.S. Pharmacopeia Class VI Certification and Cytotoxicity.

1 = Excellent 2 = Good 3 = Acceptable 4 = Marginal 5 = Poor 0 = Do Not Use

Gasket Comments	Continuous Steam	Intermittent Steam	Pure Water Ambient	Pure Water Hot	Process Fluids Ambient	Process Fluids Hot	Process Fluids Variable (<0°C - >100°C)	Temp. Range
Tuf-Flex®/Ansi-Flex	1	1	1	1	1	1	1	-20°F to 300°F
Maintains seal with wide temperature variations. Has extended service life.**								
Tuf-Steel®	1	1	1	1	1	1	1	-320°F to 550°F
Maintains seal with wide temperature variations. Has extended service life.**								
PTFE	1	1	1	1	1	1	3	-100°F to 500°F
Wide temperature variations and may cause leakage at ΔT.								
Silicone (platinum)	2	2	2	2	2	2	1	-40°F to 450°F
Very flexible low temperature.								
FKM Fluoroelastomer	2	2	2	2	2	2	2	-30°F to 400°F
Acceptable for steam applications.								
EPDM (peroxide cured)	3	3	3	3	3	3	3	-30°F to 300°F
Low pressure steam only.								
Buna*	0	0	5	5	5	5	5	-30°F to 200°F
Not recommended for strong acids and ozone								

*Buna does not pass U.S. Pharmacopeia Class VI Certification and Cytotoxicity and is not ADI free. **Application dependent.

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