



...rupture disks and related over-pressure protection products

Technical Bulletin #430 Rev.A

Rupture Disk Liners

This document answers questions related to the usage and pricing of "liners" on ZOOK Graphite Rupture Disks.

Q. What is a liner?

- A. A liner is a thin layer of thermoplastic or elastomer material. The liner is attached to the disk using a pressure sensitive adhesive tape around the periphery of the disk. The liner is **not** attached to the center section or membrane of the disk.

Q: What is the purpose of a liner or lined rupture disk?

- A. The liner functions as a barrier between the process media and the rupture disk material. The liner protects the disk against chemical attack.

Q. What does DUPLEX represent?

- A. Duplex is a model or style designation that represents a graphite rupture disk mounted with the lined flat side toward the process media *and* the disk is lined.

Q. How is the need for a liner determined?

- A. ZOOK offers an abbreviated corrosion guide in ZOOK Bulletin 6000. If more detail is required, contact ZOOK for an expanded corrosion guide.

Q. What are the standard liner materials?

- A. The standard liner material on a Duplex style disk is PTFE. In addition to PTFE the following liner materials are stocked, in limited quantities, at the factory:

FEP, PFA, Kynar and Halar.

- Note: The width and thickness of some liner materials are limited by manufacturing capabilities. Consult ZOOK on disk liner materials other than PTFE and FEP.

Q. How is the thickness of the liner determined?

- A. The liner thickness is determined by the strength of the liner material in relation to the size and burst rating of the disk. The liner material alone should not withstand a pressure equal to or greater than the disk burst rating, otherwise the disk membrane could break and leave the liner intact. Lower burst ratings require thinner liners. Higher burst ratings can accept thicker liners. Some liner materials are stronger than others, thus limiting the availability of some materials in low burst applications.

Consult ZOOK regarding material availability for applications where burst ratings are below 5 psig and require liner materials other than PTFE, or FEP.

Q. Is there an additional charge for non-standard Liner materials?

A. In the past there were additional charges for non-standard liner materials. This policy was recently changed. Currently, PTFE, FEP, PFA, Kynar and Halar materials are priced the same.

Q. Can a liner be mounted onto the vent side of a Graphite Rupture Disk?

A. A liner may be mounted onto the vent side of a Mono, Duplex, or Inverted disk. The liner will protect the vent side of the disk from chemical attack. I.E. Closed header and Manifold applications.

➤ Note: Other terms for "vent side" are: downstream, outlet, or discharge side.

*Q. Can a Mono disk be specified with a liner on the **process** side (counterbore)?*

A. No. Duplex is the only style disk that can accept a liner on the process side of the disk.

➤ Note: Other terms for "process side" are: inlet, upstream, or pressure side.

Q. When should the Additional Liners price list (#1011) be used?

A. Only in the following cases:

➤ When a liner is requested to be mounted on the downstream side of a Mono, Duplex, or Inverted disk.

➤ When a replacement liner is required.

Q. What is the difference between a liner and a "coating"?

A. A liner is a separate component from the rupture disk, it is attached onto the disk using adhesive tape. Coating is a process involving a liquid PTFE sprayed-on and baked on to the surface of the rupture disk. A coating is similar to the coating on a frying pan. The primary purpose for applying a coating onto a rupture disk is to provide a non-stick surface. The non-stick surface is resistant to process media building-up on the disk surface and causing performance problems. A coating is less resistant to corrosive attack, as opposed to a liner. A coating is more permeable than a liner, therefore a coating may, more easily be attacked corrosively.

CAUTIONS

Caution during installation is required to assure the liner is not scratched, damaged or removed.

Determination of compatibility with liner materials is the responsibility of the user.

