Liner Seals for Metal Expansion Joints

KE-Burgmann liner seal should be used where there is a build up of debris, fly ash or particles in the line which could enter the space between the internal sleeve outside diameter and the bellows inside diameter.

**Liner Seal**

A liner seal is a flexible tubular product typically made from stainless steel. The seal is fitted close to the open end of the internal sleeve, resulting in its exposure to the medium temperature and service. Due to the liner seal location, the product is designed to be flexible, resilient and strong.

The liner seal consists of multiple concentric knitted wire tubes. The seal is solid but flexible and has an elastic behaviour.

The liner seal is also designed to be corrosion resistant, as acid formation can build up during a plant shutdown.

The liner seal is held in place with ‘U’-shaped 304H stainless steel solution annealed hooks, 6 mm (0.25”) diameter. These hooks are on 150 mm (6”) centres.

The liner seal diameter is calculated based upon design movements and the clearance between the sleeve outside diameter and the pipe inside diameter.

The purpose of the liner seal is to prevent large particles entering the bellows and to maintain the insulation bolster in the cavity. The liner seal will not prevent dust passing through the seal or small openings. (As the liner seal is typically supplied in expansion joints, where there is an insulated cold packed design, the cavity is extremely tough. This product is now becoming the norm to assure long service life.

In some cases the liner seal mesh and outer hose braid are in different materials i.e. 309/310 stainless hose braid with Incoloy DS inner seal.

**Liner Seal Hooks**

When installing a liner seal during construction of a new expansion joint, the liner seal hooks are TIG welded to the internal sleeve outside diameter. The weld is therefore away from the media particles, which is a service benefit as in some cases the media has eroded away the hook attachment weld if located near the open end of the liner.

Our close collaboration with customers on field based development programs allows KE-Burgmann to maintain the high level of quality through on site inspection activities and in house R&D.

**Stock**

KE-Burgmann maintains a limited stock of liner seals and outer hose braids. If these items are to be made for emergency services, the quantities required are usually low. There are significant costs to stopping the knitting and braiding machine and re-tooling it for a short run.

KE-Burgmann suggests that the client stocks the required type and material of liner seals, as these items are often replaced in turnarounds.

**Liner seal (type) identification:**

A: WM-Seal = Liner seal, knitted wire mesh only.

B: BH-Seal = Liner seal with outer braided hose and inner core knitted wire mesh.

Hooks will be automatically supplied to suit the diameter and length of the seal purchased.

KE-Burgmann: The ‘One-Stop-Shop’ for metal, fabric, and rubber expansion joints - plus bellows on-site services! Please contact us for more information.