

Technical Data Sheet

DURABILITY OF FLEXSEAL NITRILE COUPLINGS

Flexseal couplings are manufactured for use when jointing pipes in sewerage, drainage and other non-pressure applications. They consist of an elastomeric sleeve with clamping bands. The clamp bands are manufactured from stainless steel. The sleeve is normally supplied in EPDM material but where resistance to hydrocarbon contamination of effluent and or surrounding material is required Nitrile couplings are offered.

The product is manufactured to the requirements of BS EN 295. This has a requirement for the elastomeric seal to be compliant with BS EN 681 Part 1.

We have to consider three aspects concerning the durability of the product.

- 1) The life of the elastomeric sleeve.
 - 2) The life of the stainless-steel clamp bands.
 - 3) The performance of the product.
- 1) The durability of the elastomer is influenced by many factors such as the type of elastomer, the temperature and the environment in which the elastomer is functioning. Nitrile should be used when effluent and or surrounding material is contaminated by hydrocarbons in below ground applications. In this environment Nitrile will provide a long service life.

Nitrile compounds have a quoted operating temperature range up to 120°C. We recommend that our Nitrile couplings should not be used for continuous operating temperatures in excess of 45°C to ensure product longevity. It is considered unlikely that applications requiring Nitrile as the elastomer will operate at temperatures higher than ambient conditions.
 - 2) Stainless steel usually has excellent durability. It can be attacked by chloride ions present in soils by the mechanism of crevice corrosion. If this is anticipated to be a problem, then the higher grade 316 stainless steel should be utilized.
 - 3) The performance of the Flexseal product is dependent upon maintaining contact pressure under the clamp band to ensure the seal remains tight. The elastomer has to meet performance criteria specified in BS EN 681:1. This factor ensures that the physical properties of the material are both known and consistent. Extrapolation of the results of stress relaxation under compression provides a figure for 50-year relaxation.

We are confident that these products, if correctly specified and installed, are adequate for a 50-year life in below ground applications.

NBR

Nitrile or Acrylonitrile Butadiene (NBR) can be offered as an alternative material for instances when the drainage effluent and or surrounding material is contaminated by hydrocarbons.

Advantages:

Very good resistance to oils, petrol, diesel and greases.

NBR generic temperature range is -20 deg C/+120 deg C.

Good resistance to alkalis and acids

Limitations:

Poor resistance to ozone and sunlight.

Remarks:

The physical properties of the compound meet the requirements of EN 681:1 NBR is used in specific application for effluent and or surrounding material contaminated with hydrocarbons, oils, fats and greases.