



Customer : Hyflux CEPAration Technologies (Europe)
 Product group : Rubber Moulded Parts and Profiles
 Market : Food and pharma

ERIKS PREVENTS HYFLUX MEMBRANE FROM EXPANDING AT HIGH TEMPERATURES

Bio-hygienic sanitary seal for membrane housing prevents end- product wastage



CUSTOMER PROFILE

Hyflux® CEPAration Technologies researches and develops inorganic and hybrid membranes. It also tests and sells ceramic and polymer membranes for a range of applications, from liquid filtration to gas separation. Hyflux does its development work in Helmond, the Netherlands, and has production facilities in Friesland, also in the Netherlands, and Asia.

CHALLENGE

In critical filtration processes, e.g. in beer breweries, the Hyflux® InoCep™ membrane is used, which consists of a metal tube, with a metal lid at both ends. Inside the tube are a number of ceramic tubelets of at least 50 cm long. These tubes have extremely thin walls, and are sealed with epoxy resin at both ends. The outer diameter of the epoxy resin and the inner diameter of the metal tube are sealed with a rubber O-ring. The membrane had a weakness: the epoxy resin and the O-rings expand due to the high temperature, creating pressure on the ceramic tubes, which can crush them. This effectively limits the maximum temperature during the filtering process.

The problem can only be solved by absorbing the expansion of the epoxy resin and the O-ring in the rubber seal, and correcting for the shrinkage during cooling. No leaks of any kind may occur during expansion and shrinkage. Hyflux approached ERIKS for a suitable alternative. The solution had to be identical on both sides in order to retain simplicity of construction.

SOLUTION

ERIKS advised against a sealing ring, and recommended using silicon FDA, because the same seal is used on both sides of the membrane. This material has the property of killing any bacteria that may lodge in the sealed space between the profile and the epoxy resin. After successful tests of the silicon FDA profile, Hyflux placed an order for the bio-hygienic seal.

The sealing profile has significantly improved the filtering process, raising the maximum operating temperature and reducing end-product loss to close to zero.

SAVINGS

- Cost savings
- Increased production

OTHER BENEFITS

- The seal has become the go-to solution for manufacturers in the food and drink industry, in particular the beer industry.