

Case Study: GYLON® Style 3522 - Food and Beverage



INDUSTRY

Food and Beverage - Dairy

CUSTOMER

Global Food Processing and Packaging Company

BACKGROUND

Historically this customer had used fluoroelastomer (FKM) rubber gaskets on their customized cheese block forming equipment. The equipment design is a rectangular configuration, manufactured from stainless steel, and utilizes stainless steel nuts, bolts, washers and well washers. As the media is inclusive of cheese and other cheese bi-products, periodic clean in place (CIP) cycling is required, and USDA certification and 3A compliance is critical.

CHALLENGES FACED

The flange and bolting configuration were less than ideal, specifically from an available bolt load perspective. While fluoroelastomer (FKM) rubber gaskets had often sealed initially, it was expected that the gaskets would eventually extrude and leak after 3 months or less. In addition to lower vs low load sealing requirements, the gaskets needed to be durable enough to handle the daily temperature cycles associated with manufacturing and CIP but also able to handle a wide variety of cleaning agents. As a result of the temperature and chemical exposure, the rubber gaskets eventually degraded, extruded, lost bolt load, and leaked - significantly impacting manufacturing efficiencies.

OPERATING CONDITIONS

Size: ~ 16" x 18" Rectangular Gasket

Temperature: 32°F to 194°F (0°C - 94°C)

Application: Flat Faced Flange / Cheese Block Former

Media: NaOH Solution & Acid Solution; Disinfection: Sodium Hypochlorite, Peracetic Acid, Hydrogen Peroxide

Pressure: 44 psi

SOLUTION AND BENEFITS

The Garlock engineering team was able to provide an effective sealing solution for this application by combining the best in class performance properties of GYLON® Style 3522 with a unique engineered reduced area gasket configuration. Manufactured from 100% PTFE, the GYLON® Style 3522 material is not only able to handle all the chemical and temperature requirements for this application, the material also complies with USDA and FDA requirements and is 3A approved for dairy applications. Also, by modifying and ultimately reducing the gasket surface area via a scalloped design, Garlock was able to dramatically reduce the required bolting force necessary to achieve a reliable seal. Ultimately the Garlock GYLON® Style 3522 reduced area gasket proved to extend the service life by three times, thus increasing up time and reducing total cost of ownership as compared to historical FKM rubber



GARLOCK

an Enpro Company

Tel: 1-877-GARLOCK / 315.597.4811

Fax: 800.543.0598 / 315.597.3216

www.garlock.com

Garlock

Garlock Australia

Garlock de Canada, LTD

Garlock China

Garlock Taiwan

Garlock Singapore

Garlock Germany

Garlock India Private Limited

Garlock de Mexico, S.A. De C.V.

Garlock New Zealand

Garlock Middle East