

Rubber Fab

a Garlock Hygienic Technologies company

Case Study: Non-Alcoholic Craft Beer Crush Resistant FDA Bromobutyl-Lined Hose



INDUSTRY

Craft Brewing Industry

CUSTOMER

Large Non-Alcoholic Craft Brewer

BACKGROUND

The customer was using standard Food & Beverage Hoses, to transfer both ambient wort and chilled carbonated non-alcoholic beer at different stages of the brewing process. While initial performance of the hoses appeared satisfactory, the customer experienced issues with the hoses due to kinking of the metallic helices resulting in flow restriction.

CHALLENGE FACED

There is a high cleanliness requirement when brewing non-alcohol beer to prevent microbial contamination. Due to the lack of alcohol present in traditional beer, non-alcohol beer is considered more vulnerable to spoilage by food borne pathogens and microorganisms. This environment requires hoses that can withstand chemical cleaning processes to ensure consumer safety and shelf stability of the product. Additionally the hoses would be required to handle the rigors of the brewing process from hanging storage to being damaged by other equipment.

OPERATING CONDITIONS

1. Temperature – 32°F to 50°F (0-10°C)
2. Application – Hose Assembly for liquid transfer
3. Media (Process) – Non-alcoholic Carbonated Malt Beverage
4. Media (Cleaning): Alkaline and Acidic Cleaning agents
5. Pressure – 15psi (1Bar)
6. Size – Various

SOLUTION AND BENEFITS

Rubber Fab's technical team concluded that the process required a hose material that was impervious to carbonated beverages, harsh cleaning agents and could resist damage to storage and handling or other equipment used in process. By redesigning the hose wall and adding thermoplastic helices, in place of metal helices, we were able to create a hose that could bend and conform without permanent deformation. This eliminated potential bacterial build up area where the standard hose might kink restricting flow creating a damming effect.

In order to handle the carbonated beverage and harsh cleaning agents utilized to maintain a sterile brewing environment, we designed the hose with a Bromobutyl liner. The Bromobutyl liner has significantly better chemical resistance to the cleaning agents used in the non-alcoholic brewing process as compared to Standard Food and Beverage hoses with a Nitrile/ PVC liner, and still offers the required flexibility and durability for long term service in all brewing applications.

The customer was advised to replace all existing hoses with Rubber Fab's new Crush Resistant FDA Bromobutyl-Lined Hose. The Crush Resistant Bromobutyl-lined hose was successfully evaluated and approved for use. The improved hose performance has not only reduced ongoing maintenance costs, but has allowed the customer to build a more flexible brewing program as they continue to grow their business.

For more information, please visit: www.rubberfab.com