FERGUSON INDUSTRIAL

THE DIFFERENCE BETWEEN SANITARY 3-A AND BPE

For sanitary food handling applications, stainless steel is a popular material choice. The high levels of chromium and nickel found in 304 and 316 stainless steel provide them with a strong resistance to heat, abrasion and corrosion.

Sanitary stainless steel fittings and tubing are used because they are cleanable—either by dismantling a system for clean-out-of-place (COP) or using a clean-in-place (CIP) process. These products maintain hygienic environments by limiting entrapment areas where bacteria could form or fester.

3-A SANITARY FITTINGS AND TUBING

- Meets requirements for food processing and packaging equipment intended for contact with beer, wine, water, dairy and most food products
- Surface finish meets or exceeds 32 Roughness Average (Ra)
- Identified with the 3-A logo
- Commonly offered in 304 and 316 stainless steel*
- Material traceability not required
- Commonly used in food and beverage facilities

BIO-PROCESSING EQUIPMENT (BPE) FITTINGS AND TUBING

- Held to tighter tolerances and cleaner interior surface finishes
- Carefully regulated to eliminate product holdup and eliminate sources of contamination
- Material traceability and verification required
- Specifications for inner diameter roughness are identified as SF1 (20Ra mechanical polish, also referred to as a PL finish) and SF4 (15Ra electropolish, also referred to as a PM finish)
- Markings on the outside of the fittings must include heat number, material type, company, country of origin, surface finish and BPE mark
- Must be capped, bagged and color-coded for shipment
- To comply with ASME-BPE Standards, all BPE fittings are dimensionally consistent regardless of manufacturer
- Commonly used in pharmaceutical and personal care product facilities

*See reverse for more information on 304, 316 and 316L stainless steel.

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Stainless steel is the most common material used in sanitary tubing because of its cost, corrosion resistance, cleanability and durability relative to other materials. Sanitary fittings and tubing are available in three stainless-steel alloys. For many applications, 304 and 316 are interchangeable.

304 STAINLESS STEEL

304 is a practical and economical choice, used in a variety of applications because of its durability and appearance. Of the three alloys used in sanitary process products, 304 stainless steel has the least corrosion resistance.

SUITABLE APPLICATIONS:

- Beer and wine
- Water
- Dairy
- Most food products
- Oils and most extracts

316 STAINLESS STEEL

316 stainless steel incorporates molybdenum, which enhances its corrosion resistance, especially in harsh industrial environments. 316 stainless steel is more resistant to acidic material, industrial solvents, highly concentrated saline solutions and fatty acids at high temperatures.

SUITABLE APPLICATIONS:

- Pharmaceuticals
- Personal care products
- Bleach and cleaning products
- Oily meats at high temperatures
- Medical products
- Aerospace
- Chemical applications
- High salt concentrations

316L STAINLESS STEEL

316L stainless steel is almost identical to 316 but with a lower carbon content. The reduced carbon content further enhances the corrosion resistance imparted by the molybdenum.

SUITABLE APPLICATIONS:

- Pharmaceutical
- Semiconductor

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