

3-A[®] Sanitary Standards for Sanitary Fittings, Number 63-03

Formulated by
International Association of Food Industry Suppliers (IAFIS)
International Association for Food Protection (IAFP)
United States Public Health Service (USPHS)
The Dairy Industry Committee (DIC)
United States Department of Agriculture – Dairy Programs (USDA)

It is the purpose of the IAFIS, IAFP, USPHS, DIC, and USDA in connection with the development of the 3-A Sanitary Standards Program to allow and encourage full freedom for inventive genius or new developments. Sanitary fittings specifications heretofore or hereafter developed which so differ in design, materials, and fabrication or otherwise as not to conform to the following standards but which, in the fabricator's opinion, are equivalent or better, may be submitted for the joint consideration of the IAFIS, IAFP, USPHS, DIC, and USDA at any time. The 3-A Sanitary Standards and 3-A Accepted Practices provide hygienic criteria applicable to equipment and systems used to produce, process, and package milk, milk products, and other perishable foods or comestible products. Standard English is the official language of 3-A Sanitary Standards and 3-A Accepted Practices.

A	SCOPE	B	DEFINITIONS
A1	These standards cover the sanitary aspects of fittings and gaskets for fittings used on processing equipment and pipelines which hold or convey milk, milk products, or other comestibles. These standards cover the product contact surfaces of disassemblable joints on sanitary fittings.	B1	<i>Product:</i> Shall mean milk, milk products, or other comestibles.
A1.1	Standards for fabricated hose assemblies are found in 3-A Sanitary Standards for Hose Assemblies for Milk and Milk Products, Number 62-. ¹	B2	Surfaces
A2	These standards do not cover:	B2.1	<i>Product Contact Surfaces:</i> Shall mean all surfaces which are exposed to the product and surfaces from which liquid may drain, drop, diffuse, or be drawn into the product.
A2.1	Fittings, such as recessed ferrules, which are attached to a pipeline or equipment by means of soldering.	B2.2	<i>Nonproduct Contact Surfaces:</i> Shall mean all other exposed surfaces.
A2.2	Recessless or rolled on fittings, except as allowed in Section D2.1.1.	B3	Cleaning
A3	In order to conform to these 3-A Sanitary Standards for Sanitary Fittings, fittings shall conform to the following design, material, and fabrication criteria, and the applicable documents referenced herein. ²	B3.1	<i>Mechanical Cleaning or Mechanically Cleaned:</i> Shall mean soil removal by impingement, circulation, or flowing chemical detergent solutions and water rinses onto and over the surfaces to be cleaned by mechanical means in equipment or systems specifically designed for this purpose.
		B3.1.1	<i>Cleaned In Place (CIP):</i> Shall mean mechanical cleaning of equipment, the cleanability of which has been sufficiently established such that all product or solution contact surfaces do not have to be readily accessible for inspection, (i.e. pipelines that have welded joints).
		B3.2	<i>Manual (COP) Cleaning:</i> Shall mean soil removal when the equipment is partially or totally disassembled. Soil removal is effected with

¹ 3-A Symbol authorization shall not be granted to a fitting used on a fabricated hose assembly.

² Use current revisions or editions of all referenced documents cited herein.

chemical solutions and water rinses with the assistance of one or a combination of brushes, nonmetallic scouring pads and scrapers, high or low pressure hoses and tank(s) which may be fitted with recirculating pump(s), and with all cleaning aids manipulated by hand.

B4 Fitting Types

B4.1 *Butt Weld Fittings*: Shall mean fittings which have at least one plain end intended for welding to a pipeline or equipment.

B4.2 *Mechanically Cleaned Fittings*: Shall mean a fitting which is cleaned while fully assembled. If such a fitting has a demountable joint, the joint is self-centering, employs a gasket, and the resulting gasketed joint forms a substantially flush interior surface. A fitting for attachment to glass or plastic which meets the preceding criteria may also be a mechanically cleaned fitting.

B4.3 *Manually Cleaned Fittings*: Shall mean a fitting which has a disassemblable joint that is intended for dismantling for manual cleaning. An example of a manually cleaned fitting is the bevel-seat type.

B5 *Substantially Flush*: Shall mean mating surfaces or other juxtaposed surfaces shall be within 1/32 in. (0.794 mm).

B6 *Simple Hand Tools*: Shall mean implements normally used by operating and cleaning personnel such as a screwdriver, wrench, or mallet.

B7 *Coatings*: Shall mean the results of a process where a different material is deposited to create a new surface. There is an appreciable, typically more than 1 µm, build-up of new material.

C MATERIALS

C1 Metals

C1.1 Product contact surfaces shall be of stainless steel of the AISI 300 Series³ or corresponding ACI types⁴ (See Appendix, Section F), or metal which under conditions of intended use is at least as corrosion

resistant as stainless steel of the foregoing types, and is nontoxic and nonabsorbent.

C2 Nonmetal

C2.1 Rubber and rubber-like materials may be used for coatings for sealing surfaces, gaskets, O-rings, seals, and parts having the same functional purposes.

C2.1.1 Rubber and rubber-like materials, when used for the above-specified applications, shall conform to the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Rubber and Rubber-Like Materials Used as Product Contact Surfaces in Dairy Equipment, Number 18-.

C2.2 Plastic materials may be used for coatings for sealing surfaces, fittings, gaskets, O-rings, seals, and parts having the same functional purposes.

C2.2.1 Plastic materials, when used for the above-specified applications, shall conform to the applicable provisions of the 3-A Sanitary Standards for Multiple-Use Plastic Materials Used as Product Contact Surfaces for Dairy Equipment, Number 20-.

C2.3 Rubber and rubber-like materials and plastic materials having product contact surfaces shall be of such composition as to retain their surface and conformational characteristics when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization.

C2.4 Rubber and rubber-like materials and plastic materials having product contact surfaces that are a bonded coating or a covering shall be of such composition as to retain their surface and conformational characteristics when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment or sterilization.

C2.5 The final bond and residual adhesive, if used, on bonded rubber and rubber-like materials and bonded plastic materials shall be nontoxic.⁵

C2.6 Glass may be used for fittings specified in the 3-A Accepted Practices for the Design, Fabrication, and Installation of Milking and Milk Handling

³ The data for this series are contained in the *AISI Steel Products Manual, Stainless & Heat Resisting Steels*, Table 2-1. Available from the American Iron and Steel Society, 186 Thorn Hill Road, Warrendale, PA 15086 (724) 776-1535.

⁴ Steel Founders Society of America, Cast Metal Federation Building, 455 State Street, Des Plaines, IL 60016 (708) 299-9160.

⁵ Adhesives shall comply with 21 CFR 175 - Indirect Food Additives: Adhesives and Components of Coatings. Document for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (202) 512-1800.