

3-A[®] Sanitary Standards for Sifters for Dry Products, Number 26-05

Standards Developing Organizations

3-A Sanitary Standards, Inc. (3-A SSI)

in collaboration with

United States Public Health Service (USPHS)/

United States Food and Drug Administration (USFDA)

United States Department of Agriculture (USDA)

European Hygienic Engineering & Design Group (EHEDG)

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Note: The highlighted text denotes changes to the previous document.

Disclaimers

3-A Sanitary Standards and 3-A Accepted Practices are developed through the efforts of experts, working on a volunteer basis, using science-based information and their professional experiences to reach consensus decisions on the sanitary (hygienic) criteria in these 3-A documents.

3-A SSI, its employees and its volunteer committees/working groups shall not incur any obligation or liability for damages, including consequential damages, arising from or in connection with the development, use, interpretation, or reliance upon this 3-A Sanitary Standard.

3-A Sanitary Standards and 3-A Accepted Practices do not include provisions for mechanical, electrical, or personnel safety. Such safety criteria are established by government regulations and other standards development organizations (SDOs). Other SDO standards may be referenced.

Drawings and illustrations contained herein are examples to assist in understanding the criteria in this 3-A Sanitary Standard. Appendix drawings and illustrations are not intended to show all variations of the equipment or system nor are they exclusive of alternate approved methods. Appendix drawings and illustrations are non-normative.

Foreword

This 3-A Sanitary Standard establishes minimum sanitary (hygienic) requirements for design, materials, fabrication, and/or installation of Sifters for Dry Products.

This 3-A Sanitary Standard is for use on a voluntary basis by directly and materially affected organizations such as equipment and machinery fabricators, processors, regulatory agencies and by other SDOs to assure adequate public health protections exist for the equipment or systems and covered products. 3-A SSI uses these documents as its source of sanitary criteria for 3-A Symbol authorization.

This 3-A Sanitary Standard was developed jointly by 3-A SSI, the United States Public Health Service (USPHS), the United States Department of Agriculture – Dairy Programs (USDA), and the European Hygienic Engineering & Design Group (EHEDG).

It is our intent to encourage inventive genius and provide a forum to discuss new developments. Suggestions for improvement and new technology are welcome at any time for consideration by 3-A SSI. Please forward comments to the 3-A Secretary, 6888 Elm Street, Suite 2D; McLean, VA 22101-3829, USA or by fax: 703-761-6284, or by e-mail to: 3-ainfo@3-a.org.

A SCOPE

A1 These standards cover the sanitary aspects of sifters used for processing dry products beginning at, as appropriate, the inlets for products, cleaning solutions, processing air and terminating at the outlets for product, processing air, cleaning solutions or rejected material.

A2 In order to conform to these 3-A Sanitary Standards, sifting equipment shall comply with the following design, material, and fabrication criteria¹.

B DEFINITIONS

B1 *Product*: Shall mean dry milk, dry milk products and other dry comestibles.

B2 Surfaces

B2.1 *Product Contact Surfaces*: Shall mean all surfaces which are exposed to the product, or from which other materials may drain, drop, diffuse, or be drawn into the product.

B2.2 *Nonproduct Contact Surfaces*: Shall mean all other exposed surfaces.

B3 Cleaning

B3.1 *Mechanical Cleaning or Mechanically Cleaned*: 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.

B3.2 *Manual (COP) Cleaning*: Shall mean soil removal when the equipment is partially or totally disassembled. Soil removal is effected with 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 *Bond*: Shall mean the adhesive or cohesive forces holding materials together. This definition excludes press and shrink fits.

B5 *Corrosion Resistant*: Shall mean the surface has the property to maintain its original surface characteristics for its predicted service period when

exposed to the conditions encountered in the environment of intended use, including expected contact with product, cleaning, and sanitizing compounds or solutions.

B6 *Easily or Readily Accessible*: Shall mean a location which can be safely reached by personnel from a floor, platform, or other permanent work area.

B7 *Easily or Readily Removable*: Shall mean quickly separated from the equipment with the use of simple hand tools if necessary.

B8 *Inspectable*: Shall mean all product contact surfaces can be made available for close visual observation.

B9 *Nontoxic Materials*: Shall mean those substances which under the conditions of their use are in compliance with applicable requirements of the Food, Drug, and Cosmetic Act of 1938, as amended.

B10 *Simple Hand Tools*: Shall mean implements such as a screwdriver, wrench, or mallet normally used by operating and cleaning personnel.

C MATERIALS**C1 Metals**

C1.1 Product contact surfaces shall be of stainless steel of the American Iron and Steel Institute (AISI) 300 Series, (except 301 and 302)² or corresponding Alloy Cast Institute (ACI)³ types (See Appendix, Section E), 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, except that:

C1.1.1 Solder, when used, shall be silver containing solder and shall be corrosion-resistant, free of cadmium, lead and antimony, nonabsorbent, and shall not impart any toxic substance to the product when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment.

² 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, 410 Commonwealth Drive, Warrendale, PA 15086 (412) 776-1535.

³ Alloy Casting Institute Division. Steel Founders Society of America, Cast Metal Federation Building, 455 State Street, Des Plaines, IL 60016 (708) 299-19160.

¹ Use current revisions or editions of all referenced documents cited herein.

C2 Nonmetals

C2.1 Rubber and rubber-like materials may be used for balls, gaskets, flexible connectors, inspection ports, vibration dampeners, bonding screening media to screen frame assemblies, and parts having the same functional purposes.

C2.1.1 Rubber and rubber-like materials when used for the above-specified applications, except for vibration dampeners and bonding screening media to screen frame assemblies, shall comply with 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-.

C2.1.2 Rubber and rubber-like materials used for vibration dampeners and bonding screen media to screen frame assemblies shall be constructed of materials meeting Title 21 Part 177 of the Code of Federal Regulations and be nontoxic and nonabsorbent and retain their surface and conformational characteristics when exposed to conditions encountered in the environment of intended use and in cleaning and bactericidal treatment.

C2.2 Plastic materials may be used for screening media, screen frame assemblies, vibration dampeners, bonding screening media to screen frame assemblies, balls, gaskets, flexible connectors, inspection port covers and parts having the same functional purposes.

C2.2.1 Plastic and plastic-like materials when used for the above specified applications shall comply with 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 Bonded rubber and rubber-like materials and bonded 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.

C2.4 The adhesive, if used, on bonded rubber and rubber-like materials and bonded plastic materials shall be nontoxic⁴.

C2.5 Cotton, linen, silk, or synthetic fibers may be used for flexible connectors and screening media. These materials shall be nontoxic, easily cleanable, and shall not impart a flavor to the product.

C3 Nonproduct Contact Surfaces

C3.1 All nonproduct contact surfaces shall be of corrosion-resistant material or material that is rendered corrosion resistant. If coated, the coating used shall adhere. All nonproduct contact surfaces shall be relatively nonabsorbent, durable, and cleanable. Parts removable for cleaning having both product contact and nonproduct contact surfaces shall not be painted.

D FABRICATION**D1 Surface Texture**

D1.1 All product contact surfaces, except those of screens, shall be at least as smooth as a No. 4 ground finish on stainless steel sheets free of imperfections such as pits, folds and crevices in the final fabricated form. (See Appendix, Section F).

D1.2 The use of stainless steel sheets with a No. 2B finish, (less than or equal to 32 µin. Ra), free of imperfections such as pits, folds, and crevices in the final fabricated form is acceptable.

D2 Permanent Joints

D2.1 All permanent joints in metallic product contact surfaces shall be continuously welded. Welding shall produce product contact surfaces which are at least as smooth as a No. 4 ground finish on stainless steel sheets and which are free of imperfections such as pits, folds, and crevices.

D3 Bonded Material

D3.1 Bonded rubber and rubber-like materials and bonded plastic materials having product contact surfaces shall be bonded in such a manner that the bond is continuous and mechanically sound, so that when exposed to the conditions encountered in the environment of intended use and in cleaning and bactericidal treatment, the rubber and rubber-like material or the plastic material does not separate from the base material to which it is bonded.

⁴ 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.