



3-A SANITARY STANDARDS, INC.

Advancing Food Safety through Hygienic Design



ANNUAL REPORT 2021



It is the mission of 3-A Sanitary Standards, Inc. to enhance product safety for consumers of food, beverages, and pharmaceutical products through the development and use of 3-A Sanitary Standards and 3-A Accepted Practices.

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3-A SSI Begins Second Century

The first standards for sanitary fittings known as '3-A' were introduced in the 1920s. Now as we enter the 2020s, 3-A SSI can take special pride in a long and significant record of achievements. In brief:

- Dedicated processors, equipment fabricators and regulatory sanitarians established a community to share knowledge, share diverse views and collaborate in an open and neutral forum.
- '3-A' criteria provided the engineering keystone for the design of food processing equipment and systems that enhance the competitiveness of U.S. industry and promote global trade.
- The 3-A Symbol is widely recognized and respected throughout the industry for the assurance of sound hygienic design.
- Third Party Verification inspections for conformance to '3-A' criteria gained a central role in assuring the integrity of hygienic design and supporting regulatory objectives.
- New 3-A SSI education resources and outreach expanded recognition of hygienic equipment design in the marketplace and engaged new constituents from a range of industries.

More challenges are in store for '3-A' as it begins an exciting second century. Traditional manufacturing processes and technology are changing. Customers are looking for hygienic design solutions, not just components. Traditional training and educational offerings and the modes of delivery require new energy and retooling.

3-A SSI has a strong foundation of experience and expertise to create better solutions through collaboration. With the engagement of leading associations and dedicated volunteers, 3-A SSI is more capable than ever before to meet the needs of its stakeholders, address current and upcoming industry priorities and public policy objectives.

We are deeply grateful for the support of members, volunteers and contributors who dedicate energy, time and expertise to help ensure 3-A SSI remains a strong and trusted steward in Advancing Food Safety Through Hygienic Design.



3-A Symbol Program Strong in Pandemic Year

The number of applications for new 3-A Symbol authorizations dropped in 2020 due to restricted travel in all regions, but 3-A SSI maintained the highest number of authorizations since 2008. Results reflected the strong continuing demand for hygienic equipment during the pandemic across all segments of the food processing industry. 3-A SSI posted organic growth in the program each year since 2008, reflecting a growing worldwide consumer demand for food safety and 3-A design criteria.

3-A SSI collected data from recent purchasers of 3-A SSI documents and current 3-A Symbol authorization holders on the driving forces for 3-A hygienic design criteria and the perceived future industry demand. The results showed:

- **Two strong factors drive customer interest in hygienic equipment:** U.S Dairy regulations, Food Safety Modernization Act
- **Industry applications other than dairy are significant (rank order):** Non-alcoholic beverages, Alcoholic beverages, Pharmaceuticals/ Personal Care Products, Produce, Sauces/ dressings, Pet foods, Cereals, Meat
- **Industry demand for 3-A equipment will increase in next two years:** Pharmaceuticals/ Personal Care Products, Dairy, Non-alcoholic beverages, Alcoholic beverages, Sauces/dressings, Meat, Pet foods, Produce, Cereals

- **Customer interest in '3-A' equipment in next 1-2 years will remain strong:** Higher: 40%, Same: 56%, Less: 4%

The voluntary 3-A Symbol authorization program helps regulatory professionals, processors, and fabricators identify equipment that conforms to the criteria of 3-A Sanitary Standards. Fabricators from across the U.S. and 24 other countries around the world maintain a 3-A Symbol authorization to verify the equipment conforms to 3-A Sanitary Standards.

The integrity of the 3-A Symbol authorization program rests upon the Third Party Verification (TPV) inspection requirement. The TPV inspection requirement applies to any equipment built to a 3-A Sanitary Standard that is licensed to display the 3-A Symbol. A licensee must engage a credentialed inspection professional, known as a Certified Conformance Evaluator (CCE), to conduct an on-site evaluation of finished equipment and other product attributes to affirm conformance to the applicable 3-A Sanitary Standard. A complete on-site TPV inspection is required upon application and once every five years thereafter, or any time there is a significant design change or non-conformance. Representatives from each of the 3-A SSI stakeholder groups participate in oversight of the program.

The 3-A SSI website features on-line access to complete certificate information for all 3-A Symbol licensees and the Replacement Parts and System Component Qualification Certificate (RPSCQC)

Program. This public information offers detailed information on models and equipment covered under a company's license to assist regulatory sanitarians, processors, equipment fabricators, and other interested parties. The information is searchable by the unique authorization number, equipment type/standard or company name. A copy of the actual authorization certificate may also be generated and printed from the online database. The certificate search database is the most frequently visited area of the 3-A SSI web resources.

The 3-A Symbol is a registered mark used since 1956 to identify equipment that meets 3-A Sanitary Standards for design and fabrication. Voluntary use of the 3-A Symbol on food processing equipment conveys assurance that equipment meets sanitary standards, provides accepted criteria to equipment manufacturers for sanitary design, and establishes guidelines for uniform evaluation and compliance by sanitarians.

3-A SSI Expands Protection of Marks

Maintaining the integrity of the '3-A brand' is critical to retain the confidence of regulatory sanitarians, processors and fabricators across the U.S. and worldwide. 3-A SSI stepped up protection of its intellectual property this year through several initiatives to stem the problem of counterfeits.

3-A SSI secured registrations for the word marks used in the 3-A Symbol and the 3-A Replacement Part and System Component Qualification Certificate programs and the associated design marks for both programs in the following countries/regions:

China
United States

United Kingdom
European Union

In India, 3-A SSI obtained registration of the word mark and design mark for the RPSCQC program. Applications are pending for the '3A' word mark and design marks. As worldwide interest in hygienic equipment grows, 3-A SSI plans to seek trademark protection in additional countries.

3-A SSI worked with representatives of the U.S. Customs and Border Protection Service to institute a new system to enforce a General Exclusion Order approved by the United States International Trade Commission last year. The GEO gives broad authority to U.S. Customs to exclude shipments of documented infringers from entry into the U.S. 3-A SSI also prepared a special advisory on the legal status of its marks and the GEO in Mandarin and English with the goal of helping 3-A Symbol licensees in China protect the integrity of the 3-A SSI marks.

3-A SSI Expands Recognition

3-A SSI reaches out to a broad range of audiences each year to solidify its recognition as a trusted resource for hygienic design. This outreach helped spread important knowledge about the critical role of hygienic equipment design and the many benefits of 3-A Sanitary Standards and 3-A Accepted Practices in a wide range of food processing applications.

3-A Sanitary Design Connections

The quarterly e-newsletter *3-A Sanitary Design Connections*, continues to serve a growing, diverse and broad audience of readers from across the U.S. and elsewhere. *Connections* brings the important role of 3-A SSI in the hygienic design of equipment used in the processing of food or other products into perspective for equipment fabricators, food processors, regulatory sanitarians, academic leaders and students.

Each issue of *Connections* includes a lead or feature article on a prominent issue in hygienic equipment design or the role of 3-A Sanitary Standards, 'News of Interest' with relevant news about hygienic design from other sources, and 'What's New In 3-A SSI'.

Leading Industry Magazines

3-A SSI supports the editorial mission of *Dairy Foods* magazine, reaching 20,550 dairy processors across the \$110 billion dairy industry. 3-A SSI authored four columns this year, including: "The Importance of Nonproduct Contact Surfaces," "Equipment Installation and Maintenance: the Role of the Processor," "Nonmetal Surfaces: What's New?," and

“Readily Accessible, Cleanable and Substantially Flush Defined.”

3-A SSI also received attention in other magazines/periodicals including *Food Industry Executive News*, *Cheese Reporter*, *Food Engineering* and *Food Processing*.

Expanded E-Learning Resources Offer Essential Training

3-A SSI introduced a new series of VLOGs in a section ‘Ask the Expert’ found in the Knowledge Center. The first VLOGs include:

- **‘Surface Finish in 3-A Sanitary Standards’** — Conformance Evaluator Gabriel Miller describes the critical role of surface finish requirements for equipment across all 3-A Sanitary Standards and he demonstrates surface measurement step-by-step using a profilometer. The VLOG also addresses the basic hygienic requirements for stainless steel components, welded joints, as well as plastics, and rubber components.
- **‘Hygienic Welding: Quality and Inspection’** — Geir Moe of the Nickel Institute describes the requirements for the welding of austenitic stainless steel tube and pipe systems in conformance to American Welding Society requirements contained in the 3-A SSI General Requirements.
- **‘Applying 3-A Sanitary Standards and Accepted Practices to Cleaning Out-of-Place’** —Pete Barrie, Sr. Product Manager with Sani-Matic demonstrates how the provisions of the *ANSI/3-A Sanitary Standard for General Requirements* and 3-A CIP Accepted Practices can be applied to the Clean Out-of-Place Equipment.

3-A SSI also updated other e-learning tools, which have been incorporated into several academic programs and other training for regulatory professionals, processors and many fabricators. 3-A SSI offers four Basics and one advanced e-learning module for a comprehensive introduction to the principles of hygienic design, including:

1.0 Overview of Principles of Hygienic Design & Foundation Elements

2.0 The Basics of Hygienic Equipment Design

2.1 Advanced Hygienic Equipment Design: Materials & Surface Finishes

3.0 Basics of Hygienic Facility Design & Environmental Controls

4.0 Basics of Cleaning and Sanitizing

Tracking data shows the 3-A SSI e-learning modules have recorded more than 4,000 users from 40 countries around the world.

3-A SSI Streamlines Procedures for American National Standards

The American National Standards Institute (ANSI) Executive Standards Council accredited new 3-A SSI *Operating Procedures for the Development of American National Standards* in a significant step toward higher efficiency and economy for consensus development in 3-A SSI. Conforming to the requirements of ANSI for American National Standards has been a mission objective for 3-A SSI since its formation in 2003.

The new procedures for ANS development provide the opportunity for 3-A SSI to expand participation in the consensus development process. The new procedures reflect the most extensive improvements to 3-A SSI ANS consensus development since 2004 and they model the framework for more efficient auditing. To date, 3-A SSI maintains one ANS, *3-A Sanitary Standard for General Requirements, ANSI/3-A 00-01-2018*.

3-A SSI Working Groups Maintain Progress

The pandemic presented a very challenging year for organizations of all types but volunteers in 3-A SSI contributed to major progress on a range of 3-A SSI projects. Since early 2020, 20 3-A Sanitary Standards and one major 3-A Accepted Practice Standard were revised to reflect criteria in the foundation document *ANSI/3-A 00-01-2018*:

- *3-A Sanitary Standard for Centrifugal and Positive Rotary Pumps, 02-12* (effective 10/2020)
- *3-A Sanitary Standard for Stainless Steel Automotive Transportation Tanks for Bulk Delivery and Farm Pick-up Service, 05-16* (effective 10/2016)
- *3-A Sanitary Standard for Plate-Type Heat Exchangers, 11-10* (effective 2/2020)
- *3-A Sanitary Standard for Formers, Fillers, and Sealers of Containers for Fluid and Viscous Products, 17-13* (effective 5/2020)
- *3-A Sanitary Standard for Flow Meters, 28-06* (effective 2/2019)
- *3-A Sanitary Standard for Farm Raw Milk Storage Tanks, 30-02* (effective 7/2018)
- *3-A Sanitary Standard for Scraped Surface Heat Exchangers, 31-07* (effective 1/2018)
- *3-A Sanitary Standard for Uninsulated Tanks, 32-04* (Effective 2/2020)
- *3-A Sanitary Standard for Metal Tubing, 33-03* (effective 4/2016)
- *3-A Sanitary Standard for Open Cheese Vats and Tables, 38-01* (effective 3/2018)
- *3-A Sanitary Standard for In-Line Strainers, 42-02* (effective 1/2017)
- *3-A Sanitary Standard for Crossflow Membrane Modules, 45-03* (effective 12/2016)
- *3-A Sanitary Standard for Level Sensing Devices for Dry Product, 50-02* (effective 10/2020)
- *3-A Sanitary Standard for Vacuum Breakers and Check Valves, 58-03* (effective 3/2018)
- *3-A Sanitary Standard for Steam Injection Heaters, 61-01* (effective 11/2018)
- *3-A Sanitary Standard for Sensors and Sensor Fittings and Connections, 74-07* (effective 3/2019)
- *3-A Sanitary Standard for Spray Cleaning Devices Intended to Remain in Place, 78-03* (effective 8/2018)
- *3-A Sanitary Standard for Auger-Type Feeders, 81-01* (effective 8/2018)
- *3-A Sanitary Standard for Unitized Equipment for Automated Milking Installations, Number 102-00* (effective 3/12/2020)
- *3-A Sanitary Standard for Robot-based Automation Systems, 103-00* (effective 10/2016)
- *3-A Accepted Practice for Sanitary Construction, Installation, and Cleaning of Membrane Processing Systems, 610-03* (effective 3/2018)

The network of 14 Working Groups often take on more than one major revision project. Over 90 individual webinar sessions were completed in 2020 with volunteer WG Members drafting, balloting and reviewing on-going project revision proposals for “B Level” Standards and Accepted Practices.

Due to the broadened scope of the GR, the WGs have seen an increased participation in new members from outside our traditional dairy processing equipment stakeholder group. We are continuing to work with and harmonize with the secondary packaging/sorting, agricultural equipment, robotics and automation, metal detection/ wet conveyance equipment, and compressed gas industries. Our WGs are open and we welcome the review of our draft documents.



The following conversion projects are underway:

- **WG 1 (Vessels) revision Project B-22-08-A for 3-A Sanitary Standard for Silo-Type Storage**
- **WG 2 (Fillers) revision Project B-27-07-A for Equipment for Packaging Dry Products**
- **WG 3 (Valves & Fittings) revision Project B-53-06-A for 3-A Sanitary Standard for Compression Valves**
- **WG 4 (Pumps & Mixers) revision Project B-21-01-A for 3-A Sanitary Standards for Separators and Clarifiers**
- **WG 5 (Heat Exchangers) revision Project B-12-07-A for 3-A Sanitary Standard for Tubular Heat Exchangers**
- **WG 6 (Conveyors & Feeders) revision Project B-41-03-A for Mechanical Conveyors for Dry Milk and Dry Milk Products**
- **WG 8 (Concentrating Equipment) revision Project B-607-05-A for 3-A Accepted Practice for Spray Drying Systems**
- **WG 9 (Farm & Raw Milk) new Project B-13-11-A for 3-A Sanitary Standard for Farm Milk Cooling and Holding Tanks**
- **WG 10 (Cheese & Butter Equipment) revision Project B-71-01-A for 3-A Sanitary Standard for Italian-Type Pasta Filata Style Cheese Moulders**
- **WG 11 (Process & Cleaning Systems) revision Project B-605-04-A for 3-A Accepted Practice for Permanently Installed Product and Solution Pipelines and Cleaning Systems**
- **WG 12 (Plant Support Systems) revision Project B-604-05-A for 3-A Accepted Practice for Supplying Air Under Pressure in Contact with Product or Product Contact Surfaces**

The strength of 3-A SSI rests upon the unwavering commitment of its hygienic equipment design experts from across the spectrum of fabricators, processor and regulatory professionals from across the U.S. and around the world.



3-A Sanitary Standards, Inc.
6888 Elm Street, Suite 2D | McLean, Virginia 22101-3829
PH: 703-790-0295 | FAX: 703-761-6284 | www.3-a.org

