NSF Helps People Live Safer

Our mission and focus has always been protecting and improving human health

**STANDARDS**
Writing standards to promote food, drinking water, indoor air, dietary supplements, consumer products and environmental safety

**TESTING**
Testing products to these and other standards

**CERTIFICATION**
Certifying products to these standards

**AUDITING**
Conducting safety audits for the food, water and consumer goods industries

**CONSULTING**
Providing strategic and technical consulting for the dietary supplement, pharmaceutical, medical device, food and beverage industries

**TRAINING**
Developing training and education programs
Let’s Face It. Design Matters.
Design Requirements: A Historical Perspective

Americans began dining out in the late 1930s. State health officials monitored food service establishments for sanitation using a variety of criteria.

Inconsistent rules and regulations arose, varying from town to town, state to state. Hence...

A need for uniform national standards. NSF brings regulators, industry, consumers and public health officials together.
NSF/ANSI Food Equipment Standards

Purpose:
Minimum requirements for the materials, design, fabrication, construction, and performance of food handling and processing equipment.
Basic Principles of Hygienic Design

- Cleanable Design
- Inert, Safe Materials
- Easily Accessible
- Self-Draining
- Hollow Areas Sealed
- Smooth Surfaces

What to look for .....
Food Equipment Design: Cleanability

- Food and splash zones are accessible, and cleanable
- Using either no tools, or simple tools
- 1/8 in. smooth, continuous radii
- Chemically resistant or inert materials
Food Equipment Design: Dead Space

- Food and splash zones are accessible, cleanable
- Mechanical cleaning requiring minimal disassembly
- Clean in Place (CIP) or Clean Out of Place (COP)
- Installation of equipment

Dead Space: Space wherein product, cleaning or sanitizing agents, or soils can be trapped, retained, or not completely removed during operation or cleaning.
Hygienic Design: Avoiding Pests & Vermin

Equipment is designed to eliminate food, water, shelter for insects, rodents, and other pests & vermin:

- Food and Splash Zones
- Tubular and Hollow Spaces
- Reservoirs, Collection Areas

Fact: The 1/32 inch definition for ‘closed’ originates from the width through which a cockroach can squeeze its body.
Hygienic Design: Seams & Sealing

When to Use Sealants:

- For structurally sound joints & seams
- For seams less than 1/8 in wide
- To fill spaces around collars, grommets, and service connections
Material Requirements

Materials are reviewed against the FDA Guidelines

21 CFR & FCN
GRAS
TOR

FDA
Material Requirements: Cleanability

**Look For:**
Smooth, Hard, Non-Porous, & Corrosion-Resistant

**Avoid:**
Imperfections, Pits, Pinholes, & Wood

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Stainless Steel in the **FOOD ZONE** must be a minimum of **16% Cr**

- **Smooth:**
- **Porous:**
- **Textured:**
- **Corroded:**
Performance Testing

- Refrigeration
- Hot Food Holding
- Cleaning in Place
- Temperature Accuracy
- Organic Coatings
- Heavy Metals
- Cleanability
What Does Hygienic Equipment Mean to You?

- **Reduce/Control Food Safety Risk:** Assurance that the machine can be manually cleaned
- **Encourage & Set a Food Safety Culture Efficiency:** Faster cleaning = saved labor costs
- **Establish Uniformity in Equipment:** If you’re already specifying a design, why not incorporate hygienic standards?

Certification is voluntary. Local & state jurisdictions mandate certified equipment to protect the public.
You’ve Got Hygienic Equipment. Now What?

**Installation:** Allow easy access, avoid modifications.

**Operation:** Clean at prescribed intervals, operate as intended.

**Replacement**
Equipment has a life span. Recognize when the time has come to replace it.
Thank You.
Questions?