GreaseInterceptorTestingandCertification
MattMarble – Business Unit Manager - NSFInternational
An Introduction

Our Values
NSF’s Mission and History

Today
NSF Around the World

Capabilities
Services from NSF International
Our Mission

NSF International is dedicated to being the leading global provider of public health and safety-based risk management solutions while serving the interests of all stakeholders, namely the public, the business community and government agencies.

NSF International is a global, independent, public health and safety organization. Our mission and focus has always been protecting and improving human health.
NSF helps people live safer.

We carry out this human health and safety mission by:

- **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
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.
Our Foundation

In 1944,
NSF was founded
as the National
Sanitation
Foundation in the
University of
Michigan’s School
of Public Health.

Today,
we are
NSF International,
with corporate
headquarters in
Ann Arbor, MI,
USA, and 61 office
and lab locations
worldwide.
**NSF Office & Lab Locations**

NSF operates 61 offices and laboratories across the world.

### NORTH AMERICA
- Ann Arbor, MI
- Aurora, Ontario, Canada
- Boulder, CO
- Chicago, IL
- Columbia, SC
- Dutch Harbor, AK
- Guelph, Ontario, Canada
- Littleton, NH
- Montreal, Quebec, Canada
- Richmond, CA
- San Diego, CA
- Seattle, WA
- Waco, TX
- Washington, DC

### LATIN AMERICA
- Bogotá, Colombia
- Guayaquil, Ecuador
- Lima, Peru
- Porto Alegre, Brazil
- Querétaro, Mexico
- Rio de Janeiro, Brazil
- San José, Costa Rica
- São Paulo, Brazil
- Santiago, Chile

### ASIA / OCEANIA
- Auckland, New Zealand
- Bangkok, Thailand
- Busan, Korea
- Ho Chi Minh City, Vietnam
- Hyderabad, India
- New Delhi, India
- Seoul, Korea
- Shanghai, China
- Suzhou, China
- Taoyuan, Taiwan
- Tokyo, Japan

### EMEA
- Abu Dhabi, United Arab Emirates
- Almeria, Spain
- Antwerp, Belgium
- Bologna, Italy
- Brussels, Belgium
- Bucharest, Romania
- Hamburg, Germany
- Istanbul, Turkey
- Lille, France
- Northwich, United Kingdom
- Novara, Italy
- Oakdale, United Kingdom
- Oxford, United Kingdom
- Rheda-Wiedenbrück, Germany
- Sofia, Bulgaria
- Stellenbosch, South Africa
- Tunis, Tunisia
- York, United Kingdom
- Wavre, Belgium
7 Steps to NSF Certification

1. Application
2. Product formulation/parts list, toxicology and product use information
3. Technical review
4. Onsite Audit of the production facility
5. Our laboratory conducts testing in house or on site for the manufacturer
6. A review of the test results
7. NSF Certification is granted, facilities are audited on an annual basis – annual retests are done on PDI specified models
Certification vs. Compliance

**Certification**
- Not a one-time event
- On-site surveillance audits of manufacturing facilities
- Products can bear a Certification mark
- 3<sup>rd</sup> party

**Compliance**
- More likely to be a self-claim
- No requirement for monitor audits or testing
- Rarely accepted
NSF offers testing and Certification to the following Standards:

– ASME A112.14.3
– ASME A112.14.4
– CSA B481
– PDI G101
– SE 15741
Grease Interceptor Testing

ASME A112.14.3 Drawing
Property of ASME
ASME A112.14.3 covers general requirements and performance criteria for grease interceptors with rated flows up to 100gpm.

- Grease retention capacity is determined when the average efficiency drops below 90%, or the incremental efficiency drops below 80%.
- The interceptor must retain no less than 2lbs of grease for each gpm of rated flow (15gpm grease interceptor must hold at least 30lbs of grease).
- Labeling requirements
- Installation/maintenance Instructions
- ASME A112.14.4 – requirements for grease interceptors that are fitted with automatic grease removal devices
- Products certified to this standard must also meet the requirements of ASME A112.14.3 – flow and grease retention of each unit is tested and rated according to 14.3
- FOG removed should contain <5% water
- The volume of grease removed by the device must be at least 50% of its rated capacity
- Interceptors are tested and rated in accordance with ASME A112.14.3

- CSA B481 introduces material requirements for grease interceptors

- Requirements for hydrostatic pressure testing

- Requires an integral flow control device

- Establishes criteria for load classification based on the type of traffic the cover will be subjected to

- Marking requirements include a cover marking that includes the load classification
GreaseInterceptor
PerformanceCriteria

- Interceptors are tested in accordance with ASME A112.14.3
- Requires that the interceptor retains 2 ¼ lbs of grease per gpm
- Specific marking requirements including a PDI nameplate
- Testing is performed by a PDI recognized laboratory, and listed on PDI’s site http://www.pdionline.org/
- Evaluates the capacity of grease interceptors that have capacities above the minimum requirements of ASME A112.14.3

- “Large Capacity” grease interceptors are defined as those that have a capacity above 200% of the minimum defined in ASME A112.14.3

- Uses an accelerated test protocol

- The installation parameters of Grease Interceptors that are tested using this method can be:
  - Type A – External flow control, air intake/vent directly connected
  - Type B – External flow control, without air intake/vent, directly connected
  - Type C – Units without an external flow control, directly connected
  - Type D – Units without an external flow control, indirectly connected
- Testing is in 2 phases
  - Phase 1: Minimum capacity is established using ASME A112.14.3 method.
  - Phase 2: Increments are accelerated by adding lard directly through the lid. Grease from phase 1 is left inside the interceptor.

- The process of top loading grease through the lid and running a standard ASME increment is repeated for 15 additional increments or until the unit reaches breakthrough, whichever comes first.
- **SE 15741 Marking**

  - Grease interceptors are marked according to ASME A112.14.3, CSA B481, and PDI G101.
  - Additional marking requirements to indicate the efficiency at the tested capacity

  "___% efficiency at ___ lbs capacity per ASME A112.14.3"
  "___% efficiency at ___ lbs capacity per SE xxxxx"

  Mark of the certification agency
Appendix (Informative) – Capacity Calculation Example

EXAMPLE – 100 gpm Grease Interceptor with 1000 lbs estimated capacity

**Phase 1**
Estimated retained grease during 15 increments* 270 lbs

**Phase 2**
- Melted lard added to tank per increment 50 lbs
- Melted lard added to sinks per increment 20 lbs

<table>
<thead>
<tr>
<th>Additional increments completed</th>
<th>10</th>
<th>12</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional retained grease*</td>
<td>630</td>
<td>756</td>
<td>945</td>
</tr>
<tr>
<td>Total grease retained* - (Phase 1 + Phase 2)</td>
<td>900</td>
<td>1026</td>
<td>1215</td>
</tr>
</tbody>
</table>

* Assuming 90% average efficiency throughout
Why is Certification Important?

- Certification allows you to choose a grease interceptor that is the right fit for its intended use
- Certified manufacturers are audited annually to ensure quality and continued compliance with the standard
- Third party certification provides boundaries that manufacturers must recognize when innovating new products and modifying existing products
- Third party certification increases consumer trust in a product
Questions?

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