Certification of Protective Equipment

Who is SEI?

- Non profit 501 (c)(3) charitable organization established in 1981 to administer the first non-governmental, third-party certification program to test and certify safety & protective equipment
- Became an affiliate of ASTM International in 2016
- Policies are developed by a Committee which includes representatives from: PPE users, corporate safety, organized labor, insurance industry, and manufacturer interests
- Voluntary program open to all manufacturers
- Headquarters in McLean, VA
Certification of Protective Equipment

**SEI Mission**

- To assist government agencies, users, and manufacturers in meeting their mutual goals of protecting those who use safety and protective equipment to protect from potential hazards
- To aid advancements in protective equipment technology, using recognized standards and state-of-the-art test facilities
- To support manufacturers and users by providing an easily recognized mark for certified products
Compelling Factors for SEI Program

- There was universal interest among users and manufacturers
- There was concern about the possibility of poor quality products being sold in North America
- There existed false claims of compliance and certification
- There was confusion among users concerning non-certified vs certified products
- High injury rates
- Manufacturers concerned about liability and competition with non-certified products
Certification of Protective Equipment

Meeting Industry Needs

• To fill a void, certification programs were initiated with seed money from National Safety Council, corporate users of PPE, and manufacturers
• This was used to start programs for the certification of head protection, eye & face protection, fire fighter helmets and bicycle helmets
• Subsequently, the ASTM F8 equestrian helmet technical subcommittee approached SEI because of SEI’s reputation in head protection certification
• In the mid-1990’s, the NFPA initiated a requirement for third-party certification in all PPE standards
Certification of Protective Equipment

SEI Accreditation by ANSI & SCC

- ISO/IEC 17065 “General Requirements for Bodies Operating Product Certification Systems”
- Audited annually at SEI Headquarters
- SEI utilizes test labs that are accredited to ISO/IEC 17025
- SEI utilizes contract auditors which are ISO 9001 lead auditors
ISO/IEC 17065, Conformity Assessment – Requirements for bodies certifying products, processes and services

Certification Organization - Procedures

- Organization, Operations, Subcontracting, Quality System, etc.
- Certification Body Personnel - Competence
- Changes in Certification Requirements
- Appeals, Complaints and Disputes
- Application for Certification
- Preparation for Evaluation – Testing & Auditing
- Evaluation and Evaluation Report
- Decision on Certification
- Use of Licenses and Certificates and Marks of Conformity
- Complaints of suppliers
- Management of Impartiality, Confidentiality & Conflict of Interest
Standards Used by SEI

American Society for Testing and Materials

American National Standards Institute

National Fire Protection Association

National Operating Committee on Standards for Athletic Equipment

NOCSAE®

National Institute of Justice (NIJ)
Standards & Conformity Assessment

Conformance and Risk

- Supplier’s Declaration
  - 1st party conformity assessment
- Certification
  - 3rd party conformity assessment

Perceived Risk vs. Independence and Rigor of Conformity Assessment
Certification Requirement Considerations

Include Requirements for Certification in Standards:

• American Society for Testing and Materials
  ASTM Form and Style:
  B21. Certification
  A certification section may be included in the standard when in the judgement of the committee, technical considerations make this advisable.

• American National Standards Institute

• National Fire Protection Association

• National Operating Committee on Standards for Athletic Equipment
Certification Requirements - Example

The NFPA Certification Program Requirements
- Contained in Chapter 4 of all PPE standards

Used to demonstrate product conformity to Standard
Referenced combination of time-tested accreditation and certification systems

- Federal Agencies, User Organizations

Additional oversight by Accreditation Organization of Certification Process
Example Certification Program Requirements

Key Elements (Certification Organization):
Must be independent

Accredited to ISO/IEC 17065

Accreditation organization must meet ISO 17011

Testing performed by laboratories accredited to ISO 17025
Performs quality assurance audits
Provides follow-up program
Key Elements (Continued):

- Manufacturers shall have ISO 9001 registered quality program
- Manufacturers must have safety alert and product recall procedure
- Audits of manufacturer’s facilities are performed by the certification organization twice a year
- Annual test specimens are randomly selected during one of the manufacturer’s on-site audits
- Customer Complaints are reviewed
Key Elements (Continued):

- Use of Certification Mark is required
- Testing is conducted annually (or more often) if required to ensure the user of continued compliance
- Web-based Certified Product Listings are available for community to access
- Manufacturer submits to ongoing scrutiny of products and processes and agrees to recall non-conforming products
Certification Process – Initial

- Manufacturer signs contract with SEI agreeing to terms of certification
- Application for product certification including submission of documentation, drawings, materials & components list
- Product samples submitted for testing in accordance with performance standard at ISO 17025 accredited laboratory
- Review of design requirements, labels and user instructions
- On-site quality audit of entire manufacturing process
- Confirmation of appropriate product liability insurance
- Approval of product recall procedure
- Registration to ISO 9001
Certification Process – Follow-Up

• Occurs following the initial product testing and an on-site quality audit of the manufacturing facility
• SEI auditor returns twice a year to evaluate the manufacturer’s quality system
• The auditor randomly selects samples for annual certification testing during one of the manufacturer’s annual two (2) on-site quality audits
• If needed, SEI evaluates any proposed changes to the certified product and determines if additional testing is required
• Proposed changes are classified as either “Class I” or “Class II changes
• Class I changes require testing to confirm performance
• Class II changes do not require testing (i.e., paperwork only)
Initial Determination of Structural Glove Compliance to NFPA 1971

- Submit Glove Samples
- Review of Labels and Markings
  - Principle materials of construction, compliance information, manufacturer & model details
- Review User Information
  - Limitations, warranty, sizing, storage, cleaning, etc.
- Review of Design Requirements
  - Measurements, sizing, interface, etc.
- Quality Assurance audit conducted at Manufacturing Facility
- Confirmation of Manufacturer’s Overall Management System
• Full testing on glove samples Submitted by Manufacturer
  • Thermal Protective Property
  • Heat and Thermal Shrinkage Resistance
  • Heat & Flame Resistance
  • Thread Melting
  • Viral & Liquid Penetration Resistance
  • Overall Liquid Integrity
  • Cut & Puncture Resistance
  • Burst & Seam Breaking Strength
  • Glove Hand Function
  • Glove Donning & Liner Retention
  • Label Durability & Legibility
  • Grip, Torque & Tool tests
## Where to look for certification labels

<table>
<thead>
<tr>
<th>Category</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Service Open-Circuit Self-Contained Breathing Apparatus</td>
<td>NFPA 1981</td>
</tr>
<tr>
<td>Personal Alert Safety Systems (PASS) for Fire Fighters</td>
<td>NFPA 1982</td>
</tr>
<tr>
<td>Fire Service Life Safety Rope, Harness, and Hardware</td>
<td>NFPA 1983</td>
</tr>
<tr>
<td>Liquid Splash-Protective Ensembles and Clothing for Haz Mat Emergencies</td>
<td>NFPA 1992</td>
</tr>
<tr>
<td>Protective Clothing for Emergency Medical Operations</td>
<td>NFPA 1999</td>
</tr>
<tr>
<td>Protective Ensemble for Structural Fire Fighting</td>
<td>NFPA 1971</td>
</tr>
</tbody>
</table>
# Other Certification Programs

## Law Enforcement & Industrial Programs

<table>
<thead>
<tr>
<th>Category</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIJ Public Safety Bomb Suits</td>
<td>• NIJ 0117.00</td>
</tr>
<tr>
<td>Fall Protection</td>
<td>• CAN/CSA Z259 series</td>
</tr>
<tr>
<td></td>
<td>• ANSI Z359 Series</td>
</tr>
<tr>
<td>Eye &amp; Face Protection</td>
<td>• CAN/CSA Z94.3</td>
</tr>
<tr>
<td></td>
<td>• ANSI Z87.1</td>
</tr>
<tr>
<td>Protective Headwear for Industrial Workers</td>
<td>• CAN/CSA Z94.1</td>
</tr>
<tr>
<td></td>
<td>• ANSI Z89.1</td>
</tr>
<tr>
<td>Criminal Justice Restraints</td>
<td>• NIJ 1001.00</td>
</tr>
</tbody>
</table>
## Additional Certification Programs

<table>
<thead>
<tr>
<th>Sports &amp; Athletic Programs</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equestrian Helmets</td>
<td>• ASTM F1163</td>
</tr>
<tr>
<td>Baseball/Softball Batters Helmets</td>
<td>• NOCSAE ND022</td>
</tr>
<tr>
<td>Football Helmets</td>
<td>• NOCSAE ND002</td>
</tr>
<tr>
<td>Women’s Lacrosse Headgear</td>
<td>• ASTM F3137</td>
</tr>
</tbody>
</table>
Purpose of USDA Product Labeling Program is to:
Promote the increased purchase and use of Biobased products, thereby reduce petroleum consumption, increase use of renewable resources, better manage the carbon cycle, and, contribute to reducing adverse environmental and health impacts.
Two major program elements of USDA Program
– Mandatory Federal Purchasing
– Voluntary Labeling Program

Measuring / Defining Biobased - ASTM D6866-16, 
Standard Test Methods for Determining the Biobased 
Content of Solid, Liquid, and Gaseous Samples 
Using Radiocarbon Analysis
Approval Process for the SEI Biobased Certification Program

- Manufacturer completes application to USDA for each product
- Biobased participant agreement
- Operations manual for Biobased product certification program
- Select a laboratory from the SEI accepted laboratories
- Submit documentation and required samples to lab
- Report generated and reviewed by SEI
- Participant is notified of approval
- Listed in Catalog on USDA Bio Preferred Website
Benefits of third-party certification

Product testing and quality assurance audits are repeated at annual intervals to ensure the user of continued compliance of product to standards.

These annual audits provide oversight and ongoing scrutiny of products and processes and the manufacturer agrees to institute corrective actions.

SEI evaluates any proposed changes to the certified product and determines if additional testing is required.
More Benefits…..

- Complaint logs are reviewed at quality audits to ensure proper handling
- Requirements for product liability insurance as recourse for users
- Timely adoption of new or revised standards
- Web based Certified Product Listings are available to public
Public Certification Information

Certified Product Listings & Safety Alerts:

[Image of web page showing SEI Safety Alerts]

<table>
<thead>
<tr>
<th>Date Issued</th>
<th>Alert Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 2013</td>
<td>US Safety - Blaze 3.0 IR Frames - Safety Notice</td>
</tr>
<tr>
<td>Nov. 2012</td>
<td>Mine Safety Appliances (MSA) - Air Gauge for AirHawk® II, Black Hawk® &amp; FireHawk® M7 Air Masks - User Notice</td>
</tr>
<tr>
<td>Nov. 2012</td>
<td>Ansell Protective Solutions - VPS Flash Ensemble - Safety Notice</td>
</tr>
<tr>
<td>July 2012</td>
<td>NIOSH — SCBA Care &amp; Maintenance — User Notice</td>
</tr>
<tr>
<td></td>
<td>NFPA — SCBA Lenses — Alert Notice</td>
</tr>
<tr>
<td></td>
<td>Mine Safety Appliances (MSA) — Y-Guard Cap — Labeling Error — User Advisory</td>
</tr>
<tr>
<td>June 2012</td>
<td>Mine Safety Appliances (MSA) — Cairns S501 — Lens Impact Resistance — User Notice</td>
</tr>
<tr>
<td>Aug. 2011</td>
<td>Honeywell - Sperian/Survivair SCBA - Air Klic Interface - Safety Notice</td>
</tr>
<tr>
<td>June 2011</td>
<td>Superior Glove Works - SURGE 670SG Glove - Safety Notice</td>
</tr>
</tbody>
</table>
Listing of Certified Products

WWW.SEINET.ORG

Questions?