

## **How we function.**

### **Corporate Organization**

NOCSAE® is a non-profit tax-exempt corporation which consists of a Board of Directors and various committees.

The composition of the NOCSAE® Board of directors is determined by the organizations identified in the NOCSAE® bylaws which have always specified whether a listed association or organization has one or two seats on the board. These organizations represent a broad variety of material interests in the areas of athlete safety, health, and protective equipment. Each identified organization selects a person or persons from their membership to vote as a NOCSAE director.

The NOCSAE® Board of Directors has established several committees which serve specific purposes. These committees include the following:

Standards Committee. This committee is the consensus body for standards development as defined by ANSI accreditation procedures and is responsible for developing consensus agreement for new standards, revisions to existing standards, or withdrawal of a standards. Its membership consists of the NOCSAE® board of directors and any additional members the board determines are necessary to maintain a balance of interests, to preclude the dominance of any single interest, or to provide expertise related to a proposed new or revised standard. Membership is not conditioned on being a NOCSAE® director or being a member of any organization or association. Members of the committee do not pay a fee or incur any extra expenses for participating on the Standards Committee. NOCSAE® maintains a list of individuals who have expressed an interest or desire to be a voting member.

All meetings of the Standards Committee are open to the public and any individual or organization wishing to provide comment or feedback on agenda items, including the adoption of new standards, revisions to existing standards or the withdrawal of an existing standard.

The Standards Committee conducts all of its activities in open meetings, including votes on adopting new or revised versions of existing standards, and its decisions are final, subject only to policy compliance review by the Board of Directors, or upon appeal to the Board of Directors by any party aggrieved by the decision of the Standards Committee.

The complete standards adoption procedures are available [here](#).

Scientific Advisory Committee. This is an ad hoc committee whose membership is selected by the NOCSAE® Vice President, who also serves as the chair of the committee. The purpose of this committee is to:

1. Identify and recommend specific research topics or projects to NOCSAE for funding.
2. Participate in a medium of exchange (committee meetings) to identify and address research, scientific, or technical issues relevant to NOCSAE® standards.

3. Respond to specific questions and requests from NOCSAE® on matters of science, medicine, and technology.

Executive Committee. This committee consists of all NOCSAE® officers and has authority to make corporate decisions related to corporate operations and management and administrative actions when the Board of Directors is otherwise unavailable.

### **Summary of NOCSAE® Standards Development Procedures**

NOCSAE® is an ANSI accredited standards developer. This means that the procedures used to develop new standards or revise existing standards have been reviewed and approved by ANSI as complying with the Essential Requirements for due process, openness, balance of interests, and non-dominance by any singular interest category. NOCSAE has adopted and published detailed procedures related to the creation of a new standard, the revision of an existing standard, and the withdrawal of an existing standard. These procedures are designed and intended to comply with all ANSI Essential Requirements for accredited standards developers. A copy of the [NOCSAE® “Procedures for Adoption and Implementation of Standards and Revisions to Existing Standards”](#) can be downloaded by following [this link](#). A summary of the process is as follows:

#### **Initiation of standards activity**

Once the Director of Research, the Technical Director, or the NOCSAE® Board or any committee assembled by the Board is satisfied that evidence exists to merit consideration of the adoption of a new standard, the revision of an existing standard, or the withdrawal of an existing standard (hereinafter “standards activities” a written report of such findings shall be prepared by the Technical Director and sent to the Executive Director, who shall provide a copy to the Board.

Requests to initiate or investigate a particular standards activity may come from any interested party, and such requests are encouraged from the various sports governing bodies.

If the board determines that sufficient basis exists to proceed, a working draft of the new or proposed revised standard is prepared and submitted to the Standards Committee along with any supporting information, data, and comments from the Technical Director, and any written comments received from interested parties.

After considering input from all sources, the Standards Committee, in open meeting and after an opportunity for public comment will vote to determine whether a new or revised standard should be elevated to “Proposed” status. Once the Standards Committee votes to approve a new or revised standard as “Proposed”, the new or revised standard will remain in that condition for a minimum of 12 months from the date of the vote. During this time, additional formal and informal comment is received, objections are received, documented, and addressed,

and the Technical Director may schedule meetings with interested parties to review and discuss all technical aspects to the “Proposed” standard or revision.

The “Proposed” standard or revision will be placed on the agenda of the Standards Committee at the meeting closest to the 12 month anniversary of its initial approval, at which time the standards committee will vote to either elevate the “Proposed” standard to a “Final” standard, or it may choose to postpone that decision to allow additional time for investigation, comment, and feedback. Once the standards committee votes to approve elevating a “Proposed” standard to a “Final” standard, that standard would become effective on the 12-month anniversary of the vote approving the “Final” standard. The purpose of this additional 12-month period is to ensure that sufficient equipment compliant with the new or revised standard will be available.

All standards activity decisions of the Standards Committee are subject to appeal by any aggrieved party with a materially affected interest, and the appeal procedures are contained in the [NOCSAE® “Procedures for Adoption and Implementation of Standards and Revisions to Existing Standards.”](#)

All NOCSAE® standards, including proposed new and revised standards are available for free download at the NOCSAE® website. NOCSAE® standards are copyrighted, and they also contain trademarked and registered property owned by NOCSAE®. The terms of use for any intellectual property owned by NOCSAE® may be found at [this link](#), which is also found at the bottom of each page in the NOCSAE website.

### **NOCSAE® Revenue and Funding**

The primary source of revenue to support the programs and activities of NOCSAE® is derived from license fees assessed against manufacturers for permission to use trademarked and registered properties to label their athletic equipment as compliant with NOCSAE® standards. These fees and the duties and responsibilities of the manufacturers related to compliance with the standards and permissible uses of NOCSAE® intellectual property are set forth in a written licensing agreement executed by each manufacturer. NOCSAE® license fees are typically less than 1% of the average retail cost of a product, in many cases the license fee is less than ½ of 1% of the average retail cost of the product.

The licensing agreement obligates a manufacturer to strictly comply with NOCSAE® standards, cooperate with NOCSAE® in investigating any complaint or violation, and share any testing or certification data with NOCSAE® when requested.

### **Certification of compliance with NOCSAE® standards**

Until 2015, manufacturers of athletic equipment were permitted to self-certify products as meeting the NOCSAE® standard. This type of self-certification program was and continues to be the norm for personal protective equipment in sports and in other areas, including military protective equipment, CPSC bicycle helmets, and federal motor vehicle safety standards. In 2015, NOCSAE® imposed a requirement in all of its standards that certification of compliance can only be made by an independent and properly accredited third-party certifying body. This is the highest level of certification compliance available.

NOCSAE® selected the [Safety Equipment Institute, or “SEI”](#) to be the accredited third-party certifying body for compliance with all NOCSAE® standards. The SEI certification programs include annual product testing of all certified safety and protective equipment product models as well as annual quality assurance audits conducted at the manufacturer’s production facility. A subsidiary of ASTM International, SEI is accredited by the American National Standards Institute (ANSI) and its programs are operated in accordance with the standard, ISO/IEC 17065, *Conformity assessment — Requirements for bodies certifying products, processes and services*. This means that SEI complies with ISO requirements pertaining to impartiality, confidentiality, product testing, audit & inspection and certification.

SEI maintains a list of products certified compliant with NOCSAE® standards. A current list of certified equipment is kept on the SEI website and anyone can search the list to find all the equipment certified to NOCSAE standards. SEI also manages any corrective actions or deficiencies identified in the course of annual audits it conducts at both the manufacturing location as well as in the corporate offices of manufacturers. The production facility quality audits occur on site, whether in the United States, China, or other countries around the world.

### **Why NOCSAE® and not some other standard for athletic equipment?**

1. Sophisticated and realistic performance pass/fail criteria.

At the heart of any protective equipment standard is a pass/fail criteria which is simply that value which cannot be exceeded when the equipment is tested. If the equipment tests below that value, it passes, if it tests above that value it fails. This is a true statement whether the product is a sports helmet or a soccer shin guard.

For purposes of measuring the ability of a helmet to reduce the forces experienced by the head during an impact, other standards use a very simple peak acceleration value called a ‘g’. When there is no acceleration acting on the head, the acceleration value is 1g. As the acceleration increases, the head will experience a multiplication of those forces. The typical pass/fail criteria for other helmet standards ranges from 250 to 300 g’s peak acceleration during an impact. If a helmet tests 1g below these levels, it passes.

The NOCSAE® helmet standards utilize a sophisticated criteria that not only takes into consideration the peak g acceleration during an impact, but also calculates and incorporates the duration of the impact or the time that the head is under acceleration. This criteria is called a

Severity Index, or SI for shorthand. The formula is  $SI = \int_0^t A^{2.5} dt$ , where 'A' is the acceleration part, and the  $\int_0^t$  is the duration of the impact. Based on scientific research, an SI value below 1200 is protective for specific head injuries in a very large percentage of impacts.

## 2. Strict and substantial quality control and quality assurance requirements.

NOCSAE® standards are the only personal protective equipment standards that incorporate a very specific and very demanding level of compliance.

Because it is impossible to test every product that is manufactured, manufacturers are required to test a sufficient number of randomly selected samples to ensure that products which are not tested would in fact meet the standard if they were tested. How many products should be sampled and tested, and what their performance requirements must be are determined by the quality assurance/quality control program the manufacturer adopts. Some use Statistical Process Control (SPC), a method of quality control which employs statistical methods to monitor and control a process. SPC is not based on testing a certain sample size.

Most advanced combat helmet for the military have to admit a quality control and quality assurance program, typically referred to as the ("90 – 90") and level. What this means in simple terms is that a manufacturer must demonstrate to a 90% level of confidence that 90% of the products it produced will meet the required standards.

For manufacturers of level 3 equipment, defined as a class of protective equipment for which a functional failure presents a risk of grave and irreversible injury or death, the NOCSAE® standards require that a manufacturer establish, with recognized and accepted statistical procedures and test data, a 95% confidence level that 99% of all products produced will meet the NOCSAE® standard is tested. There are no personal protective equipment standards that require this level of compliance. The consequence of such a high level of compliance means that a product will probably have to score in the 600 to 800 range for SI values on all test impact locations to be at least three standard deviations below the 1200 SI pass fail mark.

## 3. Independent accredited third-party certification.

No other athletic equipment standards require independent certification by an accredited third-party body.

## 4. Post-sale testing and recertification.

NOCSAE® athletic equipment standards include standards for the recertification of equipment previously certified when new, but which has been used in the field. The standards provide a method for ongoing assurance that the athletic equipment continues to provide the same level of protection or better than when it was new, extends the useful life of athletic equipment, and provides test data for NOCSAE® which constitutes performance evaluation of used equipment.

There are no other athletic equipment standards which provide the opportunity to have a product recertified once it has been sold and placed into use. NOCSAE® recertification standards,

though not mandatory, are utilized nearly two million times a year by schools, teams, and clubs throughout the United States and Europe.