

**LABORATORY PROCEDURAL GUIDE
FOR CERTIFYING NEWLY
MANUFACTURED EYE PROTECTORS
FOR POLO HEADGEAR**

NOCSAE DOC (ND) 056-03m11

Prepared By



**NATIONAL OPERATING COMMITTEE
ON STANDARDS FOR ATHLETIC EQUIPMENT**

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1 Scope

- 1.1 This procedural guide establishes recommended practices for the certification of eye protectors for polo eye protectors.
- 1.2 **All testing and requirements of this standard specification must be in accordance with NOCSAE DOC.001, NOCSAE DOC.055 and NOCSAE DOC.101.**
- 1.3 *This recommended practice does not purport to address all of the safety problems, if any, associated with its use. It is the responsibility of the user of this recommended practice to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2 Referenced Documents

- 2.1 STANDARD DROP TEST METHOD AND EQUIPMENT USED IN EVALUATING THE PERFORMANCE CHARACTERISTICS OF PROTECTIVE HEADGEAR, NOCSAE DOC.001.
- 2.2 STANDARD PROJECTILE IMPACT TEST METHOD AND EQUIPMENT USED IN EVALUATING THE PERFORMANCE CHARACTERISTICS OF PROTECTIVE HEADGEAR, FACEGIARDS OR PROJECTILES, NOCSAE DOC.021
- 2.3 STANDARD PERFORMANCE SPECIFICATIONS FOR EYE PROTECTOR MOUNTED POLO EYE PROTECTION, NOCSAE DOC.055.
- 2.4 EQUIPMENT CALIBRATION PROCEDURES - KME 200, NOCSAE DOC.101.

3 Test Equipment Required

- 3.1 Twin-wire Guide Assembly (as shown in Figure 3, NOCSAE DOC.001).
- 3.2 Projectile Propelling Device (as shown in Figure 1, NOCSAE DOC.021).
- 3.3 Appropriate NOCSAE headforms (see Section 13 and 15.5, NOCSAE DOC.001).
- 3.4 PCB Triaxial Accelerometers, #354MO3, #356A66 or equivalent.
- 3.5 KME Series 200 Data Analyzer (or any analog/digital equivalent that can be demonstrated to correctly calculate SI from a given input signal)¹
- 3.6 Miscellaneous tools and equipment.
 - 3.6.1 Pressure sensitive paste.
 - 3.6.2 Digital voltmeter (DVM), 3 ½ digit, 1mv resolution, ±0.5% accuracy and connecting cables.

¹ The portion of this procedural guide that is specific to data acquisition equipment use and calibration is for the KME Series 200 only. You should refer to the manual for the specific system you are using for differences in system operation.

- 3.6.3 Torque wrench, range to 200 in/lb minimum, 5 % accuracy.
- 3.6.4 Appropriate electrical connectors (banana clips).
- 3.6.5 Tape measure.
- 3.6.6 Non-conducting glass/plastic jeweler's screwdriver (tweaking tool)
- 3.6.7 Miscellaneous hand tools.

4 **Mechanical Set-up**

- 4.1 All components of each assembly (i.e., the headform, headform adjuster, headform stem, headform collar, etc.) must be rigidly connected. Any looseness or play will cause spurious signals (false SI results).

5 **Laboratory Environment**

See Section 12, NOCSAE DOC.001.

6 **Eye Protector Preparation**

- 6.1 See Section 4, NOCSAE DOC.055.
- 6.2 Eye protectors to be tested must be moved into a Laboratory environment for conditioning at least four (4) hours prior to impacting.

7 **Sample Selection**

- 7.1 See Section 11, NOCSAE DOC.001.
- 7.2 Each certifier must test an adequate and representative sample size in order to be reasonably sure that eye protectors released to use, but not actually tested, will meet the requirements as set out in NOCSAE DOC.001 and NOCSAE DOC.055.
- 7.3 Certifiers may be faced with processing eye protectors manufactured from variable raw materials. Sample selection **must** be random yet demonstrate that raw material variability's have been accounted for.

8 **Calibration Procedures**

See NOCSAE DOC.101.

9 Testing Procedure for Certification

- 9.1 Calibrate your drop system and run the pre-testing calibration check as described above.
- 9.2 Set up selected headform on projectile propelling device with helmet mounted eye protector affixed.
- 9.3 Eye protectors selected for testing must be tested in all locations as specified in Section 5, NOCSAE DOC.055.

Testing may begin in any location. Except for the low temperature impacts, all impacts must be completed before moving to a new location. It is not necessary to complete all testing on a given eye protector before removing the eye protector from the test rig.

- 9.4 When using KME equipment, immediately after impact record the SI results and the peak g's. Any delay greater than 30 seconds can result in erroneous data.
- 9.5 Periodically, post-testing calibration checks need to be run to assure that the system being used has remained correctly calibrated (see Sections 18, NOCSAE DOC.001).

10 Reports

- 10.1 All reports must comply with Section 14, NOCSAE DOC.001.

FEBRUARY, 2011 MODIFICATIONS/REVISIONS

- Added additional accelerometer options in section 3.4
- Specified resolution and tolerance for DVM and Torque Wrench