

**LABORATORY PROCEDURAL
GUIDE FOR RECERTIFYING
BASEBALL/SOFTBALL BATTER'S
AND CATCHERS HELMETS**

NOCSAE DOC (ND) 028-07m07

Prepared By



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

March 2007

TABLE OF CONTENTS

Scope	1
Referenced Documents	1
Test Equipment Required.....	1
Mechanical Set-up.....	2
Laboratory Environment.....	2
Helmet Preparation	2
Calibration Procedures.....	2
Sample Selection	2
Reports	3

Scope

- 1.1 This procedural guide establishes recommended practices for the recertification of baseball-softball batter's helmets with or without face protectors and catcher's helmets with attached face protectors.
- 1.2 ***All testing and requirements of this standard specification must be in accordance with NOCSAE DOC.001 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 PERFORMANCE SPECIFICATION FOR RECERTIFIED BASEBALL/SOFTBALL BATTER'S AND CATCHERS HELMETS, NOCSAE DOC.026.
- 2.3 EQUIPMENT CALIBRATION PROCEDURES - KME SERIES 200, NOCSAE DOC.101.

3 Test Equipment Required

- 3.1 Twin-wire Guide Assembly (as shown in Figure 3, NOCSAE DOC.001).
- 3.2 Appropriate NOCSAE headforms (see Section 13, NOCSAE DOC.001).
- 3.3 Appropriate MEP pads (see Section 15, NOCSAE DOC.001).
- 3.4 PCB Triaxial Accelerometer, #354MO3 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

¹ The portion of this procedural guide that is specific to data acquisition equipment use and calibration is for the KME Series 200 only. Older "blue box" systems (obsolete) and newer KME 300 Series systems will operate similarly. However, you should refer to the manual for the specific system you are using for differences in system operation. HITS software/hardware is equivalent; a users manual is available for HITS software/hardware.

- 3.6 Miscellaneous tools and equipment.
 - 3.6.1 Digital voltmeter (DVM) with connecting cables.
 - 3.6.2 Torque wrench.
 - 3.6.3 Appropriate electrical connectors (banana clips).
 - 3.6.4 Tape measure.
 - 3.6.5 Non-conducting glass/plastic jeweler's screwdriver (tweaking tool).
 - 3.6.6 Miscellaneous hand tools.

4 **Mechanical Set-up**

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

5 **Laboratory Environment**

- 5.1 See Section 12, NOCSAE DOC.001.

6 **Helmet Preparation**

- 6.1 See Section 3, NOCSAE DOC.026.
- 6.2 Helmets to be tested must be moved into a Laboratory environment for conditioning at least four (4) hours prior to impacting.

7 **Calibration Procedures**

- 7.1 See NOCSAE DOC.101.

8 **Sample Selection**

- 8.1 See Section 11, NOCSAE DOC.001.
 - 8.1.1 Each recertifier must test an adequate and representative sample² size in order to be reasonably sure that helmets returned to use, but not actually tested, will meet the requirements as set out in NOCSAE DOC.001 and NOCSAE DOC.026.

² **Note:** This method will allow each recertifier to determine the rate of testing needed for each category to comply with Section 8.1.1 and 8.1.2. This method will also demonstrate the improvement, if any, which resulted from the recertifiers efforts.

This information is key to other recertifiers, manufacturers and consumers. The developed information should be used to inform and educate the consumer on the need, and frequency, with which to participate in the recertifying process. Manufacturers using this information will be better able to determine product performance.

8.1.2 Recertifiers that adhere to this guideline and participate in industry wide surveillance and reporting efforts may utilize that combined information. This may reduce the number of test samples required.

8.2 Recertifiers are faced with processing a wide range of products in various ages and condition. It is therefore necessary to divide the products submitted for recertification into categories:

8.2.1 Good: Helmets appear to be in satisfactory shape - no cracks, no missing pads, components installed correctly, etc.

8.2.2 Repair: Helmets have visible defects that are repairable - missing/torn pads, etc.

Helmets with a cracked shell, or cracks in the shell, are **not** considered repairable.

8.2.3 Reject: Helmets have obvious defects which are beyond repair - cracked shell, etc. Damaged face protectors shall not be recertified or returned to play.

8.2.4 An adequate representative sample from each group that is to be returned to use must be tested.

9 Testing Procedure for Recertification

9.1 Calibrate your system and run the pre-testing system check.

9.2 The ½" Test MEP is used as the impact surface for recertification tests.

9.3 Helmets selected for testing shall be impacted once in the side position and once in either the rear boss or rear position. This second location is to be rotated periodically and proportionately between the rear boss and rear locations. The same locations must be impacted after reconditioning the helmet as the locations impacted before reconditioning.

9.4 Periodically, post-testing system checks need to be run to assure that the system being used has remained correctly calibrated (see Section 18, NOCSAE DOC.001 and Section 5, NOCSAE DOC.101).

10 Reports

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