

**STANDARD PERFORMANCE
SPECIFICATION FOR
NEWLY MANUFACTURED
BASEBALL/SOFTBALL BATTER'S
HELMETS**

NOCSAE DOC (ND) 022- 03m04

Prepared By



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

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1. Scope

- 1.1. This standard specification establishes performance requirements for new baseball/softball batter's helmets as supplied by manufacturers.
- 1.2. **All testing and requirements of this standard specification must be in accordance with NOCSAE DOC.001 and NOCSAE DOC.021, except where modified herein.**
- 1.3. *This standard 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 standard 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/PROJECTILES, NOCSAE DOC.021.

3. Sample Size

- 3.1. See Section 11, NOCSAE DOC.001.
- 3.2. At least two (2) of each helmet model in each of the critical sizes must be tested.
 - 3.2.1. To obtain a reasonable fit (as determined by the test technician) for testing purposes, helmets larger than size 7 5/8 **may** require "shim" pads to be inserted between the largest NOCSAE headform and the interior of the helmet, opposite from the impact site.
 - 3.2.2. Helmets of a given model with a size smaller than 6 5/8 **may** not fit the smallest NOCSAE headform. In that event, testing of that size is waived so long as the other sizes of that model have been tested and meet all requirements.

4. Helmet Preparation

See Section 10, NOCSAE DOC.001.

5. Impact Attenuation Tests

- 5.1. Impact locations are described in Section 19, NOCSAE DOC.001 and shown in Figure 1 (attached).
- 5.2. The head model will be positioned with its impact site located 24 in (610 mm) from the muzzle (or point at which the ball is released).
- 5.3. The helmet fit must be maintained without intervention throughout the entire series of impacts for either test. Any structural changes or other changes that take place during impact testing which result in loosening the fit to the headform, shall be cause for failure. Helmet repositioning during testing is anticipated. However, additional, un-restorable, loosening of the fit (see the appropriate portions of Section 20, NOCSAE DOC.001) is not allowed.

In the case of helmets “shimmed” as per section 3.1.1, the replacement/repositioning of shims is allowed.

- 5.4. Each submitted sample helmet shall be impacted with a ball in accordance with Table 1 below and as depicted in Figure 2 (attached).
- 5.5. The baseball(s) used shall weigh 140 – 145 grams, have a circumference of 9 – 9.25 inches, have a Coefficient of Restitution of 0.5 – 0.55 and have a Compression-Deflection of 200 – 300 lbs and be of the construction specified and used by Major League Baseball.

TABLE 1

**LOCATION - MILES PER HOUR (m/sec)
(All speeds must be ± 3%)**

	FRONT ¹	RIGHT FRONT BOSS	RIGHT SIDE	RIGHT REAR BOSS	REAR	RANDOM
Ambient Temperature	60 (27)	60 (27)	60 (27)	60 (27)	60 (27)	60 (27)
High Temperature			60 (27)			

Notes: The high temperature condition impacts must be done after the ambient temperature impacts. Impact velocity must be within 3% of the specified velocity for that particular projectile.

- 5.6. The high temperature impacts are to be conducted on the same two (2) helmets upon which the ambient temperature tests were performed.
- 5.7. The peak severity index of any impact shall not exceed 1200 SI.

6. Labels and Warnings

¹ Because of the sun visor on a batter’s helmet, the front al locations shall be obtained using the positioner adjuster locating holes, which will allow an impact to be centered around the point on the centerline of the helmet closest to the front rim of the visor without the ball actually touching the visor.

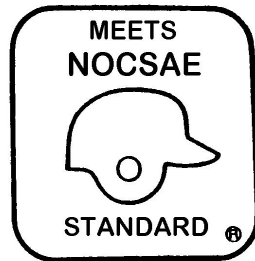
- 6.1. See Section 9, NOCSAE DOC.001 with the exception of 9.6 and Section 9, NOCSAE DOC.021.
- 6.2. Each helmet shall have permanently affixed to the exterior of the shell a clearly legible statement which can be easily read without removal of any decal tape, other temporary material or permanent part, which contains language which effectively communicates to the purchaser and user the following information, using the same or similar language:

WARNING

DO NOT USE THIS HELMET IF THE SHELL IS CRACKED OR DEFORMED; OR IF THE INTERIOR PADDING IS DETERIORATED. SEVERE HEAD OR NECK INJURY, INCLUDING PARALYSIS OR DEATH MAY OCCUR TO YOU DESPITE USING THIS HELMET. NO HELMET CAN PREVENT ALL HEAD INJURIES OR ANY NECK INJURIES A PLAYER MIGHT RECEIVE WHILE PARTICIPATING IN BASEBALL OR SOFTBALL

A permanent, exact replica of this seal must appear legibly on the exterior of the shell -

Manufacturer Certifies

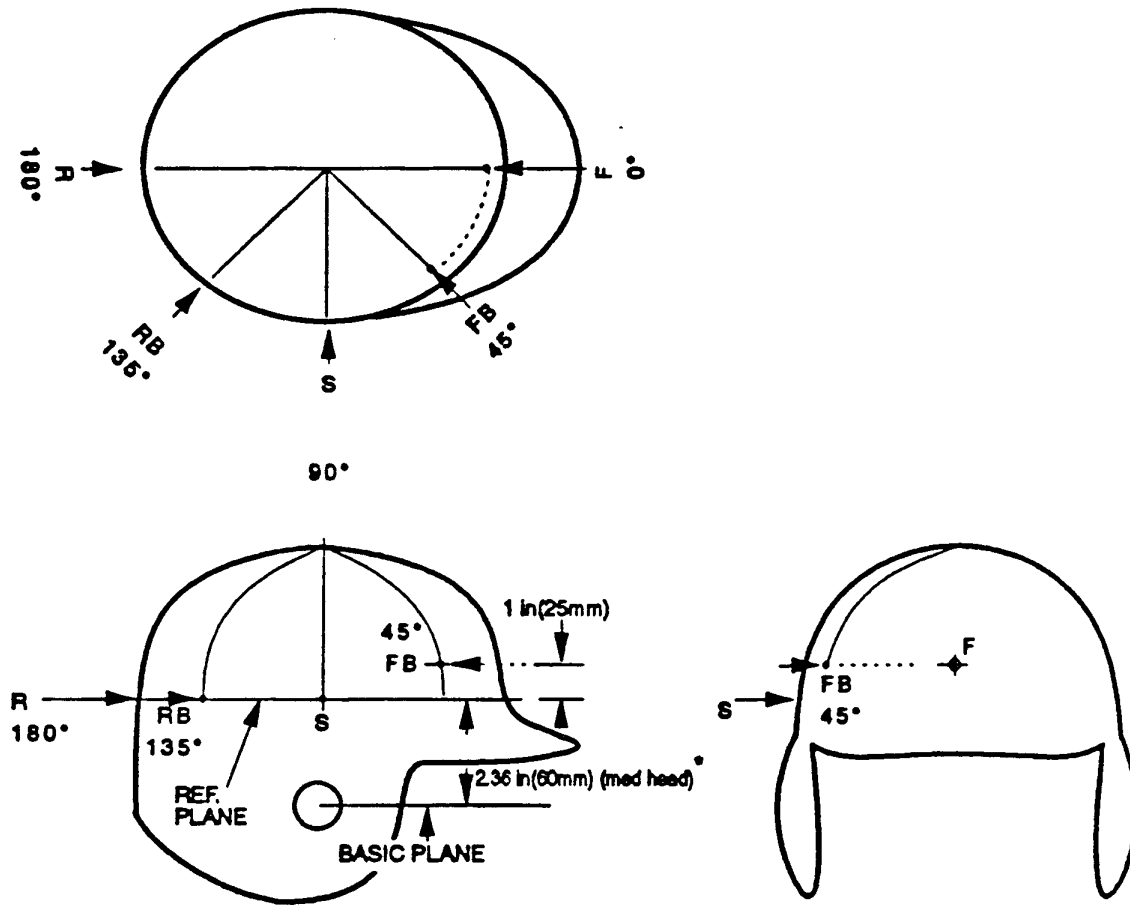


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**BATTER'S HELMET
IMPACT LOCATIONS**



* For the small headform the REFERENCE PLANE is 2.16 inches above the BASIC PLANE.
For the large headform the REFERENCE PLANE is 2.48 inches above the BASIC PLANE.

The random location may be selected from any point within the allowed impact area but not closer than 1 inch (25 mm) from the edge of the helmet nor less than 1 inch (25mm) from any previous impact.

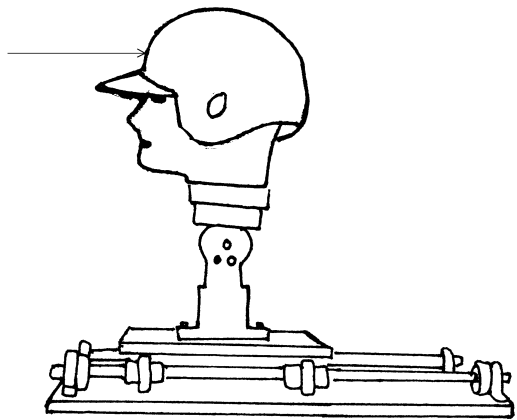
Random locations chosen must allow the rotator assembly to be locked in the position selected.

Impact area- for a helmet that is to be tested on the medium headform *, the impact area must include all locations on the headform above the BASIC PLANE rearward of a location 2.75 inches (70mm) forward of where the BASIC PLANE intersects with the CORONAL PLANE and any point on or above the REFERENCE PLANE in front of that same intersection.

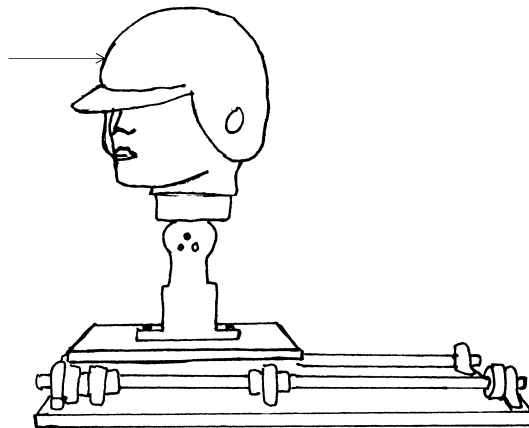
*For the small headform use 2.50 inches (64mm) and for the large headform use 3.00 inches (76mm).

Revised – 4/03

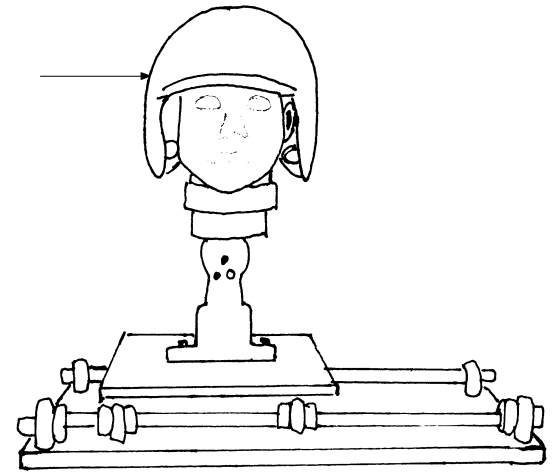
Figure 1



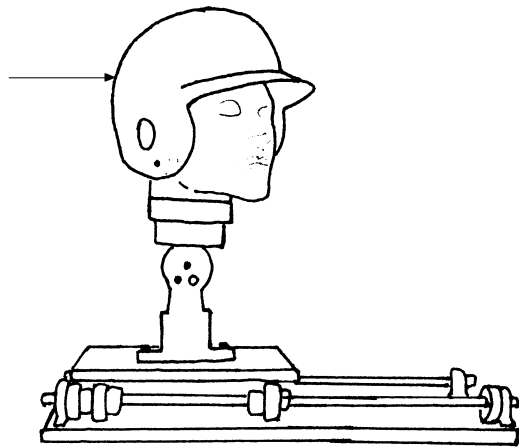
Front Impacts



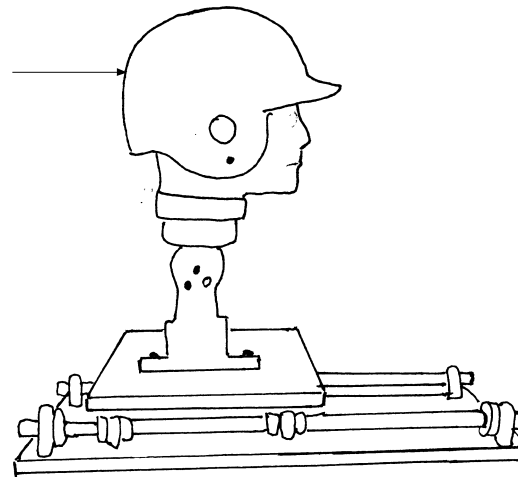
Right Front Boss Impacts



Right Side Impacts



Right Rear Boss Impacts



Rear Impacts

Figure 2

JANUARY, 2002 MODIFICATIONS/REVISIONS

- Simplified document references within document.
- Changed Fig 1 text to clarify Impact Area.

JANUARY, 2003 MODIFICATIONS/REVISIONS

- Correct typo in section 6.1 to read 9.6 instead of 9.1.6

APRIL, 2003 MODIFICATIONS/REVISIONS

- **REVISED**- Defined random impact locations referenced from previous impacts.
- Modified naming convention and added NOCSAE logo to cover page.
- Modified the description of the projectile used.

JANUARY, 2004 MODIFICATIONS/REVISIONS

- Modified Ball specifications for clarity