STANDARD PERFORMANCE SPECIFICATION FOR NEWLY MANUFACTURED FOOTBALL HELMETS

NOCSAE DOC (ND)002-11m11a

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 football helmets as supplied by manufacturers.

1.2 **All testing and requirements of this standard specification must be in accordance with NOCSAE DOC.001, 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

3 Sample Size

3.1 See Section 11, NOCSAE DOC.001.

3.2 At least two (2) of each model and size must be tested. 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.

3.3 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.

3.4 The jaw pads in the helmet may be replaced with a different thickness than originally supplied so that those pads firmly contact the headform jaw area, but without spreading the shell. This would be done prior to securing the chin strap to the chin of the headform.

4 Helmet Preparation

4.1 See Section 10, NOCSAE DOC.001.

4.2 Face Guards - Helmets must be tested without face guards or face guard specific hardware. Any components of the headgear not associated with the faceguard (i.e. nose bumpers, front padding, etc.) must be securely attached to the helmet using appropriate means prior to impact testing.

5 Impact Attenuation Tests

5.1 Impact locations are described in Section 19, NOCSAE DOC.001. See Figures 1 and 2.

5.2 Impacts shall be conducted on the Test MEP pad (see Section 15.2.2, NOCSAE DOC.001).

5.3 Each submitted sample helmet shall be impacted in accordance with Table 1 below and as depicted in Figures 1 and 2.

TABLE 1

LOCATION - DROP velocities – ft/s (m/s)
(All drop velocities must be within +3% -0%)

	FRONT	SIDE	F. BOSS	R. BOSS	REAR	TOP	RANDOM
Ambient Temperature	11.34 (3.46)	11.34 (3.46)	11.34 (3.46)	11.34 (3.46)	11.34 (3.46)	11.34 (3.46)	11.34 (3.46)
	13.89 (4.23)	13.89 (4.23)					
	16.04 (4.88)	16.04 (4.88)					
	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)
	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)	17.94 (5.46)
High Temperature		17.94 (5.46)					
		17.94 (5.46)					

NOTES: The high temperature condition impacts must be done after the ambient temperature impacts.

Impact locations requiring more than two (2) impacts must be conducted in sequence from the lowest drop velocity through the highest.

6 Test Requirements

6.1 The peak severity index of any impact shall not exceed 1200 SI.

6.2 The 11.34 ft/s impacts designated in Table 1 must not exceed 300 SI.

6.3 Helmet repositioning during testing is anticipated. Any structural changes or other changes that take place during impact testing which result in un-restorable, loosening of the fit (see Section 20, NOCSAE DOC.001) shall be cause for failure. In the case of helmets “shimmed” as per section 3.3, the replacement or repositioning of shims is allowed.

6.4 A passing helmet model is able to withstand all impacts at an acceptable SI and meets all other requirements when tested in accordance with this performance specification.

7 Labels and Warnings

7.1 See Section 9, NOCSAE DOC.001.

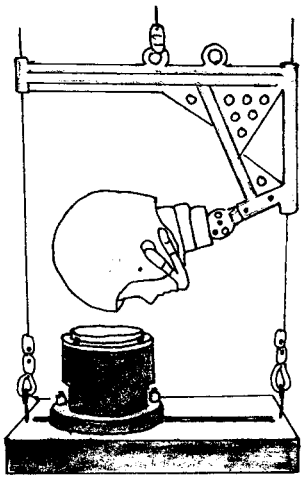
7.2 Each helmet shall have permanently affixed to the exterior of the shell a clearly legible statement which can be easily read without removal of any decal tape, other temporary material or permanent part, which contains language which effectively communicates to the purchaser and user the following information, using the same or similar language:

WARNING
NO HELMET CAN PREVENT ALL HEAD OR ANY NECK INJURIES A PLAYER MIGHT RECEIVE WHILE PARTICIPATING IN FOOTBALL.

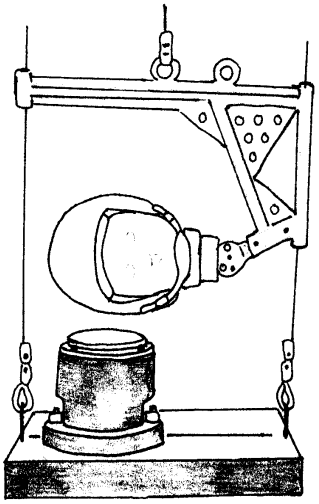
DO NOT USE THIS HELMET TO BUTT, RAM OR SPEAR AN OPPOSING PLAYER. THIS IS IN VIOLATION OF THE FOOTBALL RULES AND SUCH USE CAN RESULT IN SEVERE HEAD OR NECK INJURIES, PARALYSIS OR DEATH TO YOU AND POSSIBLE INJURY TO YOUR OPPONENT.

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

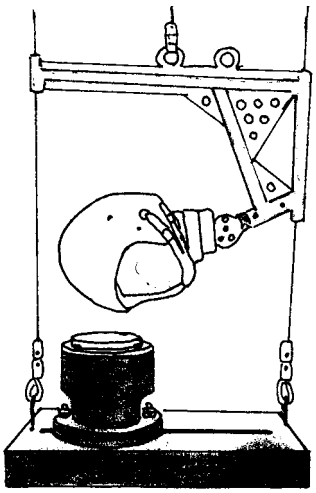
NOTE: You must have an executed, valid license agreement with NOCSAE to use any of the NOCSAE logos at any time. NOCSAE, the NOCSAE seals/logos, and the National Operating Committee on Standards for Athletic Equipment are registered marks and the exclusive property of the Committee. Use of the marks in any manner is prohibited without prior written permission of the NOCSAE Board of Directors. In place of manufacturer certifies the manufacturer may use it's own name i.e., xyz company certifies "MEETS NOCSAE STANDARD" This seal maybe scaled so long that it remains legible.



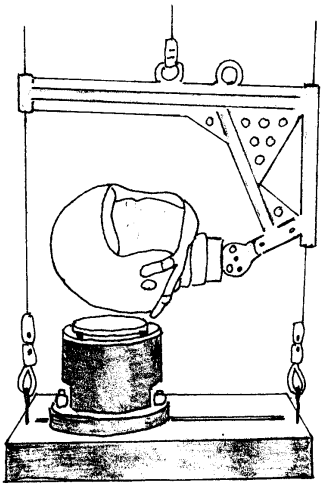
Front Impacts



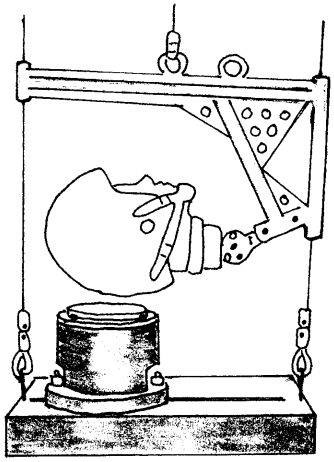
Side Impacts



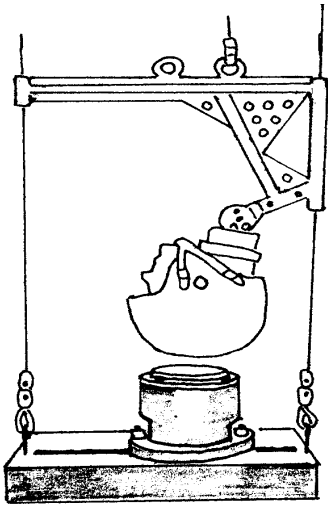
Front Boss Impacts



Rear Boss Impacts



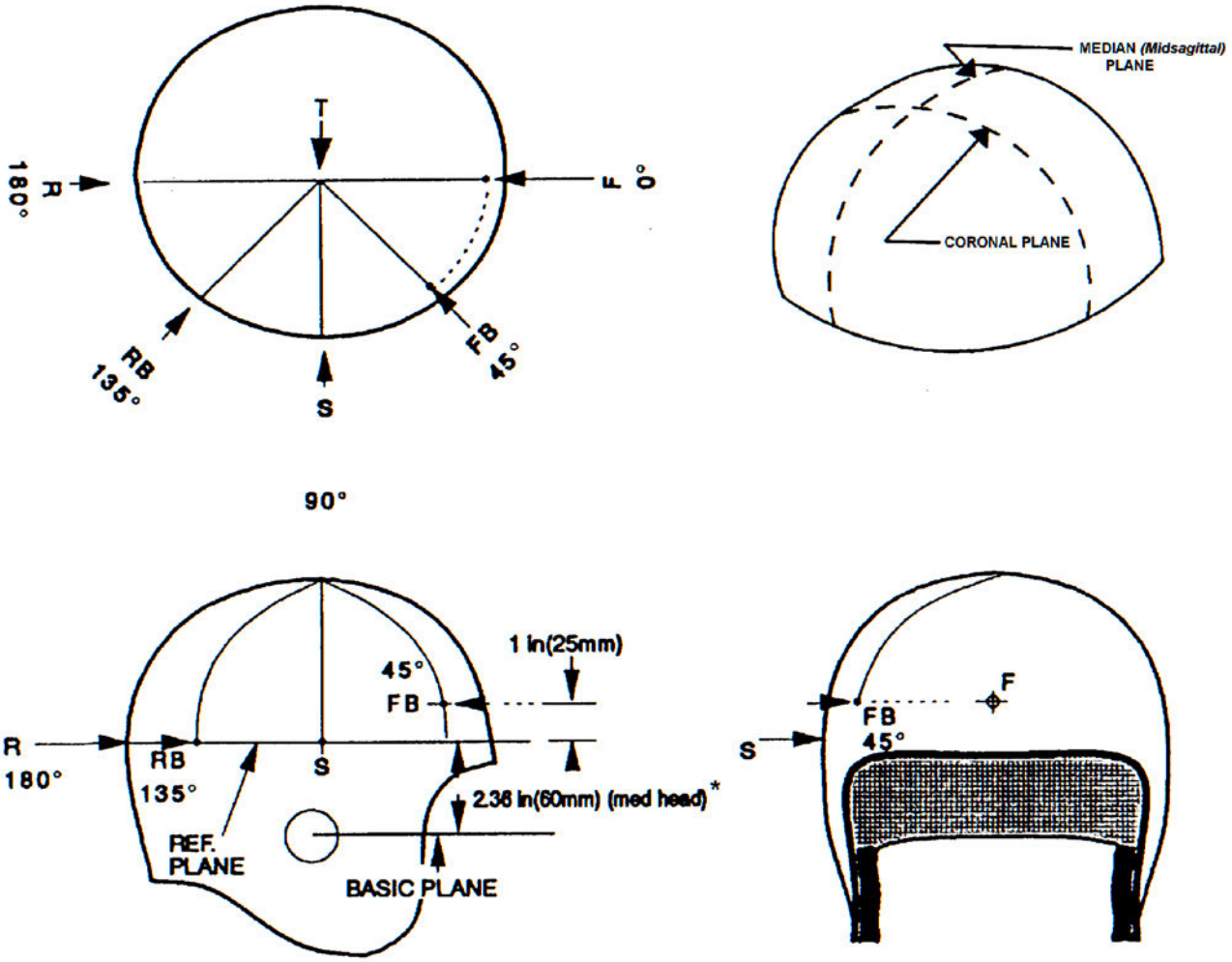
Rear Impacts



Top Impacts

Figure 1

APPROXIMATE 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 (25 mm) 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 2.5 inches (64 mm) 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 2.25 inches (57 mm) and for the large headform use 2.75 inches (70 mm).

Figure 2

MAY, 1998 MODIFICATIONS/REVISIONS

- Added depictions of the helmet impacts and referenced them in 5.3.

JANUARY, 2002 MODIFICATIONS/REVISIONS

- Simplified document references within document.

APRIL, 2003 MODIFICATIONS/REVISIONS

- Changed naming convention and added NOCSAE logo to cover page.

JULY, 2005 MODIFICATIONS/REVISIONS

- Added Figure 2, Impact Locations.

MAY, 2009 MODIFICATIONS/REVISIONS

- Modified section 5.5 for clarity.

JANUARY, 2011 MODIFICATIONS/REVISIONS

- **REVISION-** Change drop heights to drop velocities. Clarified attachment of component requirement.

FEBRUARY, 2011 MODIFICATIONS/REVISIONS

- **REVISION-** Added low level impact requirement. Clarified test requirements.