STANDARD PERFORMANCE SPECIFICATION FOR NEWLY MANUFACTURED LACROSSE FACE PROTECTORS

NOCSAE DOC (ND) 045 – 17m17

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 lacrosse face protectors intended to be mounted onto compatible lacrosse helmets that have been certified to meet the NOCSAE standard as supplied by manufacturers. In addition to meeting the requirements of this standard the entire headgear must be tested to demonstrate that the face protector has not compromised the ability of the helmet to comply with NOCSAE doc 041. The requirements of this standard shall be subject to Level 3 compliance criteria unless otherwise stated herein.

1.2. **All testing and requirements of this standard specification must be in accordance with NOCSAE DOC.001, NOCSAE DOC.021 and NOCSAE DOC.041 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 HEADGEAR/EQUIPMENT, 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

2.3. STANDARD PERFORMANCE SPECIFICATION FOR NEWLY MANUFACTURED LACROSSE HELMETS WITH FACEGUARD NOCSAE DOC.041

2.4. STANDARD PERFORMANCE SPECIFICATION FOR NEWLY MANUFACTURED LACROSSE BALLS NOCSAE DOC.049

3. Sample Size

3.1. See Sections 6 and 11, NOCSAE DOC.001, for QC/QA protocol testing.

3.2. For any standalone test report; at least five (5) Face Protectors of each model mounted onto helmets that meet the requirements of NOCSAE Doc ND041 and bear the NOCSAE logo, in each critical size must be tested.

4. Helmet Preparation

4.1. See Sections 10 & 12, NOCSAE DOC.001 and section 11 NOCSAE DOC.021

4.2. Face protectors that must be mounted to helmets of a given model with a size smaller than 6 ⅝ ***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.

4.3. To obtain a reasonable fit (as determined by the test technician) for testing purposes, face protectors that must be mounted to helmets larger than size 7 ⅝ ***may*** require "shim" pads to be inserted between the largest NOCSAE headform and the interior of the helmet, opposite from the impact site.

5. Faceguards Projectile Tests

5.1. See Section 5.2, NOCSAE DOC.021.

5.2. The lacrosse balls used must be of a model that meet the requirements of NOCSAE Doc ND049, “Standard Performance Specification for Newly Manufactured Lacrosse Balls”.

5.3. Five of the submitted sample face protectors to be tested shall be mounted on a lacrosse helmet according to the manufacturer’s instructions and impacted with a lacrosse ball one time each. No submitted sample shall be impacted more than once. Each submitted sample shall be impacted with a ball in one of the locations described below in accordance with Table 1 and section 5.4. Examples of the locations are depicted in Figure 2.

5.3.1. Directly in front, aimed at the nose, with the headform and helmet in an upright (vertical) position. The barrel (line of ball travel) shall be perpendicular to the Coronal plane.

5.3.2. Directly in front, aimed at one eye, the headform and helmet in an upright (vertical) position and rotated away from the Midsagittal plane at an angle of 45° from the direction of impact that permits the ball to be aimed at the eye.

5.3.3. Random location: The headform may be located in any manner that allows the impact point to be within the “no contact area” as defined in Figure 1, attached. Pointer or other targeting means can be set within, or to any edge of, the “no contact” area. The center of ball contact must be at the edge of, or within the “no contact” area.

5.4. Impact Targeting Options

5.4.1. At least one impact shall be at the center of the widest opening in the faceguard.

5.4.2. At least one impact shall be aimed at the material structure of the faceguard.

5.4.3. Impacts shall be selected to investigate any apparent weakness in the faceguard which may allow contact to the face.

5.5. A different faceguard shall be used for each test position at each temperature (five guards are needed for the complete test series).

5.6. The head model will be positioned with its impact site located within 24 inches (610 mm) from the end of the muzzle (or from the point at which the ball is released).

TABLE 1

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

	AT THE NOSE	AT AN EYE	RANDOM
Ambient Temperature	70 (32)	70 (32)	70 (32)
Low Temperature	70 (32)	70 (32)	N/A

6. **Faceguard Penetration Test**

6.1. Each faceguard to be tested shall be mounted on a lacrosse helmet according to the manufacturer's instructions. Position the helmet onto the appropriate NOCSAE headform.

6.2. Attempt to pass the test blade (see figure 3) through any opening in the face protector towards the ocular area no contact zone defined in figure 1.

7. **Test Requirements**

7.1. 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 4.4, the replacement or repositioning of shims is allowed.

7.2. When tested accordance to section 5, all faceguards shall remain intact with no crazing, breaking or cracking, either in the material or at the testing points.

7.3. A passing helmet model is able to withstand all impacts and meets all other requirements when tested in accordance with this performance specification.

7.4. When tested in accordance to section 6, no contact to the ocular area is ever permitted.

7.5. When tested in accordance to section 5, no contact to the ocular area is ever permitted. Limited contact to specific areas of the headform is allowed (limited contact area)♦. Contact occurring to the limited contact area must be restricted to those non-structural components of the headgear that are designed/intended to rest on or come in contact with the wearers face. (See Figure 1).

♦ This requirement shall be subject to Level 2 compliance criteria.

7.5.1. Verification of ball contact: For verification of ball or protector contact with the face, cover the entire facial area (limited contact/ocular area) from the frontal bone superiorly to the mandible inferiorly with Pressure Indicator paste. Contact of either ball or protector with any part of the face will leave paste at the point of contact and proof of contact on the headform. Inspect thoroughly both the ball and the protector to determine if they contain residue of paste. Also inspect the headform ocular area for evidence of contact.

8. Labels and Warning

8.1. See Section 9.1 and 9.4, NOCSAE DOC.001 and Section 9.1 and 9.2, NOCSAE DOC.021.

8.2. The phrase, "SEI Certified, Meets NOCSAE Standard®" Shall be permanently affixed.

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.

8.3. All face protectors shall have instructions provided that inform the consumer of which helmet model(s) and helmet size the face protector is intended to be used with and how the face protector is to be attached to the compatible helmet.

8.4. Have permanently affixed to it a clearly legible statement which effectively communicates to the end user the following information, using the same or similar language:

WARNING: THIS FACEGUARD DOES NOT COMPLY WITH NOCSAE REQUIREMENTS UNLESS IT IS ATTACHED TO A HELMET SPECIFICALLY LISTED BY THE MANUFACTURER AND WHICH BEARS THE NOCSAE LACROSSE LOGO.

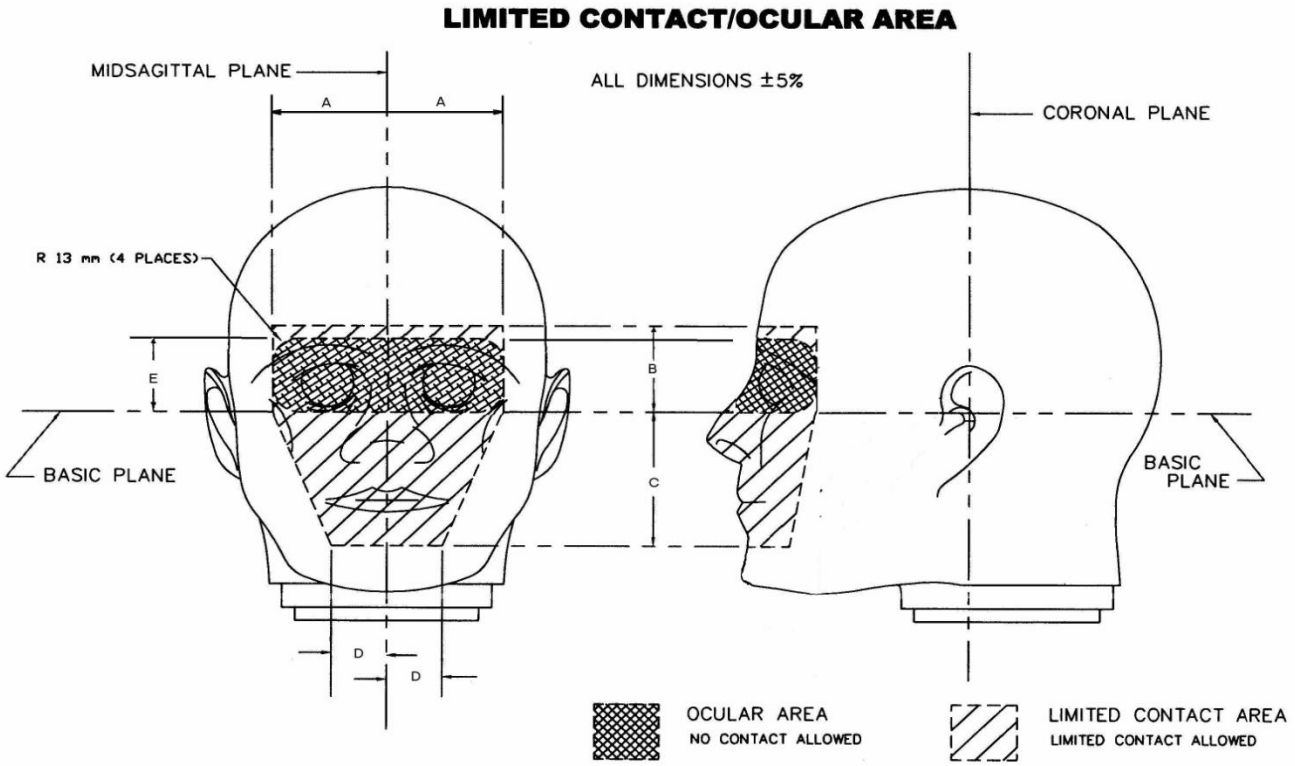
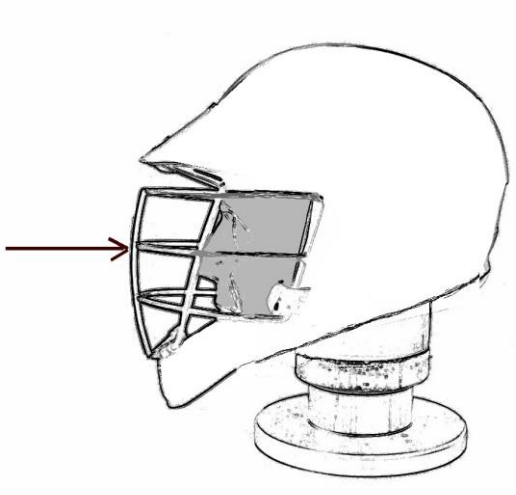


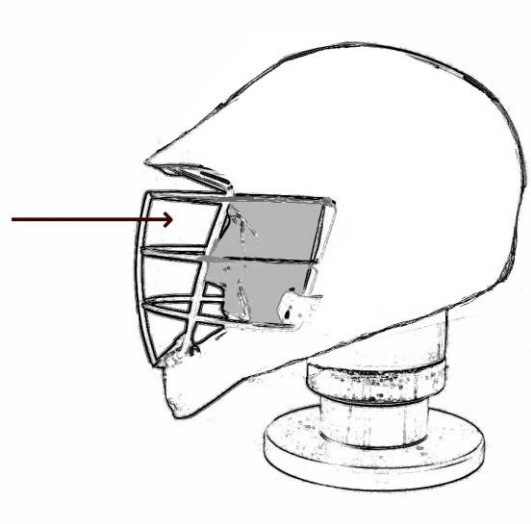
TABLE 2

Headform	Label	A	B	C	D	E
Small	**Dimension, mm (in)**	54 (2.113)	41 (1.619	64 (2.518)	26 (1.019)	32 (1.259)
Medium	**Dimension, mm (in)**	56 (2.205)	45 (1.772)	70 (2.756)	27 (1.062)	35 (1.378)
Large	**Dimension, mm (in)**	62 (2.421)	50 (1.969)	78 (3.063)	30 (1.167)	39 (1.532)

Figure 1

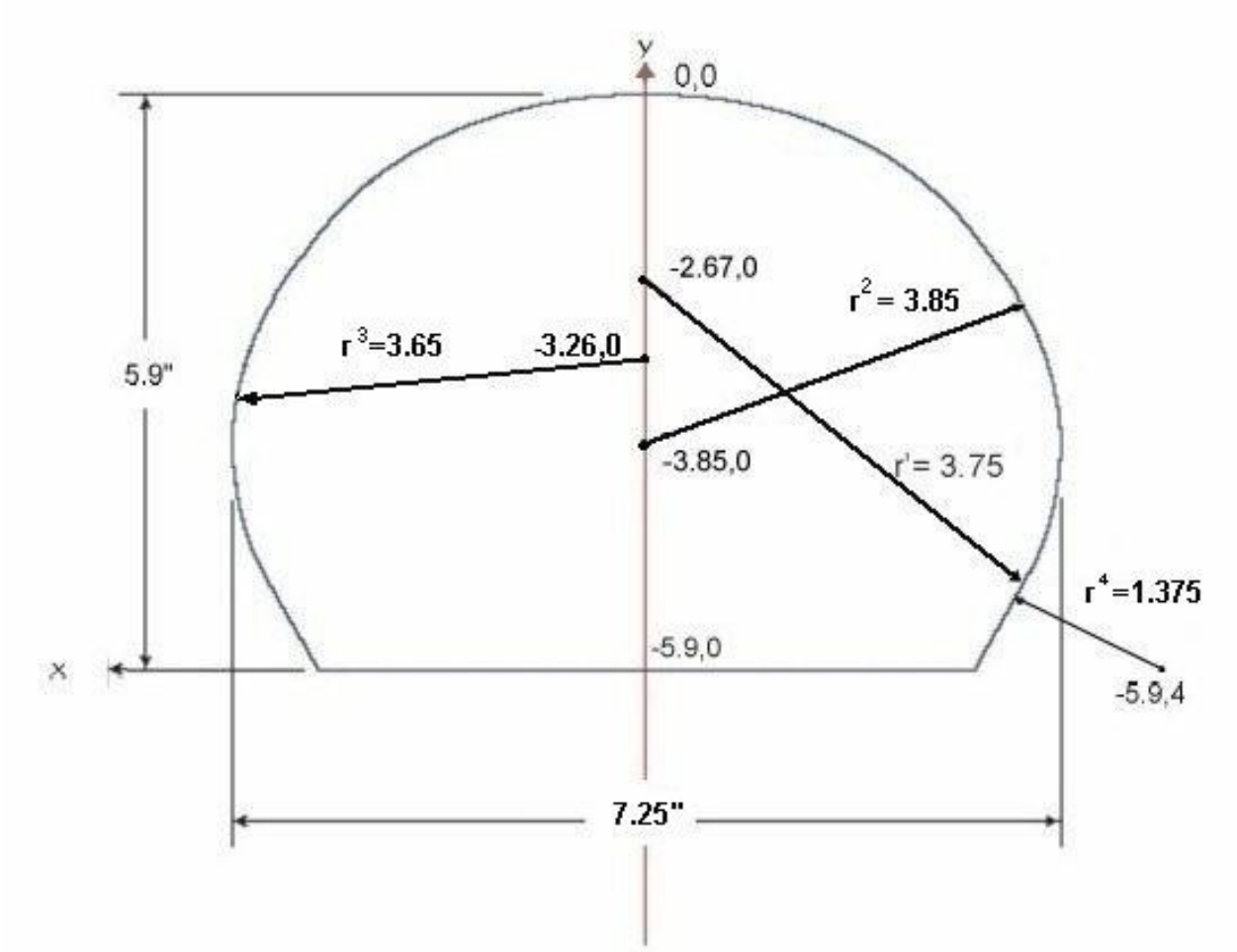


At The Nose 1



At The Eye 1

Figure 2



Drawing not to scale.

Test Blade Penetrator[1]

Cut from $^1/_4$-inch rigid material. All dimensions in inches. Tolerance ± 0.125 inch. Drawing uses a coordinate system with its origin at the top along the centerline. Radii 1 and 2 begin on the centerline and blend smoothly with radius 3, also beginning on the centerline, all of which blends smoothly to reverse radius 4. The center point of radius 4 is –5.9" from apex at the centerline and to the right 4". The left and right sides are mirrored. Only the edges that have radii are for penetration testing. The corner points created at the base of the test penetrator shall not be used to test for penetration.

Figure 3

[1] Test Blade Penetrator is available from Southern Impact Research Center.

JULY, 2004 MODIFICATIONS/REVISIONS

- Clarified penetrator drawing.

AUGUST, 2004 MODIFICATIONS/REVISIONS

- Modified Scope
- Added NOCSAE 041 as a referenced document

NOVEMBER, 2004 MODIFICATIONS/REVISIONS

- Clarified penetrator drawing by adding 4th radius.

JUNE, 2007 MODIFICATIONS/REVISIONS

- Updated Figure 1 to show limited contact/ocular area coverage on headforms

DECEMBER, 2009 MODIFICATIONS/REVISIONS

- **Revision,** Added dimensions for limited contact/ocular area for small and large headforms to Figure 1
- Corrected typo in dimension for penetrator Figure 3

FEBRUARY 2011, MODIFICATIONS/REVISIONS

- Moved test requirements to section 8. Clarified test requirements.

MAY 2012, MODIFICATIONS/REVISIONS

- Clarified section 3 for standalone test report
- Moved requirements to section 4 from section 3 for clarity
- Specified Lacrosse Ball requirements
- Added NOCSAE 049 as a referenced document

APRIL 2013, MODIFICATIONS/REVISIONS

- Corrected typos

OCTOBER 2014 MODIFICATIONS/REVISIONS

- Updated document to include level of compliance requirements.
- Added Date specification becomes effective
- Updated title name of NOCSAE DOC. 001
- Added Lacrosse Ball Parameters to Section 5 for Clarification
- Added language to section 5 to clarify impacts to the face protector
- Added SEI Certification to Section 8, “Labels and Warnings”

JUNE 2015 MODIFICATIONS/REVISIONS

- Updated NOCSAE seal/logo artwork

JANUARY 2017 MODIFICATIONS/REVISIONS

- ***Revision-*** Changed section 5.2 projectile requirements