STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
METHODS OF TESTING PROTECTIVE HELMETS

AS 2512.7
DETERMINATION OF STABILITY OF LIGHTWEIGHT PROTECTIVE HELMETS

FOREWORD

This test method was devised to detect those helmets which, even when correctly fitted, move on the head during normal use to the extent that they might endanger a user by obscuring vision or exposing the forehead to impact. The test is not intended to determine the likelihood of effective retention in an accident, though work is in progress on such a test.

The most important variable in this method appears to be the fit of helmet on headform. Because an objective method of measuring fit has not yet been developed, great care must be taken to ensure that the helmet chosen for the test is the one which, when seated on the headform and correctly adjusted, most closely resembles an acceptable fit on a person's head.

The headforms specified in this test vary from those specified in the other methods in this series because the test requires the use of a headform with a chin.

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1 SCOPE. This standard sets out a method for determining the stability of a lightweight protective helmet on a test headform under static load.

2 PRINCIPLE. Two headforms are specified, one adult-size and one child-size. A test band is marked on each headform around the eye area. A helmet judged to be a good fit on the appropriate headform is selected, placed on the headform and subjected to a static force in the forward and rearward directions. Stability of the helmet is assessed by whether the test band is completely exposed or completely obscured during the test.

3 REFERENCED DOCUMENTS. The following documents are referred to in this standard:

AS 2512.1	Methods of Testing Protective Helmets, Definitions and Headforms
ISO/DIS 6220—1983	Headforms for Use in the Testing of Protective Helmets

4 APPARATUS. The following apparatus is required:

(a) Headform(s) complying with Appendix A.

(b) Mounting stand to secure the test headform for test, with the basic plane essentially horizontal, in both forward facing and rearward facing directions.

(c) Means of applying a static, vertical force of 45.0 +0, −0.5 N to the apex of the helmet.

(d) Means of applying a static force, as specified in the product standard, at a horizontal attitude to the helmet on the headform. Typical apparatus is illustrated in Fig. 1.

(e) Spacer, flexible but substantially incompressible, approximately 150 mm long by 50 ±1 mm wide by 2 ±0.2 mm thick.
NOTE: Material such as low density polyethylene is suitable.

5 ESTABLISHING THE TEST BAND ON THE HEADFORM. A test band shall be marked on the front of the test headform and shall be a region bounded by—

(a) a line indicating the location of the basic plane;

(b) a line above and parallel to the basic plane as follows:

Headform	Distance above the basic plane
A	74 mm
J	85 mm

(c) two vertical lines 25 mm either side of the longitudinal plane through the vertical axis.
NOTE: The basic plane and the longitudinal plane through the vertical axis are defined in ISO/DIS 6220.

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