

## Annex 8

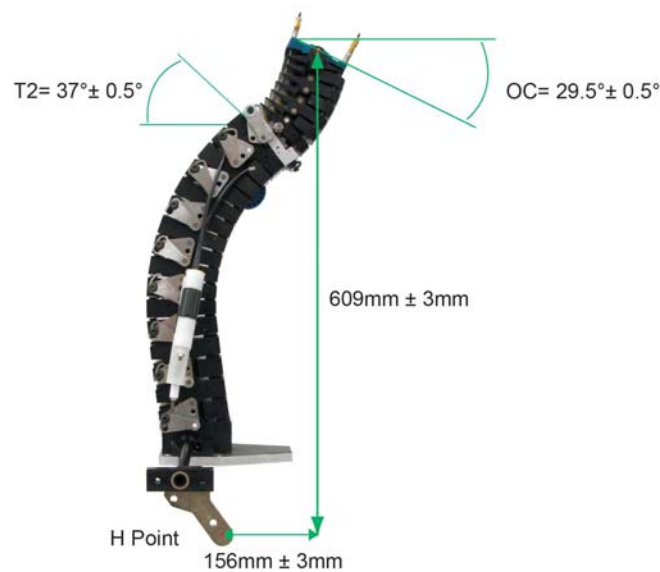
### Dynamic Performance Test Procedure

[...]

#### 2.2.2. BioRID II Requirements

These tests should be conducted with a BioRID IIg or later revision dummy. The dummy should comply with both spine stature and dynamic response specifications before the test.

2.2.2.1 Spine Curvature Check – With the pelvis adapter plate placed on a level surface with the occipital condyle (OC) angle at  $29.5^\circ (\pm 0.5)$ , the T2 angle at  $37^\circ (\pm 0.5)$ , and the neck plate laterally level ( $\pm 0.5$ ), the distance in (X) between the H-Point and the OC pin should be 156 mm ( $\pm 3$ ) and the distance in (Z) between the H-Point and the OC pin should be 609 mm ( $\pm 3$ ). (see figure and table below)



Spine Curvature Check

Table : Spine Curvature Specifications

Measurement	Specification
Angle of occipital interface plate relative to horizontal	$29.5^{\circ} \pm 0.5^{\circ}$
Angle of T2 vertebra relative to horizontal	$37.0^{\circ} \pm 0.5^{\circ}$
Angle of neck plate (lateral)	$0^{\circ} \pm 0.5^{\circ}$
H-point indicator to occipital condyle pin (horizontal)	$156 \text{ mm} \pm 3\text{mm}$
H-point indicator to occipital condyle pin (vertical)	$609 \text{ mm} \pm 3\text{mm}$

2.2.2.2 Calibration – The dynamic response of BioRID is checked by attaching the spine, torso and head to a mini-sled that is impacted through foam by a 33.4 kg probe and a velocity of  $4.76 \pm 0.1$  m/s. The specified response of the dummy and detailed test specifications are described in Test Procedure: Calibration of BioRID II available from Denton ATD, Inc. Generally, if the dummy's spine curvature changes so that it does not meet the dimensional specifications described in section 2.2.2.1, then likely it will no longer meet the dynamic response specifications.

2.2.2.3 Clothing – The dummy should be dressed with two pairs of close-fitting, knee-length, spandex (e.g. lycra) pants and two close-fitting, short-sleeved spandex shirts. The under layer of clothes should be worn with the shiny/smooth side of the fabric facing out and the over-clothes with the shiny/smooth side against the underclothes (i.e. dull side facing out). In addition, the dummy may wear a short-sleeved cotton shirt over its spandex shirts. The dummies feet should be shod with size 11 (45 European or 27.9 cm) Oxford-style, hard-soled, work shoes (e.g. MIL-S-13192P).

2.2.2.4 Instrumentation – The instrumentation required to perform the evaluation is a triaxial accelerometer located at the CoG of the dummy head and the upper neck load force sensor located at the top of the dummy spine.

2.2.2.5 Data Acquisition and Processing – The measurement data shall be recorded according to ISO 6487 or SAE J211/1. Table below specifies the channel frequency classes for each necessary measurement. Measurement data shall be considered for evaluation until the point in time at which the head leave the contact from the head restraint or at 300 ms after T-zero, whichever occurs first.

Position	Measurement	Filtering
Head X	Acceleration	CFC 60
Head Y	Acceleration	CFC 1000
Head Z	Acceleration	CFC 1000
Neck Load Force X	Force	CFC 1000

2.3. Equipment for measuring and recording sled accelerations.