

§ 572.152 Head assembly and test procedure.

(a) The head assembly (refer to § 572.150(a)(1)(i)) for this test consists of the assembly (drawing 921022–001), tri-axial mount block (SA572–80), and 3 accelerometers (drawing SA572–S4).

(b) *Frontal and rear impact.* (1) Frontal impact. When the head assembly in paragraph (a) of this section is dropped from a height of 376.0±1.0 mm (14.8±0.04 in) in accordance with paragraph (c)(3)(i) of this section, the peak resultant acceleration measured at the head CG shall not be less than 100 g or more than 120 g. The resultant acceleration vs. time history curve shall be unimodal, and the oscillations occurring after the main pulse shall be less than 17 percent of the peak resultant acceleration. The lateral acceleration shall not exceed ±15 g's.

(2) *Rear impact.* When the head assembly in paragraph (a) of this section is dropped from a height of 376.0±1.0 mm (14.8±0.04 in) in accordance with paragraph (c)(3)(ii) of this section, the peak resultant acceleration measured at the head CG shall be not less than 55 g and not more than 71 g. The resultant acceleration vs. time history curve shall be unimodal, and the oscillations occurring after the main pulse shall be less than 17 percent of the peak resultant acceleration. The lateral acceleration shall not exceed ±15 g's.

(c) *Head test procedure.* The test procedure for the head is as follows:

(1) Soak the head assembly in a controlled environment at any temperature between 18.9 and 25.6 °C (66 and 78 °F) and at any relative humidity between 10 and 70 percent for at least four hours prior to a test. These temperature and humidity levels shall be maintained throughout the entire testing period specified in this section.

(2) Before the test, clean the impact surface of the head skin and the steel impact plate surface with isopropyl alcohol, trichlorethane, or an equivalent. Both impact surfaces shall be clean and dry for testing.

(3)(i) For a frontal impact test, suspend the head assembly with its midsagittal plane in vertical orientation as shown in Figure R1 of this subpart. The lowest point on the forehead is 376.0±1.0 mm (14.8 ±0.04 in) from the

impact surface. The 3.30 mm (0.13 in) diameter holes located on either side of the dummy's head are used to ensure that the head is level with respect to the impact surface. The angle between the lower surface plane of the neck transducer mass simulator (drawing 910420–003) and the plane of the impact surface is 45 ±1 degrees.

(ii) For a rear impact test, suspend the head assembly with its midsagittal plane in vertical orientation as shown in Figure R2 of this subpart. The lowest point on the back of the head is 376.0±1.0 mm (14.8 ±0.04 in) from the impact surface. The 3.30 mm (0.13 in) diameter holes located on either side of the dummy's head are used to ensure that the head is level with respect to the impact surface. The angle between the lower surface plane of the neck transducer structural replacement (drawing 910420–003) and the impact surface is 90 ±1 degrees.

(4) Drop the head assembly from the specified height by a means that ensures a smooth, instant release onto a rigidly supported flat horizontal steel plate which is 50.8 mm (2 in) thick and 610 mm (24 in) square. The impact surface shall be clean, dry and have a micro finish of not less than 203.2 × 10–6 mm (8 micro inches) (RMS) and not more than 2032.0 × 10–6 mm (80 micro inches) (RMS).

(5) Allow at least 2 hours between successive tests of the head assembly at the same impact point. For head impacts on the opposite side of the head, the 30-minute waiting period specified in § 572.155(m) does not apply.

§ 572.153 Neck-headform assembly and test procedure.

(a) The neck and headform assembly (refer to §§ 572.150(a)(1)(ii) and 572.150(a)(1)(iii)) for the purposes of this test consists of parts shown in CRABI neck test assembly (drawing TE–3200–100);

(b) When the neck and headform assembly, as defined in § 572.153(a), is tested according to the test procedure in § 572.153(c), it shall have the following characteristics:

(1) *Flexion.* (i) Plane D referenced in Figure R3 of this subpart shall rotate in the direction of pre-impact flight