

Subpart M—Side Impact Hybrid Dummy 50th Percentile Male

SOURCE: 63 FR 41470, Aug. 4, 1998, unless otherwise noted.

§ 572.110 Materials incorporated by reference.

(a) The following materials are hereby incorporated by reference in Subpart M:

(1) The Anthropomorphic Test Dummy Parts List, SID/Hybrid III part 572, subpart M, dated May 10, 1997.

(2) The SID/Hybrid III Part 572 Subpart M User's Manual, dated May 1997.

(3) Drawing number 96-SIDH3-001, titled, "Head-Neck Bracket," dated August 30, 1996.

(4) Drawing number 96-SIDH3-006, titled, "Upper and Middle Shoulder Foam," dated May 10, 1997.

(5) Drawing number SA-SIDH3-M001, titled, "Complete Assembly SIDH3," dated April 19, 1997.

(6) Drawing number 78051-61X, Revision C, titled "Head Assembly—complete," dated March 28, 1997.

(7) Drawing number 78051-90, Revision A, titled "Neck Assembly—complete," dated May 20, 1978.

(8) Dummy assembly drawing number SA-SID-M030, Revision A, titled "Thorax Assembly—complete," dated May 18, 1994.

(9) Dummy assembly drawing SA-SID-M050, revision A, titled "Lumbar Spine Assembly," dated May 18, 1994.

(10) Dummy assembly drawing SA-150 M060, revision A, titled "Pelvis and Abdomen Assembly," dated May 18, 1994.

(11) Dummy assembly drawing SA-SID-053, revision A, titled "Lumbar Spine Assembly," dated May 18, 1994.

(12) Dummy assembly drawing SA-SID-M080, titled "Leg Assembly, Right," dated August 13, 1987.

(13) Dummy assembly drawing SA-SID-M081, titled "Leg Assembly, Left," dated August 13, 1987.

(14) Drawing number 78051-383X, Revision P, titled "Neck Transducer Structural Replacement," dated November 1, 1995.

(15) The Society of Automotive Engineers (SAE) J1733 Information Report, titled "Sign Convention for Vehicle Crash Testing," dated December 1994.

(16) SAE Recommended Practice J211, "Instrumentation for Impact Tests," Parts 1 and 2, dated March 1995.

(b) The incorporated materials are available as follows:

(1) The Director of the Federal Register approved those materials incorporated by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies of the materials may be inspected at NHTSA's Docket Section, 400 Seventh Street S.W., room 5109, Washington, DC, or at the Office of the Federal Register, 800 North Capitol Street, N.W., Suite 700, Washington, DC.

(2) The parts lists, user's manual and drawings referred to in paragraphs (a)(1) through (a)(14) of this section are available from Reprographic Technologies, 9000 Virginia Manor Road, Beltsville, MD 20705 (301) 419-5070.

(3) The SAE materials referred to in paragraphs (a)(15) and (a)(16) of this section are available from the Society of Automotive Engineers, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

§ 572.111 General description.

(a) The dummy consists of component parts and component assemblies defined in drawing SA-SIDH3-M001, dated April 19, 1997, which are described in approximately 200 drawings and specifications that are set forth in §§ 572.32, 572.33 and 572.41(a)(3),(4),(5) and (6) of this part, and in the drawing of the Adaptor Bracket 96-SIDH3-001.

(1) The head assembly consists of the assembly specified in subpart E (§ 572.32) and conforms to each of the drawings subtended under drawing 78051-61X rev. C.

(2) The neck assembly consists of the assembly specified in subpart E (§ 572.33) and conforms to each of the drawings subtended under drawing 78051-90 rev. A.

(3) The thorax assembly consists of the assembly shown as number SID 053 and conforms to each applicable drawing subtended by number SA-SID M030 rev. A.

(4) The lumbar spine consists of the assembly specified in subpart B (§ 572.9(a)) and conforms to drawing SA 150 M050 and drawings subtended by SA-SID M050 rev. A.

§572.112

(5) The abdomen and pelvis consist of the assembly and conform to the drawings subtended by SA 150 M060, the drawings subtended by SA 150 M060 rev. A and the drawings subtended by SA-SID-087 sheet 1 rev. H, and SA-SID-87 sheet 2 rev. H.

(6) The lower limbs consist of the assemblies specified in Subpart B (§572.10) shown as SA 150 M080 and SA 150 M081 in Figure 1 and SA-SID-M080 and SA-SID-M081 and conform to the drawings subtended by those numbers.

(7) The neck mounting adaptor bracket conforms to drawing 96-SIDH3-001.

(8) Upper and middle shoulder foams conform to drawing 96-SIDH3-006.

(b) The structural properties of the dummy are such that the dummy conforms to the specifications of this subpart in every respect before being used in vehicle tests specified in Standard 201.

(c) Disassembly, inspection and assembly procedures, external dimensions, weight and drawing list are set forth in the SIDH3 User's Manual, dated May 1997.

(d) Sign convention for signal outputs is given in the reference document SAE J1733 of 1994-12, "Sign Convention for Vehicle Crash Testing."

§572.112 Head assembly.

The head assembly consists of the head (drawing 78051-61X, rev. C) with the neck transducer structural replacement (drawing 78051-383X, rev. P) and three (3) accelerometers that are mounted in conformance to §572.36 (c).

(a) Test procedure. (1) Soak the head assembly in a test environment at any

49 CFR Ch. V (10-1-02 Edition)

temperature between 18.9 and 25.6 degrees C. (66 to 78 degrees F.) and at a relative humidity between 10 percent and 70 percent for a period of at least four (4) hours prior to its application in a test.

(2) Clean the impact surface of the head skin and impact plate surface, described in paragraph (a)(4) of this section, with 1,1,1 trichloroethane or equivalent prior to the test.

(3) Suspend the head, as shown in Figure 51, so that the midsagittal plane makes an angle of 35 ± 1 degrees with the impact surface and its anterior-posterior axis is horizontal ± 1 degree.

(4) Drop the head from a height of 200 ± 0.25 mm (7.87 ± 0.01 inches), measured from the lowest point on the head, by a means that ensures a smooth, clean release into a rigidly supported flat horizontal steel plate, which is 51 ± 2 mm (2.0 ± 0.01 in.) thick and 610 ± 10 mm (24.0 ± 0.4 in) square. The plate shall have a dry surface and shall have a micro-finish of 0.2 microns (8 microinches) to 2.0 microns (80 microinches).

(5) Allow at least two (2) hours between successive tests on the same head.

(b) Performance criteria. (1) When the head assembly is dropped in accordance with §572.112(a), the measured peak resultant acceleration shall be between 120 and 150 G's.

(2) The resultant acceleration-time curve shall be unimodal to the extent that oscillations occurring after the main acceleration pulse shall not exceed 15 percent (zero to peak) of the main pulse. The longitudinal acceleration vector shall not exceed 15 G's.