

child restraint at any time during the rotation or the three second period. The specified rate of rotation shall be attained in not less than one half second and not more than one second, and the rotating combination shall be brought to a stop in not less than one half second and not more than one second.

S9 Dummy clothing and preparation.

S9.1 Type of clothing.

(a) *Newborn dummy.* When used in testing under this standard, the dummy is unclothed.

(b) *Nine-month-old dummy.* When used in testing under this standard, the dummy is clothed in terry cloth polyester and cotton size 1 long sleeve shirt and size 1 long pants, with a total mass of 0.136 kg.

(c) *Three-year-old and six-year-old dummies.* When used in testing under this standard, the dummy is clothed in thermal knit, waffle-weave polyester and cotton underwear or equivalent, a size 4 long-sleeved shirt (3-year-old dummy) or a size 5 long-sleeved shirt (6-year-old dummy) having a mass of 0.090 kg, a size 4 pair of long pants having a mass of 0.090 kg, and cut off just far enough above the knee to allow the knee target to be visible, and size 7M sneakers (3-year-old dummy) or size 12 1/2M sneakers (6-year-old dummy) with rubber toe caps, uppers of dacron and cotton or nylon and a total mass of 0.453 kg.

S9.2 *Preparing clothing.* Clothing other than the shoes is machined-washed in 71° C to 82° C and machine-dried at 49° C to 60° C for 30 minutes.

S9.3 *Preparing dummies.* Before being used in testing under this standard, dummies must be conditioned at any ambient temperature from 19° C to 25.5° C and at any relative humidity from 10 percent to 70 percent for at least 4 hours.

S10 Positioning the dummy and attaching the system belts.

S10.1 Car beds.

Place the test dummy in the car bed in the supine position with its midsagittal plane perpendicular to the center SORL of the standard seat assembly, in the case of an add-on car bed, or perpendicular to the longitudinal axis of the specific vehicle shell or the specific vehicle, in the case of a built-in car bed. Position the dummy within the car bed in accordance with the instructions for child positioning that the bed manufacturer provided with the bed in accordance with S5.6.

S10.2 Restraints other than car beds.

S10.2.1 *Newborn dummy and nine-month-old dummy.* Position the test dummy according to the instructions for

child positioning that the manufacturer provided with the system under S5.6.1 or S5.6.2, while conforming to the following:

(a) Prior to placing the 9-month-old test dummy in the child restraint system, place the dummy in the supine position on a horizontal surface. While placing a hand on the center of the torso to prevent movement of the dummy torso, rotate the dummy legs upward by lifting the feet 90 degrees. Slowly release the legs but do not return them to the flat surface.

(b)(1) When testing forward-facing child restraint systems, holding the 9-month-old test dummy torso upright until it contacts the system's design seating surface, place the 9-month-old test dummy in the seated position within the system with the mid-sagittal plane of the dummy head—

(i) Coincident with the center SORL of the standard seating assembly, in the case of the add-on child restraint system, or

(ii) Vertical and parallel to the longitudinal center line of the specific vehicle shell or the specific vehicle, in the case of a built-in child restraint system.

(b)(2) When testing rear-facing child restraint systems, place the newborn or 9-month old dummy in the child restraint system so that the back of the dummy torso contacts the back support surface of the system. For a child restraint system which is equipped with a fixed or movable surface described in S5.2.2.2 which is being tested under the conditions of test configuration II, do not attach any of the child restraint belts unless they are an integral part of the fixed or movable surface. For all other child restraint systems and for a child restraint system with a fixed or movable surface which is being tested under the conditions of test configuration I, attach all appropriate child restraint belts and tighten them as specified in S6.1.2. Attach all appropriate vehicle belts and tighten them as specified in S6.1.2.

Position each movable surface in accordance with the instructions that the manufacturer provided under S5.6.1 or S5.6.2. If the dummy's head does not remain in the proper position, it shall be taped against the front of the seat back surface of the system by means of a single thickness of 6 mm-wide paper masking tape placed across the center of the dummy's face.

(c)(1) When testing forward-facing child restraint systems, extend the arms of the 9-month-old test dummy as far as possible in the upward vertical direction. Extend the legs of the 9-month-old dummy as far as possible in the forward horizontal direction, with

the dummy feet perpendicular to the centerline of the lower legs. Using a flat square surface with an area of 2580 square mm, apply a force of 178 N, perpendicular to:

(i) The plane of the back of the standard seat assembly, in the case of an add-on system, or

(ii) The back of the vehicle seat in the specific vehicle shell or the specific vehicle, in the case of a built-in system, first against the dummy crotch and then at the dummy thorax in the midsagittal plane of the dummy. For a child restraint system with a fixed or movable surface described in S5.2.2.2, which is being tested under the conditions of test configuration II, do not attach any of the child restraint belts unless they are an integral part of the fixed or movable surface. For all other child restraint systems and for a child restraint system with a fixed or movable surface which is being tested under the conditions of test configuration I, attach all appropriate child restraint belts and tighten them as specified in S6.1.2. Attach all appropriate vehicle belts and tighten them as specified in S6.1.2. Position each movable surface in accordance with the instructions that the manufacturer provided under S5.6.1 or S5.6.2.

(c)(2) When testing rear-facing child restraints, position the newborn and 9-month-old dummy arms and legs vertically upwards and then rotate each arm and leg downward toward the dummy's lower body until the arm contacts a surface of the child restraint system or the standard seat assembly in the case of an add-on child restraint system, or the specific vehicle shell or the specific vehicle, in the case of a built-in child restraint system. Ensure that no arm is restrained from movement in other than the downward direction, by any part of the system or the belts used to anchor the system to the standard seat assembly, the specific shell, or the specific vehicle.

S10.2.2 *Three-year-old and six-year-old test dummy.* Position the test dummy according to the instructions for child positioning that the restraint manufacturer provided with the system in accordance with S5.6.1 or S5.6.2, while conforming to the following:

(a) Holding the test dummy torso upright until it contacts the system's design seating surface, place the test dummy in the seated position within the system with the midsagittal plane of the test dummy head—

(1) Coincident with the center SORL of the standard seating assembly, in the case of the add-on child restraint system, or