



Designation: D 4910 – 02

Standard Tables of Body Measurements for Infants, Sizes 0 to 24¹

This standard is issued under the fixed designation D 4910; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

INTRODUCTION

These tables were developed from data published by the U.S. Department of Commerce. These data were based on original research conducted by the U.S. Department of Agriculture² in the 1930's. This standard takes into consideration children's growth patterns reflected in the 1980 charts for the National Center for Health Statistics³ and the 1977 Anthropometric Study of U.S. Infants and Children conducted by the University of Michigan.⁴ All sudden shifts of proportion have been eliminated so as to reflect the gradual growth and development of the infant. To verify the proposed body measurements, a limited sampling of children was measured and fitted with garments made as directed in these tables.

1. Scope

1.1 These tables list body measurements of infants from size 0 to 24. Although these measurements are body measurements, they can be used as a baseline in designing apparel for infants in this size range when taking into account such factors as fabric type, ease for body movement, styling, and fit.

1.2 Infants 0–24 designate sizes and do not refer to age.

1.3 The values stated in either acceptable SI units or inch-pound units shall be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system must be used independently of the other, without combining values in any way.

1.4 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 123 Terminology Relating to Textile Materials⁵

D 5219 Terminology Relating to Body Dimensions for Apparel Sizing⁶

2.2 *ISO Standard:*

ISO 3635 Size Designation of Clothes, Definitions, and Body Measurement Procedures⁷

3. Terminology

3.1 *Definitions:*

3.1.1 For definitions relating to body dimensions, refer to Terminology **D 5219**.

3.1.2 For definitions of other textile terms used in this standard, refer to Terminology **D 123**.

4. Significance and Use

4.1 The use of the body measurement information in **Tables 1 and 2** will assist manufacturers in developing patterns and garments that are consistent with the current anthropometric characteristics of the population of interest. This practice should in turn reduce or minimize consumer confusion and dissatisfaction related to apparel sizing. (Also refer to **ISO 3635 Size Designation Procedures**.)

5. Apparatus

5.1 *Tape Measure*, dimensionally stable and approximately 15-mm (1/2-in.) wide and accurately graduated in mm (1/16-in.) increments.

5.2 *Plastic Goniometer*, to measure the degree of shoulder slope.

¹ These tables are under the jurisdiction of ASTM Committee D13 on Textiles and are the direct responsibility of Subcommittee D13.55 on Body Measurement for Apparel Sizing.

Current edition approved Sept. 10, 2002. Published December 2002. Originally published as D 4910 – 89. Last previous edition D 4910 – 99.

² O'Brien, Ruth, et al., *Body Measurement to American Boys and Girls for Garment and Pattern Construction*, U.S. Department of Agriculture, Miscellaneous Publication No. 366, July 1941.

³ Available from National Center for Health Statistics.

⁴ Snyder, Lawrence, *Anthropometry of Infants, Children, and Youth to Age 18*, University of Michigan, May 1977.

⁵ *Annual Book of ASTM Standards*, Vol 07.01.

⁶ *Annual Book of ASTM Standards*, Vol 07.02.

⁷ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036.

TABLE 1 Infants 0 to 24—Body Measurements, SI Units

Size	0 to 3	3 to 6	6 to 9	9 to 12	12 to 18	18 to 24
Stature, cm	Up to 60	60 to 68	69 to 72	73 to 78	79 to 83	84 to 88
Body Weight, kg	Up to 6.5	6.6 to 7.4	7.5 to 8.2	8.3 to 9.2	9.3 to 11.0	11.1 to 12.6
Girth Measurements, cm						
Chest Girth	41.9	44.4	45.7	47.0	49.5	52.1
Waist Girth	45.7	47.0	47.6	48.3	49.5	50.8
Hip Girth	43.2	45.7	47.0	48.3	50.8	53.3
Neck Base Girth	21.0	22.2	22.9	23.5	24.4	25.4
Armscye Girth	15.2	16.8	17.6	18.4	20.0	21.6
Upper-Arm Girth	13.0	13.7	14.0	14.3	14.9	15.6
Elbow Girth	14.6	15.2	15.6	15.9	16.5	17.1
Wrist Girth	10.2	10.5	10.6	10.8	11.1	11.4
Thigh Girth	23.5	25.1	25.9	26.7	28.3	29.8
Ankle Girth	11.4	12.1	12.4	12.7	13.3	14.0
Total Vertical Trunk Length	63.5	68.6	71.1	73.7	78.7	83.8
Total Crotch Length	28.3	31.1	32.5	34.0	36.8	39.7
Head Girth	41.9	43.2	44.4	46.4	48.3	2.5
Vertical Measurements, cm						
Cervicale Height	43.8	50.8	54.3	57.8	64.8	71.8
Head and Neck Length	14.6	15.2	15.6	15.9	16.5	17.1
Center Back Waist Length	15.2	16.5	17.1	17.8	19.0	20.3
Center Front Waist Length	14.6	15.9	16.5	17.1	18.4	19.7
Cervicale to Knee Height	31.1	35.6	37.8	40.0	44.4	48.9
Scye Depth	8.9	9.5	9.8	10.2	10.8	11.4
Waist Height	28.6	34.3	37.1	40.0	45.7	51.4
Hip Height	22.2	27.3	29.8	32.4	37.5	42.5
Waist to Knee Height	15.9	19.0	20.6	22.2	25.4	28.6
Waist to Knee	19.0	23.5	25.7	27.9	32.4	36.8
Knee Height	12.7	15.2	16.5	17.8	20.3	22.9
Ankle Height	3.5	3.8	4.0	4.1	4.4	4.8
Width and Length Measurements, cm						
Shoulder Length	6.7	7.0	7.1	7.3	7.6	7.9
Across Back Shoulder Width	18.4	19.7	20.3	21.0	22.2	23.5
Arm Length	17.8	20.6	22.1	23.5	26.4	29.2
Cervicale to Wrist Length	27.0	30.5	32.2	34.0	37.5	41.0
Foot Length	9.5	10.8	11.4	12.1	13.3	14.6
Foot Width	4.4	4.8	5.1	5.4	5.7	6.0

5.3 *Scale*, standard, calibrated body weight type for infants.

5.4 *Plastic Ruler*, dimensionally stable, flat and accurately graduated in mm ($1/16$ -in.) increments.

6. Procedure

6.1 General:

6.1.1 For all vertical measurements, subject is to be lying down on its back, on a flat surface, with legs extended.

6.1.2 For all horizontal measurements, hold subject in a vertical position.

6.1.3 Take measurements over nude body.

6.1.4 Take all measurements from the same side of the body for consistency.

6.1.5 Refer to Terminology **D 5219** for the location of all points to be measured.

6.2 Body Measurements:

6.2.1 *Stature*—Measure the straight distance from the top of the head to the soles of the feet while subject is lying down flat with legs extended and foot positioned at 1.57 rad (90° to the leg).

6.2.2 *Body Weight*—Weigh the nude infant on a calibrated infant scale.

6.2.3 *Chest Girth*—Measure the horizontal circumference around the body under the arms and across the fullest part of the chest apex including the lower portion of the shoulder blades.

6.2.4 *Waist Girth*—Measure the minimum horizontal circumference around the body at waist height.

6.2.5 *Hip Girth*—Measure horizontally the maximum circumference around the body at hip height.

6.2.6 *Neck Base Girth*—Measure the circumference of the neck over the cervicale at the back, and the top of the collarbone at the front.

6.2.7 *Armscye Girth*—Measure the distance from the shoulder joint through the front break-point, the armpit, the back-break point, and to the starting point with the arms down.

6.2.8 *Upper-Arm Girth*—Measure the maximum circumference of the arm midway between the elbow and shoulder joints with the arm bent 1.57 rad (90°).

6.2.9 *Elbow Girth*—Measure the maximum circumference of the elbow over the prominence of the elbow bone with the arm bent 1.57 rad (90°).

6.2.10 *Wrist Girth*—Measure the maximum circumference of the writ over the inner and outer prominence of the wrist bones.

6.2.11 *Thigh Girth*—Measure the maximum circumference of the upper leg close to the crotch.

6.2.12 *Ankle Girth*—Measure the maximum circumference of the ankle over the greatest prominence of the ankle bones.

6.2.13 *Total Vertical Trunk*—Measure the circumference from a point on the right shoulder midway between the neck base and shoulder joint down the back, through the crotch, and up over the prominence of the right chest apex to the starting point, avoiding constriction at the crotch.