



Designation: D8241/D8241M – 19

Standard Tables of Body Measurements for Young Men Type, Size Range 32 – 48¹

This standard is issued under the fixed designation D8241/D8241M; 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 body measurement tables were developed from evaluation of data currently used in the apparel industry.

These tables were developed from data published by the U.S. Department of Commerce; the Caesar Study; the Size USA Study; current U.S. industry; and studies, scans, and documentation from Alvanon Inc.² These tables take into consideration young men at a standard height of 178 cm [5 ft 10 in.] (65 % of average U.S. population) taking into account the decrease and increase in body weight that shift a person from one size to another, while this person does not gain in height. Major evaluation was done and reviewing the incremental growth at different major body points has been addressed and defined identifying increase and decrease at different rates in specific areas: chest/bust, waist, high hip, and hip/seat. Additionally, to serve the industry better, incremental movement between sizes was reviewed ensuring smooth transition between sizes. To verify the proposed body measurements, a three-dimensional avatar was created in the young men size range 32 through 48 by Alvanon Inc. for a visual reference.

1. Scope

1.1 These tables list body measurements of young men figure type sizes 32-48. Although these are body measurements, they can be used as a baseline in designing apparel for young men in this size range when considering such factors as fabric type, ease for body movement, styling, and fit.

1.2 These tables list body measurements for the complete range of young men sizing.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system are not necessarily exact equivalents; therefore, to ensure conformance with the standard, each system shall be used independently of the other, and values from the two systems shall not be combined.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.

1.5 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*³

D123 Terminology Relating to Textiles

D5219 Terminology Relating to Body Dimensions for Apparel Sizing

2.2 *ISO Standard:*⁴

ISO 3635:1981 Size Designation of Clothes, Definitions, and Body Measurement Procedures

3. Terminology

3.1 *Definitions:*

³ For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

¹ This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.55 on Body Measurement for Apparel Sizing.

Current edition approved Jan. 1, 2019. Published January 2019. DOI: 10.1520/D8241_D8241M-19.

² Caesar: Summary Statistics for the Adult Population (ages 18-65) of the United States of America, June 2002; Size USA North America Sizing Survey, 2004; 2000 CDC Growth Charts for the United States: Methods and Development, National Center for Health Statistics, *Vital Health Stat*, Series 11, No. 246, 2002; CDC Advance Data No. 361, 7/5/2005; and Anthropometry of Infants, Children and Youths to Age 18 for Product Safety Design, May 31, 1977.



3.1.1 For definitions relating to body dimensions, refer to Terminology D5219.

3.1.2 For definitions of other textile terms used in this standard, refer to Terminology D123.

4. Significance and Use

4.1 The use of the body measurement information in Table 1 and Table 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).

4.2 Three-dimensional avatars depicting each of the young men sizes were created by Alvanon, Inc. and included in this standard to assist manufacturers in visualizing the posture, shape, and proportions generated by the measurements charts in Table 1 and Table 2. (See Figs. 1-6.)

5. Apparatus

5.1 *Tape Measure*, dimensionally stable, double coated and approximately 1.5 cm [½ in.] wide and graduated accurately in centimeters or inches.

5.2 *Plastic goniometer*, to measure the radian (degree) of shoulder slope.

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

5.4 *Ruler*, metal.

6. Procedure

6.1 For body dimensions, refer to Terminology D5219.

7. Keywords

7.1 apparel; body measurements; garment sizes; tables; young mens



D8241/D8241M – 19

TABLE 1 Body Measurements, SI Units

	32	33	34	35	36	37	38	39	40	41	42	44	46	48
Body Weight (mean), lb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Body Weight (range), lb	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Girth Measurements, cm	32	33	34	35	36	37	38	39	40	41	42	44	46	48
Head Girth (min)							54.93							
Head Girth (max)							60.96							
Neck Base Girth	37.15	37.78	38.42	39.05	39.69	40.32	40.96	41.59	42.23	42.86	43.50	44.77	46.04	47.31
Mid-Neck Girth	34.93	35.56	36.20	36.83	37.47	38.10	38.74	39.37	40.01	40.64	41.28	42.55	43.82	45.09
Shoulder Girth	98.74	100.97	103.19	105.41	107.63	109.22	111.76	114.30	116.84	119.38	121.92	126.05	130.18	134.30
Upper Chest/Bust Girth	83.82	86.36	88.90	91.44	93.98	96.52	99.06	101.60	104.14	106.68	109.22	113.67	118.43	123.19
Chest/Bust Girth	81.28	83.82	86.36	88.90	91.44	93.98	96.52	99.06	101.60	104.14	106.68	111.76	116.84	121.92
Under Chest/Bust Girth	74.93	77.47	80.01	82.55	85.09	87.63	90.17	92.71	95.25	97.79	100.33	105.41	110.49	115.57
Waist Girth	66.04	68.58	71.12	73.66	76.20	78.74	81.28	83.82	86.36	88.90	91.44	97.16	102.87	108.59
Preferred Waist Girth	69.22	71.76	74.30	76.84	79.38	81.92	84.46	87.00	89.54	92.08	94.62	99.70	105.09	110.49
High-Hip Girth	70.80	73.34	75.88	78.42	80.96	83.50	86.04	88.58	91.12	93.66	96.20	101.28	106.68	112.08
Hip/Seat Girth	81.28	83.82	86.36	88.90	91.44	93.98	96.52	99.06	101.60	104.14	106.68	111.13	115.57	120.02
Thigh Girth	48.26	49.53	50.80	52.07	53.34	54.61	55.88	57.15	58.42	59.69	60.96	62.87	64.77	66.68
Mid-Thigh Girth	47.63	48.90	50.17	51.44	52.71	53.98	55.25	56.52	57.79	59.06	60.33	61.60	62.87	64.14
Knee Girth	34.61	34.61	35.24	36.51	37.15	37.78	38.42	39.37	40.32	41.28	42.23	44.13	46.04	47.94
Calf Girth	33.02	33.66	33.66	34.93	35.56	36.20	36.83	37.78	38.74	39.69	40.64	42.86	45.09	47.31
Ankle Girth	23.50	23.81	24.13	24.45	24.77	25.08	25.40	25.72	26.04	26.35	26.67	26.99	27.31	27.62
Arm/Girth	37.47	38.10	38.74	39.37	40.01	40.64	41.28	41.91	42.55	43.18	43.82	44.77	45.72	46.67
Upper-Arm Girth	27.31	27.94	28.58	29.21	29.85	30.48	32.07	33.02	33.97	34.93	35.88	37.15	38.74	40.32
Elbow Girth	25.08	25.72	26.35	26.99	27.62	28.26	28.89	29.53	30.16	30.80	31.43	32.39	33.66	34.93
Forearm Girth	22.54	23.18	23.81	24.45	25.08	25.72	26.35	26.99	27.62	28.26	28.89	29.85	31.12	32.39
Wrist Girth	17.15	17.15	17.46	17.46	17.78	17.78	18.42	18.42	18.73	18.73	19.05	19.37	20.32	20.32
Hand Girth	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trunk Length (total vertical girth)	159.07	159.70	160.34	160.97	161.93	162.88	163.51	164.47	165.42	167.01	168.28	171.13	173.04	174.63
Vertical Measurements	32	33	34	35	36	37	38	39	40	41	42	44	46	48
Height, cm	176.53	176.53	176.53	176.53	176.53	176.53	176.53	176.53	176.53	176.53	176.53	177.80	177.80	177.80
Head and Neck Length	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40	25.40
Scye Depth	15.56	15.56	15.88	15.88	16.19	16.19	16.51	16.51	16.83	17.15	17.46	17.78	17.78	17.78
Cervical Height	151.13	151.13	151.13	151.13	151.13	151.13	151.13	151.13	151.13	151.13	151.13	152.40	152.40	152.40
Cervical to Crotch Height	71.44	71.44	71.44	71.44	71.44	71.44	71.44	71.44	71.44	71.44	71.44	72.39	72.39	72.39
Cervical to Knee Height	103.82	103.82	103.82	103.82	103.82	103.82	103.82	103.82	103.82	103.82	103.82	105.09	105.09	105.09
Waist to Hip/Seat Height	17.46	17.46	17.46	17.46	17.46	17.46	17.46	17.46	17.46	17.46	17.46	18.73	18.73	18.73
Waist to Knee Height	59.69	59.69	59.69	59.69	59.69	59.69	59.69	59.69	59.69	59.69	59.69	60.64	60.64	60.64
Waist Height	107.00	107.00	107.00	107.00	107.00	107.00	107.00	107.00	107.00	107.00	107.00	107.95	107.95	107.95
Front Preferred Waist Height	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	99.38	99.38	99.38
Back Preferred Waist Height	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	101.60	102.55	102.55	102.55
High-hip Height	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	98.43	99.38	99.38	99.38
Hip/Seat Height	89.54	89.54	89.54	89.54	89.54	89.54	89.54	89.54	89.54	89.54	89.54	89.22	89.22	89.22
Crotch Height	79.69	79.69	79.69	79.69	79.69	79.69	79.69	79.69	79.69	79.69	79.69	80.01	80.01	80.01
Rise Height	27.31	27.31	27.31	27.31	27.31	27.31	27.31	27.31	27.31	27.31	27.31	27.94	27.94	27.94
Knee Height	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31	47.31
Ankle Height	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62	7.62
Width and Length Measurements, cm	32	33	34	35	36	37	38	39	40	41	42	44	46	48
Center Front Waist Length	40.01	40.01	40.01	40.01	40.01	40.01	40.01	40.32	40.32	40.64	40.96	41.59	41.59	41.91
Center Back Waist Length	45.72	45.72	45.72	45.72	45.72	45.72	45.72	46.04	46.04	46.04	46.36	46.67	46.99	46.99
Side Waist Length	24.45	24.45	24.45	24.13	24.13	23.81	23.50	23.18	22.86	22.54	22.23	22.23	22.23	22.23
Crotch Length	68.58	68.58	69.22	69.85	70.17	70.80	71.44	72.07	72.39	72.71	73.03	74.93	75.88	76.52
Shoulder Length	11.75	11.75	12.07	12.38	12.70	12.70	12.70	12.70	13.02	13.02	13.34	13.65	13.65	13.65
Shoulder Slope	28.50°	28.25°	27.88	27.50°	27.00°	26.50°	26.38°	26.00°	25.75°	25.63°	25.50°	24.75°	24.25°	24.00°
Shoulder Drop	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72	5.72
Across Front Shoulder Width	35.56	36.20	36.83	37.47	38.10	38.74	39.37	40.01	40.64	41.28	41.91	42.86	43.82	44.77
Across Back Shoulder Width	37.47	38.10	38.74	39.37	40.01	40.64	41.28	41.91	42.55	43.18	43.82	44.77	45.72	46.67
Upper Front Chest Width	31.43	32.07	32.70	33.66	34.29	34.93	35.56	36.20	37.15	37.78	38.74	40.64	42.23	43.18
Upper Back Width	33.97	34.93	35.88	36.51	37.47	38.10	39.05	40.01	40.64	41.91	42.55	43.18	44.45	45.72
Front Chest Width	32.07	32.70	33.66	34.29	34.93	35.56	36.51	37.15	38.10	39.05	40.01	41.59	42.86	44.13
Back Width	33.97	34.93	35.88	36.51	37.47	38.42	39.05	40.01	40.96	41.91	42.86	43.18	44.77	46.04
Chest/Bust Point to Chest/Bust Point	22.86	23.50	24.13	24.77	25.40	26.04	26.67	27.31	27.94	28.58	29.21	27.94	29.21	30.48
Neck to Chest Bust Point	24.13	24.77	25.40	26.04	26.67	27.31	27.94	28.58	29.21	29.85	30.48	31.12	31.43	32.39
Chest/Bust Point to Chest/Bust Point (halter)	64.77	66.04	67.63	69.53	71.12	72.71	74.30	75.88	77.47	79.38	81.28	83.19	85.09	87.00
Cervical to Wrist Length	79.69	80.33	80.65	81.28	81.60	82.23	82.55	83.19	83.82	84.46	85.09	85.73	87.00	87.95
Shoulder and Arm Length	72.71	73.03	73.34	73.66	74.30	74.61	74.93	74.93	75.25	75.88	76.52	77.15	77.79	78.42
Arm Length	60.96	61.28	61.28	61.60	61.60	61.91	61.91	62.23	62.55	62.87	63.18	63.82	64.45	64.77
Underarm Length	45.40	45.40	45.40	45.09	44.77	44.77	44.45	44.45	44.45	44.13	43.82	42.55	41.55	40.55
Hand Length	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hand Width	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Foot Length	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Foot Width	NA	NA	NA	2NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA