



Designation: D3657 – 03 (Reapproved 2021)

Standard Specification for Zipper Dimensions¹

This standard is issued under the fixed designation D3657; 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.

1. Scope

1.1 This specification establishes standard dimensions for zippers of all materials for specified size designation; for equivalency, in inch-pound and metric units, of zipper length and length tolerances, of tape width and width tolerances, and of tape end lengths.

1.2 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.

1.3 *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.*

1.4 *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:*²

D123 Terminology Relating to Textiles

D2050 Terminology Relating to Subassemblies Used in the Manufacture of Textiles

D2060 Test Methods for Measuring Zipper Dimensions

3. Terminology

3.1 *Definitions:*

¹ This specification is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.54 on Subassemblies. This specification was developed in cooperation with the Slide Fastener and Closure Association.

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² 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.

3.1.1 For definitions of zipper terms used in this standard, refer to Terminology D2050. For definitions of other textile terminology used in this standard refer to Terminology D123.

4. Sampling

4.1 Sample the lot and select the number of specimens as directed in Test Methods D2060.

5. Dimensions and Permissible Variations

5.1 Zippers shall conform to the dimensions listed in Tables 1-4.

5.2 Tables 2 and 3 include tolerances which represent trade practice and are in common use. The tolerances are not uniform between sizes because of differing requirements of the zippers based on their normal end-use.

5.3 Table 2, within a size, has uniform plus tolerances. Minus tolerances increase nonuniformly with increasing length because that is accepted trade practice based on the requirements of the end products in which the zippers are installed.

5.3.1 Because zipper chain is composed of a series of elements with a prescribed pitch and each element must remain complete to function, it is impossible to manufacture a zipper deliberately to an exact stated length. Therefore a shipment of zippers of a stated length will not likely average the stated length. Both the lot average length and the length of individual zippers should fall within the tolerances in Table 2.

5.4 Table 4 shows the metric conversion for standard inch-pound unit tape end lengths. Tape end length tolerances are not shown due to widely varying end-use requirements and inherent zipper manufacturing dimension variations. Tolerances to be observed should be agreed upon between purchaser and supplier.

6. Test Methods

6.1 *Size*—Determine the zipper size as directed in the mouth width procedure of Test Methods D2060.

6.2 *Zipper Length*—Determine the zipper length as directed in the length of completely assembled zipper procedure of Test Methods D2060.

6.3 *Tape Width*—Determine the zipper tape width as directed in the tape width procedure of Test Methods D2060.

TABLE 1 Zipper Sizes

Size Designation ^A	Slider Mouth Widths	
	mm	[in.]
1 and 2	up to 3.8	up to 0.150
3 and 4	over 3.8 to 5.7	over 0.150 to 0.225
5 and 6	over 5.7 to 7.0	over 0.225 to 0.275
7, 8, 9, and 10	over 7.0	over 0.275

^A Zipper sizes are grouped in this table because the trade buys zippers on an end-use basis. For example, size 1 and 2 zippers are bought and used interchangeably. Each zipper industry member assigns the actual number that is applicable for each particular product.

TABLE 2 Zipper Lengths

Nominal Length ^{A, B}		Tolerance					
cm	[in.]	Size 1 to 4		Size 5 to 6		Size 7 to 10	
		mm	[in.]	mm	[in.]	mm	[in.]
7	3	±3	±1/8	±5	±3/16	±6	±1/4
10	4	±3	±1/8	±5	±3/16	±6	±1/4
12	5	±3	±1/8	±5	±3/16	±6	±1/4
15	6	±3	±1/8	±5	±3/16	±6	±1/4
18	7	±3	±1/8	±5	±3/16	±6	±1/4
20	8	±3	±1/8	±5	±3/16	±6	±1/4
23	9	±3	±1/8	±5	±3/16	±6	±1/4
25	10	±3	±1/8	±5	±3/16	±6	±1/4
28	11	±3	±1/8	±5	±3/16	±6	±1/4
30	12	±3	±1/8	±5	±3/16	±6	±1/4
35	14	+3 -5	+1/8 -3/16	+5 -6	+3/16 -1/4	+6 -8	+1/4 -5/16
38	15	+3 -5	+1/8 -3/16	+5 -6	+3/16 -1/4	+6 -8	+1/4 -5/16
40	16	+3 -5	+1/8 -3/16	+5 -6	+3/16 -1/4	+6 -8	+1/4 -5/16
45	18	+3 -5	+1/8 -3/16	+5 -6	+3/16 -1/4	+6 -8	+1/4 -5/16
50	20	+3 -6	+1/8 -1/4	+5 -8	+3/16 -5/16	+6 -9	+1/4 -3/8
55	22	+3 -6	+1/8 -1/4	+5 -8	+3/16 -5/16	+6 -9	+1/4 -3/8
60	24	+3 -6	+1/8 -1/4	+5 -8	+3/16 -5/16	+6 -9	+1/4 -3/8
65	26	+3 -8	+1/8 -5/16	+5 -9	+3/16 -3/8 ±	+6 -11	+1/4 -7/16
70	28	+3 -8	+1/8 -5/16	+5 -9	+3/16 -3/8	+6 -11	+1/4 -7/16
75	30	+3 -8	+1/8 -5/16	+5 -9	+3/16 -3/8	+6 -11	+1/4 -7/16
80	32	+3 -9	+1/8 -3/8	+5 -11	+3/16 -7/16	+6 -13	+1/4 -1/2
90	36	+3 -9	+1/8 -3/8	+5 -11	+3/16 -7/16	+6 -13	+1/4 -1/2

^A To determine metric nominal length for zippers under 36 in. long which are not shown in this table, multiply the nominal length in inches by 2.54 and round to the nearest 0.5 cm. To determine metric nominal length for zippers over 36 in. long, multiply the nominal length in inches by 2.54 and round to the nearest 5 cm.

^B For lengths under 90 cm [36 in.] long which are not shown in the table, the plus and minus tolerance shall be that shown in the table for the next shorter length. For lengths that exceed 90 cm [36 in.] the plus tolerance shall be that shown in Table 2 for the 90 cm. length. The minus tolerance shall be that shown in Table 2 for the 90 cm. length plus 3 mm [1/8 in.] for each additional 30 cm [12 in.] increment or fraction thereof of length.

TABLE 3 Tape Width

Nominal Width, mm	Tolerance, mm	Nominal Width, [in.]	Tolerance, [in.]
6	±1	1/4	±1/32
11	±1	7/16	±1/32
13	±1	1/2	±1/32
14	±1	9/16	±1/32
16	±1	5/8	±1/32
19	±1	3/4	±1/32
21	±1	13/16	±1/32
25	±1	1	±1/32
32	±1	1 1/4	±1/32

TABLE 4 Tape End Lengths

Nominal Length	
mm	[in.]
12	1/2
19	3/4
25	1
32	1 1/4
38	1 1/2
44	1 3/4
50	2

6.4 *Tape End Length*—Determine the zipper tape end length as directed in the length of tape end procedure of Test Methods D2060.

7. Conformance

7.1 Material that fails to conform to the requirements of this specification may be rejected. Rejection shall be reported to the

producer or supplier promptly and in writing. In case of dissatisfaction with the results of the test, the producer or supplier may make claim for a rehearing. The terms of the rehearing shall be as agreed upon by the purchaser and the supplier.

8. Keywords

8.1 dimensions; specifications; zippers

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