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Clothing — Standard method of garment measurement

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National foreword

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Clothing — Standard method of garment measurement

Habillement — Méthode normalisée de mesurage des vêtements

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Foreword

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This document was prepared by ISO/TC 133, *Clothing sizing systems — Size designation, size measurement methods and digital fittings*.

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Introduction

This document is intended to serve as a global reference document for defining the key and common measurement points of a garment and the methodology to be used to measure garments, as well as to facilitate the maintenance of garment measurements and aid reduction of discrepancies in the product life cycle.

The points of garment measurements can be useful for (non exhaustive list):

— creation of table of measurements;

— developments of garment prototypes;

— stages of sample approval;

— production control;

— garment inspection and quality control;

— testing houses (e.g. determination of dimensional change of garments).

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Clothing — Standard method of garment measurement

1 Scope

This document defines the main measurement points and describes the method used to measure garment dimensions.

Additional measurement points can be determined between interested parties.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
side neck point
SNP
position on the garment where the garment body intersects with the side of the neck

Note 1 to entry: Side neck point does not include any neck trim, collar or hood.

Note 2 to entry: "Side neck point" is known also as High Point Shoulder, HPS.

3.2
from the invisible line
FIL
imaginary line taken between two points

Note 1 to entry: It is used to determine an exact position of a measurement to be taken.

3.3
centre front
CF
vertical intersection that is centrally positioned on the front of a garment

3.4
centre back
CB
vertical intersection that is centrally positioned on the back of a garment

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3.5
required position
position of a point specified by the interested party, as input data, prior to measuring

Note 1 to entry: If a required position is not specified, the selected measurements cannot be carried out.

Note 2 to entry: A measurement based on a required position is identified by a code beginning with "Z" in Tables.

4 Measuring methodologies

4.1 General principle

The garment to be measured is laid on a flat surface, its measurement points identified and the measurements carried out between the relevant measurement points using a measurement device.

In some cases, other apparatus can be required for specific measurements when extended (see Annex A).

4.2 Apparatus

4.2.1 Measurement surface

Clean, flat and even surface, the dimensions of which are suitable for the garment to be laid flat with no overhang.

4.2.2 Measurement tape

Flexible and non-stretchable measurement tape, graduated in millimetres.

The measurement tape should be regularly checked to ensure its ends and edges present no damage. Calibration is recommended.

Any measurement device which leads to the same results may be used. The use of such measurement device should be reported.

4.3 Procedures

4.3.1 Preparation of the garments or textile articles

Select garments or textile articles to be measured.

Ensure that each garment or textile article is flat, in an ambient environment and without mechanical tension.

This preparation is especially important for knitted garments which should be in a "relaxed state".

When it is required by interested parties, if the garment conditioning and the garment measurements are carried out in a conditioned laboratory room, the standard atmosphere as specified in ISO 139 (i.e. 20 °C, 65 % RH) shall be used.

Lay down the garment or the textile article on the measurement surface (4.2.1), with any fasteners closed (e.g. buttons, slide fasteners, touch and close fasteners), unless otherwise stated. Place the garment or textile article as flat as possible, except the preformed garment or textile article (e.g. hat, bra cups).

Avoid any unattended folds, wrinkles and/or creases of the garment or textile article.

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4.3.2 Garment or textile article measurement

Unless otherwise specified, measure in a straight line between two points as shown in the Figures and as instructed by measurement description.

For measurement without tension, ensure that the area being measured is not stretched.

For measurement under tension, ensure that the area being measured is stretched to the maximum without seam or stitch breakage, or tear of the fabrics (see Annex A).

5 Measurements of parts of garment or textile product

5.1 General

The area of measurement and measurement descriptions stated in this document can be used across different product types. For instance, measurements for a pair of shorts can be used for a woven formalwear short as well as a pair of cycling shorts or swimming trunks.

The area of measurement and measurement descriptions are uniquely identified by letter(s) and digit(s). Taking into account the actual garment to be measured, the combination of the selected measurements could mean different tables and figures in this document are applicable.

Depending on the garment style, measurements for different garment types or parts of different garment types could be combined, for example an all-in-one where the upper section is based on a shirt and the lower section is based on a pair of shorts.

On agreement between interested parties, measurements can refer partially or completely to those listed in the tables.

5.2 Upper garment body part

5.2.1 Set in sleeves

The measurement points in Table 1 and Table 2 are shown in Figure 1 (front) and Figure 2 (back) for upper garment body part with set in sleeves.

Figure 1 and Figure 2 represent examples of upper garment body parts with set in sleeves [such as short sleeves (T-shirt), long sleeves (cardigan), long sleeves (buttoned through shirt), long sleeves (single breasted jacket)].

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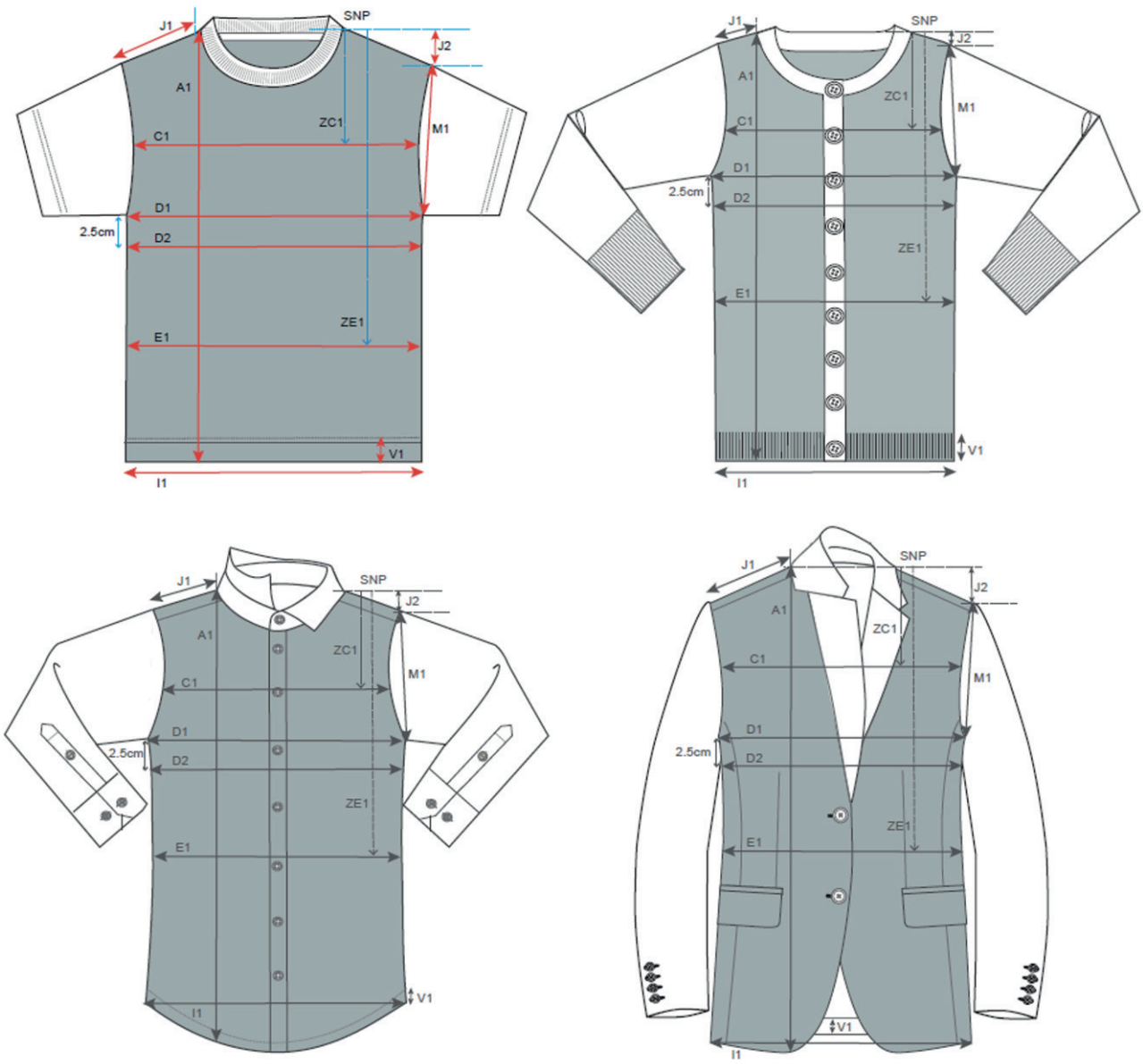

Figure 1 — Garment body length and width (set in sleeves) — Front

Table 1 — Key to measurement points indicated in Figure 1

Ref.	Area of measurement	Description of measurement
A1	Front length	SNP to hem edge
ZC1	Across front position from SNP	Distance from SNP to the across front required position
C1	Across front	Armhole seam to seam or edge to edge at position as indicated by ZC1
D1	Chest at armhole	Base of armhole to base of armhole
D2	Chest at 2,5 cm below armhole	At 2,5 cm below base of armhole measure from edge to edge
ZE1	Waist position from SNP	Distance from SNP to the waist required position
E1	Waist	At position as indicated by ZE1 measure from edge to edge
I1	Hem width (or lower edge width, when appropriate)	Measure along hem edge from edge to edge of garment. For garments with shaped hems/side vents: measure straight across at top of shaped hem/side vents from edge to edge.

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Table 1 *(continued)*

Ref.	Area of measurement	Description of measurement
J1	Shoulder length/strap width	SNP to shoulder point seam to seam or edge to edge as agreed by interested parties
J2	Shoulder slope	Measure vertically FIL at SNP to shoulder point
M1	Armhole	Shoulder point to base of armhole seam to seam or edge to edge as indicated by design of garment
V1	Hem depth	Hem edge to seam or to top row of hem depth stitching

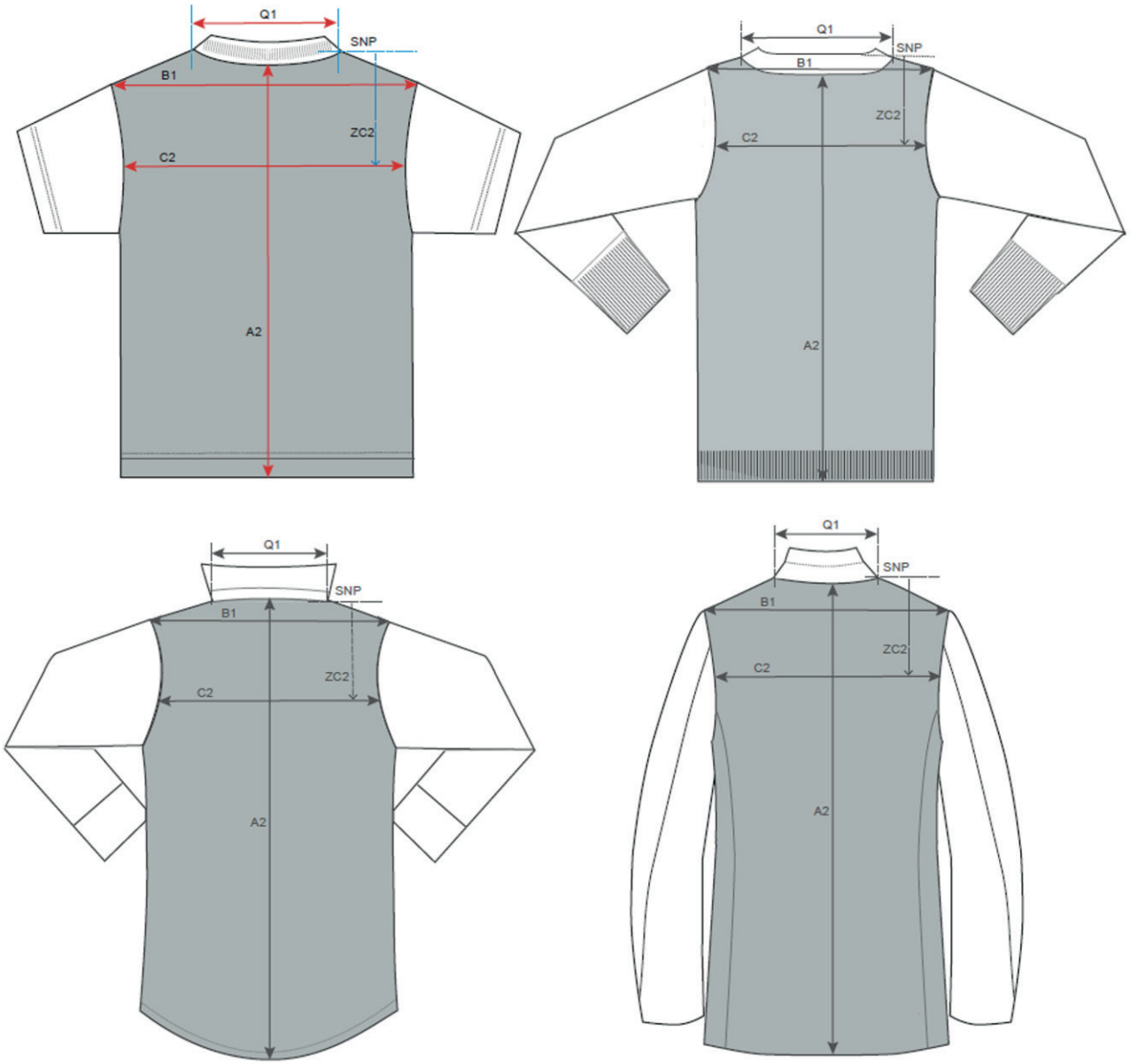

Figure 2 — Garment body length and width (set in sleeves) — Back

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Table 2 — Key to measurement points indicated in Figure 2

Ref.	Area of measurement	Description of measurement
A2	Centre back length	CB neck seam to hem edge
B1	Across shoulder	Shoulder point to shoulder point
Q1	Back neck width	Measure SNP to SNP seam to seam (excluding any neck trim) or SNP to SNP edge to edge if there is no neck trim or as agreed by interested parties
ZC2	Across back position from SNP	Distance from SNP to the across back required position
C2	Across back	Armhole seam to seam or edge to edge at position as indicated by ZC2

5.2.2 Raglan sleeves

The measurement points in Table 3 and Table 4 are shown in Figure 3 (front) and Figure 4 (back) for an upper garment body part with raglan sleeves.

Figure 3 and Figure 4 show examples of an upper garment body part with raglan sleeves [such as short sleeves (T-shirt) and long sleeves (jumper)].

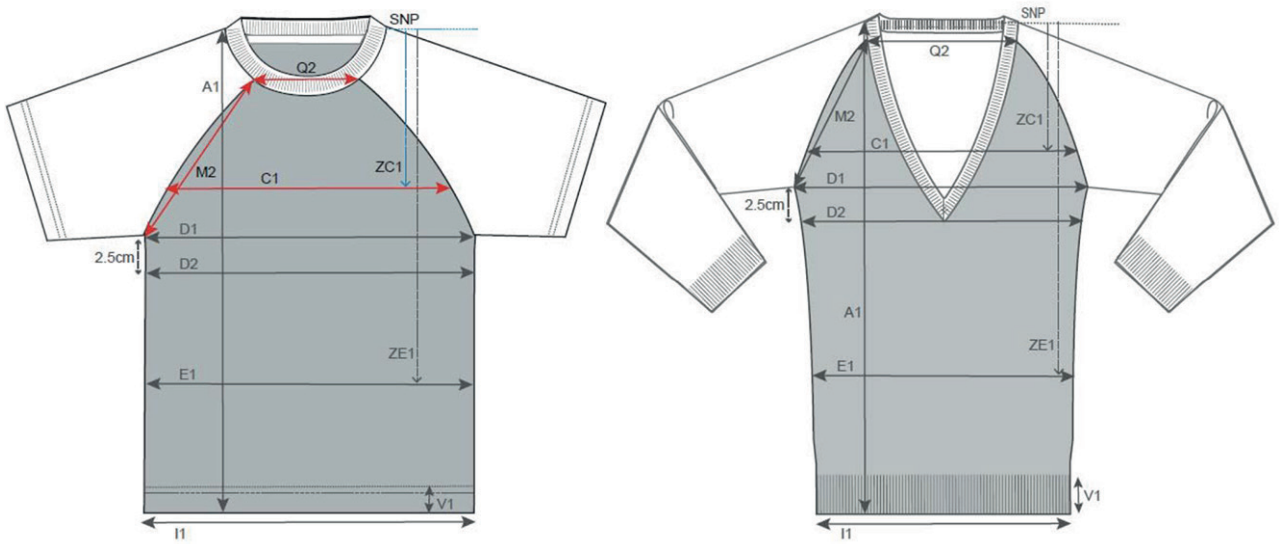

Figure 3 — Garment body length and width (raglan sleeves) — Front

Table 3 — Key to measurement points indicated in Figure 3

Ref.	Area of measurement	Description of measurement
ZC1	Across front position from SNP	Distance from SNP to the required across front position
C1	Across front	Armhole seam to seam or edge to edge at position as indicated by ZC1
M2	Front raglan length	From raglan point at front neck seam measure in a straight line to base of armhole.
Q2	Across front raglan at neck	Measure straight across front neck from raglan seam to seam.

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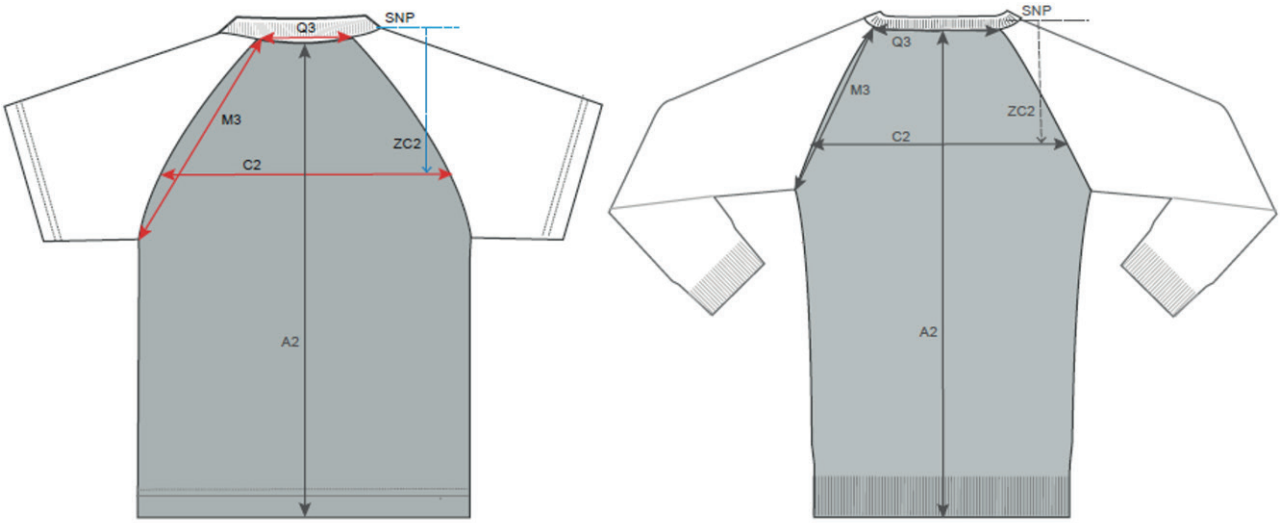

Figure 4 — Garment body length and width (raglan sleeves) — Back

Table 4 — Key to measurement points indicated in Figure 4

Ref.	Area of measurement	Description of measurement
ZC2	Across back position from SNP	Distance from SNP to required position of across back
C2	Across back	Armhole seam to seam or edge to edge at position as indicated by ZC2
Q3	Across back raglan at neck	Measure straight across back neck from raglan seam to seam.
M3	Back raglan length	From raglan point at back neck seam measure in a straight line to base of armhole.

5.2.3 Sleeveless

The measurement points in Table 5 and Table 6 are shown in Figure 5 (front) and Figure 6 (back) for upper garment body part without sleeves.

Figure 5 and Figure 6 show examples of an upper garment body part without sleeves (such as waistcoat, vest and camisole).

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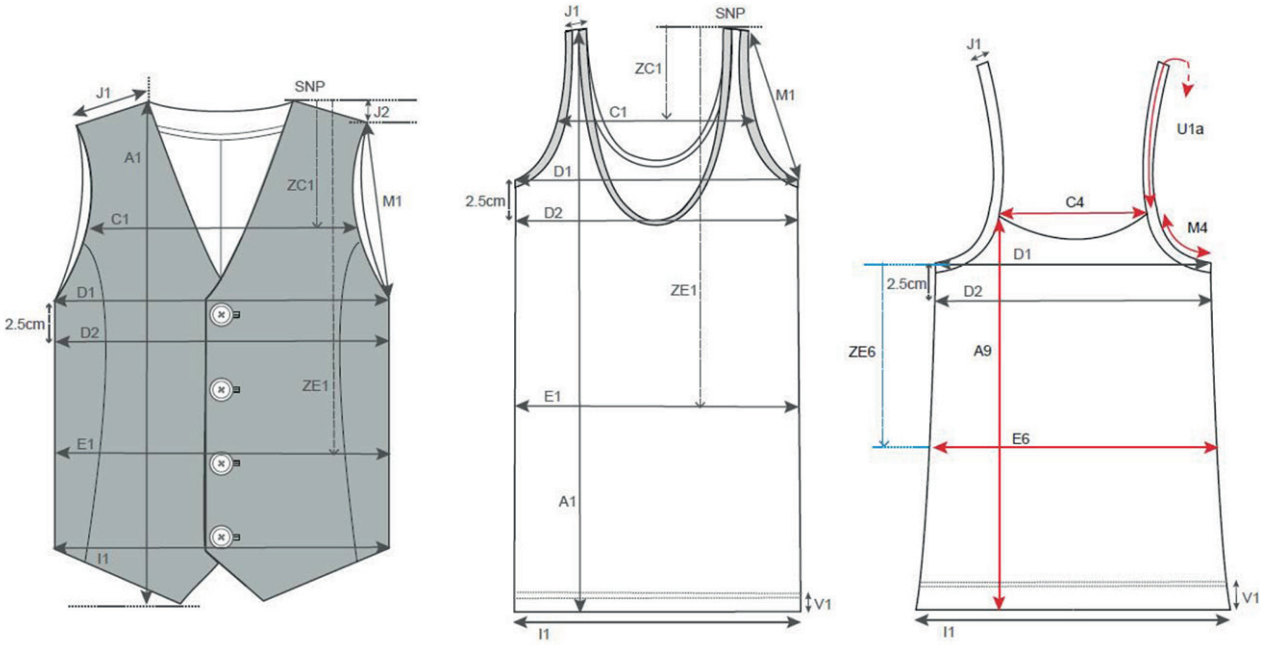

Figure 5 — Garment body length and width (sleeveless) — Front

Table 5 — Key to measurement points indicated in Figure 5

Ref.	Area of measurement	Description of measurement
A9	Front length	Apex (excluding any trims) to hem
C4	Across front	Apex to apex — i.e. between straps (excluding any trim)
ZE6	Waist position from underarm	Distance from underarm to required position of waist
E6	Waist	At position as indicated by ZE6 measure from edge to edge
U1a	Total strap length	Measure along centre of strap from apex/position where strap is attached at front to position where strap is attached at back
M4	Underarm at front	Apex to side seam/side seam fold — measure along the edge (excluding any trim)

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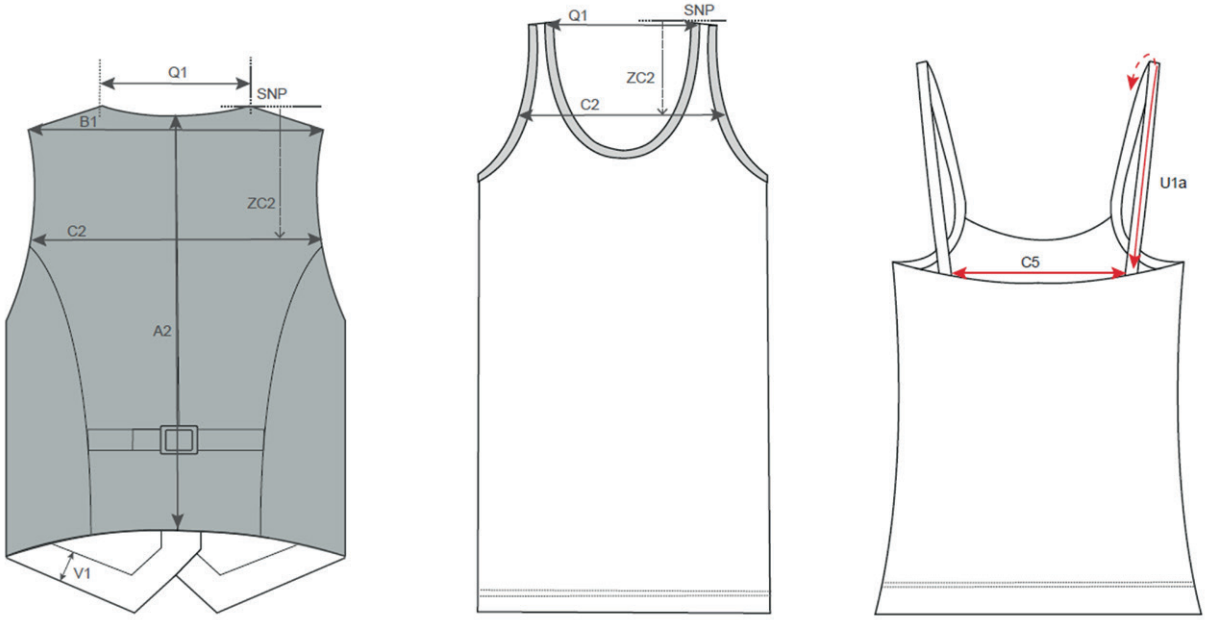

Figure 6 — Garment body length and width (sleeveless) — Back

Table 6 — Key to measurement points indicated in Figure 6

Ref.	Area of measurement	Description of measurement
C5	Across back	Apex to apex — i.e. between straps (edge to edge excluding any trim)

5.3 Sleeve part

5.3.1 Set in sleeves

The measurement points in Table 7, complementary to 5.2.1, are shown in Figure 7 for set in sleeves.

Figure 7 shows examples of set in sleeves for long sleeves (T-shirt, and shirt) on the left and short sleeves on the right (T-shirt and shirt) of each diagram.

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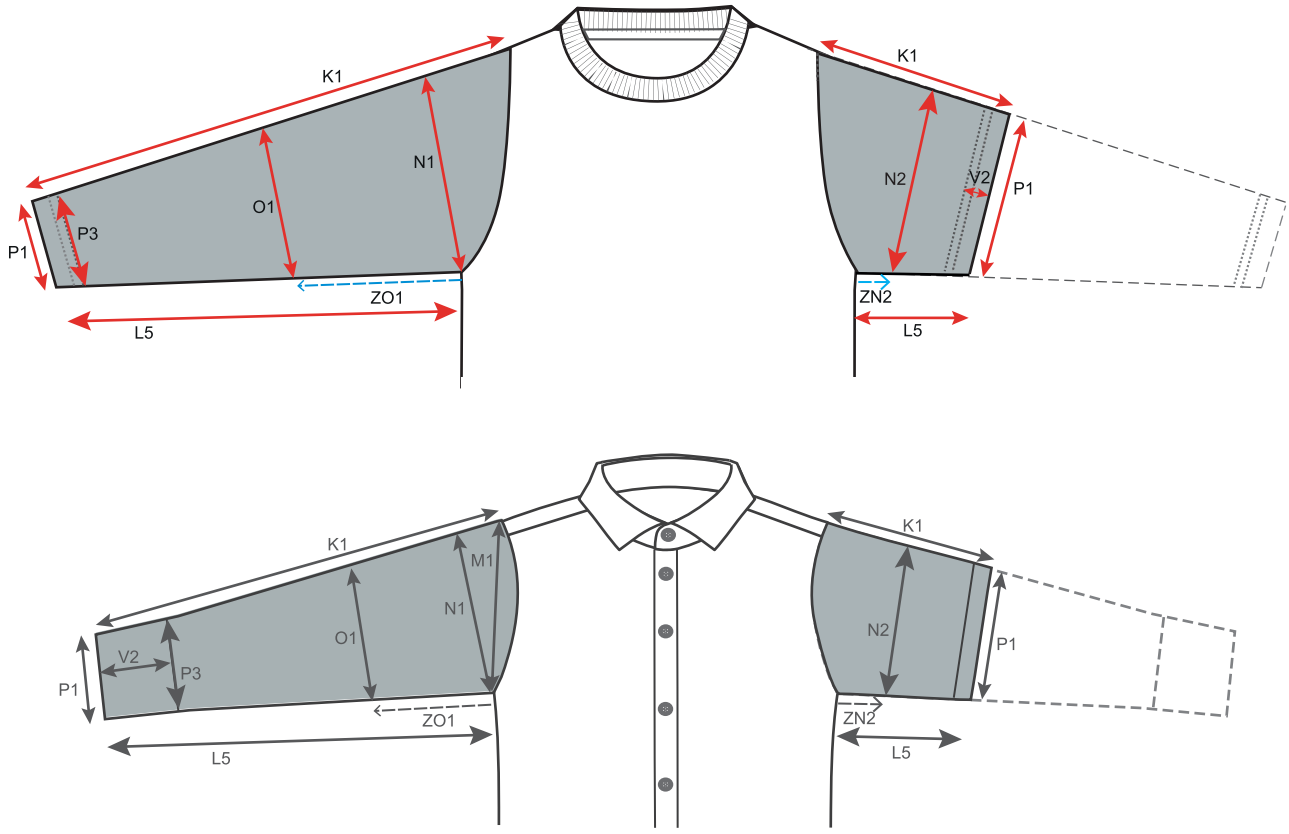

Figure 7 — Sleeve length and width (set in sleeve)

Table 7 — Key to measurement points indicated in Figure 7

Ref.	Area of measurement	Description of measurement
K1	Sleeve length	Shoulder point to cuff edge
L5	Under sleeve length	Base of armhole to cuff edge
N1	Sleeve width at armhole	From base of armhole measure straight across sleeve, forming perpendicular line with sleeve fold
ZN2	Upper sleeve position	Distance from underarm to required position
N2	Upper sleeve width	At position as indicated by ZN2 measure straight across sleeve, forming perpendicular line with sleeve fold
ZO1	Elbow position	Distance from underarm to required position of elbow
O1	Elbow	At position as indicated by ZO1 measure straight across sleeve, forming perpendicular line with sleeve fold
P1	Cuff opening width	Measure along cuff edge from edge to edge. For garments with shaped cuff edge: measure straight across at top of shaped cuff from edge to edge
P3	Cuff width at seam	Measure along cuff seam from edge to edge
V2	Cuff depth	Cuff, edge to edge, to seam or to top row of cuff depth stitching

5.3.2 Raglan sleeves

The measurement points in Table 8, complementary to 5.2.2, are shown in Figure 8 for raglan sleeves.

Figure 8 shows examples of set in sleeves for raglan sleeves (jumper and jacket) on left and short sleeves on right (jumper and jacket) of each diagram.

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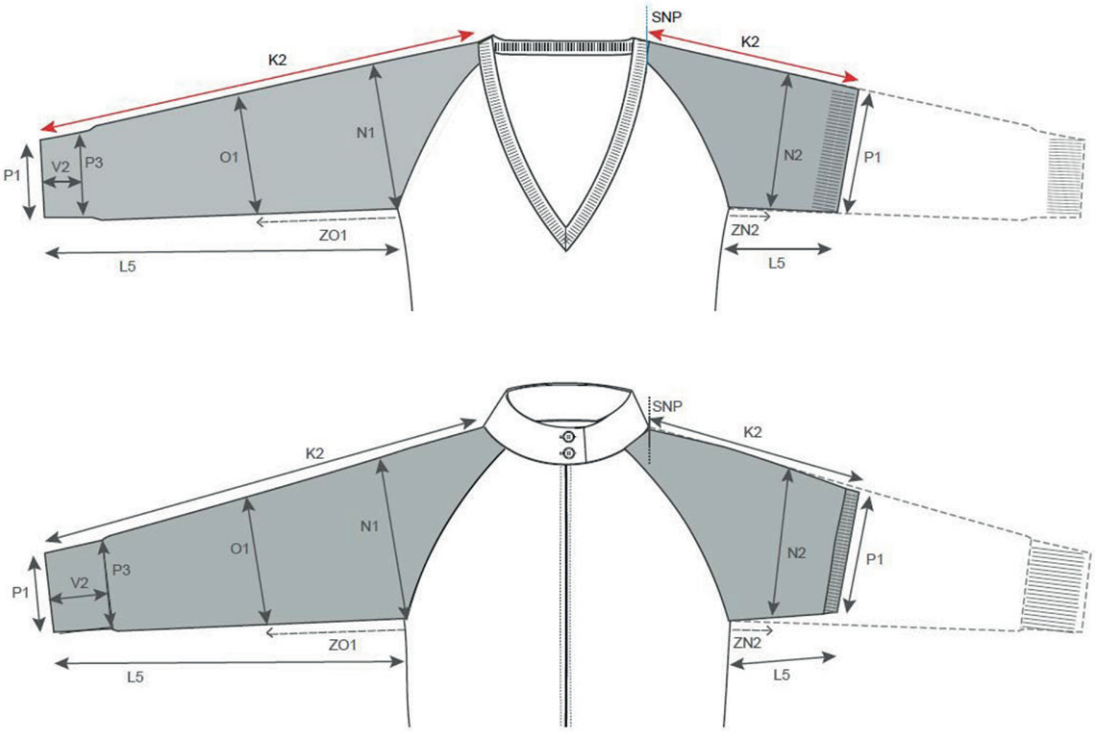

Figure 8 — Sleeve length and width (raglan sleeve)

Table 8 — Key to measurement points indicated in Figure 8

Ref.	Area of measurement	Description of measurement
K2	Sleeve length	SNP to cuff edge

5.4 Trousers and shorts part

5.4.1 Trousers and short

The measurement points in Table 9 are shown in Figure 9 (front and back) for trousers and short.

Figure 9 shows examples of trousers and shorts.

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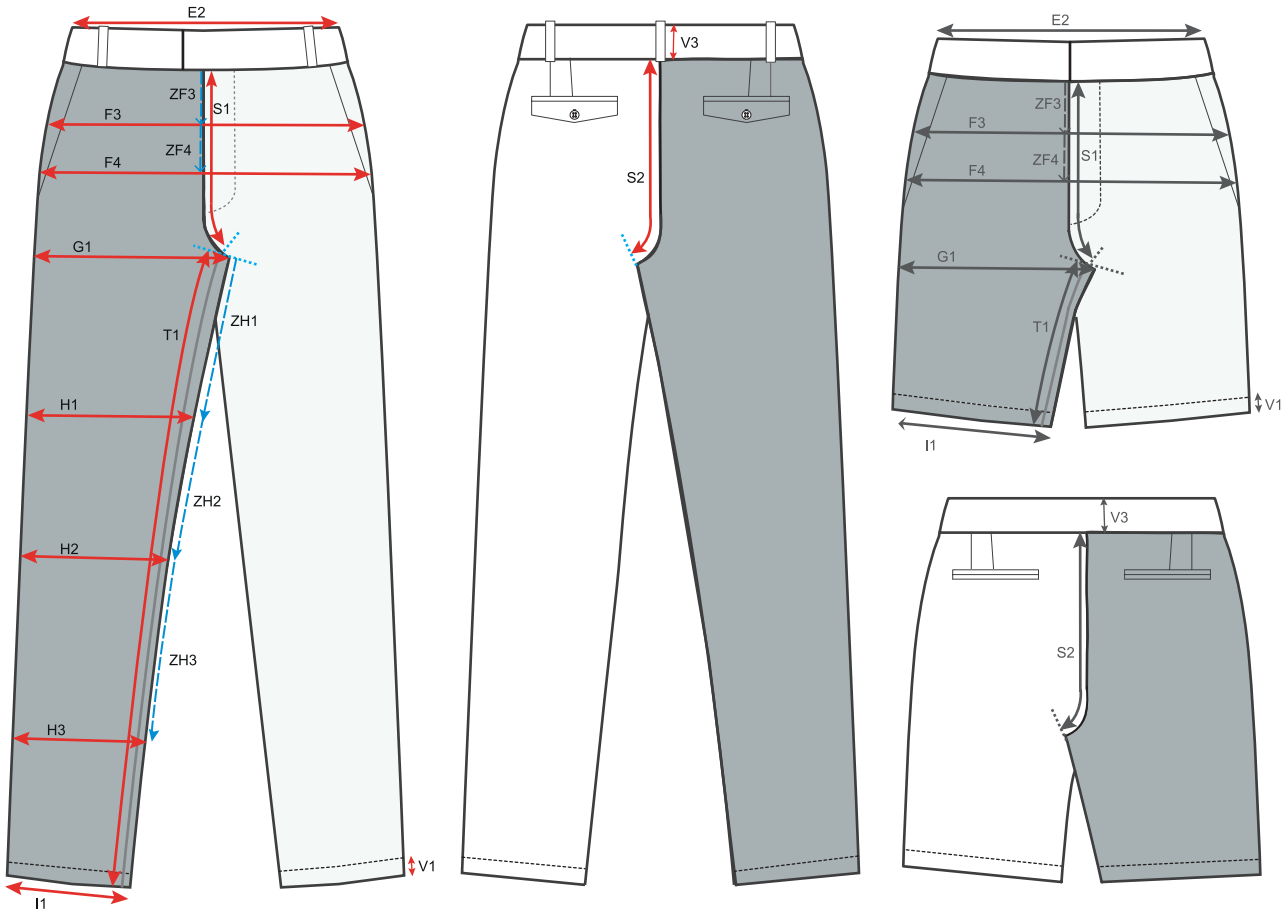

Figure 9 — Trouser and shorts — Front and back

Table 9 — Key to measurement points indicated in Figure 9

Ref.	Area of measurement	Description of measurement
E2	Waist relaxed	With waist edges placed together, measure along top edge
ZF3	Top hip position from waist	Distance from waist seam (excluding waistband) to required position of top hip
F3	Top hip width	At position as indicated by ZF3 measure from edge to edge
ZF4	Mid hip position from waist	Distance from waist seam (excluding waistband) to required position of mid hip
F4	Mid hip width	At position as indicated by ZF4 measure from edge to edge
G1	Thigh width at crotch	From side to crotch fold point
ZH1	Upper leg position from across fork seam (crotch point)	Distance from across fork seam (crotch point) to required upper leg position
H1	Upper leg width	At position as indicated by ZH1 measure from edge to edge
ZH2	Knee position from across fork seam (crotch point)	Distance from across fork seam (crotch point) to required knee position
H2	Knee width	At position as indicated by ZH2 measure from edge to edge
ZH3	Lower leg position from across fork seam (crotch point)	Distance from across fork seam (crotch point) to required lower leg position
H3	Lower leg width	At position as indicated by ZH3 measure from edge to edge
I1	Hem width (or lower edge width, when appropriate)	Measure along hem edge from edge to edge of garment. For garments with shaped hems/side vents: measure straight across at top of shaped hem/side vents from edge to edge.

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Table 9 *(continued)*

Ref.	Area of measurement	Description of measurement
S1	Front rise (excluding waistband)	Measure from waist seam (excluding waistband) following along the front rise seam to across fork seam (crotch point). If there is no front rise seam, measure in a straight vertical line from waist seam (excluding waistband) to across fork seam (crotch point).
S2	Back rise (excluding waistband)	Measure from waist seam (excluding waistband) following along the back rise seam to across fork seam (crotch point). If there is no back rise seam, measure in a straight vertical line from waist seam (excluding waistband) to across fork seam (crotch point).
T1	Inside leg	Measure from across fork seam (crotch point) in a straight line to hem edge. If leg shape is very curved, measure from across fork seam (crotch point) along inside leg seam to hem edge.
V1	Hem depth	Hem edge to seam or to top row of hem depth stitching
V3	Waistband depth	Top edge of waistband to seam where waistband joins garment. this measurement can be taken at CF, CB or at side (fold) of garment

5.4.2 Joggers and leggings

The measurement points in Table 10, complementary to 5.4.1 (measurement landmarks based on gusset, or measurements when extended), are shown in Figure 10 (front and back) for joggers and leggings.

Figure 10 shows examples of joggers and leggings.

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