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Size designation of clothes — Tights

Désignation des tailles de vêtements — Collants

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Foreword

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The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html

The committee responsible for this document is ISO/TC 133, *Clothing sizing systems — Size designation, size measurement methods and digital fittings*.

This second edition cancels and replaces the first edition (ISO 5971:1981), which has been technically revised in order to align with ISO 8559-1:2017 and ISO 8559-2:2017 and include the following main changes:

— informative Annex A added on rationale related to survey data on body dimensions;

— informative Annex B added including updated examples of tight size designation.

Size designation of clothes — Tights

1 Scope

This document establishes a system for designating the sizes of tights.

The system is based on three criteria:

— identification of dimensions;

— description of the methods of determining size designations from survey data; and

— indication of size designations for garment labelling.

Examples of size designations are given in Annex B.

NOTE Tights are sometimes called by other names, e.g. “pantyhose”.

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 8559-1, *Size designation of clothes – Part 1: Anthropometric definitions for body measurement*

ISO 8559-2, *Size designation of clothes – Part 2: Primary and secondary dimension indicators*

3 Terms and definitions

No terms and definitions are listed in this document.

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

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

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

4 Size designation

4.1 Control dimensions of tights

The control dimensions of tights are usually as follows:

1) height as the primary dimension and hip girth and/or body mass as the secondary dimension;

2) hip girth as the primary dimension and height as the secondary dimension.

NOTE There is a close correlation between hip girth and body mass (see Annex A).

Body measurements are determined in accordance with ISO 8559-1 and control dimensions in accordance with ISO 8559-2.

4.2 Survey data

The size designation is obtained from a grid (see Annex B) having height and hip girth or height and body mass for co-ordinates.

Each cell represents the fraction of population matching either both dimensions or height and body mass. A white empty cell means that it does not correspond to anybody or only to a very low percentage of people (for distribution of the population, see Annex A).

By plotting the intended wearer's height against hip girth or body mass as presented on the grid, the appropriate size designation can be determined. The size designation may be indicated by colour, by number or by any other suitable means.

Instead of using a detailed grid, a simpler chart may be provided to the consumer with a range of height/hip girth or height/body mass (see Annex B).

The cartography and the number of sizes will differ from one supplier to another, as it will depend on the deformation behaviour and the extensibility of the product as well as on the intended market of wearers.

4.3 Marking, labelling and packaging

The size designation shall be indicated clearly, conspicuously and in a plainly identifiable form on the packaging or label.

The labelling examples given in the different figures of Annex B illustrate methods of determining and indicating the size which is appropriate to the control dimensions of the intended wearer.

Annex A
(informative)

Rationale

To build a grid, the first co-ordinate is usually the hip girth or the height (there is a close correlation between the height and the inside leg length).

If the first dimension is the hip girth, the second one is the height.

If the first dimension is the height, the second co-ordinate is either the hip girth or the body mass. A close correlation has been found between both. As the consumer is much more familiar with the body mass than the hip girth, the grids height/body mass are more commonly used on the market.

EXAMPLE 1 Data from national or specific sizing surveys give the distribution of the population in the different cells of the grid (dimensions in centimetres):

Height	**Hip girth**																	
	76	80	84	88	92	96	100	104	108	112	116	120	124	128	132	136	140	144
140																		
143																		
146																		
149																		
152																		
155																		
158																		
161																		
164																		
167																		
170																		
173																		
176																		
179																		
182																		
185																		

NOTE Data from the French national survey 2006[1].

Colour scale:

— No colour: nobody matches the dimensions

— Lightest blue 1: between 0,01 % and 0,1 % of the measured population

— Blue 2: between 0,1 % and 0,5 % of the measured population

— Blue 3: between 0,5 % and 1 % of the measured population

— Blue 4: between 1 % and 2 % of the measured population

— Darkest blue 5: between 2 % and 4 % of the measured population

EXAMPLE 2 Using height (in centimetres) and body mass (in kilograms) with the same colour scale above:

Height	Body mass																	
	35	37	40	44	48	52	57	62	66	70	74	80	86	92	98	104	110	116
137																		
140																		
143																		
146																		
149																		
152																		
155																		
158																		
161																		
164																		
167																		
170																		
173																		
176																		
179																		
182																		
185																		
188																		

Each company can then define its range of sizes and the limits of the co-ordinates according to the morphology of the intended wearers. The number of different sizes within the grid often depends on the extensibility of the product; when a more stretchy material is used the number of sizes required can be reduced.

Annex B
(informative)

Examples of size grids or tables

B.1 Examples with grids

B.1.1 General

Different sizes often follow diagonal lines within the grid because of the deformation behaviour of the products.

In the first example, height is used as the primary dimension and body mass as the secondary dimension.

B.1.2 Example: Height (m)/body mass (kg)

Height	Body mass											
	42	45	48	51	54	57	60	63	66	69	72	75
1,42												
1,45												
1,48												
1,51												
1,54			**1**									
1,57												
1,60						**2**						
1,63												
1,66								**3**				
1,69												
1,72										**4**		
1,75												
1,78												
1,81												

B.1.3 Example: Hip girth(cm)/height (cm)

In this second example, hip girth is used as the primary dimension and height as the secondary dimension.

Height	Hip girth												
	80	82	84	86	88	90	92	94	96	98	100	102	104	106
142														
144														
146														
148														
150		S												
152														
154														
156					M									
158														
160														
162									L					
164														
166												XL		
168														
170														
172														

For more stretchable products, fewer sizes may be found with bigger intervals between the values.

B.1.4 Example: Height (cm)/body mass (kg)

In this third example, height is used as the primary dimension and body mass as the secondary dimension.

Height	Body mass						
	<47	48/53	53/58	58/63	63/68	68/73	73/78
<155							
155/160							
160/165			1/2				
165/170							
170/175						3/4	
175/180							
180/185							

B.2 Tables

B.2.1 General

Simpler charts may also be found on the market for some products, using only ranges of measurement and letters to represent sizes.

B.2.2 Examples with height and body mass

Height is used as the primary dimension and body mass as the secondary dimension.

B.2.2.1 Example: Letter size — Height/body mass

Letter size	Height cm	Body mass kg
S (small)	152-163	44-66
M (medium)	163-173	50-74
L (large)	173-183	56-83

B.2.2.2 Example: Height size— Height/body mass

In this example, the mean value of the height is used to express the size:

Size	Height cm	Body mass kg
155	150/160	40/45
165	160/170	45/65
175	170/180	45/75
185	180/190	55/85

B.2.3 Examples with height and hip girth

B.2.3.1 Letter size — Height/hip girth

In this example taken from the European market, height is used as the primary dimension and hip girth as the secondary dimension.

For medium and large letter sizes, two possibilities are considered: to keep the height range of the smaller size and only increase the hip range or to increase the height range with the same hip range as the smaller size.

Letter size	Height cm	Hip girth cm
Small	150-164	86-100
Medium	150-164	101-107
	165-176	86-100
Large	165-176	101-107
	177-188	86-100
Extra Large	155-178	108-122

In both examples B.2.3.2 and B.2.3.3 taken from the Asian market, hip girth is used as the primary dimension and height as the secondary dimension.