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SCHOOL CLOTHING – PART. 9 - KNEE HIGHS AND SOCKS

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B.P.: 14966 Yaoundé – CAMEROUN – Tél: 6992 257 777 / Fax.: (237) 222 22 64 96
E-mail : enquetepublique@anor.cm – www.anor.cm/enquetes-publiques

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School clothing — Part 9: Knee highs and socks



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Foreword

The African Organization for Standardization (ARSO) is an African intergovernmental organization established by the United Nations Economic Commission for Africa (UNECA) and the Organization of African Unity (AU) in 1977. One of the fundamental mandates of ARSO is to develop and harmonize African Standards (ARS) for the purpose of enhancing Africa's internal trading capacity, increase Africa's product and service competitiveness globally and uplift the welfare of African communities. The work of preparing African Standards is normally carried out through ARSO technical committees. Each Member State interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, Regional Economic Communities (RECs), governmental and non-governmental organizations, in liaison with ARSO, also take part in the work.

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ARSO Central Secretariat
International House 3rd Floor
P. O. Box 57363 — 00200 City Square
NAIROBI, KENYA

Tel. +254-20-2224561, +254-20-3311641, +254-20-3311608

E-mail: arso@arso-oran.org

Web: www.arso-oran.org

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ARSO Central Secretariat
International House 3rd Floor
P.O. Box 57363 — 00200 City Square
NAIROBI, KENYA

Tel: +254-20-2224561, +254-20-3311641, +254-20-3311608

E-mail: arso@arso-oran.org
Web: www.arso-oran.org

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School clothing — Part 9: Knee highs and socks

1 Scope

This part of ARS 1568 covers the requirements for two types of knee-high stockings and two types of ankle socks for school wear.

2 Normative references

The following referenced documents are indispensable for the application 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.

ARS 1568-1, *School clothing — Part 1: General requirements for school clothing*

ARS 1570, *Printed labels for textiles*

ISO 105-B02, *Textiles — Tests for colour fastness — Part B02: Colour fastness to artificial light: Xenon arc fading lamp test*

ISO 105-C10, *Textiles — Tests for colour fastness — Part C10: Colour fastness to washing with soap or soap and soda*

ISO 105-E04, *Textiles — Tests for colour fastness — Part E04: Colour fastness to perspiration*

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

ISO 2859-1, *Sampling procedures for inspection by attributes — Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection*

ISO 5077, *Textiles — Determination of dimensional change in washing and drying*

3 Definitions and abbreviations

For the purposes of this standard, the definitions given in ARS 1568-1 and the following definitions shall apply

3.1

automatic toe closure

an acceptable and approved method, other than linking, of effecting closure of the toe and instep pieces of knee-high stockings or of ankle socks

3.2

linking

a method of joining the toe and instep pieces of knee-high stockings or of ankle socks by a chain stitch (single or double) that passes through adjacent loops of the same knitted course

3.3

nominal

subject to the tolerances normal to good manufacturing practice

3.4

size designation

the length range, in millimetres, of the foot of the intended wearer

3.5

acceptable quality level

AQL

the maximum number of defects per hundred units that, for the purpose of sampling and inspection, can be considered satisfactory as process average

3.6

defective

a knee-high stocking or an ankle sock, a component of either, a test sample, a test specimen or a set of test specimens whose average property has been determined, that fails in one or more respects to comply with the relevant requirements of this part of ARS 1568

3.7

lot

not less than 151 pairs and not more than 10 000 pairs of knee-high stockings or ankle socks of the same material(s), colour(s), components, style and size designation, made by one manufacturer, and submitted at any one time for inspection and testing

3.8

size designation

the numerical value, in centimetres, of the circumference of the neck of the intended wearer

3.9

make

a systematic assembly and attachment of garment component parts

3.10

trims

narrow fabric generally used for the purpose of decorating or adorning furnishing **fabrics** or clothing, but often fulfilling a utilitarian function

3.11

size

a specific set of dimension for a manufactured article especially clothing

4 Requirements

4.1 General

The knee-high stockings and ankle socks shall have been made in accordance with sound manufacturing practice and shall be of uniform and acceptable make, colour(s), finish and, when applicable, design. They shall be acceptably paired and free from defects that impair their appearance or may impair their serviceability (or both).

4.2 Type

Knee-high stockings and ankle socks shall be of one of the following types, as required:

Type KH. Knee-high stockings, other than stretch type.

Type KHS. Knee-high stockings, stretch type.

Type A. Ankle socks, other than stretch type.

Type AS. Ankle socks, stretch type.

4.3 Fibre composition

The nominal fibre composition of the knee-high stockings and ankle socks, excluding the elastic splicing (where applicable), shall be as agreed upon between the purchaser and supplier, and the actual content of each constituent fibre, determined in accordance with 5.8, shall, subject to a tolerance of $\pm 5\%$, conform to the stated content.

4.4 Size designation

4.4.1 The size designation maybe be one of the following, as agreed upon:
115-135, 140-160, 165-185, 190-225, 230-255 and 260-280 (guidelines)

4.4.2 When knee-high stockings or ankle socks are tested in accordance with 5.6, the size of each foot and leg shall be deemed correct if

- a) its volume and shape are in close harmony with those of the appropriate size-board without excessive tightness or looseness being present;
- b) a straight line extension of the gore (searcher) line bisects the heel reference mark; and
- c) the top of the knee-high stocking or ankle sock is between the appropriate datum lines.

4.5 Elastic splicing

The elastic splicing in a knee-high stocking shall start two-thirds of the way down the rib top and shall continue in the direction of manufacture for the appropriate distance given in Table 1.

4.6 Colour

The colour shall be agreed upon between the purchaser and the supplier.

4.7 Toe closure

The toe shall be closed by linking or by automatic toe closure, as required. In the case of

- a) closure by linking, the ends of the linking yarns shall extend not less than 12 mm and not more than 25 mm beyond the ends of the toe linking; and
- b) automatic toe closure, the seam shall be sufficiently extensible to prevent cracking and undue shrinkage, and acceptably flat to prevent discomfort.

4.8 Constructional requirements

The knee-high stockings and ankle socks shall comply with the requirements given in Table 1, appropriate to the type and size designation required.

Table 1 — Constructional requirements

1	2	3	4	5	6	7
Property	Size designation	Requirements				Test method subsection
		Type KH	Type KHS	Type A	Type AS	
Mass per 10 pairs, g, min.						5.3
	115-135	—	—	—	120	
	140-160	370	270	175	145	
	165-185	410	320	215	185	
	190-225	510	410	260	225	
	230-255	630	500	310	240	
	260-280	730	570	330	—	
Nominal length of rib top, mm						5.4
	115-135	—		60		
	140-160	120		60		
	165-185	120		80		
	190-225	120		80		
	230-255	160		100		
	260-280	160		100		
Depth of elastic splicing, mm, min						5.5
	115-135	—		—		
	140-160	20		—		
	165-185	20		—		
	190-225	20		—		
	230-255	30		—		
	260-280	30		—		

4.9 Performance requirements

The knee-high stockings and ankle socks shall comply with the performance requirements given in Table 2.

5 Sampling

Sampling shall comply with ISO 2859-1.

6 Packing Packaging, care-labelling and marking**6.1 Packing**

Pairs of knee-high stockings and ankle socks of the same type, size and colour(s) shall be acceptably packaged and packed. Unless otherwise required, only knee-high stockings or ankle socks of the same type and colour(s), but not necessarily of the same size, shall be packed together in a bulk container. The knee-high stockings and ankle socks shall be delivered in a clean and commercially dry condition.

Table 2 — Performance requirements

1	2	3
Property	Requirement	Test method subsection
Shrinkage , %, max.		5.7
Length of foot	5	
Length of leg	5	
Colour fastness to		
a) Light , rating, min.	5	5.9
b) Perspiration , rating, min.		5.10
Change in colour	4	
Staining of transfer cloths	4	
c) Washing , rating, min.		5.11
Change in colour	4	
Staining of transfer cloths	4	

6.2 Care-labelling

Each pair of knee-high stockings and ankle socks shall have a printed adhesive label attached that provides appropriate care instructions in accordance with ARS 1570.

6.3 Marking**6.3.1 Knee-high stockings and ankle socks**

The following information shall appear in legible and indelible marking either on an adhesive label (see 6.2) attached to each pair of knee-high stockings and ankle socks or in transfer printing on one sole of each pair of knee-high stockings and ankle socks, or both:

- the manufacturer's name or trademark or both;
- the nominal overall composition, e.g. "45 % polyester, 25 % rayon, 30 % nylon";
- the size designation.
- country of origin

6.3.2 Containers

The following information shall appear in legible and indelible marking on the outside of each bulk container and shall be visible when the containers are stacked:

- a) the information specified in 6.3.1(a) and (b);
- b) a description of the contents, e.g. "Knee-high stockings, type KH";
- c) the quantity (in pairs) per size;
- d) the colour(s);
- e) the gross mass, in kilograms;
- f) the order or contract number.
- g) gross and net weight

6.3.3 Additional marking

When so required, knee-high stockings and ankle socks or containers (or both) shall bear information additional to that specified in 6.3.1 and 6.3.2.

7 Inspection and methods of test

7.1 Inspection

After inspecting the sample for compliance with the requirements of section 5, inspect all the knee-high stockings or ankle socks in the sample for compliance with the requirements given in 4.1, 4.2 and 4.4-4.7 (inclusive).

7.2 Conditioning and sequence of testing

Condition (in accordance with ISO 139) the knee-high stockings or ankle socks in the sample for testing and then divide them into three sets, each set consisting of an equal (or as nearly equal as possible) number of pairs of knee-high stockings or ankle socks. Use a different set for each of the following groups of tests:

Group 1: 5.3, 5.4, 5.5 and 5.6

Group 2: 5.7

Group 3: 5.8, 5.9, 5.10 and 5.11

7.3 Mass per ten pairs

For each size designation, determine, to an accuracy of 1 part in 500, the mass of each pair of knee-high stockings or ankle socks and calculate the mass per 10 pairs in grams.

7.4 Length of rib top

Use ISO 5077.

7.5 Depth of elastic splicing

Use ISO 5077.

7.6 Size designation

7.6.1 Apparatus

A set of size-boards conforming in volume, shape and markings to the master set held by the South African Bureau of Standards.

7.6.2 Procedure

So fit each knee-high stocking or ankle sock in turn on the appropriate size-board that all avoidable wrinkles are eliminated without the use of excessive force. Turn the rib top over at a point halfway between its start and finish, and check for compliance with 4.4.2.

7.7 Shrinkage

Use ISO 5077. Condition and calculate, separately, the mean dimensional changes in the length of the foot and the length of the leg in the case of knee-high stockings, and of the length of the foot only in the case of ankle socks.

7.8 Fibre composition

Determine by microscopical examination and chemical analysis.

7.9 Colour fastness to light

Use ISO 105-B02.

7.10 Colour fastness to perspiration

Use ISO 105-E04.

7.11 Colour fastness to washing

Use ISO 105-C10

Annex A
(informative)

Notes to purchasers

The following requirements must be specified in tender invitations and in each order or contract:

- a) the type (see 3.2);
- b) the fibre composition (see 3.3);
- c) the size(s) required (see 3.4.1);
- d) the colour and, when relevant, the colour(s) of stripes incorporated in the rib top (see 3.6);
- e) the method of toe closure (see 3.7);
- f) additional marking, if required (see 5.3.3).

Annex B
(informative)

Quality evaluation of knee-high stockings and ankle socks

B.1 Quality verification

B.1.1 When a purchaser requires ongoing verification of the quality of knee-high stockings and ankle socks, it is suggested that, instead of concentrating solely on evaluation of the final product, he also direct his attention to the manufacturer's quality system. In this connection it should be noted that ISO 9001 covers the provision of an integrated quality system.

B.1.2 If no information about the implementation of quality control or testing during manufacture is available to help in assessing the quality of a lot, and a purchaser wishes to establish by inspection and testing of samples of the final product whether a lot (as defined in B.2.1) of the knee-high stockings or ankle socks complies with this part of ARS 1568, the sampling plan given in B.2 can be applied.

B.2 Assessment of compliance with this part of ARS 1568

B.2.1 Definitions

B.2.2 Sampling

Use the following sampling procedure when determining whether a lot complies with this part of ARS 1568, and deem the samples so taken to represent the lot for the respective properties:

- a) **Sample for inspection.** From the lot take at random the number of pairs of knee-high stockings or ankle socks given in column 2 of table B.1, relative to the appropriate lot size shown in column 1.
- b) **Sample for testing.** After inspection of the sample taken in accordance with (a) above, take from it at random the appropriate number of pairs of knee-high stockings or ankle socks given in column 3 of table C.1

Table B.1 — Sample sizes

1 Lot size pairs of knee-high stockings or ankle socks	2 Sample for inspection pairs of knee-high stockings or ankle socks	3 Sample for testing pairs of knee-high stockings or ankle socks
151 – 280	32	9
281 – 500	50	12
501 – 1 200	80	12
1 201 – 3 200	125	18
3 201 – 10 000	200	18

B.2.3 Criteria of compliance

Deem the lot to comply with the applicable requirements of this part of ARS 1568 if,

- a) on inspection of the sample taken in accordance with B.2.2(a), no defective is found; and
- b) on testing of the sample taken in accordance with B.2.2(b), no defective is found.

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