

**AFRICAN
STANDARD**

DARS 1597:2026

First Edition

Textiles — Duvet and Duvet covers — Specification

PUBLIC REVIEW DRAFT



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Foreword

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This African Standard was prepared by the ARSO/TC 53, *Textiles, textile products and accessories*.

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Textiles — Duvets and Duvet covers — Specification

1 Scope

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This Draft African Standard specifies requirements, sampling, and test methods for duvets and duvet covers

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 105-B01, *Textiles — Tests for colour fastness — Part B01: Colour fastness to light: Daylight*

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-D01, *Textiles — Tests for colour fastness — Part D01: Colour fastness to drycleaning using perchloroethylene solvent*

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

ISO 105-X12, *Textiles — Tests for colour fastness — Part X12: Colour fastness to rubbing*

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

ISO 1833 (all parts), *Textiles — Quantitative chemical analysis*

ISO 3175-1, *Textiles — Professional care, drycleaning and wetcleaning of fabrics and garments — Part 1: Assessment of performance after cleaning and finishing*

ISO 3758, *Textiles — Care labelling code using symbols*

ISO 3759, *Textiles — Preparation, marking and measuring of fabric specimens and garments in tests for determination of dimensional change*

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

ISO 6330, *Textiles — Domestic washing and drying procedures for textile testing*

ISO 8498, *Woven fabrics — Description of defects — Vocabulary*

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ISO 8499, *Knitted fabrics — Description of defects — Vocabulary*

ISO 9237, *Textiles — Determination of the permeability of fabrics to air*

ISO 12945-2, *Textiles — Determination of fabric propensity to surface pilling, fuzzing or matting — Part 2: Modified Martindale method*

ISO 13934-1, *Textiles — Tensile properties of fabrics — Part 1: Determination of maximum force and elongation at maximum force using the strip method*

ISO 13938-2, *Textiles — Bursting properties of fabrics — Part 2: Pneumatic method for determination of bursting strength and bursting distension*

ISO 14362-1, *Textiles — Methods for determination of certain aromatic amines derived from azo colorants — Part 1: Detection of the use of certain azo colorants accessible with and without extracting the fibres*

ISO 14362-3, *Textiles — Methods for determination of certain aromatic amines derived from azo colorants — Part 3: Detection of the use of certain azo colorants, which may release 4-aminoazobenzene*

ISO 16373-1, *Textiles — Dyestuffs — Part 1: General principles of testing coloured textiles for dyestuff identification*

ISO 16373-2, *Textiles — Dyestuffs — Part 2: General method for the determination of extractable dyestuffs including allergenic and carcinogenic dyestuffs (method using pyridine-water)*

ISO 16373-3, *Textiles — Dyestuffs — Part 3: Method for determination of certain carcinogenic dyestuffs (method using triethylamine/methanol)*

ISO 22198, *Textiles — Fabrics — Determination of width and length*

ISO 24153, *Random sampling and randomization procedures*

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 <http://www.iso.org/obp>

3.1

duvet

bed covering, consisting of insulating filler secured between two layers of fabric designed to reduce heat loss

3.2

warmth-to-mass ratio

measure of the efficiency of the duvet which equals to the ratio of the thermal resistance of the duvet (in togs) to its mass per unit area

3.3

tog value

unit equal to ten times the thermal insulance

Note1 to entry: Tog is also known as thermal resistance of a duvet.

3.4

duvet covers

is a protective, removable fabric case that encloses a duvet insert

Note1 to entry: Tog is also known as thermal resistance of a duvet.

4 Requirements

4.1 General requirements

4.1.1 Duvets and duvet covers shall be:

- a) free from defects that could affect their appearance or their performance (or both);
- b) made from material that do not contain harmful substances
- c) made such that all seams are neatly stitched and securely backstitched, free from twists, pleats and puckers, and sufficiently extensible to prevent seam-cracking and undue shrinkage in use, made such that all ends of sewing threads have been trimmed and loose threads removed;
- d) filling material shall be evenly distributed to remain in the same position during normal use and care for duvet
- e) cleaned in accordance with the care instructions, without giving rise to any defect; such as puckering, lumpiness, tears, etc

4.1.2 The ends and side edges shall be secured together by seaming, binding, or overlocking.

4.1.3 Shall be constructed to allow for easy insertion and removal without damage.

4.2 Specific requirements

4.2.1 Fibre composition of the casing fabric and duvet cover

The fibre composition and proportion shall be as declared when tested in accordance with any relevant part of ISO 1833. Where the fabric is a blend of two or more fibres, the fibre composition and proportion shall be as declared, subject to a tolerance of $\pm 3\%$.

4.2.2 Dimensions

The mean width and mean length of duvets and duvet cover shall not vary by more than $\pm 5\%$ from the dimensions declared on the label when measured in accordance with ISO 22198.

4.2.3 Seams and stitching

All seams of the casing shall be sewn with not less than 32 stitches per 10 cm for duvets, unless one of the following occurs:

- a) if the edges of the casing are bound in this case, they shall be sewn with not less than 20 stitches per 10 cm; and

- b) if the edges of the casing are overlapped in this case, they shall be sewn with not less than 50 stitches per 10 cm.

4.2.4 Thermal insulation

When determined in accordance with Annex A the thermal insulation of a duvet shall be within -0.5 togs or +3 togs of the declared value.

4.2.5 Mass per unit area

The mass per unit area shall be within ± 5 % of the declared value when measured in accordance with Annex B.

4.2.6 Warmth-to-mass ratio

When determined in accordance with Annex C, the warmth-to-mass ratio of a duvet shall be at least 100.

The recommended TOG value is indicated in Annex D

4.2.7 Permeability of casing fabrics

The casing fabric shall be capable of satisfactorily retaining the filling and allowing a sufficient level of moisture vapour transmission.

4.2.8 Physical properties of casing fabrics

Duvets shall comply with the physical requirements given in Table 1 when tested in accordance with the test methods specified therein.

Table 1 — Physical requirements for casing fabric for duvets and duvet cover

S/N	Parameter		Requirement		Test method
			Woven casing fabric	Knitted casing fabric	
i.	Breaking strength, N, min.	Warp	350	N/A	ISO 13934-1
		Weft	200	N/A	
ii.	Bursting strength, kpa, min.		N/A	155	ISO 13938-2
iii.	Pilling, min.		4	4	ISO 12945-2
iv.	Dimensional changes after five washes, %		± 3	± 5	ISO 6330 (Procedure 4N), ISO 5077 and ISO 3759
v.	Dimensional changes after five dry cleaning cycles, %		± 3	± 5	ISO 3175-1
vi.	Air permeability, ml/(cm ² s)	Woven casing made from spun staple yarns	25 - 30	-	ISO 9237

		Casing made from other woven fabrics	15 - 20	-	
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4.2.9 Colour fastness properties of duvet casing fabrics and duvet covers

Duvets and duvet covers shall comply with the colour fastness requirements given in Table 2 when tested in accordance with the test methods specified therein.

Table 2 — Colour fastness requirements for duvet casing fabric and covers

S/N	Parameter		Requirement		Test method
			Woven duvet	Knitted duvet	
i.	Colour fastness to washing, min.	Colour change	4	4	ISO 105-C10
		Staining			
ii.	Colour fastness to dry cleaning, min.	Colour change	4	4	ISO 105-D01
		Staining			
iii.	Colour fastness to rubbing, min.	Dry	4	4	ISO 105-X12
		Wet	3-4	3-4	
iv.	Colour fastness to light, min.		4	4	ISO 105-B02, ISO 105-B01
v.	Colour fastness to perspiration (acid), min.	Colour change	4	4	ISO 105-E04
		Staining			
vi.	Colour fastness to perspiration (alkali), min.	Colour change	4	4	
		Staining			

4.2.10 Restricted colourants

The printed casing fabric for duvets and duvet cover shall not contain any of the banned dyestuffs listed in Annex E and azo dyestuffs/pigments which release any of the carbilamines given in Annex F when tested in accordance with ISO 14362-1, ISO 14362-3, ISO 16373-2 and ISO 16373-3.

5 Packaging

5.1 Duvets and duvet covers shall be wrapped individually in a suitable wrapper and packed in a suitable bulk container.

5.2 Packaging shall protect the products from contamination, moisture, and damage during storage and transportation

6 Labelling

The following information shall appear, in legible and indelible marking on a label securely attached to an edge of, or on top (near one of the corners) of each duvet and duvet cover:

- a) manufacturer's name or trademark;
- b) length and width in centimetres;
- c) fibre composition of the casing fabric and of the filling;
- d) care instructions in accordance with ISO 3758;
- e) tog value;
- f) mass per unit area, in g/m²; and
- g) country of manufacture.

7 Sampling

Sampling shall be done in accordance with ISO 24153.

Annex A

(normative)

Determination of thermal insulance

A.1 Apparatus

A.1.1 Electric blanket, of size at least 600 mm × 450 mm, that has electricity supplies controlled by a variable transformer or that has a set-point controller.

A.1.2 Polyurethane foam mattress, of a nominal thickness 25 mm and of a length and width greater than the corresponding dimensions of the duvet under test.

A.1.3 Aluminum sheet, of thickness 1.5 mm and of other dimensions equal to those of the electrically heated blanket.

A.1.4 Two pieces of a polyester-and-cotton shirting, each of length and width slightly greater than the corresponding dimensions of the duvet under test.

A.1.5 At least six thermocouples.

A.1.6 At least six small low-temperature heat flow meters.

A.1.7 Adhesive tape.

A.1.8 Suitable slow-speed fan, capable of creating a horizontal breeze of velocity not exceeding 0.3 m/s over the entire upper surface of the duvet.

A.2 Procedure

A.2.1 Determine, to the nearest 1 g, the mass of the duvet under test and record the mass in kilograms.

A.2.2 Place the mattress on a table and place the electric blanket in the centre of the mattress.

A.2.3 Cover the electric blanket with the aluminium sheet, and then cover the latter with one of the pieces of fabric.

A.2.4 Within an area of size 450 mm × 350 mm and within the boundaries of the electric blanket, tape the heat flow meters and the thermocouples to the upper surface of the piece of fabric in random configuration.

A.2.5 Gently place the duvet over the entire assembly and ensure that no heat flow meter is closer than 300 mm to an edge or end of the duvet, and cover with the other piece of fabric.

A.2.6 Place the fan in such a position that it creates a horizontal breeze of velocity not exceeding 0.3 m/s over the entire upper surface of the duvet.

A.2.7 Suspend two more thermocouples 300 mm above the assembly and in the air stream created by the fan.

A.2.8 Switch on the electric blanket and so adjust the power supply that the temperature under the duvet is maintained at $33\text{ }^{\circ}\text{C} \pm 5\text{ }^{\circ}\text{C}$.

A.2.9 Record the temperature indicated by each thermocouple and the rate of heat flow indicated by each heat flow meter disc. Calculate the mean ambient temperature (as indicated by the suspended thermocouples), the mean temperature under the duvet, and the rate of heat flow.

A.2.10 Calculate the thermal insulance, using the formula below:

$$M = \frac{(t1 - t2)}{\phi}$$

where

M is the thermal insulance, in metre-squared kelvin per watt, of the duvet;

$t1$ is the mean temperature under the duvet, in degrees Celsius;

$t2$ is the mean ambient (room) temperature, in degrees Celsius;

ϕ is the mean rate of heat flow, in watts per square metre.

A.2.11 Select two additional test areas by moving the duvet plus the upper piece of fabric, ensuring that the test areas do not overlap, and on each of these areas repeat the procedures given in A.2.9 and A.2.10.

A.2.12 From the results on the three test areas, calculate the mean thermal insulance of the duvet plus the cover fabric.

A.2.13 Remove the duvet and repeat the procedures given in A.2.9 and A.2.10 with the upper piece of fabric as the only means for covering the assembly.

A.2.14 Calculate the mean thermal insulance of the upper piece of fabric.

A.2.15 Calculate the total mean thermal insulance of the duvet by subtracting the value obtained in A.2.14 from the value obtained in A.2.12.

A.2.16 Calculate the tog value by multiplying the thermal insulance (A.2.15) by ten.

A.2.17 Check for compliance with 4.2.6.

Annex B (normative)

Determination of mass per unit area

- B.1** Condition the duvet in accordance with ISO 139.
- B.2** Determine the mass of the conditioned duvet to the nearest gram.
- B.3** Calculate the mass per square metre using the formula below:

$$\text{Mass per square metre} = 104 \times \frac{m}{(b \times l)}$$

where

- m* is the mass, in grams, of the conditioned duvet;
- b* is the width, in centimetres, of the duvet, determined in accordance with ISO 22198; and
- l* is the length, in centimetres, of the duvet, determined in accordance with ISO 22198.

- B.4** Express the results in grams per square metre (g/m²).

Annex C

(normative)

Determination of the warmth-to-mass ratio

C.1.1 Determine, to the nearest centimetre, the length and width (see 4.2.2) of the duvet.

C.1.2 Calculate the mean length and the mean width of the duvet in meters.

C.1.3 Calculate the warmth-to-mass ratio, Q , in meters to the fourth kelvin per watt per kilogram, using the formula below:

$$Q = \frac{(M \times l \times b)}{m} \times 10$$

where

M is the mean thermal insulance (see A.2.15), in metre-squared kelvin per watt, of the duvet;

l is the mean length (see C.1.2), in metres, of the duvet;

b is the mean width (see C.1.2), in metres, of the duvet; and

m is the mass, in kilograms, of the duvet (see A.2.1).

Annex D
(Informative)

Recommended TOG ratings by night temperature

Night Temperature Range	Recommended TOG	Duvet Classification	Comfort Level	Best For
-5°C to 5°C	10.0 - 13.5 TOG	Winter / Heavy Weight	Maximum warmth	Very cold nights, frost conditions, unheated rooms
5°C to 15°C	7.0 - 10.5 TOG	Spring/Autumn / Medium Weight	Moderate warmth	Cool to mild nights, transitional seasons
15°C to 25°C	3.0 - 4.5 TOG	Summer / Light Weight	Light covering	Warm nights, heated rooms, tropical climates

Annex E
(Normative)

List of Banned Dyestuffs

Table E.1 – Banned Dyestuffs

No.	Generic Name	C.1 Structure No. C.1 Constitution No.	Chemical class
1	C.1 Acid red 26	16150	Monoazo
2	C.1 Basic red 9	42500	Triarylamine
3	C.1 Basic violet 14	42510	Triarymethane
4	C.1 Direct black 38	30335	Triazo
5	C.1 Direct blue 6	22610	Diazo
6	C.1 Direct red 28	22120	Diazo
7	C.1 Disperse blue 1	64500	Anthraquinone
8	C.1 Disperse orange 11	60700	Anthraquinone
9	C.1 Disperse blue 3	61505	Anthraquinone
10	C.1 Disperse blue 7	62500	Anthraquinone
11	C.1 Disperse blue 26	63305	Anthraquinone
12	C.1 Disperse blue 35	-	Anthraquinone
13	C.1 Disperse blue 102	-	Monoazo
14	C.1 Disperse blue 106	-	Azo
15	C.1 Disperse blue 124	-	Monoazo
16	C.1 Disperse yellow 1	10345	Nitro
17	C.1 Disperse yellow 3	11855	Azo
18	C.1 Disperse yellow 9	10375	Nitro
19	C.1 Disperse yellow 39	-	-
20	C.1 Disperse yellow 49	-	Methine
21	C.1 Disperse orange 1	11080	Azo

22	C.1 Disperse orange 3	11005	Azo
23	C.1 Disperse orange 37	-	Monoazo
24	C.1 Disperse orange 76	-	Monoazo
25	C.1 Disperse red I	11110	Monoazo
26	C.1 Disperse red II	62015	Anthraquinone
27	C.1 Disperse red 17	11210	Monoazo
28	C.1 Disperse brown I	11152	Monoazo

Annex F
(Normative)

List of Banned Dyes

Table F1-Arylamines cleaved from azo dyes and pigments

No	Amine
1	4 – aminodiphenyl
2	Benzidine
3	4 – chloro-o-toluidine
4	o-aminoazotoluene
5	p-chloroaniline
6	2,4 – diaminoanisole
7	4,4 – diaminodiphenylmethane
8	3,3' – dichlorobenzidine
9	3,3' – dimethoxybenzidine
10	3,3' – dimethylbenzidine
11	3,3' – dimethyl -4,4'- diaminodiphenylmethane
12	p- cresidine
13	4,4' – methylene-bis-(2-chloroaniline)
14	4,4' – oxidianiline
15	4,4' – thiodianiline
16	4,4' – thiodianiline
17	o- toluidine
18	2,4' toluylenediamine
19	2,4,5' trimethylaniline
20	o-anisidine
21	2,4 – xylydine
22	2,6 – xylydine
23	4 - - aminoazobenzene*

24	2 – naphthylamine
25	2 – amino-4-nitrofluene

*No validated test method exists for this amino yet

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Annex G (Informative) Fillings

Commented [JW1]: Annex not referenced in the body of the standard

G.1 Plumage filling

A plumage filling should comply with the following relevant requirements

G.1.1 Down fibre or feather fibre content (or both)

The down fibre or feather fibre content (or both) of a plumage filling should not exceed 8 % (*m/m*) in a landfowl or waterfowl feather filling and 5 % (*m/m*) in any of the other three types of filling (see A.1.3).

NOTE - The composition of feathers in a waterfowl filling should be as follows:

Waterfowl feathers, % (<i>m/m</i>), min.	90
Landfowl feathers, % (<i>m/m</i>), max.	10

G.1.2 Residual matter

The residual matter of a plumage filling should not exceed 2 % (*m/m*).

G.1.3 Filling power index is power filling index a formal or standard term used in textiles?

Commented [JW2]: To be clarified after Public Review

The filling power index determined in accordance with the plumage filling should be at least equal to the appropriate of the following:

Type of filling	Filling power index, min.
Down	75
Down and feathers	60
Feathers and down	50
Waterfowl feathers	45
Landfowl feathers	—

G.2 Synthetic-fibre filling

A synthetic-fibre filling should consist entirely of clean, crimped continuous filaments or staple synthetic fibres, of (in both cases) linear density between 4,5 dtex and 17,0 dtex . The length of staple fibres should be at least 30 mm. The fibres should be thermos-bonded or resin-bonded and the blend of melting fibres should not exceed 30 %.

The mass per unit area of the filling including, when relevant, the surface stabilizer, should be:

- a) 150 g/m² minimum. ("summer weight"); and

Commented [JW3]: To be clarified after public review

Annex H (Informative)

Dimensions

Commented [JW4]: Not referenced in the body of standard

Table 1 - Guideline on the finished dimensions for duvets

1	2	3
Bed size	Dimensions cm	
	Width	Length
Single	130-140	200
Three-quarter	150	200
Double	200	200
Queen	230	200
King	230	220
Extra king	250	220

Bibliography

FDKS 2668: 2016, Duvet, quilts and accessory products — Specification