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# **Woven blankets — Specification**

Part 3:

**Cotton leno cellular blankets**

## **TECHNICAL COMMITTEE REPRESENTATION**

The following organizations were represented on the Technical Committee:

Nakuru Industries Ltd.  
Kenya Industrial Research and Development Institute  
Spinners and Spinners  
Spin Knit  
Kenya Textile Training Institute  
Lamsons Ltd.  
Nakuru Industries  
Ministry of Roads — Materials Department  
Moi University  
Chalange Industries Ltd.  
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## **REVISION OF KENYA STANDARDS**

In order to keep abreast of progress in industry, Kenya Standards shall be regularly reviewed. Suggestions for improvements to published standards, addressed to the Managing Director, Kenya Bureau of Standards, are welcome.

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# **Woven blankets — Specification**

Part 3:

## **Cotton leno cellular blankets**

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# **KS 117-3: 2008**

## **Foreword**

This Part 3 of this Kenya Standard was prepared by the Technical Committee on Blankets, Non-wovens, Threads and Fibres, under the guidance of the Standards Projects Committee, and it is in accordance with the procedures of the Kenya Bureau of Standards.

In the revision of this standard, performance requirements such as mass of blankets and threads per centimetre have been reviewed to be in harmony with manufacturing practices within the country. References have also been updated.

In the preparation of this standard, reference was made to the following document:

BS 5866-2: Blankets for use in the public sector.

Part 2: Specification for cotton leno cellular blankets.

Acknowledgement is hereby made for the assistance received from this source.

## Specification for woven blankets

Part 3:

### Cotton leno cellular blankets

#### 1 Scope

This Part 3 of this Kenya Standard specifies technical requirements for cotton leno cellular blankets.

#### 2 Application

This standard applies to both adults' and children's blankets.

#### 3 References

The documents referred to in this Kenya standard are given below:

BS 2160, *Method test for determination of cuprammonium fluidity of cotton and certain cellulosic man-made fibres.*

KS 08-32, *Conditions for testing of textiles.*

KS 08-68, *Textiles care labelling code.*

KS 08-69, *Method for the determination of colour fastness of textile materials to daylight.*

KS 08-119, *Method for determination of breaking load and elongation (strip method) of woven fabrics.*

KS 08-123, *Methods for determination of colour fastness of textile materials to washing.*

KS 08-210, *Glossary of terms relating to fabrics made from natural fibres.*

KS 08-215, *Methods of determination of colour fastness of textile materials to bleaching.*

KS 08-264, *Methods for estimation of moisture, total size or finish, ash, fatty matter and determination of water soluble matter in textiles.*

KS 08-359, *Method for determination of colour fastness of textile materials to artificial light (xenon arc).*

KS 08-479 -1, *Specification for sewing threads, Part 1 — Cotton sewing threads*

KS 08-479- 2, *Specification for sewing threads, Part 2 — Sewing threads made wholly or partly from synthetic fibres.*

KS 08-526, *Method for determination of linear density of yarns (skeins method).*

KS 08-527, *Method for determination of twist in yarns.*

KS 08-836 - 1, *Classification and terminology of stitches and seams — Part 1: Types*

KS 08-836 – 2, *Classification and terminology of stitches and seams — Part 2: Seam types*

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## 4 Terms and definitions

For the purpose of this standard, the following definitions and those given in KS 08-210 shall apply.

### 4.1 Cellular fabric

A fabric constructed so as to have a close and orderly distribution of hollows or holes. In woven fabric, this can be achieved by:

- i) honeycomb,
- ii) leno, or
- iii) mock-leno weaves. (See figures 1, 2 and 3.)

Note In certain sections of the trade, the term is restrictively used to describe leno cellular fabrics.

### 4.2 Doup/leno weaving

A form of weaving in which warp threads are made to cross one another between picks.

Note 1 The simpler types of light-weight fabric produced by this method of weaving are known as 'gauze'.

Note 2 It may be necessary to use:

- i) an easier motion to control the tension of the crossing ends during formation of the crossed shed;
- ii) a shaker motion to provide a partial lift to the standard heald to bring the threads approximately level and thus facilitate crossing.

In simple leno weaving, one thread, generally called a crossing or leno end, *L* (see Figure 4), is caused to lift alternately on one side and on the opposite of the thread, usually referred to as the standard *G* end, so as to provide 'crossed' or 'open' sheds. If the standard end is lifted a 'plain shed' (occasionally referred to as an ordinary shed) is formed.

### 4.3 Leno fabric

A fabric in which warp threads are made to cross one another, between the picks, during leno weaving. The crossing of the warp threads may be a general feature of plain leno fabrics (as in marquisette and some gauzes and muslins) or may be used in combination with other weaves (as in some cellular fabrics).

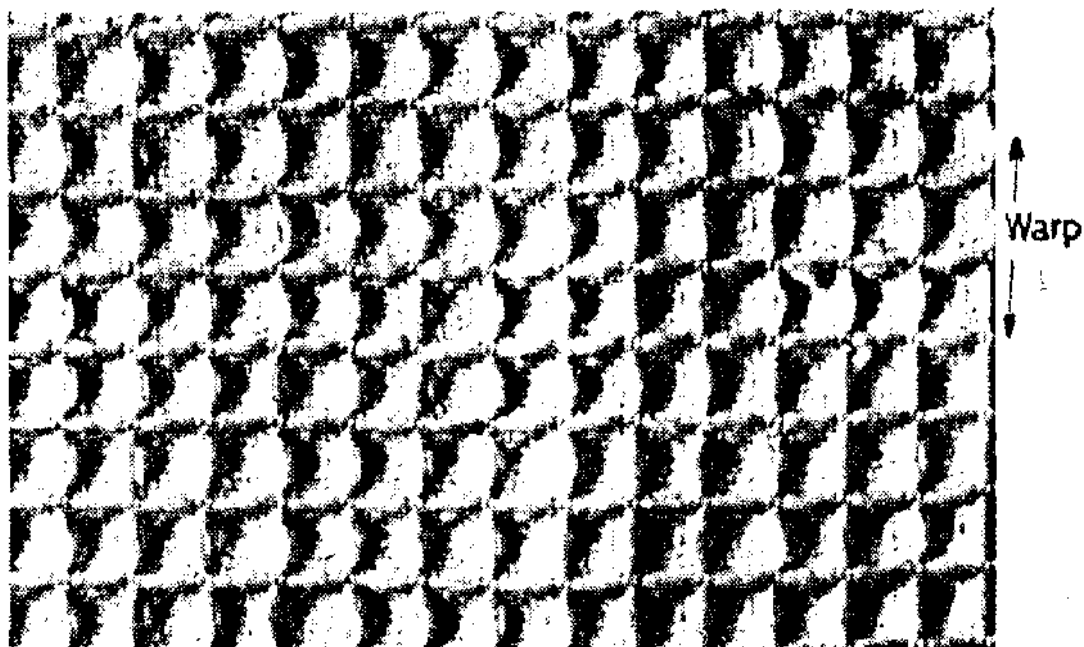


Figure 1 — Ordinary honeycomb (actual size)

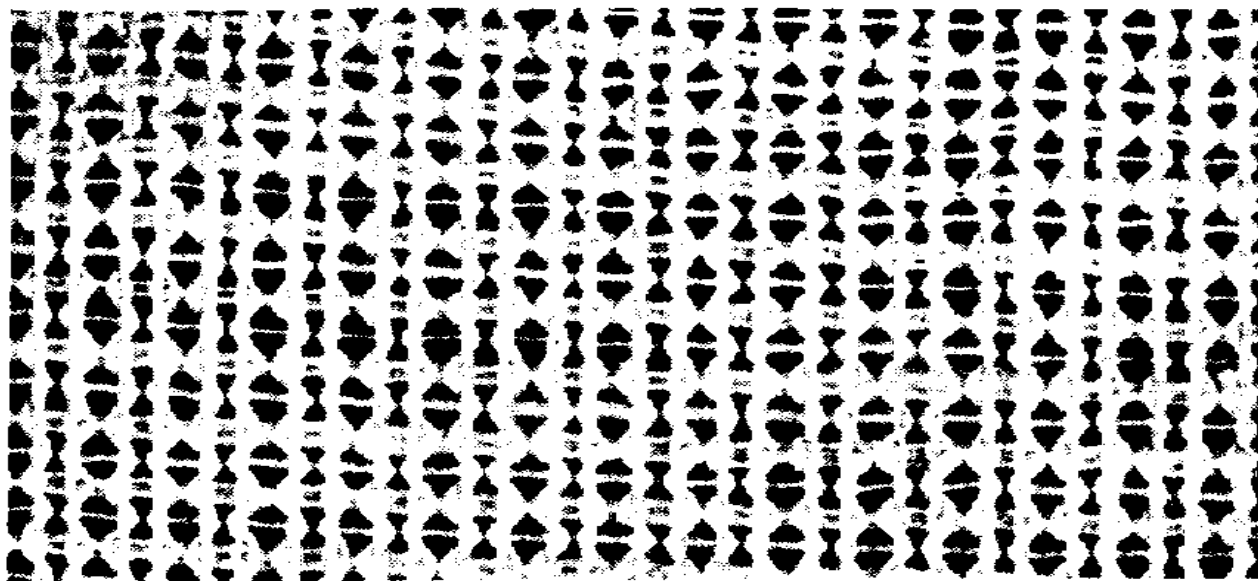


Figure 2 — Leno cellular fabrics (actual size)

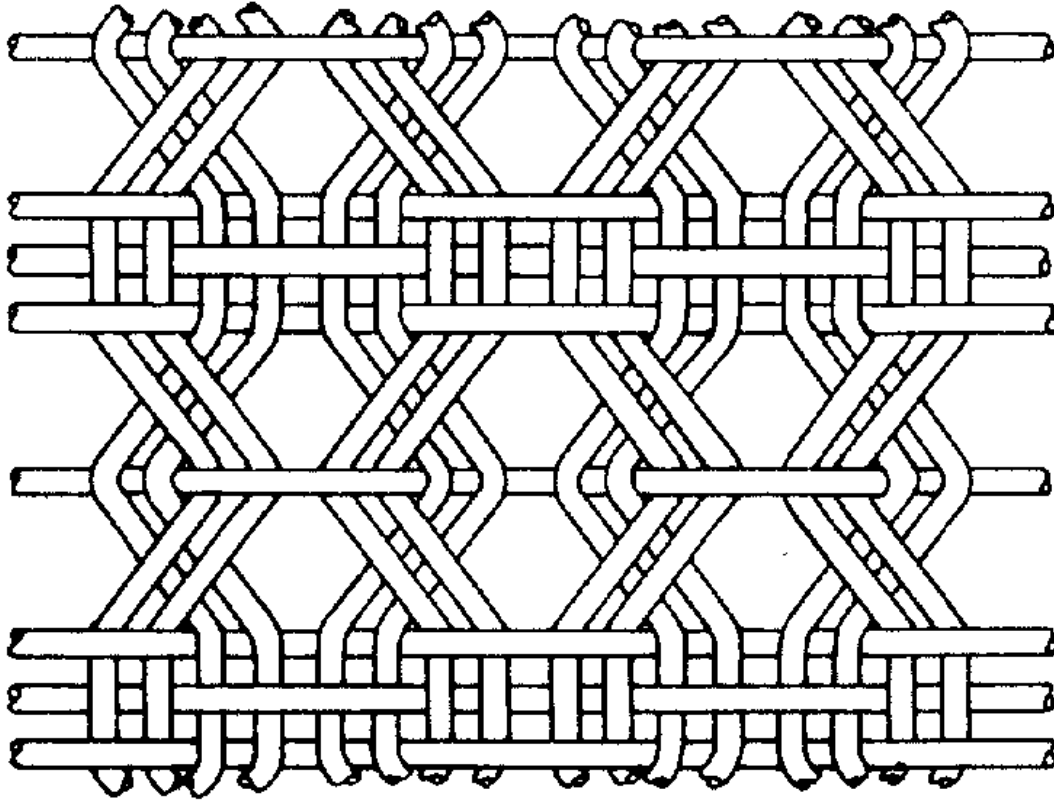


Figure 3 — Leno cellular



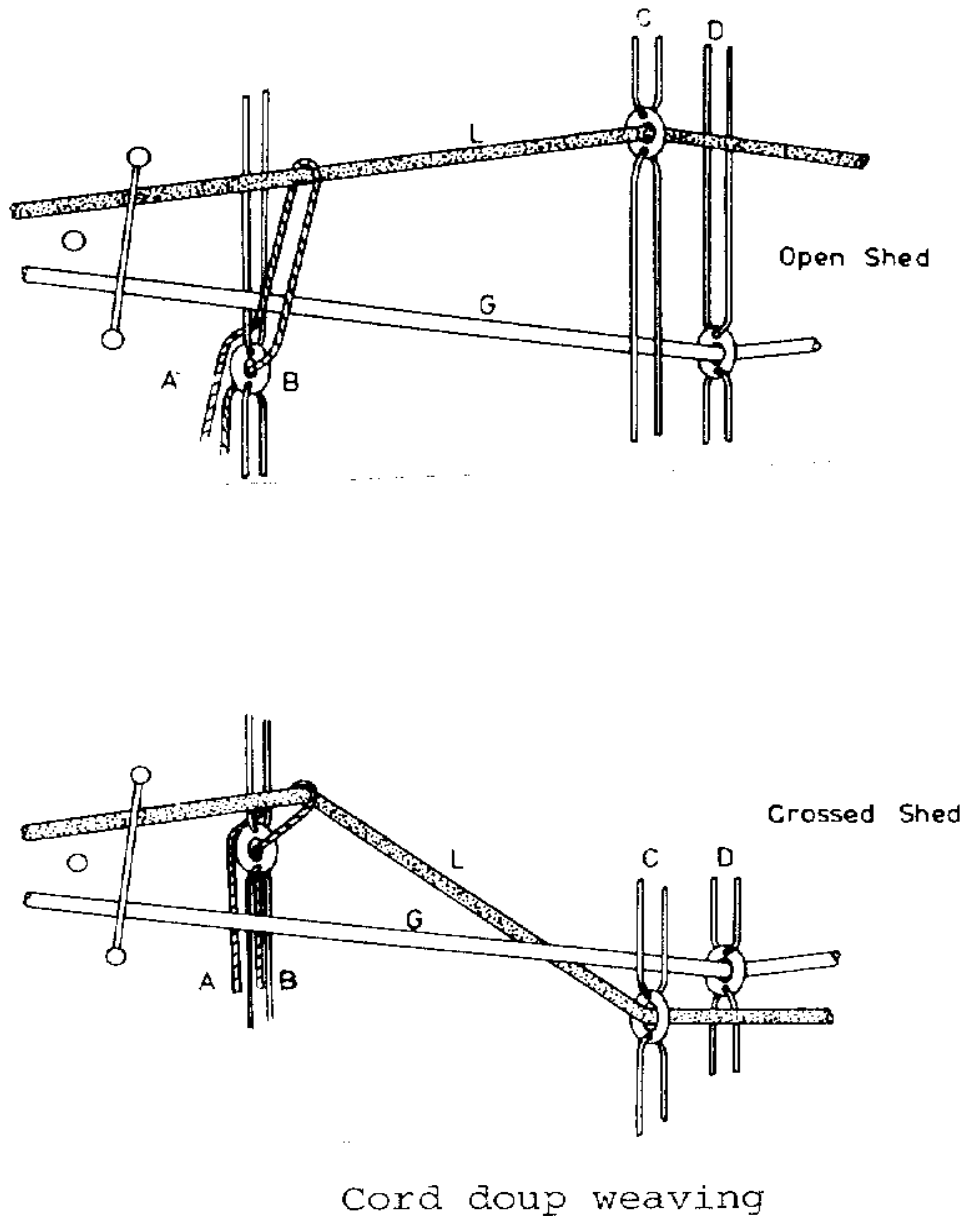


Figure 4 — Leno weaving

## 5 Materials

Cellular blankets shall be made from 100% cotton.

## 6 Manufacture

### 6.1 Yarn

The same type of yarn shall be uniformly spun, two fold, with singles and folding twist factors as stipulated in Table 1, and tested in accordance with Clause A3.

**Table 1 — Physical requirements for cotton leno cellular blankets**

Property	Requirements		Test method
	Adult blanket's	Children's blankets	
a) Twist factor (max.)			
i) Singles Z	4 100	4 100	A3
ii) Folding S	3 200	3 200	
b) Threads per 10 cm, (min.)			
i) Leno warp	36	36	A4
ii) Plain warp	47	47	
iii) Weft	47	47	
c) Dimensions			
i) Width (including tucking strip)	180 cm $\pm$ 3 %	145 cm $\pm$ 3 %	A5
ii) Length	230 cm $\pm$ 3 %	185 cm $\pm$ 3 %	
iii) Width of tucking strip (min.)	23 cm	15 cm	
d) Mass of blanket (min.)	1.5 kg	0.85 kg	A6
e) Breaking load (min.)			
i) warp 20 threads	350 N	350 N	A7
ii) Weft 26 threads	450 N	450 N	
f) Dimensional change on washing (max.)			
i) warp	$\pm$ 4 %	$\pm$ 4 %	A8
ii) weft	$\pm$ 4 %	$\pm$ 4 %	

## 6.2 Weave

The body part of the blanket shall be woven in a five and two leno weave, and the standard and doup ends shall be of equal length. At each side of the blanket there shall be a tucking strip, woven plain, of width shown in Table 1.

### 6.3 Number of threads per ten centimetres

The number of threads per ten centimetres shall be as specified in Table 1 and determined in accordance with Clause A4.

### 6.4 Selvedges

The selvedges shall be firm and straight. They shall be at least 1 cm wide containing twelve ends of the yarn as used in the cloth with two ends weaving as one.

### 6.5 Finishing

The blankets shall be supplied either scoured only, or bleached, or dyed, or bleached and dyed. They shall contain no size or filling when tested in accordance with KS 08-264. Bleached dyed and bleached and dyed blankets shall also comply with the requirements of Clause 10.

## 7 Make-up

The ends of cellular blankets shall have hems 2 cm wide. The seams shall conform to KS 08-836: Part 1 and stitches shall conform to KS 08-836 : Part 2, using a 40 tex 100 % cotton , polyester/cellulosic blend or 100 % polyester sewing thread (see KS 08-479: Parts 1 and 2) with a stitch length not greater than 3.2 mm.

## 8 Dimensions

The dimensions of the cellular blankets shall be as given in Table 1, and tested in accordance with Clause A4.

## 9 Physical requirements

The remaining physical requirements, i.e. mass, breaking load and dimensional change on washing, tested as described in Clauses A6 to A8 shall be as given in Table 1 (see Clauses A1 and A2).

## 10 Colour fastness and fluidity

10.1 Dyed blankets shall comply with the requirements stipulated in Table 2 for colour fastness.

**Table 2 — Colour fastness of dyed blankets**

Agency	Requirements (min.)		Test method
	Change in colour	Staining	
a) Light	5	—	KS 08-69 or KS 08-359
b) Washing	4	4	KS 08-123 Method 4
c) Bleaching	4	4	KS 08-215 Method 2

10.2 The cuprammonium fluidity of bleached only and bleached and dyed blankets shall be not more than 6 units as determined in accordance with BS 2160.

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## **11 Marking**

### **11.1 Pieces**

The following information shall appear in legible and indelible marking on a label attached to the corner of each blanket.

- i) manufacturer's name or registered trade name;
- ii) the words "Cotton leno cellular blanket";
- iii) width and length of blanket in centimetres;
- iv) care label instructions in accordance with KS 08-68;
- v) year of manufacture;
- vi) fibre composition;
- vii) made in Kenya or country of origin.

### **11.2 Bulk containers**

The following shall appear in legible marking on the outside of each bulk container.

- i) information specified in Clause 11.1 (i), (ii) and (iii);
- ii) quantity of pieces.

## **12 Packaging**

Blanket(s) shall be securely packed so as to protect them from contamination with dust, moisture, fumes, etc.

## **13 Criteria for conformity**

Each blanket shall comply with the requirements of this Kenya Standard.

## Annex A (normative)

### Methods of test

#### A1 Test specimens

The test specimens shall be taken at points as widely dispersed as possible throughout the available test sample and no two specimens used for determination of a particular property shall contain the same warp or weft yarns.

#### A2 Conditions and testing atmosphere

All blankets shall be conditioned and tested in the standard atmosphere for testing in accordance with KS 08-32.

#### A3 Twist factor

Determine the tex and twist as described in KS 08-526 and KS 08-527 respectively. For the purposes of this part of this Kenya Standard, calculate the twist factor as:

$$\text{twist factor} = (\text{turns/metre}) \text{ tex}^{\frac{1}{2}}$$

#### A4 Threads per ten centimetres

Lay the blanket, or a full-width portion at least 1 m long, on a flat horizontal surface and place on it, at right angles to the threads to be counted, a steel rule calibrated in millimetres. Measure the width of the strip to the nearest mm and count the number of threads. Calculate the number of threads per ten centimetres. Take the mean of at least three determinations, over different groups of threads, for each requirement.

#### A5 Dimensions of blankets

Spread the blanket out flat on a level surface. Use a steel tape calibrated in millimetres for making the measurements.

Measure both the length and width of the blanket in three places, one in the centre of the blanket and the other two measurements half-way from the centre to (a) and the inner edges of the tucking strips for measurement of length and to (b) the outer edges of the blanket for measurement of width. No movement of the blanket should take place between the measurement of the length and the measurement of the width. Take the mean of the three measurements for length and width respectively.

#### A6 Mass of blanket

Condition the blanket by freely exposing it to the standard atmosphere for testing for at least 5 h. Determine the mass to an accuracy of  $\pm 0.5\%$ .

#### A7 Breaking load

Use the method described in KS 08-119 but, owing to the nature of this particular cloth construction, fray down the specimen to 20 threads for tests in the warp direction and 26 threads for tests in the weft direction, regardless of the resultant specimen width.

#### A8 Dimensional change on washing

Take from the leno portion a specimen and overlock the edges to prevent fraying, follow the procedure described in KS 08-363 procedure !A but with a washing temperature of  $71\text{ }^{\circ}\text{C}$  rather than  $92\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ , then

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tumble dry using the tumble dry specified in KS 08-363. Repeat this procedure twice. Determine the total dimensional change occurring as a result of the three treatments.