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**Non-woven disposable wet wipes —  
Specification**

PUBLIC REVIEW DRAFT

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Kenya Medical Association  
National Environmental Management Authority (NEMA)  
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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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# **Non-woven disposable wet wipes — Specification**

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# **KS 2720:2017**

## **Foreword**

This Kenya Standard was prepared by the Towels, Medical and Hygienic Textile Products Technical Committee under the guidance of the Standards Projects Committee and it is in accordance with the procedures of the Kenya Bureau of Standards.

This standard contains tables of section properties and dimensions of cold rolled steel sections which are available in Kenya.

Non-woven disposable wet wipes are generally used for cleaning purposes.

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

SANS 1245: 2012 Edition 1, Non-woven cleaning wipes.

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

## **Non-woven disposable wet wipes — Specification**

### **1 Scope**

This Kenya Standard specifies minimum requirements for non-woven disposable wet wipes.

This standard does not apply to swabs.

### **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.

KS 2659, *Packaging of textile products — Code of practice*

KS EAS 96, *Sanitary towels — Specification*

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

KS ISO 3071, *Textiles — Determination of pH of aqueous extract*

KS ISO 9073-1, *Textiles — Test methods for nonwovens Part 1: Determination of mass per unit area*

KS ISO 9073-18, *Textiles — Test methods for nonwovens Part 18: Determination of breaking strength and elongation of nonwoven materials using the grab tensile test*

KS ISO 1833-1, *Textiles — Quantitative chemical analysis Part 1: General principles of testing*

KS ISO 18416, *Cosmetics — Microbiology — Detection of *Candida albicans**

KS ISO 20743, *Textiles — Determination of antibacterial activity of textile products*

KS ISO 21149, *Cosmetics — Microbiology — Enumeration and detection of aerobic mesophilic bacteria*

KS ISO 21150, *Cosmetics — Microbiology — Detection of *Escherichia coli**

KS ISO 22717, *Cosmetics — Microbiology — Detection of *Pseudomonas aeruginosa**

KS ISO 22718, *Cosmetics — Microbiology — Detection of *Staphylococcus aureus**

### **3 Definitions**

For the purposes of this standard, the following definitions apply.

#### **3.1**

##### **absorbency time**

rate at which a liquid is dispersed into the non-woven disposable wet wipe

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## 3.2

### **acceptable**

acceptable to the authority administering this standard, or to the parties concluding the purchase contract, as relevant

## 3.3

### **length of piece**

distance between the beginning and the end of the sample in the lengthwise or machine direction

## 3.4

### **overall width of piece**

distance between the outermost edges of the sample measured perpendicular to the longitudinal edges

## 3.5

### **usable width of piece**

width of the fabric excluding any selvedge materials, marks, pin-holes or other non-homogeneous areas of the fabric.

## 3.6

### **non woven**

structures of textile materials, such as fibres, continuous filaments, or chopped yarns of any nature or origin, that have been formed into webs by any means, and bonded together by any means, excluding the interlacing of yarns as in woven fabric, knitted fabric, laces, braided fabric or tufted fabric

NOTE 1 Film and paper structures are not considered as nonwovens.

NOTE 2 For some end uses or specifications, the usable width may be defined differently, as agreed between the interested parties.

## 4 Requirements

### 4.1 General

Non-woven disposable wet wipes shall

- a) be in accordance with good manufacturing practices
- b) be of a non-woven construction,
- c) be of acceptable uniform make and finish,
- d) be free from defects that might impair their appearance or serviceability (or both).

### 4.2 Requirements for non-woven wet wipes

Non-woven hygienic wet wipes shall comply with the requirements given in Table 1.

**Table 1 — Requirements for non-woven wet wipes**

S/N	Characteristic	Unit		Requirement	Test method
i)	Fibre composition	%		A blend of at least 20 % cellulose and the remaining percentage of upto 80 % manmade (or synthetic fibres)	KS ISO 1833-1
ii)	Size	Length	mm	As declared on the label	Annex B

S/N	Characteristic	Unit		Requirement	Test method
i)	Fibre composition	%		A blend of at least 20 % cellulose and the remaining percentage of upto 80 % manmade	KS ISO 1833-1
ii)	Size	Length	mm	As declared on the	Annex B
		Width		As declared on the label	
iii)	Mass per unit area	Total length	g/m <sup>2</sup> , min.	36	KS ISO 9073-1
		Total width			
		Mass piece			
iv)	Breaking strength	Machine Direction-Wet	N, min.	30	KS ISO 9073-18
		Cross Direction-Wet	N, min.	2.5	
v)	Absorbency time (max)(for manufacturer)		seconds	5	Annex A
vi)	pH			4.6 – 8.0	KS ISO 3071
vii)	Moisture content		%	Above 50%	Annex C
viii)	Anti-bacterial activity (if declared) minimum		Anti-bacterial activity value (A)	2	KS ISO 20743
ix)	Total viable count		cfu/g	1	KS ISO 21149
x)	<i>Pseudomonas aeruginosa</i>		cfu/g	Not detectable per	KS ISO 22717
xi)	<i>Staphylococcus aureus</i>		cfu/g	Not detectable per	KS ISO 22718
xii)	<i>Candida albicans</i>		cfu/g	Not detectable per	KS ISO 18416
xiii)	<i>Escherichia coli</i>		cfu/g	Not detectable per	KS ISO 21150
xiv)	Number of wipes		pcs	As declared	Sensory
xv)	Flushability				KS EAS 96

## 5 Test methods

### 5.1 Conditioning

Condition the test samples in accordance with KS ISO 139.

### 5.2 Fibre composition

Use KS ISO 1833-1. Check for compliance with Table 1.

### **5.3 Size**

Check Annex B.

### **5.4 Mass per unit area**

KS ISO 9073-1. Check for compliance with Table 1.

### **5.5 Breaking strength, wet**

Use KS ISO 9073-18, but immerse each sample before testing for at least 60 s in distilled water and test each specimen immediately after removal from the water. Check for compliance with Table 1.

## **6 Packaging and marking**

### **6.1 Packaging**

Non woven disposable wet wipes shall be packaged according to KS 2659.

**6.1.1** The wipes shall be packed in a suitable package that shall protect them from any form of contamination and damage.

**6.1.2** The primary pack seal shall be secure and allow resealing as many times as possible ensuring wet wipe is not dry.

**6.1.3** Shall be delivered in a clean and commercially dry condition.

**6.1.4** Only non-woven wet wipes of the same size shall be packed together in secondary package.

### **6.2 Marking**

**6.2.1** The primary packs shall be marked with legible and indelible pre-printed marking bearing the following information:

- a) Manufacturer's name, address and/or trade mark;
- b) Importer/distributors name, address (if applicable);
- c) number of wipes in a pack;
- d) Intended use e.g. baby, adult, facial, skin;
- e) Size of wipe in the pack;
- f) Ingredients "fibre content" or "material content";
- g) Instruction for use, storage and disposal;
- h) Country of origin;
- i) Date of manufacture and expiry; or best before;
- j) Batch number; and
- k) Each package shall have the relevant quality mark.

#### **6.2.2 Secondary packaging**

The outside of each secondary package shall bear the following information in legible and indelible marking:

- a) The manufacturer's name and/or registered trade mark;

- b) Detailed description of wipe contained within”; and
- c) The number of packages.

## Annex A

(normative)

### Method for determination of absorbency rate (for manufacturers)

#### A.1 Apparatus

**A.1.1 Water tub**, of a depth of at least 100 mm and maintained at room temperature.

**A.1.2 Stop watch**, with an accuracy of 0.2 s.

**A.1.3 Cylindrical basket**, weighing  $2.7 \text{ g} \pm 0.3 \text{ g}$  of height of 80 mm, diameter 50 mm with square opening of 15 mm to 20 mm, made of copper wire of 0.4 mm diameter.

**A.1.4 Weighing machine**

**A.1.5 Forceps**

**A.1.6 Glass beakers**, each of capacity 2 L, or other suitable transparent containers, each of which is filled to a depth of approximately 200 mm with distilled water maintained at a temperature of  $20 \text{ }^{\circ}\text{C} \pm 2 \text{ }^{\circ}\text{C}$  and has a surface area of adequate size to allow the test specimen to float freely.

#### A.2 Preparation of test specimens

Take three test specimens, each of mass at least 5 g and composed of a number of pinches of fibres taken from widely separated parts of the conditioned laboratory sample.

#### A.3 Procedure

**A.3.1** Compress the first test specimen to a volume of approximately 20 mL.

**A.3.2** By means of the forceps (see A.1.5), place the test specimen lightly on the surface of the distilled water (see A.1.6) and simultaneously start the stopwatch (see A.1.2).

**A.3.3** Using the stop watch, measure the time it takes the basket and its contents to sink below the surface of water in seconds.

**A.3.4** Record the absorption period to the nearest 0.1 s.

**A.3.5** Repeat the test for at least three test specimens.

#### A.4 Calculation

Calculate, to the nearest second, the arithmetic mean of the three test results.

#### A.5 Test report

Report the following information:

- a) all the data needed to identify the laboratory sample tested;
- b) confirmation that the test was carried out in accordance with this standard;
- c) any deviation from this standard; and
- d) the mean absorbency rate, expressed in seconds, of the absorbent cotton wool.

**Annex B**  
(normative)

**Method for determination of length and width**

**B.1 Apparatus**

**B.1.1 Steel scale**, that is of a length exceeding the width of the fabric to be measured, and is graduated in centimeters and millimeters.

**B.1.2 Marking pen**

**B.2 Procedure**

**B.2.1 Procedure for width**

**B.2.1.1** Lay the test sample flat and full width (without subjecting it to tension) on a plane surface and condition it in that state for at least 24 h in accordance with KS ISO 139.

**B.2.1.2** Take, to the nearest 1 mm, five measurements across the overall width or between the innermost selvedge threads (as relevant) of the conditioned test sample at approximately equal intervals throughout its length.

**B.2.1.3** Calculate the arithmetic mean of the five measurements and record it as the width of the sample.

**B.2.2 Procedure for length**

Take a laboratory sample as specified in the relevant product specification. Where no specification exists, take the laboratory sample as agreed upon between the test laboratory and the manufacturer to ensure a reasonable and acceptable reliability at a reasonable and acceptable confidence level.

**B.2.2.1** Lay the laboratory sample flat and full width (without subjecting it to tension) on a plane surface and condition it in that state for at least 24 h in accordance with KS ISO 139.

**B.2.2.2** From the conditioned laboratory sample cut a test specimen across the full width of the laboratory sample along a datum line drawn (see B.1.2) at right angles to the selvedges and as close as possible to the beginning and the end of the laboratory sample.

**B.2.2.3** Take, to the nearest millimeter, five measurements (see B.2.1.2) of the length of the test specimen at approximately equal intervals across its width.

**B.2.2.4** Calculate the arithmetic mean of the five measurements and record it as the length, in metres (accurate to the nearest centimeter), of the laboratory sample.

## **Annex C** (normative)

### **Determination of moisture content**

#### **C.1 Principle**

A specimen of specified mass of filler material of the non-woven disposable wet wipe is dried in an oven at specified temperature and the moisture content is determined.

#### **C.2 Apparatus**

**C.2.1 Balance**, with an accuracy of 0.05 % of the weighed mass.

**C.2.3 Sample container**, waterproof when sealed, will be used for transfer of analyzed material and during weighing.

**C.2.4 Oven**, well ventilated with a temperature of 102 °C to 105 °C.

#### **C.3 Sample preparation**

**C.3.1** Take a sufficient number of dry sample containers, number them and take their masses after they are held open for a short period of time so that they will have the same air pressure as the surrounding atmosphere. Then leave them open until you take the test piece.

**C.3.2** Take 5 random pieces of the wet wipe. The test pieces shall weigh 5 g.

**C.3.3** If the surrounding atmosphere is hot and humid, prevent water condensation on the internal and external surfaces of the container.

**C.3.4** Handle the test pieces gently to prevent dirt or changes in water content. Don't touch the test pieces with your bare hands. Put the test pieces in a container just after taking them and close the container immediately.

#### **C.4 Procedure**

**C.4.1** Dry the test pieces in an oven with a temperature of 102 °C to 105 °C. Open the containers lid and dry the specimen inside the container. Open the container for a moment, to balance the air pressure inside the container with the surrounding pressure, weigh the container that holds the specimen again and calculate the weight of the specimen.

**C.4.2** First cycle of drying will last at least 30 min. Return the container with the test pieces to the oven, for at least half the first cycles drying time. Take the container out and take the mass with the test pieces inside. Repeat the drying and weighing cycles. When the drying time on every cycle is at least half of the total previous drying cycle times. Continue the process until the difference between two consecutive masses does not exceed 0.1 % of the original mass of the specimen.

#### **C.5 Calculations**

Calculate the moisture content using the following formula and round the results up to the nearest 0.1 %.

$$V = 100 \frac{a - b}{A}$$

where,

- $a$  is weight of the container with the specimen before drying (in grams);
- $b$  is weight of the container with the specimen after drying (in grams); and
- $V$  is water content (in weight %).