SPECIFICATION TECHNIQUE CAMEROUNAISE STC 3025 : 2024

2024

AGENCE DES NORMES ET DE LA QUALITE©
STANDARDS AND QUALITY AGENCY©

www.anor.cm

COUCHE JETABLE POUR BEBE SPECIFICATION

PROJET DE NORME CAMEROUNAISE

ENQUETE PUBLIQUE N° : 16

Durée de l'enquête Du 24/04/2024 Au 22/06/2024

Edition et diffusion par l'Agence des Normes et de la Qualité
B.P.: 14966 Yaoundé – CAMEROUN – Tél: 699 791 787/Fax.: (237) 222 22 64 96
E-mail : enquetepublique@anor.cm – www.anor.cm/enquetes-publiques

ANOR©

DN-R2/PR-01/ENR-02
16/12/2015

Disposable baby diapers — Specification

Contents

Page

Disposable baby diapers — Specification

1 Scope

This Cameroon Standard specifies requirements and test methods for disposable baby diapers.

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.

2.1 ISO 6887-1, Methods for the microbiological examination of foods – Part 1: General procedures and techniques

2.2 ISO 6888-1, Methods for the Microbiological examination of foods – Part1: Enumeration of coagulase-positive staphylococci in foods

2.3 ISO 4833-1, Microbiology of food and animal feeding stuffs – Horizontal method for the enumeration of microorganisms – Colony-count techniques at 30°C

2.4 ISO 9073 -8, Textiles – Test methods for nonwovens – Part 8: Determination of liquid strike-through time (simulated urine)

2.5 ISO 9073 - 14, Textiles – Test methods for nonwovens – Part 14: Converstock wetback

2.6 GB/T 28004.1-2021

2.7 Arrété N°000056/MINMIDT/DAJ/CDQ/CDL du 29 Janvier 2019

2.8 ARS 1566 :2017 Disposable diapers for infants - spécification

3 Terms and definitions

For the purposes of this standard the following definitions apply:

3.1

disposable baby diaper

disposable hygienic pad for babies having capability to absorb urine and prevent stool and fluid from leaking out

3.2

Super Absorbent Polymer (SAP)

granular cross-linked sodium polyacrylates material used as absorbent core with high retention capacity in disposable baby diapers.

3.3

acquisition/distribution layer (ADL)

component of an absorbent hygienic product through which the fluid is transferred and distributed within the absorbent core.

3.4

top sheet

the outer layer of an absorbent hygiene product that is in direct intimate contact with the skin. It allows gradual transfer of the fluid from the point of contact to the inside of the product

3.5

Back sheet

layer of an absorbent hygienic product made of either polymer film or non-woven film designed to prevent wetness transfer from the wearer to their bed or clothes.

3.6

Rewet (RWT)

the mass of test solution which returns to surface under specific pressure after a certain amount of the test solution is absorbed by the diaper.

3.7

Leakage

The mass of test solution which penetrates the leak-proof carrier film under specific pressure after a certain amount has been absorbed by the product.

3.8

liquid strike through (LST)

time taken for liquid to pass through the top sheet to the core of the diaper.

3.9

Absorptive capacity

Ability of a diaper to absorb the liquid

3.10

Non- woven

Engineered fibrous assembly, primarily planar, which has been given a designed level of structural integrity by physical and/or chemical means, excluding, knitting or paper making

3.11

Accepted

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

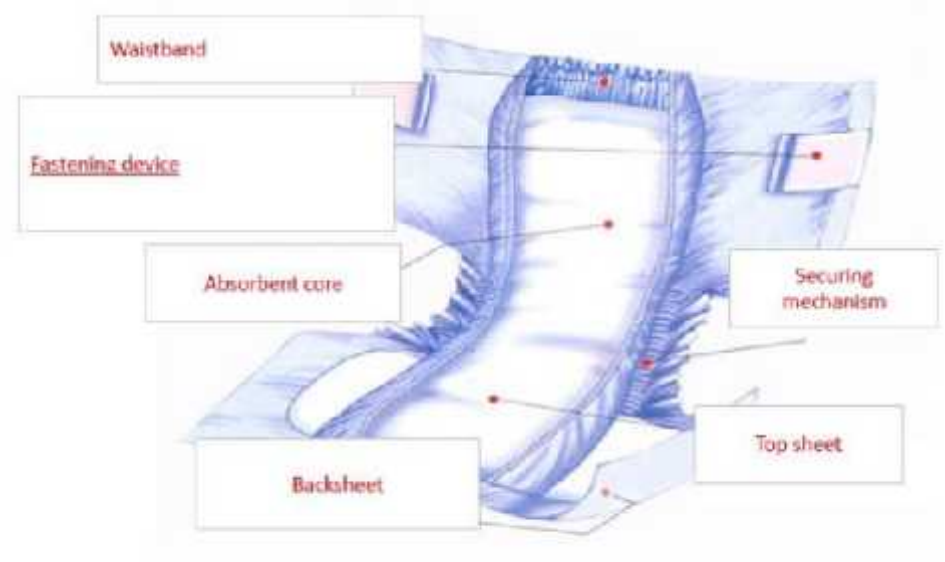


Figure 1 – Baby diaper

4 Classification

Baby diaper shall be classified according to the weight of baby as follows:

4.1 Small size (less than 8kg)
4.2 Medium size (6kg -11kg)
4.3 Large size (9kg-16kg)
4.4 Extra-large (14kg -25kg)

NOTE: Classification is based on manufacturers' specifications

The dimensions of the diaper shall ensure and comfortable fit for the baby

5 Requirements

5.1 General requirements

Baby diapers shall be manufactured, stored and packed under hygienic conditions to minimize contamination of the product and shall be disposable. The diaper shall present a neat, well finished appearance and shall be free from all defects which might affect the functionality of the diaper.

5.2 Materials requirements

All materials used for making disposable baby diapers shall not harm the skin in contact. None of the components in the products, including additives, should be listed in any Regulatory Agency as being “unsafe’’.

In accordance with decree N°000056/MINMIDT/DAJ/CDQ/CDL from 29 Janvier 2019 the following chemical substances must no be present in the finished product

- Azos dyes,
- Formaldehyde
- Alkyl phenol (nonylphenol ethoxylate , nonylphenol1)
- Phthalates
- Heavy metals (lead, nickel)

5.2.1 Absorbent core

a) consist of super absorbent polymers for absorption of fluids to keep moisture away from the skin.

b) If use pulp fibers which should be Fluff Pulp rather than Paper Pulp in order to maintain good fluids distribution. The Fluff Pulp has relatively longer fiber length for better quality performance as well as hygiene control during its production. It shall also have a comfortable feel and shall ensure complete dryness and prevent growth of microorganisms.

c) be free from foreign materials, lumps no more than 10 mm x 10 mm in size, unintentional splits, holes and protruding points when visually examined.

5.2.2 Top sheet

The layer which is in contact with the skin shall:

a) be of material that helps fluid absorption, and shall have no harmful effect; and

b) cover the absorbent core completely and prevent the core from reaching the skin or clothes under normal handling.

5.2.3 Back sheet

There shall be an outer cover to prevent direct contact of the absorbent core with the baby’s clothing and to prevent fluid leakage out of the baby diaper.

5.2.4 Fastening device (closure system)

There shall be a suitable device for fastening the baby diaper for secure use. The closure system regardless of how its functionality is achieved should allow for multiple fastening and unfastening. This promotes better fit and allows for easy check of wetness without having to dispose of and replace unsoiled product.

5.2.5 Stretchable waist band

There shall be a stretchable waist band for better fitness with baby body shape at the back. This stretchable waist band helps to prevent back leakage as well as improves aesthetic appearance. More importantly, when baby is eating at the siting

position, there will be much less stress from stretchable waist band than elastic back ear. So stretchable waist band becomes vital character for baby diaper.

5.2.6 Air permeability

There should be minimum air flow sufficient to release trapped body heat or gaseous body perspiration in the pelvic region. To be breathable the material should be made of micro porous that do not enable water to pass through, but only gases: Such as polyethylene material.

5.3 DEFECTS

5.3.1 Refastenable tabs shall be able to peel open without tearing the landing strip.

5.3.2 The tabs shall be able to adhere securely.

5.3.3 There shall be two fastening tabs, on either side of the diaper at the correct position as agreed upon (see Annex B).

5.3.4 There shall be no tears, perforations or cuts in the tabs.

5.3.5 The absorbent pad shall be centralized.

5.3.6 The pad shall be free from contamination (such as adhesives or manufacturing materials) and hard spots.

5.3.7 The absorbent filler shall be evenly distributed within the pad.

5.3.8 None of the absorbent filler material shall be accessible from the outside of the diaper.

5.3.9 The landing strip shall be correctly placed in relation to the tabs and completely welded to the outer layer without wrinkles, folds or breaks.

5.3.10 The leg elastic(s) shall be correctly placed.

5.3.11 The nonwoven inner lining(s) shall not contain any holes or severe wrinkle.

5.3.12 The diapers shall not be joined together due to an outflow of adhesive.

5.3.13 The diapers shall be sealed around the edges.

5.3.14 Diapers shall be folded flat without excessive crumpling.

5.4 Specific requirements

Disposable baby diapers shall comply with the performance requirements given in Table 1 when tested in accordance with the methods specified therein.
5.4.1 Table -1 requirements for Liquid Strike Through

Requirement	**S, M, L, XL (Sec)**	**Test Method**

LST 1	≤60	Annex A/ ISO 9073-8
LST 2	≤60	
LST 3	≤70	

5.4.2 Table 2- Requirement for Rewet under load

Requirement	**S, M, L, XL (g)**	**Test Method**
RWT 1	≤0.5	Annex B/ ISO 9073-8
RWT 2	≤10 (with a tolerance margin + 5)	
RWT 3	≤25	

5.4.3 Requirement for Absorption and Retention Capability

When test is carried out in accordance with Annex C, the diaper core shall absorb all the applied saline solution (urine) after application of three gushes and 10 minutes waiting time is allowed after each gush.
The fluid shall not spill out of the cuff material within the 10 minutes waiting time.
Fluid shall not leak through the backsheet of the diaper.

5.4.4 Table -3 Requirement for Absorption Capacity

Requirement	**S**	**M**	**L**	**XL**	**Test Method**
Absorption	≥360g	≥420g	≥500g	≥580g	Annex F

5.4.5 Requirement for Shear Test

When test is carried out according to Annex D, the Tapes shall not unfasten from the Landing Zone until 20 minutes or more time elapses.
The Tapes shall remain attached to the Back Ear. The Back Ear shall also remain attached to the diaper throughout the test.
The diapers shall have two fastening tabs or refastenable tabs and landing strips (see Table) 1 the diapers shall comply with the relevant performance requirements given in Table 1.

Table 4 — Performance requirements

1	2	3	4	5	6
Property	requirement				
	small	**medium**	**large**	**x-large**	
Re fastenability %	90% of the original				Annex G

Tab strength with front landing tape.N.MIN	40	Annex H
Ph of extract	6-8	ISO 3071
Ear strength with non-woven N.MIN	25	Annex I

5.4 6 Microbiological requirements

When tested in accordance with recommended test methods, baby diaper shall comply with microbiological limits specified in Table 3.
Table 5 – Microbiological requirements for baby diaper
For microbiological analysis, testing shall be done every six (6) months.

Microorganism	Requirement	Test Method
TVC	$<1 \times 10^2$	Annex E.4.1
Enterobacteriaceae	Absent	Annex E.4.2
Staphylococcus aureus	$<1 \text{ X } 10^1$	Annex E.4.3

6 Packaging and marking

6.1 packing and/or packaging

Diapers shall be packed in suitable waterproof packages that shall protect them from any form of contamination and damage. Packaging for shipment shall be in accordance with the manufacturer's standard practice and in a manner readily accepted by the market. Within the secondary packing, units shall be packed in a manner designed to minimize damage during shipment due to rough or improper handling.

6.2 Marking

Disposable baby diapers packs shall be marked with legible and indelible pre-printed marking or a securely affixed and durable label bearing the following information name of products:
a) name and address of the manufacturer and/or importer/distributor (if applicable);
b) number of diapers in the pack;
c) intended baby weight in kilograms;
d) instructions for proper use;
e) instructions for storage and disposal;
f) date of manufacture and expiry;
g) batch/ lot number;
h) country of origin; and
i) any perfume, lotion, powder and any other substance added on to the diaper.

j) the main material used should be identified

7 Test

Baby diaper shall be tested in accordance with recommended test methods set out in this standard.

8 Criteria for conformity

Baby diaper shall comply with the requirements of this standard if after testing of samples in accordance to recommended test methods no defects are found. The manufacturer or the supplier of baby diaper shall bear the burden of proof of compliance with this standard.

Annex A
(Normative)

Liquid Strike through Test

Purpose:

To measure the time needed for liquid to strike through the top sheet to the core. The outcome of the test shall be in conformance to Table 1.

Materials:

NB

Liquid solution (9 g of salt, 1 L of water and 2 drops of dye)

Equipment:

Graduated burette/cylinder of 100 ml. (of class A)
Stopwatch timer
LST plate 10 x 10 cm, inner diameter: 2.5 cm, thickness 2.4 cm, weight 230 g
Scissors, ruler

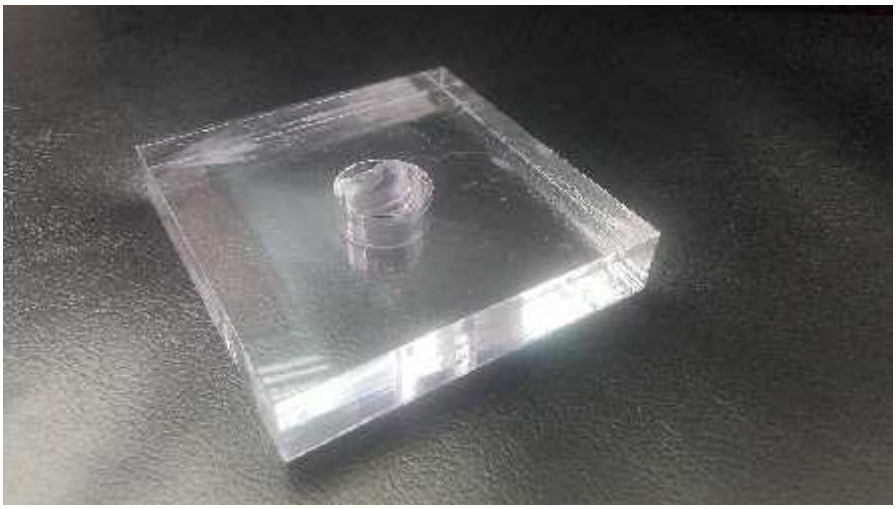


Figure 2 - Liquid Strike Through Plate (LST)

Procedure:

1. Using scissors, cut off the cuffs and elastic to make the diaper flat.
2. Place the Liquid Strike Through Test (LST) plate on the product with the front positioning distance as per the table below such that the aperture of the LST plate will exactly be on the measured front positioning distance.
3. Fill the graduated burette/cylinder with the liquid solution (quantity as per table below).
4. Release the liquid in the graduated burette/cylinder into the LST plate (quantity as4. per table below), at the same time start the timer.
5. When the liquid is completely absorbed by the product, stop the timer.

Results:

Liquid strike through is automatically indicated by the stop watch.

Measuring Unit: seconds (s)

NB: Three (3) consecutive insults are applied on the same product The time span between one insult and the next is 10 minutes. Quantity and front position distance are as per the table below.

The results are recorded as LST 1, LST 2, and LST 3.

Size/Class of diaper	**1st insult (ml)**	**2nd insult (ml)**	**3rd insult (ml)**
Small	30	30	30
Medium	50	50	50
Large	60	60	60
Extra large	60	60	60

Annex B
(Normative)

Rewet Under Load

Purpose:

To measure the wet back quantity of fluid that is absorbed by filter paper under specific load from the surface of the product.

Materials:

Liquid saline solution: 1 L of water, 9 g of salt and two drops of dye.
Filter Paper diameter: 110 mm.

Equipment:

Graduated cylinder/burette of 100m (of class A)
Stopwatch timer
LST plate 10 x10 cm, Inner diameter 2.5 cm.
Rewet plate 12.5 x12.5 cm
3.0kg weight
Digital Scale precision of 0.01 g (calibration)
Ruler & scissors

Procedure:

1. Repeat steps 1 to 5 of Annex A
2. Wait for 10 minutes
3. Weigh the filter paper. Refer to the table below. Record the weight as the “Initial Filter Paper Weight”
4. Place the filter paper centered over the LST insult positioning.
5. Cover the filter paper with Rewet plate.
6. Put the 3kg weight on the plate and immediately start the timer
7. After 2 minutes, release the weight and weigh the filter paper. Record the weight as the "Wet Filter Paper Weight”.

Calculation:

Rewet filter paper weight - initial filter paper weight

Measuring unit: gram (g)

NB. Three consecutive Rewet tests are applied on the same product immediately after each LST insult Quantity and front positioning are as per the table below, the results are recorded as Rewet 1, Rewet 2 and Rewet 3.

Size/Class of diaper	**1st insult (ml)**	**2nd insult (ml)**	**3rd insult (ml)**	**Loading point**
Small	30	30	30	Center of the core
Medium	50	50	50	
Large	60	60	60	
Extra large	60	60	60	
Filter paper weight(g)	~5g	~10g	~20g	

Annex C
(Normative)

Test of Absorption and Retention Capacity

Purpose:

The intention of this method is to test the minimum fluid holding capacity requirements of diapers, the outcome of the test shall comply with clause 5.3.3.

Scope:

The method is intended for use on diapers sizes (small) to (extra-large). lt may also be used for pants diapers and pull-ups but does require the waistband of the diapers to be cut open on both sides to allow the diaper to lie flat.

Principle:

The test simulates the introduction of urine into a diaper under the following Conditions:

- Specific loading volumes are used for each diaper size.
- The diaper is tested under pressure to simulate real wearing conditions.
- A total of three (3) loadings are carried out every 10 minutes.
- To pass the test the diaper needs to both Absorb and Retain all of the fluid applied during the test.

Sampling and Preconditioning of diapers:

Modern diaper production lines are well controlled however it is easy to find diapers within 1bag that can differ in diaper weight by 1 to 2g from the lightest to the heaviest diaper. To compare the performance of different diapers in a lab performance test, it is best to measure the diapers within their target average weight to avoid testing the lightest diaper from 1 bag against the heaviest diaper from another bag.

- Determine the average weight of 10 diapers and record it.
- Select 6 samples in a weight range of the average diaper weight 1g and use these diapers for the next preconditioning step.

Many modern diapers are packed into tight packages; this means that the same diaper taken freshly from a compressed bag and a diaper left to condition overnight can show differences in performance driven by different void space availability within the diaper. This effect is reversible by allowing the diapers to condition unrestrained by the packing.

- Take the 6 diapers to be tested 24 hours before testing, unfold them and allow them to condition in the testing laboratory ideally in conditions of controlled temperature (23 +2 C) and humidity (62+5%).

The final test only requires 4 diapers to be tested however it is advisable to condition extra diapers in case there are any issues with testing individual diapers during the testing.

Instrumentation and reagents:

- A rigid cover plate with a weight as shown below. Dimensions of plate 200mm X 70mm. Inner diameter of cylinder 40mm, total weight 2950g ± 10 g representing a pressure of 2.11 kPa ± 0.05 kPa (0.3 psi ± 0.007 psi) for all sizes.

  - 0.9% NaCl solution (22-24°C)
  - dye
  - Graduated cylinder (1 ml graduation) (of class A)
  - Small pipette of 5 to 10 ml volume to accurately adjust the volume of fluid for the test.
  - Stopwatch accurate to 1 sec.
  - Ruler (at least 2 cm longer than the absorbent core of the sample, 1mm graduation)
  - Pen to mark the fluid acquisition point on the diaper.

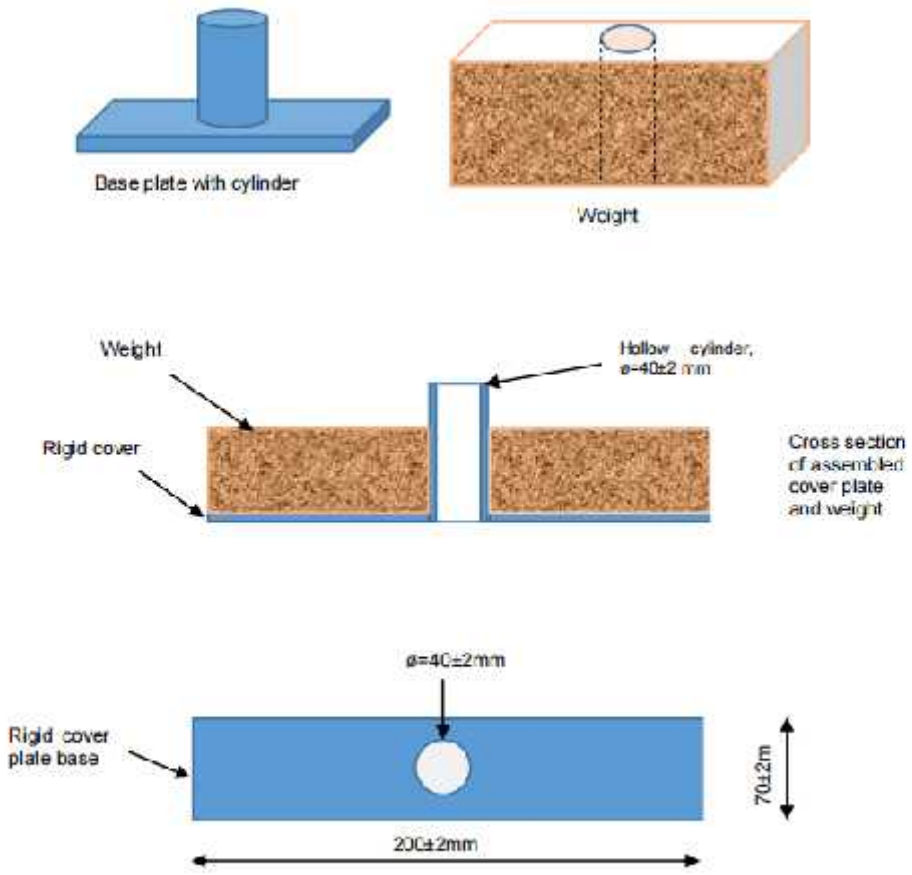


Figure A.1 — Apparatus and set up

Sample preparation and Set-up:

The test should be performed in a well-lit laboratory as the end point of the test is visual: a poorly lit laboratory may make it difficult for the analyst to accurately determine the endpoint of the test.

1. Take 4 diapers randomly from the 6 diapers left conditioning overnight in the laboratory. The test requires only 4 diapers to be measured.
2. Mark the loading point as the middle of the absorbent core; note that the absorbent core does not cover the full length of the product but it is more concentrated in the front of the diaper therefore the middle of the absorbent core may not be the same as the middle of the diaper, Measure the length and width of the absorbent core. Mark the midpoint, which will be the loading point.
3. Place diaper with topsheet facing up on the tray with the front of the diaper facing away from the analyst. The front of the diaper normally has smaller ears; the back of the diaper has stretchable waistband and fastening tapes.

4. Place the acquisition plate on the diaper, ensure the plate is centered and the cylinder opening is placed over the marked loading point. The diaper should be gently stretched to remove any wrinkles in the diaper. Take care not to tear the diaper when positioning the acquisition plate to remove the wrinkles.
5. Gently place the provided weight on the acquisition plate.
6. Fill the measuring cylinder with the respective amount of saline solution from Table below depending on the diaper size. Use the small pipette to make fine adjustments of the volume to bring it to the required amount +/- 1ml.
7. Set stop watch to 10min.
8. Start the stop watch and gently pour the saline onto the diaper.
9. If gush is absorbed after 10 minutes. i.e. no more liquid in the cylinder and no liquid on the surface outside the cuffs of the product, repeat step 6to 8 another 2 times.

Table: Gush volume per diaper size. The amount of fluid should be measured accurately to t 2ml using a small pipette.

Classification	Gush volume
Small	3 x 35ml
Medium	3 x 50ml
Large	3 x 60ml
Extra Large	3 x 60ml

Result:

Test is **passed** if after apply a total of three gushes and 10 minutes waiting time after each gush all the applied saline solution gets absorbed by the diaper core. Fluid may temporarily move out of the side of the acquisition plate. It is important that it does not pass through the cuff material and that it is reabsorbed into the diaper with the 10 minutes waiting time. In this step it is important to have good lighting during the testing to ensure that any fluid not absorbed into the diaper is detected.

Test **failed if** saline solution is not totally absorbed or any one of the following outcomes is observed:

- Unabsorbed fluid left in the vertical tube of the acquisition plate after 10 minutes;
- Fluid spills through the inner cuff material; and
- Fluid leaks through the basksheet, even a small quantity can lead to wetting of the baby's clothing in real use condition. This is checked at the end of the test, any wetness on this tray is evidence that fluid has leaked through the backsheet material.

Annex D
(Normative)
Shear Test

Purpose:

To measure the efficiency of the fastening system of baby diapers.

Principle:

Diapers can get displaced from the right position or fall off babies as they roll over due to inefficient fastening system. The fastening system is expected to stay intact when baby plays. The test simulates the stress the fastening system goes through during period the baby wears the diaper.

Equipment:

Two retort stands and a cross bar as shown in Figure 4
1 kg standard weight.
Receiver of height about 25cm and diameter of about 18cm with cushion within.
A timer.

Figure 4 - Shear Test set-up

Procedure:

1. Set the two retort stands at about 40cm apart.
2. Clamp the cross bar across the retort stands at about 40cm above the bench.
3. Place the receiver under the cross bar.
4. Fasten the diaper to be tested on the cross bar in such a way that both tapes lands properly on the landing zone.
5. Adjust the diaper so it sets right above the receiver.

6. Adjust the cross bar up or down so that the base of the hanging diaper is above the receiver.
7. Gently place the 1kg standard weight in the diaper so that the weight balanced centre of the hanging diaper and start the timer just as the weight set in diaper.
8. Wait for 20 minutes
9. Stop the timer just when the weight drops into the receiver.

Test fails if:

- Any of the Tapes unfastens from the Landing Zone in less than20 minutes.
- Any of the Tapes detaches from the back ear during the 20 minutes test period.

Annex E
(Normative)

Microbiological examination

E.1 Apparatus and equipment

Use apparatus and equipment complying with the relevant requirements of ISO 6887-1.

E.2 Media and reagents

E.2.1 General

Ensure compliance with the general requirements for the ingredients and for the preparation of media and reagents given in ISO 6887-1.

E.2.2 Bacteriological peptone

Peptone	10g
Disodium phosphate dodecahydrate	1g
Sodium chloride	5g
Mono-potassium phosphate	1.5g

Dissolve the ingredients in distilled water and make up to 1 L. Adjust the pH value to be 7.0±0.1 after sterilization. Dispense 300 mL volumes into flasks of capacity 500 mL and sterilize by autoclaving at 121 C ± 2 °C for 20 min.

E.2.3 Plate count agar

Agar	15g
Glucose	1g
Tryptone	5g
Yeast extract	2.5g

Dissolve the ingredients in distilled water, made up to 1litre, and adjust the pH value to 7.2 ±0.2. Dispense 15 mL volumes into bottles and sterilize by autoclaving at 121 °C ± 2 °C for 20min.

E.2.4 Neutral red-bile salt peptone glucose medium

Peptone	20g
Glucose	10g
Bile salts No. 3	1.5g
Sodium chloride	5g
Neutral red	0.03g
Crystal violet	0.002g

Dissolve the ingredients in 400 mL of distilled water and make up to 500 mL boiling to aid

solution. Adjust the pH value to 7,4 and filter to a clear solution. Dispense 10 mL volumes into bottles each containing a Durham tube and sterilize by autoclaving at 121 °C ±2 °C for 20 min.

E.2.5 Fluid soybean-casein digest medium

Pancreatic digest of casein	17g
Papaic digest of soybean meal	3g
Sodium chloride	5g
Dibasic potassium phosphate	2.5g
Dextrose	2.5g

Dissolve the ingredients in distilled water and make up to 1 L, warming slightly to aid solution. Cool the solution to room temperature and adjust the pH value to be 7.3 ± 0.2 after sterilization. Filter to clarify (if necessary), dispense into suitable containers, and sterilize by autoclaving at 121 °C ± 2 °C for 20 min.

E.2.6 Cetrimide agar medium

Pancreatic digest of gelatine	20g
Magnesium chloride	1.4g
Potassium sulphate	10g
Agar	13.6g
Cetyl trimethylammonium bromide (Cetrimide)	0.3g
Glycerine	10mL

Dissolve all the solid ingredients in distilled water, make up to 1 L. and then add the glycerine. Heat, agitating frequently, and boil for 1 min. Adjust the pH value to be 7.2 ± 0.2after sterilization, Dispense into suitable containers and sterilize by autoclaving at 121 °C±2°C for 20 min.

E.3 Preparation of test suspension

Transfer 300 mL of the sterile solution of bacterioloqical peptone (D.2.2) to a sterile wide-mouthed jar of capacity not less than 1 L and not more than 2 L. The jar shall have a mouth of diameter not less than 150 mm and not more than 250 mm, and is fitted with a hermetically closing glass or metal-and-glass lid. Aseptically place the diaper under test the solution in the jar, fit the lid, agitate the contents of the jar for 2 min and then allow the jar to stand for 10 min. Repeat this agitating and standing procedure twice more. Aseptically about 100 mL of the test suspension for testing as described in D.4 below.

E.4 Procedure

E .4.1 Total viable bacterial count

Into each of three sterile petri dishes aseptically pipette a 1 ml portion of the test suspension. To each dish, add 15 mL of freshly melted plate count agar (D.2.3) that

has been cooled to 45 ·C, and mix well Incubate, count and calculate the total count as described in GS ISO 4833-1.

E .4.2 Examination for the presence of Enterobacteriaceae

Aseptically add 10 mL of the test suspension to a bottle that contains neutral red – bilie salt peptone glucose medium (D,2.4). Incubate the bottle for 24 h to 3 h at 37 °C ± 0.5°C and examine for the presence of Enterobacteriaceae as evidenced by the formation of acid and gas.

E .4.3 Examination for the presence of Staphylococcus aureus

Use the media, reagents and procedure described in GS ISO 6888-1 to examine the test suspension (D.3). As a control, pipette 0,1 mL of a 1:1000 dilution of an 18 h to 24 h culture of Staphylococcus aureus SATCC Sta 10 into Staphylococcus medium and proceed as with the test suspension.

Annex F
(Normative)

Absorption Capacity

a) Take five conditioned samples for absorption test. Weigh each diaper and record as weight "W_a"

b) Put the five samples into tray which contains enough 0.9% saline water.

c) Wait for 20min to allow diaper full absorption.

d) Hang the diaper for 10min

e) Take out each piece of diaper and weight it and record as weight "W_b".

f) Absorption capacity amount= W_b-W_a.

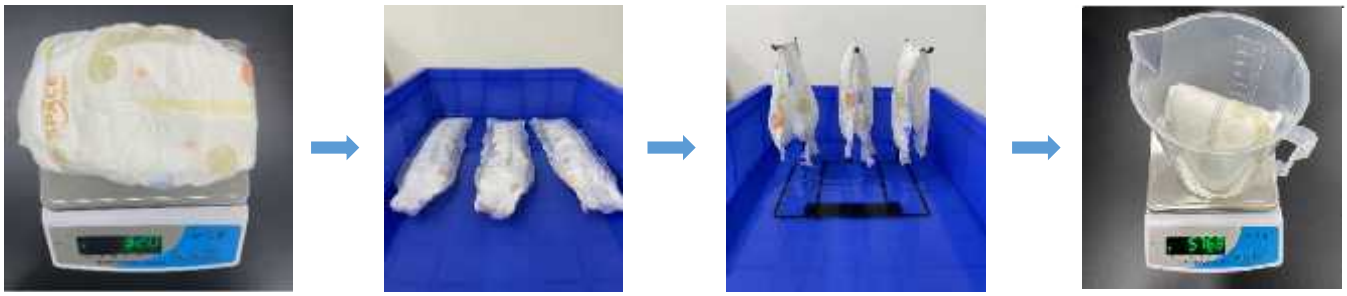
g) Record and report the average absorption of the five samples tested.

Weight the diaper and record as W_a

Put the diaper into water and wait for 20min

Hang the diaper for 10min

Weight the diaper and record as W_b



Annex G
(Normative)

Re-fastenability of tabs (when specified)

G.1 Apparatus

G.1.1 Tensile strength testing machine, as described in ISO 13934-1, that is operated at a rate of traverse of 500 mm/min with the gauge length of 100 mm to allow clamping of the free ends of the test specimens, and fitted with an autographic recorder.

G.1.2 A roller exerting a force of 2 kg.

G.2 Preparation of specimens

Prepare three specimens by cutting an area around the tab and the area around the landing strip, each of size approximately 100 mm × 100 mm, that will fit the jaws of the tensile strength testing machine.

G.3 Procedure

G.3.1 Lift tab to expose attachment area.

G.3.2 Position on front landing strip without applying any pressure.

G.3.3 Move the roller over the tab at a speed of 2.5 cm/s up and 2.5 cm/s down.

G.3.4 Mark the area where the tab is stuck.

G.3.5 Clamp side A (see figure 1) of landing strip in the lower jaw and side B (see figure 1) of the area next to the tab in the upper jaw.

G.3.6 Start machine and record the result (1st reading or original), in Newton.

G.3.7 Repeat 5.4.3.1 to 5.4.3.6 three times, ensuring that tabs are secured in the marked area (see 5.4.3.4

G.3.8 Determine the mean of the 2nd and 3rd readings. Determine the % re-fastenability by expressing the mean of the 2nd and 3rd readings as a percentage of the 1st reading.

Annex H
(Normative)

Tab (ear) strength with front landing tape

Apparatus and procedure

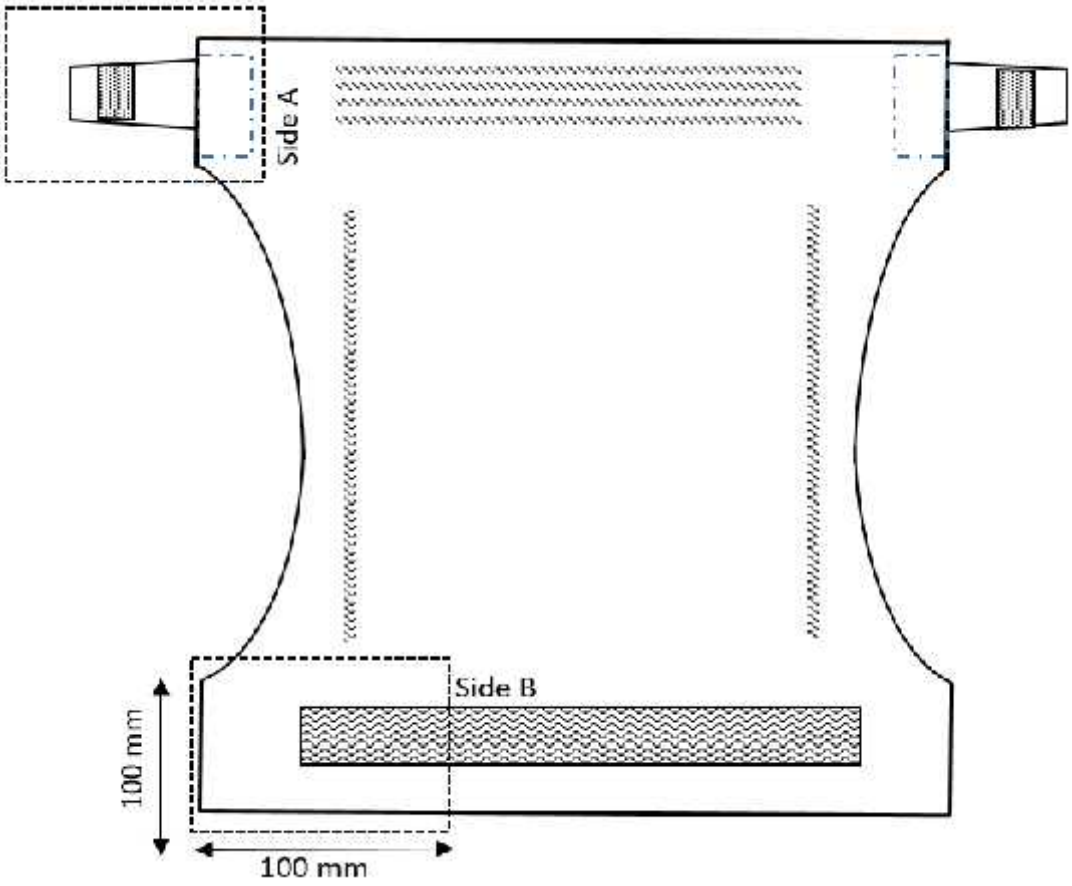
Tensile strength testing machine, as described in ISO 13934-1, that is operated at a rate of traverse of 500 mm/min with the gauge length of 100 mm to allow clamping of the free ends of the test specimens, and fitted with an autographic recorder.

Roller exerting a force of 2 kg.

- Prepare three samples
- Cut off the tab or ear directly at the limit of the edge fixed between non-woven as showed on figure 1.
- Cut an area around the front landing tape, each of size approximatively 100 * 100mm that will fit the jaws of the tensile strength testing machine
- Lift the tab to expose attachment area
- Position to front landing strip without applying pressure
- Move the roller over the tab at a speed of 2.5 cm/s up and 2.5cm/s down.
- Clamp free edge of the tab (side A) and the other side of the front landing tape (side B)
- Operate the machine until breakage occurs and record the result in Newton.

Note: 6 data (2 tabs × 3 layers) are obtained after testing. Any data below 40 N will be considered a failure of the experiment; all data greater than or equal to 40N will be considered a success.

Figure 5 — Disposable diaper



Annex I
(normative)

Tab (ear) strength with Non-woven

Apparatus and procedure

A tensile strength testing machine, as described in ISO 13934-1, with a stretch speed of 150mm/min and a gauge length of 70mm between the two jaws.

- Prepare three samples
- Cut and area around the tab of each side of size equal or greater than 100mm as showed on figure 2 to make it easily fit the jaws of the tensile strength testing machine.
- Clamp the free edge of the tab (side C) on the top jaw of the machine
- Clamp the non-woven side (side D) on the bottom jaw of the machine. Make sure the tab base is not clamped while tightening the bottom jaw.
- Operate the machine until breakage occurs then record the result in Newton.

Note: 6 data (2 tabs × 3 layers) are obtained after testing. Any data below 25N will be considered a failure of the experiment; all data greater than or equal to 25N will be considered a success.