RWANDA STANDARD

DRS 88

Second edition

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Washing bars — Specification

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In order to match with technological development and to keep continuous progress in industries, standards are subject to periodic review. Users shall ascertain that they are in possession of the latest edition

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Foreword

Rwanda Standards are prepared by Technical Committees and approved by Rwanda Standards Board (RSB) Board of Directors in accordance with the procedures of RSB, in compliance with Annex 3 of the WTO/TBT agreement on the preparation, adoption and application of standards.

The main task of technical committees is to prepare national standards. Final Draft Rwanda Standards adopted by Technical committees are ratified by members of RSB Board of Directors for publication and gazettment as Rwanda Standards.

DRS 88 was prepared by Technical Committee RSB/TC 42, *Surface Active Agents.*

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

1) DARS 1461: Washing bars (Performance-based) — Specification

The assistance derived from the above source is hereby acknowledged with thanks.

This second edition cancels and replaces the first edition (RS 88: 2015), of which has been technically revised.

Committee membership

The following organizations were represented on the Technical Committee on *Surface Active Agents* (RSB/TC 42) in the preparation of this standard.

Paragraph of participants

Rwanda Standards Board (RSB) – Secretariat

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Introduction

The available Standard specification for laundry soaps is based on composition. The major concern is that the present compositional standards based primarily on the total fatty matter (TFM) do not necessarily reflect the performance of laundry soaps, and it is a limiting factor to the application of the latest technological developments.

The latest technological applications in soap design and processing yield products that are different in structure, texture, performance and value. They are therefore not fully covered by the current compositional based standards. This therefore necessitates that the value and performance benefits of the technology applied be valued and appreciated in a performance based standard.

The performance of soaps depends more on the type/nature of fatty matter present than the total fatty matter in soap. For example, the solubility of soap depends on the characteristics of the fatty acid such as chain length, level of unsaturation and on the type of cation, besides the processing parameters.

The main aim of introducing the washing bar standard as a category is therefore to develop standards which reflect the trends in the latest technological developments while ensuring the performance and safety of the product to the consumer. This shall in particular facilitate use of broad spectrum saponification surfactants and structuring aids, some of which are locally available. These shall substitute a significant ration of oils, most of which are imported and expensive and shall hence boost the country's economy.

The importance in use criteria for washing bars shall be performance embodied in safety, cleaning and economy. With regard to safety, it is important to guard against the removal of the beneficial skin lipids at the washing bar and over-cleaning resulting in defatting of the skin during washing. This shall be ensured in the proposed standard by allowing only such surfactants and structuring aids which have a history of safe use in washing products. A list of the proposed surfactants and structuring aids is given in Annex F. Other surface active agents may be added to the list in a future revision if there is adequate evidence of their safety.

The cleaning index and lather volume requirements are intended to ensure the presence of adequate types and levels of surfactants in the washing bar for cleaning. The lather test is designed to take into account dissolution of the bar and subsequent lather generation. The mush and rate of wear tests cover the aspect of economy.

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Washing bars — Specification

1 Scope

This Draft Rwanda Standard specifies requirements, sampling and test methods for washing bars.

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 456, *Surface active agents — Analysis of soaps — Determination of free caustic alkali*

ISO 457, *Soaps — Determination of chloride content — Titrimetric method*

ISO 672, *Soaps — Determination of moisture and volatile matter content — Oven method*

ISO 673, *Soaps — Determination of content of ethanol-insoluble matter*

ISO 684, *Analysis of soaps — Determination of total free alkali*

ISO 685, *Analysis of soaps — Determination of total alkali content and total fatty matter content*

ISO 862, *Surface active agents — Vocabulary*

ISO 8212, *Soaps and detergents — Techniques of sampling during manufacture*

ISO 6839, *Anionic surface active agents — Determination of solubility in water*

RS EAS 377, *Cosmetics and Cosmetic Products (all parts)*

3 Terms and definitions

For the purposes of this standard, the terms and definitions given in ISO 862 and the following apply.

3.1

washing bar

bar processed in a manner so as to meet performance requirements as in 3.4. They are for household washing purposes, and primarily have well saponified fatty matter, structurants, preservatives and moisture. The y may also contain suitable quantities of colouring matter, perfume, pacifiers and optical brightening agents.

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4 Requirements

4.1 Composition

4.1.1 The product shall be made of fatty acids, fatty acid ester sulphonates, fatty alkanolomides, fatty alcohol ethoxylates, fatty isothionatese, alpha olefin sullphonates, alcohol sulphonates and any such proven saponification surfactants.

4.1.2 In addition to suitable surfactants, washing bars shall contain other ingredients such as electrolytes, bar structuring processing aids, permitted antioxidants and humectants. For guidance, a list of bar structuring aids is given in Annex A.

4.2 General requirements

4.1.1 The product shall be in the form of bars or tablets.

4.1.2 The colour of the product shall be uniform, except for multi-coloured bars or tablets.

4.1.3 The product shall not be harmful to skin.

4.1.5 They may contain suitable quantities of colouring matter, perfume, opacifiers and optical brightening agents.

4.1.6 The product shall not contain any materials prohibited and all substances used shall comply with the requirements of all parts of RS EAS 377

4.3 Specific requirements

The product shall comply with the specific requirements given in table 1.

Table 1 — Specific requirements of washing bars

S/N	Parameter	Requirement	Test method
(i)	Cleaning index, max.	2.0	Annex B
(ii)	Lather volume mL, min.	200	Annex C
(iii)	Wear, g/m, max.	1.5	Annex D
(iv)	Mush g/30 cm^2, max.	10	Annex E
(v)	Free caustic alkali as NaOH, % by weight, max.	0.4	ISO 456
(vi)	Grittiness	To pass test	Annex F

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5 Packaging and labelling

5.1 Packaging

A number bars shall be packaged in suitable box that could ensure integrity of the product during handling, storage and transportation.

5.2 Labelling

5.2.1 On each of the primary wrapper/box of washing bars and/or on each package shall be marked with the following particulars:

a) Name of the product as 'Washing Bar';

b) manufacturer's name and physical addressand trade mark if any;

NOTE The name, physical address of the distributor/supplier may be added as required.

c) Net weight

d) batch number or code number

e) date of manufacture and expiry date or best before date;

f) On the box or the package containing the cakes shall be marked the number of cakes contained therein;

5.2.2 Unwrapped Washing bars

Each unwrapped washing bar shall be marked legibly and indelibly with the following particulars:

a) Name of the product;
b) The word "Washing bar"; and
c) Nominal weight of the bar.

5.2.3 Cartons/Boxes/ Other packages:

a) the words 'washing bar;

b) manufacturer's name and physical address and trade mark if any;

c) batch number or code number;

d) number of bars or cakes contained in the package;

e) date of manufacture and best before date;

f) country of origin, if different from manufacturer address

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6 Sampling

6.1 General

When no information concerning the implementation of quality control or testing during manufacture is available, the following sampling procedure shall be applied to determine whether a lot submitted for inspection and testing complies with the requirements of the standard. The samples so taken shall be deemed to represent the lot for the respective properties. The sampling procedure shall also be used for adjudication in cases of dispute.

6.2 Sample for inspection

Draw at random from the lot

a)five containers if the lot is packed in containers of net mass not exceeding 5 kg, and
b) three containers if the lot is packed in containers of net mass greater than 5 kg.

6.3 Sample for testing

6.3.1 From the containers, take at random enough soap to provide a laboratory sample of total mass at least 2 kg (take equal quantities of soap from all containers).

6.3.2 Place the laboratory sample in clean, dry, air-tight glass or plastics containers clearly marked with the manufacturer's name or trade mark, the batch identification, and the date of sampling.

6.3.3 In the case of unwrapped soap, take the sample bars or tablets (as relevant) from the centre of the container.

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Annex A
(normative)

Permitted structuring and processing aids

Following is a list of structuring and processing aids (excluding colouring matter, perfume, preservatives, opacifiers, and optical brightening agents) that shall generally be used in washing bars.

g) Starch and derivatives

h) Cellulose and derivatives

i) Mannitol

j) Dextrin

k) Kaolin

l) Talc

m) Bentonite

n) Calcite/ $CaCO_3$

o) Borax

p) Soda ash

q) Vegetable/animal fatty acid

r) Silicates

s) Phosphates

t) Sodium chloride

u) Sodium sulphate

v) Dolomite

w) Fatty alcohol

x) Fatty acid ethanolamide

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y) Diethylene glycol monostearate

z) Paraffins

aa) Polyoxyethylene glycol

Glycerol monostearates

New structuring and processing aids shall be added following clearance by the relevant authorities.

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Annex B
(normative)

Determination of cleaning index

B.1 Principle and instrumentation

The cleaning index expresses the potential of the washing bar to lift off pre-defined stain from a known fabric under defined conditions.

The 'Cleaning Index' is a ratio of the surface tension of clean water to the difference between the surface tension of a standard washing bar solution in which a defined stained cloth is soaked for a defined time; and the surface tension of the standard concentration of the washing bar (detergent) in water.

Nu Nuoy Tensiometer (Cambridge Instrument Company Ltd.) shall be used to determine the surface tension (or any such suitable surface tension measuring equipment).

In this set up, a platinum iridium ring on the surface of the liquid is supported by a stir-up attached to the beam of the torsion balance. The ring is pricked upwards from the liquid by turning the torsion wire, thus applying a force which is known from calibration of the instrument for an idealized system. The force necessary to separate the ring from the liquid is equal to $4\prod Ry$, where R is the mean radius of the ring, i.e.

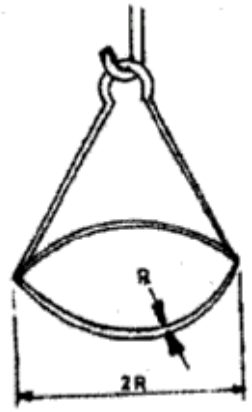

Figure A.1 — Platinum iridium ring

Doubling of the perimeter arises from the fact that there are two boundary lines between liquid and wire, one on the outside and one on the inside of the ring. The shape of the liquid held up influences the force necessary for breaking away.

The shape is a function of R^3/V and R/r where v is the volume of the liquid held up and r is the radius of the wire. The surface tension is thus given by the equation:

$$Y = \frac{f}{4\Pi R} F$$

where,

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f = maximum force registered on a torsion balance scale;

F = correction factor due to shape of liquid held up and the ring dimensions.

Over extreme variations of R^3/N and R/r, F varies between about 0.75 and 1.02. In ordinary cases it is close to 1.

B.2 Sample solutions

B.2.1 Preparation of stained cloth — The staining solution consists of ethyl acetate analytical grade engine oil in the volume ratio of 4:1.

NOTE This method was developed using Caltex motor oil SAE 40.

Pieces of cotton cloth measuring 4 cm x 4 cm are then stained being soaked in the staining solution for 60 minutes (ensure uniform staining by continuously swirling the beaker). The cloth pieces are then dried in an oven at 80 ºC for 48 hours.

B.2.2 Detergent solutions — These are prepared by dissolving 1.0 g of each bar sample in 300 mL of hot water (ordinary tap water) and left to stand for 21 hours.

Surface tension measurements or these solutions are then recorded to give $y_{Det.}$

Stained cloth pieces prepared in (B.2.1) are then soaked in 50 mL of the washing bar solution and let to stay for 21 hours.

The surface tension of the soiled solution is then determined to give $y_{Det/Stain.}$

The clearing index (C.I) is then computed from the expression:

$$C.I = \frac{yH_{20}}{y_{Det/Stain} - y_{Det}} \times 10^{-1}$$

or

$$C.I = \frac{yH_{2O}}{\Delta y} \times 10^{-1}$$

where,

y_{H2O} = the surface tension pure water; and

Δy = $y_{Det/Stain}$ - y_{Det}.

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Annex C
(normative)

Determination of Lather volume

C.1 Principle

A domestic kitchen blender is adjusted to deliver 600 ± 100 mL of lather in 60 seconds from a 1 per cent solution of sodium lauryl sulphate in 300 ppm calcium hard water at 25 ºC.

The bar is transformed into uniform 2 mm diameter noddles by hand extrusion through a perforated plate. 100 mL of 300 ppm calcium hard water at 25 ºC and 5 grams of bar noodles are agitated in the adjusted kitchen blender for 60 seconds and the lather volume is measured. The bar lather is normalized to a volume of 600 mL from the SLS solution tested in the same blender.

C.2 Apparatus

C.2.1 Kitchen food blender — Hamilton beach commercial bar mixer with a low speed of 14 000 rpm, high speed of 18 000 RPM. It shall be operated at a speed which shall deliver a lather volume of 600 ± 100 mL from a standard solution on sodium lauryl sulphate defined in Clause C.3. The test procedure is described in C.5.

C.2.2 Bar extruder — The bar extruder consists of a block of metal 10 cm x 10 cm x 50 cm drilled centrally through the longer axis with a 25 mm diameter hole. The hole is threaded and a matching threaded bolt is provided. A plate with well separated 2 mm diameter holes is bolted to one end of the metal block.

Any device which shall extrude bar through a plate with 2 mm diameter holes is quite suitable. The equipment consists of a block of metal 10 cm x 10 cm x 50 cm drilled centrally through the longer axis with a 25 mm diameter hole. The hole is threaded and a matching threaded bolt is provided. Plate with well separated 2 mm diameter holes is bolted to one end of the metal block.

Materials of construction, screw thread and dimensions other than the end plate holes are not critical. To ease cleaning of the equipment and to make extrusion easier, the end plate shall not be too thick. A 3 mm thickness plate is sufficiently robust.

For use, the device is conveniently clamped vertically in a bench vice and the bolt is turned by hand, or for higher time or aged products with a spanner or bar. The lower end is encased in a plastic bag held in place by elastic or tape to collect the bar noodles extruding from the end plate.

B.2.3 Other equipment/chemicals

- A coarse cheese grater;
- Measuring cylinder 1 000 mL;
- Volume equipment/balance for hard water preparation;
- Sodium laurly sulphate, that shall have minimum 99 per cent purity, C_{12} compounds by GLC shall be a minimum of 98 per cent.

The impurity level shall be as given in Table B.1 below.

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Table B.1 — Impurity level

Maximum limit of impurities	Per cent
Loss on drying at 110 ºC	1
Acidity or alkalinity	0.5 mL N %
Chloride	0.03
Phosphate as PO_4	0.001
Copper as Cu	0.0005
Iron as Fe	0.0001
Lead as Pb	0.0005

C.3 Sodium lauryl sulphate solution

Prepare a 1 per cent solution of sodium lauryl sulphate (SLS) in 300 ppm calcium hardness water. Solution more than 1 week old shall not be used.

C.4 Sample preparation

C.4.1 The requirement is for a lather measurement on three samples from each of three bars taken during the sampling procedure 6.

C.4.2 Approximately 100 g of each bar is coarsely grated with a kitchen cheese grater. The gratings are quickly mixed by hand and then transferred to a labelled container which is closed to prevent moisture loss.

C.4.3 Grated bar from the sample is introduced into the threaded barrel of the extruder described above. Sufficient bar shall be used to ensure production of at least 20 grams of coherent noodles by the procedure described in Clause C.2. The noodles from each bar shall be divided into 3 equal parts for the subsequent lather tests.

C.5 Lather measurement

C.5.1 All test shall be performed at 25 ºC ± 2 ºC.

C.5.2 **Lather from the standard SLS solution** — 100 mL of the standard SLS solution is poured into the jar of the kitchen food blender, the jar is covered and the blender is run for exactly 60 seconds. Immediately the blender jar is inverted over a 1 litre measuring cylinder and the liquid and foam are allowed to drain. A large plastic spatula or ruler shall be used to scoop residual foam from the jar into the measuring cylinder. The top of the foam is levelled off and the total volume of material in the cylinder is taken as the lather volume value, i.e. with no allowance for any liquid volume which may separate from the foam.

If the foam volume is not 600 ± 100 mL, adjust the mixer speed and repeat the test until a foam volume in this range is achieved.

Once the blender speed setting is confirmed, it shall be used for all subsequent tests on SLS solution and bar samples.

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C.5.3 Lather from bar sample — Pour 100 mL of 300 ppm calcium hardness water into the blender jar. Add 5 grams of extruded bar noodles prepared as in B.4. Cover the jar and operate the blender for exactly 60 seconds at the speed identified in B.5.2 as giving 600 ± 100 mL of foam with the standard SLS solution. Quickly pour the foam and any residual liquid into a 500 mL or 1 litre measuring cylinder.

C.6 Notes for guidance

NOTE 1 Temperature

Although an ambient temperature and equipment shall be maintained at 25 ± 2 ºC, this is not always easy to achieve. It is essential to measure the temperature of the SLS or bar foam after the volume measurement. If the temperature recorded is outside the range 25 ± 2 ºC, the test shall be repeated with the starting SLS solution or water temperature adjusted so that the final temperature of the foam is within the specified range

NOTE 2 Number of lather volume measurements

For each bar type to be tested, three (3) measurements are made on the noodles produced from three (3) bars of the type.

NOTE 3 Sequence of lather tests

Once the kitchen food blender is established as delivering 600 ± 100 mL, the SLS solution and noodles prepared from each of 3 bars of the type the sequence of testing shall be as follows:

Lather volume SLS;
Lather volume on noodles from bar 1;
Normalize the bar lather to an SLS volume of 600 mL = V1/1;

Lather volume SLS;
Lather volume on bar noodles from bar 1;
Normalize the bar lather to an SLS volume of 600 mL = V2/1;

Lather volume SLS,
Lather volume on bar noodles from bar 1;
Normalize the bar lather to an SLS volume of 600 mL = V3/1.

The average of V1 - 3/1 volumes is the sample value for bar 1.

This procedure is continued for bars 2 and 3 taken from the same sample lot. The average of the three sample values shall be reported as the lot value.

NOTE 4 Normalizing lather volumes

$$\text{Normalized bar volume} = \text{Actual bar volume} \times \frac{600}{\text{Actual SLS volume}}$$

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Annex D
(normative)

Determination of the potential wear

D.1 Principle

A bar of fixed dimensions cut from the product is first preconditioned by allowing it to stand on a damp cloth. The bar is held in a weighted holder, and is moved across a wetted fabric in a prescribed manner. The weight loss from the bar during rubbing is measured and expressed as grams lost per 10 metres of rubbed fabric.

For each bar type to be tested, three (3) consecutive wear measurements are made on three (3) bars of the type. If the bar size is too small to allow three consecutive wear measurements on each sample, then nine (9) individual samples of each product shall be tested.

D.2 Apparatus/Chemicals

D.2.1 For bar preparation

(a) Coarse kitchen cheese grater;

(b) Sharp thin bladed knife;

(c) A weighted bar holder.

The holder and the weight shall be fixed together or shall separate. The total weight of the holder and weight shall be standardized to 110 ± 25 grams.

D.2.2 For the test procedure

(a) De-sized cotton cloth with a weave of close to 32 by 32 threads per cm. Cut to pieces 61 cm x 39 cm.

(b) A tray of non corrodible metal or rigid plastic sized to accommodate the 61 cm x 39 cm test cloths.

(c) A number of small flat bottomed trays of non corrodible metal or plastic (bar dishes) equal to the number of samples to be tested.

(d) De-sized cotton cloth pieces to fit as a double layer into the base of the bar dishes.

D.2.3 General — Balance to weigh 1 300 grams to 0.1 g if the bar and weighted holder shall be weighed together.

If the weight can be easily separated from the holder, then it is only the holder (typically not more than 100 grams) plus bar which need be weighed and the balance can have a smaller capacity.

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D.3 Bar preparation

D.3.1 A test piece is cut from each bar. The test piece shall have a working face (to be applied to the fabric) of 3.75 cm x 7.5 cm.

The working face shall be a fresh surface from the interior of the bar sample.

The 7.5 cm length of the test piece shall be from a direction parallel to the longest axis of the original bar sample.

The height of the test piece is whatever is needed to fit securely into the test piece holder and to leave sufficient product below the holder to allow for wear during the test. Typically, the depth shall be 2 cm to 3.5 cm.

D.3.2 To cut the bar, it is convenient to first trim it to the approximate size using a coarse kitchen cheese grater and then to make the final adjustments to a smooth surface with a sharp thin bladed knife.

D.4 Test procedure

D.4.1 **Preconditioning the test bar —** In this stage it is not necessary to weigh the bar.

D.4.1.1 A small tray (bar dish) plus double thickness of cloth is filled with demineralized water. The tray is then held vertically to drain the water from the cloth. The vertical position is maintained until water ceases to run from the dish in a continuous stream, i.e. drained to dripping.

D.4.1.2 The cut bar piece is placed on the wetted cloth for 1 hour at room temperature, approximately 25 ºC. This procedure allows the bar surface to absorb water (from mush) in a way characteristic of the product during use. The mushed test piece is fitted into a bar holder with the mushed face to the outside.

D.4.1.3 The bar is dried lightly with tissue. The bar is now preconditioned to a state typically met during normal use. The main wear test can now be performed.

D.4.2 **The wear test**

D.4.2.1 A fresh piece of test fabric is immersed in normal supply water and is then held vertically by the corners of a shorter edge. The cloth shall be held so that one of the corners is at the lowest point. Water shall drain from the cloth, initially in a continuous stream and eventually as drops. As soon as the continuous stream ceases and drops are formed, the cloth is placed flat on the test tray and smoothed to remove wrinkles, creases or bubbles. A shorter edge of the cloth shall be nearest the operator.

C.4.2.2 The test bar and weighted holder, or the holder plus bar only, are weighed to the nearest 0.1 g.

C.4.2.3 The test face of the preconditioned bar in the holder is placed towards one edge of the fabric and is then moved away from the operator towards the other shorter edge.

NOTE The effective cloth length shall be the distance moved by the leading edge of the bar, not the length of the cloth.

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D.4.2.4 The holder/bar are repositioned at the edge closest to the operator in a new position adjacent to the previous position and such that it is on fabric which was not rubbed in the previous step.

D.4.2.5 Steps **D.4.2.3** and **D.4.2.4** are repeated such that, in total the bar is moved four (4) times along the length of the fabric.

D.4.2.6 The bar is dried lightly with tissue and the weighed holder plus bar, or holder plus bar only, are re-weighed to give the weight loss during the fabric application.

D.4.2.7 Provided the sample size is adequate, the wear test can be repeated with two more measures of wear on the same sample. The complete wear test is then repeated with two more examples of the product giving nine (9) measures of wear. If the sample size is not adequate to allow replicate tests on a given sample then nine individual samples shall be used.

D.4.2.8 The average weight loss for movement over 4 times the effective cloth length is calculated for the nine samples of a given product, and then expressed as weight loss per metre of application to the fabric.

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Annex E
(normative)

Determination of the potential mush

E.1 Principle

A test bar piece of defined size is cut from the sample bar to remove harder outer layers. The test piece is preconditioned by giving 18 x 180 degree twists under running water at 25 ºC or in a bowl of water. The bar is left for six hours on a piece of fabric which has been wetted and drained of excess water. During the six hours, the bar/cloth is covered to prevent drying. At the end of the test period, mush is removed from the test piece face in contact with the cloth. Weight loss from the test piece is expressed as mush per 30 sq.cm of original surface area in contact with the cloth.

E.2 Equipment

E.2.1 For sample preparation

bb) Coarse kitchen cheese grater;

cc) Sharp thin blade knife;

dd) Callipers or ruler to ensure the sample dimensions

E.2.2 Other equipment/materials

(a) Plastic or non corrodible trays which are suitably sized for the test piece;

(b) Plastic bar dishes 7 cm x 11 cm x 2 cm shall be suitable.

Cotton cloth pieces are cut to fit as a double layer inside the trays. The cotton cloth used for wear measurements (Appendix B) shall be suitable.

E.3 Bar preparation

E.3.1 Nine (9) individual bars shall be tested. A test piece is cut from each bar. The test piece shall have a working face (to be applied to the fabric) of 4.0 cm x 7.5 cm.

The working face shall be a fresh surface from the interior of the bar sample. The face opposite the working face shall be identified by making a small hole with a sharp object. This enables the working face to be identified after the preconditioning step.

The 7.5 cm length of the test piece is from a direction parallel to the longest axis of the original bar sample.

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E 3 2 To cut the bar, it is convenient to first trim it to the approximate size using a coarse kitchen cheese grater and then to make the final adjustments to a smooth surface with a sharp thin-bladed knife.

E.4 Test procedure

For each test piece:

D.4.1 The tray plus double thickness of cloth is filled with de-mineralized water. The tray is then held vertically to drain the water from the cloth. The vertical position is maintained until water ceases to run from the dish in a continuous stream, i.e. starts to drip.

D.4.2 The area of the working face of the test piece is measured.

D.4.3 The bar is preconditioned by giving 18 twists of 180 degrees under running supply water at 25 ºC in a bowl of supply water at that temperature.

D.4.4 The working face of the bar is placed onto the damp fabric and then the tray plus bar are covered, e.g. with a sealed plastic bag, to prevent water loss.

D.4.5 The covered test piece and holder are maintained at 25 ºC for 6 hours.

D.4.6 The mushed bar test piece is removed from the tray and is weighed.

D.4.7 Mush is removed from the working face of the bar test piece by scraping with a blunt sided spatula or plastic ruler.

D.4.8 The test piece is reweighed and the amount of mush removed is calculated. The mush is expressed as grams per 30 sq. cm of original test piece surface area.

NOTE The procedure for weighing the bar and removing the mush shall take some minutes. During that time the remaining bars will continue to form mush. While this time is not critical for a set of nine (9) test pieces from a given product, if more than one product is under test, it is advisable to stagger the start of the test for the second product. This shall give adequate time to complete work on the first set before the 6 hour storage time of the subsequent set is completed.

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Annex F
(normative)

Test for freedom from grit

F.1 Outline of the method

Soap is rubbed with water between the hands for a specified time and examined for its gritty or rough feel, if any.

F.2 Procedure

F.2.1 Hold the laundry bar under running tap water (at a temperature between 20 ºC – 30 ºC) and rub gently the two sides of the bar on the palm for one minute each. The bar shall show no rough surface and shall feel smooth to the touch. Allow the used bar to dry in the open for 4 hours and examine the surface.

F.2.2 The soap shall be taken to have passed the test if there is no gritty or rough feel on the surface.

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