

**Draft
Tanzania Standard
Textiles – Tests for colour fastness– colour fastness to sea
water.**



TANZANIA BUREAU OF STANDARDS

Textiles – Tests for colour fastness- colour fastness to sea water.

0 FOREWORD

0.1 Colour fastness of textile materials is of considerable importance to the consumer. The fastness depends not only upon the nature and depth of shade of the dyestuff used but also the nature of the fibre and the method of dyeing or printing employed. The same colouring matter, when used in dyeing or printing different fibres, or when applied by different methods upon the same fibre, may give vastly different results. Formulation of standard methods of test for determining colour fastness of textile materials to different agencies likely to effect change in colour is therefore, necessary.

0.2 In the preparation of this Draft Tanzania Standard, the reference was made from: ISO 105-E02:1994; Textiles-Test for colour fastness-Part E02: Colour fastness to sea water.

1. Scope

1.1 This Draft Tanzania Standard prescribes a method for the determination of colour fastness of textile materials of all kinds and in all forms to immersion in sea water

2. Reference

For the purpose of this Draft Tanzania Standard the following references shall apply:

- a) TZS 41: 2016 *Textiles - Test for colour fastness _ Assessing staining.*
- b) TZS 42: 2016 *Textiles - Test for colour fastness _ Assessing staining.*
- c) TZS 533: 2016 *Textiles - Test for colour fastness _ General principles of testing*

3. Principle

A specimen of the textile in contact with one or two specified adjacent fabrics is immersed in sodium chloride solution, drained and placed between two plates under a specified pressure in a testing device. The specimen and the adjacent fabrics are dried separately. The change in colour of the specimen and the staining of the adjacent fabrics are assessed with grey scales.

4. Apparatus and Reagent

4.1 Test device, consisting of a frame of stainless steel into which a weight-piece of mass approximately 5kg and base of 60mm x 115mm is closely fitted so that a pressure of 12.5kPa can be applied on test specimens measuring 40mm x 100mm placed between glass or acrylic-resin plates measuring approximately 60mm x 115mm x 1.5mm. The test device shall be constructed so that, if the weight piece is removed during the test, the pressure of 12.5kPa remains unchanged.

If the dimension of the composite specimen differ from the size of 40mm x 100mm, the weight – piece used shall be such that a pressure of 12.5kPa is applied to the specimen.

NOTE 1: other devices may be used provided that comparable results are obtained.

4.2 Oven, maintained at 37 °C ±2°C

4.3 Reagent - Sodium Chloride Solution — containing 30g of pure sodium chloride per litre of distilled water.

NOTE 2: pure sodium chloride shall mean sodium chloride that does not contain impurities which affect the test results.

4.4 Undyed cloth

Take two sufficiently large-sized pieces of undyed cloth (see Note) same kind of fibre as that in the sample or that predominating in the sample in case of blends, and the second piece being made of the fibre as indicated below or as otherwise specified.

If the first adjacent fabric is:

Cotton
Wool
Silk
Linen
Viscose
Acetate or triacetate
Polyamide
Polyester
Acrylic

second piece to be:

wool
cotton
cotton
wool
wool
viscose
wool or cotton
wool or cotton
wool or cotton

NOTE 3: it is recommended that the undyed pieces should be of plain weave, medium weight, and free from finishes, residual chemicals and chemically damaged fibres. Cotton and linen materials should be bleached. Other materials should be cleaned to their usual degree of whiteness without bleaching. The fluidity value of cotton cloth should not exceed 5 poises when measuring in standard cuprommonium solution.

4.5 A grey scale for evaluating change in colour and staining.

5. Composite specimen

5.1 If the textile to be tested is fabric, either

- a) Attach a specimen measuring 40mm x 100mm to a piece of the multi-fibre adjacent fabric(4.1) also measuring 40mm x 100mm by sewing along one of the shorter sides with the multi-fibre fabric next to the face of the specimen. Or
- b) Attach a specimen measuring 40mm x 100mm between the two single-fibre adjacent fabrics also measuring 40mm x 100mm by sewing along one of the shorter sides.

5.2 If the textile to be tested is yarn; knit or weave it into fabric and treat as in 4.2.1 or form a layer of parallel lengths of it between the two adjacent fabrics, the amount of yarn taken being approximately equal to half the combined mass of the adjacent fabrics and sew along two opposite sides to hold the yarn in place and to form a composite specimen.

6. Procedures

6.1 Wet the composite specimen thoroughly in sodium chloride solution (see note 2) at room temperature. Pour off the solution and place the specimen between the two glass plates under a force of about 4.5kg. Keep the glass plates in position in the perspirometer (or its equivalent) and place the apparatus in the air oven maintained $37^{\circ} \pm 2^{\circ}\text{C}$ for 4hours. At the end of this period remove the specimen, separate the test piece and the two pieces of undyed cloth and dry them apart in air in shade at a temperature not exceeding 60°C .

NOTE 4: special care should be taken when wetting the specimen to see that it is uniformly saturated. In particular, when wool or material containing wool is to be wetted out, it should be kneaded thoroughly by hand with a flattened end of a glass rod, or by a mechanical device.

6.2 Evaluate the change in colour of the treated test piece by the method prescribed in TZS 41: 2016 (see clause 2) and the degree of staining of the two pieces of undyed cloth by the method prescribed in TZS 42: 2016 (clause 2)

NOTE 5: Treated test piece and the two pieces of undyed cloth shall have cooled after drying and should have regained their normal moisture content before evaluation

7. TEST REPORT

The test report shall include the following particulars:

- a) The numerical rating for change in colour of the test piece, and
- b) The numerical ratings for staining of the two pieces of undyed cloth used in the preparation of the composite specimen.