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# International Standard



# 7768

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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

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## Textiles — Method for assessing the appearance of durable press fabrics after domestic washing and drying

*Textiles — Méthode d'essai pour l'évaluation de l'aspect des étoffes traitées « pressage permanent » après le lavage et le séchage domestiques*

First edition — 1985-05-15

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ISO 7768:1985

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UDC 677.017.855 : 677.016.24

Ref. No. ISO 7768-1985 (E)

Descriptors : textiles, fabrics, tests, estimation, appearance, washing, drying.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council. They are approved in accordance with ISO procedures requiring at least 75 % approval by the member bodies voting.

International Standard ISO 7768 was prepared by Technical Committee ISO/TC 38, *Textiles*.

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# Textiles — Method for assessing the appearance of durable press fabrics after domestic washing and drying

## 1 Scope and field of application

This International Standard specifies a method for assessing the retention of the original smooth appearance, after one or several domestic washing and drying treatments, of those fabrics intended for use in durable press (sometimes referred to as permanent press) products.

This method has been developed for use primarily with domestic washing machines of Type B as defined in ISO 6330, but it may be possible to use it with machines of Type A defined in the same International Standard.

NOTE — It is recognized that prints and patterns will mask the mussiness present in durable press fabrics. However, this does not detract from the durable press concept which seeks to provide the consumer with fabrics which require little or no ironing.

## 2 References

ISO 105/A, *Textiles — Tests for colour fastness — Part A: General principles.*

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

ISO 6330, *Textiles — Domestic washing and drying procedures for textile testing.*

## 3 Definition

For the purpose of this International Standard, the following definition applies.

**durable press fabric:** A fabric which requires little or no ironing after domestic laundering to restore it to a wearable or usable condition.

## 4 Principle

Fabric specimens are subjected to procedures simulating domestic laundering practices. One of the washing and drying procedures specified in ISO 6330 shall be used, as agreed between the interested parties.

## 5 Apparatus and reagents

**5.1 Apparatus as specified in ISO 6330 for washing and drying.**

**5.2 Lighting and evaluation area** in a darkened room using the overhead lighting arrangement shown in the figure and comprising the following items:

- a) two 2,4 m length CW (cool white) fluorescent lamps, without baffle or glass;
- b) one white enamel reflector, without baffle or glass;
- c) one specimen holder;
- d) one 6 mm thick plywood mounting board, outside dimensions 1,85 m × 1,20 m, painted grey to match No. 2 rating on the grey scale for assessing staining specified in ISO 105-A03.

**5.3 AATCC three-dimensional durable press replicas** (see the table).

NOTE — These replicas may be obtained from

AATCC Technical Center  
One Davis Drive  
P.O. Box 12215  
Research Triangle Park  
NC 27709  
USA

## 6 Test specimens

Prepare three test specimens, each measuring 38 cm × 38 cm, cut parallel to the length direction, pinked to prevent fraying and marked to indicate the length direction.

## 7 Procedure

**7.1** Wash and dry each specimen according to one of the procedures specified in ISO 6330, as agreed between the interested parties.

**7.2** If required, repeat the selected washing and drying cycle four times, to give a total of five cycles.

**7.3** Condition the test specimens for 2 h in the atmospheric conditions specified in ISO 139, hanging each specimen unfolded with the length direction vertical to avoid distortion.

### 7.4 Evaluation

**7.4.1** Three observers shall rate each treated test specimen independently.

**7.4.2** Mount [5.2 c)] the test specimen on the viewing board [5.2 d)] as illustrated in the figure, with the length direction vertical. Place the three-dimensional plastic replicas (5.3) on each side of the test specimen to facilitate comparative rating.

The overhead fluorescent light [5.2 a)] shall be the only light source for the viewing board, and all other lights in the room shall be turned off. It has been the experience of many observers that the light reflected from the side walls near the viewing board can interfere with the rating results. It is recommended that the side walls be painted black or that blackout curtains be mounted on either side of the viewing board to eliminate the reflective interference.

**7.4.3** The observer shall stand directly in front of the specimen, 1,20 m away from the board. It has been found that normal variations in the height of the observer above and below the arbitrary 1,50 m eye level have no significant effect on the rating given.

**7.4.4** Assign the number of the replica which most nearly matches the appearance of the test specimen, or assign ratings midway between those whole-number standards which have no half-number standards separating them, if the appearance of the specimens warrants it (see the table).

A DP-5 rating is equivalent to the DP-5 replica and represents the smoothest appearance and best retention of original appearance, while a DP-1 rating is equivalent to the DP-1 replica and represents the poorest appearance and poorest retention of original appearance.

**7.4.5** Similarly, the observer shall independently rate each of the other two test specimens. The other two observers shall proceed in the same manner, assigning ratings independently.

Table — Fabric smoothness ratings

Rating	Appearance
DP-5	Equivalent to the DP-5 replica
DP-4	Equivalent to the DP-4 replica
DP-3,5	Equivalent to the DP-3,5 replica
DP-3	Equivalent to the DP-3 replica
DP-2	Equivalent to the DP-2 replica
DP-1	Equivalent to or worse than the DP-1 replica

## 8 Expression of results

Average the nine observations made by the three observers on the set of three test specimens. Report the average to the nearest half rating.

**NOTE**— Data on precision and accuracy are given in the annex. Because the test procedure described is subjective and ordinal ratings are given, statistics that use frequency distribution as a basis were applied to the data.

## 9 Test report

The test report shall include the following information :

- details of the washing and drying procedures used as specified in ISO 6330;
- the number of washing and drying cycles used;
- the fabric smoothness rating as calculated according to clause 8 and expressed according to the table;
- details of any deviation from the specified procedure.

Dimensions in millimetres

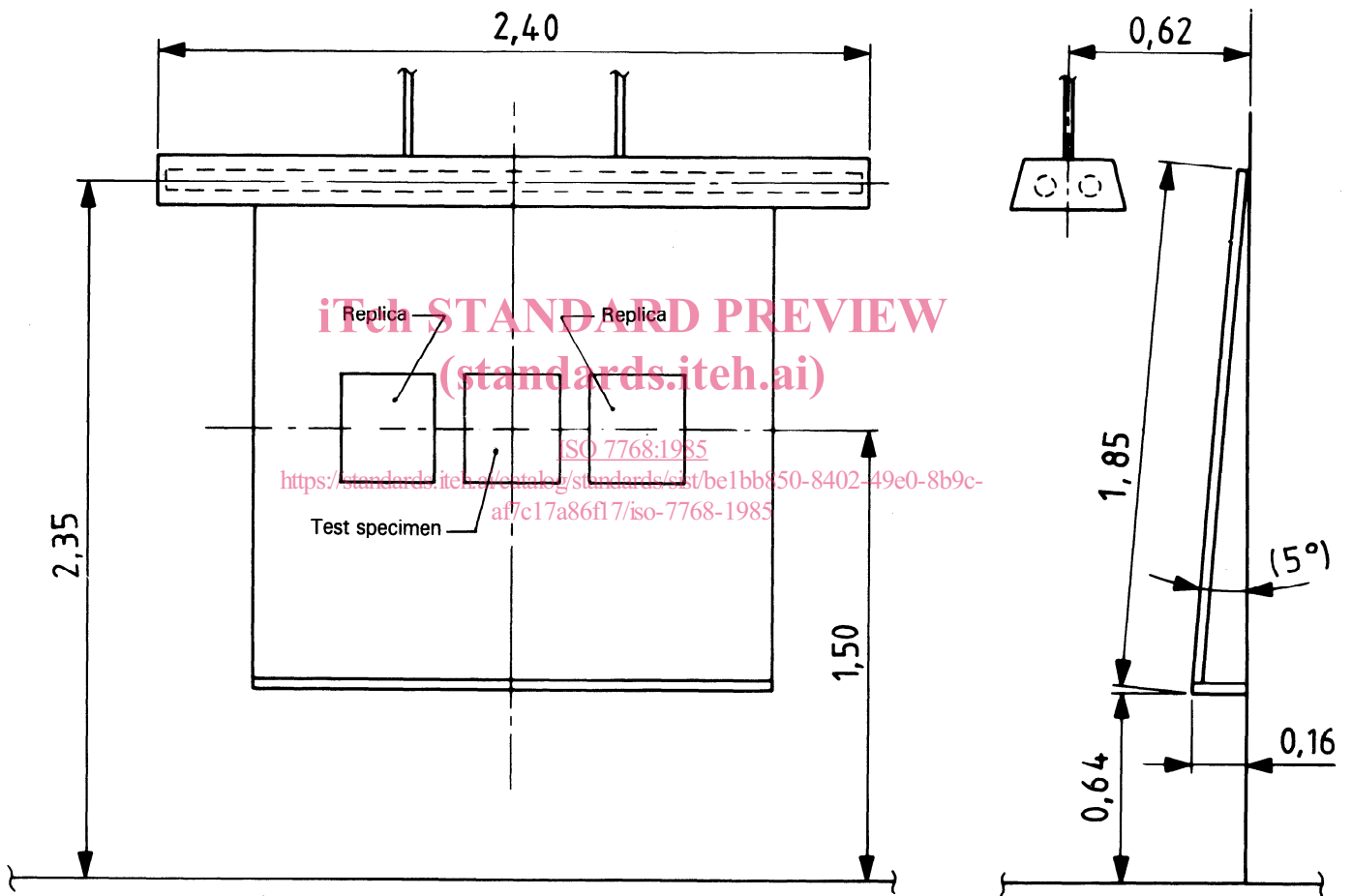


Figure — Lighting equipment for viewing test specimens

## Annex

### Precision and accuracy

(This annex forms an integral part of the Standard.)

Tests were conducted in the USA in 1980 with eight laboratories evaluating four fabrics. The analysis of variance technique was judged not to be applicable to these data because their distribution was not normal and because of the limited and discontinuous scale of replica ratings. The data were analysed by calculating expected laboratory test results from the distribution of individual specimen ratings.

From the data it was determined that single observers rated three specimens on the following frequency:

Three specimens to same replica: 0,55

Two specimens to same replica and one different: 0,40

Three specimens different: 0,05

Only rarely did the separation in specimen ratings exceed the next replica step. This is indicative of the high degree of repeatability in observer ratings.

From the observer rating distribution a distribution of laboratory test results was calculated for each replica level with half-ratings included. Precision over the whole DP replica was improved.

From the frequency distribution of laboratory test results, a calculation was made of the critical difference,  $D$ , between two laboratory test levels. With laboratories at the same level:

Critical difference	Confidence level
$D > 0,17$	$P \geq 0,95$
$D \geq 0,25$	$P \geq 0,99$

When two or more laboratories wish to compare test results, it is recommended that laboratory levels be established between them prior to commencing test comparisons. Fabrics of known history and performance may be used for this purpose.

Differences between laboratory test results (on the same fabric, under the same washing and drying conditions) equal to or greater than a quarter replica unit are statistically significant at  $P$  greater than 0,99. A difference of this magnitude or greater suggests a difference in laboratory levels and indicates a need for the laboratory level comparisons.

A true value of durable press fabrics after repeated home launderings can be defined only in terms of a test method. There is no independent method for determining the true value. As an estimate of this property, this test has no known bias.

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