

INTERNATIONAL STANDARD

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Second edition
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Textiles — Method for assessing the appearance of creases in durable-press products after domestic washing and drying

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

ISO 7769:1992

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Reference number
ISO 7769:1992(E)

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. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 7769 was prepared by Technical Committee ISO/TC 38, *Textiles*, Sub-Committee SC 2, *Cleansing, finishing and water resistance tests*.

This second edition ~~is~~ ISO 7769:1992 ~~replaces the first edition~~ and replaces the first edition (ISO 7769:1985), of which it constitutes a technical revision.

Annex A of this International Standard is for information only.

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Textiles — Method for assessing the appearance of creases in durable-press products after domestic washing and drying

1 Scope

This International Standard specifies a method of test for evaluating the retention of pressed-in creases in durable-press fabrics after one or several domestic washing and drying treatments. A technique for inserting creases is not included as this is controlled by fabric properties.

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

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 105-A03:1987, *Textiles — Tests for colour fastness — Part A03: Grey scale for assessing staining.*

ISO 139:1973, *Textiles — Standard atmospheres for conditioning and testing.*

ISO 6330:1984, *Textiles — Domestic washing and drying procedures for textile testing.*

3 Definition

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

3.1 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

4.1 Creased fabric specimens are subjected to procedures simulating domestic laundering practices. One of the washing and drying procedures specified in ISO 6330 is used, as agreed between the interested parties.

4.2 Evaluation is performed by supplementing the overhead lighting arrangement with a spotlight suitably placed to highlight the creased area. The specimens are compared visually with plastic crease replicas under specified illumination.

5 Apparatus and reagents

5.1 Washing and drying apparatus, as specified in ISO 6330.

5.2 Steam or dry iron, with appropriate fabric temperature settings.

5.3 Lighting and evaluation area, in a darkened room, using the lighting arrangement shown in figures 1 and 2 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 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;

- d) one 500-W reflector flood lamp and lightshield (for the purpose of protecting the viewer's eyes from direct light as illustrated in figure 2).

5.4 AATCC plastic crease replicas, prepared for evaluating creases, as shown in figure 3.

NOTE 1 Details of the source of supply may be obtained from the Secretariat of ISO/TC 38/SC 2.

6 Test specimens

Prepare three test specimens, each measuring 38 cm x 38 cm and pinked to prevent fraying, each with a pressed-in crease through the middle. If the fabric is wrinkled, it may be smoothed by appropriate ironing prior to testing. Care shall be taken to avoid altering the quality of the crease itself.

7 Procedure

7.1 Wash and dry each specimen in accordance with 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 one of the atmospheres specified in ISO 139, by hanging each by two corners with the crease vertical or, alternatively, using full-width clamps.

7.4 Three observers shall rate each treated test specimen independently, as follows:

7.4.1 Mount the test specimen on the viewing board [5.3.c)] as illustrated in figure 1, with the crease in the vertical direction, taking care not to distort the crease. Place the plastic crease replicas (5.4) alongside to facilitate comparative rating.

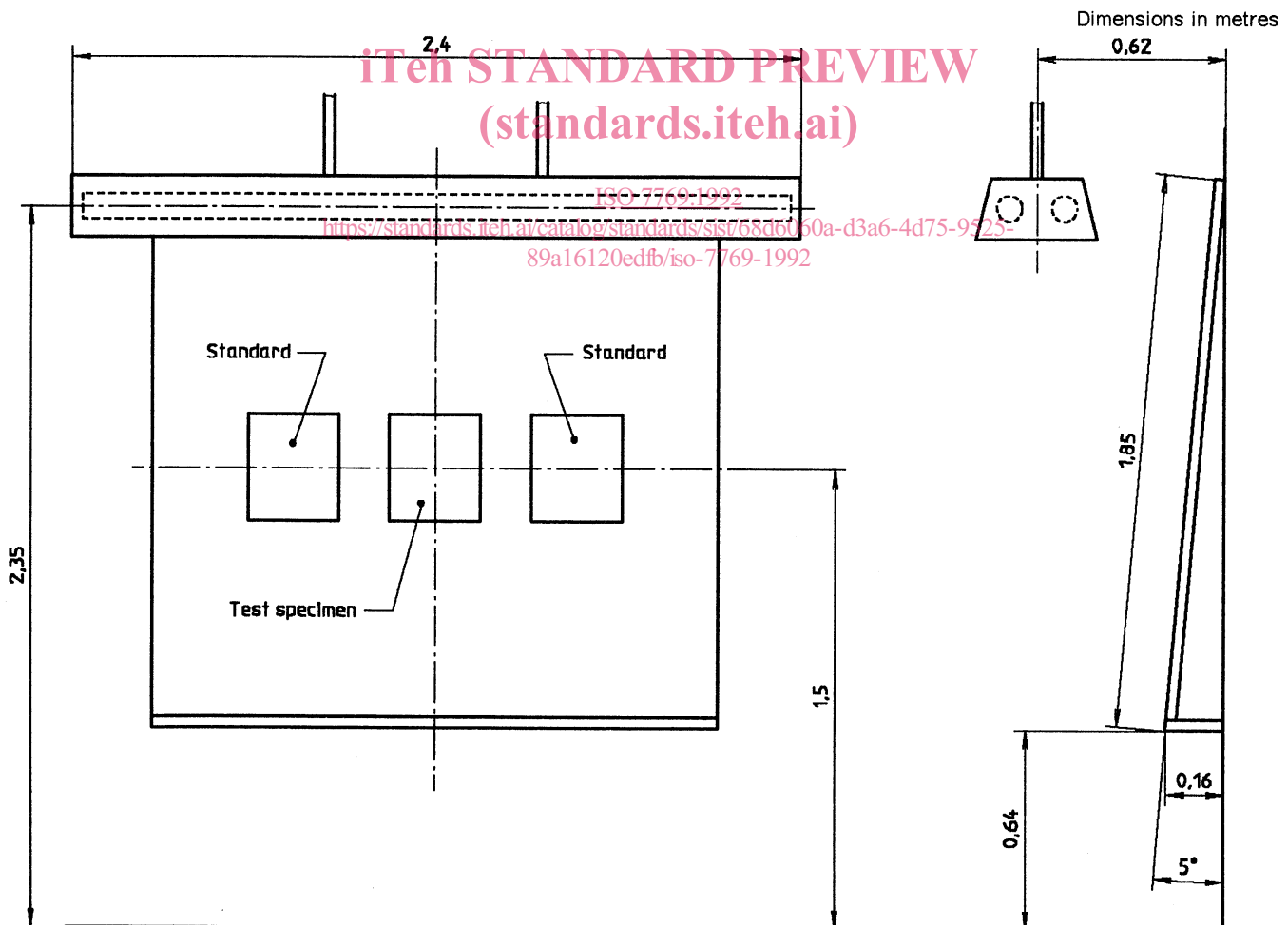
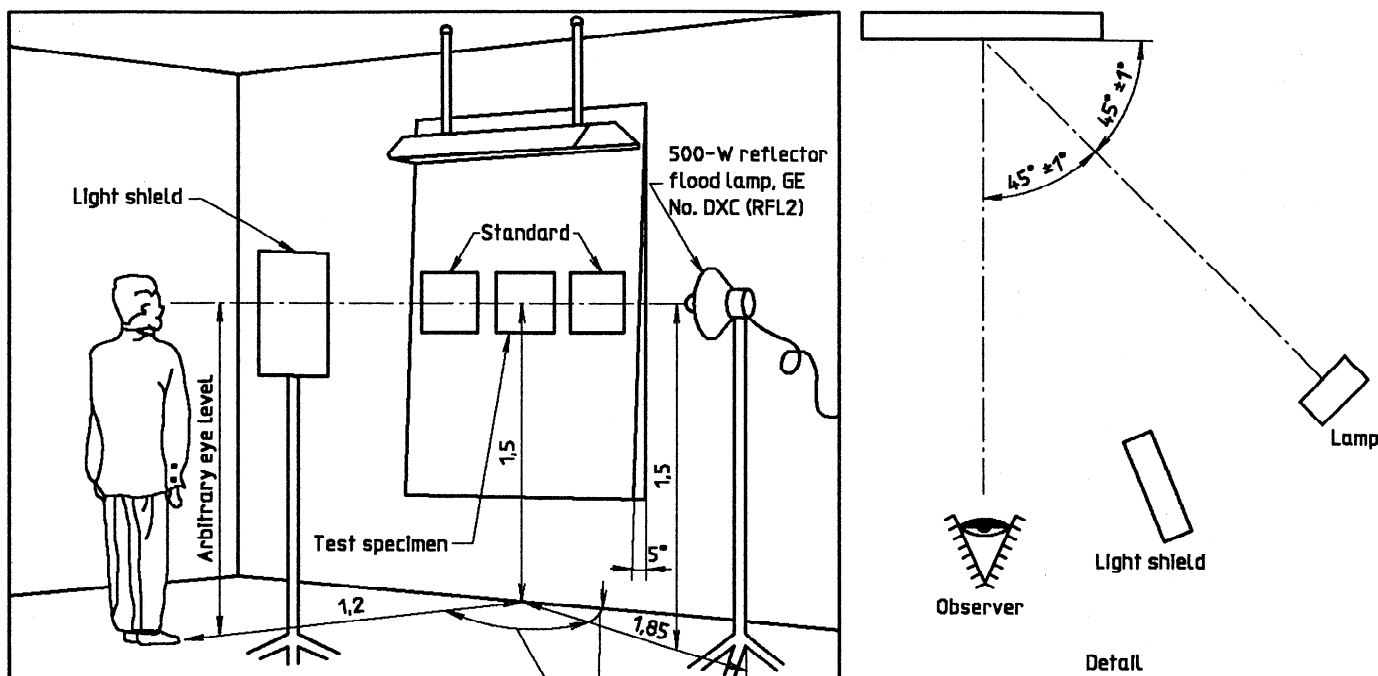


Figure 1 — Lighting equipment for viewing test specimens

Dimensions in metres



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Figure 2 — Lighting and viewing arrangement

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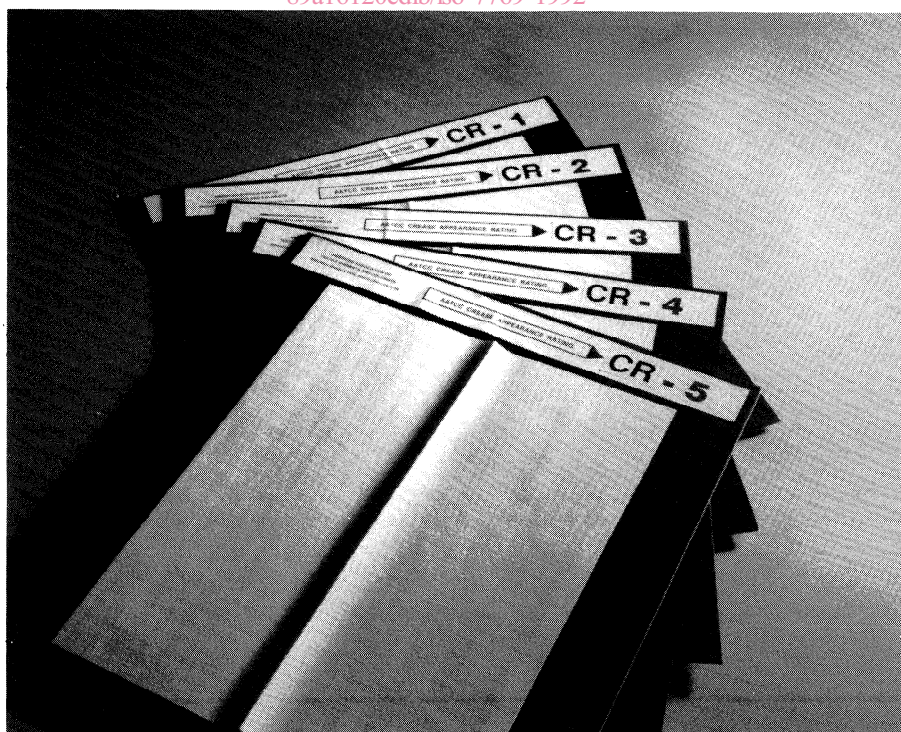


Figure 3 — AATCC plastic crease replicas

7.4.2 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.

7.4.3 Compare the retention of the specimen crease with the plastic crease replicas (see figure 3), using the prescribed lighting arrangement in a darkened room as shown in figures 1 and 2. Assign the number of the plastic crease replica that most nearly matches the appearance of the specimen crease (see figure 3 and table 1).

Table 1 — Crease appearance ratings

Class	Crease appearance
5	Equivalent to standard C-5
4	Equivalent to standard C-4
3	Equivalent to standard C-3
2	Equivalent to standard C-2
1	Equivalent to or worse than standard C-1

Standard C-5 represents the best level of appearance of crease retention while standard C-1 represents the poorest crease retention.

7.4.4 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.

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 of a rating.

9 Test report

The test report shall include the following information:

- a) a reference to this International Standard, i.e. ISO 7769:1992;
- b) details of the sample evaluated;
- c) details of the washing and drying procedures used as specified in ISO 6330;
- d) the number of washing and drying cycles used;
- e) the crease appearance rating as calculated in accordance with clause 8;
- f) details of any deviation from the specified procedure.

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Annex A (informative)

Precision and bias statement

A.1 Preliminary tests

A series of inter-laboratory tests was conducted during development of the set of five plastic replica standards. From this work, it was concluded that:

- a) replica standards were preferred over photographic standards;
- b) replica standards did not change the level of ratings;
- c) the absence of side-lighting raised the level of ratings;
- d) rating to half-units improved precision.

This was the basis for adopting the set of replica standards, retaining side-lighting and allowing rating to half-units.

A.2 Precision

Using the adopted set of replica standards, five fabrics spanning the range of ratings from 1 to 5, three specimens per fabric, were rated by six observers at a single laboratory location (December 1985). With all conditions identical for the six observers, this data set provided an unbiased estimate of the frequency distribution of observer ratings about an unexpected rating value (or the variability to be expected in observer ratings). Because of the limited and discontinuous scale of replica ratings, the analysis of variance technique was judged not to be applicable to this data set, but such a scale imposes no such restriction with regard to frequency distributions. From the data set, it was determined that

observers rate individual specimens to an expected half-rating (E) on the following frequency:

rated a whole unit under the expected value	0,011 11
rated a half-unit under the expected value	0,133 34
rated to expected value (E)	0,600 00
rated a half-unit over the expected value	0,200 00
rated a whole unit over the expected value	0,055 55
Total	1,000 00

Starting with the near-normal distribution for observer determinations (designated distribution 1), it was used to calculate the following additional distributions: 2) the probability of differences between observers (single determination); 3) the distribution of observer totals of three determinations about an expected value; 4) the probability of differences between observers (three determinations per total); 5) the distribution of laboratory totals of three observer totals (nine rating determinations, three each by three observers) about an expected value; and 6) the probability of differences between laboratories (nine determinations per total).

Adhering to fiducial limits based on the usual $P = 0,05$ (or, in some instances, slightly more favorable), critical differences were established from the three different distributions as given in table A.1.

Table A.1 — Critical differences

Source	Critical difference (average)	Probability (P)
Between two observers (one determination each)	1	0,03
Between two observers (three determinations each)	0,67	0,02
Between two laboratories (nine determinations each)	0,33	0,05
	0,50	0,01

The foregoing was based on observers and laboratories at the same level. When two or more laboratories wish to compare test results, it is recommended that laboratory level be established between them, through ratings of creases on fabrics of known history and performance. Differences greater than the critical differences (on the same fabric, with the same washing and drying conditions)

suggest differences in laboratory levels and indicate a need for removing such bias.

A.3 Bias

The true value of appearance of creases in durable-press items after home laundering can be defined only in terms of a test method. There is no independent method for determining the true value.

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