DRAFT AMENDMENT ISO 7770:2006/DAmd 1

ISO/TC **38**/SC **2** Secretariat: **ANSI**

Voting begins on: **2008-04-02** Voting terminates on: **2008-09-02**

Textiles — Test method for assessing the smoothness appearance of seams in fabrics after cleansing

AMENDMENT 1

Textiles — Méthode d'essai pour l'évaluation de la régularité d'aspect des coutures sur les étoffes après nettoyage

AMENDEMENT 1

ICS 59.080.30

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Foreword

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Amendment 1 to ISO 7770:2006 was prepared by Technical Committee ISO/TC 38, *Textiles*, Subcommittee SC 2, *Cleansing, finishing and water resistance tests*.

Textiles — Test method for assessing the smoothness appearance of seams in fabrics after cleansing — Amendment 1

Pg. 9, Annex A (informative)

New annex added

ANNEX A
(informative)

Digital Description of the ISO Seam Pucker Replicas

A.1 This informative annex provides the digital description of 3D replicas. The data are not intended to be used to assess specimens. When assessing specimens, the 3D replicas are to be used.

A.2 Processes of Measurement and Analysis

A.2.1 A 3-dimensional scanning system was used to measure digital images of ISO seam pucker replicas as shown in Figure A.1. Specifications for the scanning system are shown in Table A.1.

Figure A.1 — 3-Dimensional scanning system

Table A.1 — Specification of the 3-dimensional scanning system

Camera	1024×768pixel, B/W
Special Pattern	Structural beam by halogen lamp
Adjustment of focus	Using the laser point light source
Measurement time	70 ~ 80 sec
Resolution	± 0,05 mm

A.2.2 Measuring area is shown in Figure A.2

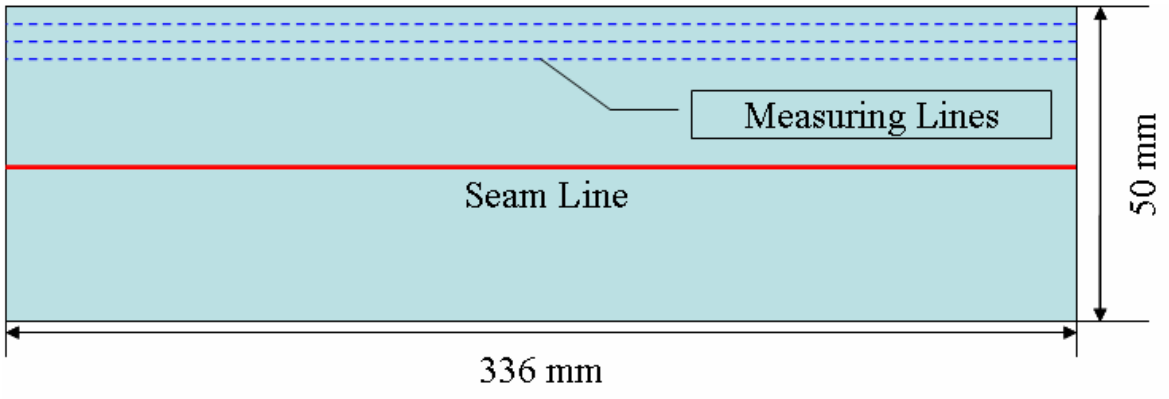


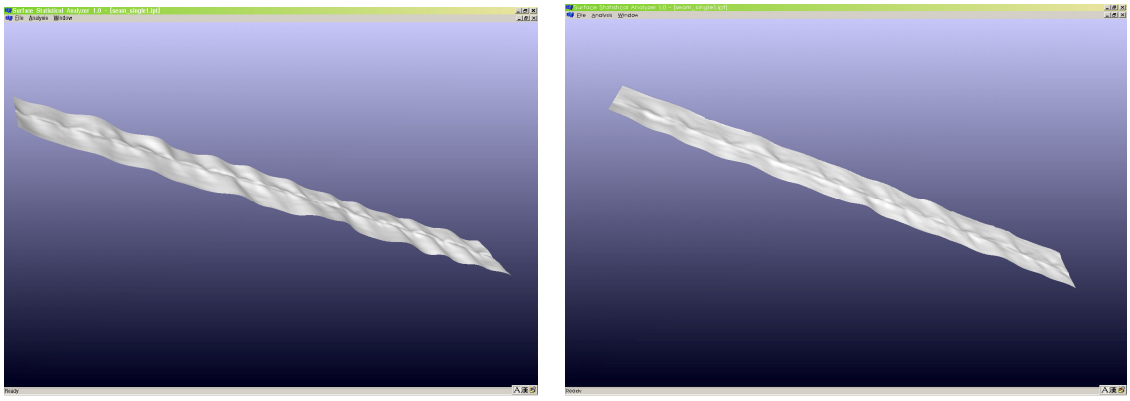
Figure A.2 — Measuring area of seam pucker replica

A.2.3 A geometric shape of each standard replica is measured using 3-dimensional laser scanning system in a parallel direction with the seam line of the replicas at an interval with 1mm. The 43 lines with 1 mm interval are selected to analyze the replicas precisely. The measuring point intervals along each line are same as the line intervals, 1 mm. The number of measuring points along each line is determined by the interval.

To analyze the replicas, we defined six shape parameters that have an influence on grade of replica. They are mean of heights, maximum of heights, variation of heights, mean of height frequency, maximum of height frequency, variation of height frequency. For each region, we can get 6 parameters.

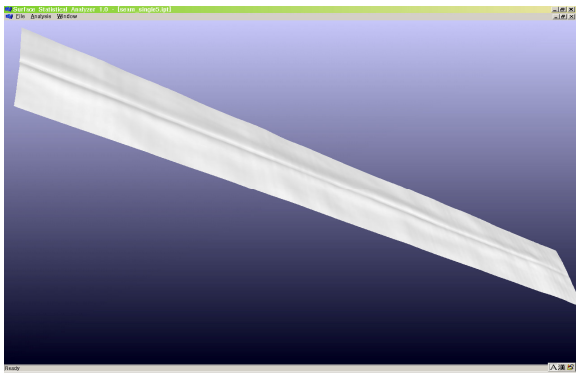
A.3 Analysis of Single Seam Pucker with 1 mm Measurements

A.3.1 Figure A.3 shows measured images of crease replicas using 3-dimensional scanning system at the intervals of 1 mm.



(a) Grade 1 (b) Grade 2

(c) Grade 3 (d) Grade 4



(e) Grade 5

Figure A.3 — Measured images of Seam Puckered Replicas

A.3.2 Analysis of Parameters

A.3.2.1 Mean of Height (H_mean)

Figure A.4 shows the relationship between seam pucker grade and mean of height. ANOVA test and Tukey's method were performed to confirm differences in this parameter among grades. From the results of ANOVA test, the difference in grades was confirmed at the 95% confidence level. The results of Tukey's method indicated no significant differences between grade 1 and grade 2 and between grade 3 and grade 5.

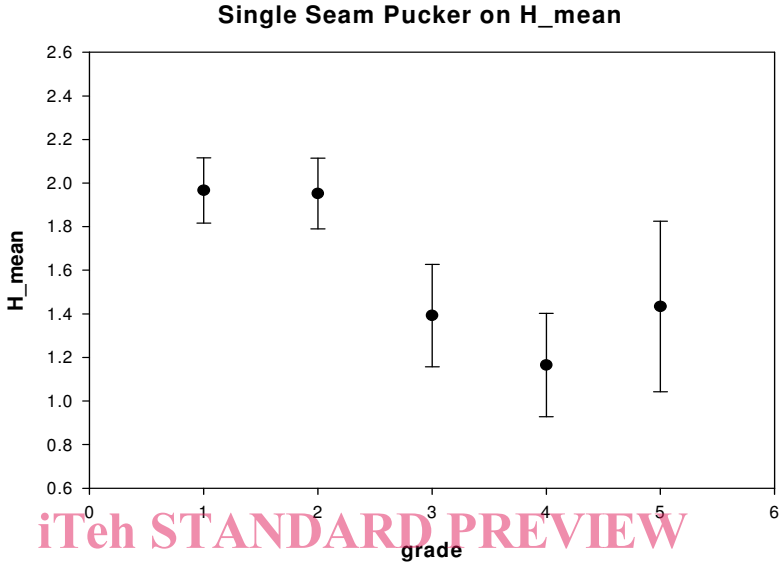


Figure A.4 — Relationship between grade and mean of height

A simple regression analysis is performed to verify the apparent linear relationship between grades of replicas and mean value of height. From the results of this analysis, the R-squared value is 41,70 %, as shown in Table A.2.

Table A.2 — Results of a simple regression analysis on H_mean

parameter	Regression Equation	R^2
H_mean	Grade = 6,56 – 2,25×H_mean	41,70 %

A.3.2.2 Maximum of Height (H_max)

Figure A.5 shows the relationship between seam pucker grade and mean of height. An ANOVA test and Tukey's method were performed to confirm any difference of this parameter among grades. While the difference was confirmed at the 95% confidence level with the ANOVA test, grades 1, 2 and grade 4, 5 were clearly not classified in a way comparable with the Tukey's method.

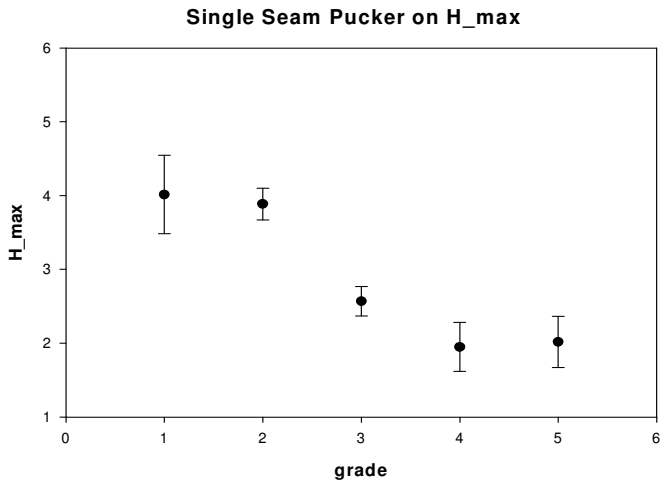


Figure A.5 — Relationship between grade and maximum of height

A simple regression analysis is performed to confirm the linear relationship between the grade of replicas and maximum value of height. From the results of this analysis, the R-squared value is 76,6%, as shown in Table A.3.

Table A.3 — Results of a simple regression analysis on H_max

parameter	Regression Equation	R^2
H_max	Grade = 6,73 − 1,29 × H_max	76,60 %

A.3.2.3 Variation of Height (H_var)

Figure A.6 shows the relationship between seam pucker grade and variation of height. The ANOVA test and Tukey's method were performed to confirmed differences of variation of height among grades. The results of these analyses, all grades with this parameter are clearly distinguished at the 95% confidence level.

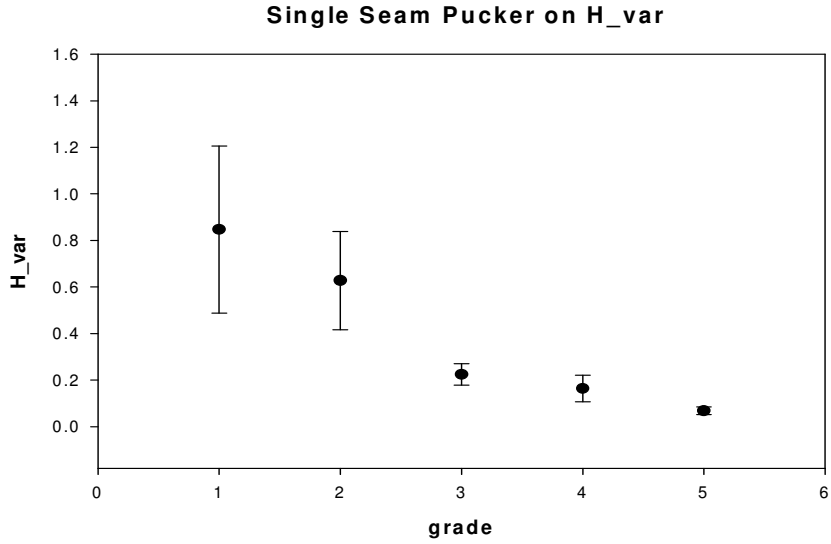


Figure A.6 — Relationship between grade and variation of height

A simple regression analysis is performed to confirm the linear relationship between the grade of replicas and variation value of height. From the results of this analysis, the R-squared value is 65,7%, as shown in Table A.4.

Table A.4 -- Results of a simple regression analysis on H_var

parameter	Regression Equation	R^2
H_var	Grade = 4,26 – 3,25 × H_var	65.70%

A.3.2.4 Mean of Height Frequency (dH_mean)

Figure A.7 shows the relationship between seam pucker grade and mean of height frequency. The ANOVA test and Tukey's method were performed to confirm differences of mean of height frequency among grades. While the difference was confirmed at the 95% confidence level with the ANOVA test, grade 4 and 5 are not classified at the 95% confidence level with the Tukey's method.

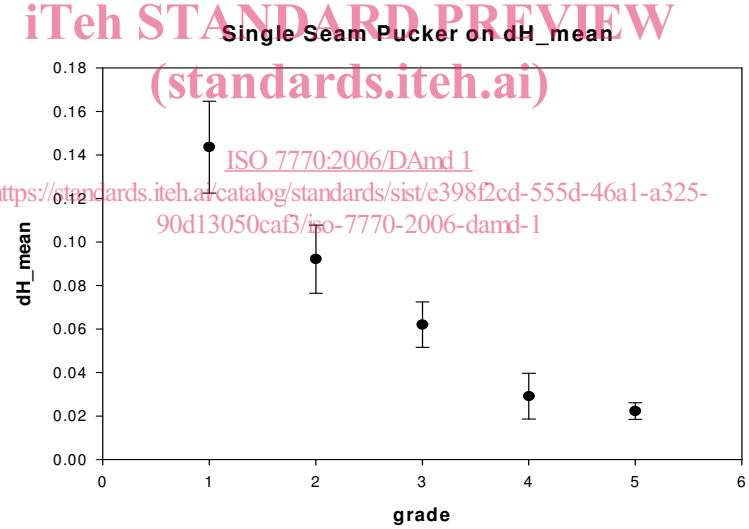


Figure A.7 -- Relation between grade and mean of height frequency

A simple regression analysis is performed to verify the linear relationship between grades of replicas and mean value of height frequency. From the results of this analysis, the R-squared value is 86,3%, as shown in Table A.5.

Table A.5 Results of a simple regression analysis on dH_mean

parameter	Regression Equation	R^2
dH_mean	Grade = 4,97 – 28,2 × dH_mean	86,30%