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# International Standard



# 7211/2

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

## Textiles — Woven fabrics — Construction — Methods of analysis — Part 2: Determination of number of threads per unit length

*Textiles — Tissus — Construction — Méthodes d'analyse — Partie 2: Détermination du nombre de fils par unité de longueur*

First edition — 1984-03-15

UDC 677.064 : 677.017.353

Ref. No. ISO 7211/2-1984 (E)

**Descriptors** : textiles, woven fabrics, tests, determination, numbers, yarns.

## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been authorized 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.

International Standard ISO 7211/2 was developed by Technical Committee ISO/TC 38, *Textiles*, and was circulated to the member bodies in November 1982.

It has been approved by the member bodies of the following countries:

Australia	India	Portugal
Belgium	Iran	Romania
Brazil	Iraq	South Africa, Rep. of
Bulgaria	Israel	Spain
Canada	Italy	Sweden
China	Jamaica	Tanzania
Czechoslovakia	Japan	Turkey
Egypt, Arab Rep. of	Korea, Rep. of	United Kingdom
Finland	Mexico	USSR
Germany, F.R.	Netherlands	Venezuela
Ghana	New Zealand	
Hungary	Poland	

The member body of the following country expressed disapproval of the document on technical grounds:

France

# Textiles — Woven fabrics — Construction — Methods of analysis —

## Part 2: Determination of number of threads per unit length

### 1 Scope and field of application

This part of ISO 7211 specifies three methods for the determination of the number of threads per centimetre in woven fabrics. Any of the three methods may be used, the choice depending on the character of the fabric. However, in case of dispute method A is recommended.

**Method A:** Dissection of fabric, suitable for all fabrics. This is the most laborious method but has fewer limitations than the others; in particular, it is the only one that is really suitable for the examination of certain folded structures and other complicated weaves.

**Method B:** Counting glass, suitable for woven fabrics with more than 50 threads per centimetre.

**Method C:** Traversing thread counter, suitable for all fabrics.

Where the number of threads per centimetre is low, it may be convenient to express the results as the number of threads per decimetre.

NOTE — Methods using parallel line gratings and tapered line gratings have been given in the annex for information. These methods have not been considered accurate enough to be used as standard test methods but can be used to give rough and ready estimates for routine testing.

### 2 Reference

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

### 3 Principle

Three methods of determining the number of threads per centimetre are specified, any of which may be used, the choice depending on the character of the fabric. The principles are as follows:

**Method A:** A section of fabric of dimensions in accordance with those given in clause 4 is dissected and the number of threads counted. The threads that are to be counted are preferably short, 1 or 2 cm being suitable.

**Method B:** The number of threads visible within the aperture of a specified counting glass is determined.

**Method C:** The number of threads per centimetre of the fabric is determined with the aid of a traversing thread counter.

### 4 Minimum measuring distance

Use the appropriate minimum measuring distance specified in the table.

Table — Minimum measuring distance

Number of threads per centimetre	Minimum measuring distance cm	Number of threads per test piece	Accuracy in percentage (count to within 0,5 thread)
Less than 10	10	Less than 100	Greater than 0,5
10 to 25	5	50 to 125	1,0 to 0,4
25 to 40	3	75 to 120	0,7 to 0,4
More than 40	2	More than 80	Less than 0,6

For the method A, take test pieces containing at least 100 threads.

For narrow fabrics having a width of 10 cm or less, count all warp threads including the selvedge ends and express the result as threads per full width.

When fabrics are patterned by broad areas of higher or lower density of thread spacing, select test specimens containing at least one weave repeat (see clause 10).

### 5 Conditioning and testing atmosphere

One of the standard atmospheres for conditioning and testing textiles as defined in ISO 139 shall be used for conditioning and testing.

### 6 Test specimens

No specially prepared specimens are required except for method A (see 7.2), but count the threads at not less than five different points selected to represent the fabric as fully as possible. Expose the fabric or specimens to the standard atmosphere for testing for at least 16 h before making the test.