

Specification for a

# Universal system for designating linear density of textiles (Tex System)

Confirmed  
November 2011

# Co-operating organizations

The Textile Divisional Council, under whose supervision this British Standard was prepared, consists of representatives from the following Government department and scientific and industrial organizations:

- Board of Trade
- British Railways Board
- Consumer Council
- Cotton Industry Standards Committee
- Jute Industry Standards Committee
- Linen Industry Standards Committee
- London Transport Board
- Man-made Fibres Industry Standards Committee
- Ministry of Defence
- Ropes and Cordage Industry Standards Committee
- Silk Industry Standards Committee
- Society of Dyers and Colourists\*
- Textile Institute\*
- Textile Machinery Industry Standards Committee
- Trades Union Congress
- Wool Industry Standards Committee

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the committee entrusted with the preparation of this British Standard:

- British Launderers' Research Association
- British Man-made Fibres Federation
- Commonwealth Joint Services Committee
- Cotton, Silk and Man-made Fibres Research Association
- Hosiery and Allied Trades Research Association
- International Federation of Cotton and Allied Textile Industries
- Linen Industry Research Association
- Scottish Textile Research Association
- Wool Industries Research Association

This British Standard, having been approved by the Textile Divisional Council, was published under the authority of the Executive Board on 25 February 1970

© BSI 07-1999

First published March 1941  
First revision May 1952  
Second revision February 1959  
Third revision February 1970

The following BSI references relate to the work on this standard:  
Committee reference T/-/8  
Draft for comment 69/15303

ISBN 580 05986 3

## Amendments issued since publication

| Amd. No. | Date of issue | Comments                              |
|----------|---------------|---------------------------------------|
| 1376     | May 1974      | Indicated by a sideline in the margin |
|          |               |                                       |
|          |               |                                       |
|          |               |                                       |

# Contents

|                                                                   | Page               |
|-------------------------------------------------------------------|--------------------|
| Co-operating organizations                                        | Inside front cover |
| Foreword                                                          | ii                 |
| 1 Scope                                                           | 1                  |
| 2 Characteristics of the system                                   | 1                  |
| 3 Units                                                           | 1                  |
| 4 Notation                                                        | 1                  |
| Appendix A Conversion                                             | 2                  |
| Appendix B Implementation of the Tex System in trade and industry | 4                  |
| Table 1 — Tex System: recommended units                           | 1                  |
| Table 2 — Multiplying factors for direct systems                  | 2                  |
| Table 3 — Constants for conversion of indirect systems            | 3                  |

## Foreword

This standard makes reference to the following British Standard:

BS 946, *Method for the designation of yarns*.

BS 4985, *Conversion table for replacing traditional yarn numbers by rounded values in the Tex System*.

This British Standard is in accordance with the ISO Recommendation R 1144, "Textiles: Universal system for designating linear density (Tex System)", which has received substantial support and in the preparation of which the United Kingdom has played an active part.

BS 947 was originally published in 1941, when it was based on Tentative Textile Specification No. 3 in the Journal of the Textile Institute of June, 1939. A revised edition was published in 1952, including information on additional counting systems, and a further revision was published in 1959, which was based on Tentative Textile Standard No. 3a in the Journal of the Textile Institute of February, 1958. That edition of BS 947 referred to the recommendation made by the ISO technical committee on textiles at its meeting in 1956 that a universal direct and metric system should be adopted by all member nations and that this system should be the Tex System; the standard suggested that wherever traditional yarn count is mentioned the equivalent tex value should be given in brackets.

It has long been customary to quantify the coarseness or the fineness of textile yarns by numerical systems. Many branches of the textile industry employ systems of their own for this purpose. However, the systems in current use are all indicative of the relationship between mass and length for the yarn, and may be classified into two groups:

- 1) *Direct systems* which measure the mass per unit length of the yarn, i.e. a direct measure of the linear density. The results of such measurements are often known as yarn numbers or yarn titres.
- 2) *Indirect systems* which measure the length per unit mass of the yarn i.e. an inverse measure of the linear density. The results of such measurements are usually known as yarn counts.

With the growing use of yarns containing more than one kind of fibre, and of fabrics containing these yarns, it became increasingly evident that the general adoption of a single system of numbering or counting would avoid confusion and save time.

The Tex System is direct and based upon metric units; originally grammes per kilometre (tex), milligrammes per kilometre (millitex), and kilogrammes per kilometre (kilotex), with the addition of decigrammes per kilometre (decitex) agreed in 1967. The original decision was embodied in ISO Recommendation R 138, "Universal yarn count system", and further elaborated in ISO Recommendation R 271, "Implementation of the Tex System for designating the size of textile fibre, yarns and similar structures". The latter outlined the procedure for the conversion of counts or numbers expressed in other systems into tex values, both exact and rounded, and included guidance on the gradual implementation of the Tex System in trade and industry. In 1967 a supplement to R 271 was circulated as Draft ISO Recommendation 1412, "Intermediate steps leading to the complete introduction of the second stage of the Tex System". Later that year it was agreed to revise the existing ISO Recommendations, and this British Standard is in line with the comprehensive document so produced.