

Conversion table for replacing traditional yarn numbers by rounded values in the Tex System

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- Cotton Industry Standards Committee
- Jute Industry Standards Committee
- Linen Industry Standards Committee
- London Transport Executive
- 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 organization marked with an asterisk in the above list, together with the following, was directly represented on the committee entrusted with the preparation of this British Standard:

- Association of Jute Spinners and Manufacturers
- British Carpet Industry Technical Committee
- British Man-made Fibres Federation
- British Textile Employers' Association
- Central Council of the Irish Linen Industry
- Flaxspinners' and Manufacturers' Association of Great Britain
- Knitting Industries Federation
- Textile Converters' Association
- Wira
- Wool Textile Delegation

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Contents

	Page
Co-operating organizations	Inside front cover
Foreword	ii
1 Scope	1
2 Choice of unit	1
3 Symbols and abbreviations	1
4 Application of conversion table	1
Conversion table	2
Publications referred to	14

Foreword

This British Standard is technically identical with International Standard ISO 2947 *“Integrated conversion table for replacing traditional yarn numbers by rounded numbers in the Tex System”*.

The table in this standard was developed by ISO Sub-committee ISO/TC 38/SC 4: Tex Implementation, in collaboration with the following international organizations:

Association Européenne de Moulinage
Association of European Jute Industries
Comité International de la Rayonne et des Fibres Synthétiques (CIRFS)
Eurocoton
Fédération Internationale de la Filerie
International Association of Users of Man-made Fibres (AIUFFAS)
International Bureau for the Standardization of Man-made Fibres (BISFA)
International Federation of Cotton and Allied Textile Industries (IFCATI)
International Wool Textile Organization (IWTO)
Secrétariat International des Industries de la Maille

In compiling the conversion table the principle has been to choose rounded values in the Tex System each of which would accommodate as many yarn counts as possible from the traditional systems on a commercially acceptable basis. Whilst in many cases rounding has been determined by purely numerical considerations, account has been taken of existing international practices or agreements. For example, where specific English cotton counts are related to metric counts, this is reflected in the rounded tex value. The rounded values included for denier numbers form a limited selection from the range of “Continental rounded decitex values”, which embraces the bulk of deniers produced and is already in use by the major man-made fibre producers.

To ensure a smooth transition to the Tex System it is necessary to maintain a degree of flexibility in regard both to the choice of unit and to satisfying the reasonable requirements of spinners’ customers. Adoption of the rounded values in the table would, however, make a substantial contribution to rationalization since 466 traditional yarn counts would be replaced by 204 rounded tex values.

When the Tex System has been fully adopted, it is expected that a range of tex values will ultimately evolve which will have more rational intervals between linear densities than those determined pragmatically and embodied in this standard.

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Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 14, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

1 Scope

This British Standard is intended to facilitate the changeover by industry and commerce from traditional yarn numbering systems to the Tex System (see BS 947).

It provides a range of recommended rounded linear densities in the Tex System to replace the yarn numbers in the six main traditional numbering systems referred to in Table 3 and covers the great majority of yarns currently produced. The rounding procedure set out in BS 947 is superseded by this standard.

The rounded tex values for count systems not covered by Table 3 (e.g. Dewsbury count) may be ascertained by applying the principle on which the table is based, namely, by using the relevant conversion factor from BS 947 to give the exact Tex System equivalents and then choosing a range of rounded numbers which are, as far as possible, not more than 2 % different from the exact equivalents.

NOTE The title of the British Standard referred to in this standard is given on page 14.

2 Choice of unit

Although the rounded Tex System values in Table 3 have been expressed in terms of the basic unit, tex, the decitex equivalents have also been included because they can be used throughout the whole count range without employing decimal fractions.

The choice of unit is entirely a matter to be determined by individual sectors (or even between spinner and customer); the decitex unit, for example, is particularly suitable for fine yarns (whether spun or filament) and the tex unit for medium and coarse yarns.

3 Symbols and abbreviations

The count systems referred to in the headings of columns 2 to 7 of the Conversion Table are as follows:

Indirect systems

Symbolic abbreviation	Yarn count system	Basic length	Basic mass	Unit measure of yarn count number
N_{eC}	Cotton (English)	840 yards	1 pound	840 yd/lb
N_m	Metric	1 kilometre	1 kilogram	km/kg
N_{eW}	Worsted	560 yards	1 pound	560 yd/lb
N_{eL}	Linen (wet or dry spun)	300 yards	1 pound	300 yd/lb

Direct systems

Symbolic abbreviation	Yarn count (number) system	Basic mass	Basic length	Unit measure of yarn count number
T_J	Jute, hemp, linen (dry spun)	1 pound	14 400 yards (spynkle unit)	lb/14 400 yd
T_d	Denier	1 gram	9 kilometres	g/9 000 m
T_t	Tex ^a	1 gram	1 kilometre	g/km

^a Tex is the linear density of a yarn expressed in grams per kilometre. Two decimal multiples of the system are decitex (1 tex = 10 dtex) and kilotex (1 ktex = 1 000 tex).

4 Application of the conversion table

4.1 Whilst covering the majority of spun and filament yarn production, the rounded values in the six traditional systems are not exhaustive. Where a customer requires a yarn of a specific linear density not included in the Conversion Table, production of such a yarn should be arranged between spinner and customer. This is particularly relevant to yarns used for the production of sewing threads, where it is necessary to work to especially fine tolerances.

4.2 With a few exceptions, fractional traditional counts have been omitted from Table 3; the rounded Tex System values for most fractional traditional counts can usually be obtained by taking the rounded value for a count in the table having the same digits and making the necessary adjustment of the decimal point (this is of particular significance where yarns for the carpet and tyre industries are concerned, N_{eC} 0.98 and N_{eC} 1.05 being quite common).

4.3 This standard is not intended to apply to the product designation of sewing threads, for which special systems are recognized by producers and customers.

Conversion Table

Columns A and B are given for information only.

1	2	3	4	5	6	7	8		A	B
Rounded value	Traditional counts or numbers							Exact equivalent ^a	Deviation	
	English cotton	Metric	Worsted	Linen	Jute	Denier	Rounded value			
tex	Ne _C	Nm	Ne _W	Ne _L	T _J	Td	dtex		dtex	%
1						9	10		10.00	0.0
1.1						10	11		11.11	− 1.0
1.2						11	12		12.22	− 1.8
1.3						12	13		13.33	− 2.5
1.6						14	16		15.56	+ 2.8
1.7						15	17		16.67	+ 2.0
2						18	20		20.00	0.0
2.2						20	22		22.22	− 1.0
2.6						23	26		25.56	+ 1.7
2.8						25	28		27.78	+ 0.8
3						27	30		30.00	0.0
3.1						28	31		31.11	− 0.4
3.3						30	33		33.33	− 1.0
3.5						32	35		35.56	− 1.6
4						35	40		38.89	+ 2.9
4.4						40	44		44.44	− 1.0
4.8						43	48		47.78	+ 0.5
5	120	200				45	50		49.21	+ 1.6
	118							50.00	0.0	
								50.04	− 0.1	
5.1	116						51	50.91	+ 0.2	
	115							51.35	− 0.7	
5.2	114					47	52	51.80	+ 0.4	
								52.22	− 0.4	
5.3		190					53	52.63	+ 0.7	
	112							52.72	+ 0.5	
	110							53.68	− 1.3	
5.5	108						55	54.68	+ 0.6	
5.6		180				50	56	55.56	+ 0.8	
	106							55.71	+ 0.5	
	105							56.24	− 0.4	
5.7	104						57	56.78	+ 0.4	
5.8						52	58	57.78	+ 0.4	
	102							57.89	+ 0.2	
^a Correct to at least four significant figures										