

# FACT SHEET UNDERSTANDING YARN COUNTS



## UNDERSTANDING YARN COUNT AND THE USES OF AUSTRALIAN COTTON

Understanding and measuring yarn count is important to fabric technologists and designers, because it provides a key to predicting a fabric's quality and properties such as structure, weight, comfort, porosity and movement.

This fact sheet is intended to help designers and fabric technologists make decisions about the types of products to make from Australian cotton at various qualities.

## WHY SPINNING MILLS LOVE AUSTRALIAN COTTON

The conversion of cotton fibre to a textile starts with the spinner, for whom price and quality are the most important attributes. Higher quality fibres, such as Australian cotton:

- command a premium, as they produce better yarns and fabrics (finer, lighter, stronger, cleaner and more even)
- achieve better productivity in the spinning mill (improved machine efficiency, less waste, fewer quality rejections)
- are one of the least contaminated cottons in the world, improving spinability

## YARN COUNTS EXPLAINED

### Tex

Although the thickness or diameter of a yarn is one of its most fundamental properties, it is difficult to measure objectively, so a system of representing the fineness of a yarn by weighing a known length is used. This quantity is known as the 'linear density' and it can be measured with a high degree of accuracy if a sufficient length of yarn is used.

The term 'yarn count' refers to this linear density, or thickness. The textile industry refers to yarn in terms of its mass per unit length, using the unit 'tex'.

Tex is the mass – in grams – per kilometre of yarn. The higher the tex, the coarser the yarn. For example, yarn count 30 tex means that 1000 metres of yarn will weigh 30 grams. Fibre fineness is measured in 'millitex', or milligrams per kilometre.

### English cotton count

An older system of measurement called English cotton count (notated Ne) is also used within the cotton spinning industry. In this system, a big number describes a fine yarn, while a small number describes a coarse yarn – the inverse of the tex system.

To convert tex to Ne or vice versa, use the following equations:

$$\text{Tex} \times \text{Ne} = 590.5$$

That is,

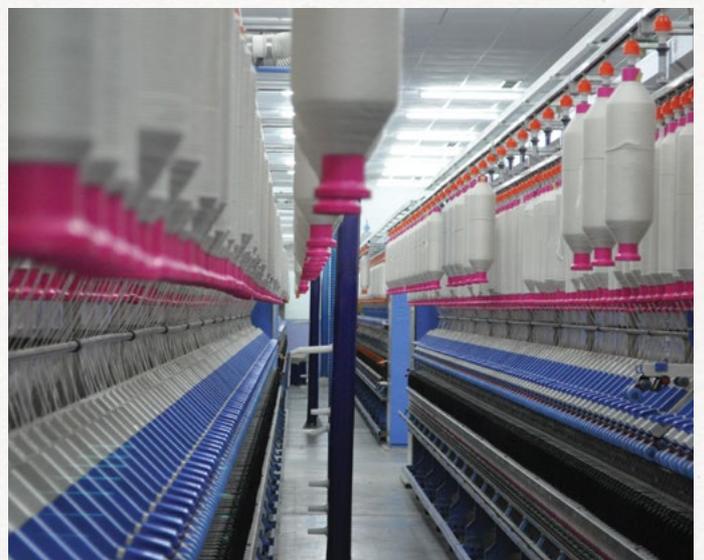
$$\text{Tex} = \frac{590.5}{\text{Ne}} \quad \text{and} \quad \text{Ne} = \frac{590.5}{\text{tex}}$$

**Example: Yarn count 30 tex**

$$30 = \frac{590.5}{\text{Ne}} \quad \text{Ne} = 19.68$$

Both systems are used in trade, and commonly appear side by side in yarn descriptions.

**NOTE: When dealing with spinners always ask which measure of yarn count – tex or Ne – they use.**



Australian cotton offers almost zero contamination.

## SPINNING SYSTEMS

Depending on whether the yarn is to be used for knitting or weaving, the spinner will focus on different quality parameters when sourcing the raw cotton fibre from merchants in Australia (who buy cotton from farmers and sell to spinning mills).

**Table 1. Spinning systems by yarn count**

Yarn count tex	Yarn count Ne	Spinning system	Percentage that applies to Australian cotton
≥300 to 40	2 to 15	Open-end spinning	<10%
40 to 10	15 to 60	Air-jet spinning (mainly for 100% manmade or small proportion of blends with cotton)	<5%
40 to 10	15 to 60	Ring spinning	100% up to Ne 50 ≤25% up to Ne 60
<12	>50	Compact ring spinning	100% up to Ne 50 ≤25% up to Ne 60 ≤15% maximum up to Ne 70
<7.5	>80	Compact ring spinning	≤5%

**100% AUSTRALIAN COTTON IS USED IN A VERY WIDE RANGE OF PRODUCTS FROM TOWELS TO T-SHIRTS, BED SHEETS TO DENIM**

**Table 2. End product uses by yarn count**

Yarn count tex	Yarn count Ne	The products in which these yarns are used	The products in which Australian cotton is used
Up to 60	Up to 10	Mops, ropes, coarse knits and woven fabric including denim	-
Up to 30	Up to 20	Ropes, coarse knits, denim, drill, towels and carded underwear/t-shirt knits. In this category, Australian cotton is used in underwear and high-quality t-shirt knits.	 High quality
120 to 12	5 to 50	Coarse, medium and fine weight carded and combed knits, denim, drill and upholstery woven fabrics, towels, standard bed linen. Australian cotton is used in the medium to fine weight fabrics category within these specifications, but not usually in upholstery or denim.	
40 to <10	15 to >60	Medium to fine weight combed knits, medium to fine weight combed woven fabrics including shirting and bed linen fabric. Australian cotton is used in these products.	

## USES OF AUSTRALIAN COTTON

Unless a brand demands the use of 100% Australian cotton in its supply chain, most yarns are made from a blend of cottons from various parts of the world.

The most common yarns produced from Australian cottons are 20 tex (Ne 30) to 12 tex (Ne 50) count yarns, produced on the ring-spun system of which at least 60% are combed. These yarns are used to construct a wide range of quality woven and knitted fabrics.

Finer Australian cotton is also used in blends with extra-long staple (ELS) cottons. For example, Pima cotton from Egypt or the USA. These countries produce very fine count yarns in the range of 12 tex (Ne 50) to 7.5 tex (Ne 80), which are used for very high-quality knits or woven apparel and bed sheets. ELS cotton is not grown in Australia because it does not easily fit into Australian cotton production systems.

In recent years, there has been a move to spin coarser count ELS-type yarns, up to 20 tex (Ne 30) and coarser, for production of very high-quality denims and towel yarns.

Cotton Australia knows, through its brand partnerships, that 100% Australian cotton is used in a very wide range of products from towels to T-shirts, bed sheets to denim - with noticeable differences in quality.



FOLLOW COTTON AUSTRALIA ON



**FOR AUSTRALIAN COTTON SOURCING, TRACEABILITY, BRAND LICENSING AND MARKETING**  
[www.cottonaustralia.com.au](http://www.cottonaustralia.com.au)  
[supplychain@cottonaustralia.com.au](mailto:supplychain@cottonaustralia.com.au)

**FOR SALES AND MARKETING OF AUSTRALIAN COTTON FIBRE**  
 The Australian Cotton Shippers Association  
[www.austcottonshippers.com.au](http://www.austcottonshippers.com.au)

**FOR AUSTRALIAN COTTON NEWS**  
[www.cottonaustralia.com.au](http://www.cottonaustralia.com.au)

*With thanks to: René van der Sluijs,  
 Principal Consultant, Textile Technical Services*