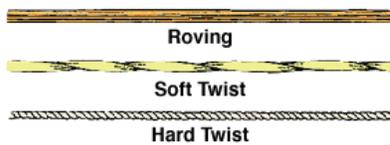
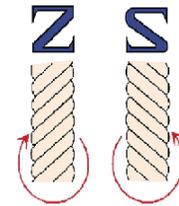


Conductive Yarn

Textile Notes

Twist

During the spinning process fibres are twisted into yarn. Twisting the fibres holds them together and gives the yarn strength. There are only two directions that yarn can be twisted- clockwise and counter clockwise. Either direction can be used. Counter-clockwise twist is known as "S" twist while clockwise is known as "Z" twists. Single strands of yarn are usually given a Z twist during spinning and plied yarns are usually given an S twist. Most Shieldex yarns are Z twist.



The degree of twist required depends on the fibre and can vary from no twist to high twist. Yarns with no twist are called 'Roving' while high twist yarns are 'Crepe'. The amount of twist in a yarn is measured in Turns Per Inch (TPI). Spun yarns with relatively little twist of 2-12 TPI are referred to as 'Soft Twist'. Yarns with 20-30 TPI are referred to as 'hard twist.'

Packaging

Yarns are bought and sold by weight, not by length. Because of this sizes (or numbers) are used to express a relationship between unit length and weight of yarn.

There are two main numbering systems- direct numbering for filament yarns and indirect numbering for spun yarns.

While yarns sizes reflect a relationship between weight and length, this relationship also reflects the diameter or thickness of the yarn, although not as precisely. Basically the relationship to size is expressed in that a lighter weight yarn is finer (smaller) than a heavier weight yarn of the same length. This relationship becomes less precise due to variations in twist and fibers. Therefore sizes express the relationship between weight and length in a yarn and a close, but not precise, relationship to diameter.

Direct Numbering

In the direct system as the numerical value of the size goes up, so does the weight per length and the diameter. Direct numbering is expressed in terms of weight in grams over length in meters. The most common direct numbering terms are:

Denier- Grams/9000 M. Decitex- Grams/ 10,000 M. Tex- Grams/1000 Yarns are sold by the weight.

To better understand the described yarns, an example would be of our 117/17 dtex 2 ply – the 117 is the weight in dtex. (weight of 10,000m of thread in grams) If it is a 2 ply you would multiply the weight of $117 \times 2 = 234$ dtex total weight before the silverisation. The 17 is the number of filaments.

Abbreviations: TPU = Thermoplastic Polyurethane, HC = High Conductivity, HC+B = High Conductivity plus coating to enhance mechanical properties, HC+AT = High Conductivity plus anti-tarnish coating, OA = Water soluble finish.

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