

NEW TEXTILES

YARN

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YARN

“A continuous strand of textile fibers, filaments, or materials in a form suitable for knitting weaving, or otherwise intertwining to form a textile fabric”

-American Society for Testing and Materials (ASTM)

TYPES OF YARN

- Filament Yarns
 - Smooth filament yarns: smooth uniform filaments
 - Mono filament yarns: single filament
 - Tape yarns: tape-like filaments
 - Bulk yarns: textured filaments
- Spun Yarns: spun from staple fiber



Photo courtesy of [Koocheekoo](#) on Flickr.

STAPLE FIBER → YARN PROCESS

- Opening: cleaning the fiber
 - Carding (combing): aligns fiber, produces slivers
 - Drawing (rolling): increases alignment, combines slivers
 - Combing (brushing): increases alignment
 - Combed yarn=“worsted” or “combed”
 - Uncombed yarn=“woolen” or “carded”
 - Roving: increases alignment, introduces slight twist
 - Spinning (twisting): creates yarn
- * Filaments can also be spun

MEASURING YARNS

- Fiber length
- Twist
 - Direction
 - S twist
 - Z twist
 - Amount
 - turns/twists per inch
- Ply: number of strands in yarn
- Size
 - Yarn number
 - Spun: length/weight (finer yarn=higher number)
 - Filament: weight/length
 - Denier (for filament yarn)
 - weight in grams of 9000 meters of yarn (larger yarn = higher number)
 - $1000/280 = \text{yarn denier}/\text{fiber denier}$
 - Tex
 - Weight in grams of 1000 meters of yarn



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