

SHIVPRIYA TEXCHEM · KNOWLEDGE SERIES

Spun vs Filament.

The divide that runs through the whole industry.

Every yarn in the world is one of two things: short fibres twisted together, or continuous filaments running the full length. Almost every property that matters — handle, pilling, strength, cost, comfort — follows from which side of that line you are on.

38–51 mm

typical staple length; a filament has no length at all

Twist

what holds spun yarn together — filament needs none

2 chains

entirely separate supply chains, machinery sets and price logics

Bridging world-class spinning mills and your needs, since 2003.

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CHAPTER 01

Two ways to make a thread

Spun yarn is an assembly of short fibres held together by friction from twist. Filament yarn is a bundle of continuous strands that need no twist at all. Everything downstream traces back to this.

	SPUN YARN	FILAMENT YARN
Component	Short fibres, 25–150 mm	Continuous strands, effectively endless
Held together by	Twist and inter-fibre friction	Nothing is needed; twist is optional
Surface	Hairy — fibre ends protrude	Smooth — there are no ends
Machinery	Blowroom to ring frame	Polymer extrusion and texturing
Sold by	Count (Ne, Nm)	Denier or dtex
Origin	Natural fibre or cut man-made staple	Melt or solution spinning

The odd one out. Man-made fibres are extruded as filament and then **deliberately cut into staple** so they can be spun. Cutting a perfectly continuous filament into short pieces sounds absurd until you consider that the entire cotton machinery base already exists — and that staple gives a handle filament cannot.

CHAPTER 02

Why hairiness is the defining difference

A spun yarn has millions of fibre ends and every one of them is a potential hair. A filament yarn has two ends in a kilometre. Almost every practical difference between them flows from this.

01 Spun yarn is hairy

Protruding ends give warmth, matt appearance, a soft dry handle and a fabric that breathes.

03 Filament is smooth

No ends means no hairiness, high lustre, a cool slippery handle and no pilling.

05 Texturising bridges the gap

DTY and ATY give filament some of spun yarn's bulk and matt surface without the ends.

02 Spun yarn pills

Those same ends work loose under abrasion, tangle into balls and stay attached to the fabric.

04 Filament snags

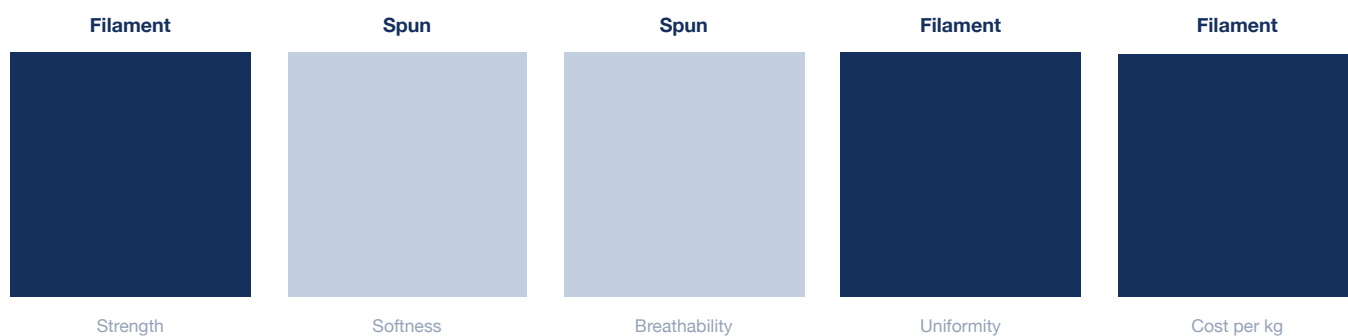
A continuous filament pulled from the fabric drags a long loop rather than breaking free.

Spun yarn pills. Filament yarn snags. **Neither problem exists in the other**, and no fabric escapes both.

CHAPTER 03

What each side is genuinely better at

This is not a quality ranking. Each structure wins decisively at some things and loses decisively at others, and fabric design is largely the work of choosing correctly.



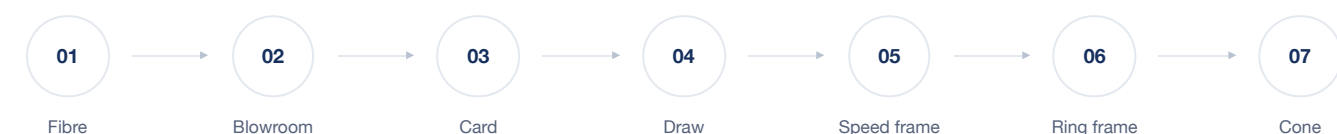
Where each structure leads — direction, not magnitude

PROPERTY	SPUN	FILAMENT
Tenacity	Lower — load transfers between fibres	Higher — each strand runs the full length
Evenness	Inherently variable	Extremely uniform
Handle	Warm, dry, soft, matt	Cool, smooth, slippery, lustrous
Breathability	Good — air moves through the structure	Poor unless textured or engineered
Pilling	A real and permanent risk	Essentially none
Cost	Higher conversion cost per kilo	Lower — fewer processing stages

CHAPTER 04

Two industries that barely touch

The spun and filament chains use different machinery, different skills, different pricing logic and largely different companies. Understanding both is what allows a blend or a union fabric to be specified properly.



The spun route — six or seven stages between fibre and yarn



The filament route — a continuous chemical process rather than a mechanical one

Spun economics

Driven by fibre price, conversion efficiency and count. Labour intensive.

Filament economics

Driven by crude, PTA and MEG. Capital intensive, largely automated.

Spun flexibility

A mill can change fibre, blend and count relatively easily.

Filament flexibility

Changing polymer or denier is a major and expensive line changeover.

CHAPTER 05

Which fabrics need which

Most end uses have a settled answer, arrived at over decades. Knowing why the answer settled where it did is what lets you challenge it sensibly.

FABRIC	STRUCTURE	WHY
T-shirt jersey	Spun	Softness, breathability and moisture absorption next to the skin
Denim	Spun	Bulk, surface character and the way indigo sits on a hairy yarn
Saree & dress fabric	Filament	Drape, lustre and cost — the defining Indian filament market
Sportswear	Filament	Strength, moisture transport and dimensional stability under stress
Shirting	Either	Spun cotton for comfort, filament blends for wrinkle recovery and cost
Lining	Filament	Smoothness is the entire function of the fabric

- **Union fabrics** put spun in one direction and filament in the other — filament warp for strength, spun weft for handle.
- **Blends** cut man-made filament into staple and spin it with cotton, taking properties from both.
- **Core-spun yarn** wraps staple around a filament core, which is the closest either side comes to the other.

CHAPTER 06

Where the two sides meet

The commercially important middle ground is not a compromise — it is a set of deliberate structures that borrow specific properties from each side.

CONSTRUCTION	WHAT IT BORROWS FROM EACH SIDE
PC blend	Polyester staple spun with cotton — strength and stability from one, comfort from the other
PV blend	Polyester with viscose staple — drape and cost, the backbone of Indian suiting
Core spun	Filament or elastane core for strength and stretch, staple sheath for handle
Siro-fil	A filament strand and a staple strand twisted at one spindle in a single passage
Union fabric	Filament warp and spun weft, or the reverse, chosen direction by direction
ATY	Filament made to look and feel like staple, without any staple in it

Blend ratio is a design decision. PC 65:35 and PC 50:50 are different fabrics with different handles, different pilling behaviour and different costs. **The ratio is not a rounding of availability** — it should be chosen against the end use.

CHAPTER 07

How each behaves downstream

Spun and filament yarns need different dyeing chemistry, different finishing and different handling. A processing house set up for one is rarely equally good at the other.

STAGE	SPUN (COTTON)	FILAMENT (POLYESTER)
Dye class	Reactive, vat, direct	Disperse
Temperature	Around boiling, atmospheric	High temperature, pressurised
Preparation	Desizing, scouring, bleaching	Scouring and heat setting
Shrinkage control	Sanforising	Heat setting
Common defect	Barré from mixed yarn lots	Oligomer deposits and streaks
Effluent	High — salt and alkali load	Lower volume, different chemistry

The blend penalty. A PC fabric must be dyed **twice** — disperse for the polyester, reactive for the cotton, in sequence. That is two baths, two temperatures and two chances for shade error, and it is why blend processing costs more than either fibre alone.

CHAPTER 08

Identifying which you are holding

A few seconds of physical examination settles what a specification sheet sometimes obscures.

01 Look along the length

Spun yarn shows protruding fibre ends. Filament looks smooth and glassy.

03 Break it

Spun yarn breaks with a tapered, fibrous end. Filament breaks abruptly and cleanly.

05 Burn a strand

With care. Cotton smells of paper; polyester melts and beads; wool smells of hair.

02 Untwist it

Spun yarn falls apart into short fibres. Filament separates into continuous strands.

04 Feel the temperature

Filament feels cool against the skin. Spun yarn feels warm and dry.

06 Rub the surface

Spun yarn fuzzes under rubbing. Filament stays smooth or snags a loop.

The untwist test. It is the fastest and most reliable field test in textiles. **Short fibres or continuous strands** — the answer takes ten seconds and settles the whole question of structure.

CHAPTER 09

Choosing the right side

The choice should be made at fabric design, against the end use — not at purchasing, against price.

01 Start with next-to-skin

If the fabric touches skin for long periods, spun or a spun-rich blend is usually correct.

03 Consider the wash cycle

Industrial laundering punishes hairy spun yarn far more than it punishes filament.

05 Cost the whole fabric

Filament is cheaper per kilo but may need a heavier construction. Compare per metre.

02 Check the pilling requirement

If the buyer specifies a pilling grade, that alone can decide the structure.

04 Match the drape

Filament drapes; spun has body. This is a design property, not a quality one.

06 Check the processing house

Confirm the processor is genuinely equipped for the structure or blend you have chosen.

How Shivpriya reads it. We start every yarn conversation with **the end use and the wash cycle**, because between them they usually settle the spun-or-filament question before count and price are even discussed. Getting this right first makes every later decision easier.

IN CLOSING

Short fibres, or long ones. Everything follows.

The spun-versus-filament decision sits underneath every fabric specification, and it is often made by habit rather than by design. If you are developing a new construction or reconsidering an old one, talk to us — we trade across both chains and can compare them honestly at the fabric rather than at the cone.

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