

## TECHNICAL TUESDAYS

TOPIC: Silk Textiles & Silk Production

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### What is Silk Fiber?

Silk is a natural protein fiber produced by silk worms. The best-known type of silk is obtained from the cocoons of the larvae of the mulberry silkworm *Bombyx mori* reared in captivity (sericulture).

Silk possesses a natural fiber known as the filament fiber. The protein fiber filament is spun by the caterpillars of various butterflies and is also produced by certain insects to build their cocoons and webs.

The natural protein filament of silk has a density of about 1.34 g/cm which makes it a medium weight fiber.



### Different Types of Silk:

#### **Wild or tussah silk:**

Wild or Tussah silk is a tan-colored fiber from the cultivated silk worm. The silk worm feeds on oak. Tussah silk differs both physically and chemically from ordinary silk. It is usually dark rich brown in colour, considerably stiffer and coarser. Tussah silk is less reactive toward chemicals.

**Thrown or Greg silk:** Thrown silk consists of two or more threads of raw silk that are reeled tighter with a slight twist.

**Organize silk:** Organize silk is produced from the best cocoons. It contains two or more stands each composed of a number of gregs twisted together slightly.

**Tram silk:** Tram silk is usually made from cocoons of lower grade. It is composed of two or more strands of thrown silk that are lightly twisted together and then doubled.



## The steps in manufacturing silk:

### Sericulture:

Cultivation of silkworm is known as Sericulture. It involves a lot of care and nurturing of the silk caterpillar, it is usually a tedious process. The process starts with the silk moth which lays eggs on a specially prepared paper.

### Cocoons shortlisting:

The cocoons are sorted according to color, shape & texture.

### Sericin removal:

When the silk worm is grown it spins a double strand of silk fibers surrounded by water soluble substance called the Sericin. The Sericin gum can be removed by the boiling process.

### Reeling:

The process by which the filament is taken up from the cocoons is called reeling. It is delicately and carefully unbound from the cocoon. The diameter of the filament is so little that once reeled, its commercial value decreases automatically. Moreover the double filament is too delicate to handle.

### Throwing:

The production of yarn from reeled silk is known as throwing. It consists of adding twists, then doubling it further with twisting until these strands reach the desired size. When 2-3 silk multi-filaments are twisted together, it forms heavier threads, this process is called Throwing.

### Advantages of silk fabric:

- Luxurious hand (the feel of a fiber, yarn, or fabric to the wearer)
- Excellent drape (a fabrics ability to fold while worn)
- Wonderful luster (reflection of light on fabric)
- Hydrophilic
- Stain resistant
- Strong but lightweight

### End users of silk fabric:

*Apparel:* Luxury items, wedding dresses, evening gowns, blouses, scarves, neckties

*Interiors:* Pillows, wall hangings, draperies, upholstery

**Wishing you a great week ahead!**

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