Silk Weaving - Kanchipuram
Art of Indian Silk Weaving
by
Prof. Bibhudutta Baral with Mr. Antony William, Mr. Mahesh, and Mr. Srikanth
NID, Bengaluru

Source:
http://www.dsource.in/resource/silk-weaving-kanchipuram

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**Introduction**

Kanchipuram silk saris are exclusively known for rich gold borders and dense brocades in contrast colors. More than 150 years of traditional weaving of Kanchipuram is purely hand woven from the processed silk yarn and Zari– the silk thread made of silver and gold. Kanchipuram specialized in ‘Murukku pattu’, a heavy silk sari which is woven with twisted three-ply silk yarn and Zari on fly-shuttle pit looms. The contrast borders are achieved by Korvai technique. There are more than 45,000 expertise weavers in Kanchipuram. Weavers are from Padma Sali-yar and the Pattu Saliyar community. Almost all local families are engaged in different production processes such as silk weaving, warping, spinning, twisting and dyeing.

**Place:**

Kanchipuram is also known as Kanchi is located 72 Km away from Chennai in Tamilnadu. The place is also known as “City of 1000 temples” as the city has more than 1000 temples. The Kanchipuram silk saris have become very popular all over the world. Silk weaves of Kanchipuram has ancient history for its rich weaving and the tradition. The city is the major centre for producing silk saris with 5000 weaving families.

The silk weaving is also done in some other parts of Tamil Nadu such as Rasipuram, Mannarkudi, Kumbakonam, Thirubuvanam and Arni. All these areas follow the weaving techniques of the Kanchipuram but they are lighter in weight when compared to Kanchi saris.
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Intense care taken while dyeing the raw silk yarn.

In Kanchipuram, Street warping practiced in the early morning.

Weaver displaying the final product.
Traditional tools are still used in spinning process. Nearly three to five artisans practice warping process.

Zari-golden thread loaded in warp for borders. Senior artisan carefully checking the warp.

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1. **Introduction**

Traditional and simple loom from Kanchipuram, it is operated by aged artisans.

**Gold colored sari highly embellished with leaf motifs.**

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**Colored yarn dried at room temperature.**

**Artisan's family with silk saree.**
Skilled artisan engaged in sari weaving.

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Tools and Raw Materials

Different types of tools and raw materials used are:

Mulberry Silk:
The basic raw material used for the production of saris is silk. Finely processed silk is purchased from Karnataka. The tough silk which comes from Karnataka grants luster and smooth finish to the Kanchi sari.

Zari:
Golden thread is imported from Surat. Pure silver and gold is used to make Zari thread. Recently, the artisans of Kanchipuram started zari unit to produce zari thread locally. This thread is especially used for borders and pallu of sari.

Dye Color:
Different colors of dye color powders purchased from local markets. The color powder is mixed in boiling water while dyeing the silk yarn.

Copper Containers:
Huge copper containers are used in dyeing process. These containers are used to dye the boiling solution.

Rice Starch:
Starch is extracted by boiling rice. The extracted solution is locally called as Kanji. Yarn is dipped in the kanji to obtain stiffness.

Spinning Wheel:
This is a hand cranking spinning wheel which is locally called as ‘Mara Ratinam’. It is used to spin the silk yarn to spools and spindles. These spindles are used in weaving process for weft weaving.

Fly-shuttle:
It is mainly used to process the weft. The spools are inserted in fly-shuttle while weaving. These shuttles are made of whole bamboo pole.

Warp Beam:
The length of yarn is wound on warp beam which is later loaded into the loom.
Jacquard Machine:
The improvised equipments such as jala and jacquard are used to produce the designs for borders and Pallu.

Warping machine:
This is used to draw the length of the yarn from the spools.

Handloom:
Looms of Kanchipuram ranging from traditional to modern. Traditional looms can be operated manually. Modern looms are upgraded with motor pedals.

Punch Cards:
The design is punched on the punch cards. The cards are loaded into jacquard machine.

Colored Silk.
Warping machine used to prepare warp beam.
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Punch cards are loaded into Jacquard for getting design in the sari.

Design reference used while making punch cards.

Floral design reference.

Parivattam - Bamboo spool used to wind the yarn to form silk bundles.
Spindle – Kulal is inserted into Fly-shuttle – Neel locally. Synthetic threads to connect jacquard and warp threads.

Motorized pedal to operate handloom. Warp beam loaded to the other end of loom.

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The warp is measured with tape and knotted with cotton thread.

Cotton cloth used to wipe the excess gum.
Dyeing Process

The length of raw silk is first divided into 3 segments using rubber tube to make 3-saris. Hence these silk segments are colored separately as per the requirements. The border and pallu of a silk saree are dyed in single color. But the body of the sari is dyed in contrast color of border and pallu.

To start dyeing process, water is boiled in a huge copper container. Once water is boiled at high temperature, the dye materials—washing soda, soap oil, dye color are added to the boiling water. The off-white silk yarn is dipped into the colored boiling solution. After dyeing, the colored yarn is immersed in normal water to remove excess color. The yarn is taken out from the container and it is allowed to dry for 2 to 3 days. Red, green, blue and mustard are the popular colors used in dyeing process.

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Raw silk is dipped in the color solution.  
Silk is partially colored.

The yarn is hanged between two iron rods to rotate continuously while coloring.  
A Artisan ensuring the uniformity of color. Artificial flowers are added to the garland.
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Traditional Spinning Process

The colored silk is brought for spinning process. The yarn bundle is first spun onto a traditional bamboo spool locally called as Parivattam. Then, the yarn from these spools is again spun onto spindles with the help of spinning wheel. Silk strand is reeled to spindle and the spinning wheel is operated. The yarn from bamboo spool is transferred into spindles. These spindles are used to insert into fly-shuttle which is used while weaving to weave the weft. The spinning process is done to avoid entangles in the yarn and to ensure the easy weaving.

Colored yarn is ready for spinning process.
Silk bundle is reeled onto traditional bamboo spool.
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Warping Process

The length of silk yarn after dyeing is brought simultaneously winding process. The warping is carried out in streets preferably in the early morning, so that the color of the silk yarn would not be sun-bleached. The length of the yarn is tied between the two poles and the warp is stretched. Entangles in the yarn are checked and then knotted. A cotton thread is laced into the warp as it helps to trace the entangled silk threads. Once the warping is completed, the yarn is dipped in rice starch solution-Kanjito obtain more shine and luster. The yarn is loaded to warping machine to prepare warp beam. This is loaded into loom to start weaving process. The length of the warp 18 meters which can make three saris of 6 meters each. Nearly 3 to 5 artisans required to complete warping process. Count of warp threads ranges 5000 to 6000. Each thread of warp is 2 ply and weft is 4 ply.

Initial stage of warping is in process.

Cotton thread is inserted into warp threads as it helps to find the damaged silk threads.
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Artisan making space to insert bamboo stick.
Thin bamboo stick is being inserted into warp threads.
Warp is stretched over bamboo stick to inspect breaks in the silk threads.
After warping, the silk is dipped in rice starch.
**Excess starch is squeezed.**

**Starched yarn is again dried.**

**Warp is being fixed to warping machine.**

**Reed is inserted into warp threads to make them even.**

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Artisan checking the tautness between the stretched warp.
The ends are connected to iron rod to make warp beam.
Warp is being reeled to warp beam.
Over view of warp making and environment.
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Warp beam is ready for weaving.
Weaving Process

There are few pre preparations to be done before weaving process. The processes are warp loading, punch card loading and weaving.

Warp Loading:
The loom setting activity is done before weaving process. The yarn after warping is prepared into warp sheets by rolling the length of yarn to an iron rod. The process of transferring the warp sheet into weavers beam is called beaming. In this process the strands of yarn passes through the reeds and healds. This is done by joining each silk strand to the old warp threads manually. It takes nearly 2-3 days to complete the joining process. Generally women folk perform the joining process.

Punch Card Making and Loading:
Technology is also a part in the production of silk saris. The automated design process has replaced the traditional design process. The image of the motif is first scanned and then it is traced and filled with bitmaps. Finally the image is transferred to the punch cards. Now the punch cards are attached in the form of a chain and loaded into the jacquard machine to start weaving. This automated process is simple and time saving.

Weaving in Handlooms:
Weaving is done on the fly shuttle pit looms. The weaver interlaces the silk threads of weft and warp. The shuttle passes through the opens formed when the pedal is operated to interlock the threads of warp and the weft. Once the shuttle is passed, the suspended rope from jacquard is pulled to form the weave. The proton of woven cloth is wounded to the wooden beam which is in front of the weaver. After weaving of 6 meters of weft, the portion of unwoven warp is intentionally left before and after the sari weaving which is later knotted for fringe. Thus the weaving is completed; the unwoven stands are cut out with a small metal blade and sari is folded in traditional manner for the marketing.

It takes nearly 4 to 5 days to complete one sari. The length of 10 saris warp is loaded into the loom at a time. The weaver may need 1 or 2 persons help while working.
Each thread from warp beam is being attached to the loom silk threads.

In Kanchipuram, Count of warp threads ranges from 5000 to 6000.

Spindle is being inserted into fly-shuttle.

The thread of fly-shuttle is connected to warp threads.
Shuttle passes through the opening of warp shed.

The shuttle is collected from other end.

Pulley helps to lift the warp threads.

Weaver inspecting warp to ensure smooth weaving.

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Small beads are inserted to connect warp threads and jacquard threads.

A wooden stick fixed to the woven part of sari for better support.

Women weaving sari which has contrast border.

Continuous pedal movement to operate handloom.

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External Zari thread is inserted to create motif designs. Gum is applied on the sari for stiffness.

Excess gum is removed. Woven sari which is rolled on weavers beam is cut and removed.

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Products and Motifs

Traditionally woven Kanchipuram saris are very heavy and soft with fine counts of silk. The weight of sari ranges from 750 grams to 1000 grams due to their rich counts. The gorgeous wide borders in contrast colors are very fascinating. Intricate border and pallu designs are so aesthetically embellished with beautiful motifs. Finer quality of Zari and silk is durable and enhances the life, richness and luster of sari.

The most popular motifs used in Kanchi saris are inspired by temples of Kanchipuram and around environment. Other motif patterns include flowers, natural leaves, fruits, Mayilkan- the peacock’s eye, Rudraksham- Rudraksha beads, Swans, Parrot. Mallinaggu – the jasmine motif scattered all over the body of sari. The Ganga-Jamuni refers to two different colored borders in one sari. Checks and stripes are also included in the motifs.

Traditional products include saris and Pattu langas- skirts for teenage girls. The twisted three-ply threads and the extra Zari warp and weft patterning is used to create the final product. The contrast borders and pallus are achieved by Petni and Korvai technique.
Traditional bright colored saris are ideal wear for wedding occasions.

Combination of silk and Zari threads to create unique design pattern.

Brocade silk sari in combination of floral and geometrical forms.

Kanchi weaves also include dual shades in the sari as per market need.
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