**Industrial Textile Printing Techniques:**

Textile printing is a process through which a pattern, color or combination there for is applied to the surface of a textile. When a fabric is dyed, all the fibers absorb the dye and assume the designated color. With textile printing, however, only the surface fibers or specified area of the textile receives the color or pattern. As a result, the color is not applied uniformly but in selected regions.

**Methods of Printing:**

The different approaches or techniques are prevalent for printing color on a fabric on commercial basis is following:

**Discharge Printing:**

The discharge printing, also called Extract printing, method of applying a design to dyed fabric by printing a color- destroying agent, such as chorine or hydrosulfite, to bleach out a white or light pattern on the darker colored ground. In color- discharged printing, a dye impervious to the bleaching agent is combined with it, producing a colored design instead of white on the dyed ground. The printed fabric is steamed and then thoroughly washed. This technique is in less use these days.

**Resist Printing:**

The resist printing has been very widely used in Eurasia and Africa since Antiquity. Resist printing is a technique in which a resist paste is fixed onto the fabric and then it is dyed. The dye affects only those parts that are not covered by the resist paste. After dyeing, the resist paste is removed leaving a pattern on the ground of the fabric. Result achieved through this technique is of similar to discharge printing this method is also less in use.

**Roller Printing:**

The roller printing also called direct printing and engraves roller printing. It used to decorate large quantities of fabric on a commercial basis. It is invented by Thomas Bell of Scotland in 1783. A separate dye paste for each color is applied to the fabric from a metal roller that is intaglio engraved according to the design. It is a modern continuous printing technique. In this method, a heavy copper cylinder (roller) is engraved with the print design by carving the design into the copper. The design is engraved on the surface of a metal roller, to which dye is applied, and the excess is scraped off the roller’s surface, leaving dye in the engraved sections then it rolls across the fabric, the dye on the roller transfers to the fabric.

Copper is soft, so once the design is engraved, the roller is electroplated with chrome for durability. This printing technique developed in the late 19th and early 20th centuries. Until the development of rotary screen printing it was the only continuous technique. Designs with up to 16 colors present no problem in roller printing.

**Flat Bed Printing:**

Flatbed printing machines can be manual, semi- automatic or completely automatic. One type of machine, which is still commonly found in printing houses, can be described as follows. The fabric is first glued to a moving endless belt. A stationary screen at the front of the machine is lowered onto the area that has to be printed and the printing paste is wiped with a squeegee. Afterwards the belt, with the fabric glue on it, is advanced to the pattern- repeat point and the screen is lowered again. The printed fabric moves forward step by step and passes through a dryer. The machine prints only one color at a time. When the first color is printed on the whole length of the fabric, the dried fabric is ready for the second cycle and so on until the pattern is completed.

**Rotary Printing:**

In the mid-1950s a new type of screen printing method involving a cylindrical screen was developed. Rotary screen printing involves a series of revolving screens, each with revolving screens, and each with a stationary squeegee inside which forces the print paste onto the fabric. Twenty or more colors can be printed at the same time. The process is much quicker and more efficient than flat screen printing. Since the 1970s it has grown to dominate the textile printing market.

**Digital Printing:**

The non-contract method of substrate decoration is called “digital printing”. Images, colors and patterns can be created by this method, using computer driven ink-jet nozzles or charged drums. The process of directly printing the textile dyes onto pre-treated fabric is called as Digital Printing Textile. Digital textile printing is quite different from traditional textile printing, and it is considered to be the next generation printing. The only requirement of the digital textile printing is that the fabrics which have to be used must be pre-treated to confirm about their ink holding capacity. A wide range of colors can be obtained through the pre- treatment process.

The concept of digital printing on fabrics has opened new opportunities for designers, merchandisers and sales persons. By printing as little as a small piece of fabric, or as much as needed to sew a garment or even more yards of your design, you can obtain a sample strike-off, a garment to show or multiple samples for your sales reps. You can also print your banners, flags and signs in our fabrics, and any other type of graphic or art reproduction would also be well suited. You can see this is not only time effective but also cost effective.