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TEXTILE FINISHES

When we go to the market to buy a fabric, we see various types available and buy the material after a lot of questioning. Will it shrink after washing? Is the fabric colourfast? Can I wash it at home or does it require dry cleaning? Some fabrics have markings like, colourfast or 'antishrink' or 'wash' 'n' wear. We also come across textiles like 'lizy-bizy,' 'chandni', 'chinon', 'crinkle', and so on. Most of the time, these terms do not make much sense to most of us. Also, sometimes when you want to get your dupatta dyed in a particular colour the dyer refuses to dye it as it is polyester and can not be dyed. Does that mean polyester can not be dyed at all? But we see polyester dupattas in different colours. How are those dyed at all? Also when we want to buy fabrics for suits, salesmen show us designed fabrics which are 'tied and dyed' or 'printed' or are in 'batik'. How are these designs made? In this lesson let us find out answers to these and many more similar questions.

OBJECTIVES

After studying this lesson you should be able to:

- explain the meaning of a 'finish' and the importance of applying it to the fabric;
- classify finishes as renewable, durable, basic and special, and explain selected characteristics of each;
- list the types of dyes and discuss their special characteristics;
- enumerate the stages of dye application; and
- demonstrate the process of tie and dye, batik and printing.

25.1 WHAT IS A FINISH?

Have you seen a fabric that comes from a loom? It is generally rough to feel, dirty with stains and is known as 'gray cloth'. The 'markin' fabric which we buy for making quilt covers is off-white and dirty and is a gray fabric. But most of the other fabrics that we buy from a shop are smooth, neat and clean. Why and what happens in between? Yes, a finish has been applied.

> A finish is anything that is done to a fabric after weaving or knitting, to changes its appearance, hand and performance.

When a finish is applied, say on cotton, it might become more shiny, stronger or resist shrinking on washing. Similarly, other finishes may make the fabric softer or stiffer; water or stain resistant; coloured or designed.

25.2 CLASSIFICATION OF FINISHES

Finishes can be classified as:

a) Renewable and Durable

b) Routine (Basic) and Special

Routine finishes are applied to almost all fabrics with an aim to improve their appearance. Special finishes are applied with a specific purpose or end use in mind.

FINISHES

Renewable	**Durable**	**Routine**	**Special**
Stiffening/ Starching	Mercerisation, Wash-n-wear	Scouring Bleaching Stiffening	Mercerisation Shrinkage control Wash-n-wear Dyeing and Printing

We come across the problem of fabric losing its stiffness after washing or the fabric crushing badly after wearing. What do you do in such a case? You starch the fabric and iron it after every wash. This is called a renewable finish. That means, these finishes last only till washing or drycleaning but some finishes stay on the fabric for its entire life, eg., resistance to crease or the wash 'n' wear finish. These are not affected by washing, drycleaning or ironing. These finsihes are called durable finishes and they cannot be applied at home. Some of the finishes which are durable could also be special or routine.

INTEXT QUESTIONS 25.1

1. Fill in the blanks after unscrambling the clues in the brackets.

   i) A finish is applied to fabric to improve its _____, _____ , and _____(EPARACAPEN, DHAN, EPRAC MORFNE).

ii) Finishes can be classified as _____ or _____ and _____ or _____. (CIABS/ECALIPS, ENWELAERB/RBEDALU)

iii) A finish that is applied after every wash is called _____. (NRALEEWBE)

iv) When a finish is applied to almost all fabrics it is termed as _____. (UINORTE)

v) The rough, dirty and stained fabric received from a loom is called _____. (YRAG)

25.3 SOME COMMON FINISHES

Let us now discuss the basic characteristics of different finishes that can be applied on a fabric.

A. Basic Finishes

i) Scouring/cleaning

Fabrics received as gray cloth have a lot of impurities naturally present in them. These may be oils, waxes and dirty stains acquired during construction of the fabric. Complete removal or cleaning of these impurities is important before applying any other finish. This cleaning is called scouring and is done to all fabrics with the help of soap solutions and chemicals. After cleaning, the fabric becomes smooth, neat and more absorbent.

Activity 25.1 **Do and See:** Take a new and an old washed fabric and put them in water. What do you observe? The old one will sink faster because it is more absorbent. As soon as it absorbs water, it becomes heavier and sinks.

ii) Bleaching

When fabrics are made, they are not white in colour, due to impurities and colouring material present in them. To make them white or to dye them in light colours they are bleached. Suitable bleaching agents are used to remove the colour from the fabric. Bleaching is done for cottons, woollens and silks. Man-made fabrics do not need bleaching as they are naturally white. Can you recall some man-made fabrics?

Bleaching has to be done very carefully as the chemical which can destroy the colour may also damage the fabric to some extent. Hydrogen peroxide is a universal bleach which can be applied to all kinds of fabrics.

iii) Stiffening

Stiffening means the fabric which is generally limp becomes stiff when a stiffening agent is applied. How do you stiffen your cotton clothes at home?

Yes, you use maida starch or rice water. For stiffening silk, gums are used. Stiffening gives body, smoothness and lustre to the fabric. This practice is sometimes used to cheat the customer. You must have observed that sometimes if you rub a fabric between your hands, some white powder comes out. It is because the fabric has been overstarched. Inferior fabrics are overstarched to look dense and better. Avoid buying such fabrics. Can you say why?

Activity 25.2 : Take a starched fabric and rub it against your fingers. Then hold it against the light. The weave will look little more open in that area, as the starch has been removed. This will clearly indicate if the fabric is of good quality or inferior quality.This activity will enable you to select a good quality fabric.

B. Special Finishes

i) Mercerisation

Before finishing, cotton is a dull and rough fabric which wrinkles easily. When it is mercerised by using chemicals for eg. sodium hydroxide it becomes strong, lustrous and dyes well as it is now more absorbent. This is a durable finish. Now-a-days this finish has become almost a routine finish for all cottons. Threads used for stitching are also mercerised. Can you say why?

ii) Shrinkage control or antishrink

What happens when your new shirt becomes small after washing?

Reduction in size of a fabric after it is washed is known as **shrinkage.**

If the label on the fabric reads 'sanforised' or 'antishrink' or 'shrinkproof' then it means the fabric has received a finish for shrinkage control, and such a fabric will not shrink on washing. If this marking is not there on the fabric, you may shrink the fabric yourself at home. You probably do it many a times. You soak the fall in water before putting it on the saree or soak the cloth before getting a suit made out of it. Purchase the fabric, a little more than what you need, soak it overnight, squeeze and dry it. The garment made from this fabric will not shrink on further washing.

Activity 25.3 Find a new (unwashed) khadi cloth. Cut a 15 cm square piece. Wash the cloth and dry it. Measure the dry cloth. Is there any difference in the size? If the size remains unchanged it means that the fabric has not shrunk. The difference in size clearly indicates shrinkage of fabric.

iii) Water proofing

Fabrics to be used as raincoats, umbrellas, and tarpaulins have to be treated with chemicals to give them a property which makes them water resistant. The finish is called waterproofing and it is a durable finish.

iv) Parchmentisation

Have you observed something different about the organdy fabric? Yes, it is stiff though thin. At the same time it is quite transparent and when washed the stiffness still remains.

This is because of a finish called parchmentisation resulting in a permanent stiffness. You don't need to apply starch to organdy sarees.

v) Wash 'n' Wear

You know that cotton fabrics crush badly when in use. By applying the finish of wash-n-wear, cotton fabrics become easy to maintain as now they do not require repeated ironing and do not wrinkle also. This finish is a durable one and is produced by use of chemicals like resins.

vi) Dyeing and Printing

In the market, you see fabrics in plain colours or colourful designs apart from white ones. The processes of producing colours and designs are called dyeing and printing. Dyeing gives a solid colour to the fabric whereas printing is an application of dye at specified areas to create a design. It is very important for the dyed and printed fabric to be 'colourfast', otherwise, if the colour runs on washing, rubbing or ironing the design is destroyed.

A simple test to check colourfastness is to rub a wet white hanky against the coloured fabric. If colour comes on it, the colour is not fast and the fabric should not be bought. If you have bought a cotton fabric whose colour runs, wash it only in cold water with salt added to it. This will help in fixing the colour to some extent.

INTEXT QUESTIONS 25.2

1. State true or false and justify the given statements.

   i) Scouring is a finish used to clean the fabric.

   .....

   .....

   ii) Bleaching has no damaging effect on fabric.

   .....

   .....

   iii) Shrinkage control can be done at home also.

   .....

   .....

iv) Organdy is permanently stiff.

.....

.....

v) Mercerized thread should be used for stitching.

.....

.....

2. Fill in the blanks by choosing correct words from the bracket.

i) Mercerisation is a _____ finish. (renewable/durable).

ii) Shrinkage control is indicated as _____ on the label. (sanforised/ parchmentised)

iii) Water proofing is a _____ finish. (routine/special)

iv) If on washing, the colour does not bleed, it has been treated for _____. (water proofing/colour fastness)

3. Name the finish required to achieve the following qualities in the fabrics.

i) a) Strong and lustrous cotton

b) It should dye well.

Finish required .....

ii) a) A crisp cotton fabric

b) It should be able to withstand daily washing during summer

Finish required .....

iii) a) Cotton that does not wrinkle easily

b) It does not require repeated ironing

Finish required .....

iv) a) Fabric should not absorb water

b) Water should not be able to pass through it.

Finish required .....

25.4 DYEING/FINISHING WITH COLOUR

When 'colour' is applied to a fabric it is termed as dyeing. Dyeing and printing of fabrics is usually done after routine or basic finishes but prior to the application of other finishes. But the question arises - Why do we dye fabrics? It is mainly done to give colour to the fabric and thus improve the appearance of the fabric.

The dyes which are used for colouring fabrics can be classified according to their sources.

A) Natural	B) Chemical
Saffron	Acid
Mehendi	Basic
Indigo	Azoic
	Direct
	Disperse
	Reactive
	Vat

Let us try to see each group-

Natural dyes:- These dyes are based on raw materials available in nature (plants, insects and minerals) and are non–polluting.

Chemical dyes : These dyes are not received from natural sources. They are synthetically made by using various chemicals. Chemical dyes are cheap and easy to apply, with overall good colour fastness but cause environmental pollution.

25.4.1 Stages of dye application:

When we go to the market we find it is not only fabrics which are dyed but sewing threads and knitting yarns are also available as dyed materials.

Dyeing may be done during

i) **Fibre Stage:** Both natural and manmade fibers can be dyed at this stage. It gives very uniform dyeing and fast colours. But there is a lot of wastage during further processing of fibres.

ii) **Yarn stage :** Sometimes yarns are also dyed, especially when they have to be sold as such. Hence in embroidery thread, sewing threads and knitting yarn, dyeing is done at the yarn stage.

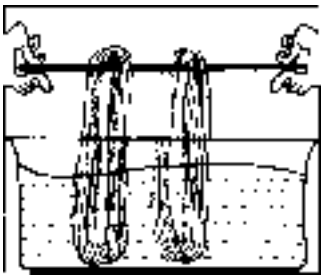


Fig. 25.1 Dying at yarn stage

iii) **Fabric stage :** This is the most popular stage of dyeing. Most of the fabrics which are dyed in a single solid colour are dyed at this stage. This method is a fast method and it is easy to match colours. Blended fabrics can also be dyed.

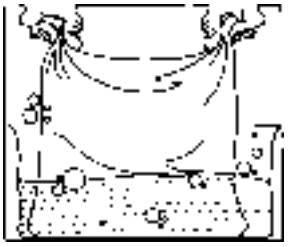


Fig. 25.2 Dying in fabric form

iv) **Garment dyeing:** Sometimes, after stiching the garment, there is a need to dye it, for example, dupattas for suits are dyed after making.

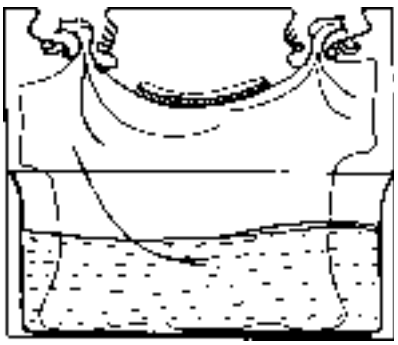


Fig. 25.3 : Garment dyeing

25.5 DESIGNING USING DYEING AND PRINTING

In order to get a design on the fabric, dyes have to be applied in a selective way. This can be done using the following techniques:-

A) Tie & Dye **B) Batik** **C) Block Printing**

A) Tie & Dye

You must have seen beautiful coloured bandhani dupattas with tiny white dots scattered all over the fabric. Have you ever wondered how this effect is achieved? This is done by a process of dyeing called tie and dye.

Tie and dye is a process of resist dyeing

'**Resist dyeing**' means doing something to the fabric so that some obstruction is provided to the dye. By tying, colour is restricted from entering the fabric. In the process of tie and dye selected areas of the fabric are tied as a result of which colour does not go through that particular portion. You can use the process to create a variety of designs on the fabric.

There are a number of ways in which you can do tie and dye. Some of these are presented here.

1. Marbling: Take the fabric and crumble it, then tie it with a thread at different areas randomly. Then dye the fabric. Open up after drying.

2. Binding: Pick up the fabric from one point and bind it with a thread at intervals.

Fig. 25.4: Marbling

Fig. 25.5: Binding

3. Knotting : Put knots on the fabrics wherever desired and dye it.

Fig. 25.6: Knotting

4. Folding: Fold the fabric and then bind it.

Fig. 25.7 Folding

5. Clump tying: Take some beads or pebbles and put them in the fabric and then tie.

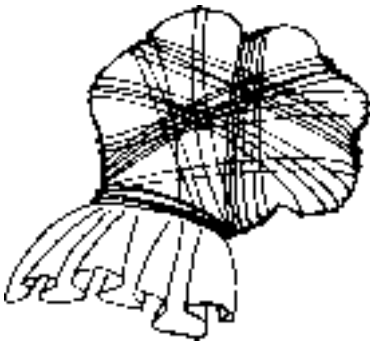


Fig. 25.8: Clump tying

6. Tritik : Make the design with a running stitch, pull the thread and tie it.

Fig. 25.9: Tritik

B) Batik

Another technique of resist dyeing is batik and in this case the obstruction to dye is provided with the help of wax. Wax is applied on selected areas of the fabric and when dyed, dye does not penetrate the waxed areas, resulting in a patterned effect or design. The wax can be applied with the help of a brush or blocks.

Fig. 25.10 : Batik

C) Printing

Printing, as you know is the patterned effect of colour/dye applied locally. Have you ever gone to a post office? There, every letter is stamped whereby a stick with a stamp on it is pressed into an ink pad and then put on the letter. Block printing is similar to this where a wooden block which has a design engraved on it is pressed into a thick dye paste and then to the fabric. You can use the same procedure at home using objects which are easily available as a block.

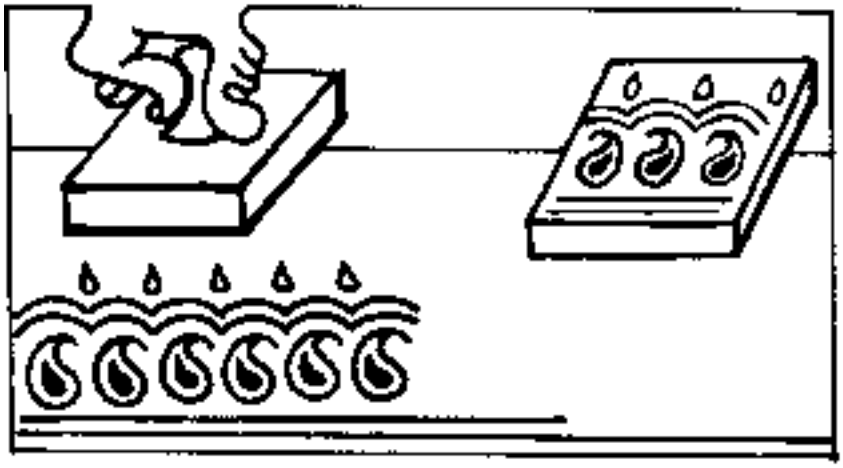


Fig. 25.11 : Block Printing

You can use your imagination to create interesting patterns. There are some pattern given below. These patterns have been created with the help of household articles. Can you think of some other patterns or designs?

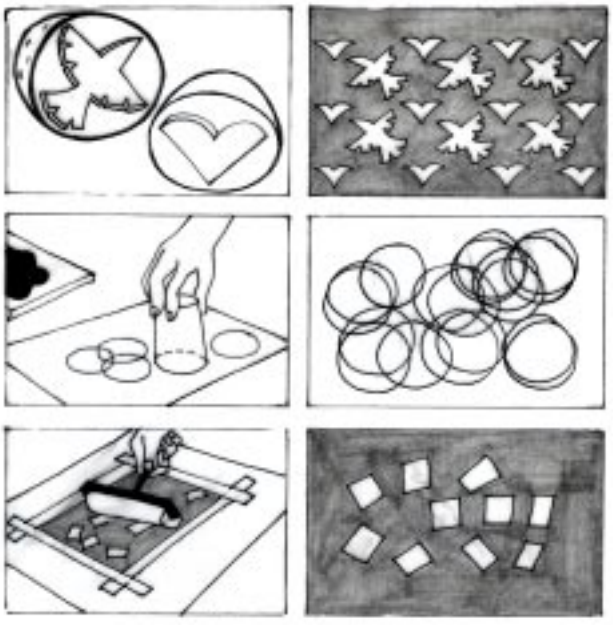
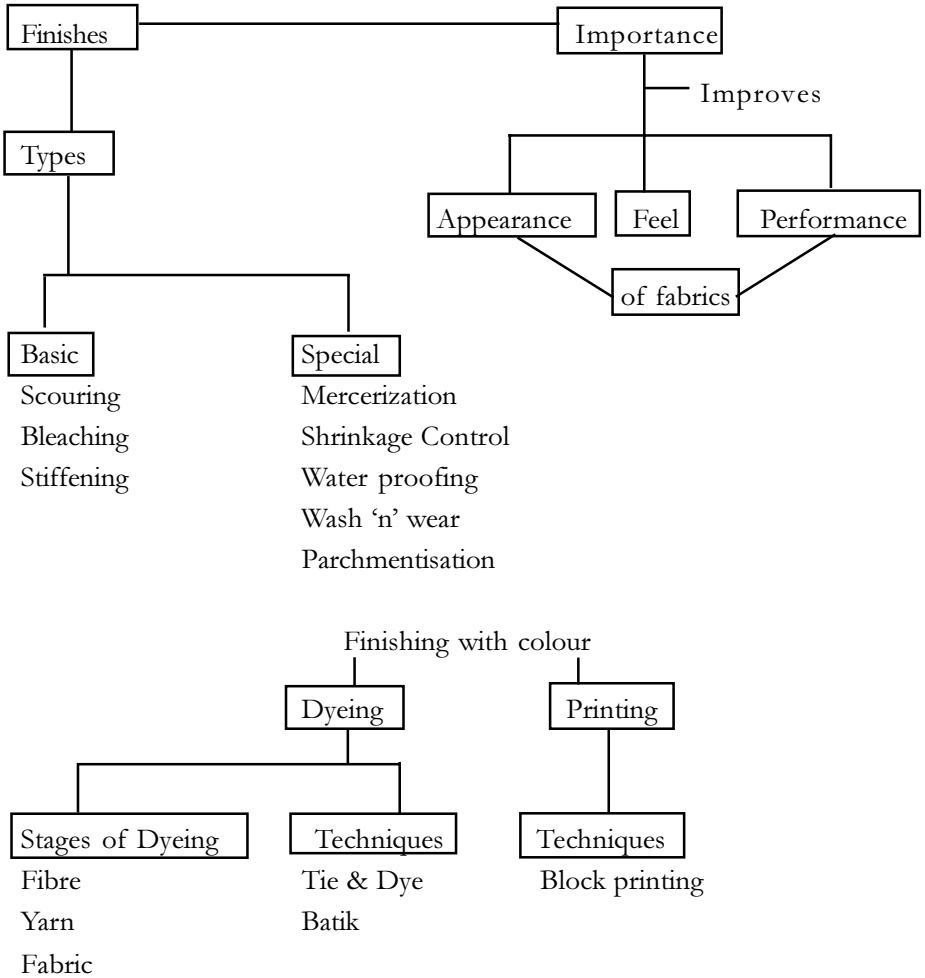


Fig. 25.12

Activity 25.4: Look out for available materials at home that can be used for block printing creatively. List them in the given box .

S.No	Materials that can be used for blocks printing of fabrics.

WHAT HAVE YOU LEARNT



TERMINAL EXERCISE

1. What is a textile finish? Why is it necessary to apply it on fabric?
2. Explain two basic finishes.
3. Name the special finishes and describe the process and use of each.
4. "Dyeing is finishing with colour". Explain.
5. Name the various stages at which textiles can be dyed. Explain them using diagrams.
6. Define printing.

ANSWERS TO INTEXT QUESTIONS

25.1 i) Appearance, performance

ii) Basic/Special, renewable/durable

iii) renewable

iv) Basic or routine

v) Gray fabric

25.2 1. i) Yes, scouring is washing fabric with soap and chemicals to remove all impurities

ii) No, Bleaching has to be done very carefully. It destroys the colour. Strong bleach can damage the fabric to some extent.

iii) Yes, soaking the fabric overnight and drying it causes shinkage.

iv) Yes, this is due to a permanent finish called Parchmentisation.

v) Yes, mercerization makes cotton smooth, shiny and strong.

2. i) durable ii) sanforised iii) special

iv) colour, fastness

3. i) Mercerization ii) stiffening iii) wash-n-wear

iv) water proofing.

VIDEO

1. Dyeing and Printing techniques.
2. Understanding colour.

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