



A Report on Applications of Different Methods for Folourfastness in Fabric Materials: Analysis of the Properties of Fabric

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Abstract—The study based on different blended fibre material. In it to analyze the percentage of colour fastness on the basis of fibre blends i.e. polyester percentages are 75%, 70%, and 65% and viscose percentages is 25%, 30% and 35%. Due to their fibre percentage they absorbed the colour very festally and provided us to result. Here used crock meter for rubbing and washing fastness tests. FadeOmeter tester used for lightning fastness test. Gray scale is colour fastness matching tool. It is apply for the result of all tests. The outcomes of this study to increased polyester % give excellent result as comparison to increased viscose % blended fibre. Increased % of viscose fibre responsible for colour bleeding and give poor result.

Keywords: *Fibbers, polyester, unstained fabric, Crock meter*

1. INTRODUCTION

A dye is coloured compound, normally used in solution, which is capable of being fixed to fabric. The dye must be 'fast' or chemically stable so that the colour will not wash with soap, or fade on exposure to sunlight (ultra violet light) Dyes are important additives in textile industry.

All the dye does not have the some degree of colourfastness. Some may have good colourfastness, other fair and still other poor.

Good colourfastness means that a dyestuff or pigment will retain its original colour with conditions of wear or use, cleaning or washing & storage. The type of fabric selected and the purpose for which it will be used to determine the degree of colourfastness desired in the fabric. Here nee of suiting shirting fabric is good colour fastness, because here used blend fibre.

Colourfastness is term used in dyeing of textile materials means resistance of colour fading i.e. refers to the nation of an object having colour that retains its original hue without fading or running. The term is usually used in the context of cloths. The first known use of world colourfast was in 1916. In general clothing should be tested for colourfastness before one use bleach or another type of strong cleaning product. Many factors influence the fastness of the dyes used today. Variables in colour application to fabrics are :

1. Chemical structure of fibre,
2. Chemical structure of the dye or pigment.
3. Addition of chemical additives or substances that aid in dyeing.

Colourfastness is the property of a dye or print that enables it to retain its depth & shade throughout the life product. Dyes are generally

considered fast when they resist the deteriorating influence (such as laundering or dry-cleaning) to which they will be subjected in the use for the fabric is intended. Consumer demand for fabric with excellent fastness properties is of great concern to apparel manufactures. If apparel manufactures can test fabrics for various colourfastness properties, they will then able to prevent costumer complaints due to poor colourfastness, and they will be able to discuss their test result with the fabric suppliers should any fabric need an improvement in colourfastness.

2. OBJECTIVE

To compare the colourfastness of blended polyester viscose fabrics with different percentage.

3. MATERIALS

Polyester-viscose blended fabrics, Crock meter, gray scale, unstained fabric, semi automatic washing machine, surf excel detergent, FadeOmeter tester.

4. METHOD

This test is designed to determine the degree of colour that may transfer from the surface of coloured textile to other surfaces by rubbing. It is applicable to textiles made from all fibres in the form of yarn or fabric whether dyed or otherwise coloured.

A coloured test specimen fastness to the base of a crock meter is rubbed with a white cloth under controlled conditions. Colour transferred to the white test cloth is assessed by comparison with the gray scale for staining. Sample should be rubbed on crock meter at least 30 times for washing and rubbing test. Washing machine is used for fabric washing at room temperature in semi mode and used detergent (surf excel) as a washing agent. Repeat this process 2 to 3 times for each sample for half an hour at normal mode of washing machine. Now the sample was ready for the colour fastness test. With the help of crock meter find out the result. Here

FadeOmeter used for the colourfastness to light tests. This instrument uses, as a light source, either a carbon or xenon-arc lamp. For the test here selected irradiance at a constant level between 1.20 and 1.80 W/m²/nm. We put the samples for 48 hours in this cabinet. After this processes it give the result for light fastness of samples.

Gray scale consists of nine pairs of standard gray chips, each pairs representing a difference in colour or corresponding to a numerical fastness rating. The result of colourfastness tests are rated by visually comparing the difference in colour represented by the scale.

5. RESULT

After applying the testing methods by crock meter colourfastness of sample by scale here grade of colour fastness test is given in Table 1 and 2. The comparative study is shown in Figure 1

Table 1

Grade	Colour Range	Result
1	0-1	Excellent
2	1-2	Very good
3	2-3	Good (averages)
4	3-4	Fair
5	4-5	Poor

Table 2

S n o	Sam ple no	Fibre content	% of fi- bre s	Wa shi ng gra de	Ru bbi ng gra de	Ligh teni ng grad e
1	A	Polyester Viscous	75 25	4-5	4-5	5
2	B	Polyester Viscous	70 30	3-4	4-5	5
3	C	Polyester Viscous	65 35	3-4	3-4	5

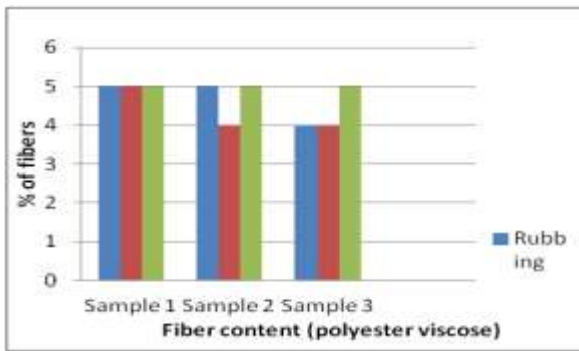


Figure 1: Result of colourfastness

6. DISCUSSION

The result of sample no (A) is excellent. It deserves the best quality of colourfastness on all conditions (rubbing, washing, and lightness). Because polyester is a filament and it gives good result with the disperse dyes. Here viscose % is minimum and it bleed small amount of colour during the testing. Sample no (B) is also very good as compare to sample no (A). It gives very good result in washing test, excellent result for rubbing test and also excellent for lightning. Sample no (C) is also provides very good result in all testing. These results are based on the percentage of fabric and the gray scale.

7. CONCLUSION

Compare the colourfastness of same fabric in different percentage of fibres is given in **Table 3**

S.No.	Fibre content	% of fibres	Washing grade	Rubbing grade	Lightening grade
A	Polyester Viscous	75 25	4-5	4-5	5
B	Polyester Viscous	70 30	3-4	4-5	5
C	Polyester Viscous	65 35	3-4	3-4	5

It is found that the fabric colourfastness depends upon the fibre content. Due to

different percentage of fibre they absorbed the lesser or higher amount of colour. Fibres are responsible for obtaining the colour. The samples are given excellent result but due to viscous percentage it bleeds some colour. In sample no A, B, C the viscose % is 25%, 30% and 35%. Due to this they absorbed the colour according to their ratio. On the other hand polyester percentages are 75%, 70%, and 65%.

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