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Research Paper :

Quality evaluation of textile fabric with special reference to cotton

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ABSTRACT

Fabric is the basic needs of human life and selection of these fabrics is an important task in per modern requirements. There are various factors which differentiate the fabric quality. The manufacturing of apparels is based on the fabric quality. Because the consumer demands good quality products always, by keeping their demands in mind the fabric needs to with certain quality standard's which are internationally accepted.

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Key words : Textile Industry, Fabric, Quality, Testing

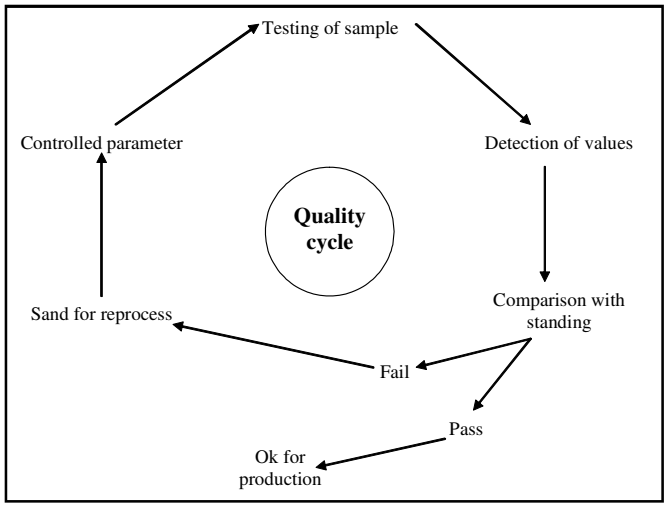
Testing of textiles provides valuable aid to those engaged in the production, distribution and consumption of textiles. Instruments and techniques are used effectively but testing instrument cannot make decisions and at the end, some person has to interpret and analyze the data available. The type of textile testing instruments available is large (Booth, 1996). Many of them are simple in principle and have been used by the textile industry for a long time (Anonymous, 2000). Some important instruments are relatively new, as also are commercial models or equipment developed in research laboratories. Electronic evenness testers and instruments based on air flow principles are typical examples of the latter. The choice of instruments and the testing techniques employed will be governed largely by the information required as well as by how accurate and detailed that information has to be.

It has been said that the subject of textile testing can be covered by answering the 'w' questions.

- Why do we test?
- What do we test?
- When do we test?
- Who does the test?

What is the quality? -

A Harvard expert on quality, there are eight dimensions of quality, performance, features, reliability, conformance, durability, serviceability, aesthetics and perceived quality.



EXPERIMENTAL PROCEDURE

The investigators have selected the same fabric (100% cotton) quality, which has the same physical structure and are similar in yarn use.

The variations are in colour and print:

- Plain cotton fabric (A)
- Coloured cotton fabric (B)
- Printed cotton fabric (C)

Selection method:

Experimental design:

Steps of the experiment:

- Standardization
- Standardization of number of samples

- Standardization of sample size
- Standardization of sample procedures
- Standardization of test procedures
- Tensile strength test
- Tear strength test
- Pilling test
- Colourfastness to light test
- Colourfastness to crocking test
- Colourfastness to laundering test

OBSERVATIONS AND ANALYSIS

After all testings, it was seen that quality of fabric 'C' was excellent in its, tensile strength and colourfastness to laundering, while other two fabrics A and B were not having so much quality. So we can say that the quality of fabric 'C' is better than fabric A and B (Table 1).

Table 1: Comparative study of fabrics A, B and C

Sample	A	B	C
Tensile strength	Poor	Good	Excellent
Tear strength	Good	Poor	Excellent
Pilling	Poor	Excellent	Good
C/F to light	Excellent	Good	Good
C/F to crocking	N/A	Good	Poor
C/F to Laundering	Poor	Good	Excellent

The result depicted in Fig. 1 shows that the tensile strength warp wise was better in 'C' fabric as compared to 'A' and 'B' fabric. Because after dyeing, printing treatment was given. Dyeing and printing layers filled the air gap presented in the weaving of fabric. So, the tensile strength of printed fabric was better than 'A' and 'B' fabrics because of less air gap.The tensile strength of 'A' fabric was the lowest because of the high density of air gap presented in the weaving of fabric. The tensile strength of 'B' fabric was better than 'A' fabric because air gap was filled after dyeing treatment.

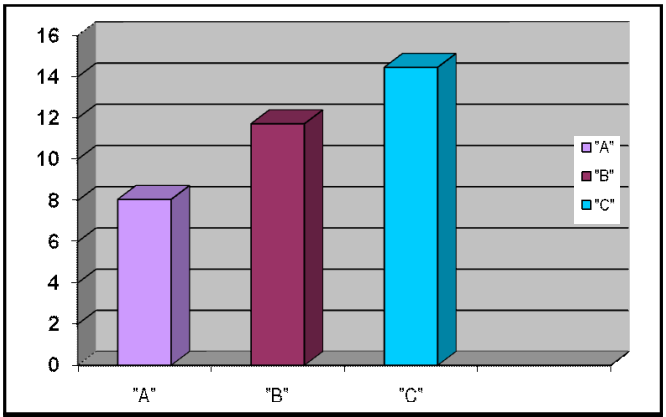


Fig. 1: Comparison of fabrics

The tensile strength weft wise was better in 'C' fabric as compared to 'A' and 'B' fabric. Because after dyeing, printing treatment was given. Dyeing and printing layers filled the air gap presented in the weaving of fabric. So, the tensile strength of printed fabric was better than 'A' and 'B' fabrics because of less air gap. The tensile strength of 'A' fabric was the lowest because of the high density of air gap presented in the weaving of fabric. The tensile strength of 'B' fabric was better than 'A' fabric because air gap was filled after dyeing treatment.

The tear strength warp wise was good in C fabric as compared to A and B fabrics. Because the percentage of moisture presented in the fabric was increased due to dyeing and printing treatments which caused an increase in its tear strength. The tear strength of B fabric was less than fabric A. Because the fabric became ruptured after dyeing treatment caused stiffness and weakness. Tear strength of fabric A was good due to high moisture content.

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The concentration of pilling in fabric A was much more then fabrics B and C. Due to fibre properties, loose fibers and rough yarn twist. Pilling in fabric B was lowest than fabric A and C due to finishing treatment on the surface of the fabric. The layer of colour presented to the fabric C brake down due to rubbing force, which caused pilling on the surface of fabric.

The colourfastness to light of fabric A was better than B and C fabrics. Because no change in the color of fabric occurred due to bleaching treatment colour change in Both B and C fabrics was equal. Because dye particles on the surface of the fabric broke, dyes by absorption of light photon, which caused fading of colour.

The colourfastness to crocking was very poor in C fabric as compared to B fabric. Because print breaking occurred due to rubbing force on the surface of the fabric, which caused more colour bleeding, colour bleeding in fabric B was less, because of finishing treatment on the fabric in dyeing process.

The dimensional change in fabric 'A' was much more than fabrics 'B' and 'C'. Because there was more tension

in weaving and after contacting with water, it became swelled out because of much absorption and that was much more in comparison of fabrics 'B' and 'C'. Dimensional change in fabric 'B' was less because shorted fibres again got their original shape due to dyeing in fabric 'C' and more change occurred in comparison of fabric 'B'.

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Conclusion:

As we have studied of fabrics with different kind of qualities, which show that printed fabric is most suitable and durable for human.

Suggestions:

– The testing seeks to maintain quick and on time deliveries.

– Skilled workers should be employed.

– Testing should be followed by the recent trends in finishing techniques as friendly testing care method.

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REFERENCES

Anonymous (2002). AATCC test method *AATCC Technical Manual*, American Association of Textile Chemists and Colorists.

Booth, J.E. (1996). Principal of textile testing. BS. Publishers & Distributors, New Delhi. pp. 229-330.

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