Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 5 Issue 06, June-2016

Aesthetic Properties of Guledgudd Silk Khana

S. F. Harlapur
Department of Textile Technology,
B.V.VS S.R.V.R. Polytechnic,
Guledgudd-587203
India

S. S. Gobbi
Department of Textile Technology,
B.V.VS S.R.V.R. Polytechnic,
Gulededgudd-587203

S. T. Rajanal
Department of Textile Technology,
B.V.VS S.R.V.R. Polytechnic,
Guledgudd-587203

R. S. Basupattad
Department of Textile Technology,
B.V.VS S.R.V.R. Polytechnic,
Guledgudd-587203

Abstract: **The aesthetic appearance of fabrics largely depends on drape. Drapeability is the phenomenon of fabrics fold formation which arises when a fabric hung down without the influence of external forces. The aesthetic properties like bending and drape is measured for khana fabric. Khana is a unique material produced in Guledgudd that is only one textile cluster of India to make blouse material. This khan is a union fabric made by warp is either silk or polyester and weft is cotton.**

Key Word: Drape , Bending Length,silk, khana.

INTRODUCTION

Aesthetic appearance is one of the most significant criteria used by consumer in judging the total performance of clothing. The appearance of garment depends on quality of fabric, seams used in manufacturing. The fabric parameters such as bending and drape along with luster, color, texture, etc. defines fabric and garment look.

Fabric drape is the main mechanical property due to its effect on the look of clothing. Drape is defined as "the extent to which a fabric will deform, when it is allowed to hang under its own weight"[1]. Drape is an important factor that affects the aesthetics and dynamic functionality of fabrics determining the adjustment of clothing to the human silhouette and providing the description of the fabric deformation produced by gravity when the fabric is partially supported. This distinctive characteristic provides a sense of fullness and a graceful presence, which distinguishes fabrics from other sheet materials [2].

India abounds with numerous types of costumes for women; sarees and blouse have assumed a special importance and significance. Nothing identifies a woman as being Indian so strongly as the sarees and blouse. The Indian women attach greater value of sentiment to the saree and blouse.

Many clusters of Karnataka state are home to traditional designs and intricate weaving methods[3]. The more traditional sarees of Karnataka are the Molkalmuru sarees of Chitradurga and the Ilkal sarees of Bagalkot. The traditional Guledgudd Khana (Choli or Blouse, elsewhere called Khana), which is only one traditional cluster making blouse fabric in India. It is compliments to Ilkal sarees as this combination widely used. This combination has been the treasure of beautiful, dignified, ultra-modern fashion.

Khana (blouse) material is always produced by keeping definite width and length i.e. 32 inch X 20 inch [4]. From each piece of khana a blouse could be stitched for ladies. The scale for measuring of this definite length of blouse piece is also traditionally called as "khana". Khana is a union fabric usually weft is cotton and warp is either silk or polyester.

MATERIALS AND METHODS

Materials:

Ten different types of silk cotton union khana fabrics are taken. Testing of geometrical parameter like yarn density, fabric thickness, fabric weight was carried out and data given table-1.

Table-1: Geometrical Properties

Fabric. No	Yarn Density (Per cm)		Thickness mm	Aerial density GSM
	n1	n2		
1.	40	33	0.26	76.50
2.	42	32	0.27	85.24
3.	41	35	0.24	80.73
4.	40	36	0.25	82.50
5.	45	36	0.31	88.33
6.	38	34	0.25	69.40
7.	43	39	0.29	104.60
8.	42	38	0.29	90.40
9.	47	37	0.28	85.60
10.	43	41	0.28	87.40

METHODS

Drape Coefficient:

The drape is measured by using drape meter. The fabric is cut to the size of the 30cm diameter and then it is placed in between small and large circular disc. The light is put on the area of specimen is traced on the paper as it is projected on the top cover plate by light. The small supporting disc is lifted up. The specimen is now supported on the smaller disc. The specimen which is bigger than the smaller supporting disc will settle in to a equilibrium position assuming an irregular shape. The projected shade of the draped portion along with small disc diameter is traced on the paper. The drape coefficient is calculated as follows.

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 5 Issue 06, June-2016

$$\text{Drape co-efficient} = \frac{A_d - S_1}{S_2 - S_1} \times 100$$

Where, A_d, S_1, and $S_2$are the area of the vertical projection of the draping sample fabric (cm^2), the area of the round sample holder (cm^2), and the area of the sample (cm^2), respectively.

Bending length, c, is defined as the length of fabric which will bend under its own weight to a definite extent. It is a measure of the stiffness that determines draping quality.

$$c = l f_1(\theta),$$

Where,

$$f_1(\theta) = \left(\frac{\cos\frac{1}{2}\theta}{8\tan\theta} \right)^{\frac{1}{2}}$$

Flexural rigidity, *G*, this is a measure of stiffness associated with the handle.

$$G = wc^3 \text{ g-cm}$$

Where, w = cloth weight in gram per square centimeter.

Bending modulus, *q*, this is independent of the dimensions of the fabric and is called as the intrinsic stiffness. This value is used to compare stiffness of fabrics of different thickness.

$$q = \frac{12G \times 10^{-3}}{g^3} \text{ g/cm}^2$$

Where, g is cloth thickness in cm, measured at a pressure of 1pounds per square inch (70.3 g/cm^2).

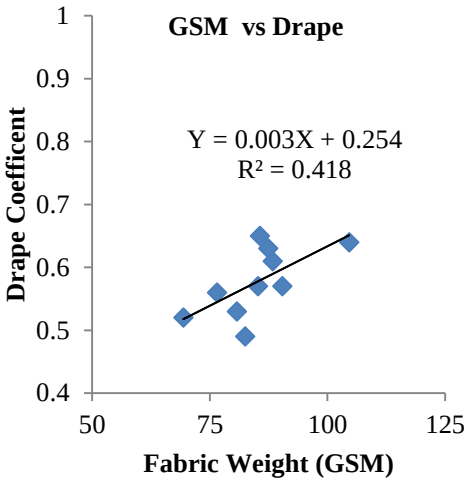
RESULTS AND DISCUSSIONS

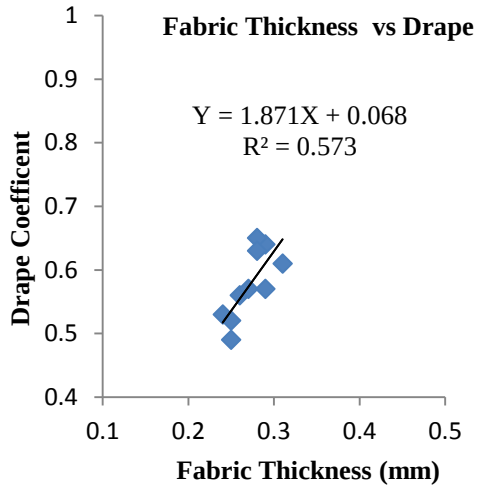
The measured aesthetic properties such as bending length (bias), bending rigidity, bending modulus and drape coefficient are as shown in table-2.

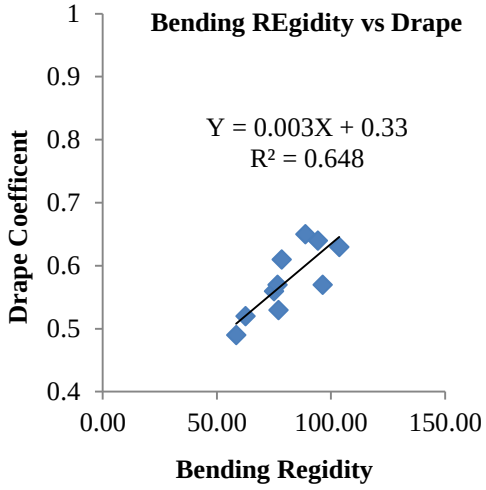
Table-2: Aesthetic properties

Fabric. No	Bending Rigidity	Bending Modulus	Drape Coefficient
1.	74.97	45.71	0.56
2.	76.46	33.98	0.57
3.	76.92	34.19	0.53
4.	58.39	28.73	0.49
5.	78.35	42.83	0.61
6.	62.45	47.96	0.52
7.	94.13	37.92	0.64
8.	96.26	47.36	0.57
9.	88.68	60.55	0.65
10.	103.59	41.73	0.63

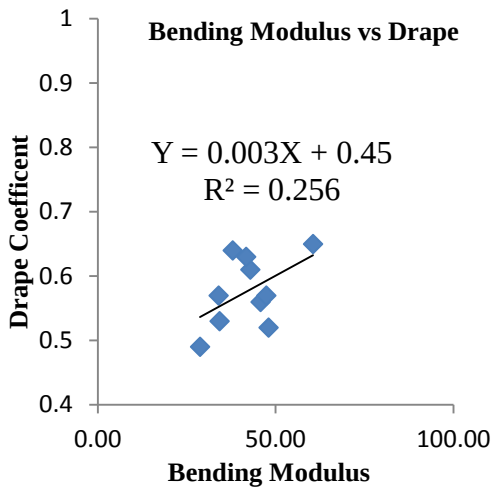
The following graphs shows relation between, Fabric weight, thickness and bending rigidity with drape coefficient.







International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 5 Issue 06, June-2016



From the above figure shows drape having good correlation with fabric weight, thickness and bending rigidity and moderate correlation with bending modulus.

CONCLUSION

The result of the work has shown that drapeability of silk khana's of Guledgudd has depended on fabric weight, thickness and bending rigidity. Fabric thickness and bending rigidity has more effect on drapeability of khana fabrics

REFERENCES

[1] BS 5058: 1973, "The assessment of Drapeability of fabrics", B.S Handbook No 11: British Standards Institution, London, 1974.

[2] http://repository.lib.ncsu.edu/ir/bitstream/1840.16/3548/1/etd.pdf.

[3] www.nhdcltd.co.in/english/depot_cluster_sep2011.

[4] Shailaja DN and Padhy R N, "Khana, a unique blouse material",Indian Textile Journal,105(12), 1995, 76-80.

[5] Booth, J.E. (1969), Principles of Textile Testing – An Introduction to Physical Methods of Testing Textile Fibres, 3rd ed., Chemical Publishing Company, Inc., New York, NY