Study on Technical Textile with reference to “Home Textile”

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This report presented in partial fulfillment of the requirements for the degree of Bachelor of Science in Textile Engineering.

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DHAKA, BANGLADESH

JULY 2012

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Declaration

We declare that this project paper is submitted in partial fulfillment of requirement of B.Sc in Textile engineering Degree in Daffodil International University, Dhaka, Bangladesh. The total Project work is written of our own language. There is no part of this consist of borrowed materials or reproduced from others. We also declare that, this project have been done by ours under the supervision of **Dr. Md. Mahabubul Haque,** Professor & Head of Department of Textile Engineering, Daffodil International University. We also declare that, neither this project nor any part of this project has been submitted elsewhere for award of any degree.

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Acknowledgement

First we express our heartiest thanks and gratefulness to almighty Allah for His divine blessing makes me possible to complete this project successfully.

We fell grateful and wish our profound indebtedness to Dr. Md. Mahabubul Haque, Professor & Head of Department of Textile Engineering, Daffodil International University, Dhaka, Bangladesh. Deep knowledge & keen interest of our supervisor in the field of 'Home Textile' influenced us to carry out this project. His endless patience, scholarly guidance, continual encouragement, constant and energetic supervision, constructive criticism, valuable advice, reading many inferior draft and correcting them at all stage have made it possible to complete this project.

We would like to express our heartiest gratitude to **Dr. Md. Mahabubul Haque**, Professor & Head of Department of Textile Engineering, for his kind help to finish our project and also to other faculty member and the stuff of Daffodil International University.

We would like to thank our entire course mate in Daffodil International University, who took part in this discuss while completing the course work.

We would like to thank the management of ' shabab Towels & Unilience Textile Ltd.' For giving us the opportunity to work on the different section of Home Textile and helping us in every possible way.

Finally, we must acknowledge with due respect the constant support and patient of our parents.

ABSTRACT

Textile manufacturing is a major industrial production. It is based in the conversion of three types of fiber into yarn, then fabric, then textiles. A Technical textile is a textile product manufactured for non-aesthetic purposes, where function is the primary criterion. In this part Home textile is common & important part in technical textile. The new promise of technical textiles is generation of products that eventually have a direct impact upon all sorts of consumer textile markets, including both clothing and furnishings. These are called “Home-tech”. The home-tech segment of technical textiles comprises of the textile components used in house hold applications.

Home Textile Product such as (i.e.: Towel, Bedspread, Carpet, Curtain, Blanket, Nonwoven wipes. Mosquito net, Furniture fabric etc) are used in our domestic purpose. Cotton, Rayon, Silk, viscose, jute, Polyester, Linen, Bamboo etc are both used in produced Home Textile product. Plain, Twill, Sateen, Patterned, Dobby, Jacquard are mainly used in HomeTech weaving process.

These parts of technical textile especially home textile are modern creation for comfort and decorative our living life. It makes our life easier and aristocrat.

Limitation of the project:

Some important limitations of our projects are as follows:

1. The officers of several departments failed to give us enough time for their business.
2. The engineers are always busy, so they could not give us sufficient records, facts and figures, etc.
3. Usually company is not willing to provide their actual data of production statement because of their security.
4. The activities of officers are not documentarily arranged.

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1.1 INTRODUCTION

Textile manufacturing is a major industrial production. It is based in the conversion of three types of fiber into yarn, then fabric, then textiles. These are then fabricated into clothes or other artifacts. And we know about textile by our senior brother and teachers. Textile engineering, also known as textile technology is the study of various principles form engineering and scientific methodologies. These principles are then implemented for the processing and production of all kinds of textile fabric and yarns from textile fibers. The disciple involves extensive study of chemical and physical principles, which is then utilized for the detailed study and analysis of the behavior of polymers involved in the formation of textile fiber.

Technical Textiles (TT) offers new ways, means and opportunity to the Bangladesh textile Industry to sustain the present growth and thrive in near future. It would offer not only an opportunity for augment the growth, but also a new direction for advancement of the industry. The field of technical textiles had not received adequate importance in Bangladesh Context so far; however, it is a potential area where the textile industry can excel. Traditional textiles today are unable to cope with cost of production for various reasons like fast technological obsolescence, high cost of modernization, power, etc. Present Product mixes of traditional textiles are not remunerative enough and therefore, more and more ideas of value-addition to textile products are gaining momentum. Technical textiles, in this context, are just perfect. And finally on this way “Home Textile” export market is the best way to earn huge foreign currency by exporting minimum amount of ‘Home Textile Goods’ in the world market.

On this prospect we choose Technical Textile specially “Home Textile” as our working area. And in this sector has a big opportunity to set up a business market by investing very simple technology and low amount of capital to reach a business goal as well as enrich our Textile market in the global market. In the global market “Home textile” goods has a big demand specially European and American market. So in this regard our exporters should need to invest their capital in “Home Textile” business and swift their business basic product to decorative and technical product. For that they earn a huge currency and establish their business very easily compare to other textile business.

2.1 What is Textile?

The word "textile" originally applied only to woven fabrics, now generally applied to fibers, yarns, or fabrics or products made offers, yarns or fabrics. The term textile originates from the Latin verb texture to weave but, as the Textile Institute's Terms and Definitions Glossary explains, it is now "a general term applied to any manufacture from fibers, filaments or yarns characterized by flexibility, fineness and high ratio of Length to thickness"

2.1.1 What is Technical Textile?

A Technical textile is a textile product manufactured for non-aesthetic purposes, where function is the primary criterion.

Technical Textiles are defined as Textile material and products manufactured primarily for their technical performance and functional properties rather than aesthetic and decorative characteristics.

2.1.2 Classification of Technical Textile

With the growing dominance of technical textiles, Tech-textile, Mess Frankfurt GmbH has classified technical textiles into twelve groups from the application point of view. They are as follows:

I. Agrotech (Agriculture, horticulture, forestry and fishing)

II. Buildtech (building and construction)

III. Clothtech (technical components of shoes and clothing)

IV. Geotech (geotextiles, civil engineering)

V. Hometech (components of furniture, household textiles and floor coverings)

VI. Indutech (filtration, cleaning and other industrial)

VII. Medtech (hygiene and medical)

VIII. Mobiltech (automobiles, shipping, railways and aerospace)

IX. Oekotech (environmental protection)
X. Packtech (packaging)

XI. Protech (personal and property protection)

XII. Sporttech (sport and leisure)

2.2 Home-tech (Domestic Textiles)

The new promise of technical textiles is generation of products (by combining the latest developments in advanced flexible materials with advances in process technologies) that eventually have a direct impact upon all sorts of consumer textile markets, including both clothing and furnishings. These are called “Home-tech”. Textiles used in a domestic environment - interior decoration and furniture, carpeting, protection against the sun, cushion materials, fireproofing, floor and wall coverings, textile reinforced structures/fittings.

In the contract market such as for large area buildings, ships, caravans, busses, fire retardant materials are used. Fire retardant properties are obtained either through the use of inherent fire retardant fibers such as mod-acryl or through the application of a coating with fire retardant additives (bromide of phosporus compounds).

2.2.1 Home-tech product

The home-tech segment of technical textiles comprises of the textile components used in house hold applications.

This product range from blinds used in the houses to the filter products used in the vaccumcleaners. They are an important component in the mattress and pillows as well. They are made of both natural and synthetic fibers. For example, carpet backing cloth is made from jute as well synthetic fibers.

The technical textile products covered under home-tech are as given bellow-

1. Towel
2. Bedspread
3. Curtain
4. Table cloth
5. Carpet
6. Blanket
7. Cushion
8. Mattress
9. Pillow
10. Mosquito net
11. Furniture fabric
12. Jute

2.3 Towels

A towel is a piece of absorbent fabric or paper used for drying or wiping. It draws moisture through direct contact, often using a blotting or a rubbing motion. Common household textile towels are made from cotton, rayon, bamboo, nonwoven fibers or a few other materials. Types of Towel: There are many types of towel. Some are them given below: Baby Towel Bath Towel Beach Towels Golf Towels Hand Towel Hotel Towels Baby Towel: Baby towel is made with fine quality 100% cotton yarn to give it that soft texture and smooth feel. This is very essential for a baby, because a baby's skin is very sensitive in nature. The baby requires a baby towel which is mild, and not harsh on the skin. Baby towel a "Hooded

Towel" is a variety.

Terry towels are standard products in most households. The terry fabric is available from light to heavier weight, but the denser the fabric is woven or knit, the higher the quality of the towels.

Frequently used sizes for all kinds of towels are (in centimeters):

Hand towels: 50 x 70; 50 x 100

Guest towels: 30 x 50; 40 x 60

Bath and beach towels: 70 x 140; 75 x 150; 90 x 160; 90 x 180; 100 x 150 Kitchen

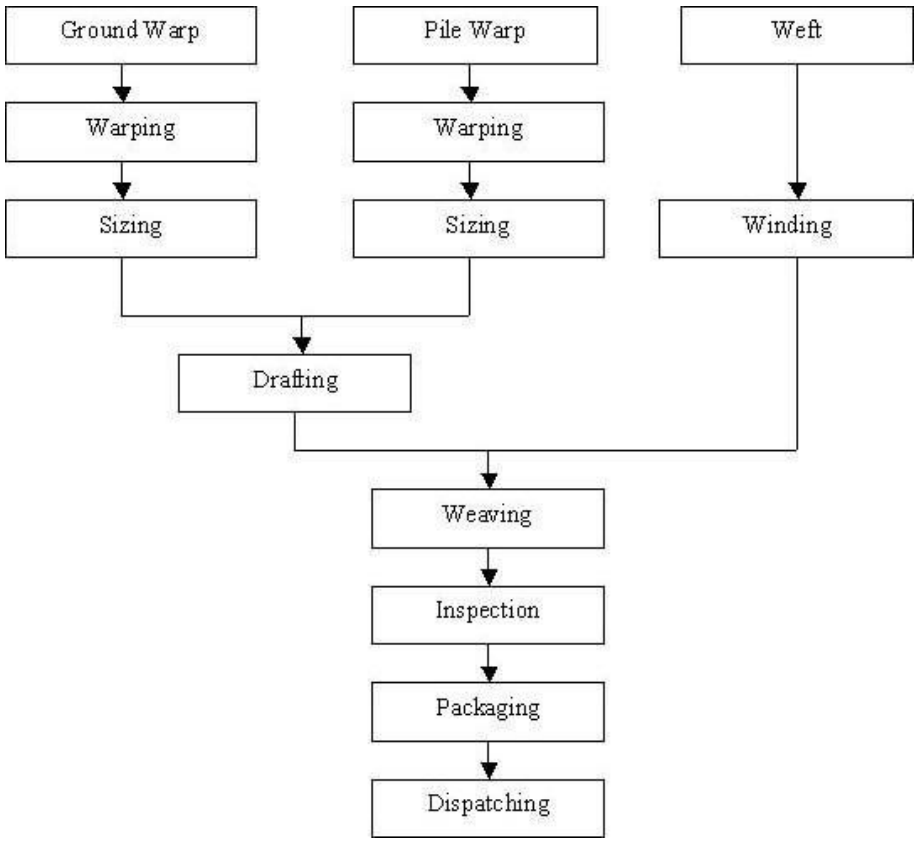
towels: 50 x 55; 60 x 65.

2.3.1 Terry Towel

A terry towel is described as a textile product which is made with loop pile on one or both sides generally covering the entire surface or forming strips, checks, or other patterns (with end hems or fringes and side hems or selvages)

The name “terry” comes from the French word “tirer” who means to pull out, referring to the pile loops which were pulled out by hand to make absorbent traditional Turkish toweling. Latin “vellus”, meaning hair, has the derivation “velour”, which is the toweling with cut loops. In research conducted on terry weaving by the Manchester Textile Institute, it was concluded that original terry weaving was likely the result of defective weaving. The research indicates that this development occurred in Turkey, probably in Bursa City, one of the major traditional textile centers in Turkey. Terry weaving construction is considered a later development in the evolution of woven fabrics. Terry toweling is still known as "Turk Fabric", "Turkish Toweling" or "Turkish Terry"

Terry weaving flow chart-



2.3.1.1 Characteristics of terry towel

In order to choose fire for manufacture a towel the following criterion are considered important, (i) high absorbency (ii) high wet strength, (ii) ability to dye well , (iii) good color fastness, (iv) wash ability, (v) softness , (vi) cost and (vii) availability. Considering these facts it seems that in manufacturing terry towel cotton fiber is the most widely used fiber in the world. Apart from this fibers like Modal. Lyocel, Bamboo, Flax, Microfiber and silk are widely used. In some special cases fibers like soybean and corn are also used widely.

2.3.1.2 Yarns used in terry towel

There are three types of yarns used in terry towel namely the ground warp yarn, the weft yarn and the pile yarn. Though the yarn parameters vary depending on the type towel but in most cases the Warp yarns are of carded 20/2 to 24/2 Ne count with 550 turns/meter. A ply yarn is preferred because of the tension being applied during weaving and subsequent processes. 20-30 ends/cm.

Pile warp yarns are either carded or combed and count range is of 16/1 to 20/1 Ne, 240255 tpi. Sometimes a ply yarn is also used. In most cases ring but sometimes rotor yarn is also used.

Wet yarn carded 16/1 or 20/1 Ne counts with 240-255 turns/meter twist and 15-25 picks/cm. Both ring and rotor yarns are used. The towel border is woven with better quality yarn as these yarns remains exposed most of the time while the weft in the pile area remains covered with the pile yarns.

2.3.1.3 Product mix and description of various products

2.3.1.3.1 Beach Towel

Generally, a beach towel is a little larger than a bath towel. They are soft, fluffy and thick because their main purpose is to provide comfort while one relaxes by the pool or on the beach.

Types:

Besides the normal ones, multipurpose and convertible beach towels are also available. These towels can be converted into a back pack, tote or sleeping bag, deck chair cover and even into an auto seat cover. These towels have storage in the form of pockets and closures. They are very useful during windy condition.

Fig: Beach Towel

Styles and patterns

Beach towels are usually in bright colors. They have interesting patterns printed or woven into them, most of them being cool, fun and youthful. They also come in bright and colorful stripes. Kids' beach towels come with printed or woven pictures of their favorite Disney characters and super heroes.

Materials used

Beach towels are made of the following materials:

- Cotton
- Terrycloth
- Tencel

Uses

Beach towels are used for different purposes like:

- ❖ To dry oneself after swimming. ❖ For wiping sand from the body or objects. ❖ Worn for privacy while changing clothes in public places.
- ❖ As a cushy spot while sunbathing and help the user relax.

2.3.1.3.2 Bath Towel

Fig: Bath Towel

The main purpose of a bath towel is for drying one's body after a bath or shower. They are generally woven with a soft and absorbent loop or pile and are thus used to wick the water away from the body.

Types

In accordance to their specific use and size Bath towels are divided into:

- Wash Cloth Towel
- Hand Towel
- Standard Bath Towels
- Bath Sheets

2.3.1.3.3 Washcloth Towel

Washcloth are the smallest form of bath towels. They are also called facecloth or washrag. Washcloth are cheap and sold mostly in bulk.

Types

Because washcloths are used for very personal purposes, there are disposable washcloths meant for perineal and personal cleaning. They are ideal for guests and for the hospitality industry. There are also scented wash cloths which contains aqueous solution to moisturize the skin while cleaning. They are used mostly in hospitals and nursing homes. The disposable washcloths can be heated once or twice to a select temperature.

Fig: Wash cloth Towel

Styles and patterns

Washcloths are mostly square in shape, though they can also be manufactured according to specification. Washcloths come in different colors, mostly in plain and checked pattern. There are knitted forms of washcloths for a more invigorating bath. Washcloths are available in bulk or in set with other matching towels.

Materials used

A washcloth is made of highly absorbent material. The material can range from medium weight to heavy weight. The texture of a washcloth should be able to stimulate and invigorate the body and at the same time exfoliate dead skin cells. The materials mostly used to make washcloth are:

- Cotton
- Terry Cotton
- Linen

Uses

Washcloths are used for:

- Lathering
- Scrubbing
- Washing the face and body

2.3.1.3.4 Hand Towel

Hand towels are not just a larger substitute for washcloths. They should be coordinated with the other bath towels. The general size of a hand towel is 30x60 cm. They are usually positioned near the sink, hung on a hanger or loop.

Materials used

Hand towels can be made of different materials. The main criteria are they should be soft and absorbent. Some of the most common materials used for making hand towels are:

- Cotton
- Tencel
- Silk

Fig: Hand Towel

Styles and patterns

Hand towel has the maximum designs and patterns, they are unlimited. They can have embroidery work on them. There are knitted hand towels. There are hand towels with crochet, patchwork and prints. Hand towels are available in many colors. Stripe and embellished hand towels are also available. Hand towels can be personalized with monograms or names embroidered on them.

Uses

The many uses of a hand towel are:

- A hand towel is used for drying hands after washing.
- Besides the general use for drying one's hands, hand towels are also used for promotional purposes
- Hand towels customized with the company/organization logo are used as a means of advertisement
- Hand towels are very popular during corporate outings and events like golf. They come with a grommet or hook to be fixed to the golf bag

2.3.1.3.5 StandardS Bath Towels

Standard bath towels are the ones that most people use on a daily basis. Their main function is to provide maximum absorption to the user.

Fig: Standard Bath towel

Types

Besides the normal bath towels, there are bath towels for infants, toddlers and kids. The infant's and toddler's bath towel can have hoods, which keep them warm after a bath. Kid's bath towels also come in the poncho style, it keeps them warm besides the pool or on the beach and also makes changing very convenient.

Materials used

While making a bath towel, importance is given to the absorbing capacity and the ability to dry quickly. Some of the most common fabrics used for making a regular bath towel are:

- Terry Cloth
- Terry Weave Microfiber
- Cotton

Microfiber

Styles and patterns

There is a vast array of styles and patterns of bath towel in the standard size. They can come in the form of solid colors. White color is the most popular because of its fresh and crisp looks. Some people preferred to have their initial/s monogrammed on the towel. Neat embroideries at the corner of the towel are also very popular. For infants, toddlers and kids, the patterns are interesting and come in bright colors. Some manufacturers offer custom digitized and monogrammed towels according to specifications.

Shape and size

A standard bath towel is rectangular in shape and its popular size is 30"×60" (75×150 cm). But people of a larger frame find the size of a normal bath towel not comfortable. So, they opt for a larger variety known as a bath sheet.

2.3.1.3.6 Bath sheets

Bath sheets are the largest of all the bath towels. Many people prefer bath sheets to the standard bath towels because of the more area for absorption.

Fig: Bath sheet

Materials used

Absorbency and comfort are the main purposes for the use of bath sheets, so high quality fabrics are the first choice for the manufacturers. Utmost care is taken to the texture and finish of the towel. The most common types of fabrics used for making a regular bath sheets are:

- Terry Cloth
- Terry Weave Microfiber
- Cotton
- Microfiber

Fleece

Size

They can be six feet or more in length. The general size of a bath sheet is bath sheet is around 60" x 32". For larger people, the normal bath towel is not satisfactory. So, they still preferred extra large bath sheet which is much larger than the normal bath towel.

Styles and patterns

White is the most popular color for bath sheet. They also come in a variety of colors with beautiful patterns but plain, single color bath sheets are preferred. Bath sheets can be customized according to the specification of the customers. Monogram, embroidery and applique are also used to add variety to the bath sheets.

Uses ❖ To dry oneself after a bath, shower or a swim. ❖ They can also be used as a makeshift sarong. ❖ They can be wrap around to provide warmth.

❖ They can be used to provide a cushy spot for sunbathing.

2.3.1.3.7 Tea towel

A tea towel is a cloth which is intended for the specific use of drying dishes and cutlery after they have been washed. In addition, clean tea towels may be spread over a tea tray before tea things are put onto it, or used to cover warm scones or a tea pot to prevent heat loss.

Many kitchen supply stores sell tea towels. They are also readily obtainable in England and Ireland, two nations well known for their tea. Some people confuse the tea towel with the dish rag.

Materials used

Linen is the traditional fiber for tea towels, since it can be used to dry delicate plates and silverware without the risk of scratching. Towels made from cotton are not uncommon Absorbent cotton or linen can be cut down to size and hemmed to prevent stray threads.

Size

They are made in a towel (regular) size.

Styles and patterns

In some cases, a tea towel is woven in a pattern, while in other instances; it may be decorated with paint or embroidery.

Uses

They can be used to cover hot foods dry dishes. Perform other kitchen tasks.

2.3.1.4 Fabric finishing

When selecting towel, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing and shrinkage control.

Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.

Shrinkage control keeps the towel fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the bedding less cool and comfortable.

2.3.1.5 Buyers

Wal-mart, H&M, Zara, JC-penny, Slazenger.

2.3.1.6 Export Country

America, Europe, Middle East country.

2.4 Bedspreads

A bed sheet is a flat-woven textile that is used on a bed between the occupant of a bed and the warm blanket above. It is generally a rectangle of broad loomed fabric, meaning it is made without a center seam. Bed sheets have hems at top and bottom. The selvages or finished edges of the woven sheet as it is made on the loom are used as side seams and thus there is no need for hemming on the sides. Today, the bed sheet comes as part of a set of bed linens that match in color, fabric, and detail and includes the fitted sheet (to cover the mattress), the flat sheet and at least one pillow case.

The bed sheet may be made of a variety of fibers, including linen, cotton, synthetics (often blended with natural fibers such as cotton) and occasionally silk. Bed sheets are made of a wide variety of fabrics. Particularly popular is percale, a closely-woven plain weave of all cotton or cotton-polyester blends that is smooth, cool, and comfortable against the skin. In winter months flannel sheets, which are woven with nappy cotton fibers, provides additional warmth. Silky, satiny bed sheets, generally woven of synthetics (silk is very expensive) are a novelty. Linen is also occasionally used for bed sheeting but is not generally commercially available in this country as linen is not processed in the United States. Linen sheeting is either imported from Eastern Europe or Britain.

Bed linen is usually sold in two-piece sets with a quilt cover and a pillowcase in matching colors and prints. Sometimes sheets are also included in the sets, though sheets are mostly sold separately. Danes seem to prefer sheets in plain colors matching the quilt cover and pillowcase, whereas the quilt cover and pillowcase can be of one or several colors and have all kinds of different prints and patterns.

Measured in centimeters (cm) the most common sizes for bed linen are as follows:

Pillow cases: 50 x 60 cm

Quilt covers 150 x 210 cm

Single bed sheets: 150 x 260 cm or 180 x 260 cm Double

bed sheets: 220 x 260 cm.

Bed linen is usually made of 100 percent cotton, and it must be able to be washed at 60 degree Celsius (^{o}c) or even at 90 ^{o}c.

2.4.1 Properties of Bed Spread

In order to choose fire for manufacture a bed cover the following criterion are considered important, (i) high absorbency (ii) high wet strength, (ii) ability to dye well , (iii) good color fastness, (iv) wash ability, (v) softness , (vi) cost and (vii) availability. Considering these facts it seems that in manufacturing bed cover cotton fiber is the most widely used fiber in the world. Apart from this fibers like cotton, linen, satin, silk, rayon, bamboo fiber, and blends of cotton with polyester are widely used.

Fig: Bedspread

2.4.2 Types of Beds

Bed sheets come in two main varieties—flat or fitted. A flat sheet is simply a rectangular sheet of cloth, while a fitted sheet has its four corners, and sometimes two or four sides, fitted with elastic, to be used only as a bottom sheet. The fitted sheet may also be secured using a drawstring instead of elastic. The purpose of a fitted bottom sheet is to keep it from slipping

off the mattress while the bed is in use. A particular way of folding and tucking while making the bed, known as "hospital corners," is sometimes used when the bottom sheet is flat rather than fitted.

2.4.3 Material uses

Common materials include, but are not limited to cotton, linen, silk, rayon, bamboo fiber, and blends of cotton with polyester.

New materials such as nonwoven polypropylene fabric allow the bed sheet to be disposable thanks to their low price. Once used in emergency shelters or hospitals, this disposable bed sheet is now used in hotels as well.

2.4.4 Fiber content

Bedding can be made from natural or manmade fibers, or a blend of both. The content that is best for you depends on what you are looking for in a bedding product. Consider the following:

Natural Fibers, such as cotton, silk, flax, or wool have inherent irregularities and subtleties which contribute to the natural beauty of bedding. Their primary advantage of absorbency and porosity makes natural fiber bed linens responsive to changes in temperature and humidity, thus ensuring comfort in every sleeping environment. Natural fiber fabrics tend to wrinkle after washing so they should be removed promptly from the washer and dryer.

Artificial Fibers, such as viscose and rayon are manmade from natural raw materials derived from cellulose or plant protein. Tencel, Modal, and rayon made from bamboo are some of today's most recognizable fabrics made from artificial fibers. Bed linens made from artificial fibers often have many of the same qualities of natural fiber linens and are generally more durable. They are extremely absorbent, have a soft, silky hand, can be dyed to vibrant colors and some even have inherent anti-bacterial properties. Artificial fiber fabrics shrink when washed so be sure to closely adhere to the care instructions on your product.

Synthetics such as polyester, acrylic, and nylon are manmade products produced from petrochemicals. Fabric woven from these fibers can be dyed with colors that are more vibrant

than those used on natural fiber fabric, and bedding made from synthetic fibers will be resistant to wrinkling. The disadvantage, due to their low porosity and absorbency, is that synthetics can be uncomfortable in warm or humid climates.

Blends are combinations of two or more different fibers. Usually the fiber present in the highest percentage dominates the fabric, but a successful blend will exhibit the desirable qualities of all. For example, a cotton linen blend sheet will exhibit linen characteristics such as a crisp texture and natural luster while at the same time exhibiting cotton characteristics such as improved strength and less shrinkage than 100% linen.

2.4.5 Types of weave

The type of weave used in the fabric for bedding plays an integral part in the durability and price of the finished product. There are three basic fabric weaves used in bedding:

Plain Weave: the simplest of the three basic weaves, is used for about 80% of all bedding. In a plain weave, each yarn alternately crosses over and under another to produce a strong, even fabric. Examples of plain weaves are batiste, voile, percale, cambric, and gingham.

Twill Weaves: identified by a diagonal rib or twill line, are used to produce strong bedding fabric that can have a softer "drape" than a plain weave. The twill construction has more cotton fibers exposed on the surface of the fabric, so it can be sanded or brushed for extra softness. As twills take longer to produce than a plain weave, they are generally a bit more expensive than a plain weave.

Sateen Weave: is used to produce smooth, lustrous, higher thread count bedding with a thick close texture. The number of yarns exposed on the surface of the fabric gives sateen its characteristic sheen. Consequently, it is this same characteristic of exposed yarns which make this fabric more prone to snagging, so it is important that the sateen have a higher thread count to keep the yarns as close together as possible. As sateen is the slowest of the three basic weaves to produce, it is generally higher in price.

Patterned Weaves: are the most difficult and most expensive to produce due to their complexity, and produce the most durable fabrics used in bed linens. There are two basic pattern weaves, the Dobby and the Jacquard:

Dobby: fabric, such as "damask" stripes, piqué, and waffle cloth, is the more economical of the two basic pattern weaves, and is limited to simple designs.
Jacquard: is the most complex weave and requires the finest quality of yarn. It is the most expensive of all types of weaves to produce. Examples of Jacquard fabrics are damask, tapestry, brocade, and matelasse.

2.4.6 Some fabric of Bedding

Cotton: It's not surprising that cotton is the most important non-food commodity in the world. Hairs from the tropical cotton plant are spun into yarn, then cloth. It's low maintenance, versatile and affordable.

Cotton Percale: This is a variation on the regular cotton where the cotton yarn is given a combed treatment. This gives the bed linen a lovely smooth finish and with a thread count of over 180, it has a high quality feel about it.

Linen: Linen is made from yarn made out of fibers from the flax plant. It is a heavier, stronger fiber than cotton, creating a fabric that is smoother and with a very unique drape. It is an excellent conductor of heat and does not retain any moisture - these qualities make linen both snug and really comfortable to sleep in.

Cotton & Linen: Linen is a luxury yarn. To keep bed linen affordable, a combination of linen and cotton brings the qualities of both yarns together.

Cotton Sateen: This is a weaving technique that is slightly more expensive to weaving classic cotton cloth. This different process produces a bed linen that is incredibly soft to handle and has a fabulous sheen.

Chambray: Often referred to as 'yarn dye', chambray is made up of a warp and weft thread of different colors. This weaving technique gives a smart, sophisticated look to plain cotton bed linen.

Silk: Originating from China, silk fabric is made from the continuous fiber the silk caterpillar makes to cocoon itself during its transformation into a moth. In the manufacturing process, fibers from several cocoons are twisted together to make a yarn of suitable thickness for weaving. The complicated process it goes through commands a high price tag, but its superb

dyeing qualities make it a true luxury fabric that needs care and attention to keep it looking good.

2.4.7 Color use

When choosing color for your bedroom and your bed linens, it all comes down to your personal preference. The bedroom is your most personal space and should be the one in which your personality really shines through. There are two types of colors, cool and warm. Cool colors are blue-based colors such as green, blue, purples, and blue based reds. Warm colors are yellow-based colors such as red, yellow, orange, and yellow green. Traditionally cool colors were recommended as the most relaxing for the bedroom, but warm based colors can create an intimate cozy environment.

If you are unsure about which color to choose for your bedroom, keep your walls neutral and incorporate color in your bed linens. Neutral wall colors allow you to effortlessly change the color scheme with just a change of your bed linens and accessories. If you have a small bedroom, choose pale colors to create space. If you have a large bedroom, use strong warm colors to create an intimate space with dimension.

Here are suggestions to create the environment you want:

Modern bedroom – use white, beige, gray, or a mixture of neutrals for a clean sophisticated look.

Elegant bedroom – use your favorite combination of dark, saturated colors

Chic – use elements of bright vibrant color

Rustic – mix and match your favorite colors

Cottage – use a mixture of light colorations found in nature

Ultimately the color choice is yours alone and what makes you feel at home. Here are a few more suggestions to help you find the color that's just right for you:

2.4.8 Fabric finishing

When selecting bedding, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing, shrinkage control, and wrinkle resistance.
Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.

Shrinkage control keeps the bedding fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the bedding less cool and comfortable.

Wrinkle resistance is applied to some cotton fabrics used in bedding so they require little or no ironing after washing. Some of these treatments can reduce the product's absorbency and porosity.

2.4.9 Recognizing Quality

Besides taking into consideration the attributes of the linen, below are a few visual tips to also help you in recognizing quality in linens. The weave of the fabric should be firm, which can be tested by scratching the surface of the cloth. If the threads shift easily, the product may be inclined to develop holes at the seamed edges.

The weave of the linens should be uniform. Hold a sheet to the light and look for any unusually thick or thin areas. Bedding in which the weave is not uniform will wear unevenly. The color should be even and look fresh. If there is a fold or crease in the product, check whether the color has rubbed off. This could be an indication of poor dye quality.

Printed designs should be even, with no un-dyed areas showing through except in areas of the design which are meant to be white. A print that is geometric or symmetrical should be printed at right angles.

No powdery dust should appear on the surface of the bed linens. If so, this is an indication of too much sizing and may conceal poor quality.

2.4.10 Tips for choosing fine linens

Prefer crisp, cool, smooth bedding: Choose plain weave bed linens such as batiste, voile, percale, or cambric. Plain weave fabrics are prone to wrinkling. To minimize ironing, dry on low temperature or a wrinkle release setting, removed promptly from the dryer, smooth flat, and fold.
Prefer soft, silky smooth, highly lustrous bedding: Choose sateen bed linens. Sateen wrinkles less than percale but due to the nature of the weave it is not as durable. To minimize ironing, dry on low temperature or a wrinkle release setting, removed promptly from the dryer, smooth flat, and fold.

Always cold: Choose cotton flannel or jersey bed linens for a warm and cozy bed. These two fabrics are the least prone to wrinkle. Wash and dry on warm temperature settings, remove promptly from dryer, smooth flat, and fold.

Prefer linens with natural temperature-regulating properties: Choose linen, silk, or rayon from bamboo bed linens. Linen is highly absorbent and draws heat away from the body, keeping you cooler in the warmer months. It is also hypo allergenic, lint free, and naturally insect repellant. Crisp, smooth, and comfortable, linen becomes softer after every wash. One of the most durable fabrics, it can be washed in hot water, but to minimize wrinkles dry on low temperature or a wrinkle release setting, removed promptly from the dryer, smooth flat, and fold Iron damp. Silk is naturally porous and absorbent, keeping you warm in the winter and cool in the summer. It is also resistant to mildew and moths. Silk can be machine washed in cool water, on a gentle wash cycle, with a delicate laundry detergent. To keep your linens from snagging on the inside of the washing machine, wash your silk bed linens inside of a mesh bag or cotton pillowcases. Tumble dry low or line dry.

Rayon made from Bamboo, is 1½ times more absorbent than cotton. Due to its natural ability to breathe, it wicks away heat and moisture in the warmer months and keeps you warm in winter. It has natural deodorant and anti-bacterial properties, which do not wash out over time. As rayon is prone to shrinking, follow all care instructions carefully.

Have sensitive skin: Choose Certified Eco-friendly bedding that is GOTS or Oeko-Tex Certified. These certifications assure you that the bed linens have been manufactured free of all substances harmful to you and your family.

Hate to iron: Select bed linens with a wrinkle resistant finish. The finish helps minimize wrinkles and does not wash out over time.

Have an extra thick mattress: Select a fitted sheet with extra deep pockets and an oversized comforter to allow for extra coverage on the sides of the bed.
Fitted sheets keep popping off the bed: Select a fitted sheet with elastic all around as this will allow the sheet to remain secure on your bed, even if you toss and turn before falling to sleep.

2.4.11 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.4.12 Export country

Europe, America, Japan, Australia, Germany,

2.5 Curtains

In comparison to other home textile products, curtains are to a higher degree fashion items and therefore, preferences in style, colors and patterns can vary from one year to another. Curtains can be made up of different fabrics where the most common materials used are cotton, polyester or a mixture of both. Standard sizes for made-up curtains are (height x width) (cm): 300 x 145; 160 x 135; 160 x 140.

A curtain (sometimes known as a drape, mainly in the United States) is a piece of cloth intended to block or obscure light, or drafts, or water in the case of a shower curtain. A curtain is also the movable screen or drape in a theater that separates the stage from the auditorium or that serves as a backdrop.

Curtains hung over a doorway are known as portieres Curtains are often hung on the inside of a building's window to block the passage of light, for instance at night to aid sleeping, or to stop light from escaping outside the building .In this application they are also known as "draperies." Curtains come in a variety of shapes, materials, sizes, colors and patterns, and they often have their own sections within department stores, while some shops are completely dedicated to selling curtains.

Curtains vary according to clean ability, ultraviolet light deterioration, oil and dust retention, noise absorption, fire resistance, and life span. Curtains may be moved by hand, with cords, by press-button pads or remote-controlled computers. Measuring the curtain size needed for each window varies greatly according to the type of curtain needed, window size, and type and weight of curtain.

An adaptation of the curtain may be a blind or, in warmer countries, a wooden Window shutter that is fixed to the outside of the building to provide privacy and still keep the building cool inside. Curtains are a form of window treatment, and complete the overall appearance of the house. Window treatment helps control the ambiance and flow of natural light into the room. The effect of drapery or curtains, is best seen in daylight, and with proper indoor light positioning, can look attractive even at night.

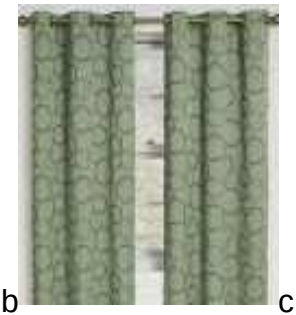
a  b  c  d 

Fig: (a,b,c,d) Curtain

2.5.1 Properties of Curtains

In order to choose fire for manufacture a curtain the following criterion are considered important, (i) absorbency (ii) high wet strength, (ii) ability to dye well , (iii) good color fastness, (iv) wash ability, (v) softness , (vi) cost and (vii) availability. Considering these facts it seems that in manufacturing curtain fiber is the most widely used fiber in the world. Apart from this fiber like cotton, linen, silk, rayon, bamboo fiber, and blends of cotton with polyester are widely used. In some special cases fibers like soybean and corn are also used widely.

2.5.2 Types of Curtain

1. Stage Backdrop

2. Traveler Curtain

3. Tableau Curtain

4. Contour Curtain

5. Austrian / Braille Curtain
6. Teaser/Tormentors

7. Legs / Border

8. Scrim

9. Cyclorama

10. Venetian

2.5.3 Fiber content

Curtain can be made from natural or manmade fibers, or a blend of both. The content that is best for you depends on what you are looking for in a curtain product. Consider the following:

Natural Fibers, such as cotton, silk, flax, or wool have inherent irregularities and subtleties which contribute to the natural beauty of curtain. Their primary advantage of absorbency and porosity makes natural fiber responsive to changes in temperature and humidity. Natural fiber fabrics tend to wrinkle after washing so they should be removed promptly from the washer and dryer.

Artificial Fibers, such as viscose and rayon are manmade from natural raw materials derived from cellulose or plant protein. Tencel , Modal, and rayon made from bamboo are some of today's most recognizable fabrics made from artificial fibers. Curtain made from artificial fibers often have many of the same qualities of natural fiber linens and are generally more durable. They are extremely absorbent, have a soft, silky hand, can be dyed to vibrant colors and some even have inherent anti-bacterial properties.

Synthetics such as polyester, acrylic, and nylon are manmade products produced from petrochemicals. Fabric woven from these fibers can be dyed with colors that are more vibrant than those used on natural fiber fabric, and curtain made from synthetic fibers will be resistant to wrinkling. Disadvantage is due to their low porosity and absorbency.

Blends are combinations of two or more different fibers. Usually the fiber present in the highest percentage dominates the fabric, but a successful blend will exhibit the desirable qualities of all. For example, a cotton linen blend sheet will exhibit linen characteristics such as a crisp texture and natural luster while at the same time exhibiting cotton characteristics such as improved strength and less shrinkage than 100% linen.

2.5.4 Different Fabric Types for Curtain

In recent times, many more people are choosing to make their own curtains and other soft furnishings using their own fabric. By doing this, curtains can be made to fit a window space exactly and matching tie-backs can also be made to keep the curtains away from the window during the day. Co-coordinating soft furnishings such as seat covers and cushions can be made using the same fabric. By using the same fabric, you can spread a color scheme throughout a room and streamline the overall design. Also, by choosing your own material, you can create a unique and individual look for your rooms, that you may not get if you buy ready-made curtains or other soft furnishings. You can buy a large number of fabrics for use in curtains; cushions etc., here are just a few of them:

Chenille

Chenille can refer to a type of colored yarn or a fabric made from it. The word Chenille is the French word for caterpillar – it instantly evokes pictures of a soft and fluffy fabric. Chenille can be used for a variety of soft furnishings, but most popular of all is the chenille cushion – a fluffy and comfortable addition to any sofa or bed. Chenille offers a soft touch to any home, and to this end, is the perfect material to use in children's bedrooms or lounge areas.

Cotton Fabric

Perhaps the most well-known fabric of all – Cotton has a wide range of variations and purposes. Grown in fields – Cotton can be used for many purposes in the home and office, from curtains to blinds and from seat covers to pillow cases. Cotton can be produced in just about every color available, and it is relatively easy to care for and clean. Some materials use variations such as pearl cotton to add a lovely sheen to designs. Cotton is a very versatile material.

Hard Wearing Fabric

Hard-wearing materials are often used for soft furnishings that experience a lot of use, such as seat covers and cushions. Hard-wearing fabrics may also be used in children's rooms and kitchen areas, as they require very little ongoing care, and can withstand everyday spills. They can also be used in offices or other businesses, and can outlive many softer material alternatives.

Heavy weight Fabric

When we talk about heavy weight fabrics, we instantly think of curtains and couch cushions. However, heavy weight materials can be used in a wide-range of applications, and can be used to great effect if you want to add a touch of luxury to a room. Heavy weight curtains can be very practical, as they often do not need linings – this cuts down on the cleaning and care of the curtains. Heavy weight fabrics are great for straight, simple designs.

Jacquard Fabric

Jacquard weaving using a loom involves the programmed raising of each warp thread independently of the others. This process allows for greater versatility in the weaving process, offers the highest level of warp yarn control, and can create stunning designs. The design commonly known as 'Jacquard' is a formation of swirly, flower like prints – used on a variety of soft furnishings, including bedding, cushions and curtains. It can be produced in a number of colors, and adds a touch of elegance to a room.

Linen Fabric

Linen is a textile made from the fibers of the flax plant. It is relatively labor-intensive to make, but when it is made into clothing, it is known for its coolness in hotter climates. Linen can be used for a number of soft furnishings including curtains, blinds and cushions. Linen can often display a hand-made look, with fleck detailing, so it can help to add a homely feel to a room.

Print Fabric

Printed fabric has increased in popularity in recent years. A wide range of printed fabrics are now available, from generic patterns to intricate animal or plant themes. Printed fabrics are ideal if you want to create a unique item, and they can be used on any soft furnishing, from curtains to seat covers.

Satin Fabric

Satin usually has a glossy surface and a dull back. It is the result of a weaving technique that forms a minimum number of interlacing in a fabric. Satin can be used to add a luxurious feel

to any room, it is ideal for small soft furnishings, but should be avoided in high-traffic areas, such as kitchens and conservatories, as it is very delicate.

Sheer Fabric

Sheer fabric by definition is slightly transparent. This kind of fabric is well suited to curtains, as with Voile, it creates a lightweight and float look for windows. Sheer fabrics can sparkle slightly, catching the light well. Sheer fabric can be draped on window areas, and different colors can be combined with ease.

Silk Fabric

Silk is a natural protein fiber - some forms of it can be woven into textiles. The result is a sumptuous and luxurious item. Silk is often used on bedding and cushions to bring out the colors and add elegance to soft furnishings. Silk is best suited to bedroom or lounge areas, as it is a very delicate material. Silk is often added to cushions and curtains in the form of an embellishment.

Velvet Fabric

Soft and relatively durable, velvet fabric has a number of uses in the home. It can be used for curtains, cushions, beddings and even seat covers. Velvet looks great in rich dark colors such as black, charcoal and purple. There are different types of velvet, and the more plush varieties are often used in throws and curtains.

Voile Fabric

Voile is a lightweight woven fabric, it is usually made of 100% cotton or cotton blends including linen or polyester. The term ‘Voile’ is French, meaning veil. This is due to its lightweight quality. Voile works very well on a number of draping projects, and it is often used on a variety of soft furnishings, including curtains. Voile curtains are floats and light - they are often used in hotter climates, to cover windows, while maintaining an airy feel.

2.5.5 Fabric finishing

When selecting curtain, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing, shrinkage control, and wrinkle resistance. Sometimes curtain requires fire proof finishing mainly for safety purpose.

Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.
Shrinkage control keeps the curtain fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the curtain less cool and comfortable.

Wrinkle resistance is applied to some cotton fabrics used in curtain so they require little or no ironing after washing. Some of these treatments can reduce the product's absorbency and porosity.

Fire proof resistance is applied to some fabrics used in curtain. It's the additional requirement. Some of these treatments help the safety of a building.

2.5.6 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.5.7 Export Country

Europe, America & Canada etc.

2.6 Table cloth

Table linen is more affected by fashion trends than bed linen is and therefore the exporter is advised to follow changes in preference with regards to colors, material and texture used. Mostly, table linen comes in white and plain colors and to a lesser extent with prints. Table linen is usually sold separately, but can sometimes also be sold in sets consisting of a tablecloth and napkins in matching design. Table linens are usually made of cotton or flax and must be able to be washed at 60 ^{o}c. Standards sizes do not exist for table linen as it comes in rectangular or round shapes and in different sizes.

A tablecloth is a cloth used to cover a table. Some are mainly ornamental coverings, which may also help protect the table from scratches and stains. Other tablecloths are designed to be spread on a dining table before laying out tableware and food.

Ornamental tablecloths can be made of almost any material, including delicate fabrics like embroidered silk. Dining cloths are typically made of cotton, a poly-cotton blend, or a

PVCcoated material that can be wiped clean, but they can range from functional coverings to fine textiles, as long as they can be laundered. Some cloths are designed as part of an overall table setting, with coordinating napkins, placemats, or other decorative pieces.
Special kinds of tablecloth include runners which overhang the table at two ends only, and table protectors to provide a padded layer under a normal cloth.

Fig: Table Cloths

2.6.1 Fiber used for Tablecloths

Though tablecloths are primarily a functional means of protecting tables from damage, they are also an opportunity to add color and style to a kitchen or outdoor living area. Tablecloths are manufactured in a variety of materials including cotton, polyester, linen and vinyl; specialty tablecloths for weddings and events may be made out of silk or organza.

Cotton

For everyday use in an eat-in kitchen or informal dining room, cotton tablecloths are an excellent option. Cotton is easy to produce and process, which keeps the price low on most cotton options. Most cotton tablecloths are machine washable, though some tablecloths with multicolored patterns may show some color bleeding after washing. Cotton tablecloths can also be spot cleaned with a damp rag or sponge. In terms of durability, few fabrics compare to long-lasting cotton. Cotton tablecloths are available in a wide range of colors, patterns and sizes which also contribute to their popularity. Though cotton tablecloths can be used outdoors, they can mold or deteriorate after long periods of exposure to extreme weather or moisture.

Polyester

For semi-formal indoor dining or outdoor parties, polyester table cloths offer similar benefits of cotton as well as some additional perks. Polyester is a synthesized material that is used to make fabric and can be combined with other fabrics like cotton to create a polyester blend. Like cotton, polyester is durable, machine-washable, relatively inexpensive and available in many colors and patterns. Unlike cotton, polyester will not shrink if it is placed on a long cycle in a dryer. Polyester has a slightly silkier and shinier appearance than cotton which makes it better suited for more formal affairs like weddings or birthday parties.

Some people have sensitivities to polyester because it is made from chemicals.

Carbon Fabrics

Carbon Woven and Unidirectional 3K-50K Plain, Twill & Satin

Vinyl

For informal outdoor dining or picnics, vinyl tablecloths offer weather resistance and easy clean up. Vinyl resists damage from stains, light, water or air exposure. Vinyl tablecloths are commonly associated with informal and outdoor dining, so they may not be ideal for formal weddings or events. Vinyl tablecloths are available in several colors and patterns to match any color scheme or theme. Vinyl is also one of the cheapest fabric options for tablecloths.

Specialty Fabrics

For formal events like weddings, tablecloths are available in numerous specialty fabrics like silk or organza. Silk and organza are more expensive tablecloth options, but they offer a more luxurious appearance and a number of formal style options including embroidery. Specialty fabrics require more delicate washing and care but most specialty tablecloths are only used on occasion. Consider renting specialty linens to avoid the cost of purchasing them in large quantities.

2.6.2 Fabric finishing

When selecting table cloth, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing, shrinkage control, and wrinkle resistance. The fabric must be shown water proof behavior. This is main object of table cloth fabric. When the fabric is made by cotton or composition of cotton and polyester.

Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.

Shrinkage control keeps the tablecloth fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the bedding less cool and comfortable.

Wrinkle resistance is applied to some cotton fabrics used in tablecloth so they require little or no ironing after washing. Some of these treatments can reduce the product's absorbency and porosity.

Water resistance is applied to some cotton fabrics used in tablecloth. It’s the additional requirement. Some of these treatments reduce the product’s absorbency.

2.6.3 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.6.4 Export country

Europe, America & Canada etc.

2.7 Carpet

A carpet is a textile floor covering consisting of an upper layer of "pile" attached to a backing. The pile is generally either made from wool or a manmade fiber such as polypropylene, nylon or polyester and usually consists of twisted tufts which are often heattreated to maintain their structure. Types of carpet. This are- woven carpet, Needle felt, Knotted & tufted carpet. Tufted carpet are two types Gripper Axminister & spool Axminister. The benefits derived from selecting good quality carpets in any type of application are manifold: what other type of floor covering will provide sound insulation, energy saving, underfoot comfort, a safe, and be easy to clean and install, with good wear and nonallergenic properties, while still providing the consumer with the flexibility for individual creative design. Carpet is a textile floor covering consisting of an upper layer of "pile" attached to a backing. The pile is generally either made from wool or a manmade fiber such as polypropylene, nylon or polyester and usually consists of twisted tufts which are often heat-treated to maintain their structure.

2.7.1 Types of carpet

1. Woven
    i. Wilton carpet- warp pile also called velvet; they are produced by wire insertion and face to face principle.
    ii. Axminister Carpets
        a. Spool Axminister
        b. Gripper Axminister
        c. Spool Gripper system
    iii. Tufted carpet-
        a. Handmade/ Knotted
        b. Direct loop/ tuft insertion
2. Knitted-2,3 thread fleece
3. Non woven-needle punched

4. Flock

2.7.2 Yarns & fibers used

All carpet have something special to offer, whether it is luxurious warmth, being easy to clean, having a whole load of resistance to carpet flammability, standing up to footfall, or even just pure and simple good pricing. The fibers available for manufacturers to blend fall into two district categories-natural and manmade fibers. Various kinds of fibers are used to make carpet e.g. nylon, polyester, acrylic, mod-acrylic, polypropylene, rayon, acetate, wool, silk, cotton, and blends of these fibers, as well as mohair, jute, hemp or grass straw. The vast majority of carpets are now made of manmade staple, textured or bulked continuous filament fiber. Nylon accounts for more than 80% of face yarns used followed by polyester, polypropylene, acrylic, and mod-acrylic. Major cost for their use is lower cost and easier care. Carpets of manmade fibers are not damaged by insect larvae.

2.7.1 Benefits of carpet

The benefits derived from selecting good quality carpets in any type of application are manifold: what other type of floor covering will provide sound insulation, energy saving, underfoot comfort, a safe, and be easy to clean and install, with good wear and nonallergenic properties, while still providing the consumer with the flexibility for individual creative design.

Sound Insulation

Noise pollution in house can have a serious effect on the well being of all its users and in this respect a fitted carpet plays an important role virtually eliminating impact noise through sound absorption. Therefore the use of carpet enhances sound absorption, and the conduction of impact noise can be reduced by up to 30 dB, as opposed to comparative values for smooth floor covering which lay between 5-15 dB.

Energy Saving

Carpet can make a measurable contribution to retaining the warmth in a room and therefore saving energy. Carpets have low heat conduction and are natural thermal insulators creating a heat barrier. As a result as much as 10% of the heat in a room which would be dissipated with smooth floor covering is retained in the room by the carpet. This combined with the outstanding underfoot comfort of a carpet, can result in a considerable reduction in the

use of heating in the transition from a warm to a cold season. It has been estimated that up to 30 days heating can be saved, resulting in an energy saving of around 4-6% and a consequent reduction in heating bills.

Safety

Safety covers two aspects- reduce slippage, especially when wet, and a decrease in stress on joints. The soft resilient fibers of a carpet provide a cushion effects and excellent orthopedic properties.

Health

With the superb dust trapping properties, carpets are conductive to a healthy living environment. Dust settles quickly and is then securely held by the pile fibers of the carpet until it is vacuumed again. The dust is not disturbed by incoming air draughts, and this means that the dust content of the indoor air is kept low. This is particularly important since dust particle also act as carriers for germs, allergens and other air contaminants.

2.7.4 Carpet backing cloth

Carpet Backing Cloths made of jute are exclusively used for weaving premium quality carpets in every part of the world. .Jute used in tufted carpet industry, as a primary or secondary backing material, but also used as wall coverings. Some carpet backing fabric made from polyester fiber which may be woven or non-woven needle punched fabric.

Fig: Jute carpet backing fabric

Fig: non-woven needle punched polyester carpet backing fabric

2.7.5 Buyer

Bangladesh etc

2.7.6 Import country

Turkey, Iran and some middle east country

2.8 Blanket

A blanket is a large, usually rectangular piece of thick bedding material. Blankets are intended primarily to offer comfort and warmth - as such, many of the above blankets are specially designed to maximize these effects. Blankets are an everyday essential. Whether going on a picnic, camping trip, long car journey, or wanting to keep cozy at home, blankets are a fantastic, economically responsible and inexpensive solution. Blankets also make great corporate gifts and wonderful gifts for elderly relatives or new born babies. There are lots of different types of blankets to choose from, many with carefully thought out features to make them most suited to specific situations and requirements. Here is a concise explanation of some of the most popular and useful varieties of blanket.

A blanket is a large, usually rectangular piece of thick bedding material. A blanket is a type of bedding, generally speaking, a large piece of cloth, intended to keep the user warm, especially while sleeping. Blankets are distinguished from sheets by their thickness and purpose; the thickest sheet is still thinner than the lightest blanket. Blankets are generally used for warmth, while sheets are for hygiene, comfort and aesthetics. Blankets are subdivided into many types, including quilts, duvets, and comforters, depending on their thickness, construction and/or fill material. Electric blankets are heated by electricity. Blankets were traditionally made of wool because of wool's warmth, breathability and natural fire-retardant properties, while sheets were made of cotton or linen, which are less irritating to the skin. Nowadays, synthetic fibers are frequently used for both. Throw blankets are smaller blankets, often in decorative colors and patterns that can be used for extra warmth outside of bed. Blankets are sometimes used as comfort objects by small children.

Fig: Blanket

2.8.1 Types of Blankets:

- Afghan blanket, a colored wool knitted or crocheted in geometric shapes
- Blanket sleeper, a one-piece, footed sleeping garment
- Electric blanket, an electrically heated bedding material
- Fire blanket, a device used to extinguish fires
- Hoover blanket (slang), newspaper used as a blanket by an impoverished person
- Saddle blanket or horse blanket, a protective covering for beasts of burden

Security blanket, any familiar object whose presence provides comfort or security to its owner

- Space blanket, a lightweight reflective material used to keep casualties warm.
- Hug-me blankets are the ultimate solution for keeping warm and comfortable at home and whilst away.
- Embroidered fleece blankets are an essential item for camping trips.

2.8.2 Fiber used

Blankets were traditionally made of wool because of wool's warmth, breathability and natural fire-retardant properties, while sheets were made of cotton or linen, which are less irritating to the skin. Nowadays, synthetic fibers are frequently used for both. Throw blankets are smaller blankets, often in decorative colors and patterns that can be used for extra warmth outside of bed. Blankets are sometimes used as comfort objects by small children.

2.8.3 End USE

Ground cloth

Blankets may also be used on the ground for a picnic or other places where people want to sit in a grassy or muddy area without soiling their clothing. Temporary blankets have been designed for this purpose, although their inherent wastefulness is a chief concern of several environmental groups.

Firefighting

Specialized blankets known as fire blankets may be used by firefighters to protect furnishings from water damage during firefighting. A fire blanket is made of fire-resistant material such as fiberglass and is used in smothering a fire. Firefighters often wear specialized variants of the fire blanket to protect themselves as well.

Moving household goods

Thick quilted and durable blankets are used as protective covers and cushioning when furnishings are moved.

Horse care

A warming coat for a horse is called a *horse blanket*, intended to prevent the development of a shaggy winter coat of hair. A small *saddle blanket* protects the horse's skin from chafing from the pressure points of a saddle.

Keeping heat within the body

To keep warmth inside the body, a blanket can be used to cover one's skin and keep the warmth in. Many kinds of blankets, such as *wool* are used because they are thicker and have more substantial fabric to them, but *cotton* can also be used for light blankets. The term blanket is often interchanged with comforter, quilt, and duvet, as they all have similar uses.

2.8.4 Buyer

Bangladesh, India, Srilanka etc

2.8.5 Import Country

Turkey, Europe & Some Middle east country

2.9 Cushion

Cushions are colorful, comfortable additions to any seating area. Some chairs can be hard, rough or plain. Adding cushions can suddenly make a room appear inviting and warm. The cushion's color and softness will invite guests to have a seat and relax. There are a variety of cushion styles for any kind of seating, from benches to ottomans. Choose a style of cushion to match your personality and décor taste.

A cushion is a soft bag of some ornamental material, stuffed with wool, hair, feathers, polyester staple fiber, non-woven material, or even paper torn into fragments. It may be used for sitting or kneeling upon, or to soften the hardness or angularity of a chair or couch.

2.9.1 Properties Of cushion

In order to choose fire for manufacture a cushion the following criterion are considered important,

(i) high absorbency

(ii) high wet strength,

(iii) ability to dye well ,

(iv) Good color fastness,

(v) Wash ability,

(vi) Softness ,

(vii) Cost and

(vii) Availability.

Considering these facts it seems that in manufacturing cushion fiber is the most widely used fiber in the world. Apart from this fiber like cotton, silk, flax, wool, viscose, rayon, polyester, acrylic, nylon and blends of two or more difficult fiber and silk are widely used.

In some special cases fibers like soybean and corn are also used widely.

Cushions: often found in piles

cushion: makes a lounge or rug softer

2.9.2 Fiber content

Cushion cover can be made from natural or manmade fibers, or a blend of both. The content that is best for you depends on what you are looking for in a bedding product. Consider the following:

Natural Fibers, such as cotton, silk, flax, or wool have inherent irregularities and subtleties which contribute to the natural beauty of cushion.

Artificial Fibers, such as viscose and rayon are manmade from natural raw materials derived from cellulose or plant protein. Tencel, Modal, and rayon made from bamboo are some of today's most recognizable fabrics made from artificial fibers. Cushion made from artificial fibers often have many of the same qualities of natural fiber and are generally more durable. They are extremely absorbent, have a soft, silky hand, can be dyed to vibrant colors and some even have inherent anti-bacterial properties.

Synthetics such as polyester, acrylic, and nylon are manmade products produced from petrochemicals. Fabric woven from these fibers can be dyed with colors that are more vibrant than those used on natural fiber fabric, and bedding made from synthetic fibers will be resistant to wrinkling. The disadvantage is due to their low porosity and absorbency.

Blends are combinations of two or more different fibers. Usually the fiber present in the highest percentage dominates the fabric, but a successful blend will exhibit the desirable qualities of all.

2.9.3 Types of weave

The type of weave used in the fabric for cushion plays an integral part in the durability and price of the finished product. There are three basic fabric weaves used in cushion:

Plain Weave: the simplest of the three basic weaves, is used for about 80% of all cushion cover. In a plain weave, each yarn alternately crosses over and under another to produce a strong, even fabric. Examples of plain weaves are batiste, percale, cambric, and gingham.

Twill Weaves: identified by a diagonal rib or twill line, are used to produce strong cushion fabric that can have a softer "drape" than a plain weave. The twill construction has more cotton fibers exposed on the surface of the fabric, so it can be sanded or brushed for extra softness.

Sateen Weave: is used to produce smooth, lustrous, higher thread count cushioning with a thick close texture. The number of yarns exposed on the surface of the fabric gives sateen its characteristic sheen. Consequently, it is this same characteristic of exposed yarns which make this fabric more prone to snagging, so it is important that the sateen have a higher thread count to keep the yarns as close together as possible.

Patterned Weaves: is the most difficult and most expensive to produce due to their complexity, and produce the most durable fabrics used in cushion. There are two basic pattern weaves, the Dobby and the Jacquard:

Dobby: fabric, such as "damask" stripes, piqué, and waffle cloth, is the more economical of the two basic pattern weaves, and is limited to simple designs.

Jacquard: is the most complex weave and requires the finest quality of yarn. It is the most expensive of all types of weaves to produce. Examples of Jacquard fabrics are damask, tapestry, brocade, and matelasse.

2.9.4 Fabric finishing

When selecting cushion, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing, shrinkage control, and wrinkle resistance.
Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.

Shrinkage control keeps the cushioning fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the bedding less cool and comfortable.

Wrinkle resistance is applied to some cotton fabrics used in cushioning so they require little or no ironing after washing. Some of these treatments can reduce the product's absorbency and porosity.

2.9.5 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.9.6 Export country

Europe, America & Canada etc.

2.10 Mattresses

A mattress is a manufactured product or improvised arrangement to sleep or lie on, consisting of resilient materials and sometimes covered with an outer fabric or ticking. It may consist of a quilted or similarly fastened case, usually of heavy cloth, that contains hair, straw, cotton, foam rubber, or a framework of metal springs. In parts of the Western world a mattress typically belongs to a bed set and is placed upon a foundation.

Fig: pillow top queen-size mattress.

2.10.1 Fiber Used in Mattress fabric

Mainly mattress fabric made from polyester fiber. But sometimes cotton, rayon and bamboo fiber will be used to make fabric. Mattress fabric made from both woven and knitted. Some mattress fabric made from bland of polyester and bamboo fiber

2.10.2 Components of an innerspring mattress

A common innerspring mattress consists of three components: the spring core, the foundation, and the upholstery layers.

Spring mattress core

The core of the mattress supports the sleeper’s body. Modern spring mattress cores, often called "innersprings," are made up of steel coil springs, or "coils."

Four types of mattress coils are available. This are-

Bonnell coils are the oldest and most common. First adapted from buggy seat springs of the 19th century, they are still prevalent in mid-priced mattresses. Bonnell springs are a knotted, round-top, hourglass-shaped steel wire coil. When laced together with cross wire helicals, these coils form the simplest innerspring unit, also referred to as a Bonnell unit.

Marshall Coils, also known in the industry as wrapped or encased or pocketed coils, are thin-gauge, barrel-shaped, knotless coils individually encased in fabric pockets—normally a fabric from man-made, nonwoven fiber.

Offset coils are an hourglass type coil on which portions of the top and bottom convolutions have been flattened. In assembling the innerspring unit, these flat segments of wire are hinged together with helical wires.

2.10.3 Air mattresses

Air mattresses use one or more air chambers instead of springs to provide support. Quality and price can range from inexpensive ones used occasionally for camping, all the way up to high-end luxury beds. Air mattresses designed for typical bedroom use cost about the same as inner-spring mattresses with comparable features.

Air mattresses for medical use

Medical versions of adjustable firmness mattresses have special control mechanisms. In 1990s, the industry began producing self-adjusting air beds that automatically change their pressure periodically, and/or inflate and deflate several air chambers alternately. The intention of these periodic changes is to reduce problems with decubitus ulcers (bed sores), though it is still a subject of research how effective this is.

Self-inflating air mattresses

Air mattresses for camping are often filled with foam. The foam itself provides little support, but will expand when the mattress' air valve is opened, and draw in air, so the mattress will (nearly) inflate by itself. This is especially useful for hikers, as unlike normal air mattresses no pump is needed for inflating. A common brand is Therm-a-Rest.

2.10.4 Foam mattresses

All-foam mattresses use different weights and densities of petrochemical-based flexible polyurethane foams and visco-elastic foams or memory foam, and latex rubber foams. A number of mattress manufacturers have incorporated polyurethane and visco-elastic foams with a portion of plant-based content.

2.10.5 Foundation

There are three main types of foundation.

A box-spring consists of a rigid frame containing extra-heavy-duty springs. This foundation contributes to softer support and a bouncier mattress. Because box-springs can allow mattresses to sag, many manufacturers add high-density block foam underneath the coils or provide a rigid foundation instead.

A traditional wood foundation is usually made of softwood, such as pine, or hardwood. It usually has seven or eight support slats covered with paperboard or beaverboard. This foundation, called a zero-deflection unit or an "Ortho Box" in the bed industry, increases the feeling of firmness and stability.

2.10.6 Upholstery layers

Upholstery layers cover the mattress and provide cushioning and comfort. Some manufacturers call the mattress core the "support layer" and the upholstery layer the "comfort layer." The upholstery layer consists of three parts: the insulator, the middle upholstery, and the quilt.

The insulator separates the mattress core from the middle upholstery. It is usually made of fiber or mesh and is intended to keep the middle upholstery in place.

The middle upholstery comprises all the material between the insulator and the quilt. It is usually made from materials which are intended to provide comfort to the sleeper, including regular foam, visco-elastic foam, felt, polyester fibers, cotton fibers, convoluted ("eggcrate") foam, and non-woven fiber pads.

The quilt is the top layer of the mattress. Made of light foam or fibers stitched to the underside of the ticking, it provides a soft surface texture to the mattress and can be found in varying degrees of firmness.

2.10.7 Fabric cover

The protective fabric cover which encases the mattress and foundation is called ticking. It is usually designed to coordinate with the foundation border fabric and comes in a wide variety of colors and styles. Mattress fabrics can be knits, damask or printed wovens, or inexpensive nonwovens. During the past decade, along with the rise in popularity of allfoam beds, stretchy knit ticking on the bed's top panel has become a standard look on both innerspring and foam

beds. Most ticking is made with polyester yarns. More expensive mattress fabrics may contain a combination of polyester with rayon, cotton, silk, wool or other natural yarns.

2.10.8 Fabric finishing

When selecting mattress, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing, shrinkage control, and wrinkle resistance. Additional fabric finish require for mattress like fire proof and water proof work for safety purpose.
Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.

Shrinkage control keeps the cushioning fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the bedding less cool and comfortable.

Wrinkle resistance is applied to some cotton fabrics used in cushioning so they require little or no ironing after washing. Some of these treatments can reduce the product's absorbency and porosity.

All most all types of mattress fabric must be shown fire proof and water proof behavior. So after doing wrinkle resistant then the fabric require water proof treatment and the fabric goes to fire proof treatment application.

2.10.9 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.10.10 Export country

Europe, America, Japan, Australia, Germany

2.11 Pillow

A pillow is a large cushion support for the head or other parts of the body, usually used while sleeping in a bed, or for the body as used on a couch or chair. A pillow can be a cloth case stuffed with down, feathers, or foam rubber.

2.11.1 Characteristics Of pillow

In order to choose fire for manufacture a pillow the following criterion are considered important, (i) high absorbency (ii) high wet strength, (ii) ability to dye well , (iii) good color fastness, (iv) wash ability, (v) softness , (vi) cost and (vii) availability. Considering these facts it seems that in manufacturing pillow fiber is the most widely used fiber in the world. Apart from this fiber like cotton, silk, flax, wool, viscose, rayon, polyester, acrylic and blends of two or more difficult fiber and silk are widely used.

Fig: Pillows piled on the corner of a bed

2.11.2 Types of Pillow

A pillow is designed to provide support and comfort to the body and head. There are three main types of pillows; Bed pillows, Orthopedic and Decorative pillows, with some overlapping of use between these. The appropriate size of a bed pillow depends on the size of the bed. In general a twin bed goes best with a standard pillow while for queen and king sized beds larger pillows are recommended.

Beds

The classic bed pillow shape is usually a square or rectangle. *Square* is also called *continental* in the UK. In the US, they are common in these three sizes (in inches):

Standard (20 x 26 inches), Queen (20 x 30 inches), and King (20 x 36 inches).

Pillows are generally covered with a removable pillow case, which facilitates laundering. Apart from the color and from the material of which they are made, pillowcases are described by three characteristics:

Size

Size conforms to the pillow the case is to contain. They are typically described as:

Standard: (square) 16 × 16 in (41 × 41 cm)

Square: 26 × 26 in (66 × 66 cm)

Standard: 20 × 26 in (51 × 66 cm)

Queen: 20 × 30 in (51 × 76 cm)
King: 20 × 36 in (51 × 91 cm)

Fig: Several pillows on a bed.

Orthopedic

Neck pillows support the neck by providing a deep area for the head to rest and a supportive area to keep the neck in alignment with the spine while sleeping. These can also be known as cervical pillows.

Travel pillows provide support for the neck in a sitting position. Their "U" shape fits around the back of the neck and keeps the head from slipping into an uncomfortable and possibly harmful position during sleep. However, U-shaped pillows can sometimes force the head forwards creating neck stiffness.

Decorative

Decorative Pillows serve a dual purpose. They likely have fancy cover material which serves to decorate the room where they are found. Since Decorative Textiles are commonly 54 inches in width, many decorative pillows finish about 17x17 inches. When used to decorate

a fully made up bed, decorative pillows are likely thrown aside at bedtime, since they are not covered with a washable pillow case, thus, while found on the bed, they are primarily there for decoration, hence they fall under this category. These pillows may be custom made, as well as made by freelancers. Decorative pillows are also found on furnishings in more public parts of the home, such as sofas, chairs and window seats. Here, their common use may overlap both orthopedic and bed pillows.

2.11.3 Fiber Used

Pillow cover can be made from natural or manmade fibers, or a blend of both. The content that is best for you depends on what you are looking.

Consider the following:

Natural Fibers, such as cotton, silk or flax, have inherent irregularities and subtleties which contribute to the natural beauty of cushion.

Artificial Fibers, such as viscose and rayon are manmade from natural raw materials derived from cellulose or plant protein. Tencel, Modal, and rayon made from bamboo are some of today's most recognizable fabrics made from artificial fibers. Pillow made from artificial fibers often have many of the same qualities of natural fiber and are generally more durable. They are extremely absorbent, have a soft, silky hand, can be dyed to vibrant colors and some even have inherent anti-bacterial properties.

Synthetics such as polyester, acrylic are manmade products produced from petrochemicals. Fabric woven from these fibers can be dyed with colors that are more vibrant than those used on natural fiber fabric, and Pillow made from synthetic fibers will be resistant to wrinkling. The disadvantage is due to their low porosity and absorbency.

Blends are combinations of two or more different fibers. Usually the fiber present in the highest percentage dominates the fabric, but a successful blend will exhibit the desirable qualities of all.

2.11.4 Construction and Parts

Internally, a pillow comprises a filler made from foam, synthetic fills, feathers, or down and visco-elastic foam and latex. Traditionally straw was a filler, but this is uncomfortable and rarely used today. Feathers and down are the most expensive and usually the most comfortable; they offer the advantage of softness and their ability to conform to shapes desired by the user, more so than foam or fiber pillows. One of the disadvantages of a down-filled pillow is that a significant number of people are allergic to them. There are currently hypoallergenic varieties of down pillows to allow people sensitive to down to enjoy the comfort of feather or down pillows. In Asia, buckwheat is common filler, as are plastic imitations. Such pillows tend to be smaller than a standard pillow. Cotton is also common filler and is considered to be healthier than synthetic fills.

The fill is surrounded with a cover or shell made of cloth or silk, known as the pillow case or pillow slip. Some pillows have a fancier cover called a *sham* which is closed on all sides and usually has a slit in the back through which the pillow is placed. Rectangular standard bed pillow cases usually do not have zippers, but instead have one side open all the time, however, a zippered pillow protector is often placed around standard pillows with the case in turn covering the protector. It is recommended that all types of pillow covers be laundered periodically since they are the part that is in contact with a person's body. But even with regular washing, pillows tend to accumulate large amounts of dust and vast numbers of microbes among the fill and it is recommended that they be replaced every few years, especially for those with allergies.

Fig: A pillow filled with plastic tubes in a mesh sack

2.11.5 Fabric finishing

When selecting pillow, take into consideration if any special fabric finishes have been utilized. The three most commonly used functional finishes are mercerizing, shrinkage control, and wrinkle resistance.

Mercerizing improves the shape of the individual cotton fibers, by adding strength, luster, and an increased affinity for dyes.

Shrinkage control keeps the pillow fabric from shrinking no more than 1% to 2%. An example of shrinkage control is when a fabric is Sanforized. These types of finishes make a product more durable but may make the pillow less cool and comfortable.
Wrinkle resistance is applied to some cotton fabrics used in pillow so they require little or no ironing after washing. Some of these treatments can reduce the product's absorbency and porosity.

2.11.6 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.11.7 Export Country

Europe, America, Japan, Australia, Germany

2.12 Mosquito Net

A fine net placed around a bed to protect the occupant against mosquitoes and the diseases carried by them. Properly used, a mosquito

net offers protection against mosquito’s, flies, and other insects, and thus against the diseases they may carry. Examples include malaria, dengue fever, yellow fever, and various forms of encephalitis.

Properly used, a mosquito net offers protection against mosquito’s, flies, and other insects, and thus against the diseases they may carry. Examples include malaria, dengue fever, yellow fever, and various forms of encephalitis.

2.12.1 Fiber Type

Mosquito net can be made from cotton, polyethylene, polyester, or nylon fiber.

2.12.2 Construction

A mesh size of 1.2 mm stops mosquitoes, and smaller, such as 0.6 mm, stops other biting insects such as biting midges/no-see-ums.

2.12.3 Usage

Mosquito nets are often used where malaria or other insect-borne diseases are common, especially as a tent-like covering over a bed. For effectiveness, it is important that the netting not have holes or gaps large enough to allow insects to enter. Because an insect can bite a person through the net, the net must not rest directly on the skin. Mosquito netting can be hung over beds, from the ceiling or a frame, built into tents, or installed in windows and doors. When hung over beds, rectangular nets provide more room for sleeping without the danger of netting contacting skin, at which point mosquitoes may bite through untreated netting.

Frame hung mosquito netting

Tent made of mosquito netting.

2.12.4 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.12.5 Export country

Europe, America, Japan, Australia, Germany

2.13 Furniture/upholstery Fabric

If you are looking to purchase new furniture or if you are thinking about having a piece reupholstered, you will need to decide upon a fabric type for the furniture. And, if you have never shopped for furniture fabric before, you need to know that this involves a great deal more than simply choosing a color or pattern. In actuality, the possibilities for furniture fabrics may just astound you.

Upholstery is the work of providing furniture, especially seats, with padding, springs, webbing, and fabric or leather covers. The word *upholstery* comes from the Middle English word *upholder*. Upholstery is a craft which evolved over centuries for padding and covering chairs, seats and sofas, before the development of sewing machines synthetic fabrics and plastic foam. Using a solid wood or webbed platform, it can involve the use of springs, lashings, stuffing's of animal hair, grasses and coir, wools, hessians, scrims, bridle ties, stuffing ties, blind stitching, top stitching, flocks and wadding all built up by hand.

Furniture/Upholstery fabric is very important in at least three ways:

- It plays a large role in creating the style of the furniture it covers.
- It's cleaning requirements and delicacy or durability play a large role in the type of use that the furniture is appropriate for and the time, energy, and expense involved in maintenance.
- Its cost may represent the largest percentage of the cost of the entire piece of furniture.

2.13.1 Fibers used in Furniture fabric

In order to choose fire for manufacture a furniture fabric the following criterion are considered important, (i) high absorbency (ii) high wet strength, (ii) ability to dye well , (iii) good color fastness, (iv) wash ability, (v) softness , (vi) cost and (vii) availability. Considering these facts it seems that in manufacturing furniture fiber is the most widely used fiber in the world. Apart from this fiber like cotton, silk, flax, wool, viscose, rayon, polyester, acrylic, nylon and blends of two or more difficult fiber and silk are widely used. In some special cases fibers like soybean and corn are also used widely.

Fig: Furniture Fabrics

2.13.2 Natural versus Synthetic Fabrics

Furniture can be upholstered in both natural and synthetic fabrics. Natural fabrics are regarded as eco-friendly and are currently used frequently by interior decorators. The types of natural furniture fabrics include:

- Cotton
- Cotton Blend
- Leather
- Linen
- Silk
- Wool

Synthetic fabrics are man-made. They are manufactured to mimic natural fabrics; however, they contain no natural fibers. They are ideal for people who have allergies. Synthetic furniture fabrics include:

- Acetate
- Acrylic
- Microfiber
- Nylon
- Olefin
- Polyester
- Rayon
- Vinyl

2.13. 3 Types of Furniture/Upholstery Fabric

Plant Fibers

A variety of fabrics made of cotton are used in upholstery. The cotton fabrics run the gamut from rougher fabrics like canvas, denim, and sailcloth, to lighter, more delicate fabrics, like chintz, gingham, and toile. Chintz is notable for its glaze, and for this reason, it should not be exposed to heat (e.g., an iron). Linen is used less because of its wrinkling tendencies.

Animal Fibers

Silk bespeaks elegance, but it does not stand up well to heavy use. Wool is a durable choice and, recently, is being used in blends to increase its versatility.

Animal Hide

Leather, tanned animal hides, wears between four to seven times better than fabric, but while it doesn't wear out, it does change in appearance. Sometimes leather is used only on the cushions and pillows of a piece of furniture, while cheaper, matching vinyl is used on the rest as a means of cutting cost.

Synthetic Fiber

There are many synthetic fibers used to make upholstery, including acetates, acrylics, nylon, polyester, polypropylene (Olefin), rayon, and vinyl. Synthetics are often blended with natural fibers for better wear. Acetate, nylon, and Olefin all tend to fade in sunlight. Acrylic and polyester can both have a wool-like feel and polyester can also be like silk, as can rayon.

Special Fabrics

Slightly less usual for use as upholstery fabric are embroidered fabrics and pile fabrics, such as velvet, which—whatever the fiber—have a thick, short pile in some configurations (overall for velvet, in stripes for corduroy, etc.) on one side.

2.13.4 Choosing a Furniture Fabric

Each form of material has particular features and features making it sensible for use in certain circumstances. It can be difficult for the normal customer to know exactly which material kind to choose for which objective, however. So, here are four primary concerns to consider when buying a home furniture fabric:

Style

It is important to keep the particular product of home furniture in mind when selecting material. Moreover, the design of the area and home in which the home furniture will be placed should be regarded. For example, a conventional wood-framed seat likely will not look quite right if it were padded in a cotton material. Furthermore, a seat being placed in a kid's area would look out-of-place if its material was official page.

Durability

When determining on home furniture material it is essential to think about the form of deterioration that the product will obtain. Furniture that will be in high-traffic areas must be padded in hard-wearing materials that offer good spot level of resistance.

Thread Count

This represents how firmly weaved the material is—and, the higher the thread-count, the better the material will last to everyday deterioration. The real variety represents the variety of strings per sq. inches of material.

2.13.5 Color

This is probably the top why individuals choose certain home furniture fabrics; however, some materials may not be the best options for individuals who have animals or kids.

Large should be selected after the particular material has been selected.

2.13.6 Features

The various fabrics of both the natural and synthetic type each offer different distinguishing characteristics and features. Cotton furniture fabric's features include its ease of spot cleaning and resistance to fading and wear. Leather offers extreme ease of cleaning and resistance to wrinkles. Linen resists pilling and fading but wrinkles and soils easily and must be professionally cleaned to prevent it from shrinking. The features of each fabric type should be considered for the best fit before a purchase is made.

2.13.7 Cleaning and Care

Furniture manufacturers and re-upholsterers should provide cleaning instructions for your new furniture fabric so that you can avoid mishaps. You may be able to call an upholsterer or dry cleaner to ask about cleaning and care for your specific furniture fabric. New furniture should have a tag somewhere, often on the cushions, guiding you on how to clean the fabric. Generally you should never use a cleaning solvent of any kind on any furniture fabric unless the solvent is designed specifically for that fabric.

2.13.8 Considerations

Failing to follow cleaning and proper care guidelines for the furniture's fabric type may result in unsightly stains or holes in the fabric. If a stain or mess cannot be removed from the fabric with water or dry vacuuming, a dry-cleaner or upholsterer should be contacted to avoid ruining the fabric with home remedies. The best prevention for such problems is to avoid eating and drinking while using the furniture, having the furniture coated in stainresistance chemicals, or using furniture covers.

2.13.9 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.13.10 Export Country

Europe, America, Japan, Australia, Germany

2.14 JUTE

The natural fiber, jute has several suitable functional properties, like high tensile strength, good dye ability, antistatic property, good moisture regain, comparable thermal insulation value as that of wool, better capability of resisting microbial attack than cotton, viscose rayon and wool etc .Additionally it is eco-friendly and abundantly available in India and Bangladesh and hence a low-cost materials in these countries. The approach of blending jute with small proportions of other costlier natural or synthetic fibers would yield diversified products with novel aesthetic properties, better warmth, dyeing effects, feel, resiliency, drap-ability, durability, etc. These inspiring features of jute have led the researchers of Bangladesh Jute Industries' Research Association (BJRI), to develop different economic jute blended woven home textile products, like wall coverings, curtains, upholstery, blankets, carpets, bed spreads, etc. employing entirely the jute processing system. The scope of other fabric manufacturing technologies viz. needle felting and stitch bonding to develop novel jute diversified products for home textile applications is also discussed briefly.

2.14.1 Jute Diversified Products for Home Textiles Applications

Jute, a natural vegetable fiber, famous for its golden-yellow color and luster, is an age-old fiber grown in the south Asian countries. It was used for the manufacture of yarn in *charkaspinning* (hand-spinning) and fabric manufacture in handloom weaving in Bengal producing ropes, screen, matting, gunny bags for packing grains, bedding materials and even clothes. The first processing of jute by steam powered mill took place at Dundee in Scotland, in flax processing machinery, in order to substitute the expensive Russian flax, in 1793. The first commercial jute spinning in the Indian subcontinent was set up by George Auckland and Bisambhar Sen in 1858 at Wellington Jute mill at Rishra. The growth was so fast that by 1910, more than billion yards of fabric and 450 million bags were being produced annually. During the last 100 years, the jute fiber could find its way from a flexible packaging material into various diversified end uses such as in shopping bags, home textiles, geo-textiles, paper-pulps, fiber-reinforced composites, decorative handicrafts and in many other applications.

The Golden Fiber, jute is the ranks second only to cotton in terms of production quantity. Jute and allied fibers are cash crops of great socio-economic importance in countries like, India, Bangladesh, China, Nepal, Myanmar and Thailand, because they provide subsistence to more than 12 million small and marginal farm families for their livelihood. The relentless competition from synthetic fibers and the current global economic recession has affected the livelihoods of millions of people who depend on natural fiber production and processing. That is why the United Nations declared 2009 as The International Year of Natural Fibers aiming at raising global awareness of the importance of natural fibers not only to producers and industry, but also to consumers. Growing one tonne of jute fiber requires less than 10% of the energy used for the production of polypropylene. According to the Food and Agriculture Organization of the United Nations (FAO), the aim of the International Year of Natural Fibers is to increase and develop the effectiveness and sustainability of this branch of agriculture.

Jute Diversified Products

The advent of cheap petroleum product based polymers especially of polyolefin groups challenged the market of jute flexible packaging. The profitability of conventional jute products suffered a decline in spite of rising cost of raw jute fibers. This led the premier R&D organizations like BJRI to venture newer application areas that are collectively called the Jute Diversified Products (JDPs).

From the late eighties, a small sector in the jute market witnessed a new prospect of growth and prosperity. The fancy jute decorative items, shopping bags, door-mats and wallhangings found customers within the country as well as abroad. The JDPs included jute along with natural fiber blends that could command premium price for each product. Juterayon, jute-cotton, jute wool products found newer avenues of application along with jute- synthetic blends. The jute and jute blended textiles were also subjected to chemical processing treatments viz. bleaching, dyeing and printing. The range of products that were possible to make from jute included: paper, handicrafts, particleboards, fashion accessories, gift items, decorative items, floor coverings and home textiles. Although the JDPs potentially had good prospects, it was not possible to create a large market instantly. Along with the JDPs, another class of materials called the technical or industrial textiles were introduced in the market.

Figure 1: Jute Carpets

Figure 2: Jute Blended Blanket

Figure 3: Jute Decorative Lamp Shades

Figure 4: Pillow Covers of Jute

Figure 5: Decorative Bags from Jute

Figure 6: Jute Floor Coverings

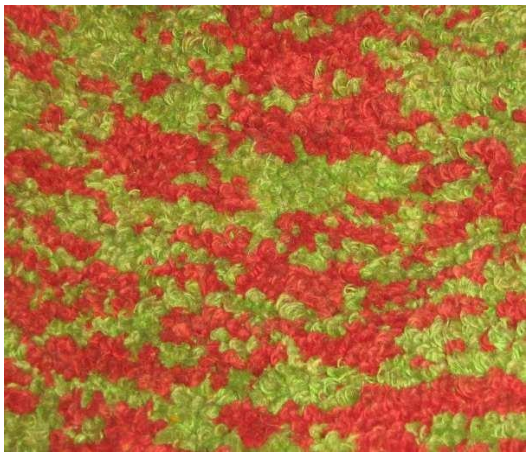


Figure 7: Decorative Wall Hanging of jute

Figure 8: Jute Blended Carpets

These included geo-textiles, jute fiber reinforced composites and filter fabrics. These products envisaged the suitable functional properties of jute like high tensile strength and modulus, good dye ability, antistatic property, high thermal insulation value (TIV) comparable to wool, better microbial resistance than other natural fibers and good moisture regain. The technical requirement of these textile materials opened new vista for using jute. Being a natural biodegradable fiber with renewable source, jute found buyers in the subcontinent and abroad.

2.14.2 Jute in Home Textiles:

There is a definite trend in the growth of jute diversified products. One of the sectors that have seen a moderate growth and promise significant growth in near future is the jute based interior or home textiles. The focus on home textiles has increased because these products are less time and labor-intensive to manufacture compared to the apparel products. The fashion and style of textile products for home end-uses such as towels, beddings, upholstery fabrics, area floor coverings, draperies and table linens, change with time in response to changing fashion trends. Home textiles are classified into six categories:

- Furniture (upholstery, slip covers),
- Hangings (drapes, curtains),
- Domestics (sheets, pillowcases, bed spreads, blankets, mattress covers),
- Linens (table cloths, napkins, towels and wash cloths),
- Floor Coverings (indoor and outdoor carpets, rugs, padding),
- Miscellaneous (lamp shades, throw pillows)

Home textiles play an important role in the comfort, protection and decoration of furnishings. Fashion practices of olden days still have a strong influence on style of fabrics used in the modern day style of home textiles. The price of all synthetic fibers like polyester, nylon and polypropylene has seen a rise in the recent past due to increase in the price of petroleum products. The natural and regenerated fibers have also seen an increase in demand, and have become more expensive due to the growing concerns against the uses of synthetic polymers and its hazardous effects on the environment and human health. The conventional home textile demands the use of textile materials of higher weight per unit area. Jute being more economical is now capable to replace the costlier fibers alone or in blended products due to its reduced cost. The torsional rigidity and flexural rigidity of jute being high, it is suitable for making floor coverings, wall hangings and heavier curtains where the application product require drape or stiffness. Extra finishing steps can thus be removed with jute fibers. These economic and technical factors can thus swing the interior or home textile market in favor of jute.

The development of jute blended home textiles had been tried by BJRI. The jute fiber was blended with different fibers like rayon, wool and polypropylene and blended yarn containing jute and other fibers as shown in Table 1, in different proportions were prepared in the jute processing system. Blending with jute as major component was carried out at various stages from baker card, finisher card, drawing frame, to spinning frame for corespun blends. Table 2 shows some of the typical blends that were made. It is interesting to note that the fancy blended yarn did not have the superior mechanical properties of all jute yarns. However the blend-spun yarns were much more regular than all jute yarns as evident from the Irregularity value (diameter CV %). Table 3 shows the woven fabric property from jute blended and jute cotton union fabric. Compared to all jute fabrics the abrasion resistance of the blended fabrics is exceedingly good while that of the union fabric is also better. There is also an improvement in the bursting strength of the fabrics that were made from the blends or that of the union fabric.

The grey yarns and fabrics were bleached, dyed and finished to prepare a range of decorative fabrics. Handloom as well as power loom fabrics were also developed. Cut-pile, woven and tufted carpets were made out of these blended yarns. Blankets of jute-wool and jute polypropylene blends were woven on jute looms and hand raised, to develop almost similar TIV and resiliency as that of pure wool blankets as shown in Table 4 below.

The functional finishing of home textiles has assumed significant importance over the years. From conventional bleached, dyed and/or printed, the consumer have started asking for specialty finishing like fire retardant treated drapes and curtains, crease resistant finished domestics and linens, antimicrobial finishing in curtains, wall-hangings, and floor coverings, water and soil repellant table cloths, antistatic drapes and upholstery fabrics, etc. There have been significant developments in home textiles in the recent years. The global market offers consumers, a broader range of fiber combination, fabrics, designs, textures and colors than it did in the 1990s.

2.14.3 The Future Trend

Adoption of newer technologies for manufacturing home textiles can make them attractive from design and commercial viewpoint. Spun-bonding, Stitch-bonding, spun-lacing and warp knitting technologies have been made optimal use of, for development of new generation products. These technologies have potential for application in processing of jute fiber as well. The performance of jute based home textile can be further enhanced by imparting the functional properties that render them as third generation intelligent textiles. Introduction of

phase-change materials for temperature control in making thermally adaptive bedding, and thermo-responsive pore control finishing for moisture management can deliver functionality in home textile to develop a niche market. Jute bases home textiles can also incorporate various functional materials like, fragrance encapsulating technologies, stain protective agents and self cleaning fabrics to introduce novel finished fabrics.

Efforts are being made to promote the traditional jute and allied fiber products in order to retain their existing markets. Also, R&D activities have resulted in the innovation and introduction of a range of value-added jute products, such as paper, jute reinforced composites, agro-textiles, geo-textiles and home textiles, etc. These products have not only provided us with solutions to certain environmental problems, but also predicted a potentially bright future for mass consumption of jute and allied fibers. However, joint efforts are still needed among policy makers, industries, SHGs and NGOs in order to revitalize jute and allied fibers and make these natural fibers a vibrant industrial material.

2.14.4 Buyer

Wal-mart, H&M, Zara, JC-penny, Slazenger

2.14.5 Export Country

Europe, America, Australia & some middle east country.

SIZE(cm)	BUYER	Count	Beam Type	Required Beam	Loom Plan	Completed Beam
50x76	RHL	12/2	Pile	4	2	2
50x80	RHL	12/2	Pile	2	2	2

3.1 Terry Towel:

3.1.1 SIZING:

Sizing Recipe:

1. Water = 500 kg
2. Topica Starch = 40 kg
3. Trizol = 15kg
4. CMC = 15 kg
5. Puresoft = 2 kg
6. Unisize = 4 kg
7. Dalda = 2 kg
8. $Mgcl_2$ = 100gm

Sizing extinction= 0.5%

3.1.2 Weaving

Table: Constructional parameters of terry towel

Buyer name	H&M	Tissages Denantes	RHL	H&M	Tissages Denantes	Wal-Mart
Nick Name	Bath towel	Hand towel (Herring bond)	Golf towel	Wash towel	Bath towel(Herring bond)	Fering towel(Velour)
GSM(Required by buyer)	390	340	520	550	340	355
Dimensions (Length*width) (inch)	45*105	50*90	17*22	13*13	50*110	11*18
Grey Wt.(gm)	407	353	531	562	356	362
Finished Wt.(gm)	382	336	513	544	333.2	349
Reed count	56	56	56	52	60	58
PPI on loom	48	48	48	44	52	42
Ground yarn count	20R/s	20R/s	10s OE	20R/s	20/2	10s OE
Pile yarn count	16R/s	20R/s	20/2	16R/s	20s	20s OE
Weft yarn count	16s	16s	16s OE	20s+20 s Fancy	16s	16s OE
Grey width (pile to pile)(inch)	29	22	58	13	31	18
Grey length (pile to pile)(inch)	55	36	22	12	55	14
Pile ratio	4.65	4.8	5.2	5.24	4.7	4.2

3.1.3 Terry towel Calculation Assumption

No. of ground warp ends= 727

Ground warp count= 20tex X 2

Warp crimp=8%

Waft yarn count= 16 tex

No. of pile warp ends= 534

Length of pile part= 105cm

Pile ratio (for pile height) =52:10(52cm of pile warp for 10 cm of cloth)

Pile yarn count= 20 tex X 2

Length of plain part= 5 cm

Picks per cm= 20

Reed width= 59 cm
Grey length (pile and plain part)= 109cm

Fringe length= 2 cm

How to determine the weight of a ground warp for a terry towel

Weight of ground warp= weight of ground warp in grey cloth+ weight of ground warp in the fringe.

Weight of ground warp in grey cloth=Length of grey cloth X warp crimp factor X No. of ground warp threads X warp yarn count in tex / (100X1000)

= (109x 1.08x 727x 20x 2)/(100x 1000)

=342.33 gms

Weight of ground warp infringe (here warp crimp is not involved) = (Fringe length X no. of ground warp x yarn count in tex)/(100 X 1000)

= (2x 727x 20x 2)/ (100x 1000)

=0.58 gms

So the ground warp weights = 342.33+ 0.58 = 342.91 gms

How to Determine the Weight of Pile Warp in Terry Towel

Weight of Pile Warp = weight of pile warp in pile part + that in plain part + that in fringe

a. Weight of pile warp in pile part (Pile ratio: 52:10)

= (Length of pile part x number of pile threads x pile length x yarn count in tex) / (100 x 1000)

= (105 x 534 x 52 x 20 x 2)/(100 x 1000)

= 116.77 g

b. Weight of Pile warp in Plain Part

=(Length of plain fabric x number of pile threads x crimp factor x yarn count)/ (100 x 1000)

= (4 x 534 x 1.08 x 20 x 2)/(100 x 1000)

= 0.92 gm

c. Weight of Pile warp in fringe (No crimp, no loop)

= (fringe length x number of pile threads x yarn count)/ (100 x 1000)
= (2 x 534 x 20 x 2)/ (100 x 1000)

= 0.42 gm

Weight of pile warp = 116.77+ .92 + 0.42 = 118.11gm

How to Determine the Weight of Weft in Terry Towel

Weight of Weft Yarn

= (Total no of weft threads x reed width x yarn count)/ (100 x 1000)

(Reed width is equal to the length of one weft yarn)

= (109X 20X 59X 16)/ (100X 1000)

= 20.58gm

3.2 Bed sheet:

3.2.1 Construction:

Contraction of the fabric = 112 x 56 / 16s X 20s

Total ends = 6540

Total length = 3400

So, the weight of warp = 830 kg

So, require amount of size paste = 1150 kg (with wastage)

3.2.2 Sizing (Recipe):

1. Water = 700 kg
2. Modified Starch 360 = 70 kg
3. Topica Starch = 40 kg
4. Trizol = 15kg
5. CMC = 15 kg
6. Puresoft = 2 kg
7. Unisize = 4 kg
8. Dalda = 2 kg
9. $Mgcl_2$ = 100gm

Sizing extinction= 0.5%

3.2.2 Weaving

Table: Constructional parameters of Bedspreads

Buyer name	**H&M**	**JC Penney**	**IEKA (UK)**	**H&M**	**JC-Penney**	**Wal-Mart**
Nick Name	Renate	Alina(with cusion)	Birgit Stra	Indira	Karit	Ieka PS sticka

GSM(Required by buyer)	80	120	135	140	156	110
SIZE(cm) (length*width)	275*275	280*180	240*150	250*250	280*260	250*150
Finished Wt.(gm)	76	114	127	134	148	105
Reed count	56	70	90	52	60	35
PPI on loom	58	56	72	64	90	82
Warp yarn count	20s	16s	10s	20s	20	10s
Weft yarn count	16s	16s	16s	20s	16s	20s
Grey width(cm) (end to end)	275	180	150	250	260	150

3.3 Jute

Table1: The Raw material

Fibre Used	Fineness	Average Staple Length	Tenacity	Extension at break
	Denier	(mm)	(g/denier)	(%)
Jute TD3	18.2	-	2.94	1.8
Viscose staple 1	6.0	54	1.54	12.1
Viscose staple 2	8.0	54	1.59	11.4
Viscose tops	4.0	80/100/120	1.62	12.3

Wool tops	17.2	81	1.1	22.8
Polypropylene Tops	4.0	100	4.56	56.0

Table2: Physical Properties of Some Typical Yarns

Fiber Used	Jute-Viscose Rayon	All Jute	Jute-Wool	Jute-Polypropylene
Blending Stage	2nd Drawing	-	Finisher Card	Finisher Card
Blend Ratio	55/45	100/0	67/33	85/15
Grist(lbs/spy)	6.1	6.0	8.6	5.3
Quality Ratio (%)	49.2	74.8	59.4	63.9
Tenacity (g/tex)	6.48	9.86	7.82	8.42
Elongation (%)	2.2	1.8	2.76	1.45
Diameter (CV%)	10.6	25.0	14.8	18.8

Table 3: Physical Properties of some typical Decorative Fabrics

Fabric Blend	All Jute	Jute Rayon	Jute Rayon	Jute - Rayon	Cotton-Jute Rayon
Manufacturing	Mill Man ufactured			Handloom Manufactured	
Areal Density(gsm)	339	292	509	441	383
Ends/dm	59	64	47	51	150
Picks/dm	51	69	47	51	71
Weave	Plain	Plain	Twill	Plain	Twill

Bursting Strength(kg/cm^2)	3.44	4.80	4.48	4.62	4.06
Abrasion Resistance (No. of cycles)	50	271	323	275	108

Table 4: Comparative study of Blended Blankets with all Wool Blanket

Blanket	67:33Jute wool	80:20Jute/Polypropylene	100% Woolen Commercial
Areal Density(gsm)	471	471	495
Thermal Conductivity Coefficient (Cal/h/m/^{o}C)	11.3	13.1	13.0
Resiliency (%)	30.0	34.6	38.7

4.1 Sizing Ingredients

In most of the cases of our study, we saw that in sizing most of the factory only 3- 4 types of sizing ingredients use to size warp yarn for better performance in weaving. It was observed that the following commercial brands of sizing ingredients are used e.g. Starch, Uni-size, Pure soft and C.M.C. The amount of sizing paste preparation depends on the weight of Warp, total length fabric to produced, total weight and warp count etc. During sizing some sizing paste is wasted and it depends on the no. of size box and depth of the size box. In Sucker-Muller sizing machine, there are two size boxes and every size box needs 150 liters of size paste to reach the sizing depth. So almost 300 letters or more size paste will be loss to size one set of yarn. And the amount of size paste requires (especially for medium sizing) on the construction of the fabric, total length and total ends of the yarn.

So finally we saw that the amount of waste size paste depend on the machine manufacturing company. If the size box depth small then the loss of size paste will be light. In [3.2.1] we describe a fabric contraction, where the amount of sizing paste will be require to size the yarn with wastage specially for medium sizing. And the amount of cooking depends on the shape of the cooking tank. If the capacity of the cooking tank is 1000 letters and we need 2500 letters of size paste to size one set of yarn, so we needs to 3 times of cooking to produce size paste.

4.2 Factor affect on changing constructional parameter

The construction parameter is important for fabric production. To change the construction parameter of fabric such as EPI, PPI, warp count, weft count may affect on fabric tensile strength, percent of elongation, Tear, Thickness and air permeability are the most important fabric propertied which determine its performance. Fabrics properties are affected by fabric parameters, methodology, processing and environment. Raw material, fabric construction (yarn structure, fabric density and fabric structure), working conditions, setting and condition of machines are the factors which influence on fabric properties. Optimum operation condition to attain the required propertied can be attained based on theoretical or experimental methods. Relationship between these parameters and fabric properties can enable the designer to create fabric for diverse applications. In the main time different fabric behavior, required for end use, impose a challenge to the industry for determining a complex fabric attribute with a simple parameter which can describe to great extant the behavior of fabrics to a specific application. On the basis of relative rate of individual structural interlacing models as well as yarn parameters fabric behavior can been defined. From literature it is possible to detect that fabric strength depends on type of raw materials, yarn structure and properties, spinning system, fabric geometry, yarn crimp during processing, weaving conditions (such as temperature, humidity and yarn tensions during weaving) as well as fabric finishing treatments. While fabric thickness is affected by yarn diameter, thread waviness and fabric structure. The air permeability is related to fabric density, yarns linear densities and the weave. Also the analysis fabric stress-strain curves can help in predicting its behavior.

These affect are as follows:

- To change EPI may affect on reed count.
- The higher the EPI, the finer the fabric is.
- The higher the PPI, the finer the fabric is.
- To change both EPI &PPI may affect on Fabric weight.
- To change both EPI &PPI may affect on cover factor.

To change both warp & weft count may affect on fabric density.

The fabrics produced of higher density of picks (PPI) have the higher values of stress in fabric directions. However air permeability and tearing strength are decreased by increasing the weft density.

- To change constructional parameter (EPI, PPI, warp count& weft count) may affect on crimp%.

- The ratio of crimp of weft yarns have a negative effects on tearing strength, abrasion resistance, air permeability and stress in warp direction and positive effect on fabric thickness but this effect is not linear.

- Increasing the thickness of yarn (EPI) is decreasing air permeability of the fabrics and increasing fabric thickness, bursting, tearing and tensile strength, abrasion resistance and elongation in warp direction.
- Fabrics produced of cotton /polyester yarns have higher fabric porosity by image processing and tearing strength in both directions beside to elongation in weft direction.

- The higher ratio of crimp in warp yarns leads to decreasing fabric porosity, air permeability and tearing strength indirection.

4.3 Terry towel

In our study we saw that, the weight of Terry towels (GSM) is high and the range is 355550. The EPI range is 55-78 is suitable for weaving. The PPI range is 40-60 is suitable for weaving. It was seen that when the constructional parameter change in terry towel then huge change will be found in fabric e.g. GSM, crimp%, reed count, cover factor, loop length, fabric density, strength etc. We saw that ground warp count is always high or same compare to pile warp count. Increasing the density of yarn (EPI) is decreasing air permeability of the fabrics and increasing fabric thickness, bursting, tearing and tensile strength, abrasion resistance and elongation in warp direction. And normally finer count yarn is used as weft. The change of PPI is not a far distance compare to various types of towel. So the PPI change is always very small compare to various kinds of product. The fabrics produced of higher density of picks (PPI) have the higher values of stress in

fabric directions. However air permeability and tearing strength are decreased by increasing the weft density. Normally ring yarn, ring-slub or open-end yarn used for terry weaving. And the pile ratio is 4.2-5.25. Pile ratio indicates that 4.2 inch pile yarn needs to produce 1 inch fabric. ACS textiles Ltd., Shabab towels, Chowdhury Towel Ind (Pvt) Ltd., Mark ABC Towels Ltd., Apex Towels Ltd., Partex towels Ltd., are 100% export oriented towels industry produce towel in Bangladesh. Wal-mart, H&M, Zara, JC-penny, Slazenger is the most valuable buyers of towels.

4.4 Bed spread

In our study we saw that, the weight of bedspread (GSM) depends on the density of the fabric and the range is 80-150. The EPI range is 60-140 is suitable for weaving, but for sateen weave more than 140 EPI is used to produce fabric. The PPI range is 56-82 is suitable for weaving, but for sateen weave more than 90 PPI is used to produce fabric. The warp count is always high compare to weft count. Normally ring yarn is used to produce fabric. Increasing the thickness of yarn (EPI) is decreasing air permeability of the fabrics and increasing fabric thickness, bursting, tearing and tensile strength, abrasion resistance and elongation in warp direction. The fabrics produced of higher density of picks (PPI) have the higher values of stress in fabric directions. However air permeability and tearing strength are decreased by increasing the weft density. It was seen that when the constructional parameter change in bedspread then huge change will be found in fabric e.g.

GSM, crimp%, cover factor, reed count, fabric density, strength etc. Alltex Industries Ltd., Arkay Textile Mfg Co. Ltd., Hashem Textile Mills Ltd., Rony Textile Textile Mills Ltd., Shabnam Textile Mills Ltd., Zaber & Zubair Fabrics Ltd., Nipun (Pvt.) Ltd., Unilliance Textile Ltd., ACS Textiles Ltd., are 100% export oriented towels industry produce bedspreads in Bangladesh. Wal-mart, H&M, Zara, JC-penny, Slazenger is the most valuable buyers of bedspreads.

4.5 Jute

Jute and jute diversified product is used for decorative fabric, fashionable fabric, carpet and blanket. And it is used blends with various types of fiber. For decorative fabric jute is blend with rayon and cotton. For blanket jute is blend with wool and polypropylene. When

jute is blend then its areal density, busting strength, abrasion resistant and Thermal Conductivity Coefficient will be changed. It's give a good finishing properties of fabric. Jute fabric usually used as a carpet backing cloth, where it's EPI & PPI is low.

5.1 Conclusion

Production development of Home Textile is one of the most important factors for weaving industry. Bangladesh is a developing country. Yet not a lot of Home Textile project likes knitting project and weaving project here. However, Home Textile project contribute huge amount of volume in our total textile & garments industry economy and huge number of people working in this sector. This sector is earning a lot of foreign currency. Therefore, it is very essential to take all the necessary steps at the grass root level & maintaining the quality of Home Textile fabric strictly. This quality of Home Textile fabric depends on good production development. Production development consist whole calculation product production. Also maintain time, value, required amount of material, man, machine, product quality. This thesis is most important for development & management of any factory.

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