

Knowledge of Textile Goods

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Lesson No. 4: [Typology of cotton woven fabrics](#)

Cotton fabric – characteristics

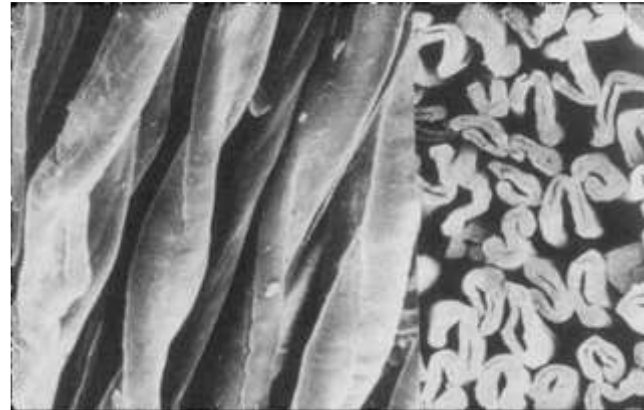
Fabric is made of cotton fibres

The fabric has some typical properties:

- Fabric is very pleasant to the touch
- Fabric is often fine to the touch
- Fabric is warm to the touch
- Fabric is often soft to the touch

(especially if the surface of the fabric is raised)

- Fabric usually has a matte appearance
- Fabric has excellent sorption properties



Cotton is a natural fiber of plant origin

| | |
|------------------|---------------------|
| Medium fineness: | 1,6 dtex |
| Diameter: | 16-20 μm |
| Medium length: | 2,5-2,8 cm |

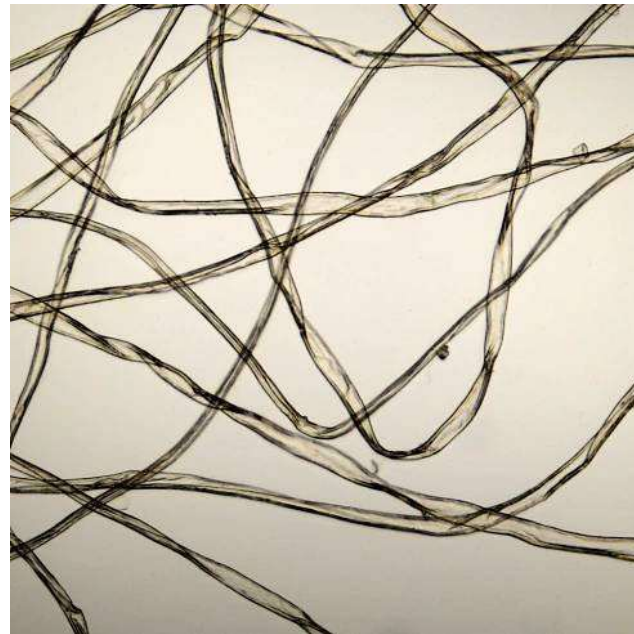
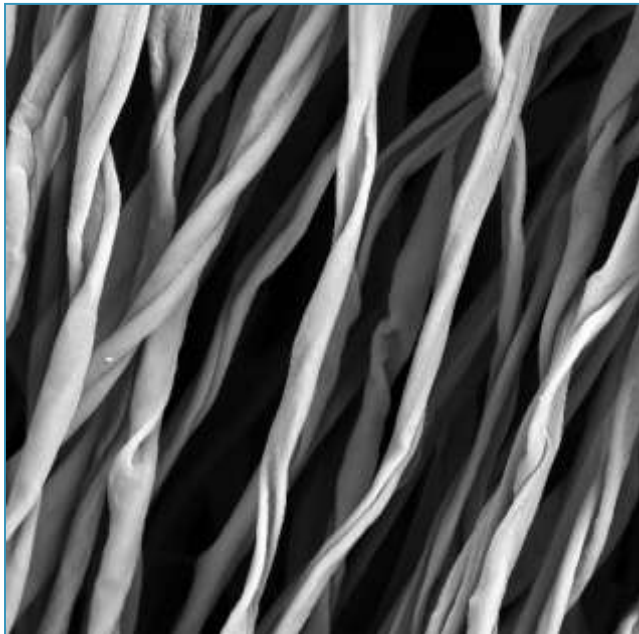
Main disadvantage: it takes a long time to dry after getting wet.

Microscopic view

For the precise identification of the material composition.

LONGITUDINAL VIEW

The fibre is similar to a twisted ribbon:



CROSS-SECTIONAL VIEW

The fibre is similar to a beans:



Fabric of cotton-type

Fabric may be made of:

- Cotton fibres
- Chemical fibres (e. g. polyester, viscose)
- Fibre blends (cotton and chemical fibres)

The yarns must be produced using the cotton spinning technology (combed or carded).

The fabric of cotton-type always reminds the cotton fabric → it has similar appearance and some similar properties.



Typical use of woven cotton fabrics

AS CLOTHING TEXTILES

- Fabrics for shirts, blouses and dresses
- Fabrics for trousers
- Fabrics for pyjamas
 - due to their excellent comfort properties
- Fabrics for work clothes
 - due to their resistance to washing at higher temperatures

AS HOUSEHOLD TEXTILES

- Fabrics for bed linen
- Fabrics for towels
- Fabrics for cloth for dishes
 - due to their excellent sorption properties
- Fabrics for table linen
 - due to their resistance to washing at higher temperatures



Shirts



Pyjamas



Jeans



Jackets



Trousers



Towels



Table linen



Dish towels



Bed linen

Selected types of cotton fabrics

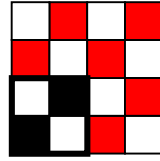
TYPICAL CLOTHING TEXTILES

- Batiste
- Poplin
- Oxford
- Piqué
- Flannel
- Madras
- Chambray
- Eyelet
- Gingham
- Seersucker
- Calico
- Cotton Voile
- Muslin/Muslin double gaze
- Denim
- Drill
- Cotton Gabardine
- Chino
- Corduroy
- Velvet
- Duvetyn

TYPICAL HOUSEHOLD TEXTILES

- Damask
- Cotton Sateen
- Caustic soda crepe
- Cotton Cellular fabric
- Bohemian ticking
- Terry fabric
- Tetra diaper fabric
- Embroidery canvas
- Embroidery basket
- Blue print fabric
- Canvas

Batiste



Batiste fabric - is smooth and delicate fabric made of very fine combed cotton yarns.

It is tightly woven in the plain weave.

It is mercerized usually.

Usually it is bleached white or dyed soft pastel colors; it may be also printed with delicate floral motifs.

The fabric is lightweight, but it should not be translucent.

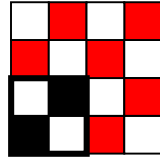


How to use:

- Women's blouses, dresses
- Baby clothes
- Handkerchiefs
- Lingerie



Poplin

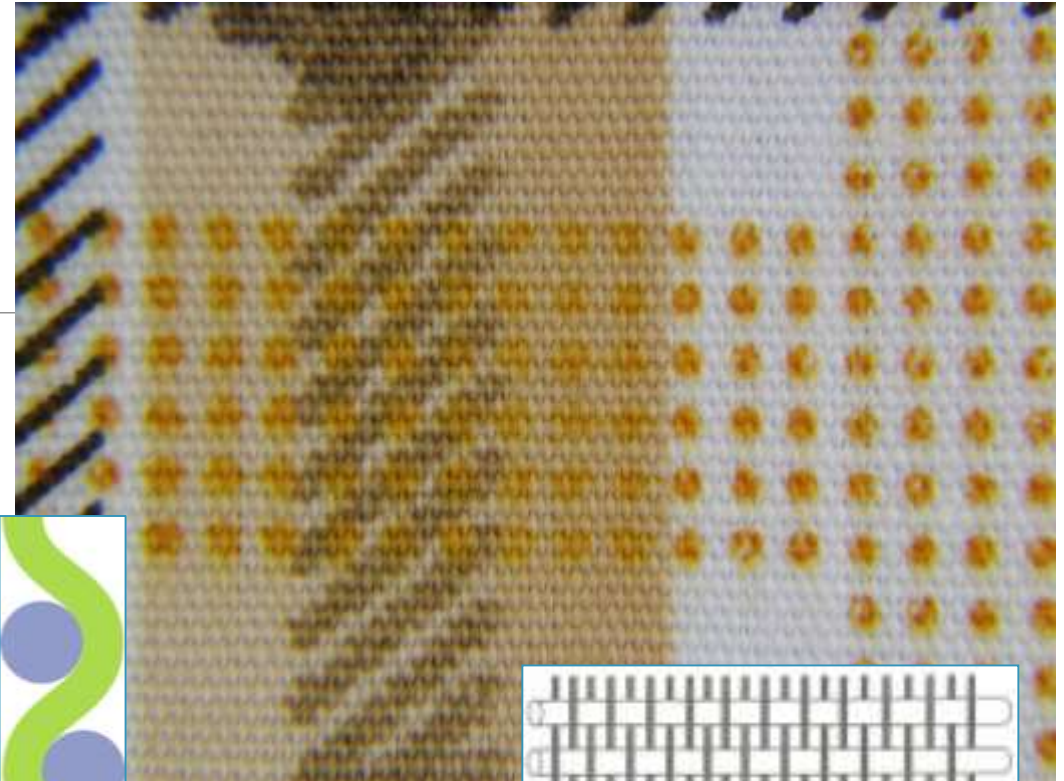


The poplin is the tightly woven shirting fabric, which is characterised by very fine transverse ribs.

It is woven in the plain weave, but:

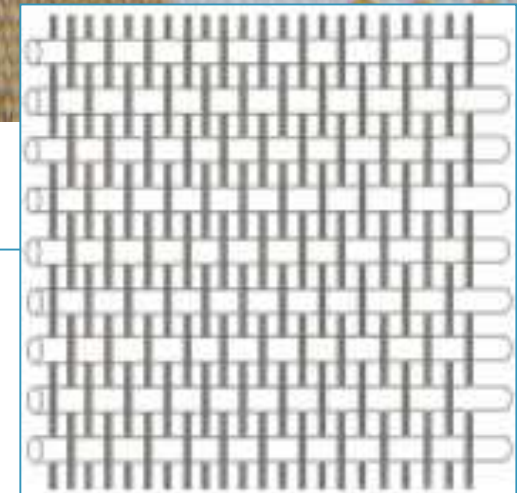
- The weft yarns are significantly heavier than the warp yarns. →
- The sett of warp yarns is significantly higher than sett of weft yarns.

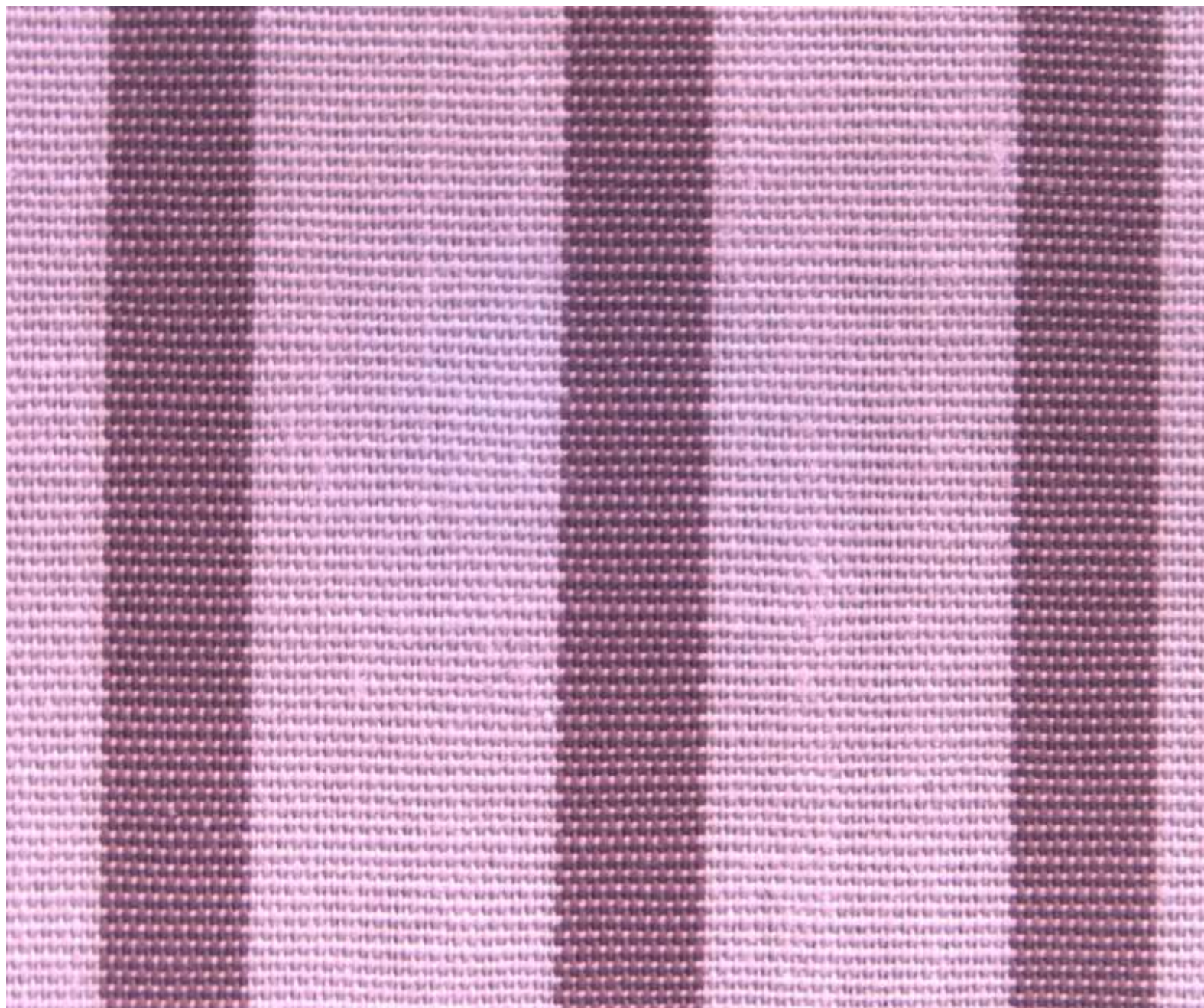
The poplin is medium weight and is stiffer to the touch.



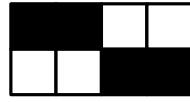
How to use:

- ✓ Dresses
- ✓ Shirts
- ✓ Blouses
- ✓ Children's clothing

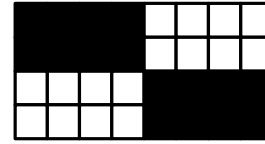




Oxford



Semi-basket weave



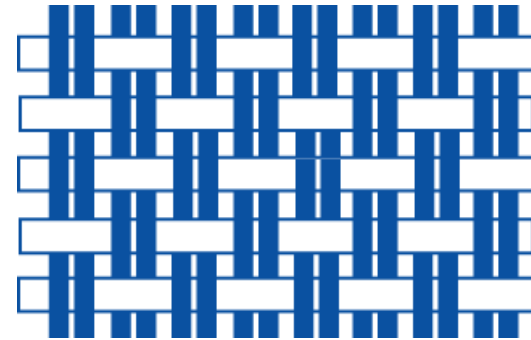
A soft cotton shirting fabric made in a semi-basket weave:

- Usually, two thinner warp yarns are grouped and woven as one against thicker, softly spun weft yarn (variations are made by weaving four warps against two wefts).

Better grades are made of combed cotton yarns.

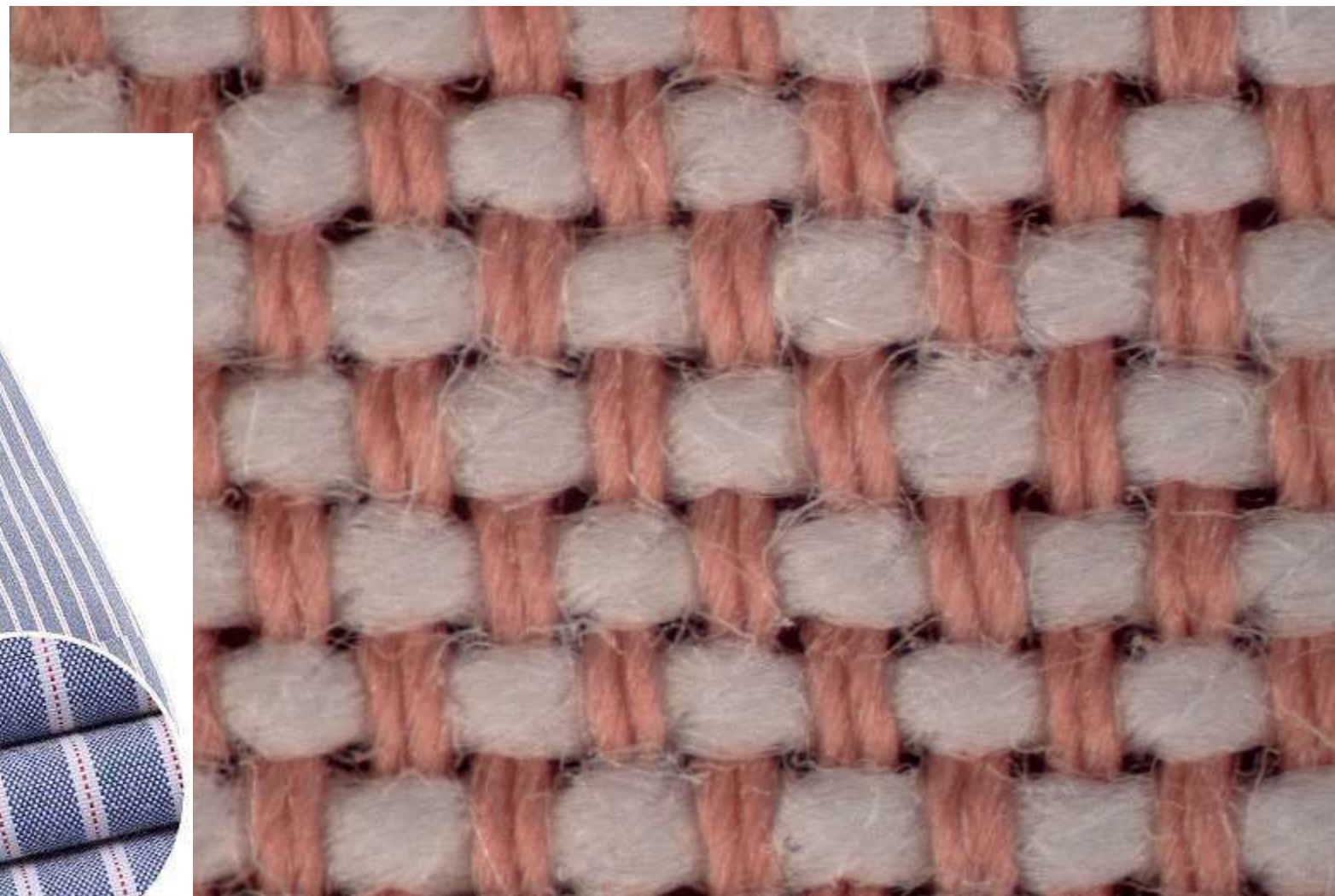
Oxford fabric is usually white, but may be also made with dyed warp yarns and white weft yarns or dyed with one colour. Stripes are also common.

The fabric is lightweight to middle weight.



How to use:

- ✓ Shirts
- ✓ Skirts
- ✓ Dresses
- ✓ Blouses



Oxford fabric in detail

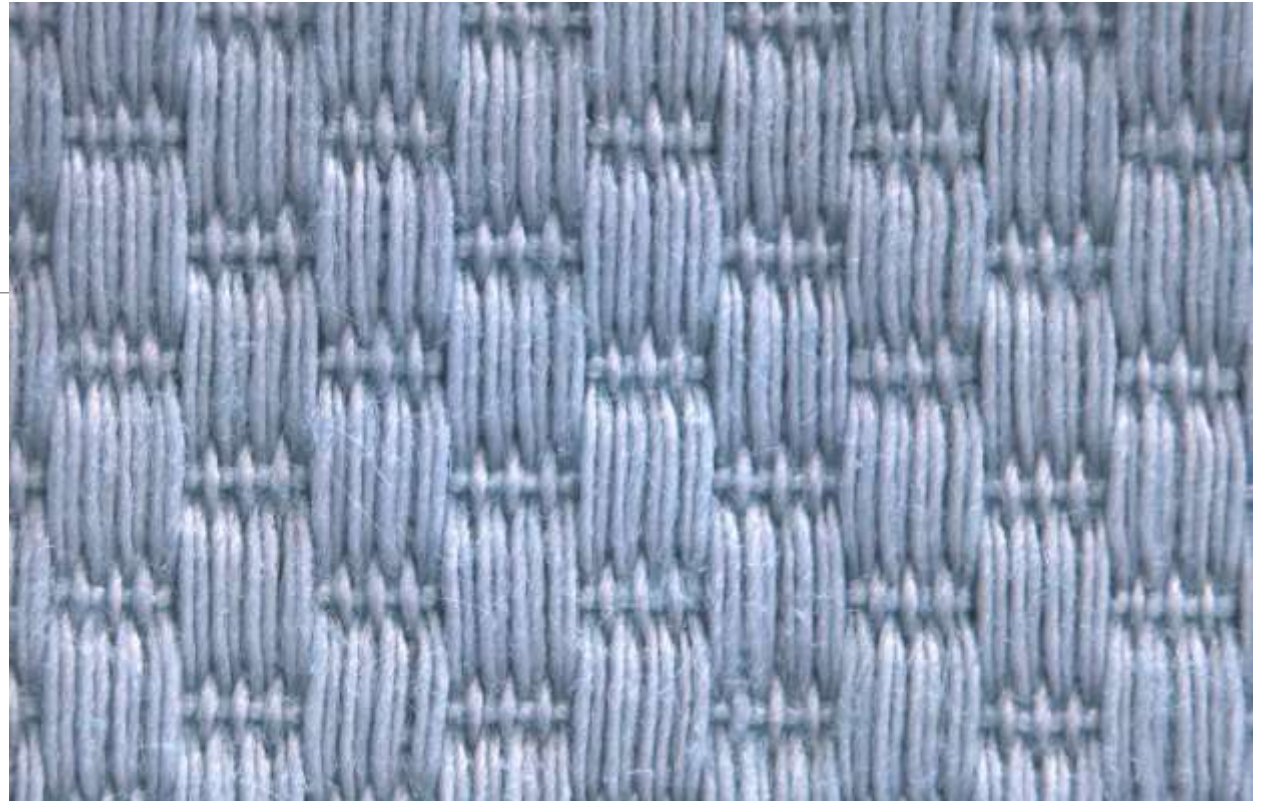
Piqué

Piqué is the cotton fabric with relief woven design.

The relief surface is created **by longer float yarns on the face side**, which create the small motives.

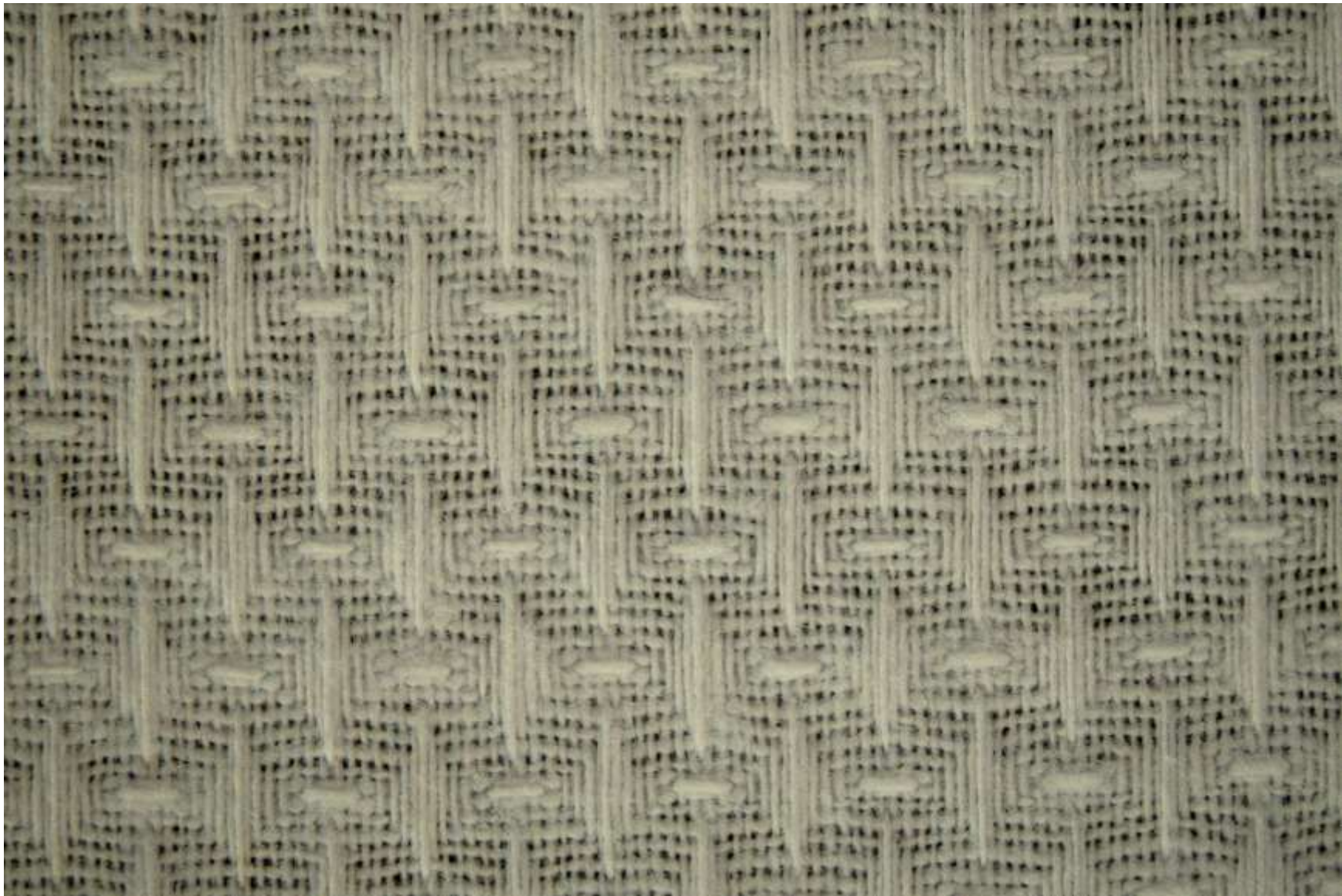
Better qualities are made of mercerized combed cotton. Lower qualities are made of carded cotton.

Piqué may be bleached, printed or dyed.



How to use:

- ✓ Blouses
- ✓ Dresses
- ✓ Summer suits
- ✓ Children's cloths
- ✓ Shirts



Piqué fabrics

Flannel



Flannel is a soft and warm fabric with a pile surface.

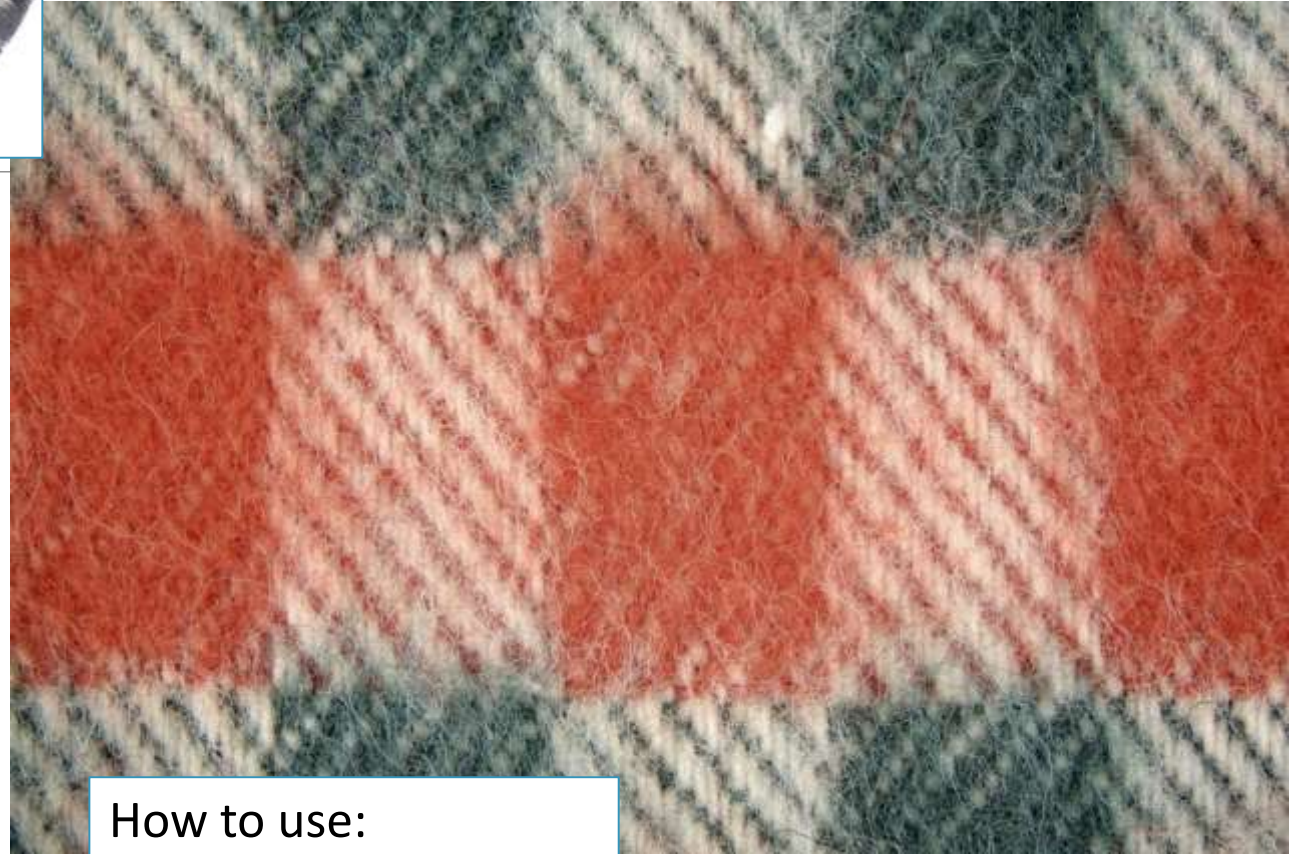
Is usually woven with a twill or plain weave.

Is raised on the face side or on the both sides. Pile surface improves touch and thermal insulation properties.

May be dyed, bleached or printed.

Often is with a checked pattern **that may be woven or printed.**

The fabric is usually medium weight.



How to use:

- ✓ Baby clothes
- ✓ Shirts
- ✓ Sleepwear
- ✓ Bedclothes

Madras

Madras check

Madras – is a cotton fabric with a typical checked pattern.

This check is characterized by an **different arrangement** of colour stripes in the warp and in the weft. The pattern is created by weaving of coloured yarns (dyed before weaving).

True Madras is woven with dyed yarns that have been dyed with vegetable dyes. When the fabric is washed, the dyes bleed together into muted colors.

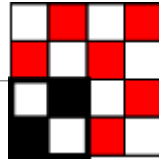


Chambray

Chambray – is soft, comfortable shirt fabric made with a plain weave, colored warp yarns and white weft yarns, giving it a weathered look.

The flat, smooth fabric may be cotton or a blend of cotton and polyester.

It varies in weight.



Eyelet

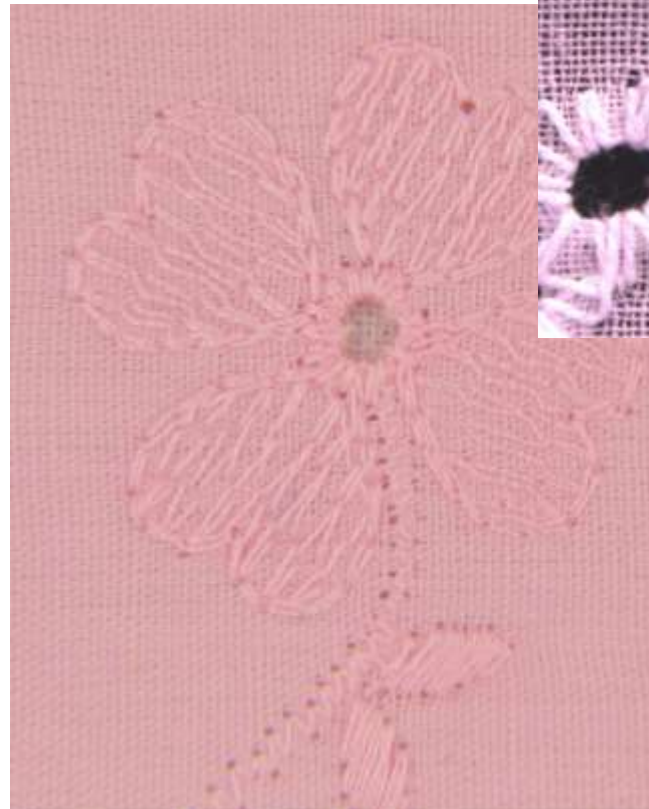
Openwork design is usually in the form of small holes surrounded by embroidery.

The background is usually fabric in plain weave such as for example batiste.

Eyelet is a small to medium weight.

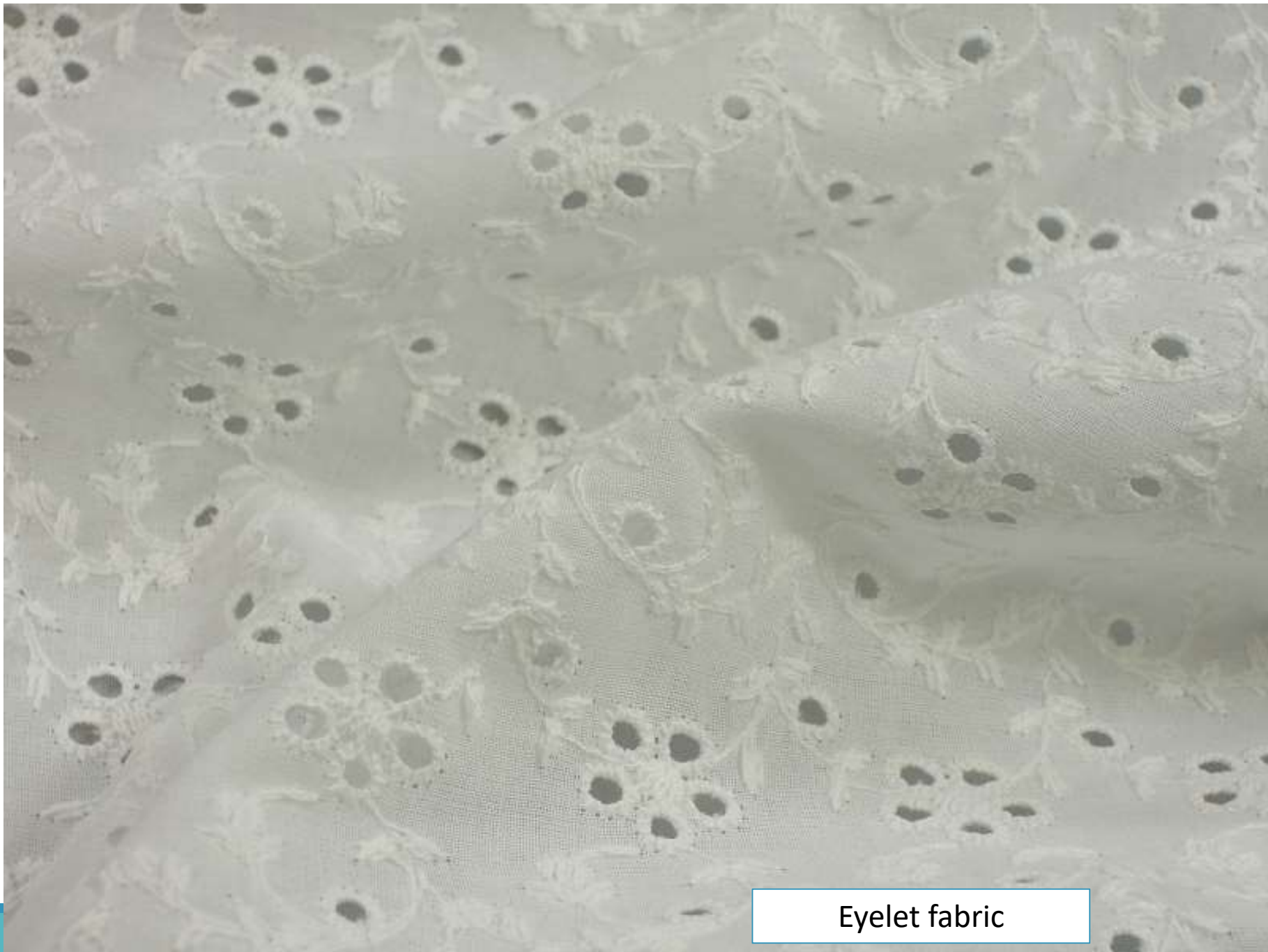
Eyelet is most often white, cream or pastel in colour.

It imitates a pinhole embroidery.

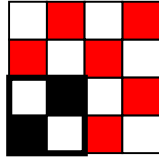


How to use:

- ✓ Blouses
- ✓ Dresses
- ✓ Wedding dresses
- ✓ Baby clothes



Eyelet fabric



Gingham

Gingham is a fabric, which is woven with alternating white and coloured yarns in the form of squares.

It is always woven in the plain weave.

Fabrics **vary in weight, quality and price**. It may be made of combed or carded yarns.

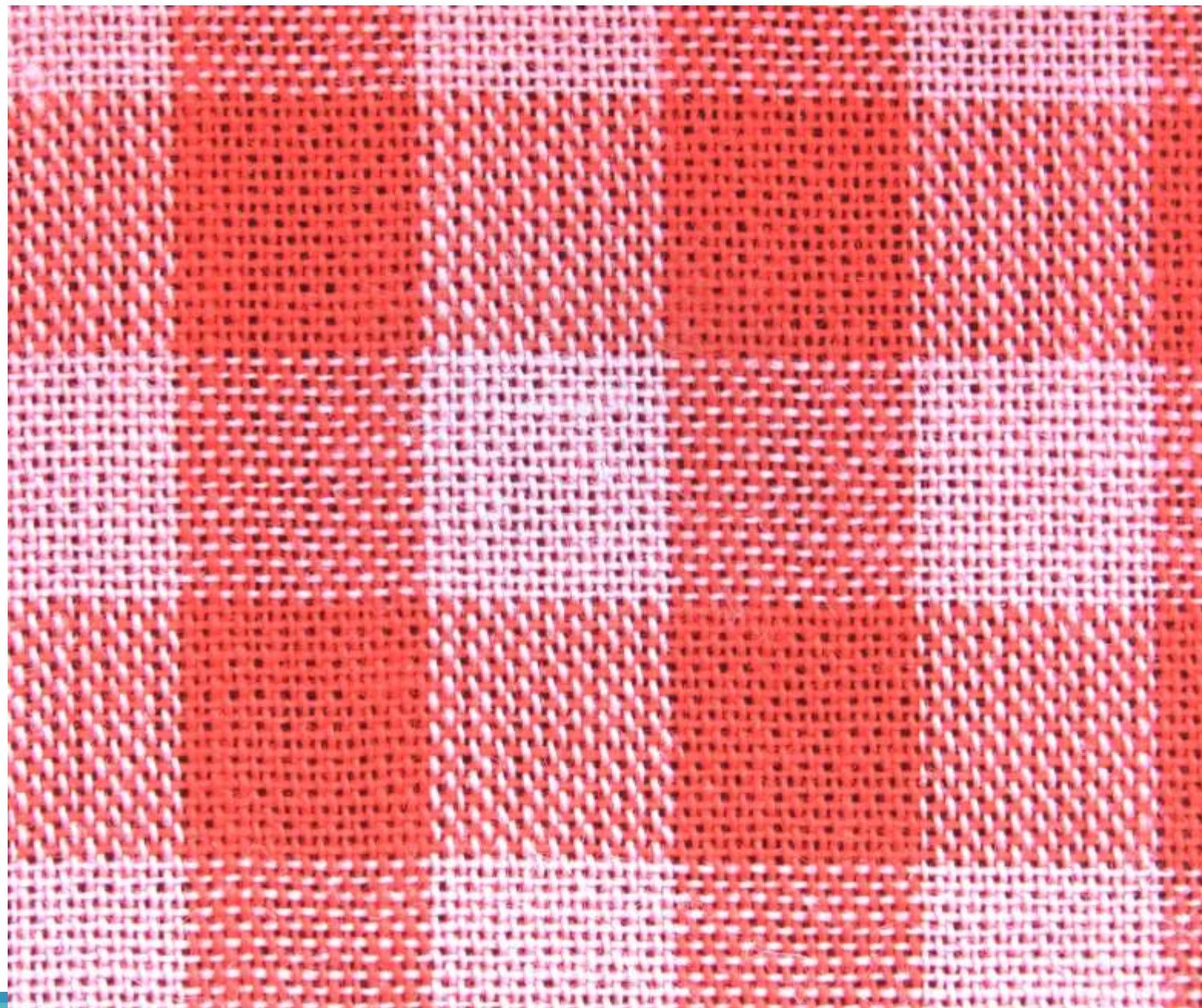
When the check pattern is printed, it is called imitation of gingham.



How to use:

- ✓ Baby clothes
- ✓ Blouses and dresses
- ✓ Sleepwear
- ✓ Shirts
- ✓ Kitchen curtains



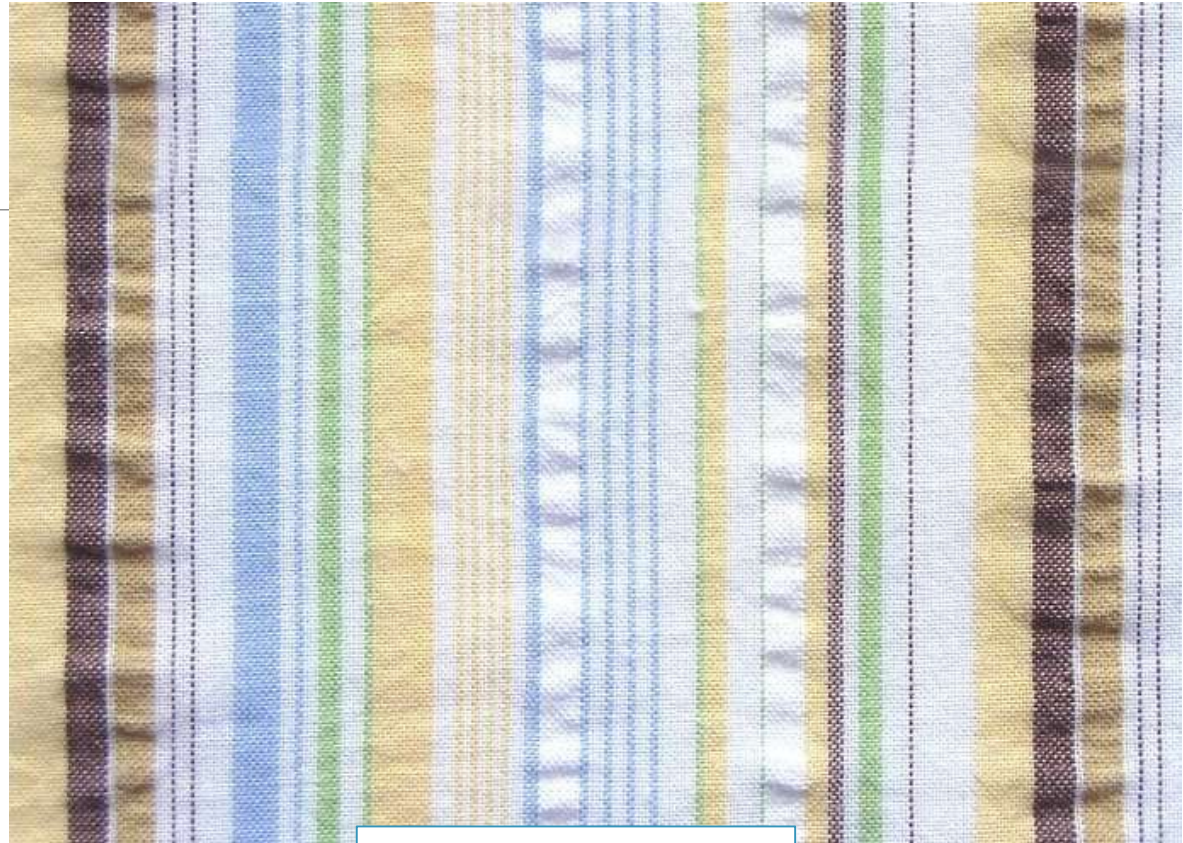


Seersucker

Seersucker – is a fabric that has a typical crinkled surface, usually lightweight.

Originally the fabric was made of cotton and linen, today it is also made of a blend with viscose or polyester.

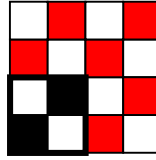
The distinctive puckered surface of seersucker fabric is created **by using a different tension in the warp threads** during the weaving process. The resulting fabric is then treated to shrink the fabric evenly, which results in the puckering effect.



How to use:

- ✓ Blouses
- ✓ Dresses
- ✓ Shirts
- ✓ Baby clothes





Cotton Voile

Voile is semi-transparent fabric made of tightly twisted yarns and is woven in a loose plain weave.

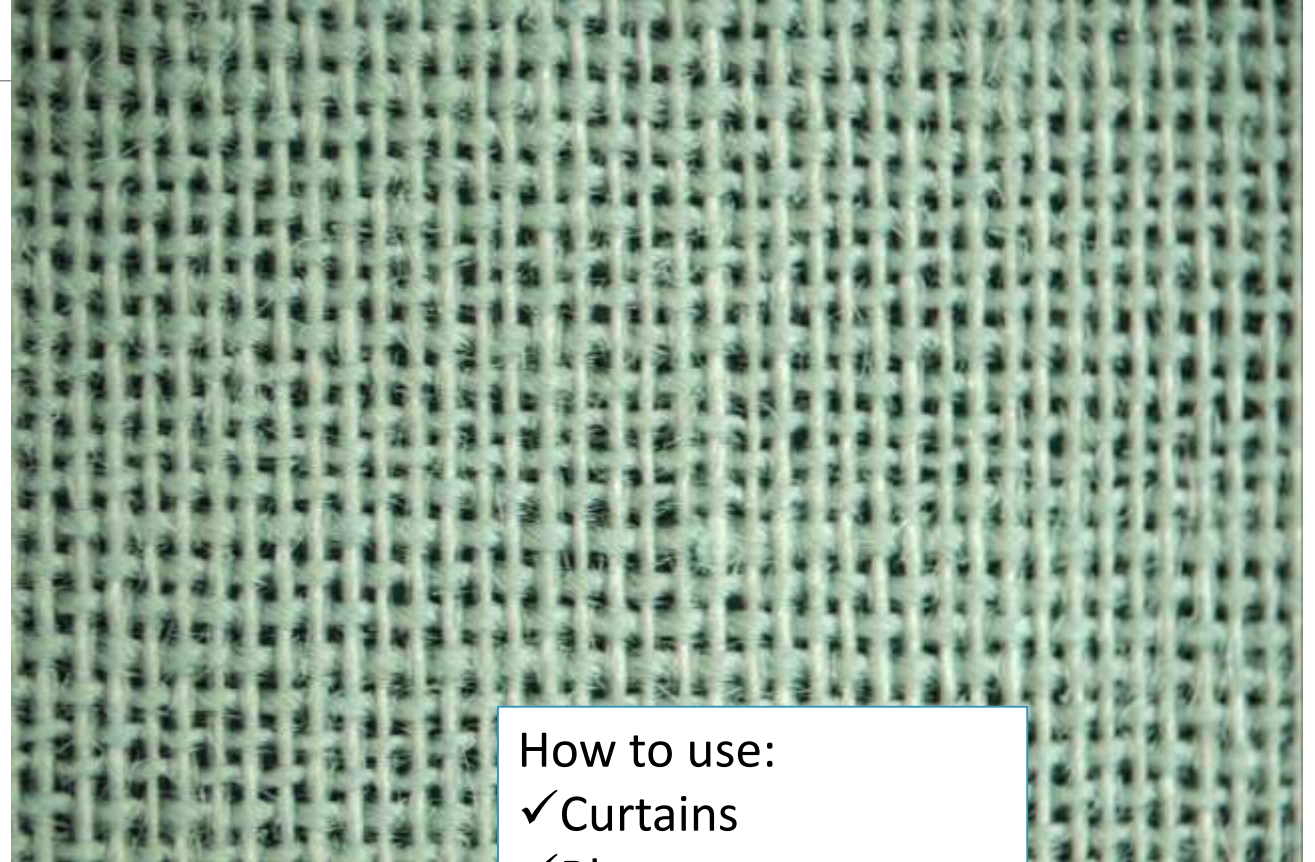
Fabric has a stiffer handle.

Better grades are made with two-ply yarns of combed cotton.

It may be made of cotton, polyester or cotton/polyester blend.

Is light weight.

Is dyed with one colour or printed.



How to use:

- ✓ Curtains
- ✓ Blouses
- ✓ Dresses
- ✓ Scarves

Muslin double gaze

Muslin – is an open-textured fabric characterised by its lightness, softness and breathability. Therefore, it is an excellent choice for the creation of summer products.

Muslin is a loosely woven fabric in plain weave, made from loosely twisted cotton yarn.

In one layer, muslin is translucent. Therefore, today it is often produced as a double fabric, which is very soft, but not so translucent.



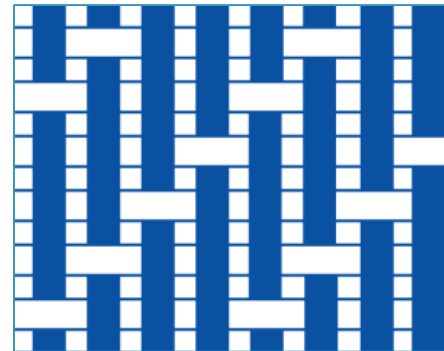
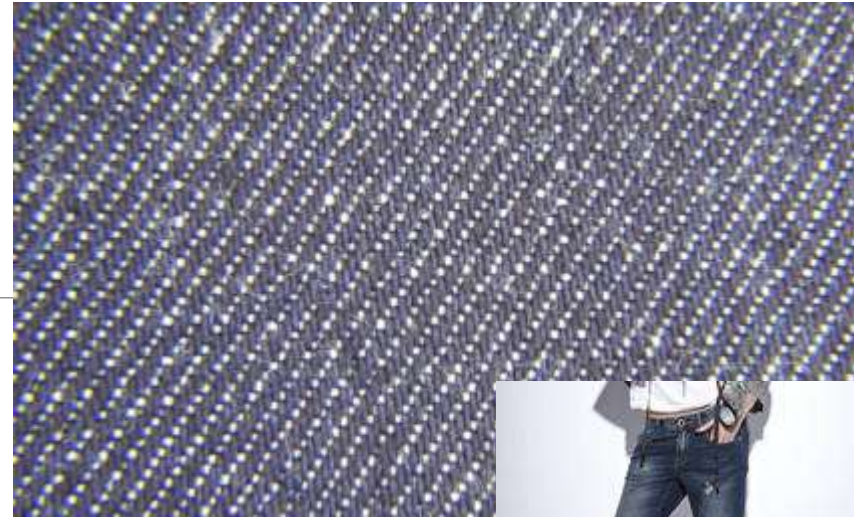
Denim

Denim is cotton fabric made of dyed warp yarns and white weft yarns, woven in twill weave.

Authentic denim is always dark indigo blue.

Denim is tightly woven fabric, usually is middle or higher weight and has relatively high stiffness.

Today is often produced with the addition of elastane fibres (1 - 2%).



How to use:

- ✓ Jeans
- ✓ Skirts
- ✓ Shirts
- ✓ Jackets

Drill

Drill is tightly woven cotton fabric in twill weave.

The fabric is durable and is with a stiff handle.

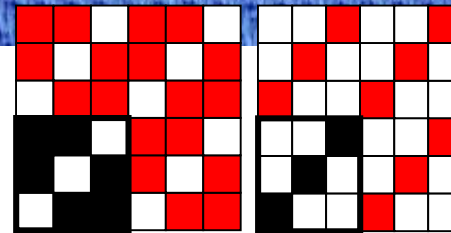
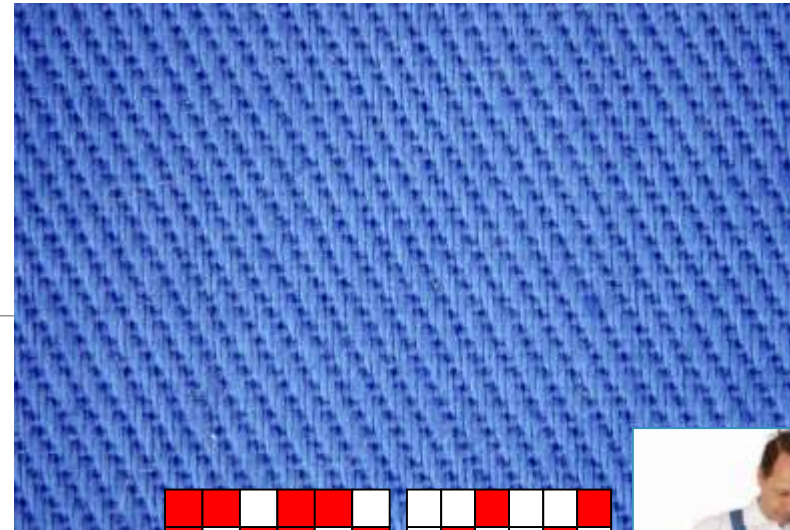
It is made of carded yarns.

The fabric may be bleached, dyed or printed.

It is medium to heavy weight.

Twill weave may be as reinforced twill, broken twill or herringbone twill.

Today is also produced from the synthetic fibres or mixtures cotton/synthetic fibres.



How to use:

- ✓ Work clothes
- ✓ Medical clothes
- ✓ Uniforms
- ✓ Lighter weights for trousers pockets



The cotton drill fabric

Cotton Gabardine

Gabardine is a fine, tightly woven fabric with a distinctive twill line on the face side.

The twill ribbing is steeper than 45° (*it is used the steep twill or high set of warp yarns and less set of weft yarns*).

The fabric has a stiff handle and is middle to heavier weight.

It is usually dyed with one colour.

It is made of combed cotton yarns.



How to use:

- ✓ Trousers
- ✓ Skirts
- ✓ Jackets
- ✓ Shirts
- ✓ Children's wear

Chino

Chino – is durable cotton fabric with noticeable diagonal twill line.

Usually is made of combed, two-ply cotton yarns and mercerized to increase its strength and shine.

It has a slight sheen on the face and a dull back.

The fabric resist snags and abrasions.



Corduroy

Corduroy is a cotton fabric with typical soft pile on the face side that forms lengthwise ribs. The ribs may be vary in size.

The weight of fabrics varies from lightweight shirting fabrics to heavy upholstery goods. Heavier versions tend to have wider ribs.

Corduroy may be solid in colour or printed.

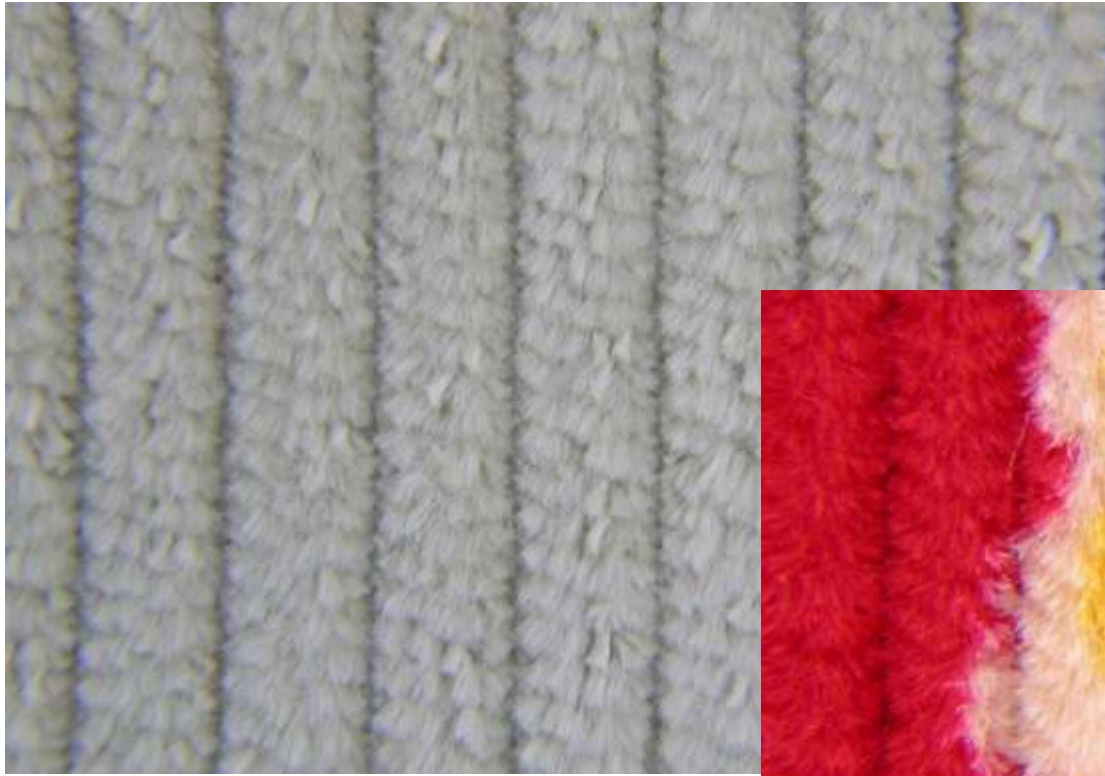
It is a double weft fabric:

- First weft yarns provide (together with the warp yarns) the cohesion of the fabric.
- Second weft yarns created a pile surface (after cutting and finishing).



How to use:

- ✓ Jackets
- ✓ Trousers
- ✓ Skirts
- ✓ Shirts
- ✓ Children's clothing.



- Corduroy's ribs are formed by weaving an extra set of weft yarns. These extra yarns „float“ over three or more warp yarns.
- After weaving, the floats are cut in the middle and later they are brushed to form the pile surface.

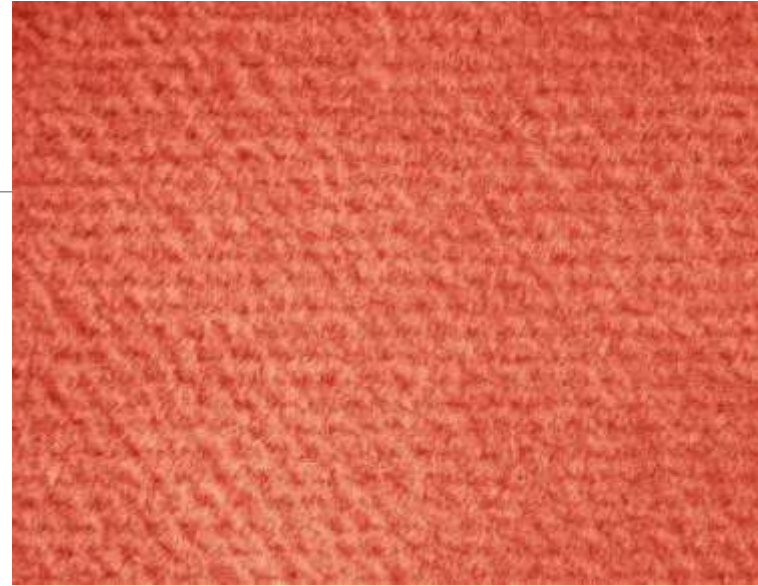
Velvet

Velveteen

Cotton velvet is heavier fabric with soft pile surface, which is formed by extra set of weft yarns (~ weft velvet, velveteen) or extra set of warp yarns (~ warp velvet, velveteen). These extra weft or warp yarns are cut to form the pile.

The pile surface is continuous in the entire area of the fabric.

It is usually dyed with one colour, but may be also printed.



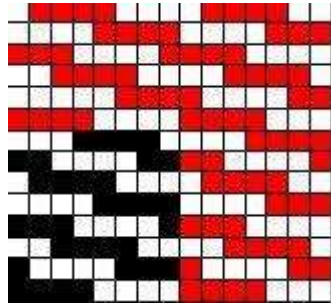
How to use:

- ✓ Bedspreads
- ✓ Draperies
- ✓ Female clothes



Velvet fabric

Duvelyn

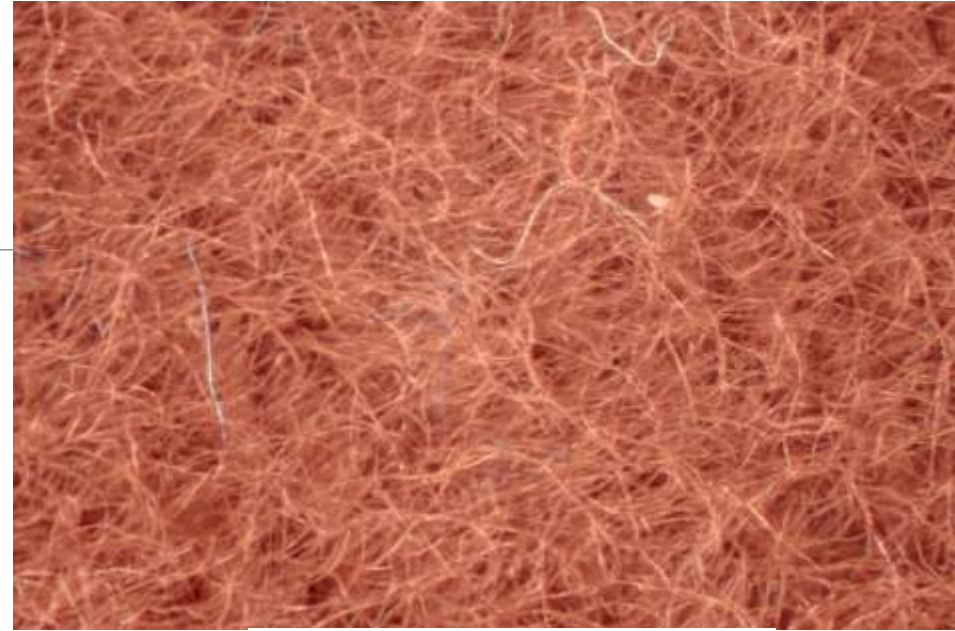


Duvelyn is a heavier cotton fabric, which has a very soft touch. The soft touch is due to the pile surface on the face side of the fabric.

Unlike velvet the pile surface of duvelyn is created only by raising (not by additional set of yarns).

It is woven always in the satin weave.

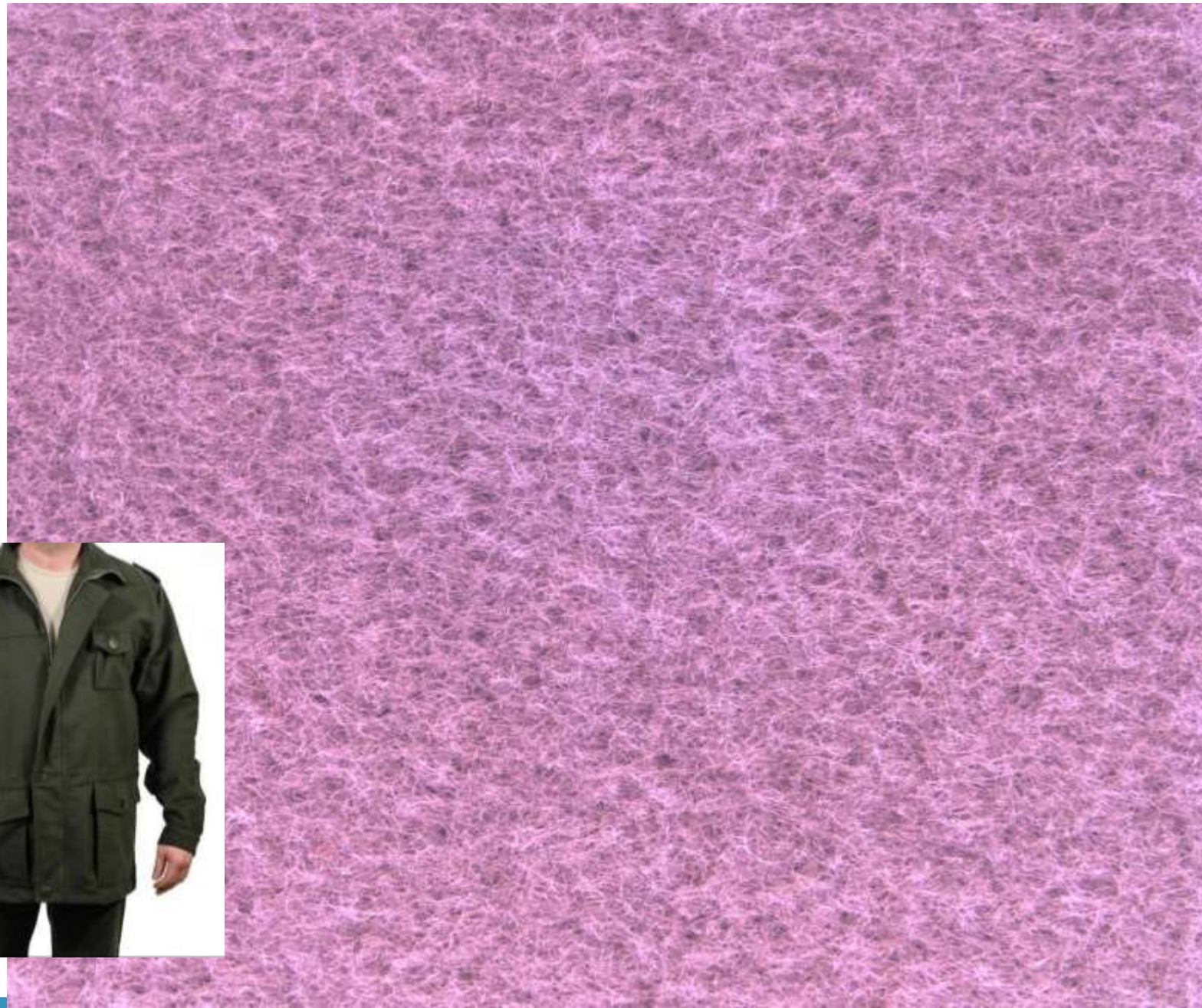
It is dyed with one colour or printed.



Duvelyn fabric in detail

How to use:

- ✓ Trousers
- ✓ Skirts
- ✓ Jackets
- ✓ Children's clothing



Damask

Usually fabric of one colour, reversible, woven on a jacquard loom. Pattern is great and often includes complicated floral or figured motives.

Warp and weft satin weaves alternate and create patterns with contrasting shine.

Either side of the fabric may be used as the face, but the right side is usually considered to be the side on which the warp floats form the pattern.

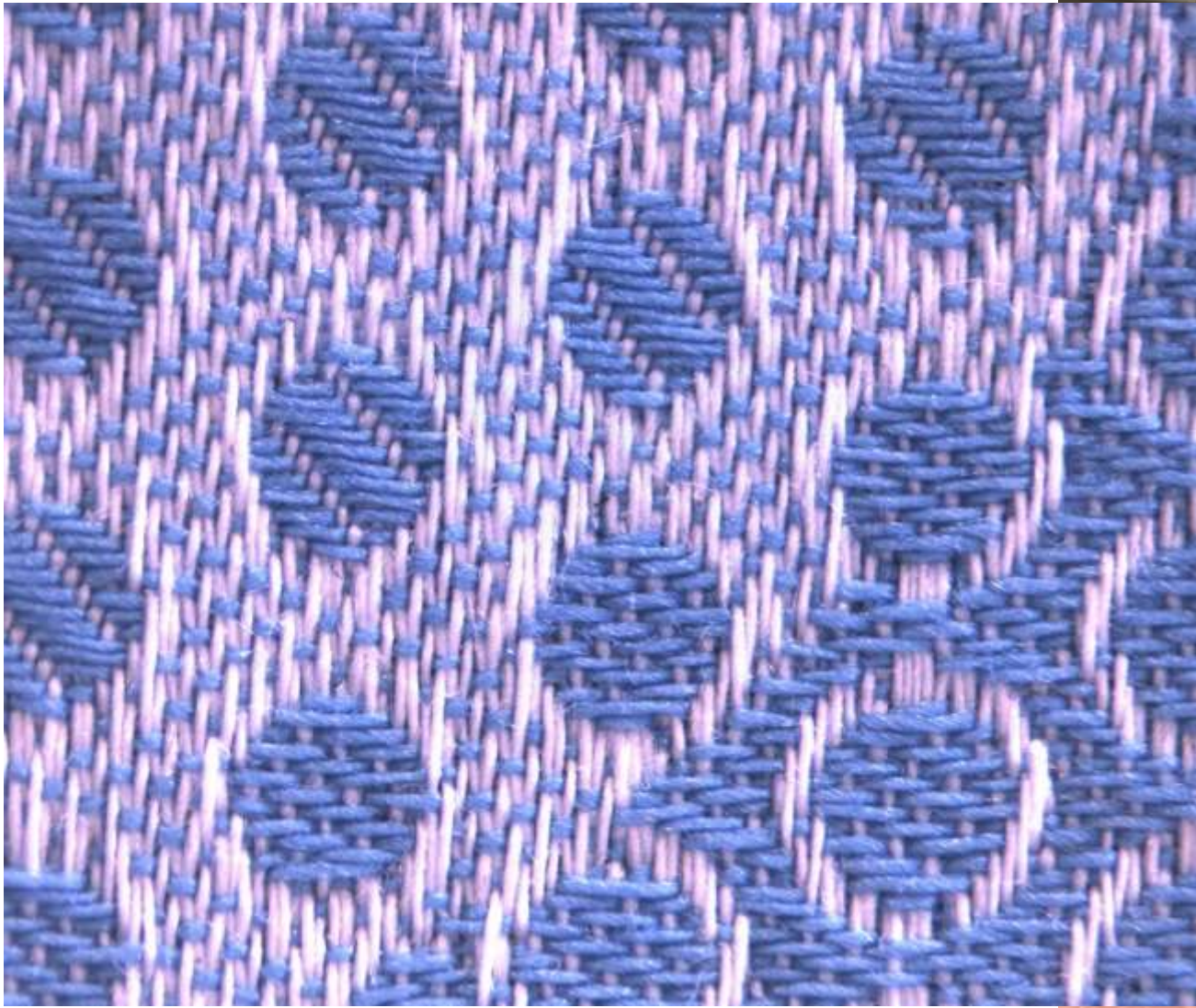
The damask is usually medium weight.

It is made of a fine single yarns (*often mercerised*).



How to use:

- ✓ Table clothing
- ✓ Bed clothes
- ✓ Draperies
- ✓ Upholstery



Damask for bed clothes

Cotton Sateen

Sateen is smooth cotton fabric with a soft shiny face side and with a dull back side.

It is made of fine yarns, with high sett of yarns and in a satin weave.

Sateen gets its shine from the weave, because the yarns float on the face side.

Threads can be mercerized to increase the shine.

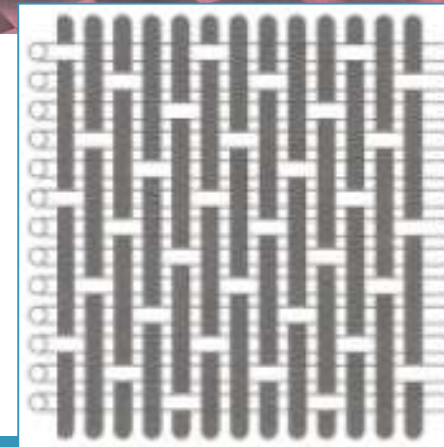
Shine can be increased also by finish on the friction calender.

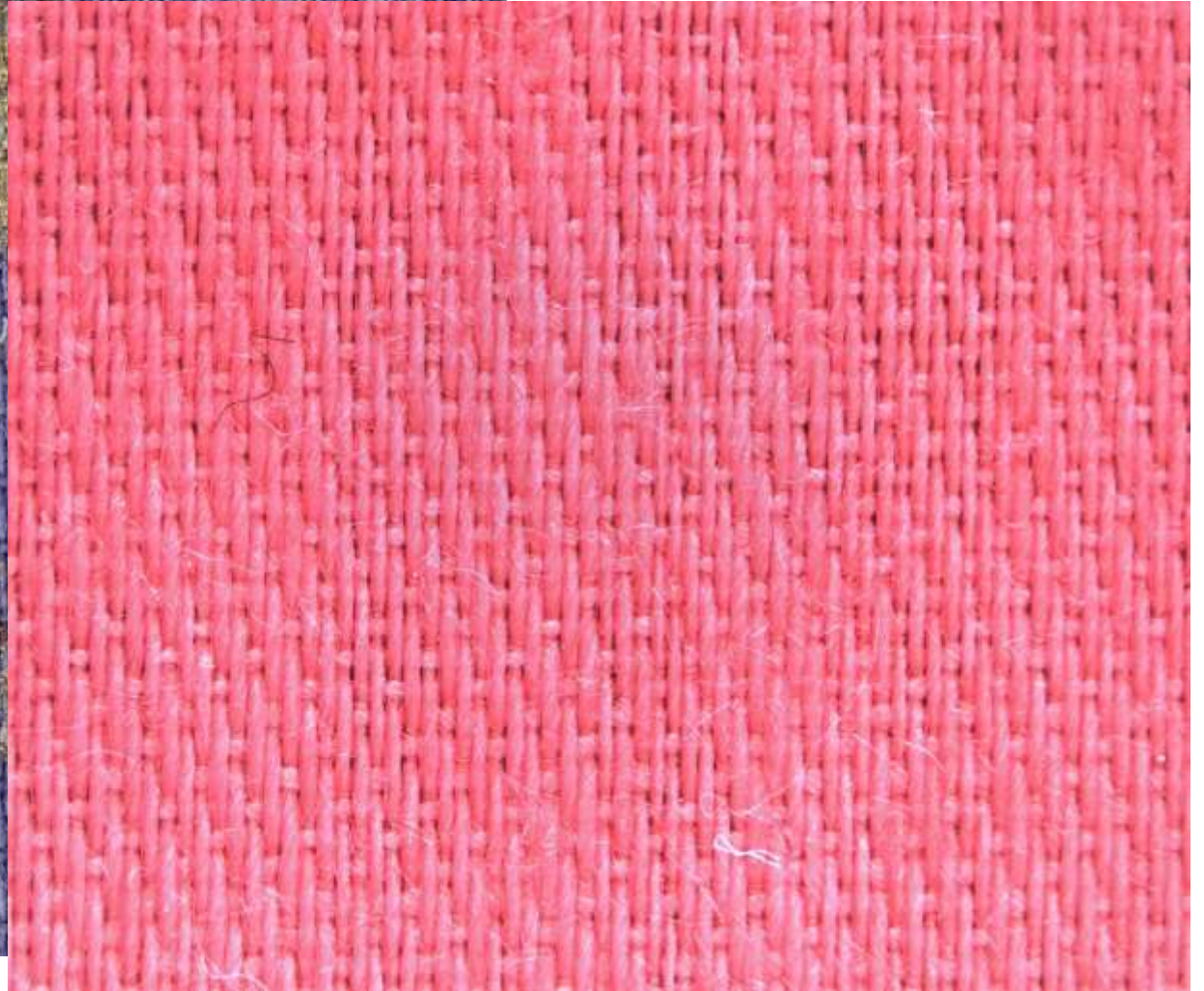
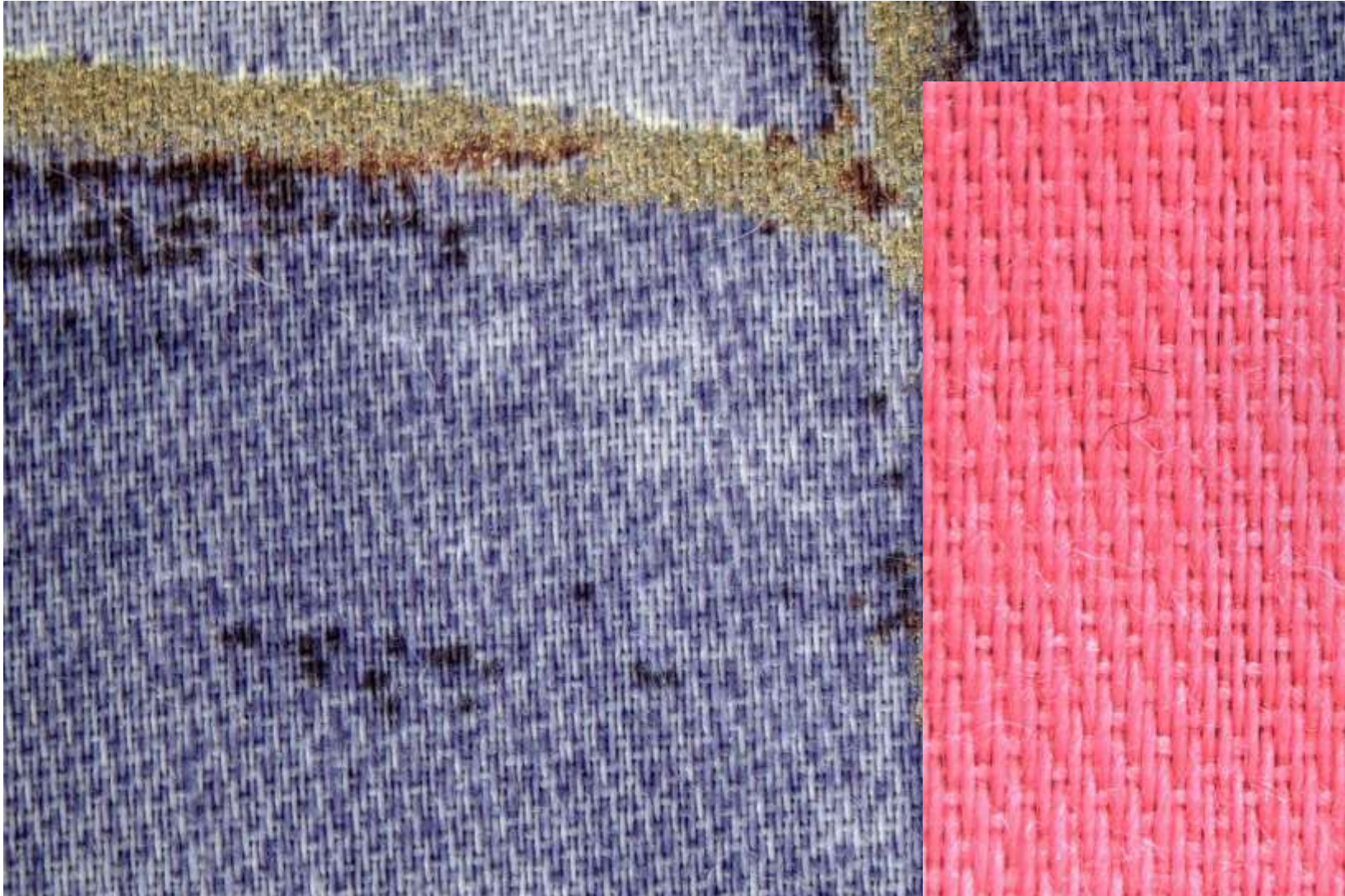
Sateen may be printed or dyed with one colour.



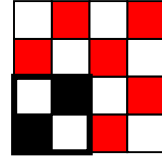
How to use:

- ✓ Dresses
- ✓ Bed clothes





Cotton sateen in detail



Caustic soda crepe

It is a cotton fabric in plain weave, which is printed by caustic soda solution – usually in the form of stripes.

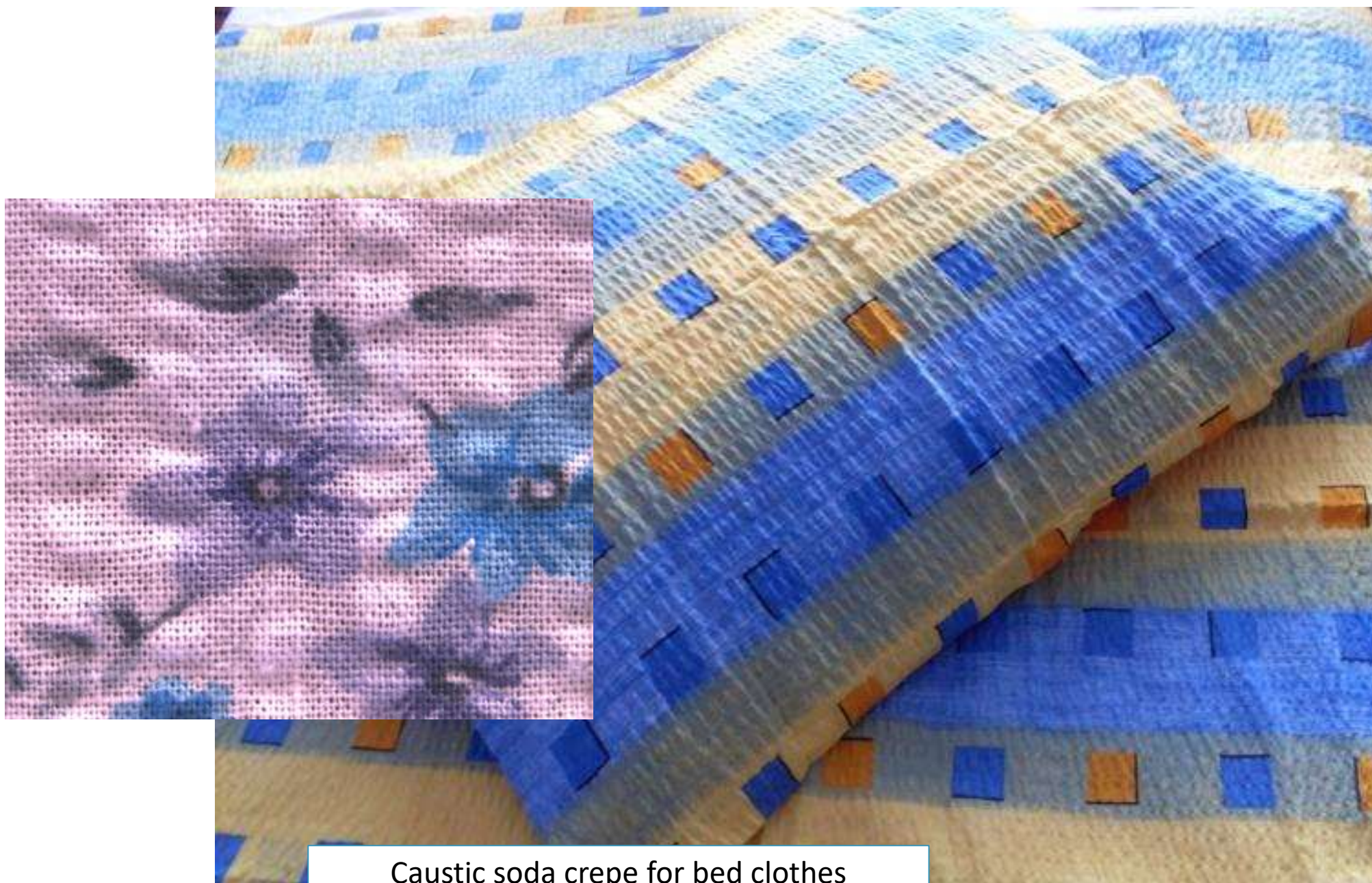
Strips, which are treated with sodium hydroxide are shortened, causing pucker of strips untreated.

Caustic soda crepe may be printed or dyed with one colour.



How to use:

- ✓ Children's clothing
- ✓ Pyjamas
- ✓ Nightshirts
- ✓ Bed clothes

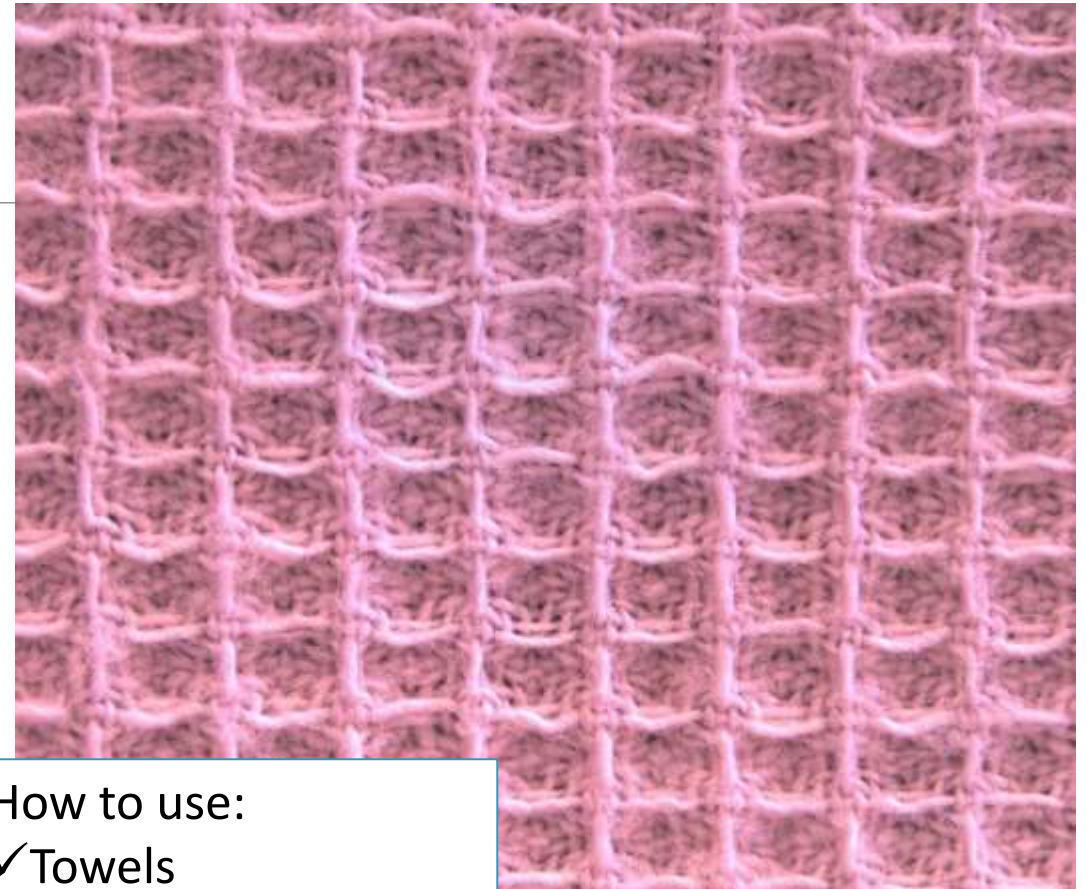
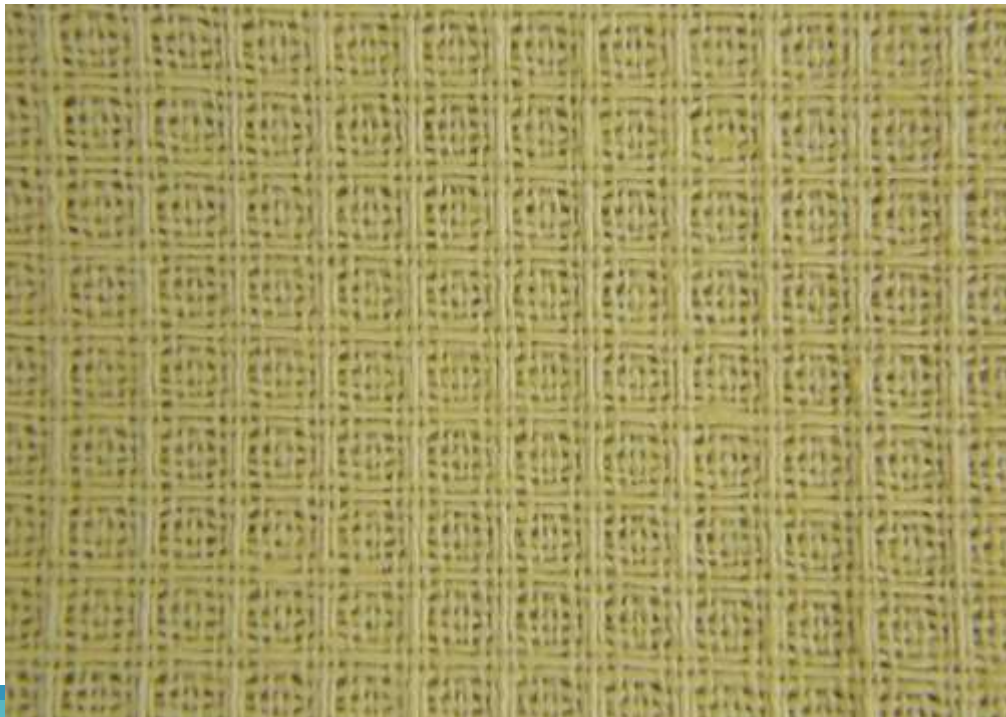


Caustic soda crepe for bed clothes

Cotton cellular fabric

The fabric is characterized by its weave.

A relief geometric pattern is evident on the fabric surface.



How to use:

- ✓ Towels
- ✓ Dishcloths
- ✓ Bed clothes
- ✓ Bathrobes

Bohemian ticking

Bohemian ticking – a feather-proof pillow ticking made with a tight plain weave and given a calendered, waxed finish.



Usually a solid color fabric - blue, pink or natural white.

It used for feather-filled pillows and duvets.



Terry fabric

Cotton fabric with uncut loops on the one side or on the both sides.

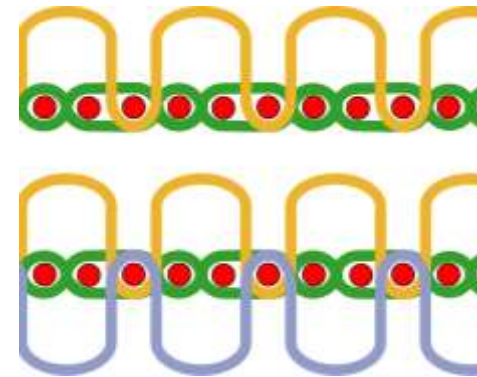
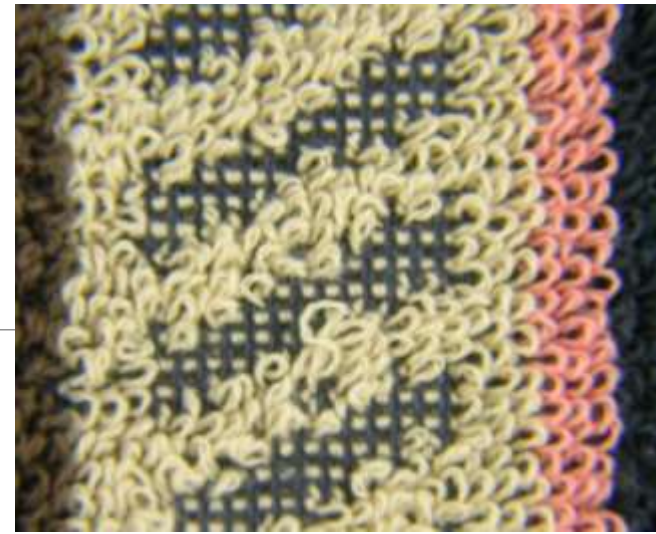
The loops are formed by insertion extra warp yarns into the plain or twill background weave.

It is made of double twisted yarns.

The loops may cover the entire surface of the fabric or may be in the form of stripes, checks or other designs.

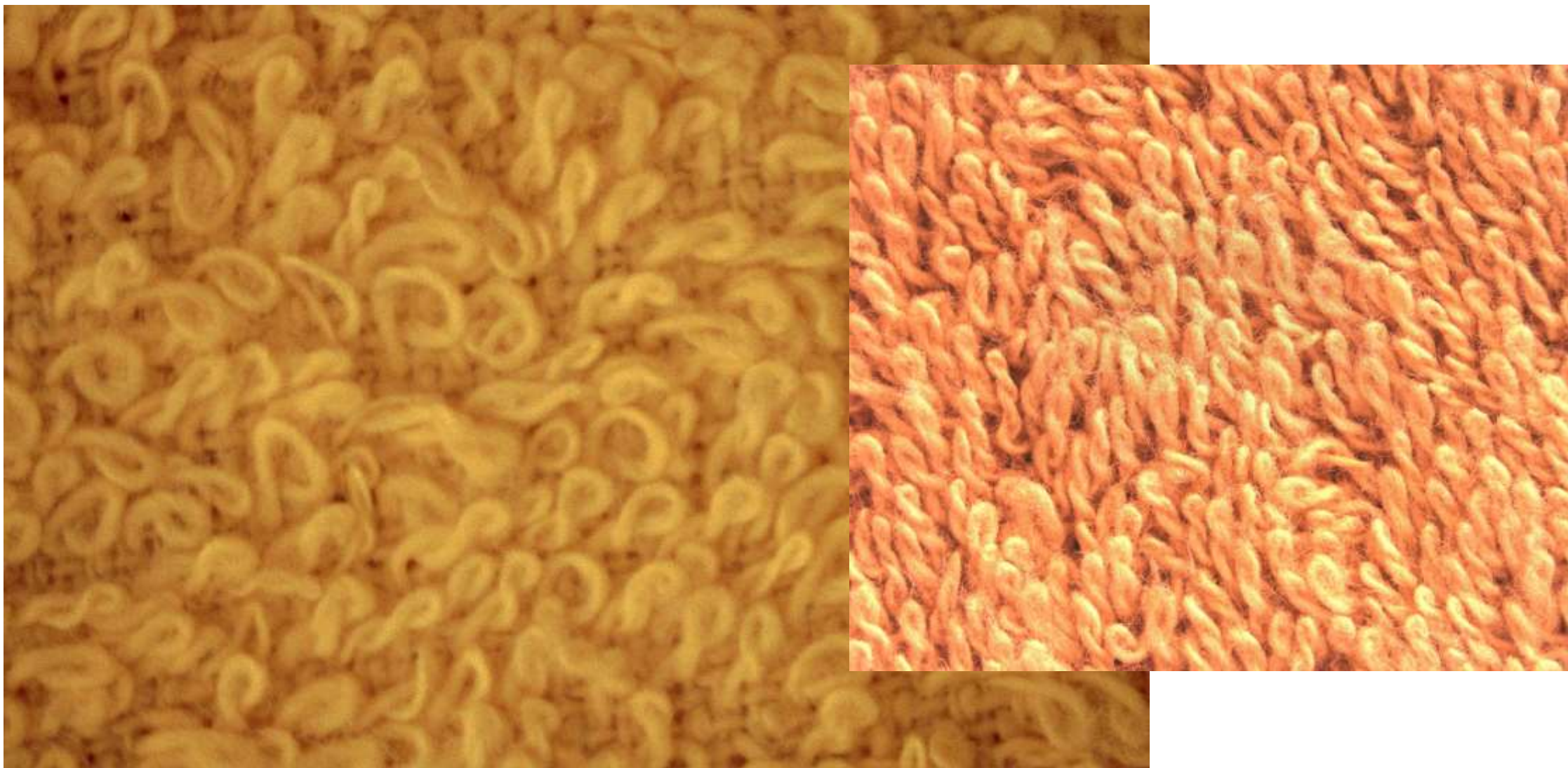
The fabric is very absorption and has very soft touch.

It is usually high weight.



How to use:

- ✓ Towels
- ✓ Bathrobes
- ✓ Washcloths



Terry fabric in detail

Tetra diaper fabric

diaper fabric

The fabric has very soft handle.

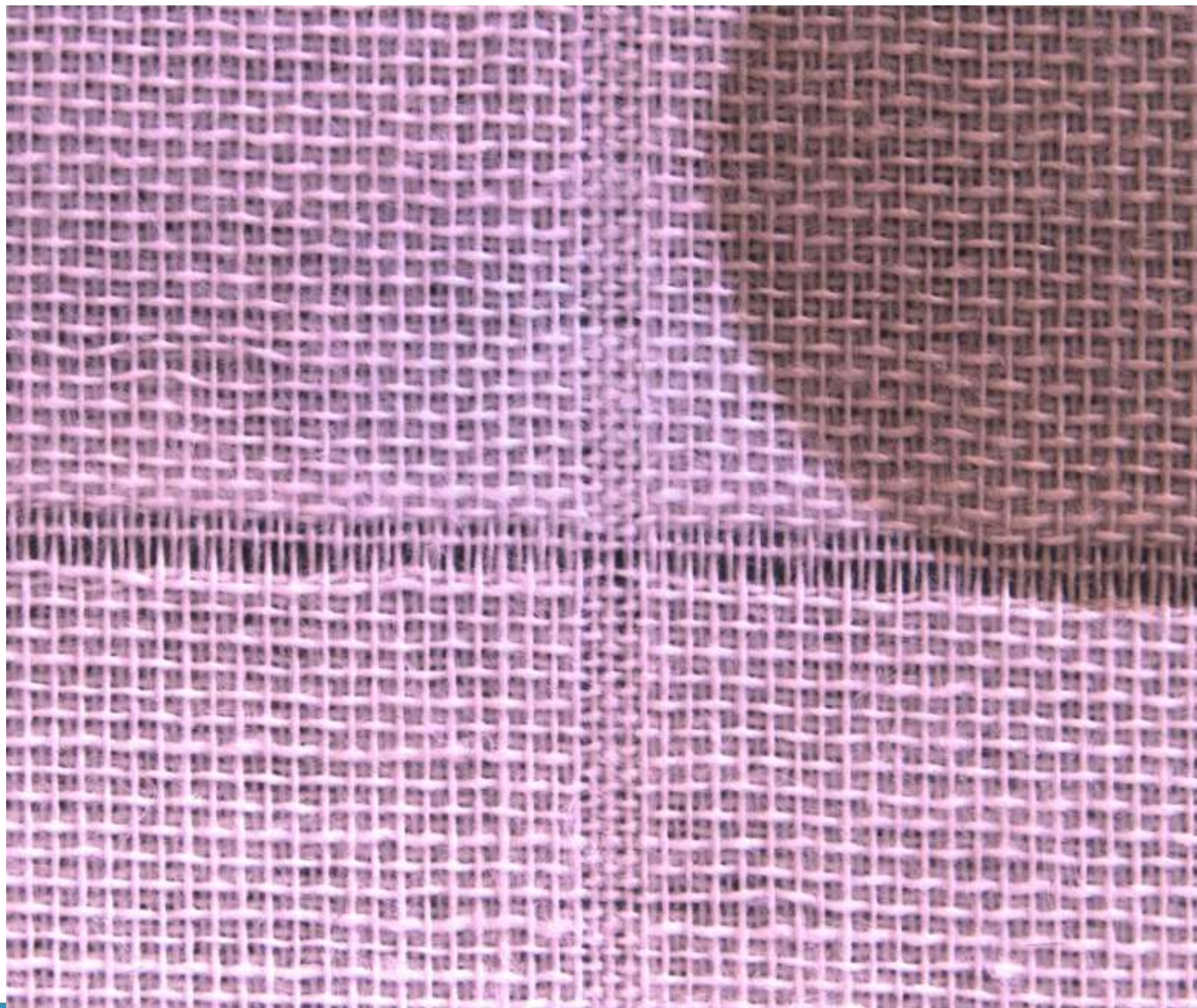
It is made of a little twisted yarns and it is very absorbent.

It is the fabric with cavities – is woven as two fabrics one above the other, which are connected in the contours of pattern motifs (*squares*).

How to use:

- ✓ Diapers
- ✓ Towels





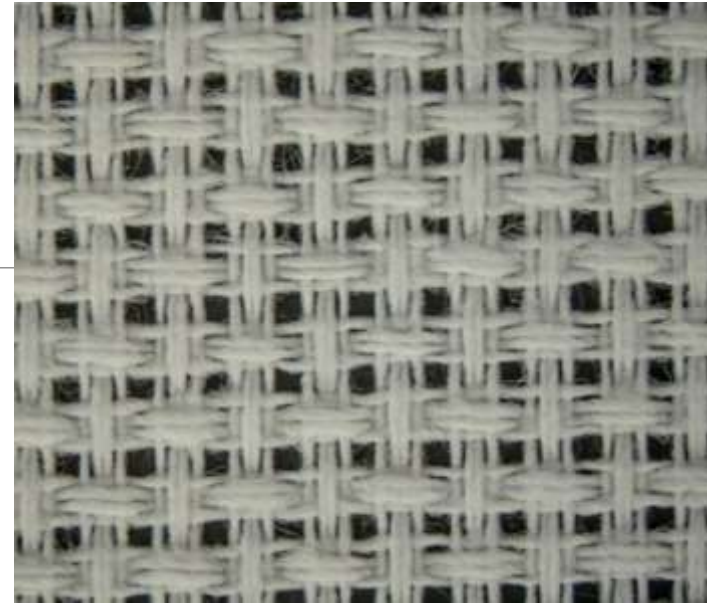
Embroidery canvas

It is cotton fabric with the characteristic appearance of the grid.

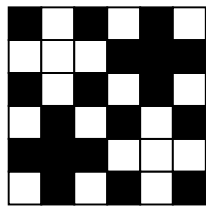
Is woven in the canvas weave and is stiffened.

Is white or dyed with one colour.

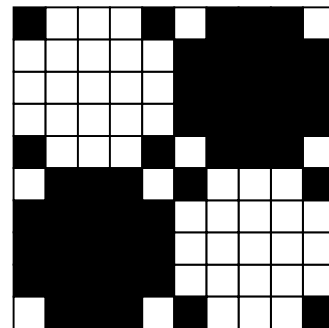
It is used as the basis for cross stitch hand embroidery.



Embroidery canvas



Canvas weaves



Cross stitch embroidery

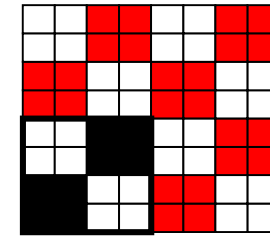
Embroidery basket

It is a cotton fabric with the characteristic appearance of the grid.

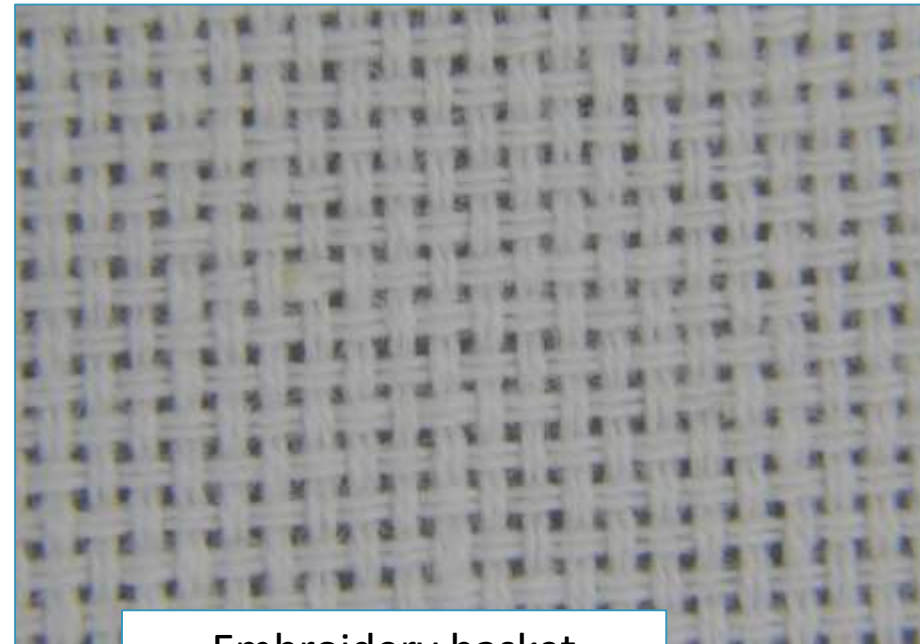
Is woven in the basket weave and is stiffened.

Is white or dyed with one colour.

It is used as the basis for cross stitch hand embroidery.



Basket weave



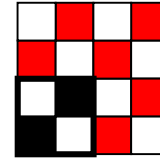
Embroidery basket

Blue print fabric

It is the traditional Czech technique.

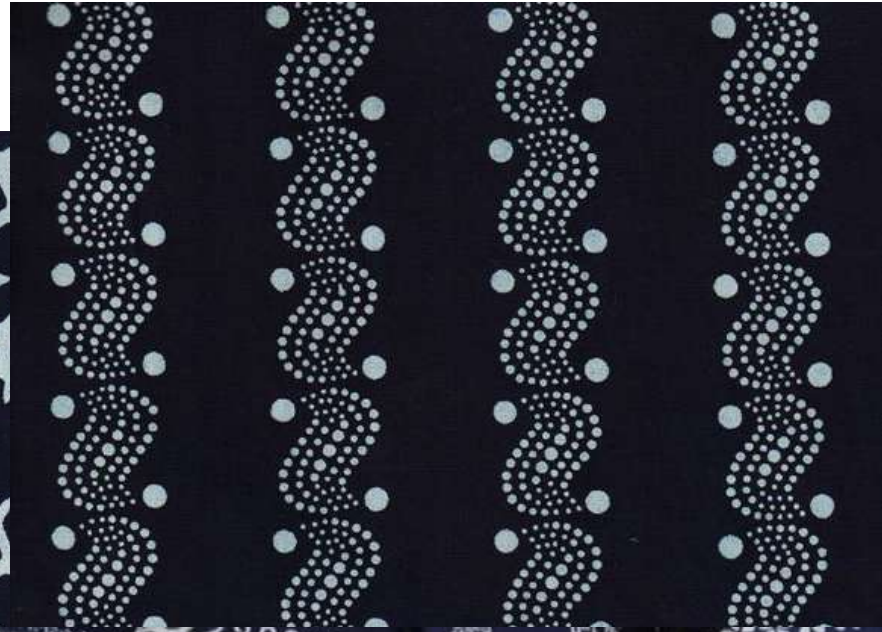
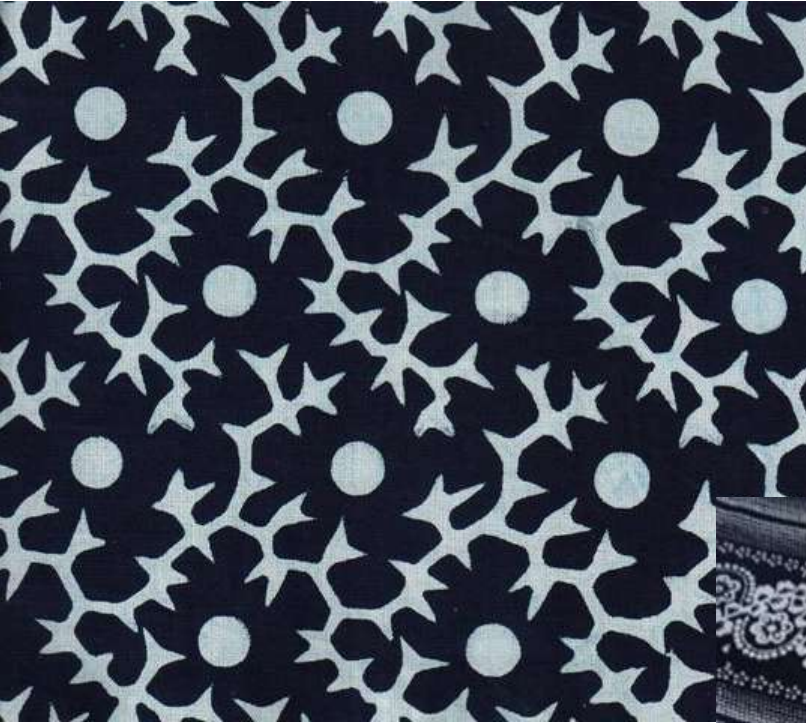
Production is based on the principle of **resist printing**:

First, the chemical solution is printed on the fabric (according to the pattern). This solution prevents the subsequent dyeing of the fabric. The fabric is always dyed dark indigo blue colour.



How to use:

- ✓ Dresses
- ✓ Gift articles
- ✓ Home textiles
- ✓ Souvenirs



Canvas

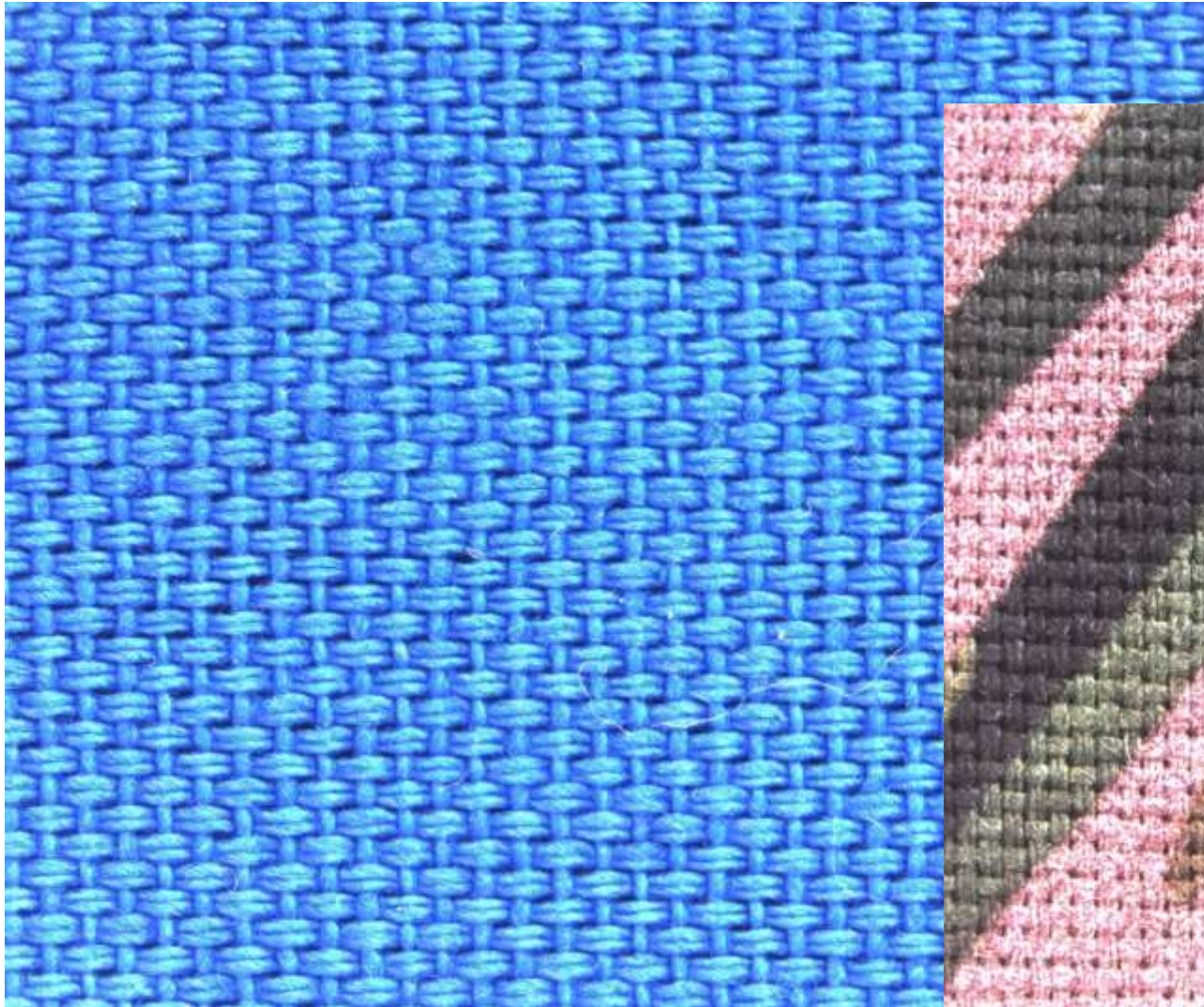
General term used to describe a variety of stiff, heavy, durable fabrics, originally made of linen or hemp and used for sails.

Today, canvas is usually made of cotton, with tight plain weave and 2 or more - ply yarns.

It is often provided with water-repellent or mildew-resistant finishes.



- How to use:
- ✓ Tents
 - ✓ Awnings
 - ✓ Bags
 - ✓ Sails
 - ✓ Upholstery



The task for you:

Choose from a bunch of samples:

- 3 samples of **POPLIN** fabric
- 3 samples of **FLANNEL** fabric
- 3 samples of **CORDUROY** fabric
- 3 samples of **DAMASK** fabric
- 3 samples of **DUVETYN** fabric
- 3 samples of **CAUSTIC SODA CREPE** fabric
- 3 samples of **VELVET** fabric
- 3 samples of **PIQUÉ** fabric

