

Knowledge of Textile Goods

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Lesson No. 5: [Typology of wool-type woven fabrics](#)

Wool fabric - characteristics

Fabric is made of wool fibres.

The wool fibres are hair of various animals (*sheep, goat, camel, rabbit, alpaca*).

The fabric has some typical properties:

- Fabric has excellent thermal-insulation properties
- Fabric is warm to the touch
- Fabric is often harsh to the touch
- Fabric has a matte appearance
- Fabric has excellent flexibility
- Fabric has excellent sorption properties



Wool has a natural waviness, called crimp.

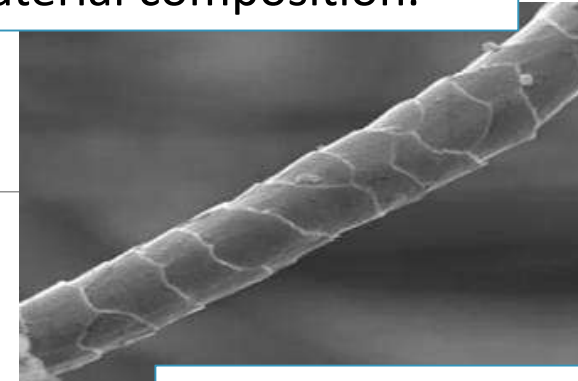


Microscopic view

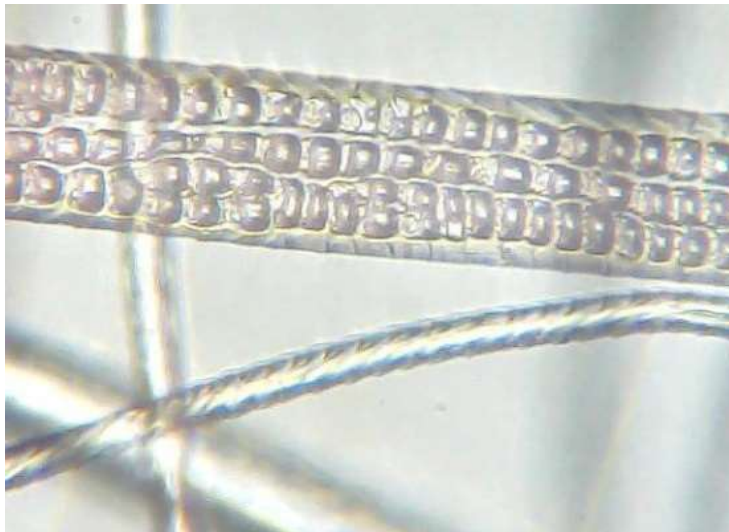
The thin overlapping scales are visible on the fiber surface.

In the cross-section view the sheep wool fiber has approximately circular shape.

For the precise determination of the material composition.



Thanks to the scales, the wool felts!



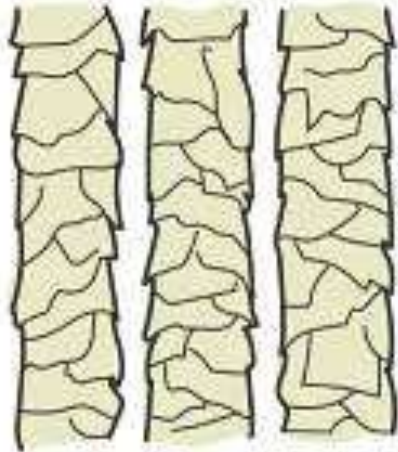
The rabbit hair



The sheep hair

The scales vary in size, shape and quantity.

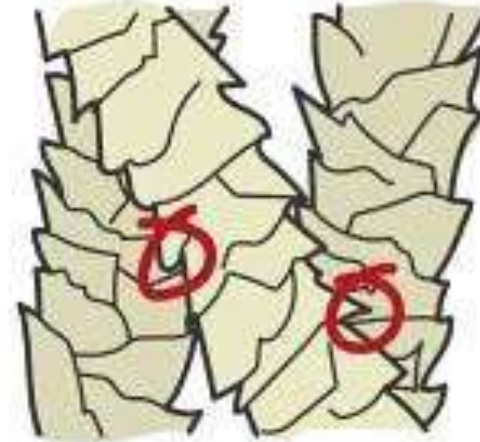
Wool Fibres



Wool fibres are covered in microscopic scales.



Felted Fibres



Due to the effect of heat, moisture and friction, the scales hook together, resulting in a strong bond.

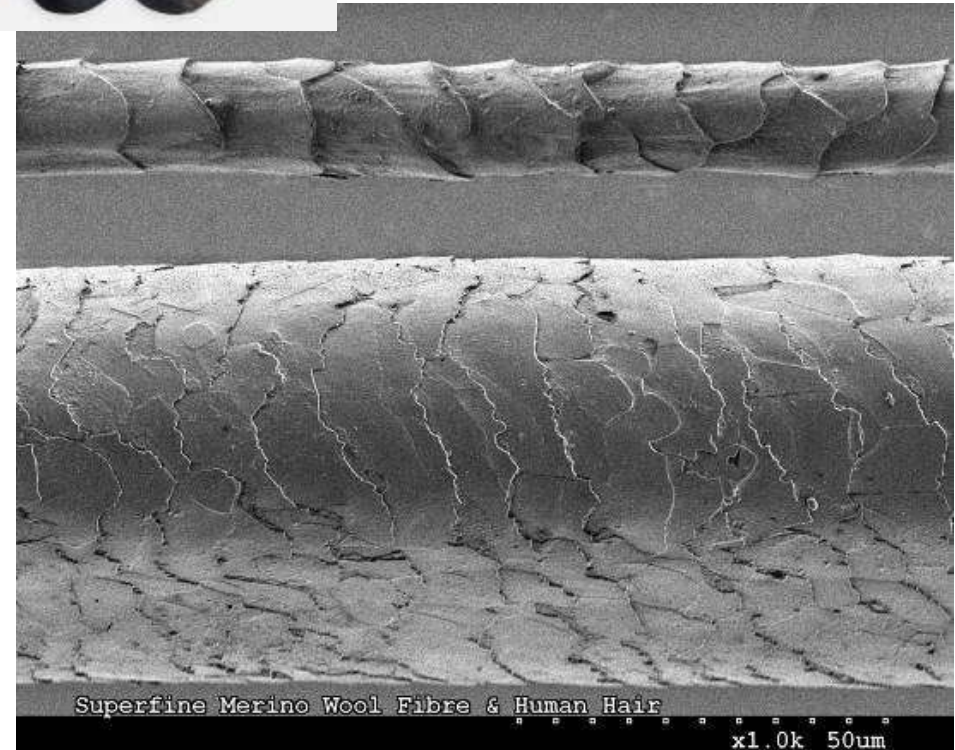


Merino wool

Merino wool – is the most fine wool comes from merino sheep and it is used to produce worsted yarns and high quality fabrics.

Often is used also for the production of functional underwear.

The textile products made of merino wool are usually characterised their higher price.



Fabric of wool-type

It can be made of:

- Wool fibres
- Chemical fibres
- Fibre blends (wool and chemical fibres)

The yarns must be produced using the wool spinning technology (woollen or worsted).

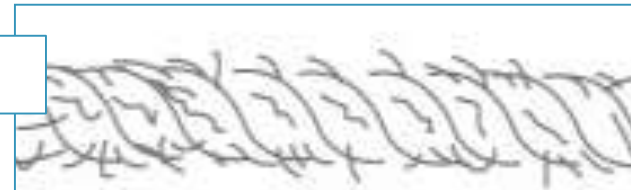
The fabric of wool-type always reminds the wool fabric – it has similar appearance and similar properties (only similar!).

They do not have such excellent thermal insulation properties and are not as flexible.



Types of yarns

The woollen yarn



The worsted yarn



Woollen yarn:

- It is spun from shorter fibres, which protrude out in all directions.
- It is usually spun as a single yarn.
- It is thicker and more loosely twisted than worsted yarn.
- The fabric is warm and **harsh to the touch**.



Worsted yarn

- It is spun from longer fibres, which are combed parallel to each other.
- It is often produce as double twisted yarn.
- The fabric is fine and with smooth surface and is **more comfortable to the touch**.





HOMESPUN – typical use of woollen yarns



TROPICAL – typical use of worsted yarns

Typical use of woven wool fabrics

- Fabrics for women's costumes and men's suits
- Fabrics for coats
- Fabrics for scarves
- Fabrics for blankets

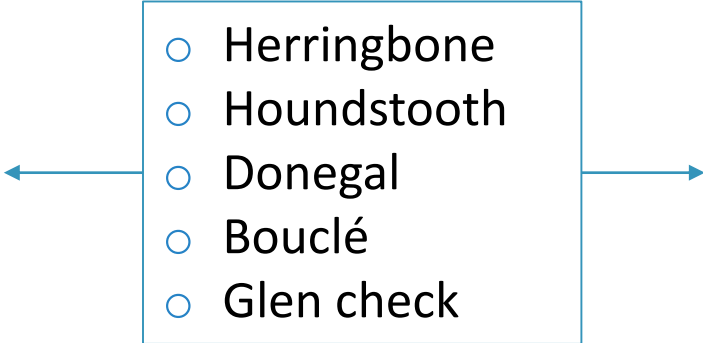


Selected types of wool fabrics

LIGHTER FABRICS FOR:

SUITS, COSTUMES, DRESSES, SCARVES

- Wool crepe
- Wool satin
- Pepita
- Scottish tartan
- Cashmere
- Wool flannel
- Wool gabardine
- Cavalry twill
- Tropical
- Wool voile

- 
- Herringbone
 - Houndstooth
 - Donegal
 - Bouclé
 - Glen check

HEAVIER FABRICS FOR:

COATS, JACKETS, BLANKETS

- Chenille fabric
- Plaid
- Tweed
- Homespun
- Cloth
- Velour
- Melton
- Loden cloth
- Double fabric
- Camel's hair

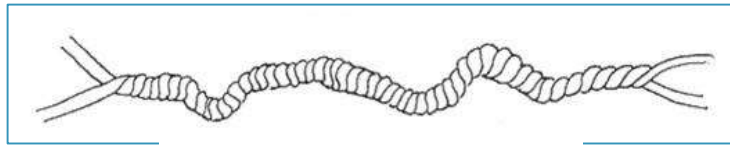
Wool crepe

The fabric is characterised by its grainy surface, which is caused by:

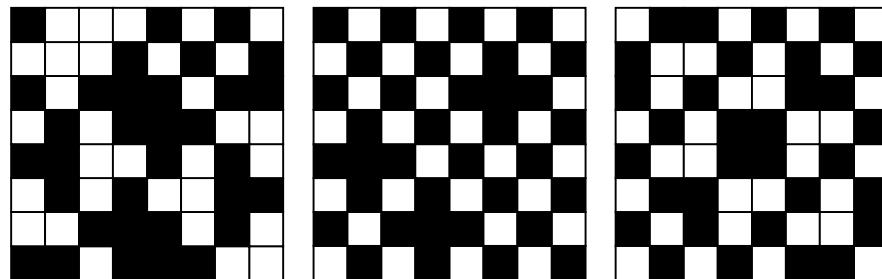
- The use of crepe weave
- The use of crepe yarns

+ Combination of both

The fabric is usually a middle weight.



Crepe yarn



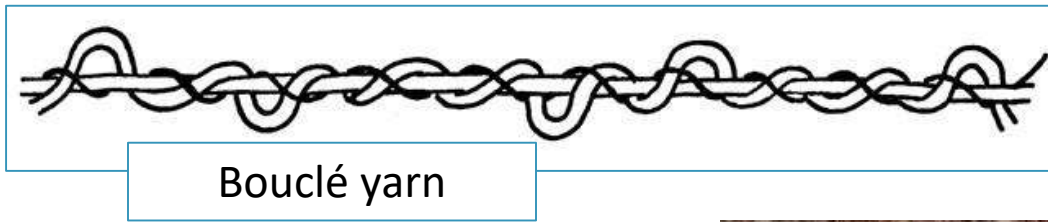
Examples of crepe weaves

How to use:

- ✓ Dresses
- ✓ Blouses
- ✓ Skirts
- ✓ Women's suits



Wool crepe



Bouclé

Bouclé is the fabric made of woollen or worsted fancy yarns, which are characterized by loops, knots or curls on their surface.

Sometimes the bouclé yarns alternate with the plain yarns.

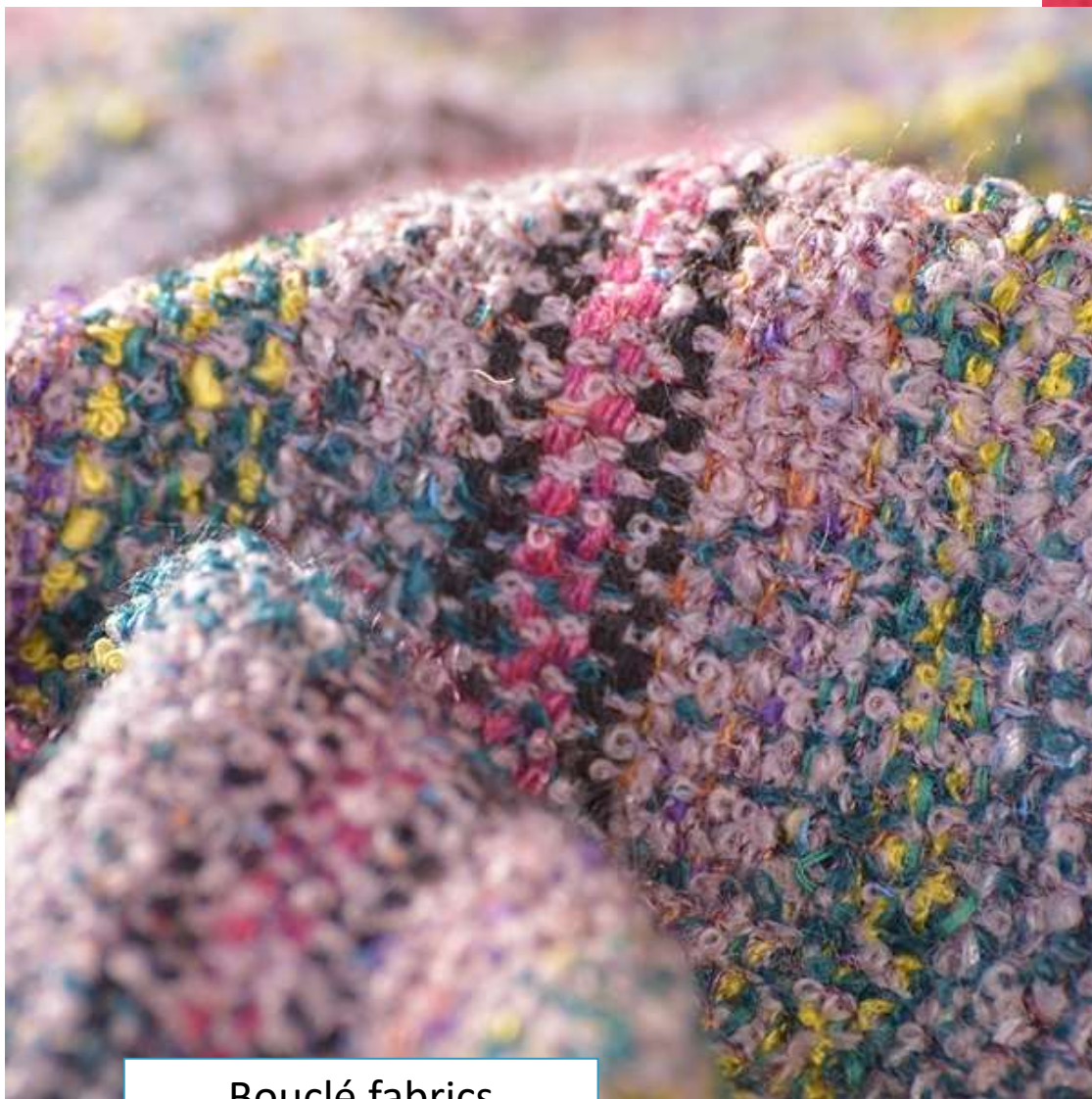
The fabric varies in weight from middle to very heavy.

Fabric may be a one-coloured or woven with pattern (e.g. check, stripe, dogstooth).



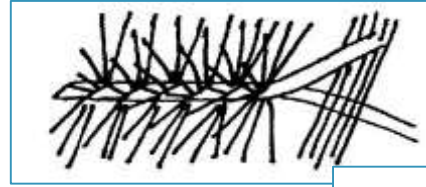
How to use:

- ✓ Jackets
- ✓ Coats
- ✓ Women's suits



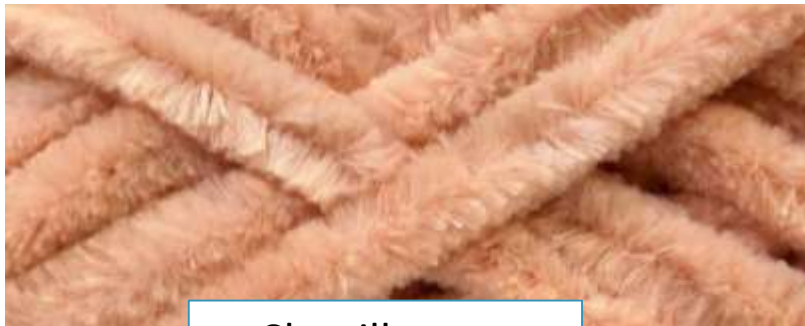
Bouclé fabrics

Chenille fabric

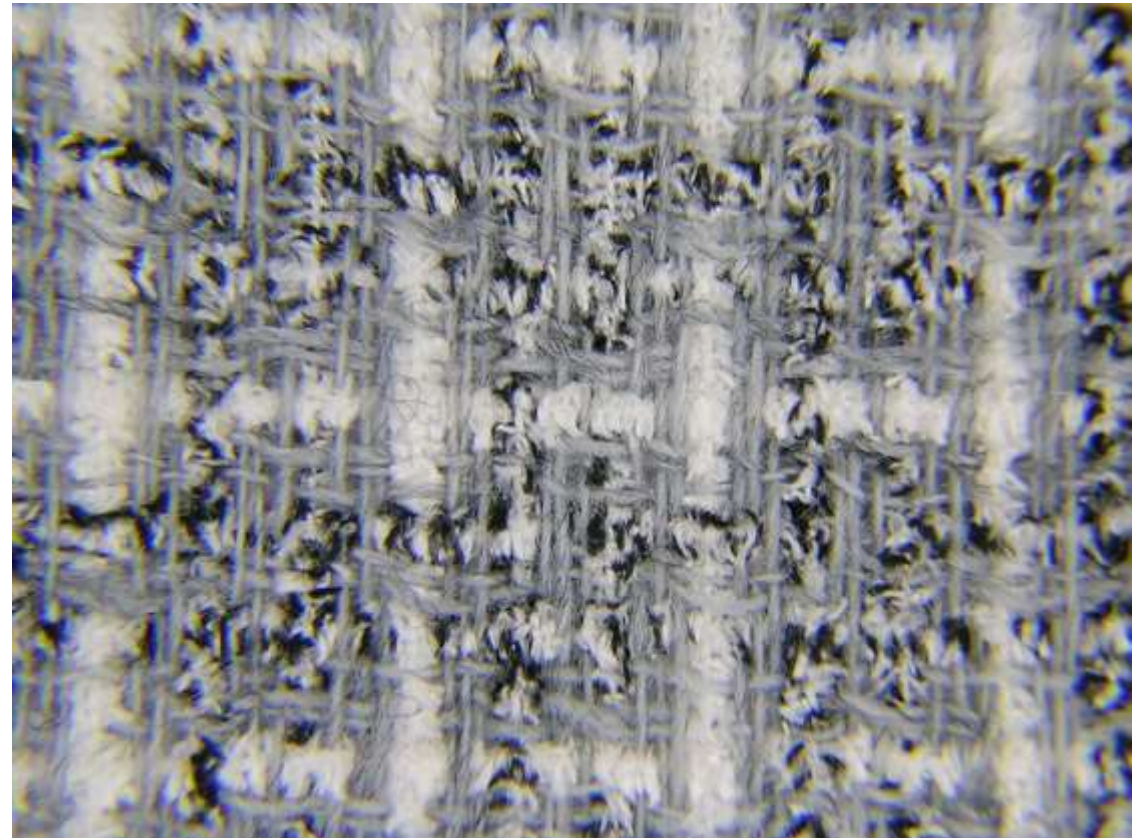


Chenille yarn

- The soft fabric with a fine pile surface, which is caused by the using the chenille yarns for the weaving.
- The chenille yarns may be alternated with the plain yarns or bouclé yarns.
- It is middle to heavier weight and may be one- coloured or with the woven pattern.



Chenille yarn



Wool satin

It is suiting fabric.

The fabric is characterised by its smooth surface.

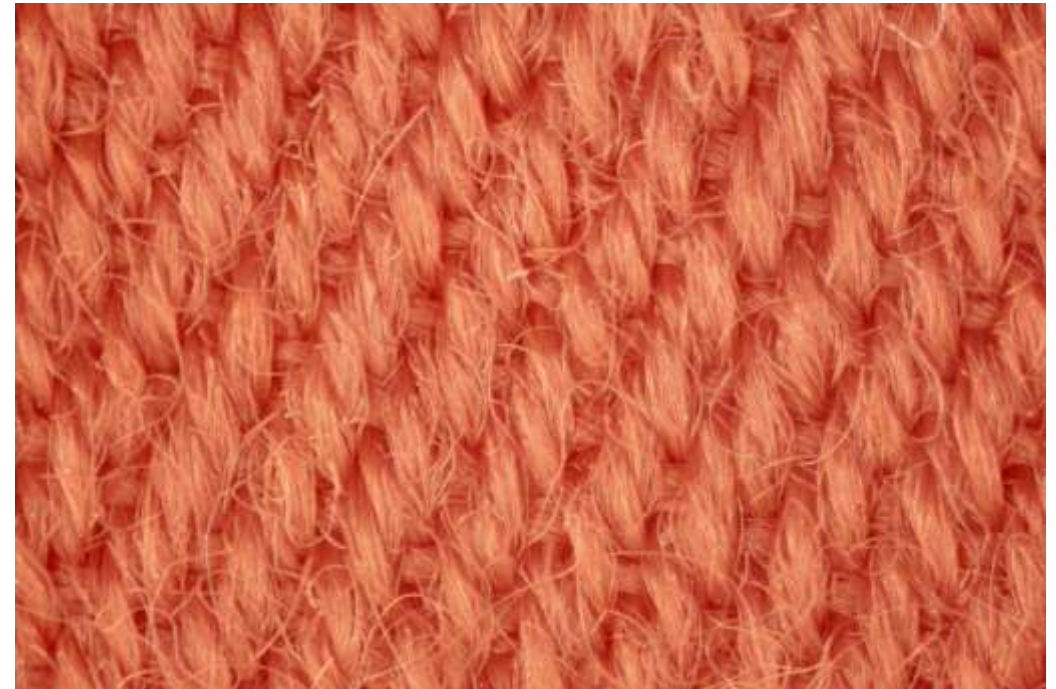
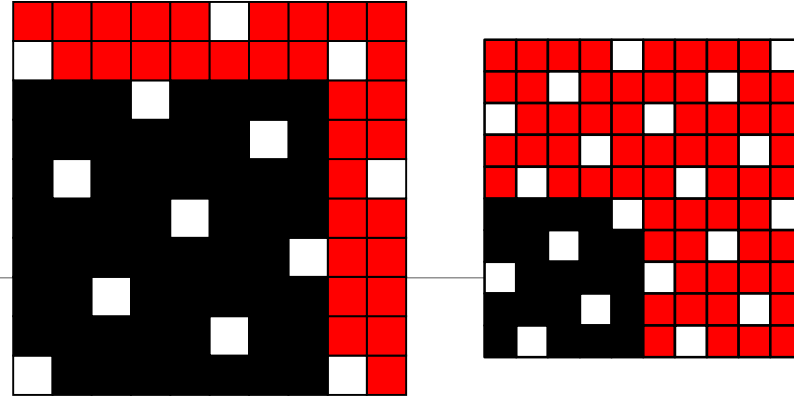
It is tightly woven in the warp satin weave.

It is without pile and without pattern.

It is usually middle weight and it is made of worsted yarns.

How to use:

- ✓ Suits
- ✓ Jackets
- ✓ Skirts
- ✓ Trousers



Herringbone

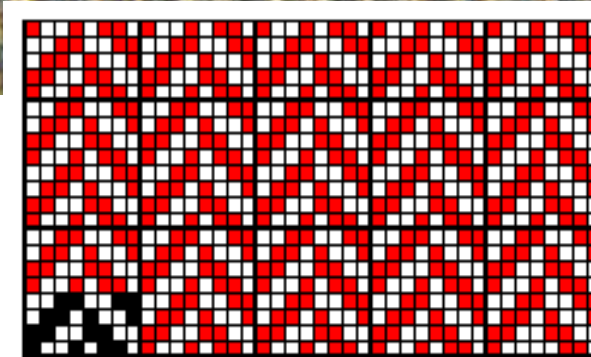


Fabric is woven in the herringbone twill weave and the drawing of weave is underlined by using contrasting colours of yarns in the warp and in the weft.

The weight of fabric varies.

The fabric may be made of woollen or worsted yarns.

The herringbone pattern is dominant feature of this fabric.



How to use:

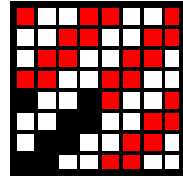
- ✓ Jackets
- ✓ Suits
- ✓ Skirts
- ✓ Coats
- ✓ Caps



Herringbone fabrics



Houndstooth



Dogstooth

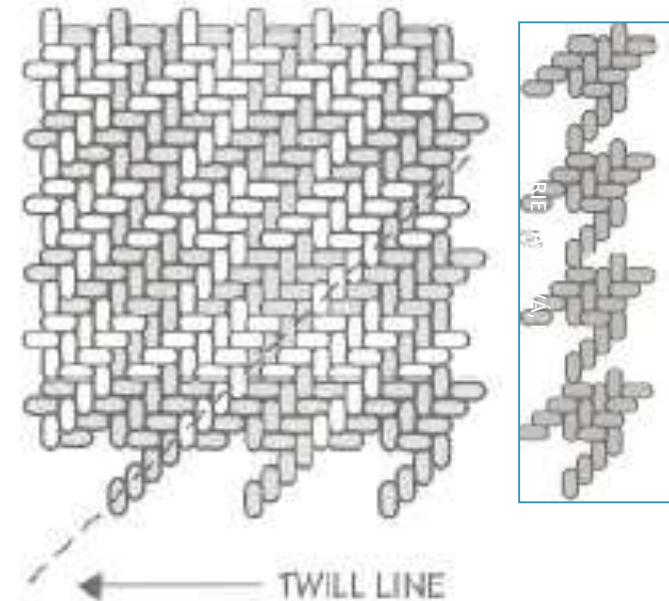
It is a fabric with dogstooth pattern.

It can vary in quality – it may be made of woollen or worsted yarns, it may be light to heavy weight.

The pattern is created using a two-up, two-down twill and using two contrasting colours of yarns, which alternate usually in the ratio 4:4 or 6:6.

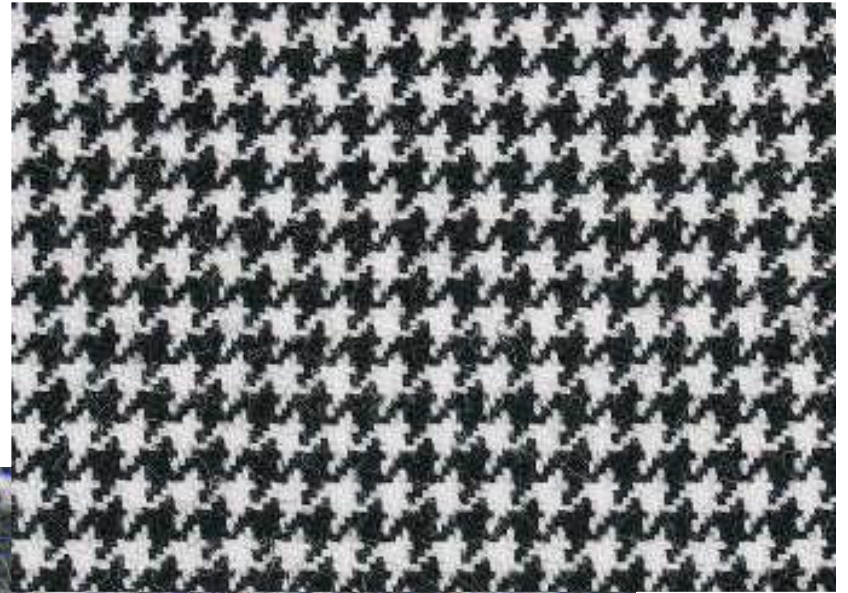
The houndstooth pattern is dominant feature of this fabric.

The checks vary in size – always more than 0.5 cm.





Houndstooth fabrics



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Glen check

Glen plaid

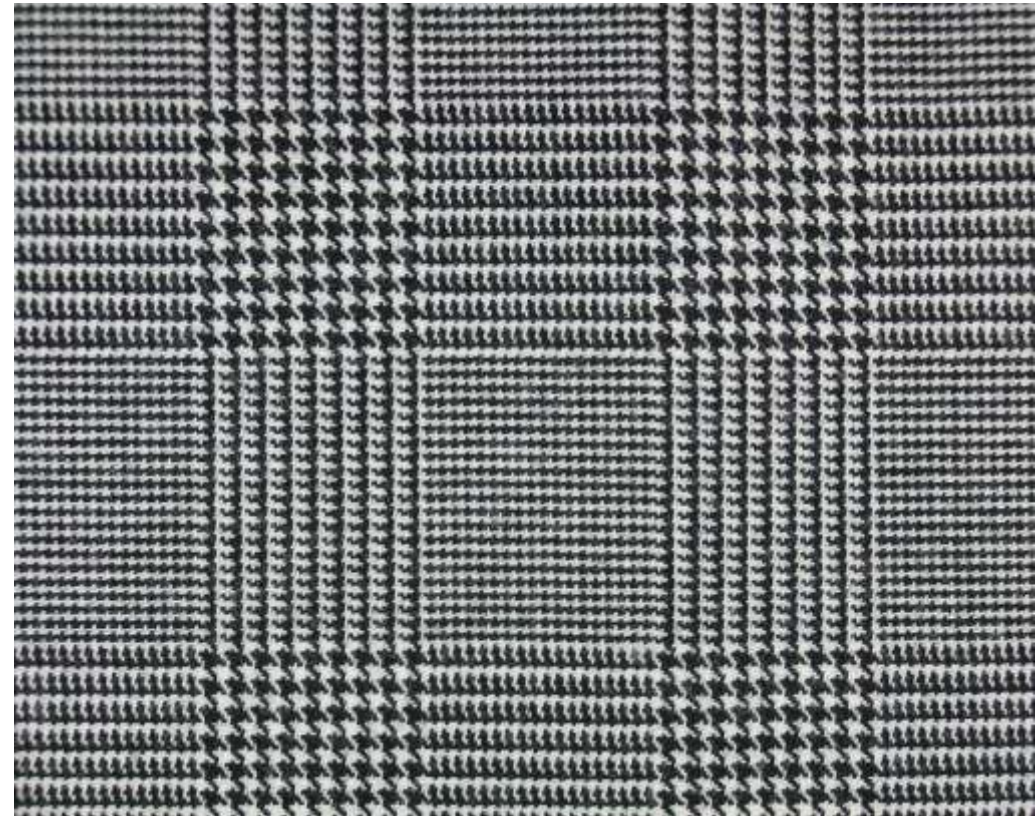
The fabric may be made of woollen or worsted yarns and may be of various weight.

The glen check pattern is dominant feature of this fabric.

The pattern can be of various size and various colours.

How to use:

- ✓ Jackets
- ✓ Suits
- ✓ Skirts
- ✓ Coats
- ✓ Caps





Scottish Tartan

The tartan may be a type of plaid, but not all plaids are tartans.

An authentic tartan is made in a twill weave, the pattern is always created by weaving before dyed yarns.

The colours of pattern represent an aristocracy dynasty or district in the Scottish Highlands.

The use of tartans dates back to the 13th century.

Tartans must be registered by name.



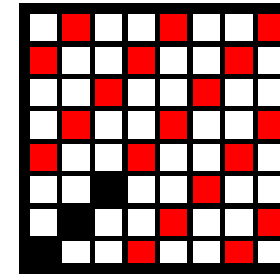
Cashmere

Cashmere is very soft and draping wool fabric, which is made of fine worsted yarns.

Original cashmere fabrics are made of cashmere wool.

The fabric is characterized by fine diagonal ribbing, which is created by 3-end weft twill weave.

It is one-coloured or printed with paisley patterns.

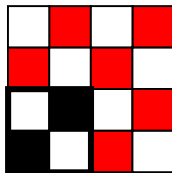


3-end weft twill



How to use:

- ✓ Blouses
- ✓ Dresses
- ✓ Neck wears



Wool voile

It is a lightweight fabric made of worsted yarns.

It is woven in a loose plain weave and the high-twisted yarns are used for weaving.

The fabric is draping and translucent and has a crisp handle.

This fabric may be one-coloured or printed.



How to use:

- ✓ Blouses
- ✓ Dresses
- ✓ Neck wears



Cashmere fabric

Wool flannel

The fabric has a soft handle caused by the pile surface on the face side or both sides of the fabric.

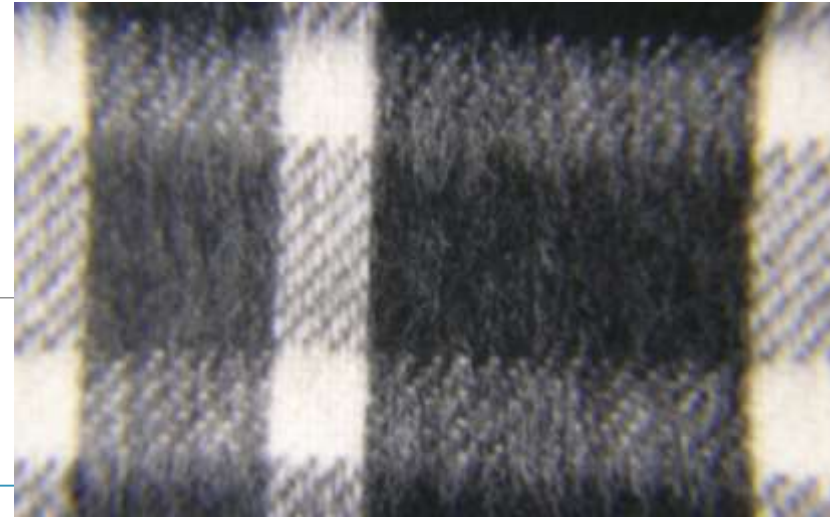
The pile surface is created by raised finish.

The flannel may be made of woollen or worsted yarns.

It is usually woven in twill or plain weave.

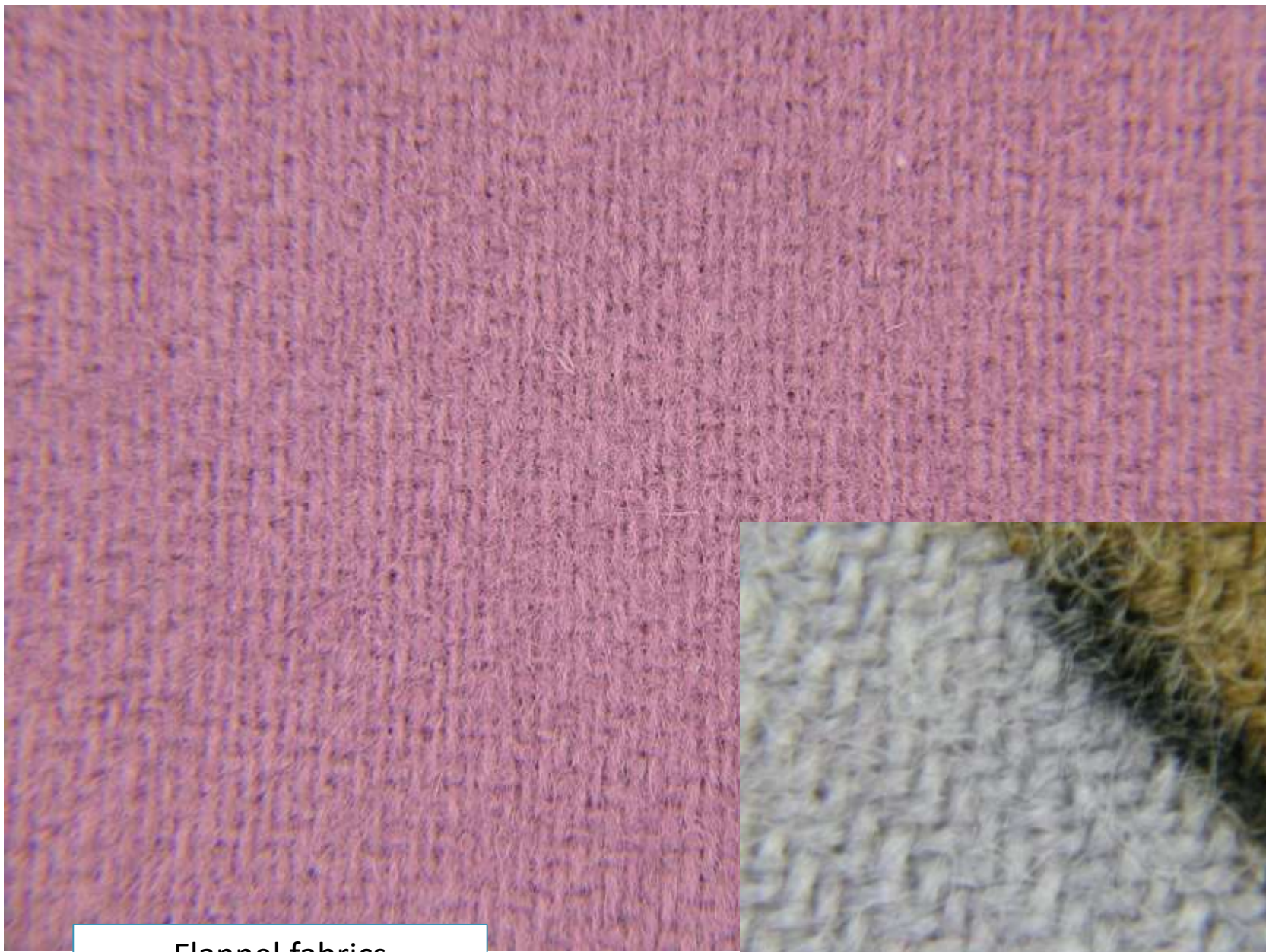
It may be one-coloured, woven from dyed yarns or printed.

It is middle to heavier weight.



How to use:

- ✓ Jackets
- ✓ Suits
- ✓ Skirts
- ✓ Dresses
- ✓ Wrappers



Flannel fabrics

Wool gabardine

The gabardine is suiting fabric with lower to middle weight.

It is always one-coloured and is characterized by a twill diagonal ribbing, which is steeper than 45°.

It has a stiffer handle and high set of warp yarns.

It is made of fine worsted yarns.



How to use:

- ✓ Suits
- ✓ Trousers
- ✓ Skirts

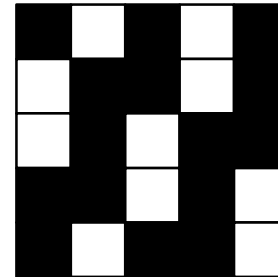
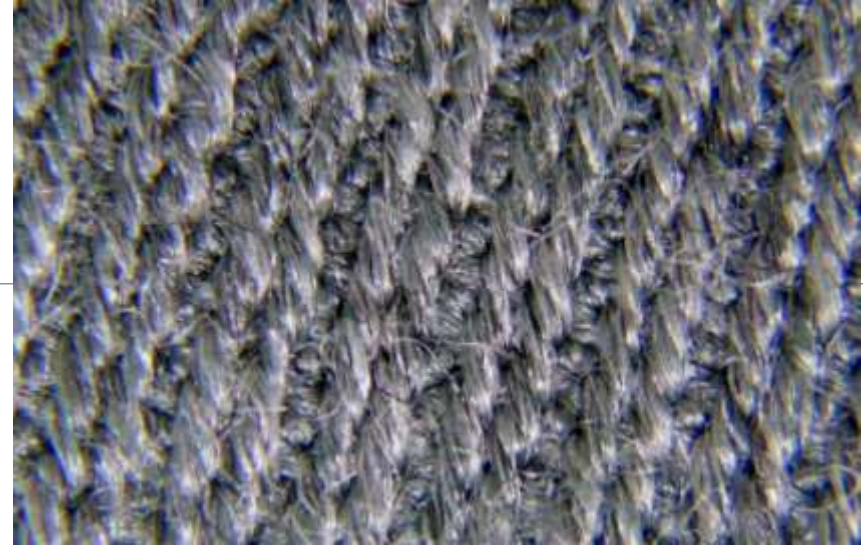
Cavalry twill

A strength and stable suiting fabric with a characteristic double twill line on the face, made of worsted wool yarns.

The paired diagonal ribs are usually equal in size. Twill ribs are steeper than 45° and right-hand direction. The fabric has a higher set of warp yarns than weft yarns.

Cavalry twill is heavier and more durable than gabardine.

The fabric has a stiff handle.

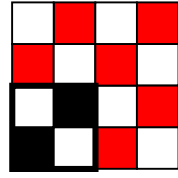


How to use:

- ✓ Suits
- ✓ Trousers
- ✓ Skirts



Tropical



Tropical is a lightweight fabric made of tightly twisted two-ply worsted yarns and woven in the plain weave.

This smooth fabric is thin but not transparent.

Tropical fabrics are usually in lighter colours.

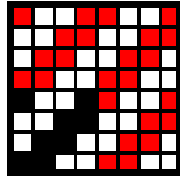
It is used to make suits for hot weather and warm climates.



How to use:

- ✓ Suits
- ✓ Dresses

Plaid

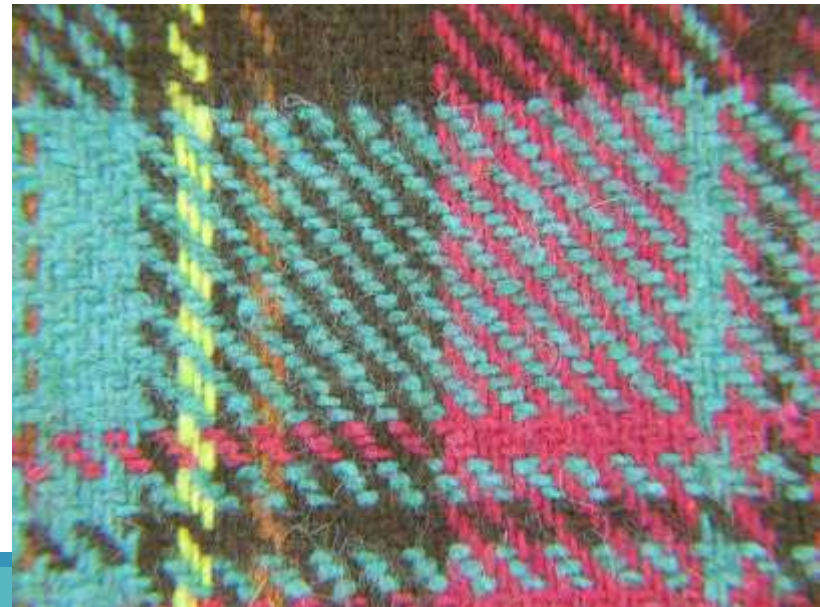


The PLAID is more general term than the TARTAN.

It is any fabric with a pattern of multi-coloured stripes that run in both directions and cross at right angles.

It is woven in 2/2 twill weave and may be made of woollen or worsted yarns.

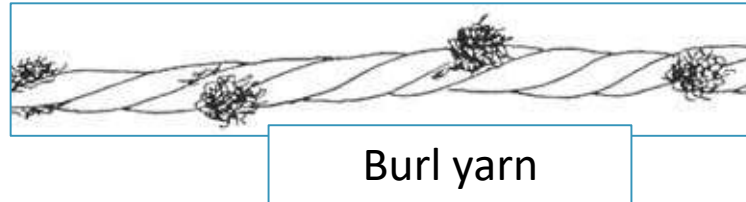
The true wool plaid is never printed, but always is woven from dyed yarns.





Plaid fabrics

Tweed



Tweed is a rustic look fabric, which is characterised by:

- Clear twill weave (*usually 2/2 twill or its variation such as for example herringbone, broken twill*).
- Coloured burls on the surface.

It may be woven with the pattern – check, stripe, herringbone, dogstooth, ...

Tweed fabric has often multicolored appearance.

It is made of woollen yarns and has a harsh handle.

How to use:

- ✓ Jackets
- ✓ Coats
- ✓ Caps
- ✓ Skirts

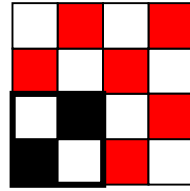




Tweed fabrics

Donegal

Donegal tweed



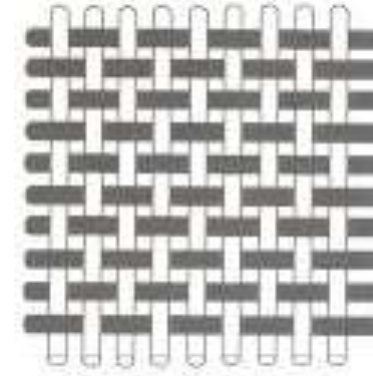
Donegal tweed is a tweed-like fabric. It is made in a plain weave and with different colours of yarns in warp and in weft.

The yarns are often with colour burls on the surface.

Donegal may be any colour, but earth tones are the most common.

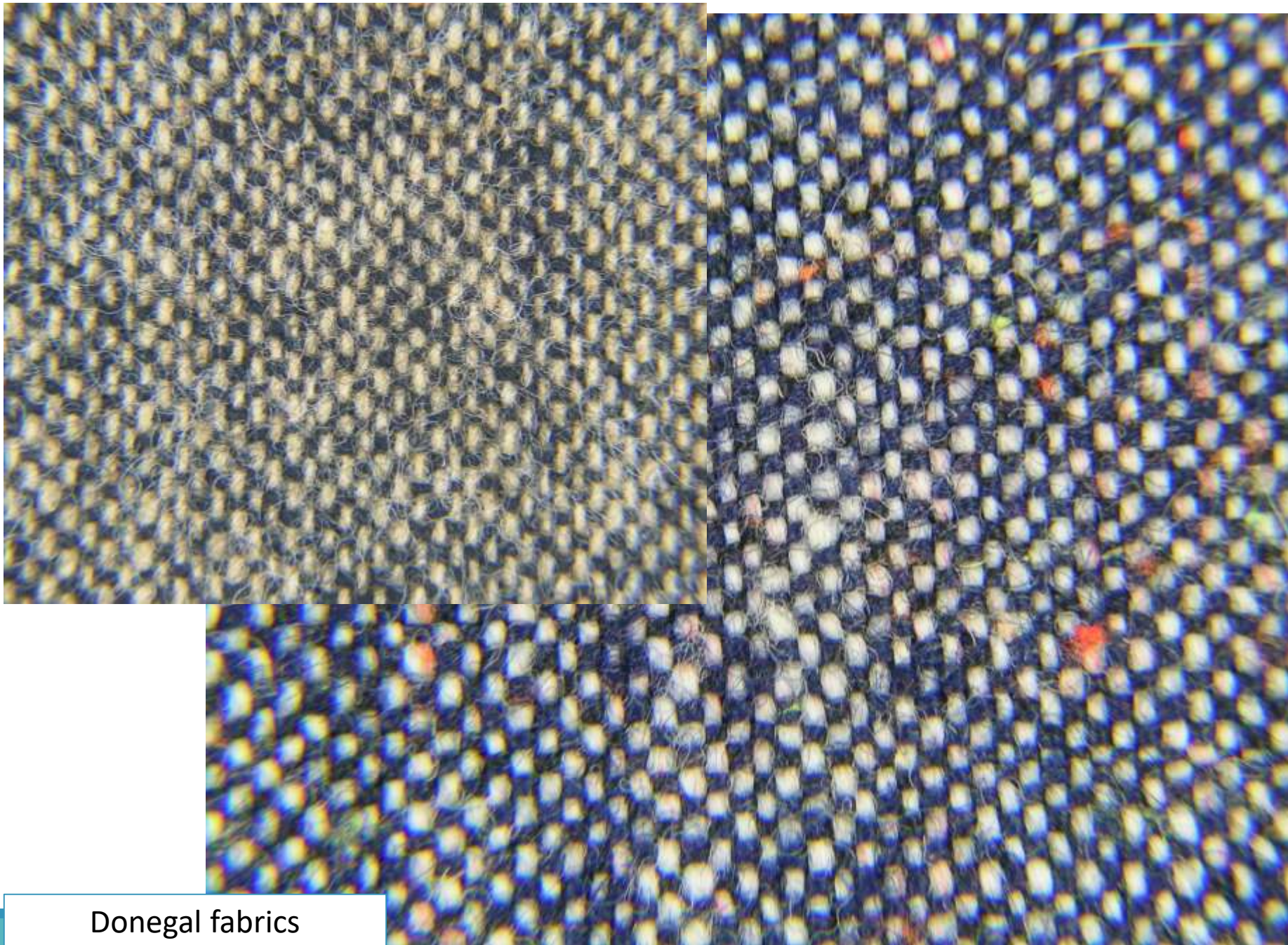
The fabric tends to be rather loosely woven and is not as stable as tweed, which is made in the more durable twill weave.

The weight of these fabrics varies usually from middle to heavy.



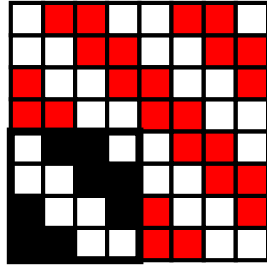
How to use:

- ✓ Jackets
- ✓ Coats
- ✓ Caps



Donegal fabrics

Homespun



Homespun is coarse fabric, which is always made of woollen yarn.

It is characterised by undyed coarse overhair fibres on the fabric surface.

It has a rustic look – reminds the fabric made by hand.

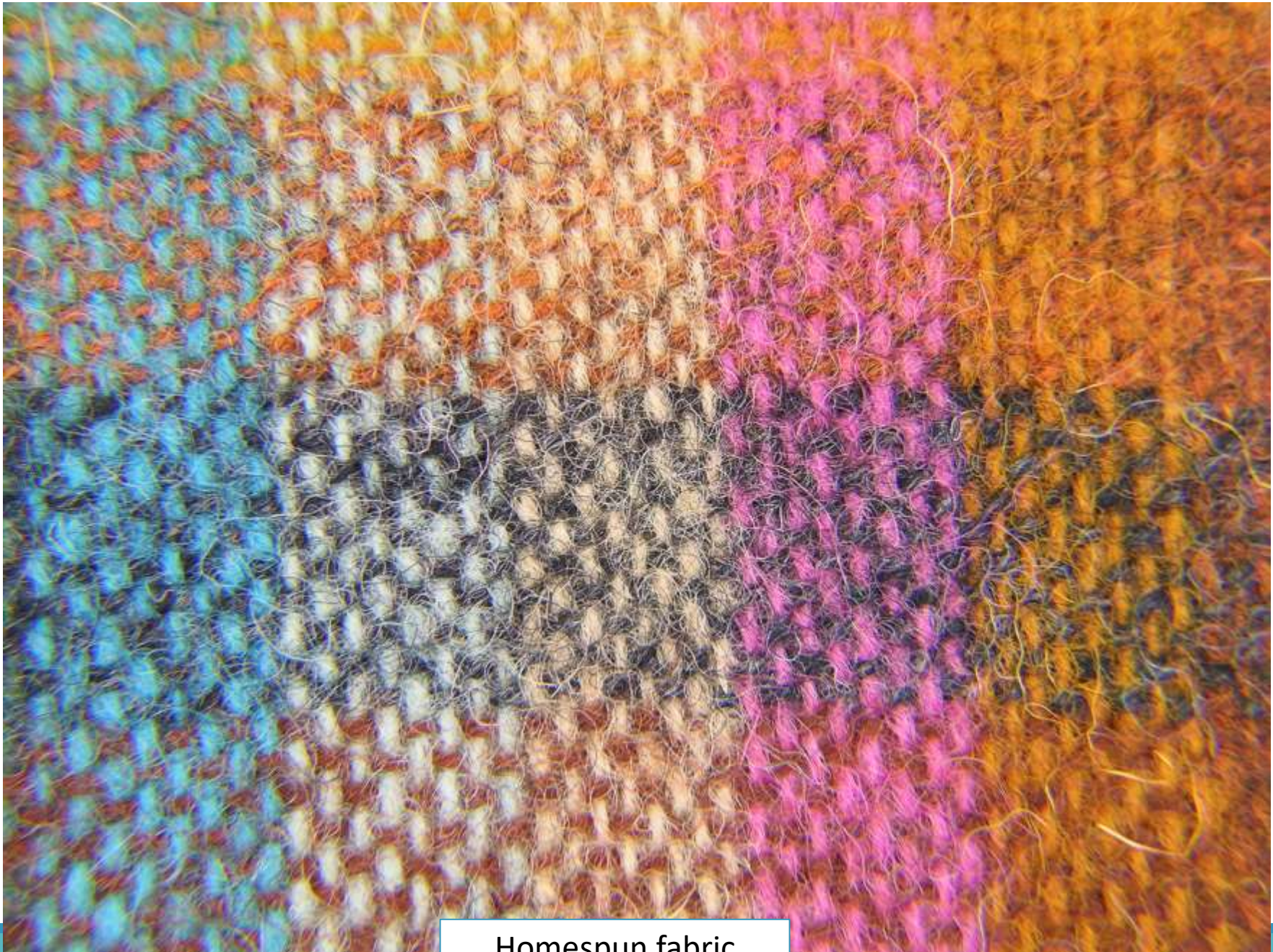
It has a very harsh handle.

It is woven in plain or twill weave (*usually 2/2 twill and weave derived*).



How to use:

- ✓ Jackets
- ✓ Suits
- ✓ Coats



Homespun fabric

Cloth

Cloth – is wool fabric, which is characterised by its full and stiff handle and by a felted surface.

The felted surface completely covers the weave (usually twill).

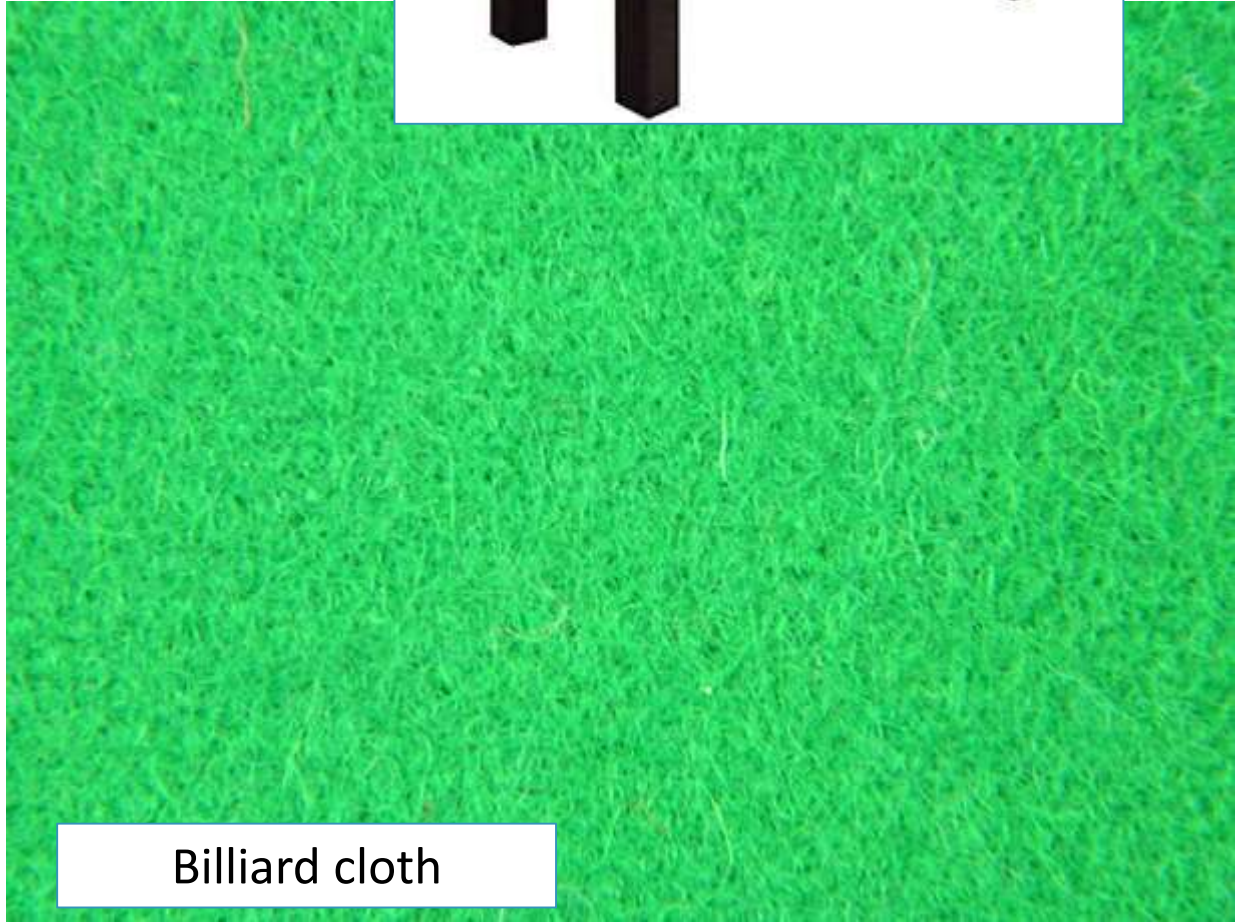
It is higher to heavy weight.

Some types of cloths are used as a billiard cloth for the coating of billiard tables.



How to use:

- ✓ Jackets
- ✓ Coats
- ✓ Skirts
- ✓ Technical applications



Billiard cloth

Velour

Velour – is a high weight coating fabric made with a twill weave and fine grades of wool.

It has a dense pile surface that stands erect and completely covers the weave on the face side of the fabric.

Due to the pile surface the fabric has a soft touch and excellent thermal-insulation properties.



Melton

Melton – is the dense, thick and heavier fabric with a soft and warm face side, which is made up of a partially felt pile surface.

So on the face side the type of weave is covered, but on the reverse side it is clearly visible.

How to use:

- ✓Jackets
- ✓Coats
- ✓Technical applications



Tennis ball



Loden cloth

The fabric is middle weight to heavy weight and is characterised by its stiffer and full handle.

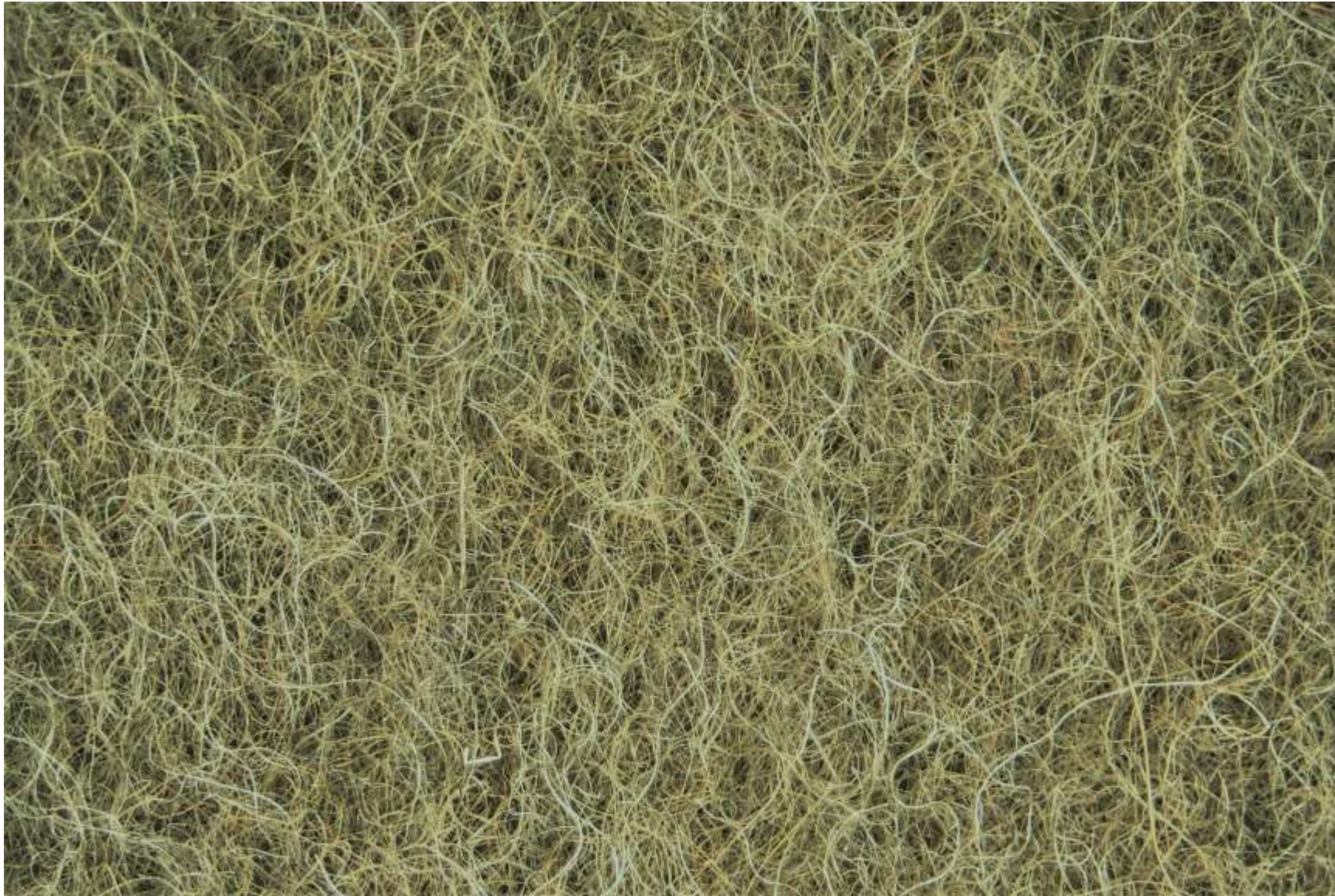
It is characterised by its olive, green, brown and gray melange yarns (*usually woollen*).

It may have a long pile surface or the pile surface may be felted.

The fabric is made of wool fibres and has a warm touch and excellent thermal-insulation properties.



How to use:
✓ Clothing and accessories for huntsman



Loden cloth

Double fabric

Double cloth

It is usually thick, heavy and double face fabric made by weaving two fabrics, which are woven one above the other.

These two fabrics are bound together by an extra set of warp yarns.

The two layers of fabric are usually made with different colours or patterns.



How to use:

- ✓ Jackets
- ✓ Coats
- ✓ Blankets

Camel's hair

Camel's hair – is usually heavy fabric for coats, which is made of camel's hair wool. Fabric is characteristic by its very soft pile surface on one or both sides and by the typical color of camel hair.

Camel's hair is softer than sheep wool and is very expansive. It is often blended with wool to increase its durability and to reduce the cost.

