

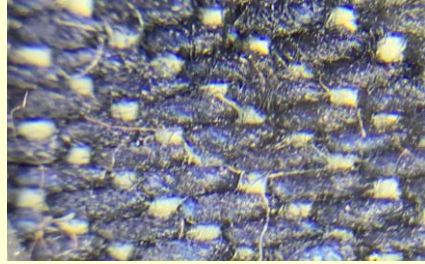
# Fabrics (5 A)

## Woven Fabrics



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### Definition

A fabric is formed by the alternate interlacing of at least one transverse weft thread and one longitudinal warp thread system.

### Technology

The warp threads are raised and lowered. The weft thread is inserted into the resulting shed by means of weaving shuttles (today only on handlooms), grippers, projectiles and air nozzles and beaten up by the reed to the previously inserted weft threads. The crossing of warp and weft threads can result in different types of weave.

### Features

By alternately lifting and lowering the warp threads, the plain weave is created as a simple and firm weave, e.g. for shirts, blouses and dress fabrics. Twill weave fabrics with a diagonal twill ridge fall softer, are nevertheless hard-wearing and may have a warming function. The atlas or satin weave uses long floats to create smooth and shiny fabrics called satin.



Did you know that your jeans are made of a twill weave fabric called denim?



# Fabrics (5 B)

## Knitted Fabrics



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### Definition

Knitted fabrics are created by thread stitches that are interlocked using one or more needles.

### Technology

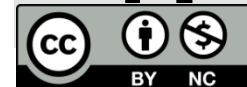
Knitwear is divided into two basic groups: Knitted fabrics, in which the rows of stitches are formed from a transverse thread that can be drawn up, and warp knitted fabrics, in which the stitches are formed by a warp thread system. Warp knitting is only possible by machine and the fabric can hardly be drawn on.

### Features

In addition to their high elasticity, knitted fabrics are crease-resistant, air-permeable and, depending on the thickness of the knitted construction, warming. The stitches trap air, which is warmed up by the body and thus forms a warming air cushion. Knitted fabrics are mainly used for stockings, underwear, sportswear and winter clothing because they are supple and follow all body movements.



Did you know that knitwear for T-shirts is produced on large circular knitting machines as a knitted tube?





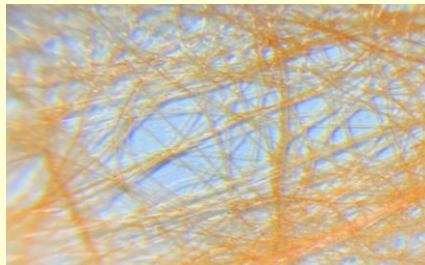
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# Fabrics (5 C)

## Nonwoven Fabrics



### Definition

The most important types include nonwovens, fulling and needle felts, constructed by mostly random layers of natural or man-made fibres.

### Technology

Nonwovens are formed by spreading and layering fibres. They can be mechanically, chemically and thermally bonded. Felts have a fibre fleece as their basis. A wool fibre fleece is rolled under the action of a washing lye and is thus compacted into a wool felt, as the wool fibres interlock with each other due to their scaly layer. Fibre fleeces are mechanically compacted by needling to form needle felts. A fleece can also be thermally welded or chemically bonded with binding agents.

### Features

The properties of fibre composites vary depending on their use, whether as disposable items such as nappies and handkerchiefs or as temperature and sound insulating layers in clothing, buildings and vehicles or as filters.



Did you know that the felting process of wool fibres leads to irreversible surface shrinkage? This sometimes happens unintentionally in the washing machine.



# Fabrics (5 D)

## Transparent and Open-work Fabrics, Laces, Nets



### Definition

Transparent and open-work textile surfaces can be produced in a wide variety of patterns by weaving, finishing or in a combined manner.

### Technology

Using weaving and knotting techniques as well as knitting and crochet, openwork effects and transparent surfaces are created for clothing and home textiles. Lace is an openwork textile surface made of yarn and fabric or yarn alone, with decorative patterns. Tulle and lace such as Raschel lace for lingerie and transparent clothing are rationally produced on warp knitting machines. In Raschel lace, pattern threads are worked into the tulle base.

### Features

Lace fabrics and tulle have a decorative and elegant effect. Handmade lace is very complex to produce and correspondingly expensive.



Did you know that in the 16th century, various European cities such as Venice, Brussels and Plauen became centres for handmade lace?





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