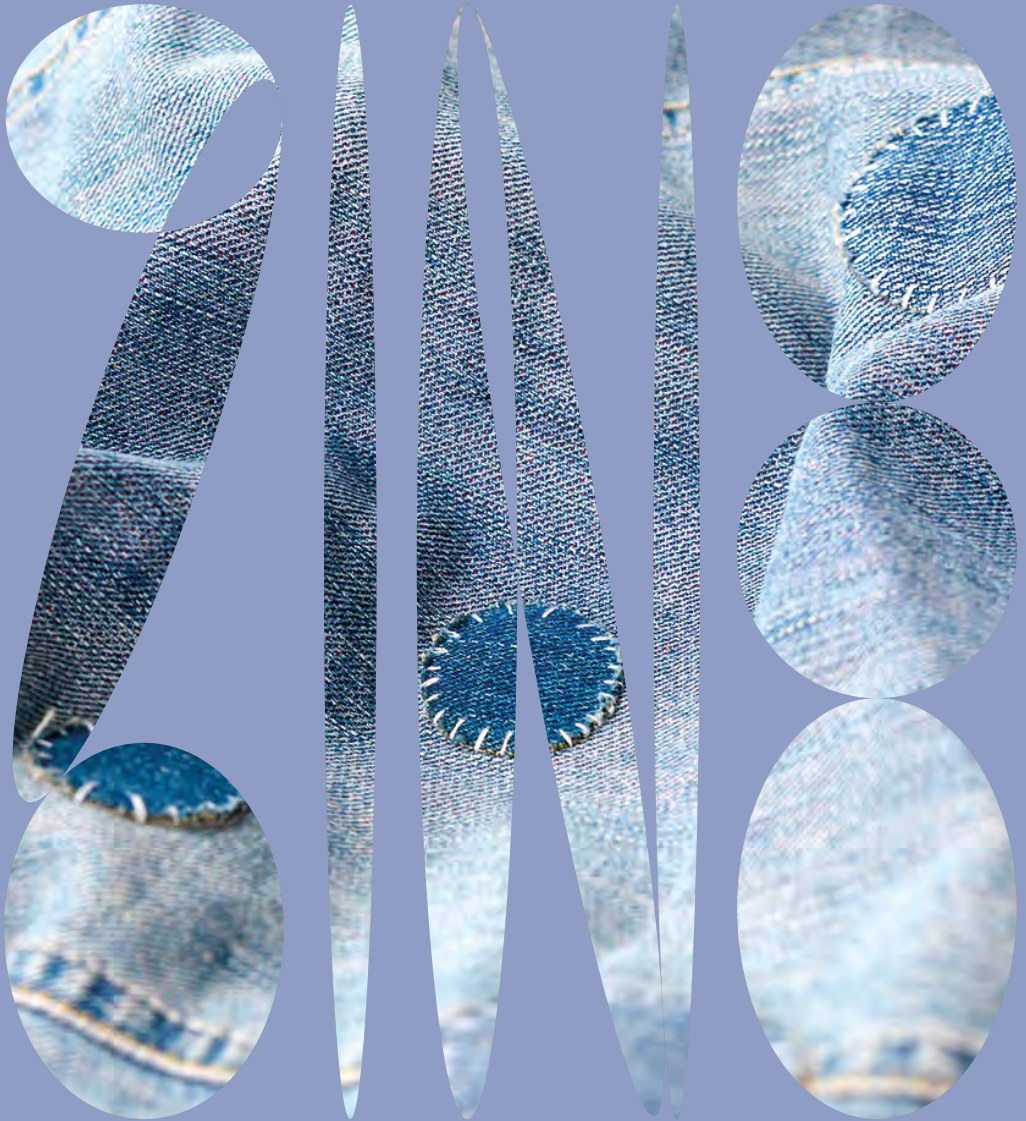




SPACE FOR TEXTILES & SPACE FOR REPAIR
Patch and Care

#02
08/2024



 SBYD, THE SPACE FOR TEXTILES AND THE SPACE FOR REPAIR

 HOW TO MAKE A PATCH

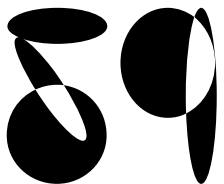
 CRISS CROSS STITCHING

 A BRIEF GUIDE TO MATERIALS – FROM FIBRE TO GARMENT

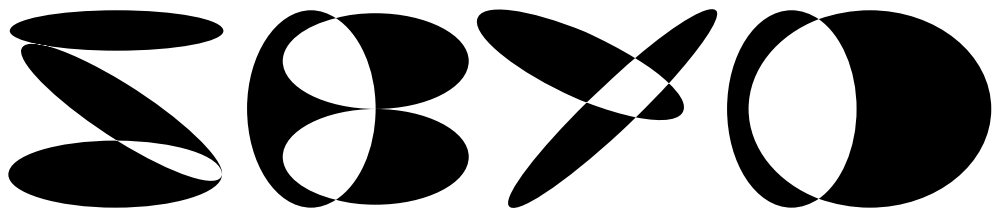
 TEMPLATES FOR PATCHES

 TEXTILE LABELS

 WASHING AND CARING FOR CLOTHES – SUSTAINABLE AND LONG-LASTING

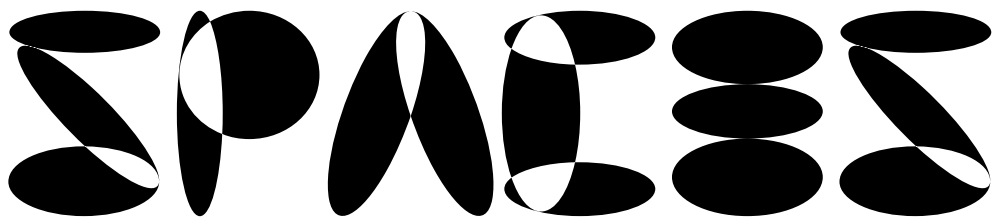
 FACTS, CONSEQUENCES, PERSPECTIVES – A CLOSER LOOK AT TEXTILE CONSUMPTION

 REFERENCES

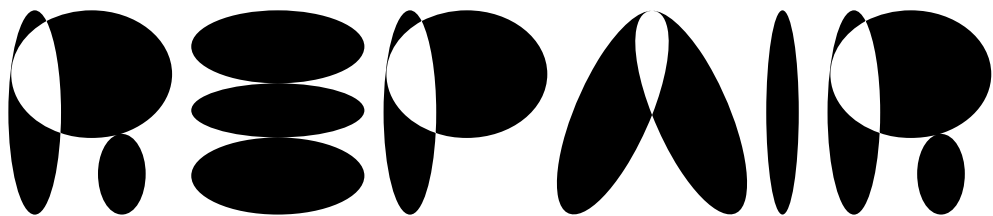


SBYD.SPACE explores new climate-neutral and resource-light ways of living and production. It transfers knowledge from sustainability research into society and the economy through design. The capability of design in making theories and abstract concepts tangible – and transferring them into everyday life – is used to explore, discuss, and test these theories and ideas in practice.

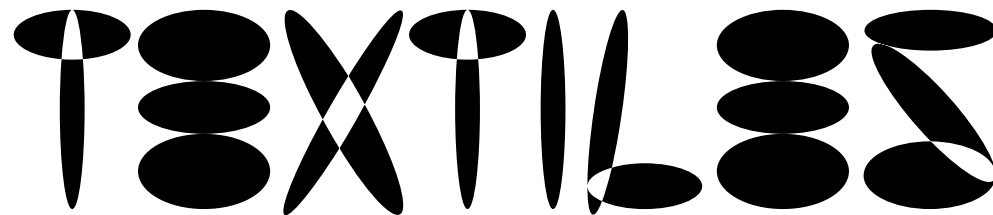
SBYD.SPACE engages with diverse audiences and collaborators through a range of formats, including workshops, international symposia, exhibitions, an artist / designer in residence program and support for entrepreneurial endeavors. It is located at Folkwang University of the Arts' North Campus at the UNESCO World Heritage Site Zollverein, a former coal mine in Germany's Ruhr region – a location that could not be more symbolic for the transformation of industries, ways of life, and entire regions.



SBYD.SPACE creates SPACES of possibility for exploring sustainable alternatives. Each SPACE is composed of a different set of interdisciplinary team members – akin to a working group. In different and continuously evolving SPACES, such as the SPACE FOR REPAIR, the SPACE FOR BIOMATERIALS, and the SPACE FOR TEXTILES, room is created for projects that pursue a circular, resource-light, and regenerative design approach. The SPACES form a thematic and conceptual structure within SBYD, around which activities such as interdisciplinary workshops, design projects, and exhibitions are clustered. Each SPACE approaches sustainability from a different perspective, definition, and way of working, creating a multiperspective approach within SBYD that makes different possibilities of sustainable living and production visible and tangible.



The SPACE FOR REPAIR operates at the intersection of craft, technology, longevity, and repair. The decision of whether to repair a broken object is often complex. It involves economic, cognitive, emotional, cultural, infrastructural, and political factors. How can design promote and consolidate a culture of repair?



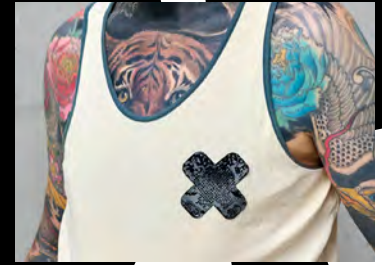
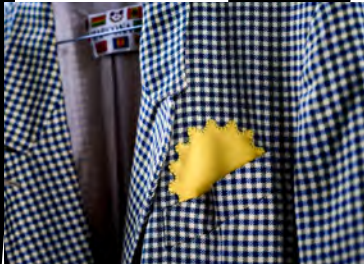
The SPACE FOR TEXTILES examines factors influencing the lifespan of textile objects. Which contributions can design make to foster the use of textiles to be as long and sustainable as possible? What potential lies in the interplay between craftsmanship, tradition, decentralised, and industrial production for the future?

Textile production is globally among the top three pressures on water and land use, as well as among the top five in terms of raw material consumption and greenhouse gas emissions (EU Commission, 2022). In nearly every wardrobe, you will find clothes that are no longer worn because they are out of style, stained, have holes, or have simply been forgotten. This zine focuses on these very garments. We demonstrate how they can be transformed and repaired with patches. An unworn garment can become a standout piece or receive a subtle repair. The zine showcases examples of what repaired clothing can look like, provides insights into textile materials, offers tips and tricks for caring for clothes, and shares facts and figures about the global handling of textiles.

We know that saving just one garment from the bin doesn't make much of a difference globally – yet we believe that practical skills, knowledge, and the ability to reflect and promote critical and self-determined actions, which we see as essential for sustainable consumption and production. The more items are repaired, the longer they stay in use. An increase in repaired clothing will eventually influence our aesthetic norms, where the new is often preferred. Moreover, we are passionate about customised and patched clothing and would love to see it everywhere!

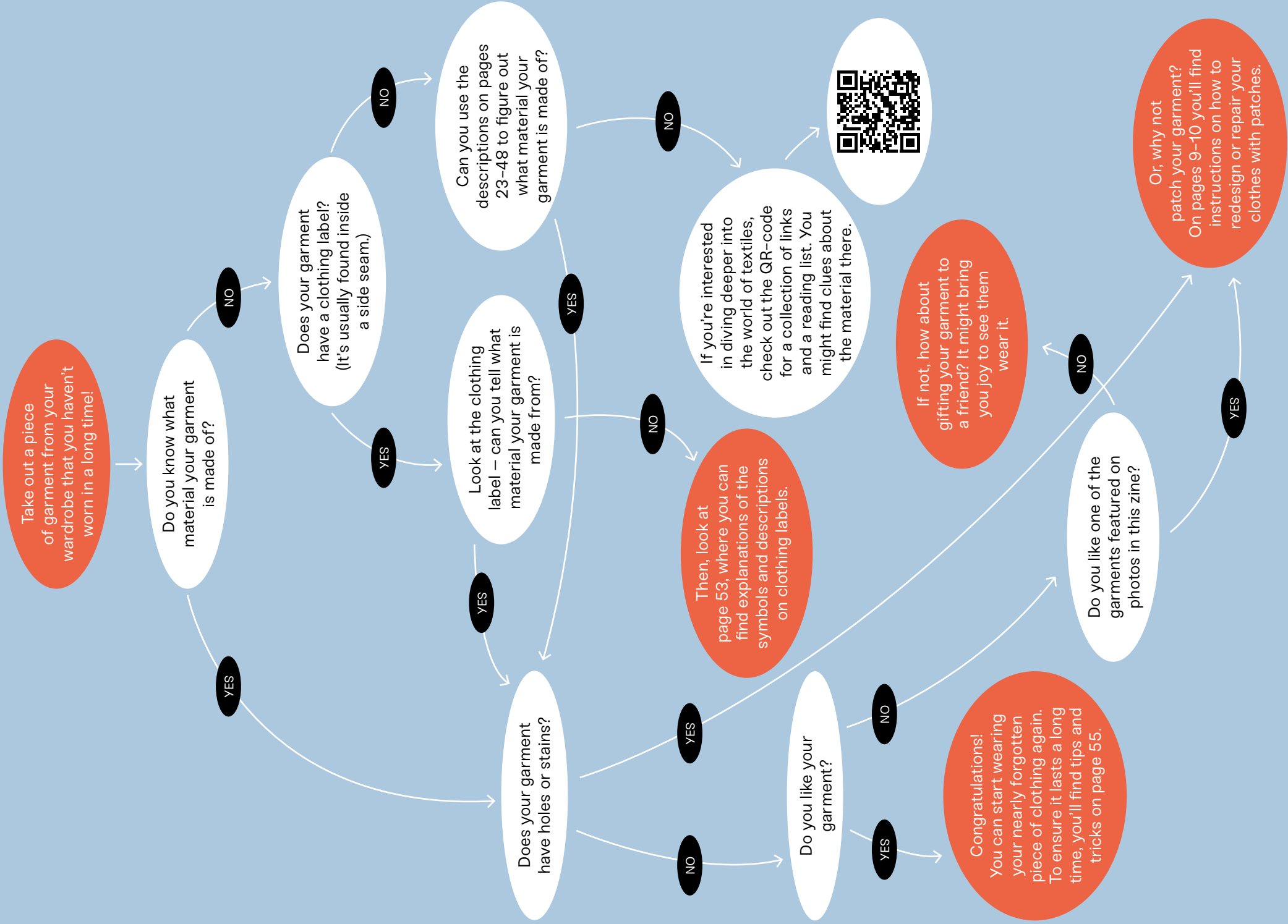
We hope you enjoy reading and sewing!

Anke Bernotat
Rolf Brändle
Corinne Riepert
Judith Schanz





START



HOW TO MAKE A PATCH

Here, you can learn how to create sturdy patches from unusable clothes or fabric scraps and iron-on adhesive using the templates from the centre of this zine. With these patches, you can transform and repair a garment that you no longer wear.

IN THIS ZINE, YOU'LL FIND:

- Templates for patches in the centre of the zine
- Ideas for attaching them with needle and thread on page 15.

ADDITIONALLY, YOU WILL NEED:

- A garment that you want to transform with patches, either because you no longer like it or because it has stains or holes
- Unusable clothes or fabric scraps to make the patches
- Iron-on adhesive (single-sided fusible), large enough to fit all the patches you want to create
- Paper scissors
- Optional: tracing paper or sandwich paper
- A pen or tailor's chalk
- Fabric scissors
- An iron
- Baking paper or an old piece of fabric
- Pins
- Sewing thread
- Sewing needle



INSTRUCTIONS:

1. Cut out the template shape for your patch from the centre of the zine using paper scissors. (You can also trace the templates onto sandwich paper or tracing paper before cutting).
2. Cut a piece of iron-on adhesive approximately the size of your template.
3. Place the rough side of the iron-on adhesive onto an unusable garment or a fabric scrap. (The right side of the fabric, which will later be visible, should face down, with the wrong side facing up, touching the rough side of the adhesive).

4. Fuse the iron-on adhesive with the fabric by ironing it (set the temperature according to the fabric type, as high as possible). Place a piece of old fabric or baking paper between the iron and the adhesive to prevent sticking. After ironing, the adhesive should be firmly attached to the fabric.
5. Place the patch template on the fused fabric and adhesive. On the adhesive side, and trace the outline with a pen or tailor's chalk.



6. Cut along the outline with fabric scissors. Your first patch is ready.
7. Pin the finished patch to the desired spot on your garment. Sew the patch in place with a needle and thread. If you need inspiration on how this can look, go to page 15.

Enjoy your newly revamped garment!

We'd love to see your finished patched clothing on Instagram using the hashtag: #attachthepatch





“THE CLIMATE CRISIS MEANS THE FASHION INDUSTRY WILL CHANGE – EITHER IT WILL EVOLVE TO SMALL, HOLISTIC, ZERO-CARBON PRODUCTION CENTRES AS PART OF A GREEN FUTURE, OR IT WILL DRAG US OVER THE CLIFF TO A CLIMATE APOCALYPSE IN WHICH THE SURVIVORS SEARCH FOR SCRAPS IN RUBBISH DUMPS. EITHER WAY, WHAT IS HAPPENING NOW HAS NO LONG-TERM FUTURE. WE LIVE IN A TIME WHERE OUR ACTIONS DETERMINE WHICH OF THESE FUTURES WILL COME TRUE.”

TANSY E. HOSKINS







A BRIEF GUIDE TO MATERIALS – FROM FIBRE TO GARMENT

GARMENT

A garment is typically made from cut pieces of textile fabric that are joined together. Textile fabrics are produced through various manufacturing processes from filaments or yarns, which in turn are made from fibres. The fibres, yarns, filaments, and textiles used to make garments can be made from different materials. Below is an overview of common materials used in the clothing industry. You will also find material-specific care instructions that offer tips on how to maintain the quality of a garment for as long as possible.

FIBRES

A fibre is a fine, thin, thread-like structure. In textile applications, the ratio of the length of a fibre to its diameter is over 1000 to 1. Fibres are generally classified into natural and man-made fibres. Natural fibres originate from plant or animal sources. Man-made fibres are further divided into natural polymer and synthetic polymer fibres. Natural polymer fibres are derived from plant-based raw materials, usually wood, and are processed chemically to produce cellulose fibres. Synthetic polymer fibres, on the other hand, are primarily made from petroleum, which is chemically treated and turned into fibres.

YARNS AND FILAMENTS

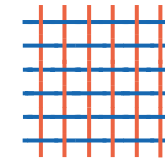
Spinning is the process of transforming individual fibres into yarns. These individual yarns are often twisted together to form thicker yarns. Natural polymer and fully synthetic polymer fibres can produce a single, long, continuous fibre, also known as a monofilament. Monofilaments can also be spun and twisted to form thicker yarns. Silk is a naturally occurring monofilament, obtained by unwinding the cocoons of silkworms.

The term “thread” is often used synonymously with “yarn.” However, a thread technically refers to a short piece of yarn of limited length.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)

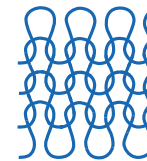
TEXTILE FABRICS

In the clothing industry, weaving and knitting are the most widespread methods of producing textile fabrics.



→ WOVEN FABRIC

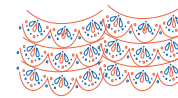
is created by the perpendicular interlacing of two thread systems: the warp and the weft threads. The warp threads run lengthwise, while the weft threads run across the warp threads. This arrangement gives woven fabrics their characteristic stability and strength. Woven fabrics are generally not elastic unless the yarns used contain elastic fibres, such as spandex.



→ KNITTED FABRIC

is made through a process in which a thread forms a loop (stitch), and the thread is then pulled through the loop to form another loop, and so on. This method gives knitted fabric its characteristic elasticity, as the looped structure is flexible and can easily stretch.

In addition to woven and knitted fabrics, there are other methods for producing textile fabrics, such as:



→ LACE AND NET FABRICS

are characterised by many open spaces. They can be created by knotting, crocheting, knitting, or looping.



→ FLEECE AND FELT

are produced by bonding loose fibres, filaments, or yarns through friction, heat, or moisture.



→ LEATHER

is made from animal hides that have been preserved through tanning. There are also vegan textile fabrics with leather-like properties. These are made from materials such as petroleum, pineapple, cactus, or mushroom mycelium.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)



COTTON

Natural Fibre / Plant-Based

ORIGIN AND PROCESSING

The cotton plant thrives in subtropical climates and is predominantly grown in India, China, and the USA. Cotton fibres are harvested from the seed pods of the cotton plant, then dried and separated from the seeds. Cotton can be dyed easily and treated in further processing steps. Due to advanced industrialisation and production in low-wage countries, the production and processing of cotton are relatively inexpensive.

ADVANTAGES AND DISADVANTAGES

Cotton is valued for its skin-friendly and breathable properties. However, it has low thermal insulation and creases easily due to its low elasticity. Cotton textiles are robust, relatively heat-resistant, easy to care for, and long-lasting. If cotton fibres are not mixed with other fibres or heavily processed, they are biodegradable. Cotton cultivation requires a large amount of water and often involves extensive use of pesticides. Many workers in the cotton industry are employed under precarious or exploitative conditions. Currently, only a very small proportion of cotton is grown under fair and organic conditions.

CARE INSTRUCTIONS

Cotton is easy to care for and can be washed without problems at temperatures up to 60°C, even higher if necessary. New, coloured garments may bleed, so it is advisable to wash them at a lower temperature with similar colours. Fabric softeners should be avoided, as this can reduce the absorbency of cotton.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)



LINEN / FLAX

Natural Fibre / Plant-Based

ORIGIN AND PROCESSING

Linen thrives in temperate and maritime climates. The majority of linen is grown in China, France, the Netherlands, and Belgium. The process of turning the plant into yarn or fabric is time-consuming and involves many steps, such as pulling or combing, making it more costly.

ADVANTAGES AND DISADVANTAGES

Linen is considered a high-quality and durable textile with climate-regulating properties. It absorbs and releases moisture quickly, making it feel pleasant and cooling on the skin. Linen does not pill and is resistant to dirt, but it is generally more expensive than cotton and becomes creased easily. Linen textiles are compostable if they have not been heavily processed (e.g., through dyeing). The cultivation of flax requires significant expertise and time. In conventional flax farming, the extensive use of nitrogen fertilisers, herbicides, and fungicides can lead to environmental damage.

CARE INSTRUCTIONS

Linen clothing becomes softer with each wash and should not be washed at temperatures above 60°C to avoid shrinkage. Linen can be ironed at a high temperature to remove creases.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)





WOOL

Natural Fibre / Animal-Based

ORIGIN AND PROCESSING

Wool fibres are made from the hair of animals, such as sheep, Angora rabbits, Mohair/Cashmere goats, llamas, and alpacas. The majority of sheep wool comes from Australia, China, and the USA. The quality of wool varies depending on the sheep breed (e.g., Merino), body part, climate, and rearing practices. Not all wool is suitable for clothing production; shorter or coarser fibres are often used for insulation materials, plant fertilisers, or carpets. Sheep wool is classified into “virgin wool,” which is shorn from living sheep, and “pulled wool,” which comes from slaughtered sheep. The raw wool undergoes many processing steps, including washing, carding, and then spinning or felting. Often, these steps take place in different countries.

ADVANTAGES AND DISADVANTAGES

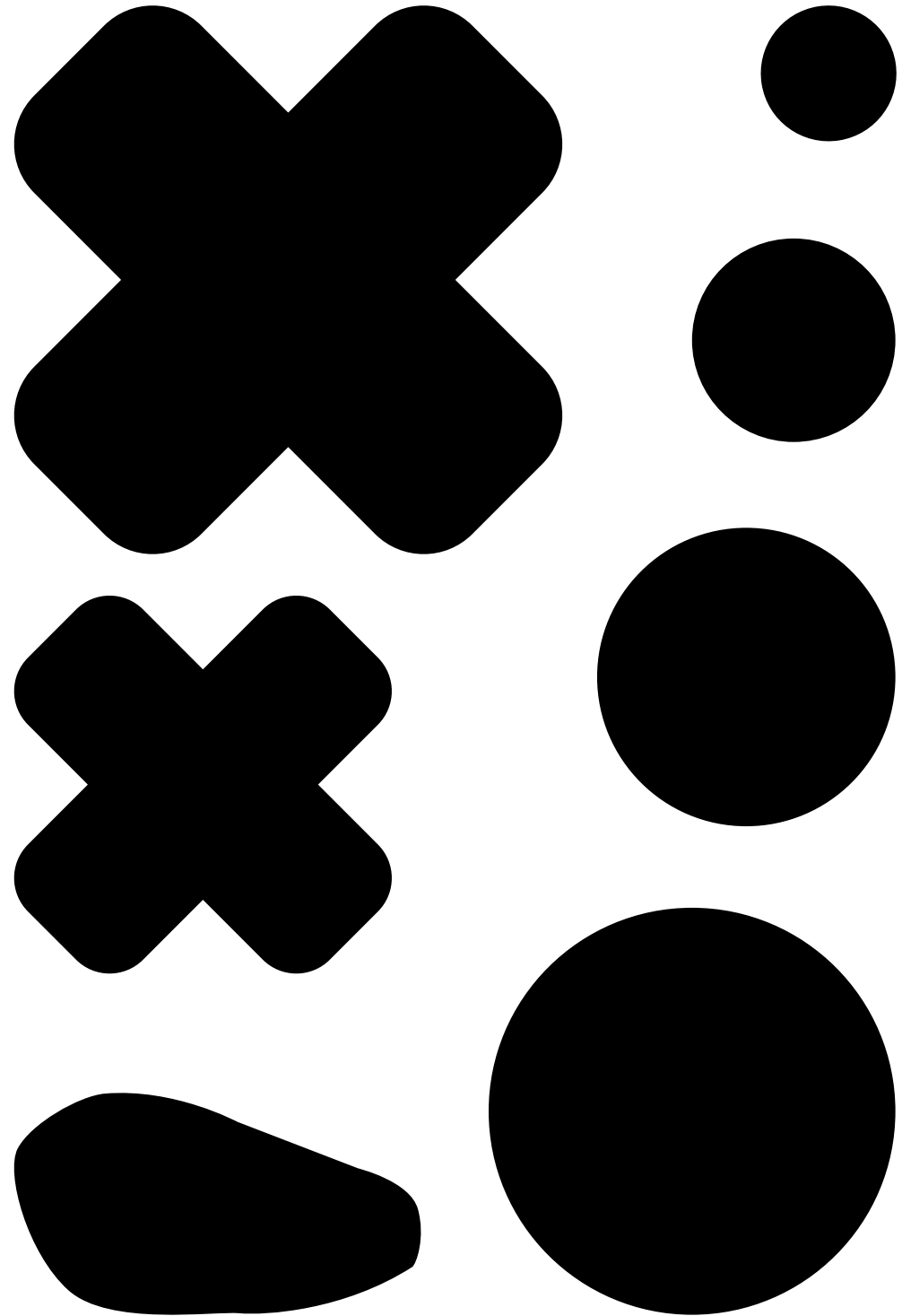
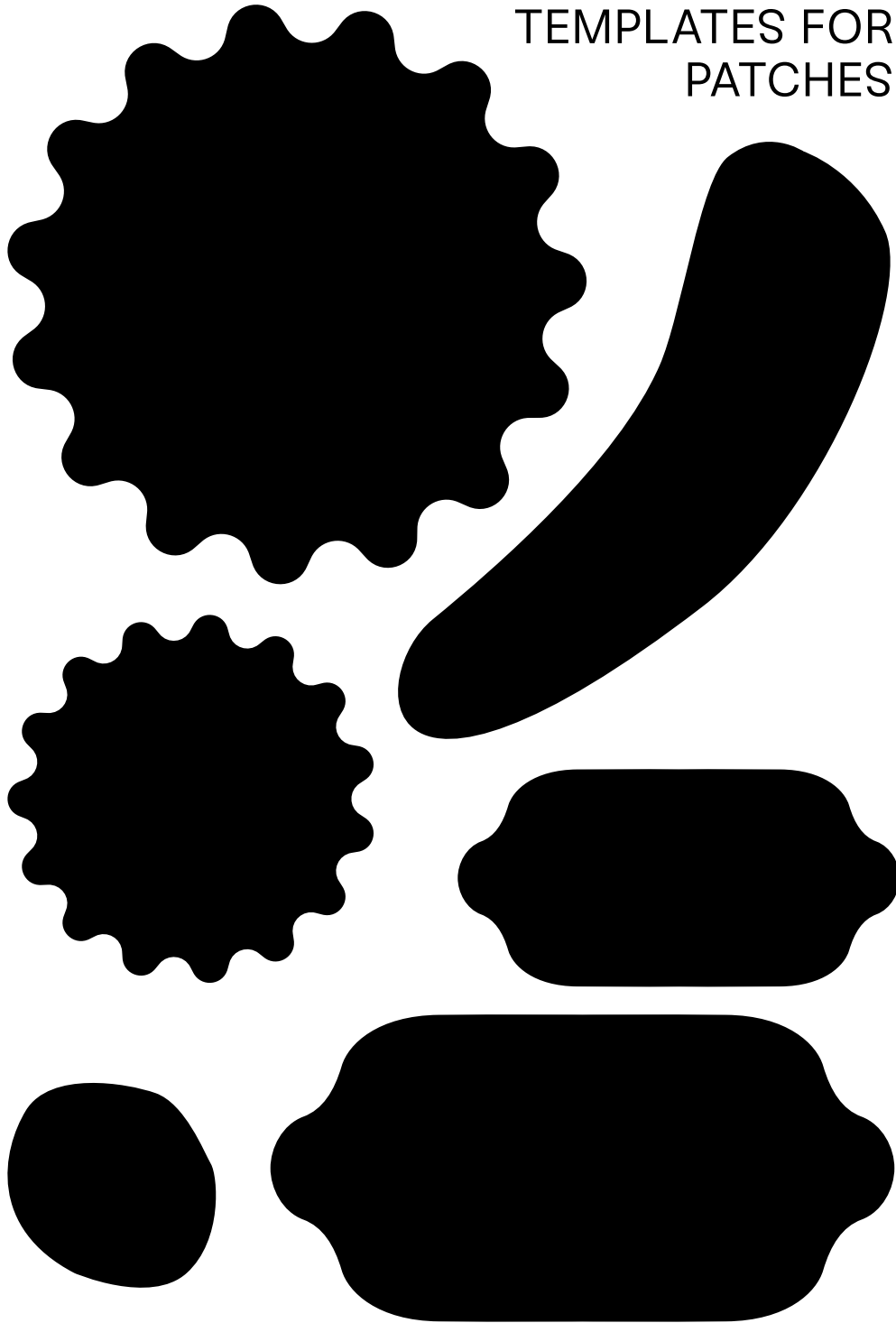
Wool has excellent insulating properties. Woollen clothing can keep the body warm or protect it from external heat. Wool is breathable, absorbs moisture well, and can wick it away. Additionally, wool absorbs and blocks odours and is somewhat resistant to dirt, making it suitable for sportswear. Wool is difficult to ignite and has a slight elasticity, which prevents woollen textiles from wrinkling. Textiles made from coarser wool fibres can be perceived as scratchy. Untreated wool is biodegradable, but processed wool is only partially biodegradable and often contains dyes or other chemicals. Virgin wool is a renewable resource, but its production can involve significant animal suffering depending on farming practices. For example, mulesing, a process where skin around the sheep’s tail is removed without anaesthesia to reduce fly infestation, is still common practice in Australia, though it is banned in Europe. The production of animal feed requires large amounts of water and extensive agricultural land.

CARE INSTRUCTIONS

Woollen clothing rarely needs to be washed. Often, hanging wool garments in the bathroom while showering is enough to air them out. When washing woollen clothing, use a cold wool wash cycle with low spin speed to prevent felting and shrinkage due to excessive heat and friction. A wool-specific detergent should be used. Ideally, woollen garments should be dried flat. As an animal-based natural material, wool is susceptible to moth damage. If moths are suspected, the garments can be frozen and then thoroughly aired and dried.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)

TEMPLATES FOR PATCHES





SILK

Natural Fibre / Animal-Based

ORIGIN AND PROCESSING

Silk is primarily obtained from the cocoons of the mulberry silkworm (*Bombyx mori*). However, around 200 other species can also produce silk. Overall, silk is one of the rarest materials in the textile industry. Silk filaments mainly come from China and India. Each cocoon consists of a continuous fibre that can be between 800 and 3000 metres long. The fibres are harvested by killing the cultivated and pupated silkworms with hot water or steam. The cocoons are then unwound, cleaned through several steps, freed from the sericin (a natural gum), and finally spun and dyed. There is also wild silk or Ahimsa silk, where the moths are allowed to emerge before the cocoons are processed. This method requires more work and is therefore more expensive.

ADVANTAGES AND DISADVANTAGES

Silk is very thin, but due to the long continuous fibres made from animal protein, it is incredibly strong. Silk is highly prized for its natural sheen and has a fine, light, yet firm texture as a fabric. A characteristic “rustling” sound (known as the “silk handle”) is a good indicator of genuine silk. Silk has insulating properties, keeping you warm in winter and cool in summer. As a natural fibre, silk is biodegradable. However, it is sensitive to heat and light. Unlike many other animal fibres, silk is moth-resistant.

Silk production consumes many resources for relatively little material. The killing of the pupae and the heavy use of chemicals in processing are ecologically concerning. However, more animal-friendly farming practices offer the possibility of cultivating mulberry trees and silkworms simultaneously, reducing the need for pesticides.

CARE INSTRUCTIONS

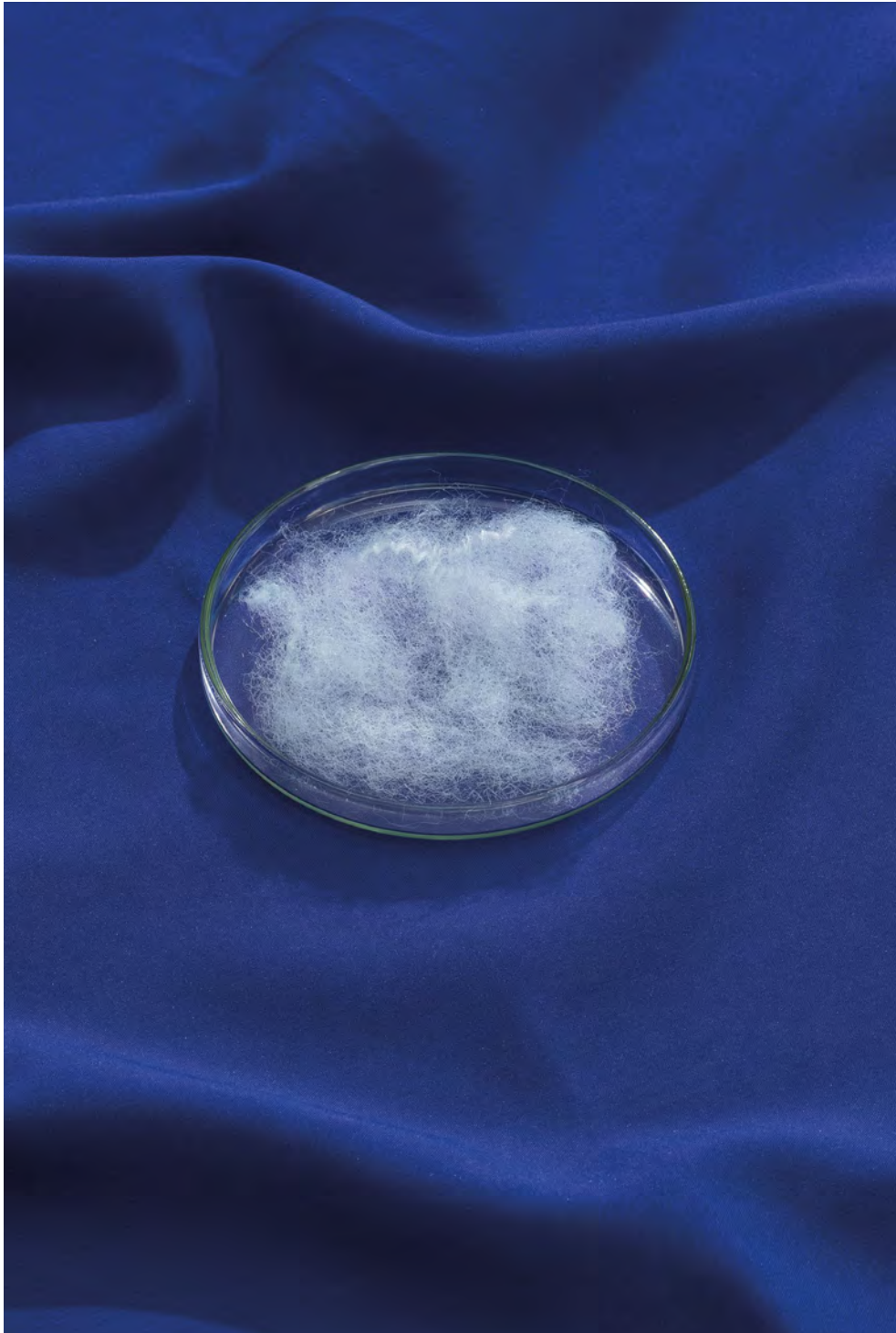
Silk garments should be washed in cold water and, if possible, should not be ironed, or only ironed very carefully. Silk should never be tumble-dried. Special detergents are available for silk, and wool detergents should be avoided; instead, mild shampoo can be used.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)

“HOW CAN A PRODUCT THAT NEEDS TO BE SOWN, GROWN, HARVESTED, COMBED, SPUN, KNITTED, CUT AND STITCHED, FINISHED, PRINTED, LABELED, PACKAGED AND TRANSPORTED COST A COUPLE OF EUROS?”

LIDEWIJ EDELKOORT





POLYESTER

Man-Made Fibre / Synthetic Polymer

ORIGIN AND PROCESSING

Polyester is the most widely used fibre due to its extremely low production cost, ability to be produced in large quantities, and independence from agricultural land. The majority of polyester fibres are manufactured in China, followed by India. In production, raw materials derived from petroleum are used to create a liquefied spinning solution, which is then processed through melt spinning into long filaments or directly into spun yarn via direct spinning. The yarn is then treated to achieve desired properties, such as high tensile strength, fire resistance, or softness.

ADVANTAGES AND DISADVANTAGES

Polyester is almost crease-resistant, but it can become electrostatically charged and generally offers lower comfort. The textiles absorb little moisture, which means they dry quickly but are not particularly breathable. Unpleasant odours can linger in polyester garments. Some people may experience skin irritation from wearing polyester, which can be due to the chemicals used in processing. During wear and washing, microplastic particles are released from polyester fibres, contributing to environmental pollution. While polyester allows for affordable textiles for all, it also accelerates the fast-fashion cycle. The fibres are produced from the non-renewable resource petroleum. In theory, polyester can be fully recycled, but this is only feasible if the original material is pure enough. Polyester filaments can also be made from secondary raw materials, such as PET bottles.

CARE INSTRUCTIONS

Polyester clothing can be washed at temperatures up to 40°C and should not be ironed. Excessive heat can cause the fibres to melt. Ironing is usually unnecessary, as polyester is resistant to wrinkling.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)



SPANDEX

Man-Made Fibre / Synthetic Polymer

ORIGIN AND PROCESSING

Spandex, also known as elastane and under the brand name Lycra, is a petroleum-based fibre. Unlike other synthetic fibres, which can be produced using the melt-spinning process with heat, spandex is based on the thermo-setting polymer polyurethane, making it unsuitable for this method. Instead, long molecules are formed from petroleum-based raw materials through chemical processes in solvents. Fibres are then spun from this concentrated solution at temperatures that cause the solvent to evaporate, allowing for the production of very fine filaments. Spandex is rarely used in its pure form; typically, 1–5% spandex is blended with other fibres to achieve the desired elastic properties. Although spandex is not produced in quantities comparable to polyester, its use as a blend in textile fabrics is widespread.

ADVANTAGES AND DISADVANTAGES

Spandex can be stretched up to 800% of its original length and can return to its original shape without losing elasticity. This property makes tight-fitting, body-conforming textiles possible. Even a small percentage of spandex can significantly reduce wrinkling and provide a more flexible wearing experience. Spandex is resistant to oxidation and light and is easily washable. However, odours can become trapped in the fibres, and older spandex fibres can become brittle. Spandex is made from non-renewable resources and requires significant energy for production. The addition of spandex is one of the main reasons why many textiles are difficult to recycle. The chemical removal of spandex from other fibres is complex and rarely practised. As a thermosetting plastic, spandex cannot be recycled by melting. Manufacturers that claim to use recycled spandex tend to use fibres made from spandex production waste. Additionally, spandex releases microplastics during wear and washing, a problem that worsens as the fibres age and become more porous.

CARE INSTRUCTIONS

Spandex should be washed at temperatures no higher than 40°C and should not be tumble-dried.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)





VISCOSE, MODAL, LYOCELL, ET CETERA

Man-Made Fibre / Semi-Synthetic Polymer

ORIGIN AND PROCESSING

Since the 19th century, processes have been developed to extract cellulose from raw materials like wood and further process it into filaments and fibres. The cellulose-regenerated fibres produced in this way are called viscose, modal, lyocell, or Tencel, depending on the manufacturing process, raw material, and manufacturer. For traditional viscose, cellulose is extracted from wood using solvents, pressed, and then spun into filaments in a re-liquefied state. In more recent processes, the solvents and water used in production are almost entirely recycled, and these fibres are referred to as lyocell.

ADVANTAGES AND DISADVANTAGES

Visually and chemically, cellulose-regenerated fibres share many properties with cotton fibres, as both are made from cellulose. Through various processes, the specific characteristics of these fibres can be modified. For example, they can be made longer than cotton fibres or even more absorbent. The properties of the fibres also vary depending on the manufacturing process. Modal, for instance, has significantly better strength than viscose, while lyocell is finer and softer than viscose.

CARE INSTRUCTIONS

Clothing made from cellulose-regenerated fibres can be washed at temperatures up to 40°C and should not be tumble-dried. These garments can be easily ironed.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)



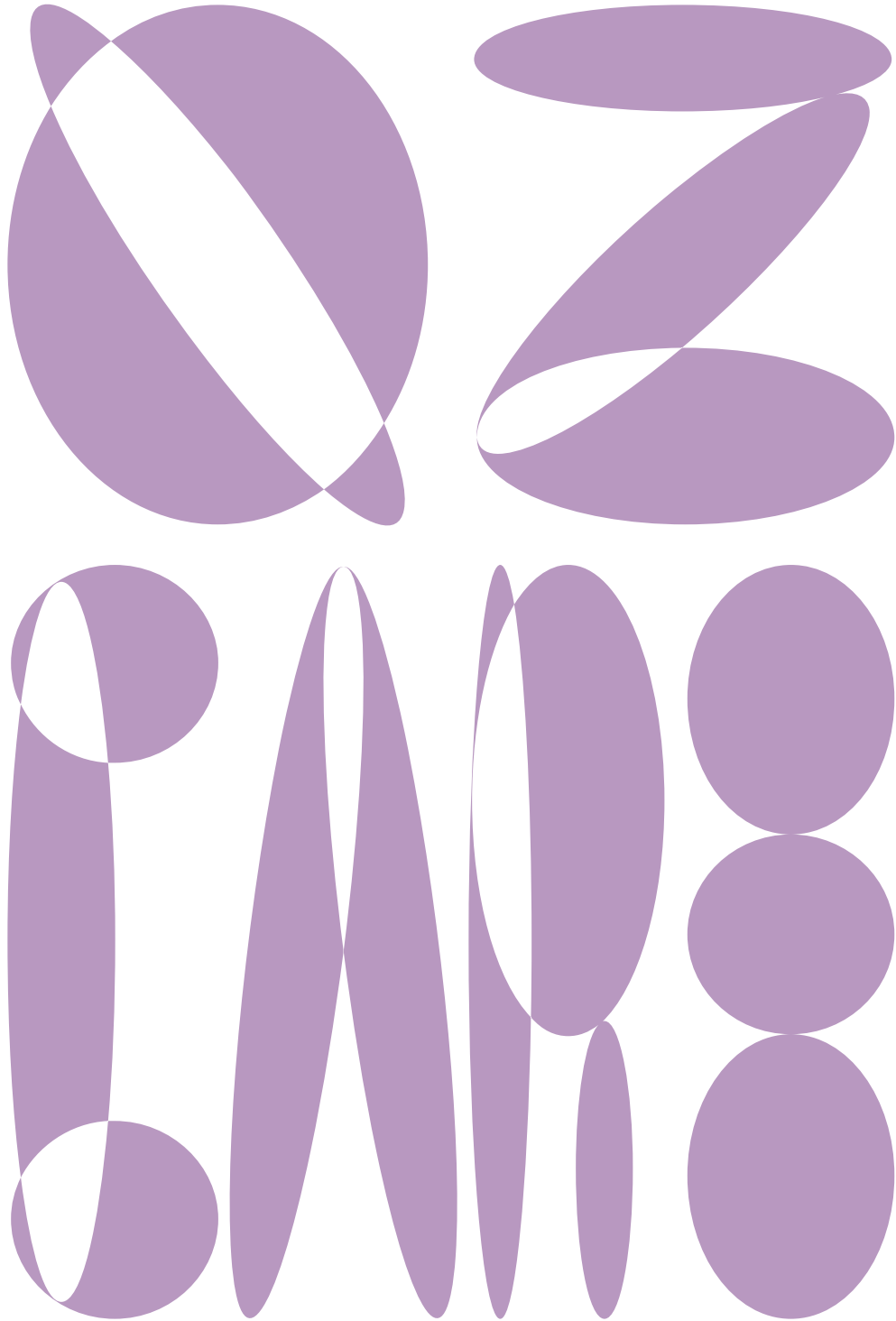
BLENDED TEXTILES

Each material used in textile production has unique properties that offer various advantages and disadvantages depending on the intended use. To combine these different properties, materials are often blended in textiles. For example, jeans are frequently made by mixing cotton with a small percentage of spandex, allowing the jeans to better conform to the wearer's body. To reduce wrinkling in linen, fibres such as viscose or modal may be added. In sportswear, cotton can be blended with polyester to create garments that are both breathable and quick-drying. By mixing synthetic fibres with natural ones, such as adding polyacrylic to wool, the generally higher costs of natural fibres can be reduced. A garment can also be composed of textile fabrics made from different materials. For instance, the lining of a coat might be made from acetate fabric, while the outer fabric is made from virgin wool. A cotton knit T-shirt may be sewn with polyester thread to ensure the seam's durability.

These combinations of different materials not only enhance the positive properties but also bring challenges. With a higher percentage of synthetic fibres, the release of microplastics increases. Additionally, because the fibres have different care requirements, they may age unevenly, which can cause unintended deformation of the fabric.

Separating blended fibres is a highly complex process. Manual and mechanical sorting is limited, and recycled fibres are rarely 100% pure. Synthetic and cellulose-based fibres can be chemically dissolved, but this process is hardly ever pursued due to the low cost of new materials. There are, however, research projects and companies that recycle textiles made from blended fibers into high-quality blended yarns (e.g., Spinning Jenny, Wyron).

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)



“THINKING AND DOING;
BOTH APPROACHES COMPLEMENT
EACH OTHER, NEED EACH OTHER AND
TOGETHER OFFER PERSPECTIVE ON
BETTER AND HIGH-QUALITY
SOLUTIONS. THE PASSION
INHERENT IN BOTH APPROACHES
PROVIDES THE STRENGTH FOR THE
CONNECTION BETWEEN THEM.”

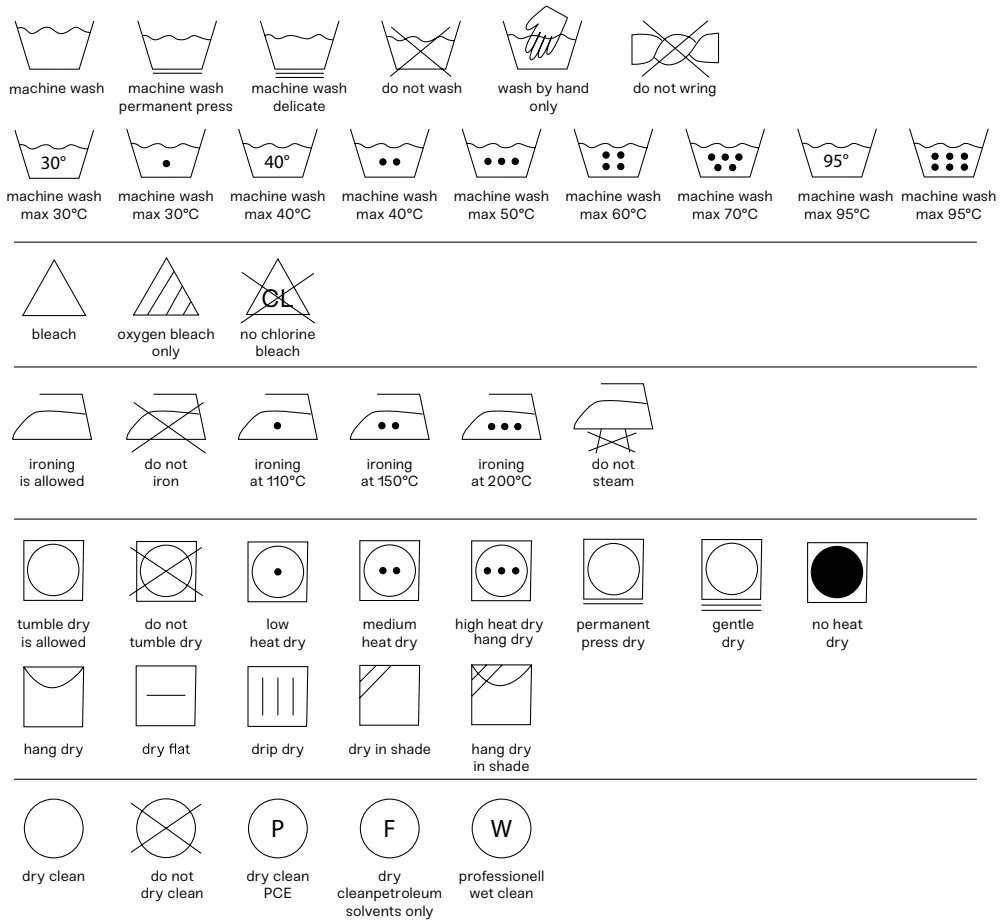
CRAFTS COUNCIL NEDERLAND



TEXTILE LABELS

A textile label is typically found in the side seam of garments, sometimes at the waistband, unless it has been removed, as is often the case with second-hand clothing. According to the EU Textile Labelling Regulation, manufacturers are required to indicate the fibre composition of a garment on its label, specifying the percentage content of each fibre. While care instructions are recommended in EU countries, they are not legally mandated. Nevertheless, most textile labels feature pictograms that provide care guidance. The label must also include the name of the manufacturer or importer.

(Eberle et al., 2022; Textil Trainer; Fashionary, 2021; Fashionary, 2022)



WASHING AND CARING FOR CLOTHES – SUSTAINABLE AND LONG-LASTING

Here are some tips and tricks on washing, refreshing, and caring for your clothes. By following these guidelines, you can save resources in your daily routine and keep your clothes in good condition for as long as possible.

WASH CLOTHES AS INFREQUENTLY AS POSSIBLE:

Only truly dirty laundry needs to be washed; everything else can go back into the wardrobe or be treated with the tricks mentioned below. Each wash cycle can break down fibres, weakening the fabric and causing colours to fade.

SPOT CLEANING:

Small stains, such as toothpaste or a sauce stain, can often be removed by hand with a little water, a drop of dishwashing liquid, and a small brush.

AIR OUT CLOTHING:

If clothing smells odd, try hanging it outside for several hours, for example, in the garden, on the balcony, or near an open window.

USE VODKA TO REMOVE ODOURS:

Another trick to remove odours is to use vodka. Fill a spray bottle with vodka and generously spray the inside of the garment. Then, let it air out and dry thoroughly.

MAXIMISE WASHING MACHINE CAPACITY:

When washing is necessary, fill the washing machine as much as possible to use the full capacity of the drum. As a rule of thumb, leaving a hand's width of space in the drum is optimal.

SORT YOUR LAUNDRY:

Separate dirty laundry into categories like colours, whites, delicates, wool, and silk if you have it.

CHOOSE THE RIGHT DETERGENT:

A full detergent, a colour detergent, and a mild detergent in powder form, as well as a liquid wool detergent, are all you need to keep your clothes clean. If you have silk garments, a specialised detergent for silk is also beneficial. You don't need more than this.

CORRECT DETERGENT DOSAGE:

Detergent contains active washing substances, water softeners, and other compounds that regulate pH, break down proteins, or add fragrance to washed laundry. The correct dosage depends on the water hardness and the level of dirt. Dosage recommendations based on these factors can be found on every detergent package. Over- or under-dosing can lead to fading and incomplete stain removal and can damage the washing machine over time.

PRE-TREAT STAINS:

Heavily stained clothing should be pre-treated before washing. You can soak the garment or treat the stain with stain remover, gall soap, dishwashing liquid, or similar products.

AVOID FABRIC SOFTENER:

Fabric softener greatly reduces the absorbency of clothing and can even damage certain textiles, such as sportswear.

WASH CLOTHES IN COLD WATER:

Wash your laundry at the coldest possible temperature. For most stains, 20°C, 30°C, or a maximum of 40°C is sufficient. Follow care labels: Pay attention to the care instructions on your clothing's textile labels.

USE ECO-FRIENDLY WASHING PROGRAMS:

If your washing machine has an eco-friendly program, use it as often as possible.

TURN DELICATES INSIDE OUT:

Turning delicate items or jeans inside out before washing helps preserve the fibres and colours on the visible side.

ZIP UP:

Close all zippers before washing to prevent deformations and tears.

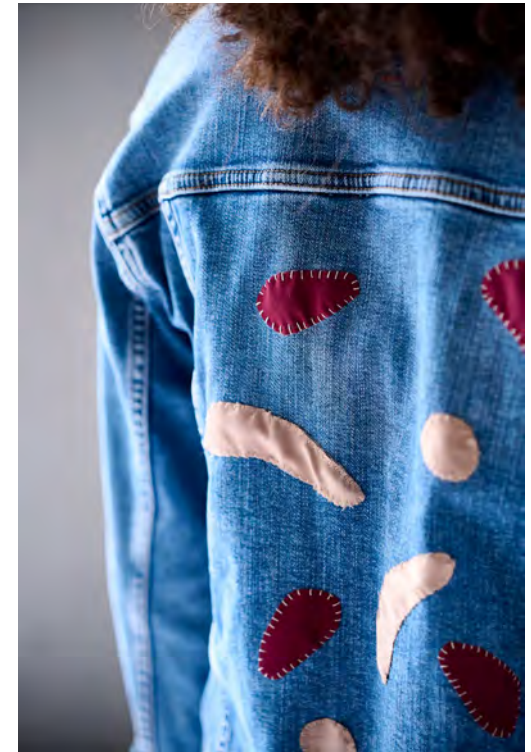
SHAKE AND HANG TO DRY:

After washing, give your clothes a good shake and, if possible, hang them to dry on a hanger. This can often save you the need to iron.

AVOID USING A TUMBLE DRYER:

Instead, let your clothes air dry. This not only saves electricity but also preserves the fibres. If possible, dry your laundry outside. A light breeze will help make the fabric softer.

Care for your clothes like for yourself!



FACTS, CONSEQUENCES, PERSPECTIVES – A CLOSER LOOK AT TEXTILE CONSUMPTION

Textile production ranks among the top three global sources of pressure on water and land use, and it has the fourth-highest impact on climate change after the food, construction, and transport sectors (EU Commission, 2022). Globally, the textile industry ranks fifth in terms of raw material use and greenhouse gas emissions due to its production processes, product transportation, and energy usage during the lifespan of textiles (e.g., washing).

In addition to the construction and packaging industries, the textile industry is one of the largest global consumers of plastics (Heinrich-Böll-Stiftung, 2019). In 2002, for the first time, more polyester fibres were processed than cotton fibres. Currently, synthetic fibres are processed at approximately twice the rate of natural fibres, and this trend is increasing (Textile World, 2015). This makes the textile industry heavily dependent on fossil resources, with estimates suggesting that 20–35% of the microplastics released into the environment come from textiles (Henry et al., 2019). The cultivation and processing of natural raw materials for the textile industry also have significant consequences. For instance, producing one kilogram of cotton requires between 8,000 and 20,000 litres of water and is highly dependent on pesticide use (Stephen, 2015).



What were once major textile regions in Europe now produce very few textiles. For example, 130 years ago, the textile sector accounted for 70% of the industry in Wuppertal, Germany; today, it is only 4% (IHK_Wuppertal-Solingen-Remscheid, 2024). Most clothing sold in Europe is imported and often comes from China, Bangladesh, Turkey, or Vietnam (Statista, 2024). The production process often spans multiple countries and continents. For instance, the cotton in a T-shirt likely originates from one of the three largest producing countries—China, India, or the USA. It may be processed into yarn and fabric in southern India, bleached and dyed in China, and sewn into a T-shirt in Bangladesh (Quarks, 2020). This T-shirt may travel 20,000 km or more before being sold in Europe. A recently passed EU supply chain law aims to ensure that larger textile companies take responsibility for meeting environmental standards and fair working conditions throughout their supply chains (Verdi, 2024).



In surveys, 88% of Europeans express a desire for longer-lasting clothing (EU Commission, 2022). However, this contradicts the generally short lifespan of purchased items, which are frequently discarded not due to defects but because they are no longer in style or because new clothing is cheap. One in five garments is worn only 1–2 times (Greenpeace, 2015). On average, 15 kg of textiles are purchased per person annually in the EU, equivalent to about 90 pieces of clothing (EEA, 2022). At the same time, 11.3 kg of textiles per person are thrown away (EU Commission, 2022). Ultra-fast fashion companies like SHEIN or BOOHOO release new products daily (Reketat, 2024). It is estimated that 4–9%

of all produced textiles are destroyed before being worn due to returns from online shopping and overproduction. New EU regulations seek to ban this practice (EEA, 2024). A total of 5.8 million tonnes of textiles end up as waste in the EU every year (EU Commission, 2022).

In Germany, about one-third of discarded textiles are thermally recycled (burned to generate energy), another third is reprocessed as recycling material, and the remaining third is reused as second-hand clothing (UBA, 2019). Most of Germany's discarded textiles are exported, primarily to the Netherlands and Poland, with some going overseas (UBA, 2019; Destatis, 2023). Some countries, such as Rwanda, have banned the import of used textiles to protect their local textile industries from cheap second-hand goods and to avoid becoming dumping grounds for textile waste (Habekuß, 2019).



The recycling of textile waste is mostly downcycling, where old textiles are cut and shredded into materials like rags or fibre insulation (UBA, 2019). Future plans for fibre recycling include the establishment of European recycling hubs to process different types of fibres and reintegrate them into equal or higher-value textile productions (EU-Commission, 2019). Recycling natural fibres is challenging; accurate sorting is labour-intensive and expensive, and after shredding, shorter fibres often remain, which are less stable and can only be used to produce yarns again by adding a significant amount of new material (Scherer, 2020). There are research projects and companies that develop processes to produce high-quality fibres and yarns from old textiles (e.g. Spinning Jenny; Wyron). However, fibres from recycled material are not necessarily from old textiles; for example, polyester from recycled packaging can be processed and spun into new textile fibres. In 2021, the recycling rate for polyester in the EU was 17%, with plans to increase it to 45% by 2025 and 90% by 2030 (Deutschlandfunk Nova, 2021). The EU Commission is renegotiating the labelling of recycled content this year, which could soon be mandatory on textile labels (EU Parliament, 2024).

The paragraphs above demonstrate that every piece of clothing involves a complex, difficult-to-track network of various cultivation and production sites, usage habits, and disposal processes that consume vast amounts of resources and land while causing significant emissions. The working conditions, employment relationships, occupational health and safety, and social structures within the textile industry have only been briefly touched upon in this discussion. It is clear that these aspects are also opaque, with significant issues prevailing for many workers (BMZ, 2023). The EU's textile strategy aims to fulfil the commitments of the European Green Deal, the new Circular Economy Action Plan, and the Industrial Strategy. This includes promoting the longer use of clothing (EU Commission, 2022). Local repair infrastructures are to be established, strengthened, and expanded to support this goal (EU Commission, 2022). In a study, respondents indicated that the high cost of professional repair services deters them from having their clothing repaired, and that time and knowledge are barriers to repairing clothing themselves (McQueen et al., 2023). As a result, buying a new garment often seems easier and cheaper than repairing a damaged one.



A variety of measures are needed to achieve a transformation of the textile industry towards climate-neutral and resource-conserving lifestyles and production methods. Economic, social, cultural, emotional, and political interests, influences, and needs must be researched and reshaped. At SPACE FOR REPAIR and SPACE FOR TEXTILES, we believe that all measures should prioritise the goal of using produced goods for as long as possible to have any chance of reducing resource consumption and harmful emissions. The processes and steps within the textile production and disposal chains, as well as the consumption culture built around them, need a shift that explores and establishes new aesthetics and usage cultures. Focusing on a long product lifespan requires establishing a culture of maintenance, care, and repair. Processes, services, and clothing must be designed so that a long wearing period is more attractive for both the economy and the wearer than the continuous acquisition of new garments.

We believe that sewing on a patch not only alters a garment but also imparts material knowledge and craftsmanship, demonstrates what well-maintained and repaired clothing can look like, and thus contributes in a small way to the larger goal of long-term use of goods.

“THE TIME HAS COME TO REVALUE
OLD WISDOMS AND TECHNIQUES
AND INJECT THEM WITH A FRESH
PERSPECTIVE, BY TURNING
OPPRESSION INTO OPPORTUNITY.”

ORSOLA DE CASTRO



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