

Lesson 6.2: Fabric Handling







Different fabrics behave in different ways due to their properties and characteristics.


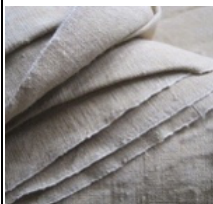
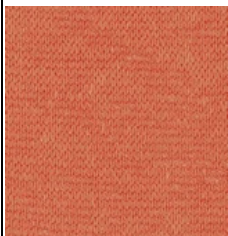
So, the skills of a sewing machinist must include the control and handling of the materials being sewn, as well as the control of the machine. You need to know the best handling methods and the problems that can occur if fabrics and materials are not handled properly.

This section lists the most common materials used, the type. characteristics, how to handle them and the products they are most often used for:

Natural Fabric


| Fabric | Top 3 Characteristics | Used in the production of... | Handling Tips |
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|  Cotton | Absorbent Retains colour Durable | Apparel Bedding Homeware | <ul style="list-style-type: none"> • Guide the fabric through the needle area. Do not push or pull fabric • Easy to manoeuvre • Responds to speed sewing well |
|  Silk | Strong Soft Lustrous | Luxurious apparel home furnishings Linings | <ul style="list-style-type: none"> • Hold both front and back of the fabric, guiding it through to avoid pucker or bunching. • Do not push or pull fabric through the needle area • Regularly check and align seams to avoid seam slippage • The needle must be sharp • Use the correct needle type and size (See lesson 2.11) |



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| | | | <ul style="list-style-type: none"> • Feed dog and pressure must be is set correctly (See Course 3) • Always test sew on delicate fabric |
|  <p>Linen</p> | <p>Strong Durable Creases</p> | <p>Apparel Home furnishings Bedding</p> | <ul style="list-style-type: none"> • Ensure a wide seam allowance to avoid fraying or seam grin • Do not push or pull fabric through the needle • Easy to manoeuvre |
|  <p>Wool</p> | <p>Warm Different weights available Water repellent</p> | <p>Outerwear Suits</p> | <ul style="list-style-type: none"> • Wool can be moulded with steam and moisture. • Use a longer than average stitch • Adjust feed dogs for bulky seams • Use correct needle types and size (See lesson 2.11) |



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|  <p>Leather</p> | <p>Water repellent Strong Retains shape Different types/ range of quality</p> | <p>Footwear, Apparel Furniture</p> | <ul style="list-style-type: none"> • Stick during sewing • Use a silicon spray, walking foot or silicon spray • Leather can only be sewn once (Needle holes do not close once sewn) • Use the correct needle type and size (See lesson 2.11) |
|  <p>Hemp</p> | <p>Warm Insulator Durable</p> | <p>Workwear/canvas Apparel Home furnishings</p> | <ul style="list-style-type: none"> • Stiff before washing • Easy to manoeuvre • No stretch or give (unless cut on the bias) |
|  | <p>Soft Stretchy Good drape</p> | <p>Casual wear Dance wear Knitwear</p> | <ul style="list-style-type: none"> • Do not pull whilst stitching, fabric will wave. • Use the correct needle type and size (See lesson 2.11) • Use a short stitch setting • Grip the fabric lightly as you sew keeping a slight stretch |


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| Jersey knit | | | <ul style="list-style-type: none"> • Fabric curls once cut • Fabric unravels/ ladders easily • Use a short stitch setting • Sews best on an overlocker or coverstitch machine |
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Synthetic Fabrics

| Fabric | Characteristics | Used in the production of... | Handling Tips |
|---|--|---|--|
|  <p>Acetate</p> | <p>Resistant to shrinkage Moth/mildew repellent Soft & luxurious</p> | <p>Ladieswear Dresses Blouses etc</p> | <ul style="list-style-type: none"> • Slippery and light • Lightly grip both front and back of the fabric whilst sewing to avoid pucker or bunching • Seam slippage can occur – regularly check and align seams • Ensure the needle is sharp, not blunt • Use the correct needle type and size (See lesson 2.11) • Do not push or pull fabric through the needle area • Always test sew on delicate fabric |



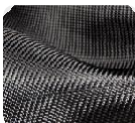
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|--|--|---|--|
|  <p>Chiffon</p> | <p>Sheer Drapes well Lightweight</p> | <p>Bridal wear Evening wear Blouses etc</p> | <ul style="list-style-type: none"> • Slippery and light • Lightly grip both front and back of the fabric whilst sewing to avoid pucker or bunching • Seam slippage can occur – regularly check and align seams • Ensure the needle is sharp, not blunt • Use the correct needle type and size (See lesson 2.11) • Do not push or pull fabric through the needle area • Always test sew on delicate fabric |
|  <p>Acrylic</p> | <p>Imitates wool Durable Cheap</p> | <p>Apparel Furnishing Luggage</p> | <ul style="list-style-type: none"> • Dulls needles, snips, and scissors quickly • Prone to skipped stitches and puckered • Keep needle sharp • Use the correct needle type and size (See lesson 2.11) |

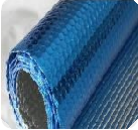

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| | | | <ul style="list-style-type: none"> • Easily damaged by heat steam • Fuses when sewn fast due to needle heat |
|  Latex | Elastic Stretchy Durable | Foundation garments Dancewear Sportswear | <ul style="list-style-type: none"> • Sticky - use silicone spray to ease feed • Use a Teflon or walking foot • Can only be sewn once (holes do not close once sewn) • Use a short stitch setting • Grip the fabric lightly as you sew keeping a slight stretch • Keep needle sharp • Use the correct needle type and size (See lesson 2.11) • Sews best on an overlocker or cover stitch machine |
|  Nylon | Durable Stretchy Easy to clean | Clothing Domestic and industrial appliances, Luggage | <ul style="list-style-type: none"> • Slippery and light • Lightly grip both front and back of the fabric whilst sewing to avoid pucker or bunching. |



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| | | | <ul style="list-style-type: none"> • Seam slippage can occur, regularly check and align seams. • Walking or Teflon foot is recommended • Use the correct needle type and size (See lesson 2.11) |
|  Velvet | <p>Smooth Soft pile Luxurious Can be cotton or synthetic base</p> | <p>Clothing Home furniture</p> | <ul style="list-style-type: none"> • Lightly grip both front and back of the fabric whilst sewing to avoid seam slippage • Regularly check and align seams. • Use the correct needle type and size (See lesson 2.11) • Use a walking foot to accommodate pile • Ensure correct pressure – too much pressure will squash the fabric pile • Cotton velvet is easier to sew than synthetics velvet |

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|  <p>Polyester</p> | <p>Wrinkle resistance Springs back into shape Strong</p> | <p>Clothing Upholstery Home furnishings</p> | <ul style="list-style-type: none"> • Dulls needles, snips, and scissors quickly • Prone to skipped stitches and puckered • Keep needle sharp • Use the correct needle type and size (See lesson 2.11) • Easily damaged by heat steam • Fuses when sewn fast due to needle heat |
|  <p>Spandex</p> | <p>Shape retention Highly durable Stretchy & Flexible</p> | <p>Fashionwear Sports/dance wear, Under garments</p> | <ul style="list-style-type: none"> • Do not pull whilst stitching, fabric will wave. • Use the correct needle type and size (See lesson 2.11) • Fabric curls once cut • Fabric unravels/ ladders easily • Use a short stitch setting • Grip the fabric lightly as you sew keeping a slight stretch • Sews best on an overlocker or coverstitch machine |

Industrial Fabric

| Fabric | | Top 3 Characteristics | Used mainly in the production of... | Handling Tips |
|--|----------------------|--|---|--|
|  | Fiber glass | Versatile Chemical resistant Stable/strong | Insulators Protective products Structural objects | <p>All technical textiles products made from industrial fabrics have extremely high specifications and require durable and accurate seams.</p> <p>Most industrial fabrics need a high penetration force, a strong needle and specialized thread, without all three you could experience.</p> <ul style="list-style-type: none"> • Skipped stitches • Point damage • Material damage |
|  | Filter Fabric | Functionality Longevity. High temperature & chemical resistance. | Industrial filters Domestic filters Linings | |
|  | Carbon Fabric | Stiff/ fire resistant Light weight High strength. | Safety helmets Aircraft interiors | |

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|---|-------------------------------|---|---|---|
|  | | | Windmill blades | <ul style="list-style-type: none"> • Thread splicing • Thread breaking • Needle breakage |
|  | Reflective Fabric | Reflects light Durability Flexibility/usability | Safety wear Hi-visibility items Security/life jackets | Reflective polyethylene, fibre glass and some filter fabrics can only be sewn once – needle holes will not close. |
| | Flame Resistant Fabric | Flame resistible. Durability Long lasting glaze quality | Apparel Furnishing Safety products/wear | |

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|---|--|---|--|
|  <p>Polyethylene Fabric</p> | <p>Dense and strong bags. Lightweight Highly elastic</p> | <p>Bags/luggage Toys i.e. trampolines Tents/tarpaulin</p> | <p>A walking, Teflon foot or silicone spay should be used if fabrics stick to the machine surface</p> <p>Dust from carbon and fiberglass may mildly irritate skin, eyes, and lungs. Wear a dust mask to minimize any itching or irritation.</p> <p>Be aware – fiberglass or carbon fabric edges can be sharp, if possible, wear gloves to avoid cuts and slivers.</p> <p>Seam slippage can easily occur on carbon, filter, and reflective fabrics, regularly check and align seams</p> |
|  <p>Quilted Fabric</p> | <p>Warm Medium/heavy weight Durable</p> | <p>Bags/luggage Clothing Bedding/mattresses</p> | |

In addition to the information above please find links to videos that demonstrate techniques used when sewing difficult fabrics on industrial sewing machine. These includes footage on working with velvet, light materials, fleece, and wool.



How To Sew Velvet And Pile Fabrics Without Pins Or Pucker

How to sew velvet without pins or pucker by Windmill Workroom

<https://www.youtube.com/watch?v=omCsfV0pC4A>



Adjusting the Juki DU-1181N to sew on lighter material with T40 thread.

Adjusting an industrial machine to sew on lighter material by Sewing Gold

<https://www.youtube.com/watch?v=Pjra7pUhfM8>



Juki DDL-5550N sewing on fleece and wool.

Sewing on fleece and wool by Sewing Gold

<https://www.youtube.com/watch?v=O1YPJD42ImQ>

Knowledge Challenge 6.2

1. What two fabrics, from the list below stretch when being sewn?
 - Cotton
 - Jersey knit
 - Chiffon
 - Spandex

2. Highlight three things you can do to ensure minimum problems when sewing stretch fabric.
 - Use a small stitch
 - Use a longer stitch
 - Sew on an overlocker or cover stitch machine
 - Tighten the presser foot pressure
 - Stretch and pull the fabric as much as possible as you sew.
 - Use the correct needle.

3. Light weight fabrics such as silk or acetate need to be handled in a certain way when sewing. Identify three problems that can occur?

- Pucker
- Skipped stitched
- Seam slippage
- Fraying
- Bunching

4. What can you do to help prevent these problems? Fill in the missing words.

To sew lightweight fabrics you need to use the right N_____, ensure the needle is not b_____, check for seam s_____. Always complete a t_____ sew.

5. Match the fabric characteristic to the fabric.

| Fabric characteristic | Fabric |
|---|---------|
| Flexible shape retention, highly durable | Spandex |
| Warm, water repellent, comes in different weights | Acrylic |

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|---------------------------------|---------|
| Imitates wool, durable, cheap | Chiffon |
| Sheer, lightweight, drapes well | Wool |

6, Which fabrics from the list below are industrial materials?

- Flame resistant fabric
- Wool
- Fibre glass fabric
- Velvet
- Carbon Fabric
- Cotton Drill

7. There are specific health and safety measures you may need to take (in addition to regular health and safety practises) when sewing industrial fabrics; highlight two from list below”

- Ensure needle guard is present before sewing on an industrial sewing machine.
- Wear a dust mask to minimize any itching or irritation when sewing carbon and fiberglass.
- Keep the work area clean and free from hazards when working on industrial fabrics.
- If possible, wear gloves to avoid cuts and slivers when stitching fiberglass or carbon fabric.

8. When working on fabric with a sticky surface, the material can flow slowly or become stuck at the needle point, causing skipped stitches or no-sew. What two things can you do to help prevent this from happening?

- Use silicone spray on the surface of the machine
- Increase the pressure on the presser foot
- Replace the 'presser foot' with a walking foot or Teflon foot
- Change the stitch setting to create a longer stitch