



## Lesson 6.4: Thread Types

As a production sewing machinist, you are unlikely to be responsible for purchasing thread, but you may be responsible for selecting thread for a product, if the thread type is not stated in the product specifications. Therefore, it is beneficial to be aware of thread types and thread characteristics.

It is important to recognise that industrial sewing machines may not function properly when using incorrect, old, cheap, or poor-quality thread and the smallest thread issue can result in sewing problems. It is also very important to ensure the same thread type is in the top and bottom threading mechanisms.

If old, cheap, or poor-quality thread is used, or if a different thread type is used in the top and bottom threading mechanisms this may cause the following problems-

- Re-occurring thread breakage
- Thread bunching and tangling
- Stitch does not form properly

**To address the problems above, use a quality thread and ensure the same quality thread is in the top and bottom feed.**

Ideally the type of thread used should match the materials being sewn, this means

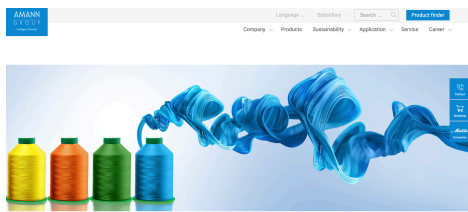
- Natural threads are best for natural fabrics
- Synthetic threads are best for synthetic fabrics

However, natural threads are expensive, therefore polyester threads are widely used throughout the industry.

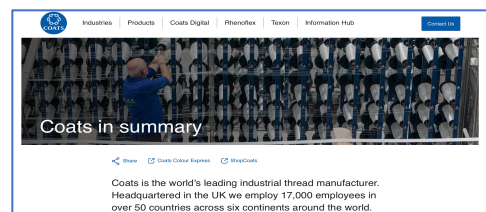
Polyester thread is usually cotton coated and works well on most fabrics. The thread stretches and thus avoids puckering, and the cotton outer layer prevents the polyester from melting as it sews at high-speed.

Sewing threads are fundamental to the form and function of the product. Specialist threads are manufactured for all kinds of applications from standard sewing to special high-tech operations for clothing, footwear, automotive, embroidery, medical and high-performance technical textiles.

Two of the top thread manufactures are UK base companies. They are world leaders in thread manufacturing, as well as an innovative pioneers in sustainability and performance materials, for more information see the links below:



<https://www.amann.com>



<https://www.coats.com/en>

## Sewability

‘Sewability’ of thread is a term used to describe a sewing thread’s performance. The main characteristics of thread with good ‘sewability’ are

- They do not break when high-speed sewing
- They form consistent stitch formations
- They do not cause skipped stitches or stitch malfunctions
- They have a high level of abrasion resistance
- They are heat resistance

- They have sufficient surface smoothness, to pass easily through the machine guides

To improve 'sewability', threads are finished differently to suit the need of various sewing tasks and materials. Different finishes can increase strength, abrasion resistance and the lubrication qualities of the thread. Thread finishes include bonded, non-wick, anti-fungal, fire retardant, water repellent and anti-statics.

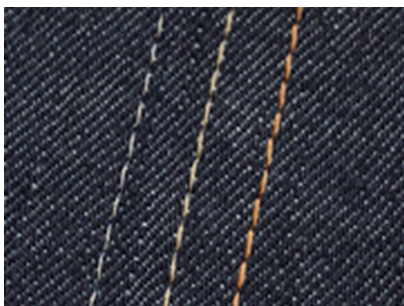
**The quality of thread is very important, certain machines will not function properly if a poor-quality thread or if different thread types or thread thicknesses are used in the upper and lower feed. Watch the short tutorial below for more on thread types**



**Lesson 6.4 Thread Types**

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<https://vimeo.com/586215377/619c780882>



## Thread Size

Thread selection is based on thread size, this is the primary consideration to ensure the functional and aesthetics requirements of the finished product is achieved.

Thread size is based on weight this known as 'denier'.

Denier is the weight, in grams, of 9,000 meters of thread. It's a physical actual weight for a length of thread. It says nothing of the thread configuration, material, or strength.

The thread size is usually communicated on a sticker located on the top of the cone. This sticker will tell you the 'ticket number' and the 'Tex Number'.

The higher the ticket number, the finer the thread. The lower the ticket number (TKT), the thicker the thread.

The Tex number (TEX) is the weight in grams of 1000 meters of thread. If 1,000 meters weighs 25 grams, it is a Tex25. The ticket number (TKT) on the thread below is 120 and the Tex is 027

But what does this mean to you? To help you select the correct thread for a product see the guide below. The guide indicates the recommended type of thread suitable for the fabric being sewn, the UK ticket number and the Tex number.

FABRIC	TYPE	TICKET/TEX NUMBER
<b>Leather and suede</b> Heavy wear Midweight Lightweight	Glazed cotton -wrapped polyester	75 /T40
Upholstery Fabric	Glazed cotton-wrapped polyester	75 /T40
Heavy Woollens (woven)	Cotton-wrapped polyester Polyester Mercerised cotton	90/T30
Lightweight worsteds	Polyester Cotton-wrapped Polyester	120/T24
Wool or wool-mix knits	Cotton-wrapped Polyester Polyester Textured Polyester	160 to 100 /T18 -T27
Medium to heavy cotton (ie denim)	Polyester Cotton-wrapped polyester	120-100/ T24-T27
Lighter cotton and cotton mix	Mercerised cotton Cotton-wrapped Polyester	120/T24
Cotton and cotton mix knits	Cotton-wrapped Polyester Polyester	180-120/ T16-T24
Polyester and Polyester mix	Polyester	120-100/T24-T27



Lightweight silks	Fine machine silk Mercerised cotton	180-120/ T16-T24
Lycra and spandex	Polyester Nylon	180-100/ T16-T24
Sheer, delicate fabric	Polyester Cotton wrapped polyester	180-120/ T16-T24

**PLEASE NOTE:** The Thread numbering systems are confusing, different countries follow different ticket numbers and threads can be measured using different standards. When comparing threads, make sure you use a consistent standard of measurement, and the best reference is your eyes and fingers to gauge the diameter of thread.

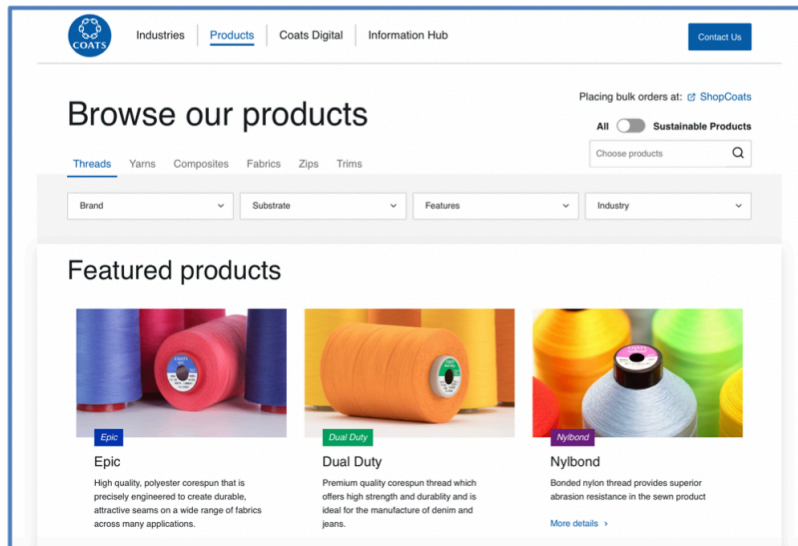
## Selecting the right thread for the job

The table above will help you select the right thread for the job. When selecting the thread, base the selection on the fabric, the functional and aesthetics requirements of the finished product.

Here are a few tips to help identify, select, and use the correct thread

- Heavier threads make your stitching more visible.
- The thread size measures the thread thickness. If another weight is given for thread, it refers to the amount of thread on the spool.
- Thread tends to get stronger as it gets heavier.
- The tension on your sewing machine will need adjusting when you switch thread weights.
- Try to use a needle where the eye is 40% larger than the thickness of the thread

As mentioned previously, Coats is one of the world's leading industrial thread producing company. They also develop and provide complementary and value-adding products, services and software solutions to the apparel and footwear industries. The Coats website is extremely informative, covering not only thread types but a wide range sewing advice and expertise.



<https://www.coats.com/en/Products?type=Threads&type=Threads>

## Knowledge Challenge 6.4

1. Incorrect, old, poor-quality, or mixed thread types in the upper and lower feed can affect how a sewing machine functions, even if the machine is threaded correctly. Select the three key problems that can occur.

- Thread bunches and tangles
- Needle breakage
- Excess pressure on presser foot
- Stitch does not form properly
- Machine slows down
- Re-occurring thread breakage

2. How can you ensure the problems listed in the previous question do not occur?

- Use quality thread, and ensure the same thread is installed in both bottom and top feed
- Ensure the top thread is the right colour and quality for the fabric being sewn
- Ensure the thread is strong, it is the right colour and the needle is threaded

3. 'Sewability' describes sewing thread performance. List three characteristics of good 'sewability'

1.	
2.	

3.

4. How do thread manufacturers improve the sewability of threads?

- They make the thread strong to ensure it does not break during sewing
- They apply different finishes to the thread suit tasks and materials
- They make increase the weight and denier of the thread to suit different quality levels

5. What is meant by the term 'Denier' when we are talking about thread?

- Denier refers to the thread weight
- Denier refers to thread configuration
- Denier refers to the thread colour

6. The thread size is indicated by the ticket number. Match the right thread (ticket number) to the fabric listed

<b>Ticket Number</b>	<b>Fabric</b>
TKT90	Heavy Woollens
TKT120	Lightweight silks
TKT180	Wool mix knits
TKT75	Medium to heavy cotton
TKT160	Leather



## Course completion and certification

Congratulations! You have successfully completed all the challenges and achieved your Course 6 Fabric & Materials Digital Certificate. Well done!

This course is part of the UKFT Production Sewing Machinist Programme. The skills and knowledge you have gained will help secure employment in the fashion and textiles industry, can be utilised in your role if you are already employed or help advance your career in the industry.

To download your certificate, ensure all your lessons are marked as complete (see image 1). Once all lessons are complete, on the course overview page you will see a button on the top right, which will allow you to download your certificate (see image 2).

1: Mark lessons as complete	2: Download certificate

If you have completed your course offline, your tutor will download and issue your certificate.

You can now progress you're learning by completing the full Production Sewing Machinist programme, which will further advance your technical know-how and expertise. To help ensure this course remains relevant, useful, helpful, and effective for future learners. Please complete the feedback form below, thank you.



## We appreciate your feedback

We would appreciate your feedback and opinion. To this end, please complete the short evaluation survey below and add general comments that may help improve the content and course delivery

### 1. The course, as a whole was:

- ☐ Excellent
- ☐ Very Good
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Very Poor

### 2. The course content was:

- ☐ Relevant to the production sewing machinist job role
- ☐ Partly relevant to the production sewing machinist job role
- ☐ Not relevant to the production sewing machinist job role

### 3. The explanations, examples, videos, illustrations etc were:

- ☐ Excellent
- ☐ Very Good
- ☐ Good, Fair
- ☐ Poor
- ☐ Very Poor

### 4. The **skills and knowledge** challenges where:

- ☐ Too Easy
- ☐ Just right
- ☐ Too difficult

### 5. Did you complete any **Groundwork exercises**?

- ☐ Yes

- ☐ No

**6. If yes, where they?**

- ☐ Interesting and useful
- ☐ Not interesting or very useful

Can you recommend any improvements to the course that may help future learners? Thank you, this will help us improve future course content and the learning experience. If you are completing the course offline.

Please email the survey section to:

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