

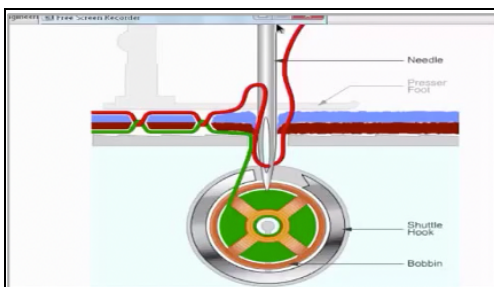
Lesson 3.12: Stitch & Seam Types

The sewing industry recognises and communicates stitch and seam requirements using classification numbers. These numbers are allocated by International/British Standard Organizations (ISO/BSI) and they help towards providing clear instructions and product manufacturing specifications.

The classification numbers may not be used when communicating with production team, and as a production sewing machinist, you may not need to know the classifications, or how to produce all the seams and stitch types within this lesson, but it is useful to be aware of the most used stitch classifications and seam types.

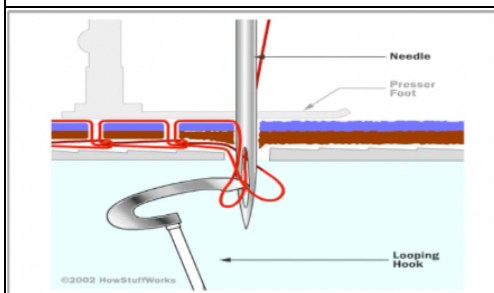
Stitch Types

Stitches are used to hold layers of fabric together and can be formed in 2 ways, by interlacing threads to form a **LOCK STITCH** or Inter-looped threads to form a **CHAIN STITCH** as shown in the images below



This image shows how a lockstitch is formed by a lockstitch machine. To see the stitch being formed follow the link below:

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





This image shows how a one thread chainstitch is formed by a chainstitch machine. To see the being formed follow the link below:

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

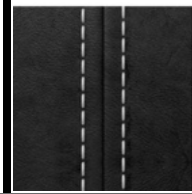
Due to the way the stitches are formed the lock stitch has different characteristics to the chain stitch. The lockstitch is strong and ridged and the chain stitch is stretchy and unravels easily. Their use depends on the design, function and end use of the product being sewn. The advantages and disadvantages of each stitch types are listed below:

| The lockstitch is... | The Chainstitch is... |
|---|--|
| Strong and secure | Strong but easily unravelled |
| Rigid, no stretch | Stretchy/Elastic |
| Reversible (back tack possible) | Unreversible (no back tack) |
| Versatile, many uses | Limited use |
| Can be turned/pivoted | Pivoting not possible – straight sewing only |
| Stitch is reversible (looks the same in both sides) | Stitch looks different on the wrong side |
| Requires minimum thread | Consumes excessive amounts of thread |

Lockstitch and chainstitch are categorised in six classifications. These classifications are used by industry to help identify the right stitch for the job in hand.

| CLASSIFICATION | |
|---|---|
| Class 100 to 104: Chain stitch, formed with one or more needle threads. These types of stitch are used for hemming, belt loops or padding Chain stitch is elastic and can easily be unravelled. |  |
| Class 200: Hand stitch produced from a single thread, passed through the fabric from one side to another. Class-200 has four types- running basting, back stitch, diagonal basting, and buttonhole stitch. These types of stitch are used for stitching high-end products. |  |

Class 300: Lock stitch, the most used stitch, formed by a needle thread interlacing with under thread. Class-300 has four types- 301, 304, 308 and 309. These types of stitch are used for stitching most types of sewn products



Class 400: A multi-thread chain stitch, formed with two or more threads, giving the appearance of lock stitch on the top with double chain effect formed by a looper thread on the under-side. Class-400 has three types- 401, 404 and 406. These types of stitch is used for setting elastic in waist bands and decorative stitching on belts.



Class 500: is the overlock stitch, formed with one or more needles and/or loopier threads with at least one thread passing round the edge of the material. Class-500 has three types- 503, 504 and 512, used for edge neatening of fabrics, particularly where extensibility of stitches is important



Class 600: Cover stitch formed with two or more groups of thread, a highly elastic, seam neatening and flat seam stitch, used to join two raw edges, suitable for knitted garments. Class-600 has three types- 602, 605 and 607. These types of stitch are used for knits, lingerie, binding elastics, decoration, etc.



To see more stitch types, go to [‘The Coats Standard stitch type classification guide’](#)

Knowledge Challenge 3.14

1. A lockstitch is formed by interlacing threads, to complete this challenge identify three key characteristics of the stitch from the list below.

- Strong and secure
- Stretchy/Elastic
- Reversible
- uses a lot of thread
- Versatile

2. A chain stitch is formed by inter-looping threads, from the list below Identify three key characteristics of the stitch.

- Stretchy/Elastic
- Reversible
- Straight sewing only
- uses a minimum amount of thread
- Unravels easily

3. This knowledge challenge is about the application and function of different stitch types. See the list of stitches below and draw a line to match them to their use.

| | |
|--|--|
| ○ Class 400: Multi-thread chain stitch | Used for setting elastic and decorative stitching |
| ○ Class 100: Chain stitch | Used in hemming, belt loops, padding operations and felling. |
| ○ Class 300: Lock stitch | Used for stitching seams etc on most types of sewn products |
| ○ Class 600: Coverstitch | Used for knits, lingerie, binding elastics, decoration, etc |
| ○ Class 200: Hand stitch | Used for stitching hems etc on high-end products. |
| ○ Class 500: Overlock stitch | Used to neaten edges of fabric |

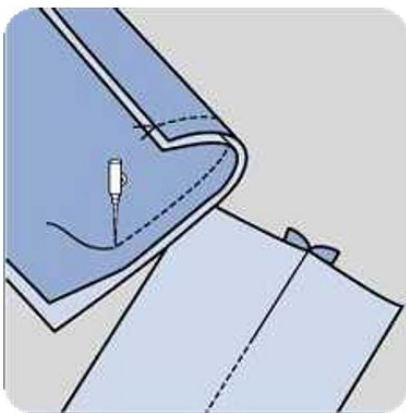


Seam Types

A seam is where two or more layers of material are held together by stitches. The stitched line is the seam line that is usually parallel to the raw edge of fabric and the seam allowance is the distance between the seam line and fabric edge.

There are numerous seam types used in the industry and it is important to be familiar with their applications and variations so you know what seam will suit the product being made. Like stitches, seam types are classified by their type (i.e., plain, lapped, bound, flat). There are eight classes of seams defined by ISO/BSI (International /British Standard Organisation) as listed by 'Coats' below:

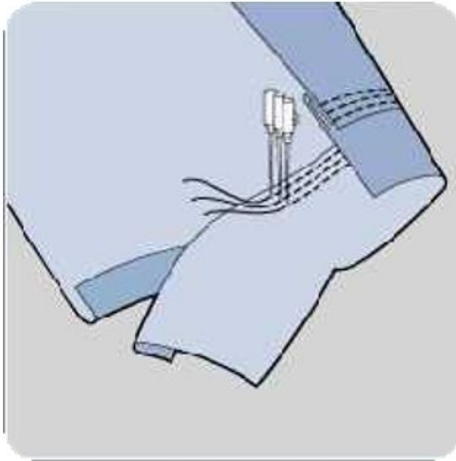
- Class 1 – Superimposed seam
- Class 2 – Lapped seam
- Class 3 – Bound seams
- Class 4 – Flat seams
- Class 5 – Decorative stitching
- Class 6 – Edge finishing/neatening
- Class 7 – Attaching of separate items
- Class 8 – Single ply construction



Class 1

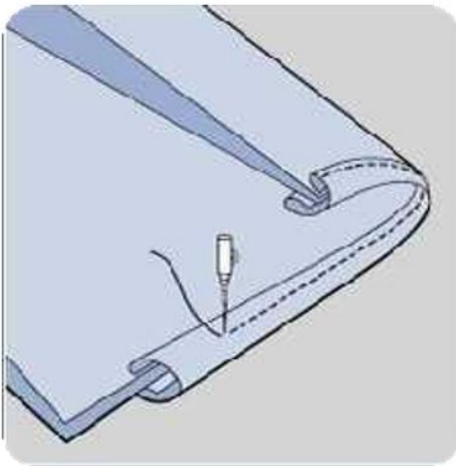
Superimposed seam(s) These seams generally start with two or more pieces of material superimposed over each other and joined near an edge, with one or more rows of stitches. There are various types of seams within this class, are used to create a neat load bearing seams on most sewn

products.



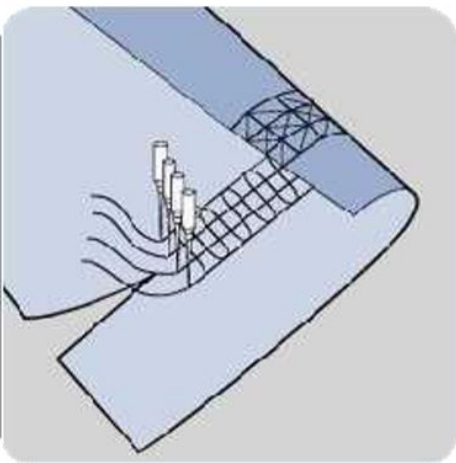
Class 2

Lapped seam(s), two or more piles of material are lapped and joined with one or more rows of stitches. Most used seam in jeans manufacture because of its strong construction. This seam version is commonly used on lingerie and rain wear production.



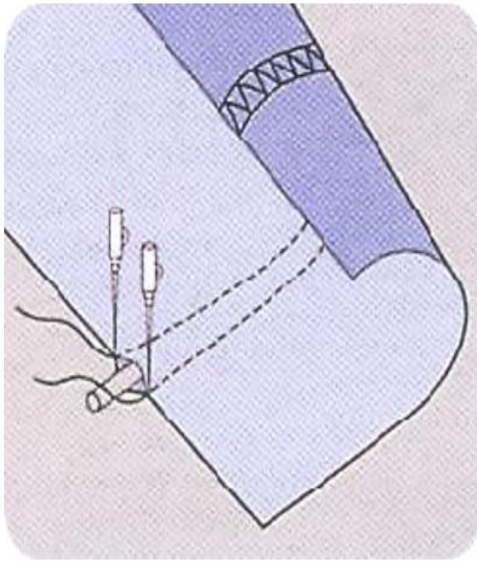
Class 3

Bound seams, these are formed by folding a binding strip over the edge of the piles of material and joining both edges of the binding to the material with one or more rows of stitching. This produces a neat edge on a seam exposed to view or to wear, used mainly on necklines of t-shirt



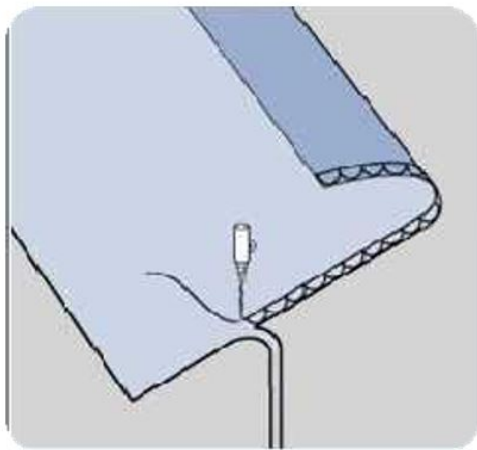
Class 4

Flat seams were two fabric edges, flat or folded, are butted together and over sewn with stitches. The purpose is to produce a joint where no extra thickness of fabric can be tolerated. The edges do not overlap one another. Used on very fine knitted garments or underwear where seams are required to be free from bulk



Class 5

The Decorative seam is a series of stitches along a straight or curved line or following an ornamental design, on a single ply of material. More complex types include various forms of piping, producing a raised line along the fabric surface. The stitching results in decorative surface effects on the fabric e.g., pin tucks, application of braids, etc.



Class 6

Edge finishing, where the edge of a single ply of material is covered with a stitch. The simplest of these operations is overlocking, in which a cut edge of a single ply is reinforced by over edge stitching to neaten and prevent fraying. There is only ever one component to this seam. This includes

other popular methods of producing a neat edge like hemming and blind stitch hemming, used on most sewn products.

Class 7 Attaching of separate items, this seam class involves seams that require the addition of another component onto the edge of a piece of fabric e.g., elastic braid onto the edge of ladies' briefs. This type of seam requires two components.

Class 8 Single ply construction., this seam class consists of one piece of fabric that is turned in on both edges. It is most seen in belt loops or belts for which a folder can be attached to the machine. This type of seam requires only one component.



Seam Quality

Seams are a basic requirement of manufacturing a sewn product and seam performance has great influence on the product quality, as the seam type affects the appearance, performance, of the product.

Seam types are selected according to the functional, design and aesthetic requirements of the product and seam choice can also depend on the structure and properties of the fabric to be sewn. Quality parameters often include:

- **Seam size:** seam depth, length, and width.
- **Seam slippage strength:** the amount of force required to pull out a total of 1/4" of the opposing sets of yarns perpendicular to the seam line.
- **Seam strength:** the force required to break open the seam either by breaking the thread or by breaking the sewn material

The eight seam types highlighted in this section are the most used in the industry, there are other seam variations, if you want to know more, follow the link below:



For further information on seam types and quality go to the coast guide on seam types:

https://coats.com/en/information-hub/Seam-Types#Seam_Quality

Knowledge Challenge 3.15

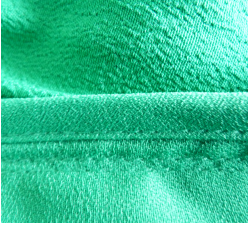



1. To make an item that's needs lapped side seams, a bound seam and decorative piping. Which three seam classifications will be used?

- Class 1
- Class 2
- Class 3
- Class 4
- Class 5
- Class 6
- Class 7
- Class 8

2. A chain stitch is formed by interlooping threads, from the list below identify three key characteristics of the stitch.

- Stretchy/Elastic
- Reversible
- Straight sewing only
- Uses a minimum amount of thread
- Unravels easily

3. This knowledge challenge is about the identification and function of different seam types. See the images of seams below. Match the seam with its classification and use.

| | | |
|---|------------|--|
|  | Class 4 | Flat Seam used on knitted garments or underwear |
|  | Class 3 | Lapped seam, commonly used on rainwear and lingerie |
|  | Class 2 | Bound Seam used to neaten edges and necklines |
|  | Class 8 | Single ply construction used to turn in on both edges e.g. belts/ belt loops |

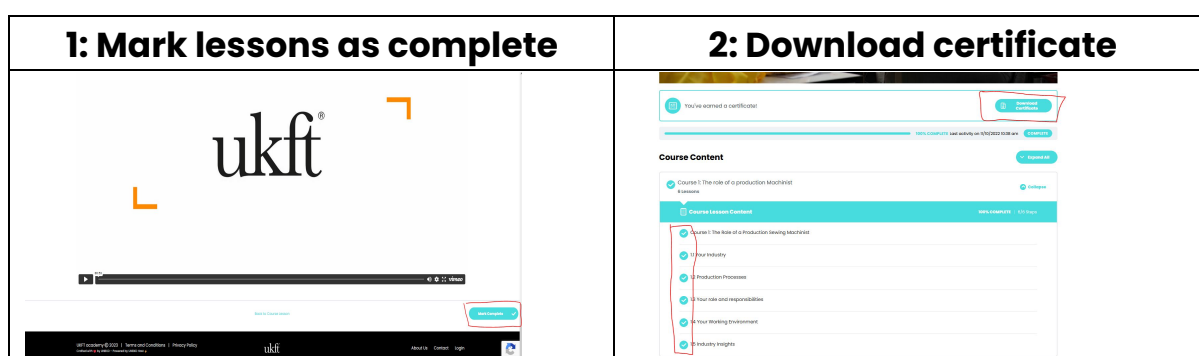


Course completion and certification

Congratulations! You have successfully completed all the challenges and achieved your Course 3 Industrial Sewing 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).



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:

Celia.thornley@ukft.org