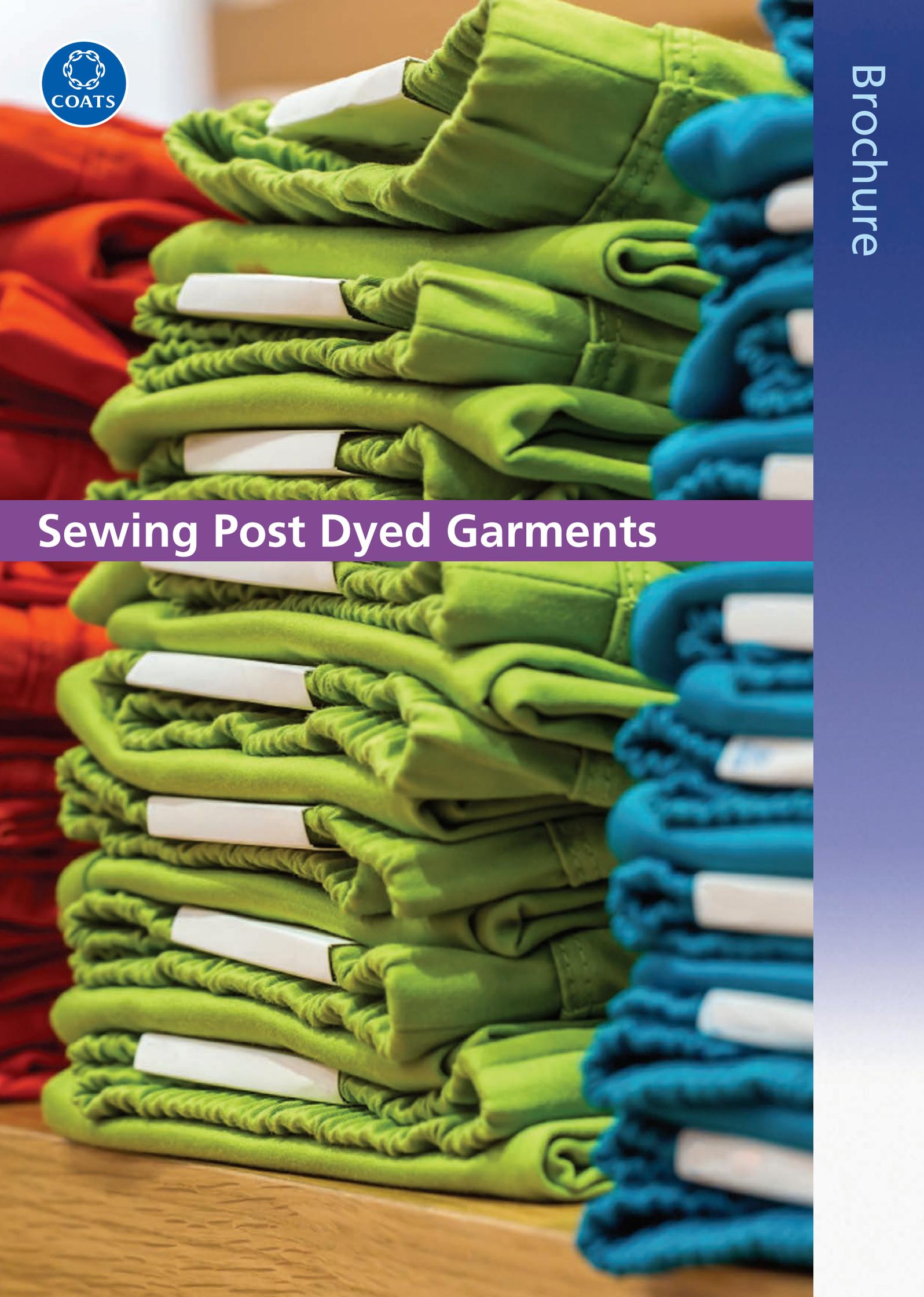




Sewing Post Dyed Garments



Introduction

In the world of fast fashion, when time to market is paramount, garment dyeing post make up is increasingly adopted by manufacturers.

Apparel dyeing has implications for the finished quality of the garments and this brochure explains how to minimise the negative impact of this process on general seam appearance and sewing related issues. We explain the do's and don'ts of sewing post dyed garments.

Why garment dyeing?

Generally, apparel is constructed from fabrics that are pre-dyed (piece dyed) before the actual cutting and sewing. The colour and quantity are committed to at the fabric dyeing stage with long lead times to market resulting and less forecast accuracy.

For seasonal fashion colours it is possible to react to actual market demand if the apparel is post dyed. This involves the production of garments from undyed fabric and components than dyeing them in the required quantities.



Post dyeing has many advantages:

- Simple one shade production
- Stock reduction - finished goods and trimmings
- Capacity for specialised finishes, which are applicable to the whole garment. i.e., tie dye, spray dye, dip dye and pigment dye

What are the negatives of post-dyeing garments?

Not suited to all fabrics

- On densely woven lightweight fabrics there is a high risk of seam pucker if cotton sewing threads are used of relatively high grist to achieve adequate seam strength. 100% cotton fabrics have low elongation and therefore the fabric yarns are displaced around the needle and thread increasing the degree of seam pucker
- On lightweight fabrics that require fine ticket sizes of thread, seam strength can be compromised
- Fabrics with high stretch properties, such as those containing Lycra can give problems with seam extension due to the low elongation properties of 100% cotton sewing threads

Not always the desired final appearance

- Garments that follow the post dye process have a "casual / washed down" appearance. Where a pristine finished look is required the post dye process is not recommended
- When manufacturing intimate apparel, the desired softness of the seam that is provided by textured sewing threads (i.e. **Coats Seamsoft**) is not achievable with 100% cotton sewing threads



Potential high damage and repair rate

- Post dyeing is a relatively harsh process that can result in damage to the garments
- When making garments in the "greige" state, needle and / or feed dog damage is not always evident. The garment dye process can expose these small levels of damage resulting in a higher level of seconds

Higher risk of inappropriate sewing thread use

- It is imperative when embarking on a garment dye program that ALL of the previously used sewing threads are cleared from the sewing machines and the thread storage areas, and that ALL sewing threads are segregated and clearly marked
- Past experience has shown that failure to remove the residual thread from ALL lockstitch, stitch type bobbins on the sewing line (including the bobbins in the machine drawers etc.), has resulted in large quantities of garments being produced which are not saleable or repairable due to even the slightest contamination of the seams

No guarantee of absolute compatibility even in apparently ideal situations - fabric shrinkage

- Fabric shrinkage is often higher than the amount of shrinkage in the sewing threads. This can result in a high degree of seam pucker which is often wrongly perceived as excessive thread shrinkage

Fabric swelling

- The fabric shrinkage levels (x and y) may well be low in percentage terms but in the third (z) dimension, the fabrics construction yarns may volumise significantly resulting in there being insufficient sewing thread in the seam which causes poor seam extensibility and seam pucker in the woven fabric

Choosing sewing threads

For best results in terms of colour uptake, the sewing thread to be used on post dyed garments should be the same fibre as the fabric.

Cotton threads

Cotton is the most common fibre used and ideally the thread should be prepared similarly to the fabric.

100% Cotton threads are coarser than synthetic threads for the same strength and are relatively low in elongation. Low elongation threads require:

- Light sewing tensions / high stitch densities to achieve the required seam strength and elongation and avoid puckering after dyeing
- The thread ticket size must suit needle size and the sewing application. A heavier thread size may require more attention to thread trimmers to ensure clean cutting



Synthetic threads

With synthetic fibres, even when using apparently identical material for fabric and thread, absolute compatibility of shade cannot be guaranteed. For example, difference in thermal history of polyester yarns used for thread and fabric may cause differential uptake of dyestuff. In the case of nylon, the properties of nylon 6 are different from those of nylon 6.6. It is the latter version which is usually used for sewing thread.

The thickness of the synthetic thread used for synthetic garments dye products will be identical to that used for conventional production. Again, minimal thread shrinkage is required and light tensions in sewing will be helpful to seam appearance after dyeing.

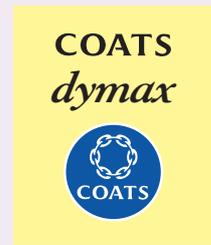
Sewing machine setting recommendations

- Speeds may need to be lower for natural products than those used for synthetic threads. This is particularly true for lockstitch machines due to the demanding nature of the thread handling systems
- Machine condition can negatively affect the sewing thread performance. 100% cotton sewing threads will be more susceptible to damage during sewing
- Larger needles to accommodate coarser thread can increase the risk of fabric damage. Particular attention should be given to this point due to the harshness of the subsequent dyeing process
- Hook, looper and feed timings may need to be adjusted to accommodate the use of 100% cotton sewing threads
- On machines with oscillating shuttle hooks the timing of the hook may need to be advanced
- On lockstitch buttonhole machines a "whip stitch" set up is preferable to a "purl stitch" set up. This facilitates the use of lighter needle thread tension

Coats threads for post dyed garments

Coats Dymax - 100% Cotton

Uses long staple cotton and is specifically designed for sewing cotton garments that are post dyed. It is ideal for untreated fabrics and it is specially processed to provide greater lustre and strength.



Dymax M

Tex	Ticket	Ply	Average Strength		Elongation % Min - Max	Recommended Needle Size*	
			cN	Grams		Singer	Metric
30	60	3	830	846	5 - 9	11 - 12	75 - 80
35	50	3	1,030	1,050	5 - 9	12 - 14	80 - 90
40	40	3	1,240	1,264	5 - 9	14 - 18	90 - 110
60	30	3	1,820	1,855	5 - 9	18 - 19	110 - 120
80	24	3	2,060	2,100	5 - 9	18 - 20	110 - 125
105	18	3	3,230	3,293	5 - 9	21 - 23	130 - 160

Coats Dual Duty Supercotton (polyester / cotton)

A top quality corespun sewing thread for use in the manufacture of post dyed cotton garments.

- The polyester core provides higher tenacity and elongation as well as lower shrinkage compared to 100% cotton threads leading to superior seam quality
- Special cotton wrap has excellent dye uptake
- The cotton wrap is natural to take up the colour of the finished garment and the thread core is pre-dyed in a range of colours to match light, medium and dark shades
- Unique corespun construction delivers enhanced sewing performance and abrasion resistance even when compared to "premium" quality 100% cotton threads
- Use of finer needles than is possible with 100% cotton threads to achieve the same seam strength



Product Guidelines:

Tex	Ticket	Ply	Average Strength		Elongation % Min - Max	Recommended Needle Size*	
			cN	Grams		Singer	Metric
24	120	2	719	733	16 - 22	10 - 14	70 - 90
40	75	3	1,054	1,075	17 - 23	14 - 18	90 - 110
60	50	3	1,780	1,815	16 - 22	18 - 21	110 - 130
120	25	3	2,889	2,946	11 - 17	19 - 22	120 - 140

* Needle size recommendations are a guide only and ultimately depend on the sewing application. Since conditions and applications vary considerably in the use of thread, the thread user should assure herself or himself by preliminarily testing that the thread is suitable for the end use intended. Technical information listed above is based on current averages and should be taken only as indicative.

Shade	Core Colour	Wrap Colour	Application
07CTT	grey	natural	for medium to dark colour garments
Y0000	natural	bleached	for light or very light (like white) garments
8975I	natural	indigo	for all kinds of jeans and denim wear

Some markets offer a wider range of core dyed shades