

Sanforizing products
Shrinkage belts

Accotex

DAYTEX Shrinkage Belt

Excellence in shrinkage



Elastomer solutions
for finishing applications

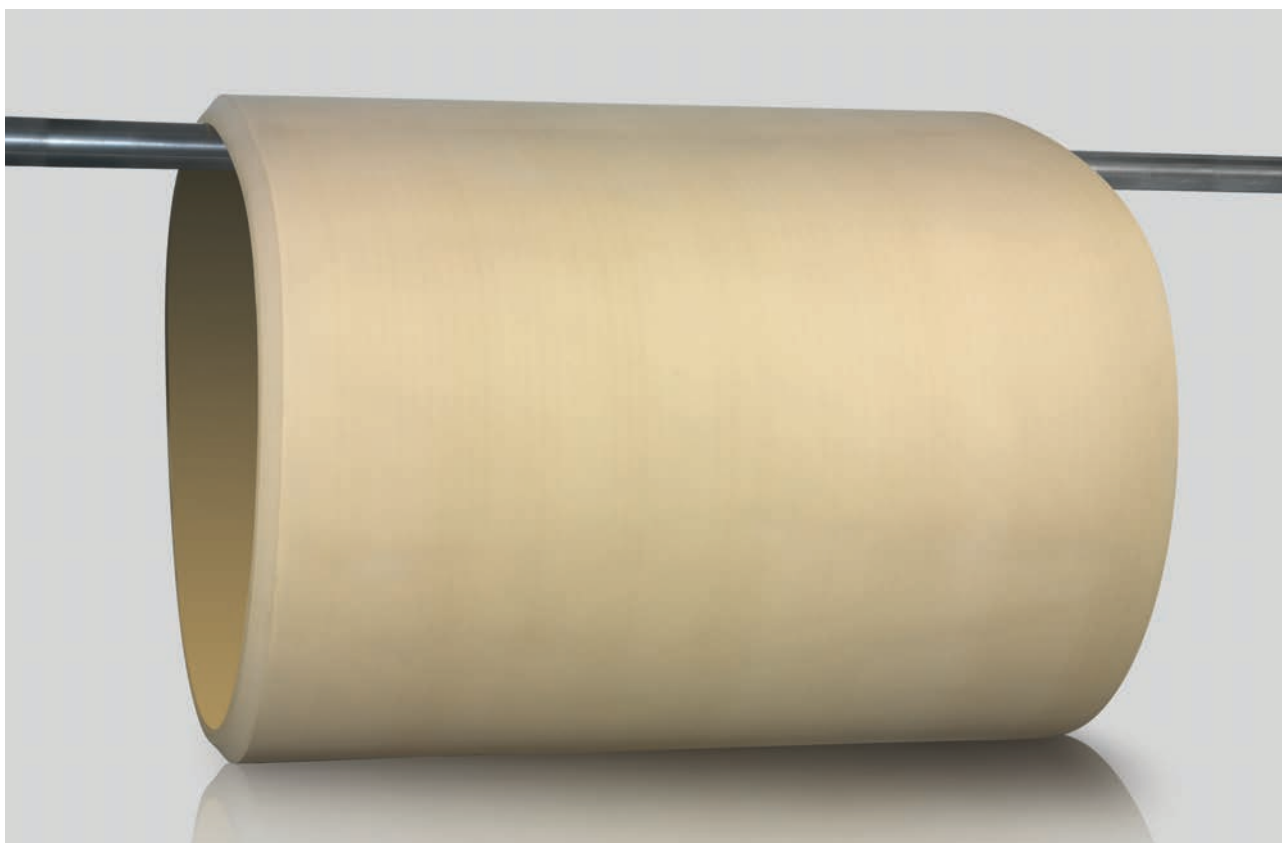


Elastomer Expertise

Accotex DAYTEX is the leading manufacturer of natural rubber shrinkage belts.

Experienced experts in the field of rubber applications as well as natural rubber from approved plantations in combination with longstanding manufacturing expertise ensure the constant product quality.

Multi-national teams are responsible for the development, manufacturing and sale of Accotex DAYTEX Shrinkage Belts. A network of experienced representatives around the globe offer the highest levels of service and expertise to deliver optimal performance of our products.



OUTSTANDING

ADVANTAGES

DAYTEX
Shrinkage
Belt

Unique Belt
Production Method

The New Edge Shape

Elastomere Composition
Used for Producing the Belt



The Global DAYTEX Belt
Service Assists the Customer
Whenever Necessary

More Than 55 Years of
Experience in Producing
High Quality Shrinkage Belts



Sanforization Process

Shrinkage, also called Sanforization, was patented in the US in 1954. Today this process is an essential part of the finishing process for most fabrics. Like in all other processes, also here the optimum result can only be reached when using the best equipment. Accotex DAYTEX has 55 years of experience in production of excellent shrinkage belts.

Sanforizing is a method of shrinking and fixing the cloth in both length and width

The shrinking process takes place between the shrinkage (rubber) belt and the heated cylinder. The pressure roll squeezes the belt against the heated cylinder and thereby the fabric is stabilized. Leaving this nip point, the pressure is relieved and the belt contracts. The fabric between the shrinkage belt and the heated shrinking cylinder has to follow this contraction of the belt and the fabric is thereby shrunk. Changing the shrinkage belt pressure changes the percentage of the fabric shrinkage. The higher the pressure, the greater the shrinkage.

Today about 80% of all textiles, which are sold on the market, undergo shrinking. The main application still lies in the area of heavy fabrics such as denim for example. However, today sheeting products, dress shirt fabrics and woven bottom weight fabrics get shrunk. The majority of knitted fabrics and open-width knits are systematically protected from shrinkage with the aid of this process. A growing field of application is surface treatment, mainly for synthetic fabrics. To optically improve the surface or optimize the feel of the textile, a process similar to the classic shrinkage process is applied.

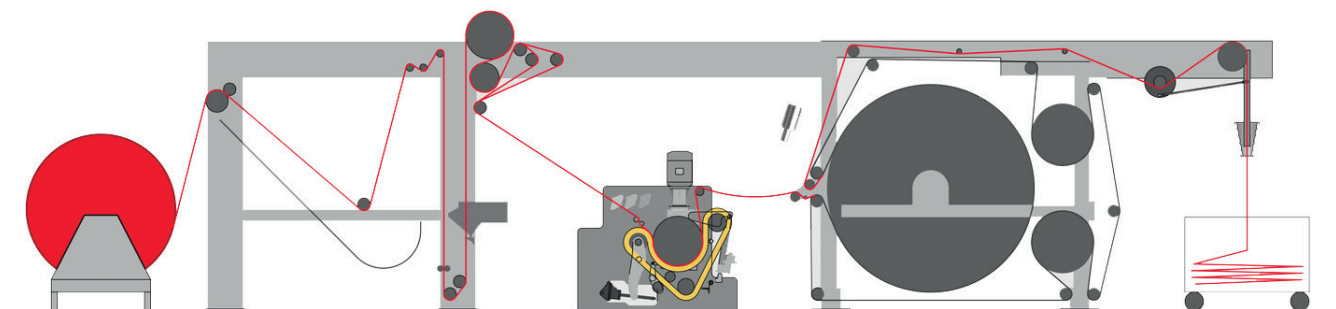


Illustration courtesy of Morrison Textile Machinery Inc.

DAYTEX Shrinkage Belt

General data and dimensions

Material	Natural Rubber
Color	Light Tan
Shore Hardness	38 – 40 ShA
Surface	Finished ground
Application	From heavy to light fabric including comfit and knitted goods
Inner Circum	3962 mm
Thickness	50.8 – 70 mm
Width	Customized
Edge	DAYTEX Curved NEW

Area of application

DAYTEX Shrinkage Belts are engineered to produce the best quality for all different types of fabrics like all Sanfor types, Comfit, knitted goods and of course, open-width knits. This includes fabrics from light to heavy weight.

Besides this it can also be used in compactors, which use an endless rubber belt with a standard inside circumference of 3962 mm (156”).

Life time of fabric/belt

Fabric classification	Application	Fabric weight (oz/sq yd)	Fabric weight (g/m ²)	Life time of fabric/belt (million yd)	Life time of fabric/belt (million meters)	Grinding cycles (weeks)
Heavy weight fabrics	Denim	8 – 14	271 – 475	7.6 – 13.1	7 – 12	2
Medium weight fabrics	Outerwear	6 – 8	203 – 271	9.8 – 15.3	9 – 14	2 – 3
Light weight fabrics	Sheeting, Shirting	3 – 6	102 – 203	16.4 – 27.3	15 – 25	3 – 5



Image courtesy of Morrison Textile Machinery Inc.

The Economics of a Shrinkage Belt

To achieve the best price-performance ratio for a belt, two factors are essential: efficient utilization of surface as well as a maximum lifetime of the belt.

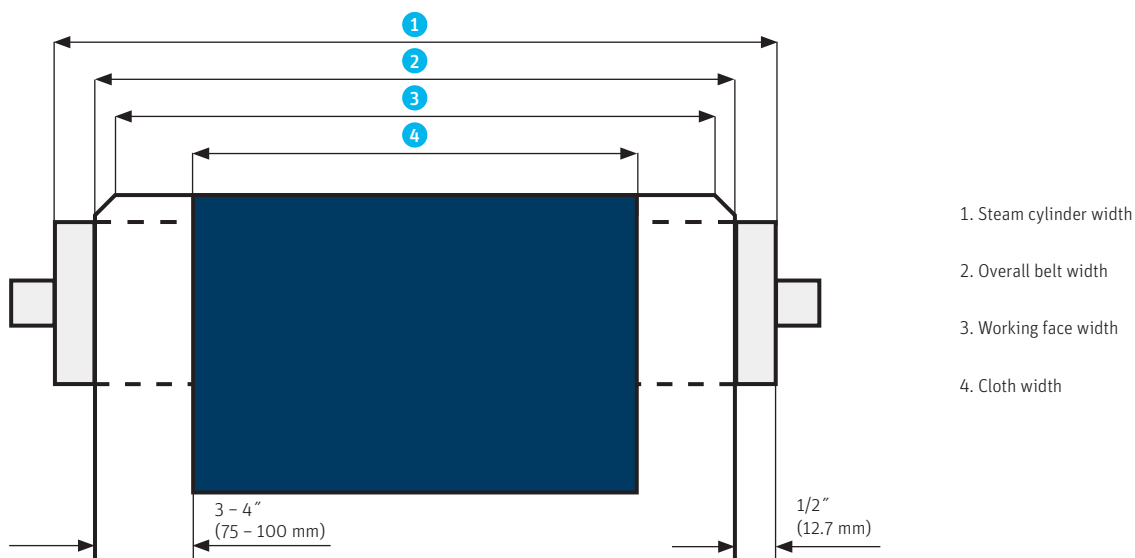
Belts all over the world are sold per unit length (US \$/inch). This means that finding the right belt width also means finding the optimum price and / or area usage. The smaller the difference between the overall belt width and the working face width, the more efficient the use of the belt. This difference is defined by the belt edge shape. The Accotex DAYTEX Curved Edge optimizes the area usage.

The larger the lateral surface of a belt, the larger the force compensation in the side area. The optimized side flank of the belt diverts the force from the critical edge area. The risk of cracks caused by pressure stress is significantly reduced. Particularly when shrinking fabrics, that require high pressure.



Image courtesy of Cibitex srl

Efficiency



How to reach the required efficiency?

- Optimized area usage is dependent on finding the optimum belt width. There are 2 belt widths to be considered: overall belt width and the working face width.
- Overall belt width should be at least 25 mm smaller than the steam cylinder or the shortest roller.
- Working face width of the belt should be at least 150 mm wider than the fabric to be treated, but not longer than 200 mm.

Curved edge optimization

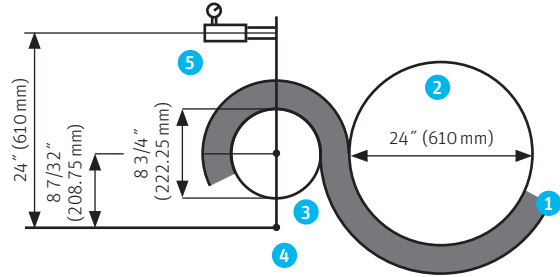
Edge forms	Delta working/overall width		Characteristics of the edges
 Modified Curved	0.500" (12.70 mm)	25.4 mm (1.00")	Curved edge shape greatly supports the durability of the belt as it is completely free of sharp edges.
 Square	0.250" (6.35 mm)	12.8 mm (0.50")	Square edge shape gives the optimum utilization but the smallest potential for force deflection.
 Long	1.500" (38.10 mm)	76.2 mm (3.00")	Long edge largely reduces the working face width but has the greatest durability.

Overall width
 Working width

Extending the Lifetime of Your Shrinkage Belt

The life time of the shrinkage belt is largely dependent on six factors. By buying a DAYTEX Shrinkage Belt, three out six factors are ensured with delivery. The ideal elastomer composition and belt production method as well as the edge shape. These factors cannot be influenced by our customers. Whereas customers are able to extend their belt life time by considering the following influenceable factors.

Rubber Belt 73 x 2-5/8 (1854 m x 67 mm)
(38° Shore A)



- 1. Rubber belt
- 2. Heated cylinder
- 3. Compression roll
- 4. Pivot
- 5. Hydraulic cylinder 1-1/2" (1767 in²) 38.1 mm (11.40 cm sq.)

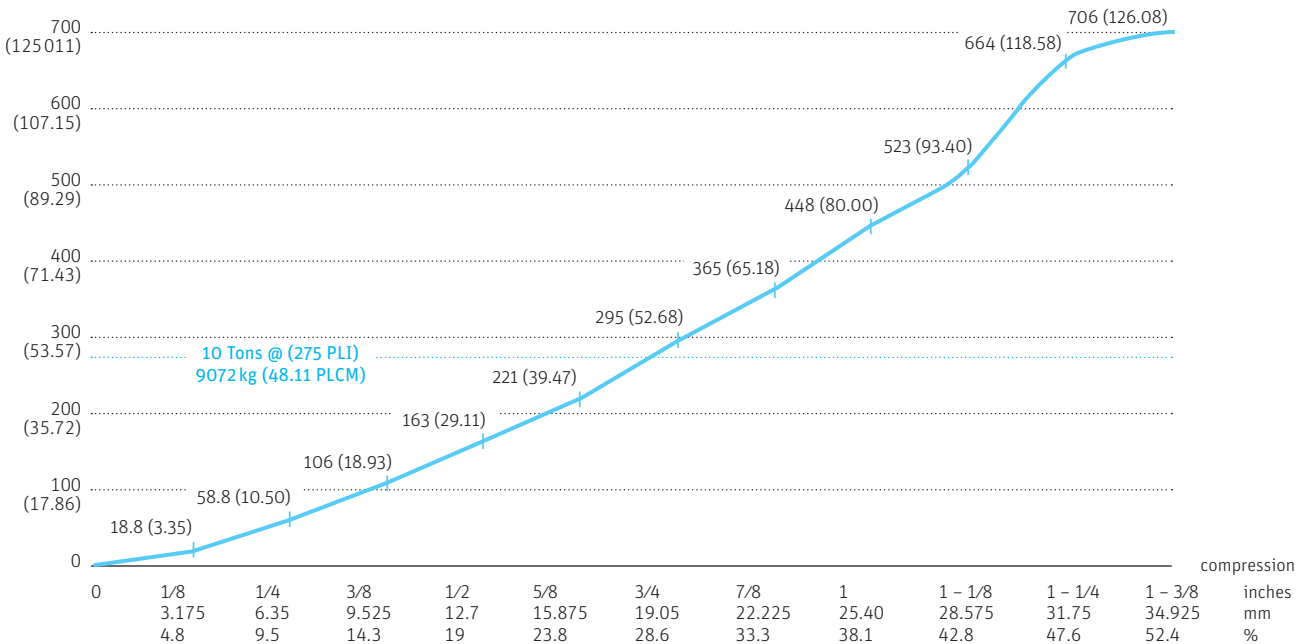
Influenceable factors

- Proper operating conditions
 - Compression
 - Temperature
 - Tension
 - Cooling
- The grinding frequency and method
- Maintenance
 - Regular checks of the belt and machine conditions

Compression

Setting up the right compression is the most important thing as it determines the shrinkage of the fabric. In addition to this the compression never should exceed 25% of the belts thickness. This needs to be taken into account as the belt is ground and wears down.

Force of compression
in PLI*, () = metric



$$* PLI = \frac{(Cyl. Press) (Area) (24)}{8218 \times 36.1}$$

Temperature

Each type of fabric needs a certain temperature for a good processing. In general the belt should operate at the lowest possible temperature to reduce the aging of the belt and premature cracking. The table below shows typical settings for different fabrics.

Settings

Material	PSI	Bar	Temperature °C	Life time of fabric/belt (million yd)
Heavy weight fabrics	52.5	3.62	140	284
Medium weight fabrics	39.2	2.70	130	266
Light weight fabrics	24.5	1.69	115	239

Tension

To ensure proper shrinkage of the fabric the rubber belts needs 2% of tension. Please refer to the technical information how to set up the right tension on the belt. The table below shows the recommended stretch according to the wall thickness of the belt.

Settings

Belt thickness inch	mm	Start inch	mm	Stretch to inch	mm
2.625	67.0	12	305	12.25	311.0
2.59	65.5	12	305	12.28	311.9
2.52	64.0	12	305	12.31	312.7
2.46	62.5	12	305	12.34	313.5
2.40	61.0	12	305	12.38	314.3
2.34	59.9	12	305	12.41	315.1
2.28	58.0	12	305	12.44	315.9
2.22	56.6	12	305	12.47	316.7
2.17	55.0	12	305	12.50	317.5
2.11	53.5	12	305	12.50	317.5
2.05	52.0	12	305	12.50	317.5
1.99	50.5	12	305	12.50	317.5
1.93	49.0	12	305	12.50	317.5
1.87	47.5	12	305	12.50	317.5
1.81	46.0	12	305	12.50	317.5
1.75	44.5	12	305	12.50	317.5
1.69	43.0	12	305	12.50	317.5

Cooling

As the shrinkage process needs temperatures well above the limits of natural rubber it is vital to maintain water sprays on both sides of the belt in order to keep the belt cool and avoid cracking and degradation of the rubber. The water sprays on the inside lubricates and cools the belt to reduce the friction with the rollers. The water on the outside cools the rubber belt to avoid overheating and cracking.

If the cooling process was improper following problems could occur:

- Orange peel on belt surface
- Belt cracking inside and outside
- Low shrinkage result

Grinding

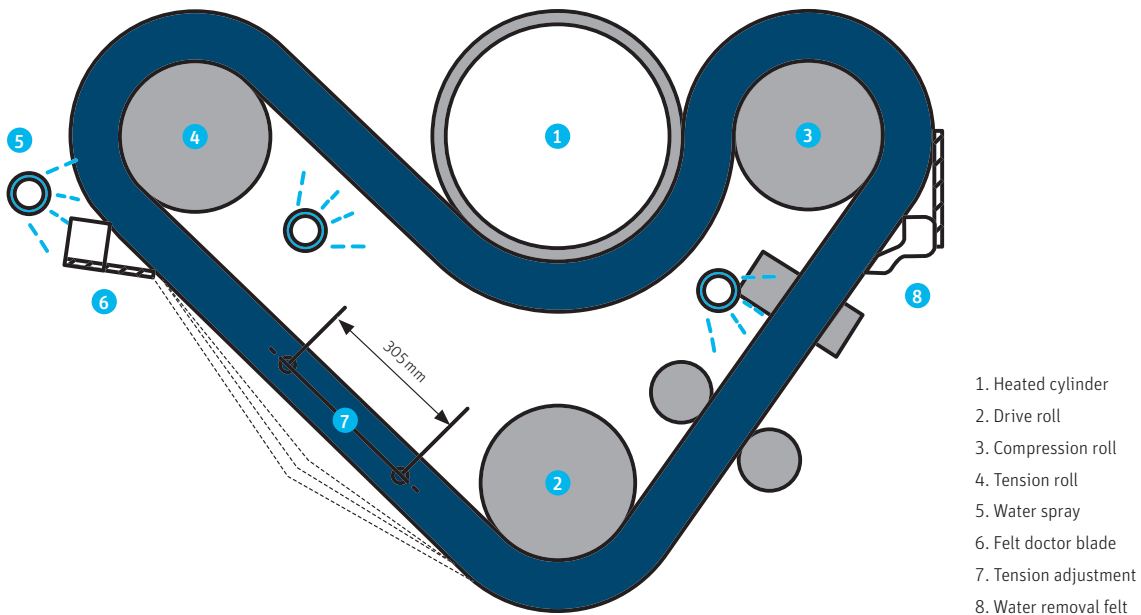
Periodic and careful inspections of belt surface are necessary to achieve maximum rubber belt life. It is also important to establish a routine grinding maintenance program in order to keep the original non-aged rubber properties for maximum shrinkage action. The re-grind procedure of a DAYTEX Shrinkage Belt should be closely monitored and should follow the DAYTEX technical information instructions that are distributed with the belt.

If the grinding process was improper the following problems could occur:

- Orange peeling on belt surface
- Reduced time between grinding cycles
- Chatter marks on rubber belt surface

Intervals

Material grind	Grinding time	Meters	Sandpaper	Suggested grinding depth
Heavy weight fabrics	Every 2 weeks	500 000 to 600 000	60 Grit	1.2, 1.1, 1.4, 1.0, 1.3, etc.
Medium weight fabrics	Every 3 weeks	750 000 to 900 000	80 – 100 Grit	1.1, 1.0, 1.2, 1.0, 1.2, etc.
Light weight fabrics	Every 4 to 5 weeks	1 000 000 to 1 200 000	100 – 120 Grit	1.0, 1.0, 1.2, 1.0, 1.1, etc.



Service

The best shrinkage belt only performs best in close cooperation with each customer. Therefore, DAYTEX has created a network of experts to support our customers in every phase over the whole lifetime of a shrinkage belt, starting with how to order the correct width, overall installation of the belt, troubleshooting during usage and guidance in all necessary maintenance during the lifetime of the rubber belt.

In our organization, there is a closed loop between all the different departments to ensure the best performing belt at the customers place today and in future. Therefore, the customer needs is always in the focus while improving the processing or the belt itself.

In every part of the world, we have established a Global Technical Support Team that helps the customer in all questions related to the belt and of course, the fabric he is processing. The backbone of knowledge of more than 55 years living this application makes us the best partner to improve the performance of your shrinkage line.

The global setup ensures quick responses on your inquiries, without delays because of different time zones.



Accessories

In addition to the belt itself Accotex DAYTEX offers you a wide range of accessories needed for the shrinkage process.

Grinding cloth

As explained earlier the grinding of the shrinkage belt is one of the most important maintenance subjects. No-talc grinding cloth (S-88 XL) is developed to alleviate the time needed to “clean up” after grinding a rubber belt. The No-talc cloth consists of a patented abrasive and bond structure that prevents “loading” of the abrasive and reduces friction build-up so the abrasive grinds cooler.

The special cloth backing has been pre-stretched and stabilized to create tremendous dimensional stability of the product. This stability means less down time for “re-tightening” of the abrasive on the grinding roll.

Wax

Wax rods are needed to protect the belt from heat of the steam cylinder in the area where no fabric is running. Using wax keeps the aging of the rubber to a limit. The wax should be applied to the rubber belt surface outside the selvage lines every eight hours. This wax helps preserve the rubber belt face that is exposed to high heat. The wax film on the rubber belt face helps prevent Orange Peel and Surface Cracks.

Grinding cloth types

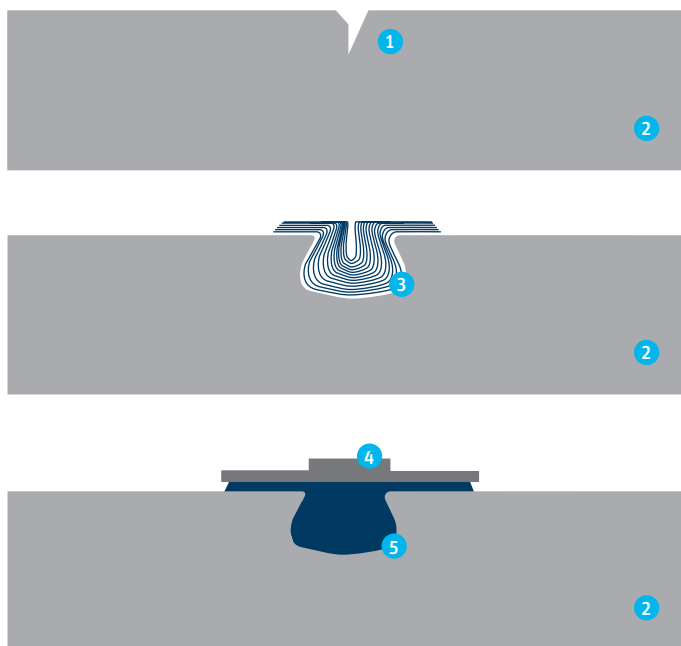
Size	Grit	Type	Continuous
3" x 33 yds	60	S88XL	No splices*
3" x 33 yds	80	S88XL	No splices*
3" x 33 yds	100	S88XL	No splices*
3" x 33 yds	120	S88XL	No splices*



DAYTEX patch kit

Patching Process

DAYTEX Patch Kit



1. Defective area
2. Belt
3. Fill and overfill void with patching rubber
4. Heating shoe
5. Fixed patching material

Felts

Felts are used in many different ways in the shrinkage process, as Felt Doctor Blades and Felt Wiper Blades to hold or remove the cooling water on the belt, or in the palmer unit where the fabric is dried.

Felt finder

Product	Warp	Filling	Application
Super 100% Nomex Finisher Felt	100% Nomex® by DuPont	100% Nomex® by DuPont	Heavy Denim and high temperature situations
Standard 100% Polyester Finisher Felt	100% Dacron Polyester	100% Dacron Polyester	All purpose, Palmer and Calendar Felt
Poly/Nylon Blend Finisher Felt	50% Polyester/50% Nylon 6.6	50% Polyester/50% Nylon 6.6	All purpose, Palmer and Calendar Felt
Compact Felt	Nomex®, Premium Plus Polyamide & Wool	Nomex®, Premium Plus Polyamide & Wool	Economical option for Knit Compacting machines
Poly/Acrylic Felt	50% Polyester/50% Acrylic	50% Polyester/50% Acrylic	General purpose, Palmer and Calendar Felt
Polyester/Wool Finisher Felt	Premium Plus Polyester & Wool	Premium Plus Polyester & Wool	All purpose, Palmer and Calendar Felt



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