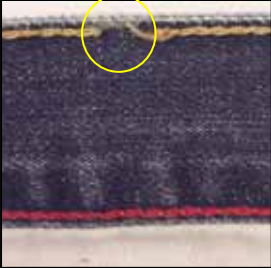

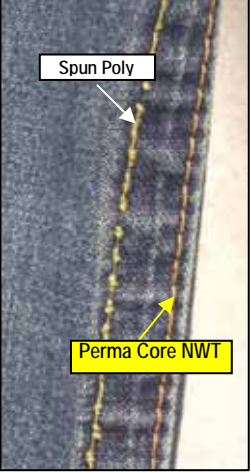
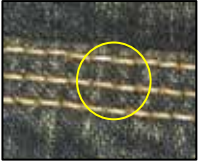












THREAD SELECTION GUIDE

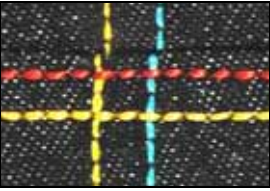


American & Efird, Inc.

Denim Garments

Using the right thread for your Denim Garments is important to minimize quality issues after finishing. Below are recommendations that we know will make a difference in the quality of your finished products.

FINISHING PROCESS	FABRIC WEIGHT	THREAD RECOMMENDATIONS	
<p>EXCESSIVE ABRASION: Stone-wash, Sand Blast, Hand Sanding</p>  <p style="text-align: center;">Thread Abrasion after finishing</p>	<p>Heavy Denim</p>	<p style="text-align: center;">Where SEAM QUALITY is Critical</p> <p><u>Topstitching:</u> T-80, T-105, T-120 Perma Core NWT or D-Core*</p> <p><u>Loopers on Waistband, Seat Seam & Riser:</u> Same thread type & size as Needle thread.</p> <p><u>Fell Inseam or Side Seam Loopers:</u> T-60 Perma Core NWT or D-Core*</p> <p><u>Serging:</u> T-40 Perma Core or T-60 Spun Poly</p> <p><u>Alternatives:</u> Waistbanding: Needles - T-80 or higher Perma Core NWT; Loopers – T-135 Magic Riser & Seat Seam: Needles - T-80 or higher Perma Core NWT; Loopers – T-90 Magic</p> <p>* The more severe the abrasion process, the larger the thread size that should be used. D-Core is used when you want a wash-down look, however, a cotton wrapped poly core thread does not have as good of abrasion resistance properties as a poly wrapped poly core thread like Perma Core NWT.</p>	 <p style="text-align: center;">Perma Core NWT Poly wrapped poly core thread construction.</p> 
<p>HARSH CHEMICALS: High concentration of Bleach, Peroxide, Enzymes, etc.</p>  <p>Here is an example of where the Cotton wrapper has been eroded by the harsh chemicals during Laundering</p>	<p>Heavy Denim</p>	<p><u>Topstitching:</u> T-80, T-105, T-120 Perma Core NWT</p> <p><u>Loopers on Waistbanding:</u> T-120 – same as Waistband Needle Thread</p> <p><u>Fell Inseam, Riser, Seat Seam Loopers:</u> T-80 or T-105 Perma Core NWT</p> <p><u>Safetystitch:</u> Needle – T-80 or T-105 Perma Core NWT</p> <p><u>Loopers</u> – T-60 Perma Core NWT or T-60 Spun Poly</p> <p><u>Serging:</u> T-40 Perma Core or T-60 Spun Poly</p>	<p>Note: Generally we recommend going to larger thread sizes when the Denim Garments will be subject to harsh Chemical washes. To achieve the best laundering results make sure that the water temperatures and PH Levels are correct and that the proper amounts and sequence of chemical dispersion are within guidelines. Also make sure the garments are being rinsed properly to neutralize the chemicals in the fabric. Monitor the drying process, cycle times, and temperatures to make sure they are correct so that the best possible garment quality can be achieved.</p> <p>100% polyester cospun threads have much better chemical resistance than cotton wrapped poly core threads. Poly core threads have much better chemical resistance than spun polyester threads because there is less surface area for the chemicals to attack.</p>
<p>RINSE WASH CYCLE: No harsh chemicals or abrasion are used</p>	<p>Heavy or Medium Denim</p>	<p><u>Topstitching:</u> T-60 Perma Core NWT</p> <p><u>Loopers & Serging:</u> T-40 or T-60 Spun Poly</p> <p>Note: <i>Perma Core</i> is less expensive than <i>D-Core</i> because it is 100% polyester and it is dyed in one step. A cotton wrapped poly core thread must be dyed twice – once to dye the core and the other time to dye the wrapper. Therefore, Perma Core NWT is an ideal thread for Topstitching and also reducing your overall thread cost.</p> <p>Spun Polyester threads are less expensive than cospun threads and can be used on loopers and serging when the denim garments are not subjected to harsh finishing processes.</p>	 <p style="text-align: center;">Perma Spun Excell Bravo</p> <p style="text-align: center;">Spun Polyester thread construction</p>

<p>WASH DOWN LOOK: Chemical or Enzyme Wash, light Stone Wash</p>	<p>Heavy or Medium Denim</p>	<p>Topstitching: T-105, T-120, T-135, T-150 D-Core Loopers on Waistband, Seat Seam & Riser: Same thread type & size as Needle thread. Fell Inseam or Side Seam Loopers: T-60 D-Core Serging: T-60 Spun Poly</p> <div style="display: flex; justify-content: space-around;">   </div> <div style="display: flex; justify-content: space-around; margin-top: 5px;"> <p><i>D-Core</i></p> <p><i>Perma Core</i></p> </div>	 <p style="text-align: right;"><i>D Core</i> Cotton wrapped poly core thread construction. Sewn in where a 'Wash-down' look is desirable.</p>
<p>STRETCH DENIM: To minimize disappearing stitches</p>	<p>Heavy or Medium Denim</p>	<p>Topstitching: T-120, T-135, T-150 Perma Core NWT or D-Core*</p>  <p>Notice how much smaller the stitch looks on the Riser seams versus the Seat Seam.</p>	 <p>The heavier the Topstitching thread, the less it will disappear on stretch denim.</p>
<p>OVERDYE DENIM: Where the 100% cotton garment will be overdyed after it is assembled.</p>	<p>Heavy or Medium Denim</p>	<p>Topstitching: T-80 or T-105 Anecot Xtra Loopers and Serging: T-60 Anecot Plus</p>	 <p>Anecot Xtra helps to eliminate these Broken Stitches</p>
<p>DECORATIVE THREAD FOR TOPSTITCHING: For a distinctive look</p>  <p>Design-A-Core® You can select any two colors off our Global Color Palette to design your own look.</p>	<p>Heavy or Medium Denim</p>	<p>Topstitching: T-105, T-120, T-150 Design-A-Core® You can select any two colors off our Global Color Palette to design your own look.</p> 	 <p style="text-align: center; color: yellow; font-size: 2em;">Design-A-Core</p>

<p>DECORATIVE THREAD FOR TOPSTITCHING: For a distinctive look</p>  <p>Design-A-Core® You can select any two colors off our Global Color Palette to design your own look.</p>	<p>Heavy or Medium Denim</p>	<p>Topstitching: T-105, T-120, T-150 Design-A-Core or T-90, T-120 Signature Plus*</p> <p>* Signature Plus is made with a Trilobal Polyester thread that provides a high sheen stitch appearance with excellent color fastness.</p>	
<p>DECORATIVE THREAD FOR TOPSTITCHING: For a distinctive look</p> <p>Indigo You can use D-Core dyed with Indigo dyes so the navy thread washes down just like the fabric.</p>	<p>Heavy or Medium Denim</p>	<p>For Topstitching, Buttonholes</p> <p>True Indigo threads are dyed with Indigo dyes so they wash down like the fabric. They are more expensive than regular core threads and tests should be conducted to make sure the wash-down look is what you are after. Indigo color numbers – US = 20271 or Global # = 33104.</p> <p>A&E also has imitation indigo threads that are dyed with traditional dye stuffs used for dyeing cotton wrapped poly core threads. Imitation indigo threads will not wash down to the degree that true indigo dyed threads will.</p>	 <p>D Core Cotton wrapped poly core thread construction. Sewn in where a 'Wash-down' look is desirable.</p>

<u>A&E Brand Names</u>	<u>Generic Thread Type</u>	<u>Description</u>
<i>Perma Core NWT</i>	PW Core	Polyester Wrapped Poly Core
<i>D-Core</i>	CW Core	Cotton Wrapped Polyester Core
<i>Design-A-Core</i>	CW Core	Cotton Wrapped Polyester Core
<i>Perma Spun, Excell, Bravo</i>	Spun Poly	Spun Polyester
<i>Magic</i>	Air Entangled	Air Entangled Polyester
<i>Signature Plus</i>	Air Entangled	Air Entangled Polyester
<i>Anecot Xtra</i>	100% Spun Cotton	100% Spun Cotton designed to minimize broken stitches on denim
<i>Anecot Plus</i>	100% Spun Cotton	100% Spun Cotton

See A&E's Web site at www.amefird.com for additional information on sewing Denim Garments.

THREAD COST

Thread Cost is equal to the Thread Price of the thread plus all the additional Costs related to the thread's Performance.

$$\text{VALUE} = \frac{\text{Thread Performance}}{\text{Price}}$$

Thread Costs that should be considered include:

- Higher Production Costs due to excessive Skipped Stitches and Thread Breakage
- Seconds that are Not repairable
- Higher overhead costs - floor space & power – needed for repairing garments after Finishing
- Longer In-process time due to Production delays and Repairs after laundry
- Penalties due to Shipment Delays
- Safety Issues - More Broken Needles
- Charge-backs from Retailer for Poor Quality or Not meeting promised shipping dates

To reduce thread cost but maintain seam performance, we recommend the following:

- Use a higher performance thread that reduces your overall thread costs
- Use White or Natural on Loopers rather than dyed thread, particularly on overedging
- If possible, use a smaller topstitching thread*
- If possible, use a smaller thread on loopers or on serging*
- If possible, substitute a spun polyester for a corespun thread in non-stress areas*

** Remember that using threads other than those recommended above will result in higher overall thread costs. The recommendations have been industry tested on production floors around the world to reduce the overall thread cost when producing denim garments. In many cases, the repair costs after laundry far exceeds the addition thread prices of using higher performance sewing threads.*