BALANCING QUALITY, SUSTAINABILITY & THREAD COST

This paper was developed to assist A&E Customers and Retailers / Brands in evaluating:

- Global Thread Companies And Performance Thread Products – What Value Do They Add To Your Company
- Considerations Related To Sustainability And The Consumer Sustainability Index.
- Thread Selection And Their Impact On The Quality Of Your Sewn Products
- The Dynamics Of Thread Selection And Thread Cost – GOOD, BETTER & BEST

Other considerations related to why you should consider using A&E as your global thread partner.

American & Efird (A&E)

A&E is a quality producer of high-performance threads and yarns for apparel and non-apparel applications. We are a global thread manufacturer with international distribution in 46 countries around the world.

A&E's primary spinning plants are located in the US, China, and India. We also have 23 international dyeing facilities that dye and wind our products on precision wound packages to meet our customers demands. We also adhere globally to rigid quality standards.

- A&E specifies Premium Raw Materials
- A&E has rigid construction specifications using State-of-the-art Thread Manufacturing Processes
- A&E promotes a Quality Business Culture in all our global operations
- A&E uses a global monitoring tool called ANESTAT to monitor Key Process Characteristics using Statistical Process Control (SPC).

What sets A&E apart from our competitors is our focus on satisfying our customers. Our Company Goal is "To be the preferred supplier of threads, embroidery and technical yarns by providing world-class products and services to our Customers."

To us, world-class means providing high-performance products that minimize interruptions on your production floor and enhance the quality of your finished products. World-class service means delivering the right A&E product at a competitive price when and where you need it. It also means going the extra-mile in assisting our customers.

Customers who have developed partnerships with A&E know that "There Is A Difference" in A&E's quality, consistency and commitment.

Eco-friendly company doing business the right way!

"A&E's Global Commitment to Sustainability"

- A&E has been in business since 1891 and has always strived to be a good corporate citizen. We have been actively promoting and executing our Environmental, Health, and Safety best practices for many years.
  - The keys to our EHS successes have been our Senior Management commitment, support and ownership; our uniform global EHS policies and practices; supporting business partners and suppliers that meet our EHS standards; and having a robust EHS organization with competent personnel
  - In the past decade, A&E has garnered many prestigious EHS awards for our operations around the world recognizing A&E as a global EHS Champion and Leader.
- Today, major issues facing our planet include:
  - Fresh water supplies that are being depleted around the world.
  - Pollutants effecting climate change resulting in the potential to seriously alter our way of life and that of future generations.
  - Energy that is becoming less available and more expensive that can lead to shortages that affect our world's economy.
  - Improper use of chemicals that can negatively impact our safety and welfare.
  - Population growth that will only magnify the issues mentioned above. It is estimated that 9.5 billion people will live on the Earth by 2052, a substantial growth over our present population of approximately 6.8 billion people.
- All of this calls for action by every responsible individual, community, country and company in the world. Together we can make a difference!
- Sustainability MUST become a more important part of all our lives as we explore ways to maintain economic growth while sustaining a healthy planet. Therefore, the marketing of Sustainability is becoming a more important consideration for retailers and brands.
- Major retailers are already developing a "Shoppers' Sustainability Index" that will be on every product's label showing it's sustainability index level.
- This "Shoppers' Sustainability Index" will allow responsible consumers to make "green" choices.
- A&E's sustainability goals give consideration to the economic, social responsibility, and environmental aspects of the company's global operations. To accomplish this:
- A&E is developing a "green" culture in our operations around the world, educating all A&E associates to understand and adhere to the highest standards of conduct.
- A&E is creating new products that will minimize environmental impact.
- A&E will continue to invest in innovative technologies that help reduce the environmental impact of our operations, including all facilities and processes.
- A&E's Eco-Driven Program consists of Ten Threads of Sustainability designed to drive our culture of innovation, creation, and delivery in the realm of sustainability.

A&E's 10 Threads of Sustainability

1. **Global Carbon Footprint** - Our goal is to be able to communicate our carbon footprint for a given product. A&E is also setting goals for Greenhouse Gas reductions through energy conservation.
2. **Water Conservation & Recycling** - A&E's goal is to reduce water consumption by 10% by the end of 2012. We will do this through manufacturing efficiencies and water recycling.
3. **Energy Conservation** - A&E has a goal of improving energy efficiency by 20% at all facilities by January 1, 2012 (Measured on unit basis, not total consumption basis).
4. **Sustainable Packaging** - A&E has a goal of reducing the overall amount of packaging on its products by 5% by 2013 (Measured on unit basis, not total consumption basis).
5. **Recycling & Waste Reduction** - A&E has a goal of Zero Waste generated by its US facilities by December 31, 2012. We are currently at 91% toward achieving this goal. All global A&E operations are required to achieve the Zero Waste goal.
6. **Sustainable Products** – When A&E performance threads help improve your production efficiency by producing more products with the same labor and overhead usage, you automatically reduce your carbon footprint. Also, if you are producing products that are subjected to harsh finishing processes and A&E threads help minimize your repairs and rework, again A&E threads help you minimize your carbon footprint and help you become more Eco-friendly.

   A&E also has both organic cotton as well as recycled textured polyester threads available. A&E will continue developing additional sustainable products that increase your production efficiency and have less negative impact to the environment.
7. **Global EHS & Social Responsibility** - Continue improving A&E's global EHS processes and systems for Wastewater treatment, Clean-Air Emissions, and Eliminating the use of any Restricted Substances listed on the AAFA RSL. We will continue to strive for excellence in Safety awareness and best practices. By the end of December, all of A&E's Asian operations will have completed BSR's EHS independent audits.
8. **Supply Chain Sustainability** - A&E is engaging its suppliers and customers to drive waste out of the supply chain.
9. **Eco-Driven Product Stewardship** - Many A&E products are certified under the Oeko-Tex program, a voluntary product certification program for global restricted chemicals in our thread products. A&E has developed best-practices and shares knowledge across the company in order to ensure that restricted substances do not become part of the company's products.
10. **Eco-Driven Education & Involvement** – A&E has established a Corporate Green Team as well as local Green Teams through-out our global operations. These teams have been charged with implementing our Eco-Driven program. All our employees are encouraged to be active participants in the Sustainability program at A&E.

The key question that should be asked is:

Can you rely on your factories to purchase threads from local suppliers who may or may not have good sustainability practices? … or should you partner with A&E, the industry leader in sustainability and product quality?

How to Reduce Thread Cost and Maintain Quality?

Minimizing Thread Consumption

- Below is a list of how to reduce thread cost without reducing the thread price.
  - Consume less thread
  - Use performance threads to minimize the total cost of thread including both labor and overhead
  - Use smaller thread sizes where possible
  - Use less expensive thread types and constructions
  - Use white wherever possible

- Ways of reducing thread consumption:
  - Use a different stitch types (from 504 to 503) = 17% savings
  - Reduce the stitch width or seam margin on overedge & coverstitch (503 from 1/4" to 3/16") = 17% savings
  - Reduce Stitches Per Inch (from 10 to 8 spi) = 17% savings
  - Use 1 step seam construction (from safetystitch & topstitch to felled seam construction) = 55% savings
  - Use auto-thread stop devices that minimize chain-off on sergers
- Use smaller thread sizes in loopers on non-stress seams
- Use less expensive thread types & constructions on non-stress seams
- Use white whenever possible

Remember: Consuming less thread also helps to minimize your carbon footprint.

Minimizing Thread Cost

Besides consuming less thread, using a thread that allows your sewing equipment to operate more efficiently with fewer interruptions and stoppages, also reduces your total thread cost.

THREAD COST = COST OF THREAD + COST OF THREAD PERFORMANCE

Costs that should be included in the Total Thread Cost:

- Costs related to excessive interruptions
  - Reduced sewing operation efficiency – fewer units produced per person sewing
  - Higher overhead cost per item produced
  - Slower through-put time
  - Shipment delays resulting in charge-backs
- Cost related to excessive garment repairs before and after finishing
  - Increased repair costs
  - Poor quality seaming

Thread only makes up a small percent of the Cost of a sewn product … but shares 50% of the responsibility of the seam!

Good, Better & Best Thread Analysis

Just like in retail, there are many different thread choices that can be used for seaming your finished products …and each combination has its pros and cons.

GOOD – offers minimum thread price using quality A&E threads.

BETTER – offers quality benefits over Good using higher performance A&E threads.

BEST - offers the best sewing performance and seam performance using even higher performance A&E threads.

A&E can help you and your contractors evaluate what is the ideal thread choice for the sewn products you are producing. Using BEST thread combinations when you can use a BETTER or GOOD thread combination is like throwing money away. On the other hand, using GOOD when you should use BETTER or BEST is even worse because you not only negatively impact your production efficiency, but you also are producing more sewn products that have to be repaired contributing to more customer dissatisfaction.

AVERAGE THREAD PRICE PER GARMENT

Garment	Mtrs per Garment	GOOD	BETTER	BEST
Slack	174	$.06 US	$.12 US	$.14 US
Men's Jean	199	$.11 US	$.18 US	$.24 US
Ladies Jean	215	$.12 US	$.17 US	$.35 US
Suit Coat	160	$.03 US	$.04 US	$.05 US
Dress Shirt – LS	152	$.05 US	$.08 US	$.11 US
Knit Polo Shirt	141	$.04 US	$.06 US	$.10 US
Tee Shirt	53	$.01 US	$.02 US	$.02 US
Knit Brief	62	$.01 US	$.01 US	$.02 US
Blouse	112	$.03 US	$.04 US	$.06 US
Dress	129	$.04 US	$.05 US	$.06 US
Panty	57	$.01 US	$.01 US	$.02 US
Bra	58	$.01 US	$.02 US	$.03 US

The prices above are for comparative purposes only and should not be used as minimum thread costs. Contact your local A&E Sales Representative for competitive prices in your country.

As you can see from the prices above, thread is really not that expensive when compared to the cost of labels, zippers, buttons, packaging, etc.

PERFORMANCE TESTING

A&E is a proponent of performance testing as it has been our experience that the quality of our products clearly will out-perform our competitor's threads. We use a data collection tool called ***ANETRAK*** to collect data on the current thread being used, and then collect data using A&E

high performance threads. This data can then be compared and a good business decision can be made on the final thread selection issue.

ANETRAK – a data collection tool used to collect data on sewing thread performance both on the sewing floor and during additional finishing / laundering manufacturing processes. This data must be collected in a consistent manner so the only variable that can impact the outcome of the testing is the thread itself. Once the data collection is completed, then the data is compared to see what performance differences there are between the threads being evaluated.

Fewer sewing interruptions will contribute to higher sewing efficiency that will reduce labor and overhead cost per garment. Usually these reduced costs will out-weigh the higher price of performance sewing threads.

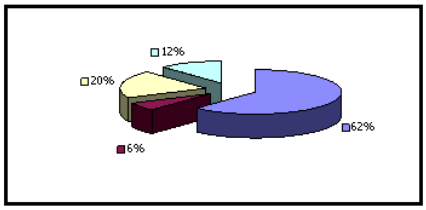
Below is an example of an ***ANETRAK PLUS*** study done on denim. This includes comparative data collected on the sewing floor and data collected in the laundry using ***ANETRAK.***

CALCULATING LABOR & OVERHEAD COSTS RELATED TO PERFORMANCE

Garment Description: 5 POCKET JEAN
Garment Style Number: xxx -xxxxx

LABOR CONTENT (SAM) - Standard Allow Minutes / Garment =	19.5
Average Labor Cost per Hour =	$ 0.80
Average Labor Cost per Minute =	$ 0.0133
Overhead Cost to Labor Cost =	333%
Avg. Labor Cost / Sewn Item =	$ 0.26
Est. Overhead Cost / Sewn Item =	$ 0.87
Total Labor & OH Cost/Sewn Item =	$ 1.13
Current Thread Price Per Sewn Item =	$ 0.100
A&E Thread Price Per Sewn Item =	$ 0.220
Increase in Production Efficiency =	10.7%

Production Units Produced	Current Thd Cost	A&E Thd Cost	Thread Price Difference	Current Labor & Overhead Cost	Labor & Overhead Cost using A&E Thread	Labor & Overhead Difference	Total Thread Cost
250,000	$ 25,000	$ 55,000	$(30,000)	$ 281,667	$ 251,519	$ (30,147)	$ (147)
							$ (0.0006) per Garment



GARMENT COSTING

		%
Material & Trim	=	62
Labor	=	6
Overhead	=	20
All Other	=	12
Total		100

As you can see from the chart above, even though the thread price was significantly higher than the local thread, because of the 10.7% increase in production efficiency when using a BEST thread combination, the THREAD COST on the sewing floor was actually the same.

This chart is available on our website so you can put your own numbers in this spreadsheet and determine what productivity increase would be necessary to pay for the additional thread price using premium A&E thread.

Again, don't forget the improved quality sewn products as well as the reduction in your carbon footprint from increased production efficiency.

But that's not all. What if there are additional finishing operations that can add cost to your finished products? Below is the same analysis from above but showing the impact that the BEST thread combination had in the Laundry.

COST CALCULATIONS DUE TO REPAIRS & SECONDS IN THE LAUNDRY

	Current	A&E Thread	
#of Repairs (% of garments needing repair)*	38.0%	3%	
Average time to inspect and repair a garment (seconds)	45	45	
Units produced for Program	250,000	250,000	
Number of Repairs after Laundry	95,000	7,800	
Cost of Garment Repairs / Program	$ 4,117	$ 338	
Percent of Garments that can not be repaired	0.15%	0.2%	
No. of Garments Not Repairable	142.5	11.7	
Cost/Garment Not Repairable	$ 3.00	$ 3.00	
Total Cost of Garments Not Repairable	$ 428	$ 35	
Total Cost at Laundry/Program	$ 4,544	$ 373	
Laundry Thread Cost Difference	$ 4,171		
Total Thread Cost from Production Floor	$ 1,793		* See Cost Savings - Sewing Floor Sheet
Total Thread Savings	$ 5,964	$ 0.0239	Per Garment Diff.

All ***ANETRAK*** data is completely confidential but will not be shared with anyone other than the factory personnel and anyone else that the customer wants the data shared with.

SUMMARY

- In most cases, Premium A&E threads will reduce your contractors total thread cost.
- A&E Premium threads will definitely improve the quality of your sewn products.
- Using A&E performance threads will help you minimize your Carbon Footprint by increasing your production efficiency.
- A&E is ready and willing to assist you in making the right thread choices that will help you minimize your thread cost, improve your sewn product quality and meet your sustainability goals.