
Sewing Threads Required for Children's Sleepwear

Introduction

Two flammability standards must be satisfied when sewing children's sleepwear for the U.S. market:

- Fed. Std. FF3 – 71 Children's Sleepwear, Sizes 0 to 6X**
- Fed. Std. FF5 – 74 Children's Sleepwear, Sizes 7 to 14**

The apparel manufacturer is responsible for: 1) Fabric sampling and testing; 2) Prototype testing (Pre-production prototypes of a garment style and type); and 3) Production testing (unit testing of production work).

Seam Testing

Seam testing of a prototype garment or a production sample must be conducted according to the procedures covered in the Federal Standards listed above. "Burn time" and "char length" are two of the key parameters measured when testing seam performance. There are many factors that should be considered when designing a garment to pass the Flammability Seam Testing requirements and satisfy the needs of the consumer. Some of these factors include the following.

Threads for Children's Sleepwear

A&E has developed two polyester threads that have a special non-silicone finish that are commonly used in children's sleepwear. They are:

- Spun Kool™ Spun polyester thread available in sizes T-21 and T-27
- Tex Kool™ Textured polyester thread available in sizes T-18 and T-35

Note: Fiber types like Kevlar® and Nomex® are not required when sewing children's sleepwear made from FR treated cotton, polyester, and cotton/polyester fabrics.

No Federal Standard exists for the thread used for seaming children's sleepwear. The most important characteristic of the thread used to sew children's sleepwear is the type and amount of thread lubricant applied to the thread. A&E has developed a special non-silicone lube (132A) that will optimize sewability but give the desired flame-resistant properties.

- 132 A Finish has actual fire retardant chemicals mixed into it!
- 132 A is used on Spun Polyester - all colors.
- 132 A is used on Texturized Polyester - colors only.

Our 132A will retard combustion from the thread standpoint! It will not stop the fabric from burning!

Remember that the goal of our FR Products is to make sure that thread does not play a role in aiding combustion in a sewn seam!

Fabric Finish

The fabric alone without a seam must pass the minimum flammability requirements. Fabrics with good flame retardant properties make thread selection and seam construction less critical. Fabrics with borderline properties make these other factors very important. In fact, seams sewn with Spun Kool™ or Tex Kool™ threads with the proper finish will still fail if the fabric has not been treated properly. Fabrics that have good flame retardant properties can be sewn with regular spun polyester with a silicone lube and generally pass the flammability tests.

Seam Mass and Fabric Compatibility

The stitch and seam type, stitches per inch, and layers of fabric in the seam all contribute to how the fabric and thread will perform during the flammability testing. This is why the components of a seam are not tested separately but together in the finished seam. A&E's Spun Kool™ and Tex Kool™ are compatible with most treated fabrics made of cotton, polyester or cotton/poly blends.

Summary

Fabric selection is very important due to the fact that fabric has the greatest effect on the flammability of the finished seam. Threads like A&E's Spun Kool™ or Tex Kool™ have a special flame-retardant finish are recommended to pass the Federal Flammability Children's Sleepwear testing. If you have any questions, please contact your local A&E Sales Representative or A&E's Technical Service Department.