

Thread Essentials

Here's the information you need to choose the right kind of sewing thread

by Carol Laflin Ahles

Aside from fabric, thread is perhaps the most essential component of sewing—yet we often sew without giving much consideration to our thread selection. We've all seen the jargon related to thread and wondered what it means. Since home sewers have a greater variety of threads to choose among than ever before, a basic knowledge of thread will reassure you as to what you need to know when you set out to make a selection, and what's just interesting.

Of course, selecting the right thread does require more than picking the best color for your fabric. For some projects, any of several thread choices may be equally fine. For others, the finished results are affected for better or worse by the type of thread used. In all cases, the thread must perform well on your machine with your fabric and needle and give the look and wear you want.

Thread options for home sewing are more numerous, and better, than ever before.

Start with background information

To understand how to choose the right thread for every one of your sewing projects, follow along as I explain some basic guidelines and explore the diverse components that go into a spool of thread: fiber characteristics, structure, final finish (which establishes how well it behaves with the machine and the sewing process), size, and type. I've focused this discussion on threads for machine-sewing, with an occasional diversion to quilting, machine-embroidery, and hand-sewing threads, too. You'll find photos of many thread types (not to scale) with an explanation of their uses throughout the article.

To better understand this topic myself, I spoke to many thread and sewing machine company representatives. I offer thanks to all of them—especially Steve Butler at American & Efird, Bob Purcell at Superior Threads, and Lanny Smith at YLI—who generously provided technical information.



To judge thread quality: look and touch

Whatever thread you choose, always check its quality; inferior thread can leave a residue in your machine or clog it with lint. For general machine-sewing, I look for a smooth, nub-free strand that doesn't twist easily and is as free as possible of fuzz. To judge a thread, I unroll a length, hold it toward a light, and look at it closely. Then, with my fingertips, I feel for nubs and check that it's smooth and even.

Mail and Internet ordering has made most thread varieties readily accessible. Of course, it's impossible to check thread quality online, but if you provide a vendor with a self-addressed stamped envelope and request a sample length, he may accommodate you. Or you can purchase one spool and order more if it proves satisfactory.

After I've chosen a thread, but before I commit to using it on my project, I test it on my fabrics. I experiment with stitches and stitch settings, presser foot and stabilizer varieties, and tension settings. I've learned to record these details right on the sample stitch-outs: too many times I've left a project, and thought I'd remember the settings, only to realize I'd forgotten them when I returned to it.

Consider the use before making a choice

We're often advised to match the thread fiber to the fabric fiber when possible, but I think there's more to a smart thread decision than that. With an understanding of the thread fiber characteristics explained at right, I can pick a thread by the attributes I want for a particular project, letting fabric type, care, and use influence my choice. For example, if my fabric requires high heat for pressing, I'll choose a thread fiber that withstands the

Bobbin thread

Fine, and used for machine embroidery where the wrong side won't show. It comes in limited colors and is sometimes available on prewound bobbins.

Elastic thread

Has a continuous elastic core wrapped with thread. Hand-wind it onto the bobbin for decorative machine-stitching and shirring.

Choose fiber by performance

Although matching thread fiber to fabric fiber seems logical, choosing the appropriate thread by characteristics such as strength, colorfastness, or chemical resistance is more practical. In general, natural fiber threads such as cotton, linen, silk, and rayon (a manufactured fiber made from natural cellulose) sew beautifully. But synthetic fibers like polyester, nylon, or acrylic are stronger.

Cotton thread:

Made from spun staple cotton fibers (Egyptian long staples are about 1½ inches long and American pima staples are about 1¼ inches long). Cotton thread has little stretch, limited strength, and (in comparison to other fibers) can produce a lot of lint. It also has a low sheen. Use cotton thread for heirloom sewing, decorative stitching or embroidery, sewing lightweight natural fibers, patchwork, and quilting.

Cotton-wrapped polyester thread:

Made by wrapping a continuous polyester filament with staple cotton, this thread has the benefits of polyester and the look of cotton. Use for all-purpose sewing.

Nylon thread:

Made from extruded filaments, nylon threads come in a variety of forms that are very strong and rot-resistant:

- **Monofilament** is a single filament and comes in a wide range of weights. Use a lightweight version for invisible sewing and blind hems, or encase a heavier version inside a rolled stitch to support fluted or ruffled edges.
- **Texturized threads** (such as woolly nylon) are continuous multifilaments that stretch into a fine, strong thread and then expand to a full, fluffy appearance when relaxed. Use them for serged seams, decorative stitching, and rolled hems.
- **Upholstery threads** are often nylon. They come in limited colors, are extremely strong, and will withstand the rigors of outdoor use. Upholstery thread is easy to sew with but the ends ravel and are difficult to knot.



Buttonhole twist, topstitching thread, or cordonnet

All names for the same product. These heavier threads are available in silk, polyester, cotton-covered polyester, and cotton. Use for heavy-duty utility sewing, open decorative machine-stitching, bold topstitching, hand-stitched buttonholes on heavy fabrics, and cording machine buttonholes.



Polyester thread:

The garment industry often uses polyester thread because it is strong, colorfast, and resistant to UV rays, rot, mildew, and chemicals. It has some stretch, good recovery, and is heat-resistant. It can also be manufactured to mimic the appearance of natural fibers.

- **Spun polyester** is made by cutting filaments into 4- to 5-inch staples, spinning them into yarns, and then plying the yarns into a thread that's smoother and stronger than a spun natural fiber. Use it for all-purpose sewing.
- **Trilobal filament polyester** is plied, multiple continuous filaments. The triangular filaments shine like rayon but have better colorfastness. Sold as a machine-embroidery thread (may not be identified as trilobal).
- **Texturized polyester** has the same characteristics as woolly nylon but tolerates higher temperatures.

Rayon thread:

Made from a continuous fiber, rayon thread has no stretch, very little strength, and is not always colorfast, but it tolerates high temperatures, and is soft and beautiful. It is less durable than silk or polyester, and is used almost exclusively for decorative stitching and machine embroidery—not recommended for construction.

Silk thread:

Made from a natural continuous fiber that is strong, smooth, and has a lustrous sheen. It is wonderful for hand-sewing, tailoring, and basting. Use lightweight silk threads for sewing fragile fabrics. Use medium-weight silk thread for elegant construction on fine silk and wool fabrics. Use heavier-weight silk thread for buttonholes and hand- or machine-topstitching.

heat as well. If I'm constructing a heavy cotton denim bag, I'll choose a polyester thread for its strength and durability rather than a weaker cotton thread. Similarly, most children's clothing requires durable polyester thread to live up to rough wearing and heavy-duty washing and drying. For swimwear, choose a strong thread with stretch, plus UV and chemical resistance—you don't want to risk fading your decorative stitching or rotting your seams in chlorinated water.

One project might use several thread types

The kind of stitching I intend to do also influences my choices. For decorative stitches, embroidering, or couching yarns or cords for special effects, I choose thread by the way it looks. For shiny, satinlike stitches, I use rayon or trilobal polyester; for matte embroidery, I use cotton embroidery thread.

Thread used for construction needs to be stronger than decorative thread. Strong polyester threads are available in every sewing store. But special circumstances or construction processes require different threads, such as ultra-fine varieties for very delicate or sheer fabrics, and silk or cotton varieties for projects that will be dyed.

A garment-sewing project could include a variety of threads—construction thread for seams, decorative ones for embroidery or decorative stitches, and specialty threads for buttonholes, buttons, hems, or shirring.

Light-sensitive thread

Novelty threads that either change color in sunlight or glow in the dark. Use for topstitching and embroidering.



Break the color-matching rule

The traditional rule for selecting thread color when an exact match to your fabric isn't available is to choose thread that's a shade darker than the fabric. I offer an exception: Choose a lighter color thread (often white or ivory) when stitching on pastel or pale fine, lightweight fabrics. Lighter thread colors

Fusible thread

Melts when ironed, forming a bond with fabric. Use it in the bobbin or lower looper on a serger to outline appliqué, pockets, etc., so they can be temporarily fused in place instead of basted.

blend and disappear better on light fabric colors than darker shades do.

Decide for yourself: Unroll a few inches of any threads you are considering, lay them over your fabric in natural light, and then decide which blends best.

Choose bobbin thread to suit the task

For general construction, thread your machine with the same thread on the top and in the bobbin because it's practical and simplifies balancing the tension. But depending on the situation, there are good reasons not to match the upper and lower threads.

Color suitability may be one reason for not matching the top thread to the bobbin thread. Some newer sewing machines have decorative stitches that pull the bobbin thread to the top to alternate two thread colors in one pattern. Or you might be sewing two different color fabrics together—in which case you would use the same type of thread in the bobbin and on top, but match the color of each to the corresponding fabric.

Bobbin thread is inexpensive, but works best for embroidery

Thread made specifically for use in bobbins was introduced when machine embroidery became popular; it's less expensive than embroidery thread. Since the wrong side of embroidery isn't usually seen, there's no need to change the bobbin thread when you change the top thread as required for the colors of the design. Anytime the top and bobbin threads are not the same type you may have to compensate for their differences by adjusting the upper thread tension on the machine.

Prewound bobbins are available for embroidery and quilting. They are convenient and usually hold more thread than a bobbin you wind yourself, but they may not be compatible with your machine. Machine experts tell me that the tension settings established in the factory are based on the bobbins provided with

Water-soluble thread

Handy for temporarily basting hems and positioning pockets, pleats, etc.



Don't get tangled in terminology

Thread is a thin, continuous cord made by either spinning staple fibers into single strands—or yarns—and then twisting two or more of them into a plied sewing thread, or by an extrusion process that forms one or more long, continuous filaments.

Staple fibers:

Natural fibers, which vary in length from 1 to 2 inches, or synthetic fibers, cut to definite lengths of 4 to 5 inches, which are spun together to form yarns. Longer staple fiber lengths increase the quality and strength of the thread.

Continuous filaments:

Extreme lengths of polyester, rayon, nylon, or silk extruded mechanically (or by silk worms) as a single monofilament or as several strands in a multifilament. Filament circumference can be a shape other than round. For instance the trilobal filament has three sides for improved light reflection.

Ply:

As a noun, any one of the several yarns composing a thread. As a verb, the act of twisting those yarns together to form a thread.

Core:

A central polyester or nylon filament around which staple fibers or micro metallic ribbons are wound to form a thread.

Spun:

Spinning is the process by which staple fibers are twisted into single yarns, which are then plied together to form thread. Spun threads are soft, somewhat fuzzy, and have good sewability.

Textured or texturized:

Texture is added to continuous multifilaments by crimping them to entangle the parallel filaments and create softness, bulk, and elasticity.

Twist:

The direction in which yarns are plied together to form threads. Most spooled threads are twisted clockwise (called Z or left twist) for optimal machine performance.

Metallic thread

Has a foil-like appearance and is used for decorative stitching and embroidery. It is known to separate, so stitch slowly, loosen the tension, use a larger needle, and pair with all-purpose thread in the bobbin. Some newer wrapped-core versions have a veneer-type finish that keeps them from separating.



For perfect, tangle-free hand-sewing, pull your thread over beeswax, then press the strand before sewing. Or condition your thread by pulling it through Thread Heaven.



Finishes smooth your work

Before thread is wound onto the spool it's given an invisible helpmate. For example, serger threads get a finish that enhances high-speed sewing; machine-quilting threads are treated to flow smoothly through the tension guides. All threads are lubricated with chemicals to some degree, but some (especially cotton varieties) have other finishes applied.

Finishes are not always identified, but if you see them, here's what they mean:

Bonded:

Polyester or nylon thread coated to keep it from shredding and to reduce abrasion.

Gassed:

Cotton thread quickly passed through a flame to reduce fuzz.

Glazed (glacé):

Cotton thread for hand-sewing, treated with starches, waxes, or chemicals, and polished to a luster for a smooth, glossy surface to reduce knots and tangling. This finish can gum-up a sewing machine.

Mercerized:

Cotton or cotton-covered polyester thread given a caustic soda bath that's neutralized with an acid bath. Mercerizing adds strength, luster, and dye affinity, and reduces lint.

Soft:

Usually refers to a cotton thread to which no finishing processes have been applied.

vided with the machine. So again, you may have to adjust the upper tension.

Some machines equipped with low-bobbin monitors will work with prewound cardboard bobbins if you remove one or both cardboard sides. Others use various systems to monitor the amount of thread remaining on the bobbin (including counting unwound wraps) and won't work with prewound bobbins at all.

Breakage isn't always the fault of the thread

Stitching difficulties are bound to happen, but you shouldn't automatically blame your sewing machine or the thread. Always clean your machine before starting a project. A buildup of lint can cause problems that appear to be related to thread tension.

Place thread correctly for horizontal and vertical spool pins

If you have a choice of spool pin direction on your machine, use a vertical spool pin for spools with thread wound parallel to the spool ends. This is especially important with sensitive threads or spools with a notch for securing the thread tails. If your machine only has horizontal spool pins, put the spool on the machine with the notch to the right, toward the fly wheel, to prevent the thread from catching in it.

Monofilament thread

A single strand of nylon or polyester filament. Polyester withstands higher heat than nylon. Almost invisible, it comes clear, gray, or matte. It feels scratchy worn next to the skin.

Construction sewing thread

All-purpose thread strong enough for seaming; available in cotton, polyester, cotton-wrapped polyester for garment sewing, silk for special-occasion sewing, and nylon for home-décor items or heavy all-weather gear. Available in a wide range of colors; often keyed to fashion trends.

Serger thread

Finer than all-purpose thread, has a special finish for high-speed sewing, and comes on cones or tubes.



Texturized thread (woolly nylon or polyester)

Fills in stitches on rolled hems and overlock stitches, and makes soft, stretchy seams for swimwear or children's clothes. Used almost exclusively on a serger.



Some thread is wrapped to form V shapes—or cross-wound—on the spool or cone. Spools wrapped this way may be used successfully in either direction. But thread cross-wound on cones or large, heavy spools should come off over the top of the spool; use a stand to keep the thread pulling in the right direction.

Improper threading causes thread to snap

If the thread breaks as you sew, make sure the top and bobbin are properly threaded. Click the bobbin thread into the bobbin tension spring. Check that the thread isn't wrapped around the spool pin, and feel for kinks or burrs along the thread path.

An imperfect needle sews badly

The needle might be the culprit behind stitching problems. Always use a good-quality, new needle that's the correct kind and size for your project. Using a stretch needle on a woven fabric, for example, can cause puckering, as can using too large a needle for your fabric. Also, the needle must have a groove and eye large enough for the thread you're using. If you're having stitching problems after you've checked the threading, change the needle even if it's new—occasionally a defective needle gets through quality control.

Thread tension: make it neither too loose nor too tight

If the thread feeds badly, loops on the bottom of your work, snaps, or if your stitching puckers, adjust the upper tension. For fragile threads like metallics, a looser tension (lower number) can reduce breakage.

How thread is sized

Unfortunately, there isn't a universal sizing system for thread, which means there is no way to easily compare size among all types. However, an understanding of the three sizing systems used today is useful because it gives you an idea of relative size within a thread type. On the "Thread size comparison chart" below, you can see that each system uses a different numeric convention to identify size.

THREAD SIZE COMPARISON CHART

	Weight/ply	Denier	Tex
Lightweight (fine) threads	50/2, 60/2, 70/2, 80/2	100s, 200s	10-24
Medium-weight threads	50/3, 30/2	300s, 400s	27-45
Heavyweight (thick) threads	40/3	500s up	50 up

Weight:

Used for cotton and other spun threads—weight is expressed as the number of kilometers required of a specific thread to weigh 1 kilogram. The higher the number the lighter and finer the thread.

A slash separates weight from plies:

When there is a slash in the thread size, the first numeral indicates weight, the second, the number of plies in that thread. Thread marked 60/2 is a 60-weight, 2-ply thread. Generally 2-ply threads are for machine-embroidery and 3-ply threads are all-purpose.

Denier:

Used for man-made threads like polyester, rayon, and nylon—denier is the weight in grams of 9,000 meters of a specific thread. The higher the number, the heavier and thicker the thread.

Tex:

Previously used for industrial threads only, this system is expected to become universal—tex is the weight in grams of 1,000 meters of a specific thread. The higher the number the heavier and thicker the thread.

Quilting thread

Usually refers to threads for quilting, not piecing. Some may indicate whether they are for hand-quilting only (due to the finish), for machine-quilting, or for both.



Basting thread

Fine, soft, and weak, making it easy to remove.



ONLINE EXTRA

To learn which sewing machine needle to use with your thread and project, visit www.threadsmagazine.com.

Don't gum up the works

Remove labels from the ends of spools if they don't list critical information. If a label is the only way to identify the fiber, color, and size, I push its center into the spool hole. That way the label adheres to the inside of the spool rather than to the spool pin.

Answers to frequently asked storage questions

I asked technical and educational experts at major thread and sewing machine companies to answer these common thread questions:

What's the best way to store thread?

Storage drawers are ideal for protecting thread from UV rays, which cause deterioration and dust. One expert told me exposure to air conditioning and heat dries the thread and diminishes its quality. All sewing machine threads have lubrication that evaporates over time, especially if exposed to air conditioning and heat. Dried out polyester thread will flake.

Open thread racks should only be used for thread in current use. If you don't have a closed storage space, make a cover to protect your thread.

How long will thread last?

It all depends on the initial quality of the thread and the way it's

stored. Thread that is kept clean and away from UV rays lasts much longer than thread that is not.

Does freezing thread revive it?

Forget advice to wet, refrigerate, or freeze thread to rehydrate it. These so-called remedies just cause more problems. If thread is not performing as it should, discard it.

The choice is yours

For special projects, you may need to experiment to find the thread that gives the results you want, but once you understand the complex factors that go into the creation of different threads, you're set to evaluate the options in an informed way. After researching this article, I realized I really don't have to remember all the technical background information when I make a choice, as long as I consider the use of the thread. This is because manufacturers have taken care to make different kinds of thread for different purposes. If a thread is labeled on the spool, or categorized for specific use on a display rack or in a catalog, you can probably trust it's an appropriate choice to be used as indicated—it may not be your only choice but you can trust that it's a good choice. ♦

Carol Laflin Ahles travels worldwide teaching easy ways to get the best machine-sewing results.

Machine-embroidery thread

Designed to fill in evenly without bunching, this fine thread comes in cotton, rayon, long-staple polyester, or with a wrapped polyester core, and is available in hundreds of colors. Use for decorative stitching and embroidery where strength is not a concern.



Upholstery thread

Always a synthetic fiber, usually nylon but can be polyester, and extra-strong—too strong for clothing. It is good for outdoor projects because it doesn't rot.



Thread resources

These Web sites have information for purchasing a variety of sewing threads:

Manufacturers

Aurifil (Tristan Embroidery Supplies)
www.tristan.bc.ca/

Coats & Clark
www.coatsandclark.com

DMC Corporation
www.dmc-usa.com

Madeira USA
www.madeirausa.com

Maxi-lock/Mettler/Signature
www.amefird.com

Robison-Anton
www.robison-anton.com

Superior Threads
www.superiorthreads.com

Sulky
www.sulky.com

YLI
www.ylicorp.com

Vendors

BagLady Press
www.baglady.com

Fabrics To Dye For
www.notions.fabricstodyefor.com

Manhattan Wardrobe Supply
www.wardrobesupplies.com

Sew Thankful
www.SewThankful.com

Sew True
www.sewtrue.com

Things Japanese
www.silkthings.com

Web of Thread
www.webofthread.com