

BATTLE VESTS

Materials

I've been building battle vests since 1993, and during that time I have experimented with almost every imaginable material. What you choose to use for your vest may depend on what you can find, what is easiest for you to work with, and what suits your Klingon character the best. I do not claim to have all the answers, but hopefully I can help you make some decisions.

LEATHER, VINYL AND OTHER LEATHER LIKE MATERIALS

LEATHER-- Most of the prominent set costumes were leather sewn onto fabric. This would be the most "authentic" material to use. I made a leather vest and skirt early on. I made three mistakes: 1) I used upholstery grade leather. My Bernina sewing machine handled the job--barely. I recommend using garment grade cowhide instead. 2) I sewed leather to leather--this meant much more cutting, since I cut the black stripes as well as the gray ones. 3) I didn't line the vest. That allowed the garment to stretch out of shape. The resulting garment was heavy and HOT. Had I used the lighter garment weight leather sewn to fabric, I would have made a much lighter, more comfortable vest. Leather is sold by the piece and is priced by the square foot. Since it is made from animal skin, it is not always uniform in thickness and texture, and you have to pay for unusable areas and flaws as well as the good parts. Belt leather can be used to make the metallic trim on the yoke and around the bottom of the vest.

MARINE VINYL-- This is the thickest kind of upholstery vinyl made, and usually has a nylon knit backing. I usually cut flat strips and sew them down without folding the edges. While it can be folded and stitched down it becomes stiff and heavy. Marine vinyl can be found in chain fabric stores like Hancock. The trick is finding gray. Check auto and marine upholstery places as well.

FABRIC BACKED VINYL-- Thinner versions of knit-backed vinyl can be found at chain sewing stores. I have come across lengths of inexpensive gray vinyls on tables in the back of Hancock Fabrics. I'd avoid vinyls with woven backings--they tend to be stiffer and may only do what you want by being cup on the bias. Choose the most supple vinyl you can find if you plan to sew stripes with folded edges. This type of vinyl may also be used under pre-made welted stripes (more about these later).

FUZZY BACKED VINYL-- This upholstery material is composed of a thin top layer of vinyl attached to a felt-like backing, usually white. It is fairly lightweight and comes in any imaginable color. I have found it in gray in flat folds at Hancock. The outfit who makes the theme park, AKA rent-a-Klingon outfit uses this as the base fabric for welted uniforms. It is also fine for folded stripes. Care must be taken to finish all edges, or the fuzzy lining will show. A more durable

form of this vinyl is used in the automotive industry to fashion landau car roof accents, and can be found in metallics. I use it for baldrics.

UNBACKED VINYL-- Most unbacked vinyls, while inexpensive, are not durable enough to use for garments. If you find one in a color or texture you like, like patent, you may get away with using it for trim, but you'll find that it will tear in any application that has any stress. Try lining that part with another vinyl or a fabric to take the stress.

GARMENT VINYL (INCLUDING ULTRALEATHER™ AND FABULEATHER™)-- Most garment grade fake leathers are polyurethane rather than vinyl, are bonded with a knit backing, and are much lighter and more supple than upholstery vinyls. The high end products cost as much as leather, but are much more consistent and do not require special needles. If your local fabric store doesn't have much of a selection, try a mail order source found in one of the specialty sewing magazines like *Threads* or *Sew News*.

EMBOSSED KNITS, SUEDECLOTH, ULTRASUEDE™-- Several years ago I ran across a material that was a polyester knit, sueded on one side and embossed with a leather texture on the other. The embossing left this rather this fabric with a crisper feel than Doesuede™ or other knit suedecloths, and garments made of it look very much like leather at a fraction of the weight. I collect it whenever I can, though I have yet to find it in gray (aargh!!!). I think it would make a wonderful summer weight battle vest. I have yet to locate the manufacturer--it mostly pops up in discount sections of fabric stores, or as nonreorderable lots, usually stocked in with suedecloth. The one drawback to the stuff, is that after a while it will pill. Dry cleaning may preserve the finish longer. As for other suedecloth, I find it to be too soft to be used for most vests. I have used Ultrasuede™ but it is pricey and temperamental (stitches sometimes skip). You may have to use a microfiber needle or stabilizers to make it behave. I found another fabric to be lots of fun to use and wear, if you like the suede look. It is called Moleskin™. It is a polyester-lycra blend with a satin back and a sueded front, and it really moves with you. I'd recommend serging seams to prevent fraying.

STRETCH VINYL-- Naughty-naughty! I caught you peering at those bondage wear catalogues! What red blooded Klingon hasn't looked for design ideas there at least once? Want to know why that stuff is so expensive? It is *horrible* to work with! Those stretch patents stick to Teflon even and are so thin you have to sew over paper to keep the needle from poking the fabric down the throat of the machine. Try them, if you dare! The rubber stuff is a little easier--if you can find it, and even then it requires a special needle.

OTHER WOVEN FABRICS-- when I was first introduced to Klingon costuming, I was told never to mix vinyl with fabric. Not so! There are some things to take into consideration, however.

- 1) Knits and gabardine twills stretch. Stripes sewn onto these fabrics may ripple.
- 2) Lightweight fabrics will pucker under heavier vinyls, even if you use a Teflon™ coating on the presser foot, or use a walking or rolling presser foot. A little puckering is to be expected, and may stretch out on the wearer.
- 3) Fabrics with nap, like velours or corduroys can drive you crazy. All pattern pieces must be oriented in the same direction or the fabric will appear to change color. Stripes must also be sewn in the smooth direction of the nap, or they'll creep. While corduroy was used on set costumes, you may save yourself some aggravation by avoiding it.
- 4) By far the *easiest* fabric I have found to work with is heavily starched denim. If you can find it with a brushed finish, so much the better. Battle vests made with it as a base wear like iron and the puckering problem is minimal. Try to find denim that has all colored thread. Regular denim alternates colored thread with white. You can tell by looking at the under side--the white threads show more on the backside. I have even found stretch denim--this material makes for a great fit, but be careful not to stretch as you sew or the stripes will buckle!

MATERIALS FOR TRIM, SPINE ARMOR

METAL-- "Mmmm, ooh-ooh, metal good," Tim grunts. Down, Toolman! Down, boy! Metal very, very BAD! Metal scratch furniture. Metal rip car seats. Thin metal kinks, cracks. Metal fall off in parades. Metal not even authentic. Sorry about the wishy-washy editorial opinion here, but I've used metal and I know the pitfalls. If you macho Klin can't resist the call of the plasma cutter--Please polish all edges and rivet--don't glue. And get the name of a good chiropractor. They can do wonders for carpal tunnel syndrome--anything's better than surgery!

BELT LEATHER-- The choice of the pro's, though it doesn't like to adhere to vinyl sometimes (that pop rivet tool can be a godsend). Buy it or dye it black and apply silver Rub-'N-Buff™. The result looks like metal, but allows you to move. Your local craft supplier may be able to get you a source, or check with the shoe repair guy.

VINYL COVE MOLDING-- This is the choice of the Detroit Klingons. Building and home centers carry it in several colors. It can be metalized with Bub-'N-Buff™, or vinyl auto spray paint (I think).

ABS PLASTIC-- There's an outfitter in Canada using this, but he has access to a laser cutter. He paints his with enamel. I think the stuff is a bit stiff, and may be hard to get in small quantities. It may be susceptible to scratching.

NEOPRENE OR CREPE SHOE SOLE-- Cultivate your shoe repairman. He may be able to get some 1/8" thick. It cuts easily with rotary cutter or scissors, and can be metalized with Rub-'N-Buff or auto vinyl spray paint. The material is soft, and scratches will develop.

METALLIC VINYL-- I use silver vinyl with a leather texture I found at an auto-furniture upholstery place for spine armor and sewn on metallic trim. Sewn on trim is maintenance free and lightweight. I sandwich 1/8" hardware cloth between layers of vinyl for spine armor. This makes the armor shapeable. I sew the spine scales onto a strip of silver vinyl and snap it onto the vest.

FLEXIBLE THICK VINYL-- My personal favorite for trim is 1/8" vinyl I got at a surplus store. I have no idea where it came from and when it's gone I'll be in big trouble. This stuff is extremely flexible, easy to cut and takes vinyl spray paint beautifully. It feels like the kind of vinyl in vinyl lab tubing.

PREMADE TRIM, TUBING, NOTIONS AND HARDWARE

WELTING-- Also known as hydrem or hydagump, this preformed vinyl trim was made to hide raw edges on vinyl upholstered furniture. Welting is used for stripes on background uniforms, and on the uniforms designed for the movie *Star Trek VI*. Welted uniforms are the easiest and quickest to make, since a line of stitching down the center of each stripe sews it on. The hard part is finding the stuff. Check your local upholsterer for sources. Alternatives to vinyl welting include any upholstery braid, metallic braid, ribbon, or even bias tape. The look won't be as "authentic", but used in a Klingon stripe configuration, it'll be recognizable.

VINYL TUBING-- I use several sizes of this mostly for accessories. I order mine tinted black in large quantities, but the clear variety is available by the foot at the local hardware store. Spray the inside with black enamel and you're set.

THICK CORDING-- Available in cotton or polyester, this is used to fill the neck and chest tubes. It is available at most larger fabric stores in a variety of diameters.

ADHESIVES-- I use a vinyl adhesive containing methyl ethyl ketone to glue down trims and tubing. I got mine at my favorite vinyl upholstery place. If you work with leather, you'll need Barge cement, probably available where you got the leather. Both are contact types of adhesives. I have also been known to use hot glue sticks to attach resin pins to costume parts, and superglue for quick fixes, though it loses flexibility and shouldn't be thought of as a permanent solution.

HARDWARE-- Two pre-made items were used on Klingon vests. The buckle at the neck tube was designed to create a belt from pieces of heavy cord. As far as I know they are no longer in production, but you see them every now and then especially in older independent fabric stores. I found a cache of them in a basement and bought them all. The chest buckle is actually a big, klunky purse latch. Check with a luggage repair place for sources. I know of one, but their minimum order is large. Other details on open front vests are ornaments on the neck tubes. I have yet to find an accurate reproduction for this part. I use corrugated black tubing found in auto supply stores. It was made to harness electrical wiring in cars. I used to paint it, but the paint flakes off. I have found a way to place metallic needlepoint yarn into the grooves. Other folks I've talked with use styrene model railroad board and batten siding, heat molded and sprayed gold. Other miscellaneous things include long jacket zippers, heavy aluminum wire (to support stand-up collars), heavy-duty snaps, and Velcro™ (if you must).

Your assignment, should you decide to accept it, is to see how many of these materials you can locate. Next issue I'll tackle pattern mangling--I mean--manipulation and fitting. Questions, contributions of material sources may be sent to me by visiting my site at <http://www.qidar.com>. I am especially looking for online sources for costumes, prosthetics, weapons, etc. so I can put together an online source guide. This article will self-destruct in 30 seconds.