SHOTO #70-4520

LEED	Eligible for credits indoor air quality, use of rapidly renewable resources, and/ or innovation; Passed predictive test to meet GreenGuard™ standards for chemical emissions.
Fiber Composition	100% long fiber hemp
Colorways	2
Width	57" / 144.8 cm
Weight	17.4 oz sq yd / 590 gm sq meter
Repeat	H: 1.25" / 32 cm
Country of Origin	Romania
Cal 117	Pass
NFPA 701	Pass (with application of fire retardant)
Abrasion	30,000 Martindale with application of Cradle to Cradle certified finish; 10,000 Martindale without finish
Colorfast to light	AATCC 16: 5 at 60 hrs. for Limewash; Natural: 3 at 40 hrs.

ECO FACTS

Grown Responsibly. The fibers were grown by independent Romanian farmers in an area of the country that has, for many generations, depended on the growing of hemp. These small families use no pesticides, insecticides, fungicides or synthetic fertilizers.

The harvest is dew or field retted: the farmers leave the stalks in the fields to allow dew and rain to break down the natural lignin. The Romanian rettery removes the fibers from the stalk that are then spun into yarn without chemicals, preserving the strength of the long fibers; chemical shortcuts can "cottonize" and weaken the fibers.

Dew or field retting is a labor-intensive and time-consuming job, so other farmers are turning to chemical retting. But by supporting our farmers, we're protecting the earth and helping to keep this traditional method alive.

Old-World Quality. The fibers are then moved to a local yarn spinning facility, where they are dry spun into yarn, using no water or chemical inputs of any kind.

At the mills, artisans take great pride in creating lively fabrics, full of character. Since the mill dates from long before the Communist era, modern techniques, including chemical supports, have not been implemented.

Exceptional Standards. The fabric is softened, bleached and/or dyed at our Italian dye house, which is one of relatively few houses in the world that is qualified to produce a dyed or finished fabric which can be a certified "organic textile." Being an "organic textile," means not just that a fabric uses organic fibers in the yarn, but that every step of the production process has been certified eco-friendly.

For those who are interested, our dye house has received the Italian Institute for Ethical and Environmental Certification (ICEA) for adherence to AIAB (Italian Association for Biological Agriculture) standards.

Safe, Low-Impact Dyes. We invested more than two years of research in our dyes in order to achieve color consistency, colorfastness and complete absence of toxicity. The dyes meet EU and Global Organic Textile Standards to be free of AZO colorants (a cancer causing toxin that is used in many dyes), heavy metals and aromatic amines and the dyestuffs are completely biodegradable (except for some of the blues which can contain copper).

Eco-Softness. The fabrics are softened with a combination of beeswax, aloe vera and vitamin E.

TEST RESULTS

Shoto is predicted to meet GreenGuard standards. It was tested by an ISO 9001:2000 registered IAQ (Indoor Air Quality) testing lab, which measured the out-gassing of nasty chemicals. Our results were very impressive, well below limits set by the USGBC to allow fabrics to accrue LEED points for low emitting materials.

This test, a combination of gas chromatograph/mass spectrometry and high performance liquid chromatography, lasts for 24 hours. A small piece of fabric is placed in a closed chamber. The chemicals out-gassed for the first 24 hours at a given temperature and pressure are extrapolated to predict the results for the equivalent of a room volume. Based on decay rates for various chemicals, the test predicts the results after 168 hours (the GreenGuard requirement). So based on those parameters, and the results you see below, our fabrics passed with flying colors.

The LEED threshold and our actual results are:

Chemical measured	LEED requirement	O Ecotextiles Fabric Group #1	O Ecotextiles Fabric Group #2
TVOC - Total Volatile Organic Compounds	.25 mg/m^3	.048 mg/m^3	.02 mg/m^3
HCHO (formaldehyde)	25 parts per billion	<1 part per billion	<1 part per billion
Total aldehydes	50 parts per billion	<1 part per billion	1 part per billion

We're happy to send you more detailed lists of the 22 chemicals actually tested and not just the grouping of the chemical categories should you want it.

Group 1 Fabrics: Bloedel, Chinook, Lopez, Ozette, Ross Lake, Tyee
Group 2 Fabrics: Shoto, Tacoma, Rogue River, Hardy Organic Hemp

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