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The Utrecht Guide to Artists' Canvas



Corner of a cotton duck canvas ready to be stapled in place

and cracked in a humid climate. After much trial and error*, it's believed that painters discovered the protective effect of hide glue sizing upon observing the good condition of painted canvas glued to panels. Over time, stretching, sizing and priming canvas became a standard practice in the artist's studio and among professional colourmen (historical forerunners of modern art materials manufacturers). Today, canvas is the most popular painting support because it is easy to prepare and conveniently available ready-made.

*Early experimental canvas coatings included many strange materials, including fig juice and snail slime.

Cotton

Today cotton duck* is the most widely used type of canvas. It first gained acceptance as a full-fledged support for permanent painting in the mid-20th century. Cotton canvas was a popular choice among the American Abstract Expressionists for works of monumental scale because it was affordable and available in oversize widths. Utrecht responded to this demand by offering clean, heavy cotton duck that was much superior in quality to the utility cloth originally adapted for painting by New York artists.

Introduction

For many artists, canvas is where a work of art starts. Canvas is also where the story of Utrecht Art Supplies begins. With the 1949 launch of Utrecht Linens, the 1957 development of Utrecht Acrylic Gesso and many subsequent milestones, for over 6 decades Utrecht Art Supplies has provided the materials and knowledge for artists to craft professional quality canvases in the studio.

History

Fabric has been used as a painting support for centuries, first mounted to rigid panels, and later stretched over wooden frames. The first widespread adoption of stretched canvas painting supports is attributed to early Venetian artists who sought alternatives to wooden panels that swelled, warped



Cotton canvas being stretched on the bias

Cotton is derived from a fibrous plant "boll" or seed capsule. Fiber is separated from seeds and oil through mechanical and chemical processing.



Cotton plant with intact boll

Cotton duck is available in weights and grades ranging from economical, lightweight types for sketches and small works to extra-heavy canvas perfect for monumental scale works and floor cloth**. Cotton canvas offers great long-term performance with good sustained tension when properly stretched, sized and primed.

* The word "duck" is derived from "doek", the Dutch term for linen canvas.

** All types of Utrecht cotton duck offer the weight and density required for permanent painting.

Linen



Belgian linen canvas for painting

Linen is a premium fabric painting support with lustrous appearance and exceptional strength. It imparts a luxurious quality desirable for formal

portraiture and major commissioned works. Linen is exceptionally strong* and durable with natural resistance to mold and pests**. Properly prepared linen canvas maintains a tight stretch, enhancing permanence through dimensional stability.

* Linen fibers are 2 to 3 times stronger than cotton

**Linen artifacts dated to thousands of years old have been discovered in archaeological sites.

Flax plants, the source of fibers for linen fabric, are cultivated to produce either high seed yield or better quality fiber. Flax grown primarily for seed is cultivated to encourage branching; this produces weaker, shorter fiber that makes rough, slubby* thread suitable for rope and utility cloth. Close spacing between plants promotes long, strong stems, resulting in fine, silky thread. Top quality fiber called "line" is separated from "tow" and "shives", straw-like waste. To preserve length of fiber, flax plants are pulled roots and all; originally done by hand, this task is now accomplished with mechanical grubbers. Long-line fibers from multiple seasons are blended to produce linen of consistently high quality from batch to batch.

*Knotty inclusions in thread are called "slubs".



Ecological advantages of linen

Sustainable agricultural methods, efficient, nonpolluting processing and use of the entire plant make linen the best option for painters concerned for the environment. Flax can be grown without irrigation, little or no fertilizer and dramatically less pesticide than in cotton farming. Artists' linen is not bleached or color treated. An increasing number of European producers use clean alternative energy sources for mechanical processing and weaving. Every part of the plant is used*, and the entire plant is biodegradable.

The ancient procedure of using dew to break down newly harvested flax has been rediscovered in Europe. Dew retting provides a replacement for environmentally damaging water-retting. Condensation provides a source of water naturally free from minerals that hinder natural breakdown of plant gums. After plant connective tissue breakdown is complete, the final product is tough, silky flax fiber.

* Linen waste is used to produce rope, particle board, filter material and insulation.

Synthetics and Blends

Alternatives to cotton and linen canvas are available in pure synthetic and blended fabrics that offer desirable properties of premium fibers in an economical product. Blends include jute/cotton and linen/cotton. These may perform differently from single-fiber cloth when some types of sizing are applied. (Follow package directions for best results.)

Synthetic canvas has been developed which can be stretched and primed like organic fabric. Like linen and cotton, polyester canvas is compatible with PVA and acrylic sizings and primings. Unlike older supports, however, synthetic canvas is completely unaffected by humidity, mold and pests.

Conservation experts believe polyester canvas will prove more durable than natural fibers in advanced aging.

Weaves, weights and surfaces

Fabric with warp and weft* at right angles called "plain-weave" is preferred for painting** because it stretches easily with sustained, even tension. (Most artist's canvas is plain-weave fabric.) The subtle, regular texture of this type of cloth supports adhesion with grounds and primers and does not impose itself through paint layers. Surfaces range from extremely smooth to coarse and aggressive. Smooth canvas is preferred for portraits and fine detailed work, while coarse canvas is a good choice for landscape, large-scale work and other applications where a naturally broken brush stroke is desirable.

Unprimed canvas is available on rolls or in folded cuts***. The weight of canvas is indicated by product number or in ounces per square yard. Higher numbers are assigned to lighter weights of canvas; the heavier the canvas, the lower the number assigned. "Number Weaves" are made of double-ply yarn using two threads each from opposite sides of the loom. Double-thread canvas is the best choice for painting because it resists sagging on the stretchers and is tightly woven, preventing strike-through of the primer. Single-thread "ounce fabrics" are suitable for small works and sketches.

*Warp yarns run the long dimension of fabric; weft threads run left to right (Remember: 'weft to right')

** (Herringbone and twill are also occasionally used, but aggressive weave patterns make these types less suitable for most painting applications.)

*** Superficial creases may occur in canvas folds. These typically disappear during the stretching and priming process.

Primed Fabric

Historical artists relied on specialist craftsmen for expertly prepared linen canvases. Most artists stretch this type of primed fabric in preparation for painting, but some paint on unstretched, primed canvas and stretch finished art when dry. Oil-primed linen imparts the rich look of traditional grounds with the ease and permanence of modern art materials. Oil-primed linen is carefully pumiced and picked to remove irregularities before sizing*. Most modern oil-primed canvas is sized using PVA or acrylic-based formulas; some manufacturers still use animal protein glues but this is increasingly uncommon. After sizing, several layers of lean oil ground are applied; some types are prepared using one single priming, while others are coated with a bright white layer first, followed by a subsequent warmer ground**. Once cured, the prepared linen is ready to accept paint.

* Sizing isolates fabric from contact with the oil paint vehicle, which can damage canvas fibers.

** Oil-primed linen may yellow in storage; this color change is reversible and does not indicate diminished quality. Lighter color can be restored by exposing the priming layer to light.

Acrylic-primed linen is factory-prepared with acrylic dispersion painting ground (gesso) that provides both sizing and priming in one. Priming is applied with a knife or squeegee in several coats, either mechanically or by hand. Every layer is allowed to dry thoroughly before each subsequent application. Calendaring rollers are employed to press the priming into the cloth to produce a smoother surface than most hand-primed canvas prepared in the studio. Acrylic priming protects and preserves linen fibers, maintains a tight, uniform stretch and provides a permanently flexible, gleaming white foundation for oil, acrylic or alkyd paints.

Alkyd-primed linen is prepared in the same way as oil-primed fabric, with a fast-drying oil/synthetic resin ground. Alkyd priming imparts the authentic appearance of traditional lead-based grounds with none of the associated hazards. Made to accept oil and alkyd colors, alkyd-primed linen is extra absorbent to promote a fast-drying, lean underpainting perfect for layered techniques. An alkyd ground gives toughness and durability to the foundation layer of a painting.



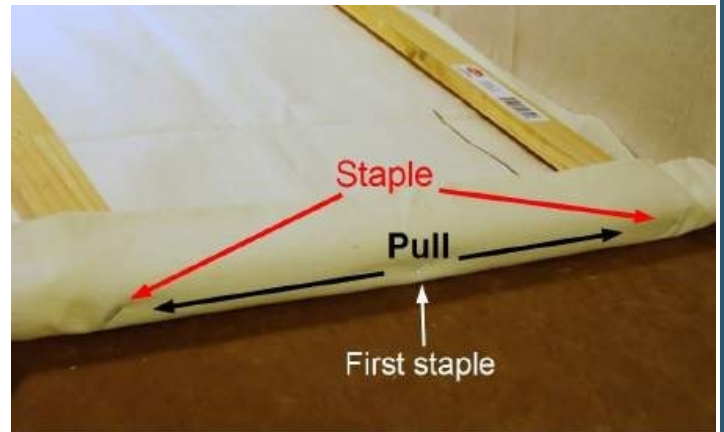
Pre-stretched Canvas

Factory-stretched canvas is a great option for painters who need to devote 100% of studio time to painting, and for those who just occasionally need something ready to go immediately*. Pre-stretched canvases are available in a huge range of sizes, proportions and surfaces, with both linen and cotton fabric. Most types are made using factory-primed canvas, but a few manufacturers size and prime raw canvas on the stretchers. Craftsmanship and quality of pre-stretched canvases is at least the equal of what most artists can achieve in the studio.

Canvas may either be tacked with staples or held in place with a spline. Spline-stretched canvas is tensioned with a cord in a shallow channel to give a clean “gallery wrapped” appearance.

*Some generic, economy-grade pre-stretched canvases are coated to prevent sticking. This coating should be removed by cleaning with denatured alcohol to ensure good paint adhesion.

In addition to traditional rectangles, pre-stretched canvas is also available in other geometric shapes including circles and ovals. Unlike solid wood standard stretcher frames, curved stretchers are normally cut from particle board or other manufactured wood.



Stretching Canvas

Preparing canvas in-studio is more common today than at any time in the past several hundred years. Utrecht played a significant role in distributing technical knowledge to enable artists to prepare handprimed canvases conveniently with professional, permanent results. Today, stretching and priming canvas is considered a fundamental studio skill.

There are two main approaches to stretching canvas: center-to-center and on the bias. Properly executed, both methods yield excellent results. Stapling on the sides of the frame provides better tension, but stapling on the back for a “gallery wrapped” presentation is generally adequate. Heavyweight linen and factory-primed canvas are often harder to pull across a stretcher than raw cotton canvas, sometimes requiring the use of pliers to achieve satisfactory tension.



Conservation professionals consider sustained, even tension an important factor in the longevity of a painting. Once a tight stretch is achieved, the application of sizing or acrylic gesso will help sustain tension and isolate fabric from contact with the paint. Not all fabrics are compatible with every type of sizing, so it's important to pair canvas with the correct product according to package directions*.

*Utrecht Type 79D Linen should only be prepared with acrylic or PVA sizing to ensure even, consistent shrinkage and straight weave pattern.

Canvas Covered Panels

Fabric mounted to a rigid support offers the texture and appearance of canvas with the durability, dimensional stability and portability of panel. It's not known for certain exactly when canvas boards were introduced, but they were already popular for students and on-site painting by the late 1800s in America*. Prior to the introduction of canvas panels, art materials vendors sold "millboards", oil-primed rigid cardboard-type panels that provided a convenient, inexpensive alternative to stretched linen for painting outdoors.

* George Rowney & Co. introduced a canvas board in 1878, and there are references to even earlier manufacturers.

Factory-prepared Canvas Panels

Canvas panels are available in a range of materials and surfaces from sketch-grade with thin cotton fabric to sturdy hardboard covered with oil-primed linen. The most economical canvas boards are typically constructed on a newsboard* core with a thin acrylic-primed fabric face. Intermediate-quality boards are made with a rigid hardboard core and heavier cotton fabric. The best quality fabric panels are constructed of hardboard with a luxurious linen face. All types of factory-prepared fabric panels are made using stable, durable heat-activated mounting adhesive.

*Newsboard is an acidic wood fiber cardboard that should not be used for permanent painting.

Studio Prepared Canvas Panels



Making panels in studio allows the full range of fabrics and grounds to be applied to panels of custom dimensions. Most types of linen, cotton and synthetic canvas can be mounted to panel; lightweight fabrics are less prone to distort the panel from shrinkage in reaction to wet adhesive. Before mounting fabric, hardboard panels should be thoroughly cleaned. Acrylic Gloss Gel Medium is an excellent adhesive for mounting fabric to hardboard panels. An isolation coat of acrylic medium should be applied to prevent support-induced discoloration (staining) of water-based grounds. Direct application of raw fabric is generally adequate, but as an optional step, some artists apply a thin layer of acrylic medium to fabric (thoroughly dry) before mounting to help improve adhesion.