




Goat-hair fan

What **you** need to know about brushes

By Michael Harbridge

Brushes are one of those must-have tools required to complete most fired arts projects. However, the vast selection and variety of brushes can be overwhelming. Where do you begin? Selecting the wrong brush can have devastating effects on your artwork. For example, using a stiff brush to apply glaze can result in a streaky or rough finish because the brush didn't lay the color on heavy enough. So selecting the appropriate brush is most important. Caring for the brush properly is also an important factor. Abused brushes may not perform the way they should. This month we'll take a close look at how brushes are made, how to select the proper brush for what you're doing, and proper care methods. Understanding these factors will make you a better artist.

head filaments	medium	surface
Soft Natural 	Acrylic, adhesives, alkyds, craft acrylics, gouache, glass paints, oils, tempera, watercolor, hobby paints	Canvas, canvas board, masonry, wood, glass, glazed ceramic, ceramic bisque, metal, plastic, plaster, silk, masonite, rocks
Bristle <i>(natural or synthetic)</i> 	Adhesives, oils, gel mediums, tube (high viscosity) acrylics – generally for heavier bodied media	Canvas, canvas board, masonry, wood, masonite, concrete, ceramic bisque
Synthetic 	Acrylic, adhesives, alkyds, craft acrylics, gouache, glass paints, oils, tempera, watercolor, hobby paints, fabric paints	Canvas, canvas board, masonry, wood, masonite, glazed ceramic, ceramic bisque, metal, plastic, plaster, all fabric, concrete

Badger-hair fan, goat-hair mop, and a brush combining natural and synthetic hair.

Hake (left) and bamboo brushes (right).

See the digital edition for videos on brush uses and care!

Hair types

How many times have you seen someone stick the hair end of a brush in their mouth to shape the end? I always take pleasure in asking them if they were aware that the hair on that brush came from inside an ox ear. After they're completely grossed out and perhaps gagging a bit, I tell them not to worry because I'm certain the hair has been cleaned thoroughly. It is true, though, that some brushes are made with hair from unusual parts of animals. There are two kinds of brush hair: natural hair and synthetic hair.

Natural-hair brushes come in a wide range of hair types, from very soft to extremely stiff or firm. Each type of hair serves a purpose, and it's important that artists understand which brush works best with each finish. Within each hair type, you can get inexpensive and expensive brushes. A more costly brush does not always work better. The proper hair type is much more important. As with the glaze brush example above, a stiff drybrush is not the proper brush for applying glaze because it will brush the color out too much. So let's look at the different kinds of natural hair and their best uses with fired arts.

Soft Natural Hair. Some of the most commonly known brushes are red sable. That may sound like a sleek brush, clearly made from a red sable. But what is a red sable? Shockingly, red sable brushes are made with weasel hair. Most people would not feel comfortable buying "weasel brushes," so the term red sable was created. These brushes are available in a variety of grades, with pure red sable being one of the finest and most costly. Sable brushes are ideal for underglazes, glazes, brushwork, stains, and oil-based products.

Kolinsky red sable brushes are known for their superb spring, strength, absorbency, and fine points. They are commonly reserved for brush-stroke work because they do an excellent job of holding color and keeping their shape. Even though these brushes work great with any form of color, they're not recommended for most staining methods or general acrylic painting on bisque. Kolinsky sable is pricey, and brushing basecoats on abrasive bisque can wear the brushes down quickly.

Ox hair is taken from inside the ears of cattle. It lacks the fine points of red sable, but ox hair is strong and silky. These brushes are moderately priced and work well with fired and non-fired colors for most types of painting. Sabeline is an imitation sable made from bleached and dyed ox hair.

Goat is a common hair in ceramic brushes. It's a very soft bristle found in many glaze brushes like the mop, fan, and bamboo shown here. Because they're so soft, they are ideal for most glazes. Their main drawback is that the hair is soft and can break easily with porous ceramic bisque. Goat-hair fan brushes are wonderful for large area coverage. But many artists have noticed that, over time, fan brushes turn into "whale's tail," with hair on each side and nothing in the middle. This commonly happens because of the shape of the fan's ferrule. The domed shape can scrape against the bisque, cutting away the bristles in the middle. Some fan brushes are now made with a blend of goat and badger hair. Badger gives the brush strength, while the goat blend keeps it soft. These glaze brushes also hold massive amounts of color for nice, even coverage.

Squirrel hair is very absorbent and finely pointed, but lacks the spring of red sable. It's more limp but holds large amounts of color. Spring can be added to brushes made with squirrel by combining a blend of synthetic bristle. These brushes are also ideal for fired color but don't work as well for stroke work. Dagger brushes work great for long line work and are commonly used with banding methods.

One might assume camel-hair brushes use hair from camels, but it's not so. Camel is actually a blend of ox, goat, squirrel, and pony. These are inexpensive brushes commonly used for overglazes.

Hog bristle is a stiff, strong hair taken from hogs. You'll usually find this hair in drybrushes and stiff fans. Stiff fans are ideal for products like crystal glazes. Since crystal glazes are thicker and contain hard chunks, you need the strength of the stiffer bristles to apply the color and lay the crystals on the surface. Soft goat fans don't work well because the hair is so soft and limp. That same stiff hair is used for round and flat brushes intended for use with non-fired colors — they're ideal for drybrushing. Within the hog bristle family, you'll discover varying grades. Some will withstand the abusive drybrushing method; lower grades will wear out quickly.



Hog bristle fan (left) and flat brush (right).

ANATOMY OF A BRUSH™



All brushes are made of four parts: the tip, reservoir, ferrule and handle.

HAIR TYPE

The quality and availability of a natural hair affects the price of a brush. The mixture of different diameters of synthetic filaments also determines the cost, as each filament is individually extruded.

hair type	density
Pony	Soft Natural Bristle
Fitch	Soft Natural Bristle
Camel	Soft Natural Bristle
Sable	Soft Natural Bristle
Squirrel	Soft Natural Bristle
Ox	Medium Natural Bristle
Goat	Soft Natural Bristle
Boar or Hog	Stiff Bristle
Synthetic, Multi-Diameter	Soft to Medium
Nylon	Medium to Stiff
Synthetic Bristle	Stiff

FERRULE TYPE

The ferrule is one of the most important parts of the brush because it holds the bristles and connects all parts of the brush. Best quality ferrules can represent up to one-third the cost of the brush.

ferrule	benefits
Plated Brass	The highest quality ferrule, nickel, copper, gold or black-plated brass represent the most durable ferrule. They are used on best quality brushes. They do not rust and will not deform easily.
Aluminum	Seamless aluminum ferrules are rust proof and will not allow solvent to affect the brush head. An aluminum ferrule is softer than brass and as a result can be deformed more easily.
Plastic	A plastic ferrule is typically used for disposable brushes.

HANDLE TYPE

The handle type can determine the cost and durability of a paint brush.

handle type	benefits
Acrylic	Best for water-based mediums. It will not absorb water and therefore will not expand and contract. The beveled end is used for burnishing, scraping, and removing color. Very durable.
Kiln-Dried Hardwood	Assures that brush heads stay firmly crimped.
Polymer	Economical, excellent for water-based mediums as it will not absorb water. Very durable.
Silk Touch™	A rubberized coating used to add comfort for the artist and protect the brush handle.

HANDLE LENGTH

The type of medium used and the amount of small detail being painted determines the choice of handle length.

handle length	uses
Standard	Also known as watercolor length. This brush length is ideal if you like to work close to your painting.
Long/Easel	Used for oil and acrylic painting at an easel. A long handle brush allows the artist to step back from the painting to get a better perspective of what is being painted.
Short	Usually used on craft brushes or brushes designed for children. Allows the artist to be closer to their work for more control.
Ultra Short/Mini	An ultra short brush handle is best for very small detail work. This brush length is ideal for miniatures and models.



Synthetic hair brushes.

Synthetic hair

Synthetic filaments have come a long way. Some artists have a hard time telling the difference between natural hair and synthetic. One of the main advantages of synthetic hair is its strength and durability. This manufactured hair is available in a variety of thicknesses tapering to fine points. You'll find hair that imitates soft sable and stiff hog. The main disadvantage of synthetic over natural hair is the color-holding capacity. Most natural hair has "tooth" which holds color. Imitation hair is generally smoother and releases color quicker.

Contemporary ceramic studios generally use synthetic brushes for everyday studio use. Because of the high use and abuse these brushes endure, manufactured hair holds up best. Most natural hair wears down quickly and requires replacement frequently. That's not to say natural hair brushes can't be used in a contemporary studio. Natural fans work best for large area coverage, and studios with clay projects prefer the softer hair when applying color to wet clay.

Synthetic hair is ideal for water-based products, and some filaments are designed for use with oil-based colors. Make certain you have the right type for the colors you've selected. Using a hair not designed for oil colors can cause the bristles to curl or fuzz up.

Combined hair

Each type of hair has positive characteristics as well as drawbacks, depending on the colors, user, and chosen methods. So combining natural and synthetic hair into one brush can bring the best of both worlds together. Natural hair brings the color holding capacity while manufactured hair offers spring and durability.

From left: dagger, wisp, and triangular brushes.

How they are made

Brush making is a true art form. Many assume brushes are made with machines and only true artist brushes are made by hand. The fact is, most brushes are made by hand. The hair is hand selected, inserted in the ferrule, glued, and crimped to the handle. Regardless of how brushes are assembled, quality can be an issue. Human error can affect hand-made brushes.

Parts of the brush

Brushes are a pretty simple tool. You have a handle, ferrule, and brush head. But each part of the brush has important factors. Handles can be made with different materials from wood to acrylic. Wood handles can swell, crack, and peel if left in water. Wood absorbs moisture and swells, stretching the paint and ferrule. When the brush dries out, the handle shrinks again, but the paint stays expanded and the metal ferrule does not shrink. This can result in paint flaking and falling off and the ferrule wobbling or falling off. So it's important to wash brushes, remove them from liquid, and place them on a flat surface to dry. Never stand brushes upright while they dry. Water can work its way down into the handle, with the same result on wooden handles as leaving them to soak in water.

Ferrules can be made with brass, aluminum, or plastic. Brass is the strongest and can be plated in different finishes. Aluminum is slightly softer and can dent easier. Plastic is typically used on lower-end or disposable brushes. Brushes can be single, double, or even triple crimped.

Brush uses

So what shape works best? It all depends on what you want to do. Basic brushes like rounds and flats can be used for basic painting as well as brush design work. Many contemporary studios have eliminated flats because customers try to paint large areas with glaze products and due to the tightness of the flat bristles on synthetic brushes, it tends to spread color thinly or even pull off the color below when additional coats are applied. That's where fans come in handy. Flats are great for creating thick, controlled lines but can also be turned sideways to make thin lines.

Specialty brushes are always popular because they do something special if used properly. Triangular brushes have three sides, so they're easy to load with multiple colors for creating blended strokes. Fans can be used for applying various glazes, but also work wonderfully for stippled effects for trees or textures. Combs and wisp brushes create feathery effects and fine lines. Liners in various sizes will make individual lines and stroke designs.





See the two pages following for illustrations of what each brush can do. But chances are, you'll discover even more uses by playing around and experimenting.

Brush care and storage

- Wood-handle brushes should always be stored flat or hanging hair-end down to prevent water from soaking into the handle.
- Acrylic brushes should be stored flat, but can be stored upright if most of the water has been dried from the hairs.
- When storing natural-hair brushes for the summer or long periods, dip the brushes in liquid hand or dish soap, wipe off the excess, reshape the head, and allow the brush to dry. This will seal the hairs, prevent mites from getting at the brush, and ensure the brush head keeps its shape.
- Do not store brushes in cramped quarters where the hairs can get bent or break.
- While brushes are not made to last forever, good care can help extend their life time significantly.
- If acrylic paints dry in the hairs, the brush may be ruined, the hairs permanently damaged.
- Try not to soak handles. Water levels should only reach to the crimping on the ferrule. Wetting handles will cause cracking and loosening of the ferrules.
- Dry handles after every cleaning.
- Clean brushes immediately after painting.
- Do not let any paint sit or dry in the hairs.
- Occasionally you can clean the brushes with regular hand soap, reshape, and let dry.
- Be gentle when using cake paints or chalks.
- Rough scrubbing can permanently damage the hairs and force paint into the ferrule.
- For natural-hair brushes, occasionally use brush conditioner. This will keep the hairs from drying out and breaking.

Cleaning Brushes

Water-based media. Rinse the brush several times in clean water. Using a good brush cleaner, lather up the brush, swirl it around in the palm of your hand, then rinse; continue until all of the rinse water is colorless and all of the cleaner is removed.

Other media. Rinse the brush in solvent until all of the color is removed. Wipe the brush back and forth on paper towel or rags to work the solvent throughout the brush and remove all color.

Understanding the makeup of brushes, their correct uses, and taking proper care of them will go a long way towards creating better artwork and keeping your brushes in great shape!

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Choosing The Right Brush

Choose just the right style of brush from our wide selection to get exactly the stroke or texture you want. The guide below will help you pick the best tool to achieve the right look.



taklon round
Paint broad lines,
round areas,
stroke work



taklon fan
Blend colors, create
texture, grass,
fur, foliage



angular
Paint angled shapes,
sharp edges and
float colors



comb™
Paint multiple
lines in one
stroke for fluffy
Santa beard



natural mop
Blend delicate
colors and soften
edges of objects



shader
Blend or float
colors, lettering,
and basecoating



natural round
Paint broad
lines, round areas,
stroke work



ox glaze
Blend colors,
apply glazes,
and basecoat



natural flat
Blend or float
colors and
basecoating



glaze/wash
Float and blend colors,
make broad square
strokes and basecoat
large objects



filbert
Paint and blend
round petals,
leaves and strokes



stencil
Stencil painting or
stippling on any
surface



bristle flat
Blending heavy
colors, dry brushing,
and basecoating



bristle round
Blending heavy
colors, dry brushing,
and basecoating in
rounded areas



bristle fan
Blend colors,
create texture,
grass, fur, and foliage



liner

Extra thin lines, small strokes, and the finest details



detail

Paint angled shapes, sharp edges, and float colors in tight areas



script

Extra long strokes, lines and scrolling



triangular

Triple load with color to create unique blends in stroke work



dagger

Banding fine lines, stems, long leaves and stroke designs



wisp™ angular

Paint multiple lines in one stroke, feathers, foliage, plaids and hair



wisp™ fan

Paint multiple lines with one stroke, banding multiple lines, curlicues and splattering



wisp™ flat

Paint multiple lines in one stroke, cross hatching and squiggles



wisp™ filbert

Paint multiple lines in one stroke, grass, hair, fur and detail flower petals



funky pouncer™

Add texture with gels, acrylics, oils, watercolor stains and glazes



natural fan

Large area washes, ceramic underglazes and glazes



hake

Large area coverage, washes, ceramic underglazes and glazes



bamboo

Ceramic glazes, underglazes, lettering, strokes and washes



tight spot

Paint in hard-to-reach spots



Mr. Big Sweep™

Fine lines, large area washes, ceramic underglazes and glazes