

# Fabricator's Journal

A Guide to Fabrication Techniques

## Adding elegance and richness with gold leaf

■ On NOMMA's e-mail discussion list or ListServ, NOMMA members ask technical questions and get answers. A recent discussion on gold leaf application techniques was the catalyst for this issue of *Fabricator's Journal*.

### Applying gold leaf

**Question: I need to gold leaf some cast iron medallions and forged steel acanthus leaves. Any suggestions?**

— Terry Driscoll, Custom Iron Inc., Zumbrota, MN

Lloyd Hughes, of Lloyd K. Hughes Metalsmithing in Lexington, KY, offers the following advice on how to apply gold leaf:

#### 1. Assemble your materials.

- 23-carat gold leaf
- size (leaf will only stick to areas that have been sized)
- soft, natural bristle brush
- cotton balls
- gold leaf lifter
- gold leaf cutter (optional)

#### 2. Prepare your surface.

Prepare the pieces to be leaved to make them as smooth as possible (the smoother the surface, the more brilliant the finished job).

If this is indoor work, prime the surface. Old time gilders used a red bole underneath the gold leaf, saying it made it brighter. With this in mind, you may use a red primer, or you can paint the surface yellow to hide any fissures in the leaf. Either way is fine.

Wipe the surface with alcohol to clean.

#### 3. Apply oil-based size.

Next, you must apply sizing, a "tacky" material that will make the leaf adhere to the surface of the workpiece. Slow size is oil-based, and is stronger with a longer working time. Fast size, which is varnish-based, is ready in about two hours, but requires less working time. I would suggest using slow size and



This "gateway of gold," an entry in the 2007 Top Job competition, was fabricated by MH Engineering. German gold leaf (23 $\frac{3}{4}$ -carat) was applied front and back to each of the steel leaves using the traditional oil gilding techniques that have been in use for centuries.

### About gold and other metal leaves

**All gold leaf** is not created equal. There are different types and grades of leaf.

Loose leaf, as the name implies, is loose in a book, interleaved with paper. Patent (transfer) leaf is lightly adhered to the papers in the book and is used for smooth surface work. Loose leaf comes in both surface grade and glass grade, the glass grade being thinner and better. There are also the many different types of imitation leaf, mostly made of aluminum, which are best used for hobby work only.

Metal leaf is available in a variety of forms:

- 22- or 23-carat deep gold leaf
- 22- or 23-carat transfer gold leaf (sticky back)
- Silver leaf (fine silver)
- Imitation gold leaf (a.k.a. "Dutch metal," "brass leaf," "composition metal leaf")
- Aluminum leaf ("imitation silver leaf")
- Variegated leaf (different colors — red, blue, green)
- Copper leaf

Gold leaf will not tarnish. The silver, imitation gold, and copper all will tarnish, so should be covered with a protective coating, such as varnish, spray fixative, or urethane.



**Gold leaf is featured on these metal sconces, which are designed to hold blown glass vases. Photo courtesy of Charles Douglas, Society of Gilders.**

applying at the end of the day, before you go home. This way it should be at the proper tack first thing in the morning. To test for ready, press your knuckle on the size — you should feel a slight tug, but leave no mark.

### 3. Apply the gold leaf.

I would use loose leaf. By rubbing the lifter lightly against the hair on your arm or head (I have a problem with that part), you will create static electricity to lift the leaf off the paper. Place the leaf over your work and dab lightly with a soft brush to get into the recesses. No matter how careful you are, you will have cracks, but you can use scraps to cover them. When all of the pieces are covered, brush off the excess leaf and

rub (as little as you can) with a cotton ball to help the leaf adhere and remove loose pieces. It is not uncommon to have to reapply size in order to get the work completely covered.

### 4. Apply a clear coat.

If the piece is to be indoors, in an area subject to little or no contact, you are finished. If contact is an issue, you can apply a THIN coat of the size over your finished piece.

If outdoors, a finish coat is optional.

Doug Bracken, of Wiemann Ironworks in Tulsa, OK, offered this additional advice:

There are a number of good articles on the subject of gold leaf online; you can also order several books on the subject of gilding.

You need to take into account the location (interior and exterior) — long-drying, oil-based sizing for exterior weathers best. I use heavy height patent (stuck to the paper) leaf. Also, keep in mind that anything less than 23-carat will tarnish outdoors, because the metal that pure gold is cut with is copper. ❄️

NOMMA's ListServ provides a forum for members to ask technical questions and receive answers from other members. You can join the NOMMA ListServ by sending an e-mail to Liz Johnson at the NOMMA office ([liz@nomma.org](mailto:liz@nomma.org)).



**This hand-forged handrail project, designed by Virginia Architectural Metals of Fredericksburg, VA, was an entry in the 2008 Top Job competition. The client had requested "gaudy elegance" — the job featured 23.5-carat gold leaf and brass medallions, which, set against a black powdercoat finish, achieved the "gaudy" element.**

## Helpful resources

### Books:

■ *Gold Leaf Techniques* by Raymond J. LeBlanc is out of print, but considered a comprehensive resource on the topic.

■ *Gold Leaf Application and Antique Restoration* by Ellen Becker features illustrated step-by-step instructions for various gold leafing techniques.

Both are available on Amazon.com.

### Suppliers:

■ Art Essentials of New York Ltd., *Ph:* (800) 283-5323; *Web:* [www.artessentials.ofnewyork.com](http://www.artessentials.ofnewyork.com).

■ Sepp Leaf Products Inc., *Ph:* (212) 683-2840; *Web:* [www.seppleaf.com](http://www.seppleaf.com).

## The art of gilding

Gilding, the process of covering an item with a thin layer of gold, has been used in the religious and secular arts for several centuries. The application of other types of metal leaf may also be referred to as gilding, though gold and silver are the most common. Today, gilding is most often seen in an architectural context and can be found on the exteriors and interiors of all kinds of structures, from churches to apartment buildings, or on signage.

■ There are two basic methods of gilding: mechanical and chemical. Mechanical gilding, the only type used in the ancient era, begins with gold leaf. The gold leaf used in the ancient era was typically thicker than today's gold leaf and has consequently survived the centuries quite well. Different types of mechanical gilding are used for different materials.

■ Water gilding, which uses a layer of gesso and a layer of bole to make the gold leaf adhere, is traditionally used for wood surfaces.

■ Oil gilding uses an adhesive oil primer to gild the walls of a building.

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