



# Lead vs Foil

## When Lead and When Foil?

I'm asked this question a lot in stained glass classes. As with almost all questions, the first answer is, "It depends". It depends on what you are making and it depends on your cutting skills.

## The Beginning

The copper foil technique was invented by Louis Tiffany to make lampshades. His studio made stained glass windows with strips of lead came made in "I" or "H" shapes and experimented with 3-dimensional shapes like vases and lamp stands. Those experiments led to making lampshades. An immediate problem was recognized with leaded glass lampshades. Glass is heavy, lead is soft and gravity is relentless. The weight of the glass stretched the lead and the lampshades came apart. Most people would have abandoned the idea of making stained glass lampshades under the assumption, "It seemed like a good idea at the time". We have probably all at sometime experienced "It seemed like a good idea at the time" in our experiments.

Tiffany, or one of his employees, decided to experiment with alternatives. Those experiments included using thin strips of metal copper bent over the edges of the pieces of glass and soldered together. This allowed them to create free standing dimensional shapes like lampshades and sculptures. Using copper foil instead of traditional lead came has come to be referred to as the "Tiffany Technique". We now have factory made glue-backed copper foil that's a lot easier to work with than strips of metal copper but it's essentially the same technique.

## The Popularity

In the late 1960's and early 1970's there was an explosion of interest in handmade work with a surge of individuals wanting to learn how to make things like ceramics, carving, weaving, macrame and stained glass. That demand presented a problem for stained glass instructors. Most of the eager participants wanted an introduction to stained glass but did NOT want to take a full class that covered all the details of assembling with lead came. Thus came the brilliant idea of suncatchers. A small simple project that could be completed in a short class. The student was given a sampling of how stained glass is done and got to take home something they made.

## The Progression

Students that were taught the copper foil technique, but not how to work with lead, progressed from lampshades and suncatchers to increasingly larger panels and even full size windows done with soldered foil.



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## The Result

Individuals that had learned how to work with copper foil and not with lead came progressed to making projects in copper foil that would be better done in lead came. Lead is less work, looks better and stands up better to weather – but making a stained glass window with lead requires different skills than doing it with foil.

## Forgiveness

Much of the popularity for working with foil is how forgiving it is for poor cutting skills. If the pieces don't fit firmly together any gap can be filled with solder. Not so with lead. Any gaps between pieces will be fully visible after the lead is applied. Lead is less work than foil but requires better cutting skills.

## Instructor Responsibility

I suggest unless it's just a little sampler class to give someone a small taste of how stained glass is done, an instructor has a responsibility to teach both techniques (lead and foil) and let the student choose which they prefer working with.

## The Choice

What technique to use starts with personal choice. I practice and teach all students what I call the "Two Key Rules of Glass Art".

**RULE 1** – If you do the work you make the rules.

**RULE 2** – If you follow Rule 1 there is no Rule 2.

Also, I practice and preach something Louis Tiffany said,

**"Usually the best way to do something is the way you best like doing it".**

However, it can be reasonably argued **"the most efficient technique should prevail"**. There are exceptions to everything (refer to Rule 1) but generally the choice should be:

**Copper foil for 3D and suncatchers.  
Lead for windows and flat panel**