Choosing the Correct Foil Tape for a Project and How To Use It

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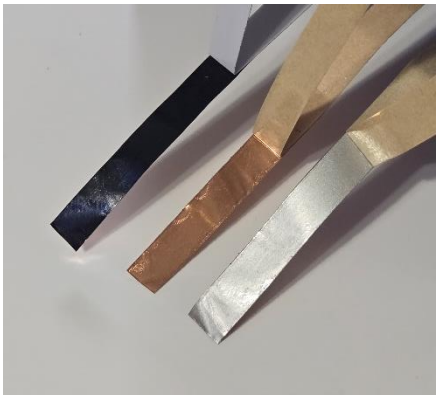
When creating stained glass in the Tiffany copper foil method, each piece of glass must be wrapped around the edges with copper foil tape. This guide will cover how to choose the correct foil for your project and how to foil glass pieces. Before you start your project, there are two main things you should know about copper foil- there are different widths and backing colors.

Copper Foil Backing Colors: Does it matter what color you use?



Usually. Before an artist foils their piece, they must decide what finish color they would like the solder lines be. Solder is naturally silver colored, so if the end result is that the product has a silver solder finish, a silver-backed copper foil tape would be used. Similarly, if a black solder line finish is preferred, a black-backed copper foil tape should be used, and a copper-backed foil tape should be used for a copper solder line finish.

Additional notes on choosing the correct foil backing color:

- If the glass an artist is using is opaque, then the color of the backing does not matter as the backing of the foil will not be seen through the glass.
- Black-backed foil tape sometimes oozes black goop from the edges while soldering. It can be cleaned off during the cleaning process, and is just something to take note of when deciding the finish color of a piece.
- Some artists may choose to make pieces with different color solder lines in one piece. This is an artistic decision and requires more care when applying foil tape to make sure that the correct colored backing is where the same-colored finish will be.

Choosing the Correct Foil Width

The other main thing to consider when choosing the correct foil for a project is the width of the foil tape. Artists decide the copper foil width they will use based on their design preferences and glass width. The most common foil width sizes are 3/16”, 7/32”, ¼”, and ½”.

The most commonly used size is 7/32”, however, if an artist is using textured glass, it usually requires a wider foil to accommodate the extra added width of the glass on the ridges, bumps, waves, etc. Similarly, if a thinner glass is used, a thin foil width such as 3/16” would be used to ensure that the solder lines are not too wide (unless that’s the desired look). Note that some stained glass pieces will contain a variety of glasses that vary in thickness. Artists must use their own discretion when deciding what width to use with their glass. It is totally ok to use different foil widths in one piece if it is needed!

Additional Copper Foil Width Notes:

- Copper foil is also available from many suppliers as a 12”x12” sheet (with different backing colors) that can be cut in any manner the artist desires, either by hand or with an electronic cutting machine. They are primarily used for copper foil overlay but are not limited to that.
- Copper foil rolls are also available with large or small decorative scallops on one or both sides of the tape (single or double edged).

Single Edged Scalloped Foil

Foil Gauge: What Does it Mean?

Depending on the brand of foil being used, the foil can vary in gauge size from .75 mil to 1.5 mil in thickness. The thicker the foil, the stronger the project. Even with that in mind, some artists care more about the brand rather than the thickness of the foil and will choose it regardless of foil gauge. Artists must be sure to accommodate for the extra thickness of a copper foil if a thicker foil tape will be used. The table below shows the gauge(s) of popular foil brands.

Foil Brand	Gauge of Foil Available
Edco	1 mil, 1.25 mil
Mongo’s	1.25 mil, 1.5 mil
Binari	1 mil
Studio Pro (Diamond Tech)	1 mil

Prepping to Use Copper Foil Tape

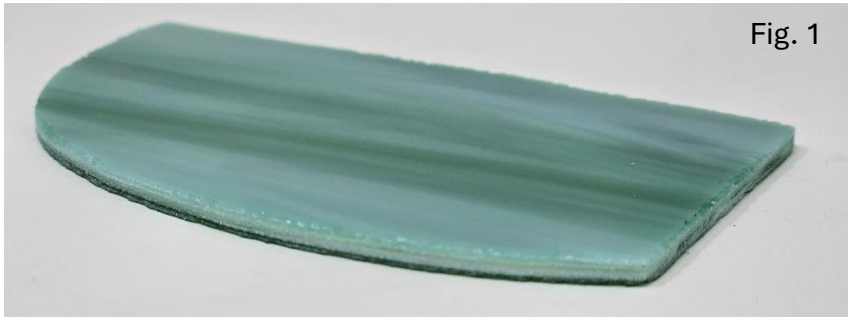


Fig. 1

No matter what foil width, backing, or gauge an artist has chosen, two things are constant when copper foiling: the glass must have ground edges for the copper foil to cling to, and it must be CLEAN when applying foil (Fig 1). When practicing the Tiffany stained glass method, each piece of glass must be ground on all sides for the copper foil to stick. If any parts of the glass are jagged or not ground smooth, it could rip the foil (and could potentially cut the artist if they are not careful).

It is very important to make sure that the glass is clean from all cutting oils, marker/paint pens, glass dust, and debris. Artists must be sure to clean each piece thoroughly because if the glass is not clean, the adhesive from the foil will not stick. While cleaning glass pieces, it’s also important that artists try not to touch the sides of the glass too much as the oils from a person’s fingers can also cause the foil not to stick.

How to Foil Glass Pieces

Foiling glass pieces is pretty straightforward- each piece of glass needs to be wrapped in copper foil for the solder to stick to it. It is best applied and more malleable when it is warm, which also makes it less likely to tare. Note that foil tape is more likely to stick to warm glass than cold glass. Unless a design requires the foil to be uneven, make sure that when the copper foil is wrapped around a piece that there is an equal overhang of tape on both sides of the glass. This is important because it is not (usually) desirable to see the backing of copper tape. Note that some projects it will be unavoidable to see the copper foil backing such as pieces with overlay.


Fig. 2

Step 1: Wrap the piece of glass in the desired copper foil tape, making sure that the glass piece is centered in the strip of tape (Fig 2). Avoid touching the ground sides of the glass and the sticky side of the foil tape when doing this as the oils from your fingers could cause the tape not to stick. Overlap the copper foil tape by about 1/8”-1/4” and use scissors to cut it straight. Fold the edges of the tape over both the sides of the glass using your fingers and/or a fid, taking care not to rip the foil when doing so.

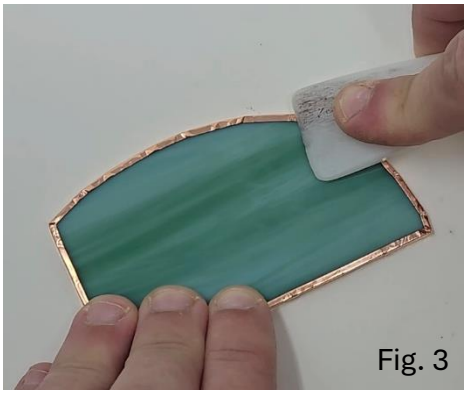


Fig. 3

Step 2: Using a wooden or plastic fid, press the foil down against the glass edges and sides (Fig 3 & 4). This is called burnishing. Rub hard enough that the foil is as flat as possible, but not hard enough to break the glass. If you are foiling a thin piece of glass, place it on a flat surface while burnishing to avoid cracking the glass from too much pressure. Be sure to burnish all the edges and the sides of the glass, taking care to make sure there is no foil backing that has flipped over. Note that solder will not stick to the adhesive side of foil tape.

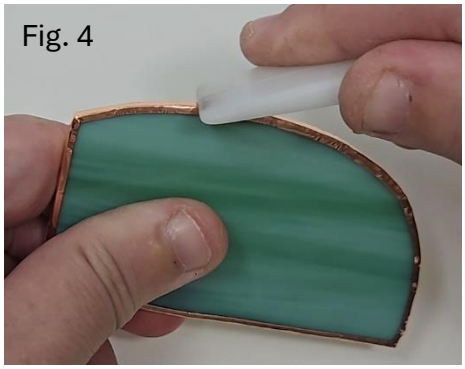


Fig. 4

When foiling curves, use the side of the fid at an angle and rub along the side of the glass, slowly pushing the foil towards the glass with each pass (Fig 5 & 6). Note that when foiling deep curves or angles, it may be necessary to add patches where you anticipate the foil will rip. Patching can be done after the piece of glass has been wrapped in foil tape, but it will be more secure if it is done beforehand.

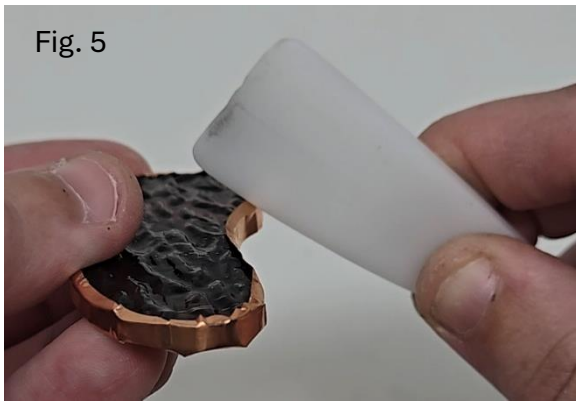


Fig. 5


Fig. 6

Additional Foiling Notes:

- If a piece contains pressed ephemera, all of the edges need to be wrapped in foil regardless of whether or not it will be wrapped in came.
- If a project needs copper foil overlay, it can be done in two ways: directly on the glass piece or on a paper backing, then added onto the glass after soldering the overlay. If the first method is used, it is very important to make sure not to stay in one spot of the project for too long, or heat cracks may occur.
- **Note that it is very important to check that all of the pieces are fitting together correctly before and after foiling. If a piece is too large or too small, the artist must make adjustments, whether that be cutting a new piece or grinding down the piece that does not fit so that it does. DO NOT start soldering a piece until all the pieces fit together correctly.**

Is there a time when NOT to Use Copper Foil?

If the piece will be wrapped in came, it is not necessary to wrap the EDGES of the piece in foil tape. All enclosed pieces in the design should still be foiled around all the edges. Pieces along the outer edge of the piece should be foiled EXCEPT for the outside edge that will be covered by came.

Proper Storage and Care for Copper Foil Tape

Copper foil tape should be stored in a dry, sealed airtight container when not in use to prevent oxidation and extend the life of the adhesive. Do not leave copper foil out in humid weather for more than a few days as it will ruin the tape. Copper foil tape dispensers are available in many styles to organize various sizes of tape rolls.