

# Champleve Enamel Procedure

Step by step - Edgar Refskegg

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## Overview

The procedure for creating the enamel pieces we present is multi-tiered with several distinct steps. This document will separate them out into easy to digest steps. In essence, we follow common homemade PCB (printed circuit board) etching techniques.

In general, the steps are as follows:

1. Create design.
2. Transfer design to copper to serve as a resist.
3. Etch the copper. (sidenote: engraving was used in period)
4. Clean copper and dome.
5. Pack enamel into depressions (cloisens) created by etching.
6. Fire the piece in a kiln.
7. Stone enamel piece and observe. Re-pack and fire as needed.
8. After final firing, sand and polish metal.

These steps will be described in greater detail below. There are a lot of steps required, but it is a very rewarding process.

## Design

Designs can be played around with varying levels of detail. Experimentation will yield the optimal results for one's setup. We have observed that we can get considerable detail contained in our etching designs.

Our general procedure follows:

1. Create design in Adobe Illustrator with the parameters of the medium to be used. (in our case, generally 2 inch circles)
2. Special care should be taken with the amount of detail and size of the drawing, as etching can sometimes be finicky.
3. When a sufficient drawing is created, print it onto Press-n-Peel transfer paper.
  - PnP paper can be obtained from [techniks.com](http://techniks.com). It is generally used to transfer circuit designs to copper boards.

## Transfer

1. Heat transfer press.



## References

O'Neill, J.P., Musée du Louvre, and N.Y. Metropolitan Museum of Art New York. *Enamels of Limoges: 1100-1350*. Metropolitan Museum of Art, 1996. <https://books.google.com/books?id=i4okAQAAAJ>.

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