

# Crafting Beauty and Engineering: The Art of Stained Glass

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## Abstract

*Stained glass artwork is a centuries-old craft that continues to capture the imagination of art lovers and engineers. The process of creating stained glass artwork requires technical skill and artistic vision, and involves several steps including design, glass selection, cutting, foiling, and soldering. This article provides an in-depth explanation of each step, highlighting the artistry and science behind creating a unique and beautiful piece of stained-glass artwork.*

## Introduction

What first attracted me to stained glass was its luminous life. There is something magical about the way the light passes through the glass, creating a warm and colorful glow that brightens up a space. The way the colors shift and change depending on the time of day and the angle of the light creates a dynamic and ever-changing work of art. Stained-glass has the ability to transform a space, by adding beauty, elegance, and a sense of wonder. This transformative quality is what initially captivated me and drew me to the art of stained glass. During the 2023 spring semester, I decided to create two pieces of stained-glass artwork.

## Design

Stained glass artwork involves a precise and intricate process that requires skill and patience. I began by designing a

pattern from my surroundings and personal life. My mother was the inspiration for my first design, the dragonfly. It is one of the most common shapes I see with stained glass, probably because my mother points it out the most. My second design comes from the desire of wanting to express more aspects of my personal life and preserve something that is precious to me. It is my cat, Gabriel. To create the desired effect I was looking for in my design, I needed to select the appropriate colors and texture of glass.

## Glass cutting

Glass cutting is a crucial step in the process of creating stained glass artwork. Precision and care are paramount when using a glass cutter, as the glass is delicate and can easily break if not handled correctly. I carefully used the glass cutter to shape my glass pieces into the desired sizes and shapes

for my stained-glass artwork. Once I had all the glass pieces cut, I then grinded down the edges to smooth them out and ensure a proper fit in my design. This step requires attention to detail and a steady hand to ensure the pieces fit together perfectly.

### **Foiling**

To achieve a sturdy and seamless connection between the glass pieces during the soldering process, it is essential to wrap the copper foil evenly around the edges of each piece of glass. During foiling, I was precise and meticulous, as any inconsistencies in the foil wrapping may result in a weak joint or an uneven surface. With the glass pieces properly foiled, the next step in creating stained glass artwork is the soldering process.

### **Soldering Iron**

Before beginning the soldering process, I secured all glass pieces tightly to a wooden board to prevent movement. Liquid flux was then applied to the copper foil using a paint brush in sections to prepare for soldering. "Flux is used to prepare the metal surfaces before soldering by cleaning and removing any oxides and impurities" (Zuberbuehler, 2021). I applied small amounts of solder to the joints, also known as tacking according to Delphi (n.d.), until the entire front of the glass piece was connected. Once the joints have been tacked, the next step is tinning. Tinning involves using the tip of the soldering iron to spread solder back and forth along the copper foil to create a uniform layer of solder on the seams. This helps to reinforce the joints and ensure a strong, sturdy connection between the glass pieces, while also preventing overheating and damage. After securing the glass pieces and completing the soldering process, the final result is a stunning piece of work.



*For my first stained glass creation, I utilized textured glass to craft a dragonfly measuring 6" by 6".*



*I recently fashioned a 6" by 6" stained glass piece inspired by my Russian blue feline companion.*

### **Conclusion**

Creating stained glass artwork is a challenging and rewarding process that requires a unique combination of technical skill and artistic vision. As an engineering-minded artist, I appreciate the technical skills and meticulousness required for glass cutting in the creation of stained-glass artwork. Each step, from the initial design to the final finishing touches,

requires patience, precision, and a deep understanding of the materials involved. The result is a unique and beautiful work of art that captures the beauty and elegance of stained glass. The process of creating stained glass artwork can be seen as a form of engineering in its own right. By combining artistry and science, stained glass artists can create beautiful and functional works of art that inspire wonder and awe in those who view them. Whether creating a traditional stained-glass window or a modern abstract design, the process of creating stained glass artwork is a true marriage of art and science.

## References

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