

Fatal Attraction—Trials and Tribulations in Toning Rare-Earth Magnets

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Rare earth-magnets are one of the many tools that museums use to display artwork. While the success of magnetic hanging systems is well documented, there is less information on toning magnets when they are visible on the surface of the displayed object. Gwen Spicer's 2010 AIC News article *Defying Gravity with Magnetism* explains that, "Magnets can be painted, wrapped in paper and fabric to blend in, or made to look like either part of the object or the mount itself." The following examples show the results of my experiences toning rare-earth magnets for textile and painted-textile display using three methods: with fabric, with acrylic paint, and with a combination of both.

Covering Magnets with Cotton Fabric

Method 1: Upholstering the magnet using needle and thread

The magnet was slipped into a pre-sewn pocket of cotton poplin chosen to blend with the artifact. The poplin was then stitched closed around the magnet.

Pros

- No adhesive needed
- Readily available materials
- Treatment is reversible

Cons

- Very time consuming
- Fabric tends to ripple when covering round magnets
- Needle is attracted to the magnet
- Fabric gets bulky under the magnet

Notes

Rectangular magnets and thicker magnets work best for this method.



The magnet was slipped into a pre-sewn pocket of cotton poplin. The end was rolled on itself and sewn closed leaving as little bulk as possible on the artifact side of the magnet.



Camouflaging Magnets with Academic Level Acrylic Paint

Method 1: Painting smooth magnets

The magnets were magnetized to a piece of steel bar for ease in handling. A base coat of white followed by a top coat of paint matching the artifact were applied.

Pros

- Fewer steps

Cons

- Dry paint peels off very easily
- Magnets must not be stuck together

Notes

Magnets failed simple scrape tests.



This magnet (L) stuck to another magnet after the paint had dried, resulting in chips to the paint layer. Paint scratches very easily off of the surface of un-abraded magnets (R).



Toning Fabric-Covered Magnets

Method: The magnets were covered with black and white cotton poplin using double-stick tape. They were then magnetized to a piece of steel bar and painted with a base coat. A top coat of acrylic paint was then applied.

Pros

- All colors are easily achievable
- Paint bonds extremely well
- Method is quick and accurate
- Uses less paint
- Magnets can be safely stacked

Cons

- The cut edges of the fabric fray and need to be trimmed
- Involves two steps

Notes

This method yielded the best results. Adhesion of the paint to the fabric was excellent. A high level of detail is possible with paint as opposed to a solid fabric color.

Drop off your email address if you would like to take part in a future survey on toning rare-earth magnets.



Method 2: Upholstering the magnet using double-stick tape

3M 415 double-stick tape was used to attach fabric to one side of the magnet. The tape was trimmed using an X-ACTO knife. The magnet was traced onto cotton poplin and the shape cut out. The fabric was applied to the taped surface.

Pros

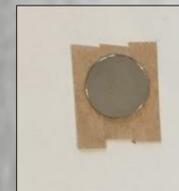
- Easy and quick
- Treatment easily reversed
- Uses less fabric

Cons

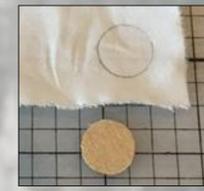
- Sides of magnet are visible
- The X-ACTO knife is attracted to the magnet
- The cut edges of the fabric fray
- Difficult to reposition the fabric on the tape

Notes

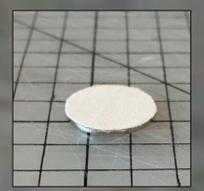
This method can easily be adapted to cover a magnet with paper.



Double-stick tape was applied to one face of the magnet and then trimmed.



A circle of fabric was cut and then applied to the tape layer. This avoids bringing a scissor near the magnet.



Method 2: Painting sanded magnets

The magnets were magnetized to a piece of steel bar for ease in handling. The magnet was sanded with an emery board and a 100 grit sanding block prior to painting.

Pros

- Paint bonds better with magnet
- Emery board is easy to control

Cons

- Plating dust and emery grit must be cleaned before magnet is painted
- Dry paint peels off easily
- Magnets must not be stuck together

Notes

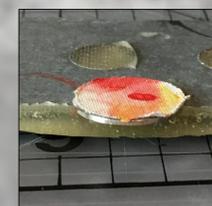
Magnets performed better under scrape tests but paint still peels easily.



Detail of a magnet sanded with an emery board (L) and with a 100-grit sanding block (R).



Results of the scrape test shows that paint still peels off of sanded magnets, just not as easily.



This profile view (L) illustrates the fraying that occurs after fabric-covered magnets are painted. Even though the side of this low-profile, fabric-covered painted magnet is not toned, it is well camouflaged and the paint layer is stable (R).



Morgan Blei Carbone joined Museum Textile Services in 2015. After earning her BA in Art History from Grinnell College in Iowa, she received an MA in Fashion and Textiles: History, Theory, and Museum Practice at the Fashion Institute of Technology in New York. Since working at MTS, Morgan has come to specialize in wet cleaning and bleaching, mounting and framing flat textiles and historic clothing. She is a volunteer on the website project for the AIC Textile Specialty Group. Morgan is also an avid instructor and knitter of laced shawls and scarves. Contact her at info@museumtextiles.com or www.museumtextiles.com.