



Caring for Bronze Medallic Art

by Marina Guglielmi

Bronze is an inherently beautiful, durable and resilient metal. These characteristics have made it the primary casting media trusted by artists, sculptors and medallists, both historical and contemporary.

This illustrious metal is easy to care for, requiring very little, if any maintenance work. However, a little time and effort go a long way in preserving the visual character of bronze artwork, and in making sure it looks its best. This is especially important for medals, whose scale allows for a false 'magnification' of problematic surface issues that would go unnoticed to the viewer of large scale bronze sculpture

Whether you are an artist or collector (or both!) of medallic bronzes, it is vital to know how to care for your metals so that they maintain their appearance and value. This article will provide you with a basic metallurgic understanding of bronze, as well as the ability to execute an effective care plan for your handheld bronze art.

What is bronze?

In the art world, bronze is a favorable casting medium, as it is naturally corrosion resistant, and because the formulation of high copper content allows for a plethora of patination colours and patterning.

Bronze is a metal alloy consisting primarily of copper with the addition of various ingredients, producing an alloy that is harder than copper alone. Different compositions allow for

distinctive properties. The bronze family of alloys is generally 85% copper with additives NOT including zinc (that would make it brass). Art casting alloys are usually 90-95% copper. Contemporary foundries almost exclusively use a silicon bronze alloy (Cu95-Si4-Mn1), though some other copper based bronzes may be used.

For the purposes of minor maintenance and care as covered in this article, it is not necessary to identify the specific bronze alloy employed.

Recognizing Corrosion Properties

Bronze is coveted not only in art, but also in industry because of its excellent corrosion resistance, especially to sea water. Even so, it is possible for bronzes to exhibit corrosion, and it is imperative to have a professional administer to it immediately, or like an infection, it will spread. *(see photo on adjacent page)*

Often called bronze disease, the corrosion of copper based alloys is caused by contact with chlorides. Often hard to differentiate from an intended green patina, corrosion is distinguished by a raised (fuzzy or crystalized) light or dark green bloom and subsequent pitting of the surface. Unlike bronze disease, a proper patina serves to protect the bronze, not degrade it. Regular maintenance of bronze not only provides protection against corrosion, but also assists in identifying disease early and preventing its spread. If you suspect your work or collection is exhibiting early or advanced stages of corrosion, you need to contact a specialist.



What is Patina?

The patina is the surface coloration of bronze, which can occur naturally, or be applied for artistic effect as well as protection.

Art patinas are forced oxidization of the copper content in bronze, resulting in a desired palette or pattern.

Patinas are created through the skilled and controlled application of natural and man made chemicals and most often heat. The art of patina can achieve endless ranges of colours, and seals off the bronze underneath it from harmful corrosive elements. To assist with that, the patina must be sealed, usually with a protective layer of wax. The wax further protects the artwork, enhances the patina and provides a beautiful finish luster.

Regular Maintenance

A good quality bronze casting, a properly executed patina, and a sealer coat (wax) will provide you with a strong foundation for the longevity of your art medal.

Combining that with a wee bit of regular maintenance will ensure that your piece looks its best. Please keep in mind though, that patinas change slightly over time as they mature.

For metals out of storage we at Maker Sculpture recommend you follow a basic, yearly maintenance plan such as the one listed below. If the artwork is handled often (as medals can be) you may choose to increase the frequency of this sequence depending on handling use.

1. EXAMINE:

- Take a moment to examine the metal.
- Note any areas of dust build up, dirt, corrosion, dullness or other changes in the condition.
- If you notice spoiled areas, dirt or wax bloom (whitish haze) refer to the Additional Care

instructions before proceeding with regular maintenance.

- Use your judgment based on the condition displayed, your ability, as well as the historic or monetary value of the work as to whether you should continue on to the other steps. You may decide at this point to consult a professional for further consultation or advice.



2. DUST:

- using a soft microfiber cloth, wipe down the work
- use a very soft natural bristle brush to remove dust from hard to reach areas such as crevices of textures.
- examine and be sure that you have removed all dust and particulate matter.



3. WAX:

- once free of dust and particulates, be sure it is very dry and room temperature (not cool or cold, and not hot)
- use a dedicated very soft natural bristle brush to apply a thin layer of wax finishing paste to the surface, without leaving excess buildup in deep areas. Good general waxes for this purpose are Minwax furniture wax (slight golden hue), and Trewax (clear), both readily available at hardware and furnishing stores.
- allow wax to harden/dry. It will not feel sticky.
- Note that when you re-wax green patinas, the green colour may dissipate when the wax is applied, but will reappear as the wax hardens.



4. BUFF:

- using a clean soft microfiber cloth, buff the medal until you reach the desired luster. Be sure to remove any excess wax buildup (looks crusty/white) from crevices with a toothpick.
- do not buff before the wax is totally hardened.



Additional Care:

During your maintenance examination you may notice issues outside of normal care. here are a couple common occurrences:

SOILED:

Should the medal be very dirty (beyond dusting) it should be cleaned before re-waxing:

- put a few drops of ph neutral soap (Ivory or Dawn dish soap will work) in water (preferably distilled), and use a soft bristle brush to apply the solution to the work, making sure to get in the crevices.
- Dry completely and thoroughly before re-waxing (continue to step 3 of regular maintenance).

WAX BLOOM:

If your medal has turned dull, white and hazy, it may be because you applied the wax too cold, or moisture got in between the medal and the wax layer. Either way, the wax layer needs to be removed and reapplied. The least invasive way is to use a cleaning wax, (such as Conservators Wax from Lee Valley), which has a mild solvent that dissolves the previous wax layer and dissipates very quickly.

- dust or clean metal as required.
- apply Conservators wax with a soft natural bristle brush, being sure to get into crevices.
- wipe off immediately with a soft clean, lint free microfiber cloth, before the C wax dries.
- allow to dry fully.
- reapply your regular wax from Maintenance plan Step 3 to a clean, dry medal. (We at Maker Sculpture re-apply regular wax because it is our opinion that Conservators Wax is not a protective enough finish on its own.)



Storage and Display Concerns:

STORAGE:

Works in storage should be treated so that they have the least amount of contact with environmental influences, while being in stable conditions.

Museum standards storage would dictate wrapping the clean work in archival tissue, and storing it safely and snugly in an archival box (all available from Carr Mclean). These precautions should be taken for any work of exceptional historic or monetary value, or that will be in long term storage.

Most of the time, it is sufficient to wrap the work in a soft, cotton, non-pigmented cloth and store in a cool dry place.

In either instance, do not use non-archival tape to seal any packaging. Regular tape has adhesive that off gasses and may alter the medal surface patination.

DISPLAY:

The biggest issue for works on display is UV. It is recommended to display works away from windows or plant lights. Also, be aware that double sided medals should be flipped regularly and evenly, allowing equal exposure to the obverse and reverse, and keeping the condition

uniform. There are waxes with UV additives should you want additional protection. These waxes need to be reapplied regularly as the UV component breaks down.

Other display concerns are heat, moisture, chlorinated and salt water. Ideally keep your work away from very hot or drastically fluctuating temperatures (fireplace mantles) and humid environments. Take every precaution to keep your work away from chlorinated water (even splashes) and salt water.

Bronze is a wonderful material, and taking care of it through regular maintenance is an important preventative measure.

That being said, this is only a general guide. And we do recommend seeking specialized assistance if you are unsure about anything, if you medal requires or has had any special treatment in the past, or just to be sure this sequence works for your medal. We often deal with maintenance, conservation and preservation plans and executions for specific bronze situations at Maker Sculpture, and we would be happy to assist you further.

Knowing about bronze and how to care for medallic art has its advantages, both for the artist; it gives you the opportunity to educate your clients and increase the long term investment they made in you in your work, and for the collector; this knowledge allows you to make informed acquisitions, as well as to maintain or leverage the value of your collection.

Marina Guglielmi, April 2016

For more information on Marina Guglielmi, sculptures, metals, medals, or the Maker Sculpture art foundry and fabrication team, visit makersculpture.ca.