

TESKO ENTERPRISES WORKS WITH MANY METALS AND APPRECIATES THAT EACH IS UNIQUE IN ITS APPEARANCE AND PROPERTIES. OUR WORK IS ALWAYS GUARANTEED TO BE OF THE FINEST QUALITY REGARDLESS OF THE METAL TYPE YOU CHOOSE. TO HELP ENSURE THAT THE INTEGRITY OF YOUR PIECE REMAINS FOR A LONG TIME, FOLLOWING ARE SOME TIPS IN CARING FOR THE MOST COMMON METAL TYPES WE WORK WITH.

STAINLESS STEEL

Stainless steel surfaces require less maintenance than other metals, and its hygienic qualities mean that end-users do not have to use harsh cleaners to get a clean surface.

Although stainless steel is very resistant to corrosion, it is NOT completely impervious. Passivation, treating or coating metal to reduce the chemical reactivity of its surface, should be used routinely for maximum protection. Passivation is not applicable to architectural uses of stainless steel.

CLEANING

The best way to clean stainless steel is to apply routine simple and gentle cleaning. Use soap, mild dilute detergent, and dilute ammonia in warm water.

Suitable cleaning agents

Commercial cleaners which say "Suitable For Stainless Steel" on their labels can, and should, certainly be used.

Some simple everyday household cleaners can also be used to clean stainless steel:

- Vinegar - moisten a cloth with undiluted white or cider vinegar and wipe the surface clean
- Club Soda - remove streaks or heat stains from stainless steel by rubbing with club soda

How to apply cleaner

Apply with a soft cloth or synthetic sponge and dry with a soft cloth or drip dry. Rub in direction of finish.

! THINGS TO AVOID

- metallic scourers
- brushes with metal bristles
- coarse abrasives/abrasive powders
- aggressive chemicals

How often to apply

Employ **repeated routine cleaning** rather than an aggressive single cleaning. Stainless steel surfaces are easy to maintain, but it is best if the surfaces are routinely cleaned. Use household caustic cleaners only as a last resort.

ADDITIONAL TIPS

Of particular concern to stainless steel is exposure to chlorine (commonly used to sanitize equipment), and hydrochloric acid (used in some cleaning agents and process liquids). Be aware that the cleaning/polishing processes of other nearby surfaces isn't affecting your stainless steel!

Finally, don't leave ordinary steel in contact with stainless steel under damp conditions.

COPPER

GENERAL TIPS

Decorative copper items should be kept clean and dusted. A factory-applied, baked-on lacquer protects most pieces of decorative, modern copper. Only dusting and an occasional washing with lukewarm, soapy water are needed to keep lacquered objects shiny. **Never polish them.**

CLEANING*

Following are some methods for cleaning copper using common household agents:

- Dissolve 1 teaspoon of salt in 1 cup of white vinegar. Add enough flour to make a paste; apply the paste to copper and let sit for 15 minutes to 1 hour. Rinse with clean, warm water, and polish dry.
- Make a paste of lemon juice and salt. Rub with a soft cloth, rinse with water, and dry.
- Use a slice of lemon sprinkled with baking soda. Rub copper with the lemon slice and rinse with water and dry.
- Pour vinegar over the surface. Sprinkle salt over the acid and rub in the mixture. Rinse with warm water and polish dry.
- Make a paste of lemon juice and cream of tartar. Apply, let sit for 5 minutes, and then wash in warm water. Dry with a soft cloth.

DE-TARNISHING

Polish copper with a commercial copper polish following the directions on the container. The polish can be homemade by moistening salt with vinegar or lemon juice to make a paste for a bright finish. After polishing decorative items, spray them with lacquer to preserve color if desired.



Do NOT coat copper with lacquer if being used for food or food processing applications

TREATING "BRONZE DISEASE"

"Bronze Disease" also attacks copper. To remove these patches of corrosion, apply **one** of the following to the affected area:

- hot vinegar and salt; or
- lemon juice and salt; or
- copper cleaner; or
- buttermilk

After treating, wash promptly with soap and water, and then rinse and dry.

* primarily for household copper items

BRONZE

GENERAL TIPS

Bronze forms a patina (green color) that is protective to the metal and is often seen on artwork. Reproduced, it is called Verde Solid.

Bronze often is lacquered (at the factory) to protect the finish. Lacquered bronze only needs dusting and an occasional wiping with a damp cloth. Have the lacquer replaced if it cracks or peels.

Keep bronze pieces as clean as possible. Accumulations of dust and dirt can eat into the metal surface. Dust regularly using a soft cloth. Do not rub too vigorously, especially on any protruding parts. If a bronze piece has been neglected for a long time and is covered with grime, thoroughly clean it with a soft brush. Remove all dust from crevices and notches and then lightly rub the entire surface with a soft flannel cloth. For a more thorough cleaning, carefully wash with a solution of 1 tablespoon of salt mixed in to 3 quarts of water. Rinse well.

CLEANING

A good general-purpose bronze cleaner can be created using common household ingredients. Dissolve 1teaspoon of salt into 1 cup of white vinegar. Add enough flour to make a paste. Apply the paste to the bronze and let sit for 15 minutes to 1 hour. Rinse with clean, warm water, and polish dry.

TREATING “BRONZE DISEASE”

Washing the piece in repeated changes of boiling hot, distilled water, usually can stop "Bronze Disease". You may have to soak the object for a week or more in distilled water. If this treatment does not work, consult a museum expert about using a strong solution of sodium sesqui-carbonate or have your piece treated by a professional.



Do not use heavy abrasives to clean bronze

POLISHING

Polish with copper polish followed by glass wax. If a high polish is required, dip a cloth into liquid wax and apply to the piece. When the piece is dry, buff lightly to a high gloss. This wax treatment also may be given to bronze pieces that are kept outdoors. Weathered bronze usually darkens; however, this is natural and does not harm the piece.

ALUMINUM

GENERAL TIPS

Like stainless steel, aluminum is relatively resistant to corrosion, HOWEVER, it is very susceptible to attack by strong acids and alkalis used in some cleaning products. Also, it is very susceptible to galvanic corrosion - if aluminum and another type of metal are in contact with a liquid food that contains an electrolyte (e.g. salt), an electric current may form resulting in dissolution of the more active metal, which will probably be the aluminum.

CLEANING

Interiors

Use a mild detergent and warm water when possible. Alkalis, even baking soda, and especially stronger alkalis discolor aluminum. If trying a stronger cleaner, pre-test on a hidden place to be sure it cleans satisfactorily and does not damage the aluminum. Always follow directions on the product label for aluminum, EXACTLY.

Exteriors

On outdoor architectural surfaces, remove bugs, sap, tree seeds, and other materials as soon as possible, as they harden with exposure to sunlight and heat, and become more difficult to remove. Suitable solvents will remove tar and similar substances. Test the solvent first if the aluminum is painted to be sure it doesn't also remove the paint. Make sure you follow the product label precautions when using solvents. Ensure that no spark or flame is in the area and make sure you have adequate ventilation.

! THINGS TO AVOID

- Do NOT use abrasive cleaners such as scouring powders, steel wool, abrasive polishes, etc; these could permanently damage the aluminum
- Do NOT clean aluminum when it is too hot to touch, or if ambient temperatures drop below 50°F

CORROSION

Aluminum is so susceptible to corrosion from alkalis that aluminum panels should be protected from splashed mortar and cement.

BRASS
(finished/lacquered)

CLEANING AND POLISHING

Most commercial metal polishes usually contain solvents and detergents to remove the tarnish, mild abrasives to polish the metal, and oils to act as a barrier between the raw metal and air.



 **Do not use heavy abrasives to clean brass**



Brass products can turn "black" due to the over-use or misuse of polish. The biggest challenge to upkeep is the removal and inhibition of tarnish. All substances, especially metals, oxidize when exposed to air. Once tarnish is removed, a chemical barrier should be created between the bare metal and the air to inhibit the process from re-occurring.

Many people over-use and flood metal surfaces with polishes thinking they are better protecting the surface. It is an incorrect assumption that the use of more polish will provide more protection. More polish creates a smudging problem since fingerprints (human body oils) "dissolve" the solvency of the metal polish. Additionally, too much polish may discolor the surface.

APPLICATION

Apply a trace amount creating a THIN film. Only apply an adequate amount of metal polish and spread out the amount on an absorbent rag. Then, let the rag dry out for 24 hours before using on most metals. Apply this trace amount of polish with the grain of the brass with one hand while buffing it out in a rapid motion (creating friction) with the other hand.

This burnishing, or buffing, action will harden the polish and create a surface more difficult to smudge or discolor.

BRASS
(raw)

The care of raw brass is a 2-step process:

STEP 1: CLEANING

To clean light soils use isopropyl (a.k.a. rubbing alcohol) applied with the sponge side of a light-duty, "white-padded" scrubbing sponge. In the event of tougher scuff marks or heavier soils, flip over the sponge and gently agitate moving the white scrub pad with the grain of the metal.

Dampen the sponge side with water, and apply a light scouring low abrasion cream onto it. Work the abrasion cream into the sponge, and then stroke with the grain. When completed, wipe the surface thoroughly clean with a clean, soft rag. Once surface is cleaned, then go to the next step, polishing.



Do not use heavy abrasives to clean brass

STEP 2: POLISHING

General polishing

One of the best tools to polish brass is a "yellow" treated dust cloth, which provides just the right amount of oil onto metal. Wipe down the brass with this cloth and then buff it dry with a soft, cotton cloth. The trace amount of oil contained in the cloth should not smear or discolor, especially after buffing.

Use olive oil. Rub brass with a cloth treated with olive oil after each polishing and the brass will look brighter and require less polishing. Olive oil retards tarnish.

Polishing for a soft finish

Wash the piece in hot, soapy water, rinse and dry. Make a paste of whiting and boiled linseed oil. Apply with a soft cloth and rub to remove tarnish. Wipe off excess paste and polish with a clean cloth.

Polishing for antique pieces

Wash the piece in hot, soapy water to remove grime, wax, and other surface buildup. Rinse and dry the piece. Moisten a soft cloth with boiled linseed oil and rub on the brass surface until all the dirt and grease have been removed. Polish with a soft cloth. If you are working with very old brass items, especially if in poor condition, consult museum experts for advice as they may require extra special care.

DE-TARNISHING

General

Unlacquered brass tarnishes when exposed to air. A weekly wiping with a little liquid ammonia on a soft cloth will help keep unlacquered brass shiny. Use a commercial cleaner (available in grocery or hardware stores) or a homemade cleaner (below) to remove tarnish. On antique brass, test the cleaning product to be sure of obtaining the desired effect. Some methods not only clean tarnish but also remove the coloring of age that is desirable on old drawer pulls and other ornamental accessories.

Heavy tarnishes, difficult stains & corrosion

Wash the piece in hot, soapy water or a weak ammonia and water solution and rinse. Dampen a soft cloth in hot vinegar, then dip in table salt and rub the brass, or make a paste of flour, salt and vinegar. You may need several applications. When the item is clean, wash in hot, soapy water, rinse and dry thoroughly, then polish with a cloth moistened with lemon oil. If preferred, dip a slice of fresh lemon into table salt and rub over the corroded area. Wash, rinse and dry carefully.