



Coppercoat Antifouling

DO'S and Don'ts (updated 02-20-19)

STOP! Coppercoat is not like any other anti-fouling paint; it's easy to apply, but very different!
Before starting a Coppercoat application thoroughly read this document and watch the application video on

CoppercoatUSA.com

Based on customer suggestions, we continuously update our "Do's & Don'ts" to help you successfully apply and maintain your Coppercoat. Following is a list of the tools you will need to have available in advance, a Project Outline and Timeline, and the Application Details, which are the techniques that work best here, and are sometimes a little different than in other, cooler parts for the world.

Tools To Have Available Before Starting Coppercoat Application

- Three people are optimum to do a Coppercoat application
- A Coppercoat application generally spans about 6 days in the boatyard, plus time to remove the old anti-fouling or apply barrier coating if necessary - review the Preparation Outline
- 1/8" Foam rollers for epoxy, allow approximately 1 roller cover for each 3 - 4 kits of Coppercoat (change cover when worn out)
- A small "cigar" sized foam roller, to roll in small places
- A small paint brush, to reach small areas
- A paint tray – which can be washed out with water when finished. NEVER use an aluminum paint tray without a plastic liner, and never use an aluminum liner or foil
- A clean 1-gallon mixing bucket
- A small measured mixing pot for mixing a partial batch at end of project
- A stir stick to mix the Coppercoat (a drill mixer is not necessary, a stick works great)
- Painters tape and plastic sheets to make a "rain skirt", and sticks to keep the skirt off the paint
- A small knife or scissors to open the copper packages
- 80 grit sandpaper to prepare hull; if hull is steel or aluminum with no barrier coat, refer to the preparation outline
- 320 grit sandpaper and dual action (DA) or Random Orbital sander to sand Coppercoat prior to launch – see Application Details
- Isopropyl alcohol (90%- 99% pure), for thinning and cleaning the hull; buy this in pharmacies such as Walmart; very inexpensive (All alcohol referred to in this document is 90%-99% pure)
- DO NOT USE other types or grades of alcohol, Acetone, MEK, or other solvent or oil-based cleaners or thinners; their residue will cause compatibility issues with Coppercoat, resulting in problems during or after the application
- Barrier coat product and associated accessories (rollers, etc.) if it is being applied before the Coppercoat (Coppercoat does not require a primer)
- Other suggestions: Plastic gloves, a paper face mask, paper towels, lots of clean rags, a source of water like a sink or hose, a small table to mix Coppercoat



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Preparation and Application Outline

1. Hull preparation
 - A. New boat or boat that has never had anti-fouling paint applied (mold release wax can be present for years):
 - Remove all mold release wax from the hull. Rinse with water; if the water "beads up", repeat removal and rinse again. When water does not bead up, dry and proceed to sanding step below.
 - B. Existing anti-fouling:
 - Remove all the old anti-fouling; leave existing epoxy barrier coat, if there is one. Coppercoat is an epoxy and cannot be applied over old anti-fouling paint.
2. Sand the surface with 80 grit sand paper.
 - On steel or aluminum hulls that do not already have a barrier coat, sandblast to a 2-3 mil profile (SP5), and then apply an epoxy barrier coating, following the package directions and 4.C below.
 - If you are applying CK426 as the barrier coat follow the instructions below (4.B).
3. Wash hull with water or wipe thoroughly with Isopropyl Alcohol (90-99%) on clean rags, allow hull to dry.
4. Barrier Coat: Follow direction A, B or C, depending on your situation.
 - A. If a new barrier coat is not being applied, proceed to step (5).
 - B. If Coppercoat USA CK426 (100% solids & zero VOC's) is being applied as a barrier coat:
 - Apply CK426 to the clean hull, following the CK426 directions, which are also on our website.
 - After CK426 is applied you have a 24-hour max. window to apply Coppercoat. Proceed to step (5) to apply the Coppercoat anti-fouling. It is not necessary to sand the CK426 before applying the Coppercoat anti-fouling, as long as it is applied within 24 hours.
 - C. If you are applying a solvent borne barrier coat of your choice, wait 2-3 days after the application for the solvents to "gas out" (The product label should specify the solvent and % of solids).
 - Sand the new barrier coat with 80 grit sand paper. If not sanded well enough the Coppercoat will smear and will not stick to the surface. (For example, customers have reported this with Inter Protect 2000)
 - Wash hull with water or wipe thoroughly with Isopropyl Alcohol on clean rags and proceed to next step (5).
5. **Mix one of the 1.5-liter kits of Coppercoat at a time** (mix part A and part B, add alcohol thinner- see "Thinning" in Application Details for quantity- and then the copper); roll it on the hull in 4 thin coats, wet- on-tacky, all in the same day.
 - The application video on www.CoppercoatUSA.com shows very detailed examples; you can see how thin each coat must be applied to keep the Coppercoat from dripping or "sagging".
 - **Always mix all of each of the parts** (unless following the "Partial/Small batch" instructions in "Application Details"); Coppercoat is packaged with the correct amount of each part to work – Never "save" some of the copper for something else!
6. Allow the Coppercoat to cure for 2-3 days. It's time to move the jack stands/pads to prepare and paint the bare areas and start sanding the hull, see details.
7. Allow the newly painted areas 2-3 days to complete curing and then sand those areas.
 - This will make a total of 4-6 days since the application started.
8. Refer to the picture that was sent with the Coppercoat shipment which shows what the surface will look like with the correct amount of sanding; it is absolutely necessary to sand the Coppercoat to expose copper, which is what makes the surface "anti-fouling".



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Application Details

- ✓ **Never apply Coppercoat over existing anti-fouling paint**
This means all the old anti-fouling must be removed or the Coppercoat will lift the old anti-fouling paint, resulting in the Coppercoat and the old paint peeling off.
- ✓ **New Coppercoat can be applied over existing Coppercoat, for example when touching up or repairing**
To touch up or repair damaged Coppercoat you need to sand the area well with 80 grit sandpaper, as well as overlap the old Coppercoat for about 1". See additional info in "Repairs & Touch ups" later in this document.
Copperpoxy or Copperclad: Coppercoat can be applied over these with correct preparation; please call us for instructions. (Although not been available for many years, some people still have them on their boat.)
Hull repairs: If you need to make repairs to your hull before applying Coppercoat, use an epoxy product to make the repair. A repair made with polyester or vinyl ester product may cause issues.
- ✓ **Barrier Coating**
Existing barrier coat, leave it there; barrier coatings are two-part epoxy; sand it smooth as described below.
Only apply Coppercoat to a clean and well abraded/sanded surface
Thoroughly sand the existing or new barrier coat with 80 grit sand paper (or sand the gel coat if there is no barrier coat). If not sanded well enough the Coppercoat will slide and smear on the surface. The surface of your barrier coat or gel coat should be dull, not "shiny". The smoother the surface is under the Coppercoat, the smoother the Coppercoat will be, and smooth is what you want for a good application.
Never clean the hull with a solvent based cleaner before applying Coppercoat
-Solvents like MEK and Acetone leave a residue that Coppercoat does not stick to well.
-Clean the hull prior to applying Coppercoat by washing with water or wiping with Isopropyl alcohol (90-99% pure), this is a safe cleaner which leaves no residue.
You cannot "hot coat" Coppercoat over a solvent based epoxy barrier coating
-This is different from most anti-fouling. If you are applying a new solvent-based barrier coat, wait 2-3 days and sand it before applying Coppercoat; read the barrier coat label for the percentage of solids.
-You must sand the barrier coat with 80 grit sandpaper (it should not be shiny) before applying Coppercoat. If there are less than 60% solids in the barrier coat, additional cure time may be required or the solvents in the barrier coat will "gas out", resulting in small blisters under the Coppercoat. Call CoppercoatUSA if you have questions.
Coppercoat can be applied over CK 426 barrier coat within 24 hours without sanding
Apply Coppercoat when the CK426 has cured enough to not be sticky and no more than 24 hours after the CK426 was applied. This works because CK426 barrier coat is 100% solids and contains zero VOC's.
- If it has been more than 24 hours since the CK 426 was applied, it must be sanded with 80 grit sandpaper prior to applying the Coppercoat anti-fouling.
- ✓ **People needed to apply Coppercoat to an average size boat.**
We recommend 3 people to apply Coppercoat to your hull. One person to mix, and 2 people to roll the Coppercoat. If there are only 2 people doing the application, we recommend mixing half a kit at a time, so you don't run out of pot life.



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- ✓ **Do not start applying Coppercoat before 9AM or at less than 50°F**
Coppercoat is temperature sensitive; do not apply if it will be colder than 50°F within 24 hours of application.
 - As with most epoxies, cure times are based on a 72°F. If the temp is warmer, the cure time and the pot life is shorter. Thinning Coppercoat with isopropyl alcohol helps increase the pot life and makes the surface smoother. If the temp is colder than 72°F, the cure time and pot life are longer.
 - Coppercoat is moisture sensitive** - Generally, it is too humid to paint early in the morning; humidity will cause problems with water based Coppercoat.

- ✓ **Keep the hull dry for 48 hours, tape up a plastic "skirt", see the examples on www.coppercoatusa.com**
Even if you don't expect rain, unless you are inside a building, we recommend that you make a short "skirt" for your boat with plastic sheeting, painters' tape and sticks to hold it off the hull while its curing.
 - Keep rain, dew, and water off the Coppercoat for 48 hours after applying. Coppercoat is a water-based epoxy and will wash off with very little water until cured; dew running down the hull can remove freshly applied Coppercoat.
 - Remember to plug through hulls and deck drains to prevent drips of water.
 - Try to keep the "skirt" away from the wet Coppercoat; if it does get stuck, leave it there, it will pull away clean after a couple of days.

- ✓ **Clean up Coppercoat with fresh water**
Until it dries Coppercoat washes off easily with fresh water, so you can clean the rollers, pans, your hands, your clothes and any other place you didn't want it. Once it's dry, it's there for a long time.

- ✓ **Rollers: Use 1/8" nap foam rollers for epoxy**
 - Others don't work well; foam rollers leave the smoothest surface. Make sure they roll easily.
 - If the surface of the hull isn't sanded enough the foam rollers tend to slide/smear on the surface.
 - Use a small "cigar" roller or small brush where necessary to get into small areas; be careful to prevent drips.

- ✓ **Mixing – Set up an "assembly line" (see video for example) and work with one kit at a time**
 - Always shake the resin tub (part A) well before opening.
 - When opening the part B bottle, do not allow small bits of the plastic cap lock to fall into the mixing bucket. If you do, you will have white plastic spots on your hull!

- ✓ **Thinning Coppercoat with isopropyl alcohol; use the cap from the hardener (part B) bottle for measurement**
 - Mix three PART B capfuls of isopropyl alcohol into the part A & B as you mix them together in the bucket, before adding the copper. (Use four capfuls per kit if you are in a warmer climate)
 - Do not use the alcohol cap for measuring
 - Do not add the isopropyl alcohol to the Coppercoat in the roller tray, it will not mix correctly.

- ✓ **Keep the Coppercoat suspended (mixed) when applying.**
 - The copper powder is heavy and settles a little in the epoxy; stir the Coppercoat each time before you pour it from the mixing tub into the roller pan. Coppercoat mixes easily; do not over mix, it shortens the working pot life.
 - Coppercoat has little odor, but we recommend wearing a dust mask and gloves for mixing.

- ✓ **Coppercoat is applied in four (4) thin coats, "wet-on-tacky", all in the same day - see application video**
 - When the 1st coat is tacky it's time to roll on the 2nd coat. Apply the 3rd and 4th coat when the one before is tacky. "Tacky" is when you touch it with your finger and it doesn't come off on your finger; 20-30 min is avg wait time.
 - If your boat is too large to complete in one day, only paint part of the boat at a time.
 - Ex: Paint all 4 coats on one side of the hull, or on a catamaran, paint one hull before starting the next side/hull.
 - Remember, apply the Coppercoat in thin coats as shown in the video (you can see through the first 2 coats);** thick coats will cause the copper to run or "sag", which is difficult to sand later.



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- If you start to apply your first coat of Coppercoat and it slides or “smears”, the surface wasn't sanded enough.
- If you start to roll the next coat and the previous one is pulling off on the roller, STOP and wait a few minutes, the previous coat isn't cured enough yet.
- The goal is to have a smooth surface when the application is done, which is why Coppercoat is thinned with the alcohol and applied in thin coats. It can be difficult to sufficiently sand a rough surface.

✓ **After applying Coppercoat to the hull, keep it dry and wait 2-3 days**

- Allow the Coppercoat to cure for 2-3 days (depending on air temp) until the Coppercoat has cured enough to not lift off when you touch it, and you can sand it without the Coppercoat clogging up the sandpaper.
- Before moving the jack stands/keel pads, sand the area where they will be moved to; see sanding details.
- Move the jack stands/keel pads to the sanded area; prepare and apply Coppercoat to the bare areas that were under the stands/pads as you did the rest of the hull, mixing small batches (see Partial/Small Batch instructions below) of Coppercoat and sanding the overlap areas by 1” with 80 grit sandpaper before applying Coppercoat. Keep the new Coppercoat dry for 2 days.
- Sand the cured Coppercoat**, see Sanding Details below. Keep sanding dust out of the newly painted Coppercoat.

✓ **The newly coated stand/pad areas should be ready to sand after 2-3 days, for a total of 4-6 days since the Coppercoat was applied to the hull.**

- After those areas have cured for 2-3 days, sand them as you did the rest of the hull.

✓ **Sanding Details**

- Sand the Coppercoat with 320 grit sandpaper on a DA or random orbital sander. The Coppercoat will be much easier to sand several days after the application, than if you wait a week or more and the Coppercoat has fully cured. If the Coppercoat “gums up” the sandpaper, give it more time to cure. Allow extra time before sanding if the weather is cool.
- Refer to the sanding picture that was included with the Coppercoat shipment or on the website to see examples of how the Coppercoat should appear when sanded enough. It is absolutely necessary to sand the Coppercoat to expose copper, which is otherwise encapsulated in the epoxy. **If you don't sand the Coppercoat enough you will NOT have an anti-fouling bottom!**
 - We recommend that you wear thin rubber or Nitrile gloves, safety glasses and at least a dust mask while sanding.
 - You can now delay the launch indefinitely with no effect on the Coppercoat efficiency.

✓ **Partial / small batches of Coppercoat; the mix ratio is 1-part A, to 1-part B, to .8 parts copper, by volume**

- In a small, measured mixing pot, mix the resin and hardener together with 5% isopropyl alcohol before adding the copper powder. ALWAYS measure carefully; do not “eyeball” the quantities.
- Example: Mix 3 fluid ounces of part A, plus 3 fluid ounces of part B, and ½ a part B capful of alcohol, then add 2.4 fluid ounces of the copper powder to make 8.4 fluid ounces of Coppercoat.
- Be careful when measuring in the copper powder because the liquids will “dome up” when adding the copper powder and it is easy to add too much copper. Stir the Coppercoat gently with a stir stick when adding the copper, and check the levels carefully.

✓ **Props, shafts, trim tabs, sail drives and out drives must be sandblasted: Directions for metal parts**

- Before applying Coppercoat to your props, shafts, trim tabs, sail drives and out drives remove all old anti-fouling paint. Sandblast the metal to achieve a 2-mil anchor profile. (Sanding, polishing, etching, etc are not sufficient.)
- Apply at least 2 coats of a good epoxy barrier coat:
 - If the barrier coat is CK426, refer to the instructions for applying CK426 prior to Coppercoat.
 - If a solvent based barrier coating is being used, review the instructions above for using a solvent based barrier coating, incl. allowing the barrier coat to cure completely before sanding the newly barrier coated metal with 80 grit sandpaper.



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- Apply the Coppercoat in 4 even coats, allow the Coppercoat to cure and remember to sand it before launching.
- Bronze thru hulls** can be hand sanded with 80 grit before applying barrier coat following our barrier coat instructions. Or, if you don't intend to coat them, put painter's tape on the bronze to keep the Coppercoat off.

✓ **Repairs and Touch ups**

To repair damaged or thin Coppercoat, start by sanding the area with 80 grit sandpaper, over-lapping the good Coppercoat by an inch. Apply epoxy barrier coating (if needed) to repair damaged barrier coat, following our barrier coat instructions. Apply 4 thin coats of Coppercoat, following the application instructions. You will need to mix small batches of Coppercoat, (see "Partial / Small batches"). Use a small foam roller to make small repairs. Wait 2 days before sanding the new Coppercoat to expose the copper.

✓ **Simple Maintenance**

Coppercoat repels hard growth but contains no harsh chemicals to kill slime or the grass that grows in some areas, therefore most people find they need to do some cleaning, depending on the conditions where they are boating. This generally consists of wiping the hull with a towel, carpet, squeegee or plastic spreader to remove the slime and grass, while not removing any measurable amount of coating. If the boat is out of the water, it can be pressure washed at 4000 psi without damaging the Coppercoat.

- Coppercoat doesn't "die", regardless of how long it's out of the water.
- If the boat is in the yard for an extended time, give it a good washing before relaunching to remove the dirt and grime of the boatyard.
- The copper will turn green in salt water when the Coppercoat is working.

✓ **Trouble Shooting**

If you are getting barnacles or hard growth the most common cause is that the hull was not sanded enough and there is not enough copper exposed. Generally, it's only in certain areas that may have been difficult to reach when the boat was first sanded after the application. A rough "orange peel" surface, either from repairs to the hull, a rough barrier coat application or drips in the Coppercoat could have made it difficult to sand. The best solution is to sand the surface better, out of the water. The growth will clean off easily with a strong pressure wash and then the sanding can be done where needed.

- If it's not convenient to pull the boat out of the water, a good method to remove the growth in the water is to scrape the barnacles off with a putty knife and then scrub the area vigorously with a new 3-M type green scrub pad. After a couple of scrubbing's enough copper is usually exposed to prevent future growth.
- If the hull is not cleaned and it gets a layer of slime/grass you may see hard growth attached to the slime. Clean the bottom and the growth will come off with the slime.
- If your Coppercoat was applied outside of the US it may have been "scuffed" instead of sanded, which was adequate in colder water but may not be working when you moved into warmer water. It can now be sanded when it's convenient and you can follow the instructions above in the interim.
- It is generally not necessary to sand or "refresh" the Coppercoat each season if it was sanded sufficiently after the initial application. If you are not getting hard growth on the Coppercoat, it's working. Enjoy your boat!

Do you have questions about your application? Have you just become the owner of a boat with Coppercoat on the hull and want to understand how long it should last (10-20 years) and what you need do to care for it? We are constantly updating our website with more information for our owners. And, you can always call us!

[Coppercoat USA at 321-514-9197, EST](tel:3215149197)