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# COELAN<sup>®</sup> MARINE PRODUCTS

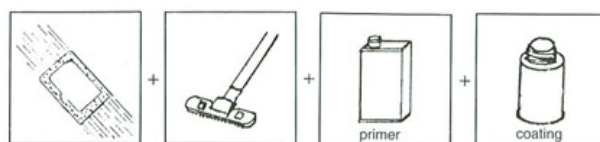
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## APPLICATION INSTRUCTIONS

### NO. 1 ► COATING NEW WOOD – HARDWOOD

(OAK, TEAK, MAHOGANY, RED IRONWOOD, ETC.)



**PLEASE READ INSTRUCTION CAREFULLY BEFORE YOU START!**

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## INTRODUCTION

This information is written for the ship or yacht coating specialist using the COELAN<sup>®</sup> Marine Coating family of products. COELAN<sup>®</sup> Marine Coating Products possibly produce the best wood coating and finishing system on the market. COELAN<sup>®</sup> coatings will out-perform any traditional varnish or marine paint and, once applied, will not require re-application for many years.

Protection of asset value, long intervals between renovations and significant reduction in material and labor costs are three major reasons for the success of COELAN<sup>®</sup> products.

You will find that COELAN<sup>®</sup> Marine Coating Products will give outstanding results.

## COATING NEW WOOD – HARDWOOD

Tropical and native hardwoods are used in ship and yacht building for parts subjected to hard wear. Hulls, superstructures and deck coverings are constructed in mahogany, teak, oak and red ironwood. With these kinds of wood, there is less surface destruction due to UV radiation or fungal attack, and destruction is less severe than that observed in soft woods.

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## I. IMPORTANT TO KNOW

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### ! ATTENTION:

- COELAN® coating should be used only above the waterline.
- COELAN® coating will not bond with silicone joints and joints sealed with silicon containing sealing compounds (i.e. WKT sealing compound).
- Do not use any solvents to prepare the surface or in cleaning after installation! Do not use floor or furniture cleaners or wax on the finished surfaces.
- Residual moisture in the wood should be in the range of 12% to 15%. (Please see more details below about how to measure the moisture under section II. PREPARATION.
- The underside of the deck requires a sealer coat of some type to prevent vapor absorption due to natural convection. This applies to all end grain, plank sides and undersides. It is necessary to provide a barrier against water vapor penetration.
- The required drying and curing time of COELAN® coating is about 7 days before you can use the surface. Furniture and other objects can not be placed on the surface before! The surface can be walked on carefully after 24 hours but only if necessary.
- Please also refer to the COELAN Guide to Marine Coating booklet and to our Working Tips Index and as well to our product MSDS's (Material Safety Data Sheets).

### ! WHAT YOU NEED TO KNOW BEFORE YOU START WORK:

- Please take the time to read these instructions in their entirety. Also read all product label information. Prepare your work area in an orderly fashion and ensure adequate ventilation and shade.
- Prior to opening the coating, do not shake the can or it's contents. However, the Primers should be mixed or shaken well.
- Don't open the coating container until ready to apply! As this is a product which hardens upon exposure to atmospheric humidity, it is advisable to use the contents on the day of opening. If the complete contents are not likely to be used then the required quantity of COELAN® coating should be poured off, and the remaining air column in the can needs be minimized. It is possible to keep the coating useable in a re-sealed can for one day, but not longer than two or three days: Place a piece of thin plastic foil or wrap on top of the coating

so that the contact with the air in the can is minimized. Note: It may be difficult to open a closed can again because of the adhesive characteristic of the coating. The top and can will stick together and attempts at reopening may deform the can in a way that future airtight closure will not be possible. To make reopening of the can easier, place a piece of thin plastic wrap between the can and the lid when closing it. Further store the can upside down, but be sure the can is tightly closed and nothing can seep out! Store it on top of a piece of foil or paper! Whenever possible, we advise that the contents of a container should be completely consumed upon opening and not closed again!

- Consumption will be 1 Liter (or 1.06 US qts.) of non thinned COATING per square meter (10.8 sq. ft.) for a finished surface. The corresponding amount of PRIMER per coat will be about 250 ml (0.26 US quarts) per square meter (10.8 sq.ft.)
- Prior to applying the coating: slowly stir the contents of the can by hand using a clean wooden stir stick. Do not use an electric drill motor and stir paddle combination as this introduces air into the liquid. Do not shake the can prior to opening.
- A constant and patient application is required to obtain optimum results. Use small paint brushes (approx. 4 to 5 cm wide /or approx. 2.00 inches). The brush must be easy to handle since this will help you to produce an smooth and even finish. Note: Avoid using large brushes even on big areas!
- Select several good quality (not foam) brushes for each coating pass and ensure the brushes have been worked to remove all loose bristles. (COELAN® boat coating application requires at least 5-6 layers of coating.)
- When using a roller for application, verify it is solvent resistant and select a nap material and height that will produce the smoothest finish.
- With horizontal surfaces the various coats can be applied evenly and generously – with overlaps – with a brush or foam roller. The total finished multiple layer coating thickness is to be 1.00 mm / or 0.039” in. minimum.
- To prevent the coating from running when applying to vertical surfaces, it may be necessary to thin the coating between 10% and 30% with our COELAN® -THINNER. Do not exceed these thinning ratios as desired results will not be meet.
- If there is a need to mask adjacent surfaces; use the “blue” tape. (3M #2080 or equiv.)
- Wear disposable latex gloves and adequate eye protection and avoid perspiration dropping onto bare surface or during coating application.

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## II. PREPARATION (FOR NEW WOODS):

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### ► HOW TO PREPARE THE SURFACE FOR APPLICATION:

1. In the case of wood, such as teak and ironwood, which contain oil and tree sap, the surface should first be brushed down with a stiff bristle brush in the direction of the fibers or grain to obtain an even surface.
2. **Joints or cracks** wider than 3 mm (0.12" in.) need to be filled and sealed. Do not use Silicon!! Usual joint sealing material can be used like Acrylic Polyurethane, Polyester, Sikaflex or a self hardening wood putty or filler.
3. **Sanding dust:** Afterwards, as with all the other kinds of wood, the surface should be sanded down with #80 grain sandpaper. Always sand with the grain. Sanding dust should be thoroughly removed with a vacuum cleaner. Attention! : Please do not use any solvents!
4. **Test for residual dust** by using several lengths of blue masking tape firmly placed on surface and then quickly removed. Any dust adhering to the tape indicates need for more vacuuming. A dust free surface is critical to achieving optimum results.
5. **Wood moisture** content needs to be in the range of 12% to 15%. Use a hand held, dual probe, portable moisture meter to measure the moisture content in the wood. If necessary allow the wood to dry until you have reached the desired range. In the case of old wood, moisture should be measured in the wood core or as near as is possible to the plank center. An alternative way to determine moisture content is by the use of a double layer of plastic food wrap taped down along all edges (edges must be completely closed) and left to stand overnight. If condensation appears on the underside of the plastic wrap, this is an indication that the moisture content is still too high and further drying is required.
6. **Metal and plastics parts** like fittings and screws fastened to the surface can create weak points on a coated surface if not treated thoroughly. Such parts should be removed before the application starts. Every screw hole as well as larger fastening points needs to be covered with primer and the coating accordingly. Before you re-install the parts, coat all sides of the part and install it before it dries. Please dip every screw in the coating and then install and firmly bed the screw so that all joints are water tight. This technique will create optimum sealing and will greatly reduce the opportunity for water to cross the coating barrier.

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### III. PRIMER:

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**COELAN®** transparent or colored boat coating primer should now be applied to the wood surface prepared in the above manner (with red colored primer for mahogany).

#### ! WHAT YOU NEED TO KNOW BEFORE YOU USE THE PRIMER:

- An intermediate sanding to remove bulging wood fibers or dust may only be affected after having applied the second layer of coating. Do not sand the applied primer as the pigments of the primer will otherwise be removed.

#### ► HOW TO APPLY THE PRIMER:

1. Thoroughly vacuum sanding residue. Don't use any chemical wipe down or any other surface preparation cleaning or sealing products. Use Coelan products only.
2. Use a brush and apply the primer to the entire prepared surface. Do not forget to prime small cracks. Larger cracks ( > 3.0 mm / 0.12 inches) must be filled. Prime adequately as the primer has the UV protection filters. Apply one coat of approx. 250 ml (or approx. 0.26 US-quarts) COELAN® primer per 1 sq. meter (10.8 sq.ft.).
3. The priming process may have to be repeated several times where very absorbent substrates or surfaces are present. Observe the corresponding drying times as influenced by humidity and air temperature.
4. Give the primer time to dry.
5. When the primer has dried, remaining cracks (in excess of 3.0 mm /or 0.12 in.) should be filled in with Polyurethane based filler or putty and smoothed flat.

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## IV. COATING:

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The surface is now ready for the first coat of transparent or colored COELAN® marine coating.

### ! WHAT YOU NEED TO KNOW BEFORE YOU APPLY THE COATING:

- **IMPORTANT:** The coating must be applied in several coats (approx. 5 -10 layers) until a minimum of 1 mm total (0.039 inches) of coating is applied. Do not attempt that in one step! Consumption will be 1.0 Liters (1.06 US qt.) non thinned coating per 1 sq. meter (10.8 sq. ft.) for a finished surface. It is important that the directions regarding coating quantities should be followed.
- **APPLICATION TECHNIQUE:** Follow the rule that the different layers should be thinly applied (0,15 mm to 0,2 mm /or 0,001 in.). Remember that COELAN is not paint or varnish, COELAN is a polyurethane based coating and needs to be applied in several thin coats (5 to 8 layers) to reach the final multiple layer thickness of 1 mm. (0.039 in.) Do not try to complete the application process too quickly by applying thicker layers. A single coat that is too thick will not allow the time necessary for characteristic substance reaction and to produce a smooth and even finish.
- **BRUSHING TECHNIQUE:** A Proper brushing technique is important! Try not to overload the brush. Too much material on the brush or surface and it will be difficult to move the brush evenly. Some practice is required here. Run tests on scrap panels until you obtain the desired result. Avoid bearing down on the brush during application. Lightly touch the surface with an evenly loaded brush and then move the brush across the surface in smooth strokes. As soon as the brush stops applying a continuous flow of coating, lightly re-load the brush. In this way you will prevent over-brushing. Use easy and even strokes of the brush! Do not wipe the re-loaded brush against the inside rim of the can as this will introduce air into the coating and brush.
- **FOOT WEAR:** Don't wear shoes during the application and don't go shoeless/barefoot. Wear clean pre-washed, lint free, quality cotton socks. Wear light weight long sleeved shirts and long pants to prevent dropping perspiration on the surface or coating. If necessary, wear wrist and forehead sweat bands.
- **DRYING TIMES:** Depending on temperature and relative atmospheric humidity, drying time for each of the coats will be between 2 and 6 hours. Higher humidity and higher temperatures will shorten drying time.

- **SUN EXPOSURE AND TROPICAL ZONES:** Consideration must be given to sun exposure and the ambient and working surface temperatures during application and curing time for each of the multiple coating layers. Minimize/eliminate direct exposure of surfaces to the sun during coating applications by use of a shade canopy. If you are in tropical climate conditions; apply in late afternoon. In addition; you may have to use the COELAN® Retardation Agent in a hot and humid climate.
- **USE OF COELAN® RETARDATION AGENT:** Using the Retardation Agent will produce a thinning of the coating. As a result, more total layers of coating are required to reach the minimum 1 mm. (0.039" in.) necessary finished thickness. The coating may appear adequate after 5 layers, yet additional layers must be applied until the final thickness of 1 mm (0.039" in) has been achieved and to guarantee the characteristics of a COELAN application as well as to obtain the desired long lasting effect! The number of individual coats should then be increased correspondingly (8-10 coats). The rule will remain that 1 Liter (or 1.06 US qt.) non thinned coating is required for 1 sq. meter (10.8 sq. ft.) and a minimum finished coating thickness of 1 mm. (0.039 in.) is obtained.
- **SANDING IN BETWEEN COATS:** is required only when intervals between coats exceed fourteen days. Sanding should be done with #80 grain paper.

## ► HOW TO APPLY THE COATING:

Minimize/eliminate direct exposure of surfaces to the sun during coating applications. High air temperature (> 86° F.) and high humidity (> 85%) is to be avoided.

Carry a small spray bottle of COELAN® Thinner to help clean up inadvertent drips on non-coating surfaces or items.

1. Apply the first thin layer of coating in a smooth even fashion. Let the first layer dry. Depending on weather and relative atmospheric humidity, drying time for each of the coats will be between 2 and 6 hours.
2. As soon as the previous coating application is dry to the touch (not tacky) another coat can be applied with no sanding. Tread lightly and be sure to wear your socks!
3. Repeat the application and drying process until a minimum thickness of 1 mm (0.039" in.) coating has been reached. Desired consumption will be 1.0 Liters (1.06 US qt.) per 1 sq. meter (10.8 sq. ft.) of non thinned coating.
4. The number of individual coats should then be increased correspondingly (8-10 coats). when thinning or using COELAN® Retardation Agent or when applying to vertical surfaces.
5. The final layer may be a gloss or a silk (matte) finish. If a silk finish is desired, the final application needs to be done with COELAN® Silk Finish Top Coat. For a gloss surface continue using the gloss coating for the final layer.

6. Seal horizontal deck to vertical wall joints only after you have finished the entire application process and you have given the coating the needed time to cure. The drying time should be at least 24 hours. Then you can use a bead of Silicon Sealant (i.e. WKT sealing compound) along the edges of the coating to seal joints connecting horizontal deck to vertical wall areas. (WKT Sealing Compound is a highly elastic and extremely non-ageing sealing compound which was developed specifically to meet the great requirements of the caulking of wooden deck joints in the yacht and ship building industry.)
7. Give COELAN® coating the required time to dry and to cure! Allow the coating to harden for at least 7 days! Do not place furniture or other objects on the surface before the coating has completely cured. Verify this after 7 days. After the completion of the drying process, the surface can be used in a normal way. Note: 24 hour after the finished application, the surface can be carefully walked on but that should be done only if absolutely necessary.

→ **COELAN® SILK FINISH TOP COAT:**

- Note: COELAN® Silk (matte) Finish is a very slippery final finish. Do not use it where water or moisture is expected and where solid footing is required. If a Silk Finish is used, then COELAN® Anti-Slip Glass Beads must be applied.
- If COELAN® Silk Finish is to be applied it can go immediately on top of the previous gloss coat as soon as it is dry to the touch.
- COELAN® Silk Finish is a one-coat application. Do not over apply as you will lose the effect.

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## USEFUL TO KNOW

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### SPRAY PAINTING:

Spray painting gives particularly good results. Depending on the spraying process used, viscosity should be suitably adjusted with our "COELAN®-THINNER" (e.g. at low pressure, 0.7 mm-nozzle, set at 40-35 DIN sec.-DIN 4 measuring beaker). Please pay attention to the additional consumption rates due to spraying loss.

### ANTI-SLIP

Please refer to the appropriate section of our user guide booklet if optional application of anti-slip surfaces are desired.

**FURTHER QUESTIONS:**

If you have further questions or need more working advice, please refer to our PREMAPRO [FAQs](#) list or the items shown in our [Working Tips](#) index.

**DISCLAIMER:**

To the best of our knowledge, the technical information contained in this product information is reliable. As the product may be used in conditions that we cannot foresee, this advice is not legally binding. Furthermore, we reserve the right to make technical changes in line with product development. On publication of revised instructions for use, any existing technical information shall be invalid. For additional inquiries; please contact our special technical support service. Agreements and warranties must in principle be in writing. Verbal agreements should therefore be confirmed in writing. In addition, our terms of delivery and payment apply.

**PREMAPRO LLC**

Premium Marine Products

15537 Sullivan Ridge Drive

Charlotte NC 28277 USA

[www.premapro.com](http://www.premapro.com)

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