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## TIPS FOR FINISHING WITH SUTHERLAND WELLES LTD. ® PRODUCTS

1. The higher the oil content the longer it takes for the coat to **dry and cure**.
2. **Best climatic conditions: temperature range 55-75 degrees F. and humidity less than 65%.** 12- 24 hours is **median** dry time.
3. The higher the oil content the faster the coat will tack up. Reduction in surface area coated at one time maybe required. If coat tacks up before it can be wiped off, add more finish to the already tacky surface and **wipe off immediately**.
4. **Drying and curing of the finish. If bad things are going to happen finishing with Polymerized Tung Oil this is where 99.999% of disasters are created.** Drying and curing are a function of the temperature and humidity in the finishing area, the percentage of oil in the coating, the application technique, elapsed time between coats, the wood species (veneers, some exotics need to be coated with an oil/resin system), thickness of the coating applied, number of coats previously applied. Drying occurs on the surface of the finish and is the result of the solvents evaporating into the ambient air. Drying occurs fairly rapidly. The second stage, or curing, takes longer and involves the ambient oxygen reacting with the finish in an oxidation process which results in the surface becoming hard and smooth. When two or more of the above stated variables begin to interact the cure becomes significantly longer (exponentially longer). It is imperative that the cure test that follows be used religiously to avoid *creating a disaster*. The above stated problem is associated with our Polymerized Tung Oil because the solid content of each coat is high, which is a good. Most “over-the-counter” finishing products don’t present with this problem because their solvent content is so high, each coat you apply is more solvent than solid. **What protects wood and provides a beautiful lustre is Polymerized Tung Oil (solid) not solvent! You have purchased the best Polymerized Tung Oil produced - but it has specific tolerances for application that need to be respected for success with our finishes.**
5. **CURE TEST:** Push your fingers perpendicular to the grain of the wood over *various* locations on the surface you previously finished. Your fingers should slip over the surface **easily**. If there is any drag or grab, the surface is not **cured**. Additional time is required before re-coating with oil and/or color.
6. **Disaster Remedy-** You will know that you have re-coated too quickly when flat areas in the finish emerge. Moisture is trapped between coats of oil. There are two ways to deal with the situation. The first is to remove the coat that flashed. If it is an oil-only coating, stripping off the flashed coat is the only solution. The sooner that is done the easier the process is. The second solution is to allow the coat to harden as much as possible and then topcoat the flashed coating with either Wiping Varnish or Murdoch’s Table Top. The second solution is a viable solution only if using a resin coating is acceptable. **Removal Procedure:** If the flashed coating was recently applied (within the last 24 hours) and you notice these flat areas you can scrub the surface with Sutherland Welles Ltd. ® Di-citrusol™ or Xylene and #0000 steel wool and attempt to remove the coat. The uncured Tung Oil will gum up the steel wool. Keep using clean pads and fresh solvent until the surface is smooth. Dispose of the waste properly - this is very flammable as well as combustible. Allow the surface to cure for 24 hours. Test the surface for readiness to re-coat with the cure test described above. If it has been awhile since you re-coated and you find these flat areas in the finish, the surface will have to be sanded to remove the layer where the moisture is trapped. When you hit the layer that is uncured, the paper will start to fill with gummy finish. You may have to use a coarser grit to remove the uncured oil. After the uncured oil is removed, sand the surface to the finish grade recommended prior to applying finish. Once the flashed coating is removed and the surface restored, begin applying your topcoats of finish per the instructions on the label. **Topcoat Procedure:** Utilizing this procedure locks in the uncured coat and masks the surface with a uniform sheen which is why you need to be using a resin system for coating as you will be applying the topcoat with a brush and leaving that surface to cure **without wiping. A Polymerized Tung Oil coating without any resin is to be used as a penetrating, wiped coat only. It does not have a drier schedule that will support an oil-only coating to cure as a surface coating.** The only exception is when you are applying the Exterior Polymerized Tung Oil **and** you are coating in the outdoors where there is adequate air movement to facilitate both fast dry (surface closure) and curing.

**7. To expedite the curing process.** After the finish is applied and wiped off, you can run a fan in the room where the project resides. The movement of air will speed the drying and curing process. You can also increase the air temperature but only with topcoats of higher concentrations of oil doing this with sealer coats will precipitate bleedback **NOTE: Don't run the fan while you are applying the finish as this speeds evaporation of the solvents allowing the surface to tack up very quickly making finishing a difficult process! NOTE: Do not run a fan in the room if you are using any of our products as a surface finish, which is a coat that is brushed out and not wiped off.**

**8. Speckling or bleed-back.** Bleed-back or speckling on the surface of the coating will be noted after you wiped the surface dry and you come back later and find shiny speckles over the surface. This usually happens when you are using a low concentration of oil in the coating such as Sealer or Low Lustre. The typical reasons why this occurs is; the finishing area is too warm, the wood pore has been closed by sanding to a high grit( wood turners take note), you are using a wood species or substrate with very limited absorption capacity such as exotic woods or veneers or the opposite - very open grain woods such as oak. In general, the evaporation process is so rapid and the oil so fluid (due to heat in the room) that the oil is brought to the surface with the evaporation of the solvent. If sanding is the reason, apply your Sealer coats when you are sanding to 180/220 grit and then move to a higher grit **after** the Sealer is applied. If you observe this soon after you applied the finish, adjust the room temperature and just keep wiping the surface with a clean rag or #0000 steel wool. Continue wiping off all the oil that comes to the surface until the bleed-back stops. If you should find the bleed-back after the oil has dried and cured on the surface, scrub the surface with some Sutherland Welles Ltd. ® DiCitrusol™ and #0000 steel wool or lightly sand with the finest grit possible to remove the speckles and then proceed with your next coat.

**9. Curing a color coat.** Adding any Sutherland Welles Ltd. ® Concentrated Stain to the surface you are finishing can extend the curing time because the colors are formulated with a very high oil content. The prolongation of the curing time is directly related to the concentration of the color coat you apply. The stain as it is packaged is very concentrated. It is formulated to be diluted and added to your second sealer coat and to each finishing coat to facilitate *layering of the color*, which gives added depth and intensifies the color value. There are times that using the color straight out of the can gives the best results.

**Undiluted stain and the thickness of the coat you apply as well as the climatic conditions can really extend the cure time. Always use the cure test before applying a new coat of oil/color to a previously coated surface.**

**10. Wiping Cloths -** Scott paper makes a “paper shop towel” that is a wonderful wiping cloth. **It is very absorbent and lint free.** It is especially useful with resin finishes where lint in the towel can be deadly. For Polymerized Tung Oil and Wiping Varnish, wiping the surface using a circular motion with a high quality cheesecloth polishes the sheen to create a beautiful hand-rubbed look

**11. Preventing the finish from gelling in the can-** as you use the finish from the can and oxygen remains in the available space, the finish will begin to oxidize as evidenced by gelling. A simple, effective method for preserving the finish is to add water to the can! The oil will rise to the surface. You will need a basting syringe to draw off the finish from the can for future applications. **You will not be able to pour from the can after adding water as the water will co-mingle with the oil as it exits the can.** Clean stones or marbles are effective as well. The best method is to decant the finish to smaller glass jars filled to the brim with a secure lid and then inverted (canning jars and lids are perfect). Make sure you **properly labeled the contents.** This method allows visual inspection of remaining quantity (a downside of water in the can- you never really know how much remains unless you record all withdrawals - a lot of work). Another factor that speeds gelling (oxidation) of the oil in the can is repeatedly working out of the can where the lid is off for the entire time you are finishing. It is best to pour a **small amount** into a bowl and work out of that container. Any unused portion can be returned to the container.

**12. Finishing Veneer and some Exotic Wood Species-** For veneers **use a straight Tung Oil finish with caution** as pores are too compressed to absorb much oil. The oil remains on the surface and the drier schedule in the Polymerized Penetrating Oil is inadequate to cure multiple coats of surface applied oil. Also, when using a combination of veneer and hardwoods in a piece we recommend using a product from either the Murdoch's line or the Wiping Varnish as the different oil absorption capacities of the two wood surface produce an uneven sheen when using an oil-only finish. **Exotics** - can be a challenge getting an oil-only coating to cure readily. You will want to consider either a very low solid in oil-only (Sealer or Low Lustre) or a Wiping Varnish product or Murdoch's Hard Sealer or Hard Oil - both are wiping finishes.