

With the availability of Liqui-Powdr™ and Powder₂O™ products, powder coating wood products is not only possible but has advantages over simple painting as well. This document is designed to help you in deciding if this process is an option for your parts, and how to prepare and coat various types of wood products.

What Can and What Cannot Be Liqui-Powdr™ Coated

The cure temperature of powder coating is normally below the temperature that most wood products will burn however there are other factors that you will need to consider.

- Will the glue holding the part together stand up to the curing temperatures?
- Is this a resinous wood that will bleed sap when heated (i.e. pine)?
- Will the grain of the wood be affected badly by the water in the Liqui-Powdr process?
- Will heating the part, cause it to warp or shrink? Will it matter?

Preparing the Parts

1. They must be clean, free from oil and other contaminates. Cleaning a part is just as important with wood products as with metal, however some solvents will attack some laminate glue. When in doubt test a sample part to see if the glue will be attacked by any solvent you may use. Many times simply removing all dust and dirt from the surface will be enough.
2. Etching the surface. Most wood products are naturally porous and so additional etching will not normally be needed, however if the surface is too rough it is advisable to smooth out the surface with sandpaper or light sand blasting where needed. Or if it is too smooth, etching with sandpaper or light sand blasting may be needed. When in doubt test first.
3. It is best that the parts to be coated with the Liqui-Powdr™ process be warm but not hot (less than 100° F.). This will allow the coating to dry completely more quickly.

Previous Paint or Coatings.

If the part has been painted or coated before, it is possible to just coat over the previous coating in some cases. You will need to test to answer the following questions. Is the previous coating stable on the part? Will the previous coating delaminate when exposed to heat? Does the previous coating have any additives that will prevent the powder coating from adhering to the previous coating?

If the previous coating does not pass the above tests the coating must be striped from the part before you can use the Liqui-Powdr™ powder coating process. If the previous coating is solid, clean and will not be adversely affected by the heat to cure the powder coating, then you can treat it just like the base wood.

Liqui-Powdr Coating the Parts

Due to the diversity of wood products, coating the part using the Liqui-Powdr™ powder coating process is going to require a little testing on your part to see what will be the exact procedure to use in a production setting. That being said the following instructions will help you to do the one-off parts, and give you a starting point on the production procedures.

1. The part needs to be completely clean and dry before applying the coating.
2. A small paintbrush may be used to apply the coating to very tight areas before spraying, or after melting the coating.
3. Using a spray gun (gravity feed is best) with a 2 mm spray aperture (smaller can be used but tend to clog up quickly), apply the coating to hard to reach areas first as a light fog coat. Then apply to the rest of the part in a light even coat. DO NOT apply a heavy coat at first, this will cause problems during the curing bake.
4. Examine the part and make sure that there are no runs, sags, or areas of excessive material. If there are, wait until the coating dries and try lightly rubbing off the excess material with a dry paintbrush, or simply wash off the part and try again.
5. Allow the part to completely dry before applying heat to melt the coating. Placing the part in a warm (below 100° F.) environment with air moving over the surface can accelerate drying. The time to dry a part will depend on the temperature and humidity of the air moving over the surface.

Curing the Coating

If your part can withstand the temperatures and time of the curing process without burning, warping or delaminating just follow the powder coating manufacturer's instructions for curing the powder.

If your part is not able to survive the heat of a full bake to cure the coating you may have to use a creative method of melting / curing the powder. The following are some of the creative ways that have been used to melt powder coating:

- Heat gun; using a hot air type heat gun to melt the powder coating is time

consuming but very effective. The process involves heating the surface of the coating until it melts with the heat gun, while moving it around so that the heat stays in the surface of the coating and does not migrate into the part very much. Multiple thin coats are recommended with wet sanding in between coats to smooth out any orange peel. This process will melt the coating but may not cure it, to protect melted but uncured powder coating you can apply Cilgen LTC™ after the last coat to give it a very good chemical resistance.

- Oven melt; this process uses a standard oven but the time or temperature are reduced so that the part does not reach a damaging temperature. A low temperature in the oven (about 180° F. or more) will melt most powders over a longer time, this will not cure the coating and the powder may not flow out as well as at a higher temperature. A high temperature in the oven (normal cure temperatures or higher) and a short time (5 minutes or less) will also melt out most powders but again may not cure. With these processes it is critical that you monitor the first few parts closely so that they are not damaged from the heat. These processes will melt the coating but may not cure it, to protect melted but uncured powder coating you can apply Cilgen LTC™ after the last coat to give it a very good chemical resistance.
- Combine the above; it is possible to use an oven for part of the melting process and use a heat gun to get in the “tight” spots either before or after heating the part in the oven.

In all cases the part needs to be completely dry before beginning the curing process.

Multiple Coats

The Liqui-Powdr™ powder coating process allows you to apply multiple coats of powder coating. After each application - curing cycle you can wet sand smooth any imperfections and apply another coat of material, either the same coating or another to achieve the appearance desired. Wet sanding is not required for multiple coats unless you desire to smooth out an uneven surface.

Some of the reasons for multiple coats are as follows:

- Cover over surface roughness of the part or to fill imperfections
- Special effects such as: flames, fire, lettering, other graphics, pearls, color transition effects, sparkles, metal flakes, base - clear effects, tints, etc...
- Repair damage to an existing powder coating
- Additional protection for the part
- Touch up areas that were missed in the original powder coating

Why Powder Coat Wood Products

After all this you may ask why would I want to powder coat a wood part. The following are some of the possible reasons to look at Liqui-Powdr™ powder coating parts made of wood products:

- Your customer says they want it
- To match metal parts on the same assembly
- It will add stiffness to some parts
- Special effect colors can be applied at a much lower cost than many special effect paints
- A higher gloss than would be provided by paint
- The application and cure cycle is shorter than watching paint dry
- Chemical resistance of powder coating (compared to paint)
- Heat resistance of powder coating (compared to paint)
- Your customer wants it

Additional Tips

When using self-adhesive backed stickers to mask off areas on a coated surface use a low tack adhesive to make removal of the sticker easier and cleaner. (flames, lettering, stripes, etc...)

If more than 3 coats of powder will be applied to the part make sure to fully cure each coat before adding another. If a coat is not fully cured it can wrinkle or bubble the coatings on top of it.