



Powder coating of wood-based substrates (WBS) Benefits

Powder coating of WBS involves heating the substrate to the required temperature and applying the powder and finally curing the powder by exposing to heat. All the three parts of this technology (Powder, substrate, and the process) have many possibilities and are chosen based on your needs such as your end product application, finish you are looking for, cost, etc. When it comes to substrate most common substrate will be MDF (medium density fiberboard). But other types of wood products such as hardwood can also be powder coated. A good quality MDF is the one which can be machined and sanded well has consistent amount of moisture, uniform density profile, and good internal bond strength. The board needs to be cut machined, sanded, cleaned and dust free to be ready to be powder coated.

A well cleaned part (sanded and any dust removed) is preheated to maximize the surface conductivity of the board temperature for powder application. The temperature of the part necessary will vary on the substrate type, thickness, moisture content, type of powder being used, type of finish expected performance expected etc. The process is dependent on moisture and temperature of the board to apply the powder to the part. Line configuration plays a significant role in the temperature settings used in this process. Powder is applied using electrostatic process to accomplish the optimum film thickness per the powder manufacturer's recommendations. Curing temperature depends on the type of [powder coating, substrate and finish you are trying to achieve. The finished product is cooled down to room temperature and packaged ready to ship.

After the MDF product is coated with powder, proper testing will result in great success in the end use application. Testing involves meeting your customers' coating specifications. In addition to this internal testing can help you identify areas of improvement in your process and the final product. Color, gloss, film thickness, adhesion, flexibility, chemical resistance, hardness, proper cure and overall appearance are things you can test for as part of a quality assurance program.

- Key points, evolution / revolution
 - Greener than liquid, zero solvents, essentially 0% VOC.
 - Low carbon footprint.
 - Mechanically and chemically a better coating.
 - Over 90% of coating utilization: reclaimable, recyclable, and minimal waste.
 - Reduced coating process steps and time.
 - Good for high moisture areas such as kitchens & baths.

- Typically, powder provides a substantial savings in the form of lower applied cost per sq. ft. than liquid.
- Stable and repeatable process.
- May be 100% automated process without manual touch up.
- Fully cured upon exiting oven, once cool it may be packaged.
- Durability
 - Full encapsulated product, better moisture resistance
 - Chemical resistant
 - Improved surface performance
 - Scratch resistance
 - Mar resistance
 - Optional beneficial characteristics such as
 - Anti-microbial
 - Anti-graffiti
 - Non-slip
- Finishes that cannot be achieved with liquid.
 - Textures
 - Metallic
 - Sublimation (wood grain, carbon fiber, etc.)
 - Increase freedom of design
- Safety
 - Non flammable
 - Low health risks
 - Cleaning without solvents

For more information or questions please contact:

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