



PMT (Part Metal Temperature)

Curing Process

There are two conditions that must be met to achieve proper cure of a powder coating. The first is temperature, referred to as metal temperature, and the second is time.

The time/temperature requirements of a particular powder material must be achieved to obtain a full cure. A cured thermoset powder coating will not re-melt upon further heating.

To ensure proper time and temperature it is often best to test using a Datapaq or similar device to provide actual performance data.

PMT

Part Metal Temperature (PMT) means that your substrate needs to reach the required temperature before you start the time.

An example would be: if you were coating a steel wheel and the cure time was 400f/10 Min @ PMT. You would preheat your oven and set to 400f. Once the wheel is coated and placed in the oven, you would wait until the entire part has reached 400f before you start the 10 minute timer.

For example: thicker substrates may take up to 30 minutes to get to 400f, meaning the total time in the oven at 400f would be 40 minutes.

Crosslinking

When a thermoset powder is exposed to elevated temperature, it begins to melt, flows out, and then chemically reacts to form a higher molecular weight polymer in a network-like structure.

This cure process, called crosslinking, requires a certain temperature for a certain length of time in order to reach full cure and establish the full film properties for which the material was designed.

The application of energy to the product to be cured can be accomplished by convection cure ovens, infrared cure ovens, or by laser curing process.