



You have questions, we have answers. In each issue of PCT, our extensive network of powder coating experts provides information to help you with your powder coating challenges. Let us know what's keeping you awake at night, and we'll do our best to help you get a good night's sleep!

The Specs and Only the Specs

I am an architect looking to specify the use of shop applied powder coating on metal products for my buildings. In the past I have typically used liquid coatings and their related specifications. Over the years I've come to recognize the many advantages that powder coatings bring to architectural structures including durability and the environmentally friendly nature of the coating. As a result, I am looking to significantly increase the usage of powder in my projects. Without a lot of experience in this area, I am looking for help to ensure I specify the powder correctly. Is there a particular specification or format I should use to make sure I am providing the correct requirements?

First, you are absolutely correct in that powder coating offers many advantages over liquid coatings. And, while liquid coatings have historically been the frontrunner in architectural applications, powder coatings have and continue to gain prominence in this market. In many cases, powder has as good or better protection characteristics than its liquid counterparts and is considered a “green” coating choice that can be used to achieve LEED building credits.

In terms of powder specifications, the first step is to determine the performance and warranty requirements for the metal you are coating. To assist in this process, you might reference a document called, “Comparison of Architectural Specifications.” A copy of this resource can be found on the PCI website at www.powdercoating.org/ArchitUse. You will

find a link to the document at the bottom of the page. This guide can be used to help determine which specification would best apply to your project.

Once you have determined the appropriate specification, you can use the “3 Part Specification for Powder Coating” document, located on the same page of the PCI website. This guide follows the CSI MasterFormat specifications and can be used as a template to develop the specifications for your project.

We hope this information is helpful in your efforts to include the use of powder coating in your projects.

Not Going Viral

We coat products that are used in homes and businesses with surfaces that are regularly touched by many individuals. We would love to offer our customers an anti-viral powder coating option. Do you know if there are coatings or additives that I can have my powder coat supplier blend/bond into our powder to achieve anti-viral characteristics, or are there technical limitations preventing the development of this property in powder?

This is a bit of a slippery slope. There are a number of antimicrobial coatings produced by powder coating manufacturers which include additives that are statistically effective against many types of micro-organisms. Some of the additives used are registered pesticides with the EPA. Only EPA registered pesticides can claim that they kill or eliminate viruses, bacteria, or fungi. However, simply using one of these additives does not automatically make the powder coating a registered pesticide. For such a classification, the coating is required to go through testing with the EPA or a certified EPA lab.

With that said, most powder coatings manufacturers are using additives to create anti-viral properties in their products. It is important to note that the EPA has strict guidelines on what words can and can't be used in promoting an anti-viral product. Most companies that market anti-viral powder coatings follow the EPA's “Treated Article Exemption” to tout anti-viral characteristics of their products in the marketplace. The Treated Article Exemption allows the use of words and phrases such as help, in conjunction with, assist, etc., in product descriptions.

Keep in mind, there are literally hundreds if not thousands of viruses, bacteria, and fungi. Testing is required to claim a product as truly anti-something and it is highly unlikely that a powder coating, or anything else for that matter, would be

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100% anti-viral. So, while it is possible to make a powder coating with anti-viral properties, you should ask your powder supplier to define exactly which viruses they are claiming the powder eliminates and request the testing records that confirm these claims. Then, it is your responsibility to accurately pass this information on to your customers.

Controlling the Weather

My company is in the process of purchasing a new powder system. We are still fairly early in the process and are wondering if we should have the powder booth located in an environmental room? Incorporating an environmental room would obviously increase the capital costs, so we are looking to better understand the advantages it would provide so we can make an informed decision. Also, if we were to purchase an EV room, can you provide any guidance in regards to the design process control parameters?

If your goals are to provide a quality finish and consistently control the film build thickness, then yes, an environmental room is recommended. The room will control the spraying environment year-round no matter what the external conditions of the plant might be. You would no longer have to be concerned about or consider the impact of temperature or humidity swings from morning to afternoon or winter to summer on your coating operation.

The powder spray guns would be set up for consistent operation without having to make constant “tweaks.” By dialing in the application, you would be able to achieve the desired film build without the costs associated with excess thickness and powder usage. The room will also protect your parts from dirt or contaminants from the rest of your plant operations. In terms of design parameters, the recommended specs for an environmental room are 70 degrees Fahrenheit +/- 10 degrees Fahrenheit and 50% relative humidity +/- 10%.

Last but not least, protect your investment by regularly cleaning and maintaining your environment and changing filters when indicated. We hope this information is useful in making your decision about incorporating an environmental room.

Best of luck with your new system!

Protection Detail

I'm looking at the benefits of using powder coating and am wondering about its efficiency against corrosion. My question is from the perspective of prolonged contact with water as well as salts, such as lithium bromide. Would powder coating provide reasonable, as well as hopefully long-term, protection of the material being coated?

The short answer to your question yes, powder coatings will hold up to salts and lithium bromide. However, there are two important things to do to maximize the

coating's defense against corrosion. First, the part must be cleaned appropriately for the substrate that is being coated (pretreatment suppliers should be consulted). This is a crucial step in the powder coating process and if not performed correctly can compromise the integrity and durability of the coating. Applying a pretreatment coating, such as zinc or iron phosphate, or a thin film coating such as zirconium serves as the first layer of corrosion resistance applied to the metal substrate.

Second, you need to consider the required durability of the part, the conditions it may be subjected to, and their potential impact on the coating. You've already shared the parts will be subjected to prolonged contact with water and salts.

Other things to think about include whether the part will be used inside or outside, subjected to extreme temperatures, sunlight, etc. All the performance requirements need to be considered. With this information in hand, you can contact your powder supplier to determine which type of powder coating is best suited for your application.

Have a question for our powder coating experts? Send it to asktheexperts@powdercoating.org.



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