Powder Coating Forum

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If you have a question or comment concerning issues relating to the powder coating industry, such as system design, coating selection, features, etc., you may e-mail (aesf-journal@worldnet.att.net) or send your questions to "Powder Coating Forum," 12644 Research Pkwy., Orlando, FL 32826-3298.

Question

I currently build weight-lifting equipment that is designed for people who are confined to a wheelchair, but it is also designed for the able-bodied as well. I am subcontracting my powder coating operations and have had problems with my supplier. The next-closest supplier is about 200 miles away. We are planning to move our shop and are considering bringing this operation in-house.

The main question is: How hard would it be to get involved in purchasing our own powder coating setup to do our work, as well as to do work for other locals? Currently, the largest piece that we powder coat is approximately 4 ft x 8 ft. What kind of cost would we be looking at for a setup that would meet our needs?

Answer

You can call the Powder Coating Institute (PCI) and ask them for their "Custom Coaters Directory," which lists many powder coaters around the country. It does not list all the custom jobshops, but it does list those that maintain membership in PCI.

There is probably a reason why there are a limited number of people who provide custom powder coating in your area—not enough business to support more custom coater companies. This fact may influence your decision to get into the business. Let's face it: Powder coating isn't the hot new technology it once was more than 20 years ago. Back then, just buying the equipment meant instant business success, because no one else was doing it. Things have changed, however. The powder coating market has matured and services have become more prevalent. The answer for success lies in performing a good market survey to establish the potential customer base in your specific geographic area. Then answer the following questions: Can this potential business become actual orders? What do I have to do to secure the orders? What price are these people willing to pay? Can I make a living on the profit available? You can see that these questions are the same for starting any business.

The cost of starting a powder coating jobshop, with new equipment, starts at $50,000 for a batch system, and can approach $1,000,000 or more for a conveyorized system. The only differences between these two systems are the amount and size of product it can process in a given period of time. For your reference, a powder coating gun and hopper costs approximately $4,500 each. Spray booths start at $10,000 each and can approach $150,000 with the facility to collect powder overspray as reclaim for reuse. Pretreatment systems to clean and pretreat the substrate range from $10,000 for a wand system to $350,000 for a modest conveyorized system. Cure ovens can cost $8,000 for a small batch type, up to $100,000 for a conveyorized type. Conveyors can cost $300/ft or more (installed).

Question

Is there a way to correct oil or grease stains without reworking the product? We currently attempt to use matched paint or resort to sanding and recoating finished product. Recoating tends to leave an orange peel effect.

Answer

These stains are indicative of residual oils left on the part prior to powder coating. They are possibly "bleeding" from hidden areas, such as at spot-welded joints. In any case, the stained area will probably have a coating failure before other areas of the part. For consistent part quality, you must sand the area and recoat.

The orange peel effect on recoated parts is a result of the first coating insulating some of the part ground. This situation can be improved by applying thinner coats, reducing the gun voltage, or using a powder with higher flow characteristics. You can also lightly sand the entire part to remove some of the first coat, or completely strip the part to eliminate the part ground problem entirely.

If potential coating failure isn't your primary concern, then you can try cleaning the stained area with solvent and touch up with a compatible liquid paint. Your powder supplier can recommend an appropriate paint formulation. Be aware that the reworked area will not perform as well as the original powder-coated surface.

The best solution for your problem is to eliminate oil or grease stains on the parts entirely. Review your pretreatment system and its chemicals to evaluate if you have selected the best method to clean and pretreat your parts. Solution impingement, chemical selection, chemical strength, tank heat and pump pressure all affect the cleaning action of your system. Work with your chemical supplier to correct this problem.

If the problem is caused by soil entrapment in spot-welded areas, you can modify this process. By removing oils from the metal surfaces prior to spot-welding, the oil will not bleed out after the part has been coated and placed in the cure oven. **P&SF**