Powder Coating—Should You Make the Switch?

By Paul D. Lovett

Powder coating is an exciting growth segment of the surface finishing industry. Sales of powder and related equipment in the U.S. are already approaching $1 billion annually, and certainly exceed that amount in other parts of the world, particularly in Europe. A good economy has stimulated conversions to powder coatings in recent years, and growth of this technology will be sustained for a long time, because it is founded on basic restructuring of the coatings market. Although competitive positioning has hurt profits for some, those who sustain and grow their businesses will ultimately be rewarded by a strong market position that will generate cash.

The development of powder technology originally was motivated by the need to meet legislated restrictions on solvent emissions. Because the powder coating process eliminated solvents, manufacturers of metal products and custom coaters began to install powder application systems.

Now, some 30 years after its introduction, powder technology has progressed so that decisions are being made to use it for other reasons—either because the performance of the finished coating is better, or because the applied cost is lower than that for traditional liquid coating systems.

Numerous products are converting to powder coating. Conversions have been made by appliance, metal furniture, and sports and recreational equipment manufacturers. Lawn and garden equipment, farm, construction and industrial equipment builders are using powder, as are architectural metal suppliers. Powder technology has become widespread in the auto industry for functional coatings on underbody parts. Its use on the exterior of motor vehicles is rapidly expanding and has potential for explosive growth.

Should You Make The Switch to Powder?

To what extent should you, the surface finisher or custom coater, be a participant in the powder coating market? If you already are coating with liquids and your volatile organic compounds (VOCs) are not a problem, you cannot ignore the market being driven to powder by customer specifications. If your customer’s competitors switch to powder, your customer is likely to do the same.

What strategies are available to you? If you are a participant already, should you expand? To answer these questions, you need to consider information about the market ... about the competition ... and about yourself.

The fact that it is a fast-growing, billion-dollar market does not necessarily mean that you can make money in the business. Every piece of that market in existence today is already accounted for. You must either take it away from a competitor or look for new business. The trick is to be in position when that business matures—without going bankrupt first!

No company can be all things to all people, and that’s good. It gives the little guy an opportunity to focus on a segment of the market that the larger regional or national competitor doesn’t have time to consider.

Although bigger companies will invariably be able to purchase raw materials cheaper and develop other economies of scale, they may not be able to gain the edge in custom service, delivered cost, delivery time, and marketing intensity that can be offered by a more localized effort.

The Market Situation

Total annual sales of powder coatings in the U.S. are estimated to be $730 million. Sales of powder application services are a considerable multiple of that—well into the billions—while yearly sales of associated equipment is estimated to be nearly $100 million. The overall powder market is estimated to be growing at a rate of 11–18 percent per year, in contrast to an economy that grows at three to four percent annually, and a paint industry that plods along with the economy.

Four key issues contribute to the success of powder coating:

- Environmental pressures
- Demand for improved quality
- Declining costs
- Proven technology

Environmental Pressures

Environmentally driven pressures on manufacturers to reduce solvent emissions continue to expand under both federal and state mandates. Powder coatings are devoid of solvents, and outperform any of the traditional liquid coating alternatives. Not only does powder coating eliminate VOC emissions, it often reduces hazardous waste generation to a fraction of previous levels.

A manufacturer’s options for eliminating VOC emissions are to: Invest in a new coatings line, shut down its line and outsource its coatings requirement to a custom coater, or install abatement equipment. Companies are pursuing all three options.

The fact that a company outsources its coatings requirements does not necessarily mean that powder is used. If a company elects to use outside services, it does not always specify that the coating be applied with powder. Often, it will only require that the coating meet the customer’s specifications for performance.

The attractiveness of your market as an existing or prospective custom powder coater is partially a function...
of the intensity of regulatory control on emissions. The fact that you are not now in an intensely controlled geographic area does not mean that you cannot compete. You need to know what the state of regulatory control is for your region, and also to what extent competitors have already positioned themselves to provide powder coating services in your area.

Demand for Improved Quality
The second “engine” driving the growth of powder coating is the increasing demand for quality. Powder offers a coating with better performance than the system of coating it typically replaces. Companies of every size are demanding standards of quality never before required, making corporations more sympathetic to spending requirements that improve quality. It is a means of gaining strategic advantage.

Can liquid coatings achieve the necessary level of quality? Yes, but the alternatives are at least as expensive as powder and have more environmental concerns.

Declining Costs
Because of the expansion of powder coating processes and higher levels of demand for coatings services, the costs of powder production itself, as well as the cost of conversion from traditional liquid coatings systems, are dropping. In addition, companies are continuing to develop new manufacturing techniques that will reduce equipment installation, application and production costs.

Recycling of overspray product is another cost-saving advantage to powder. Transfer efficiency can increase from 30–90 percent or higher. A secondary benefit to conversion is reduction in hazardous material generation, which results in reduced disposal costs.

Although it is always a hurdle for companies, both large and small, to overcome resistance to conversion expenses, the investment is a worthwhile one.

“In spite of its shortcomings, powder coating is a star market performer.”

Proven Technology
Powder is no longer a novelty. It is a proven technology and, as more companies install powder finishing lines, still more gain confidence by recognizing its benefits and accepting its established position in the industry.

Conversion Constraints
There are, however, limitations to the use of powder. So far, it is typically limited to metal substrates. While there is occasional use on specialized plastics, and research continues on its use on wood, neither of these substrates are currently acceptable for widespread commercial use. Temperatures required for curing the powder exceed those that the substrate can withstand before deteriorating. Although possible, it is difficult to prepare wood or plastic to create the necessary static forces that make the powder adhere prior to heating.

Surface preparation requirements are more stringent for powder than for liquids. This generally limits the use of powder to factory-applied situations. Seven-stage cleaning processes are often used, raising the capital requirements for conversion.

There are exceptions, however. Powder can be flame-applied, allowing application outside the plant environment. Some custom coaters are generating business through this method. In addition, powder is being successfully applied to large, over-water bridges in Spain, Hong Kong, California and other areas. Even when factory products are made of metal, there are limitations to the use of powder. In some plants, the product being manufactured (such as construction machinery) is to be painted after assembly. If the product includes rubber, plastic or wood components—even small items, such as seals and gaskets—powder cannot be applied because of the required curing temperatures. Conversion to powder would require component pieces to be coated before assembly, which would necessitate a complete reordering of the production sequence or, in some cases, re-engineering of the product. (For the custom coater,

A Look at Potential Powder Markets

The markets that widely use powder coatings include appliances, metal furniture, sports and recreational equipment, automotive exterior and underbody parts, lawn and garden machinery, architectural accessories, and a wide variety of products produced by fabricated metal processors.

Certain types of metal products are more likely than others to use powder coatings and, as a result, some market sectors can be described as already having been largely converted to powder. Products made from square or round metal tubing, for example, are likely to be powder coated, as well as exercise equipment and most tubular outdoor casual furniture.

Lawn and garden equipment is assembled from relatively small, light-gauge sheet metal components that are coated prior to assembly. Consequently, such items as lawn mowers, snow blowers, garden tillers, spreaders and related equipment are almost all powder coated. Automotive parts, including colored and high-gloss parts such as wheels and oil filters, are widely powder coated. Underbody parts are often finished with a functional black powder coating. Commercial applications for powder include metal lamp fixtures and store shelving.

An Evolving Technology
A further consideration is the potential for new markets. The powder industry is working hard on formulation improvements that can compete with liquids. Examples of the evolving powder technology include:

- Architectural quality
- Plastic coating
- Automotive clearcoat
- Low-temperature curing

In Europe, metal architectural building products are often powder coated. This is not the case in the U.S., because of stringent durability standards that powder technology has
In a Position to Compete?

Is Your Company
becomes a problem.
powder market, so competition
recognize the attractiveness of the
tions. Unfortunately, few companies
more frequently than one might
powder, lose heart in its potential, and
many companies report poor profits in
coating is a star market performer. Yet
still hesitate to add a powder line.
of just a few months, companies may
powder that achieve a payback period
to the investment. Although there are
and post-heat ovens add considerably
to the investment. Although there are
many examples of conversions to
powder that achieve a payback period
of just a few months, companies may
still hesitate to add a powder line.

In spite of its shortcomings, powder coating is a star market performer. Yet
many companies report poor profits in powder, lose heart in its potential, and
more frequently than one might expect, sell off their powder opera-
tions. Unfortunately, few companies recognize the attractiveness of the
powder market, so competition becomes a problem.

Is Your Company
In a Position to Compete?
As a custom coater, you need to
evaluate your potential as a new
entrant or an expanding participant in
the powder coating industry by
analyzing your company’s strengths
and strategic alternatives.
Study your business in terms of
market segments—what portion
involves coating metal products that
are conducive to powder technology?
The companies in your existing
customer base are the ones with
which you have developed the closest
relationship, and are therefore the
most likely to use your new powder
capabilities.
If you are in a geographic area
that includes potential customers, find out
to what degree they have converted to
powder already, and if they are using
outside services. A detailed market
study can improve your ability to
predict the level of powder coating
business you might expect. It is
typical for companies to make
investments of this sort on “gut feel,”
rather than on the basis of such an
analysis. However, companies can go
bankrupt by making investments
without first researching the market.
Contacts made during the initial
research are often the first sales calls
for the new business, and may provide
the necessary basis for getting the
financing to build your new powder
line. As emphasized earlier, always
consider the competition—is there
room in your area for another supplier
of powder coating services?

A Challenging Decision
As a custom coater in business today,
even one limited to application of
liquid, you have advantages over
start-up powder coaters. A reputation
for quality and a strong customer
base, combined with experience in
coatings practices, can position you as
a viable competitor. If you limit
yourself to liquid-based finishing,
however, you face a future loss of
business from customers moving to
powder.

The powder market is an attractive
one, and is the fastest-growing
segment of the finishing industry. But
success is not automatic. It comes
from a determined strategy that
ultimately leaves you with a competi-
tive advantage. Are you up to the
challenge? PASF

About the Author
Paul D. Lovett
Paul D. Lovett directs a 10-year-old consulting practice, P.D.
Lovett & Company, 1444 Hamilton St., Allentown, PA
18102. His company
provides business planning and
market research for industrial manu-
factoring corporations and privately
held companies.

Lovett holds a BS in engineering
from West Point and an MBA in
operations management from
Wharton, University of Pennsylvania.
Prior to establishing his consulting
practice, he was with Air Products and
Chemicals.

Low-temperature-cure powder formulations are
being researched that would reduce energy require-
ments and expand the market to manufacturers of larger
and bulkier metal fabrications, as well as to plastics.
Reinforced plastics are currently being powder coated
for use as body panels on some automobiles.

Changing Competitive Structure
The powder industry is in a state of constant change.
Every time a custom coater adds a powder line, the
competitive structure of the market in the area surround-
ing that plant is affected. Many smaller companies that
have been focused on liquid for the industrial or OEM
sector are now installing equipment to manufacture
powder, and others are making significant capacity
additions to their existing powder lines.

Is there room left in your area for another supplier of
powder coatings services? If you act now, you could
give yourself a competitive advantage in a market that is
growing fast. ❑