

PPG OPTIMA SOLUTIONS™

Total OEM and Tier Supplier Success Platform



We protect and
beautify the world™



Our Solutions. *Your Success.*

Vehicle manufacturers and parts suppliers face significant daily demands related to productivity, quality, unit cost, sustainability and more. Yet, finding the time, energy and resources to tackle these challenges – much less identify hidden opportunities for operational improvement – is becoming more difficult every day.

PPG Optima Solutions™ exists for this reason. We help vehicle OEMs and Tier suppliers turn challenges into wins. Our success portfolio is built on PPG's decades-long leadership in all coating layers applied in vehicle assembly and parts manufacturing operations.

If you need to identify and implement process enhancements, meet ever-rising sustainability targets, improve quality, increase productivity and reduce costs, your path to success is clear with PPG Optima Solutions.

We invite you to share your challenges, goals and ideas with us. Our team of skilled automotive coatings specialists will respond with a comprehensive plan for success. Throughout the planning and execution phases, we can work in close collaboration with your team members or provide turnkey solutions that enable your organization to focus on other important areas.

When it's time to turn the possible into concrete, measurable results in your production operations, PPG Optima Solutions is ready to deliver.

Our Platform



Optima In-Sites

Advanced data analytics and problem solving



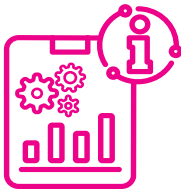
Optima Products

Specialty indirect products and facility coatings



Optima Services

Paint shop troubleshooting and partnership solutions



Optima Pilots

New system concepts and model optimization

Your Opportunities

Dirt and Defect Reduction

See Pages 3-4

Application, Color and Process Optimization

See Pages 5-6

Increased Sustainability

See Pages 7-8

Plant and Equipment Protection

See Page 9

Our Mission:

PPG develops strategic partnerships with automotive OEMs to provide innovative services and tailored solutions through our global network of experts.

Your Opportunity:

Dirt and Defect Reduction

Dirt and other contaminants can follow multiple paths into your production operations. However, regardless of how contaminants enter the manufacturing environment, they are likely to directly impact quality, productivity and unit cost.

PPG Optima Solutions™ offers a data-driven approach to identifying and eliminating the root causes of contamination and defects.

Advanced Data Analytics

The Optima In-Sites data analytics platform comprises multiple modules that enable customers to collect and analyze critical data related to specific areas of opportunity. The Dirt and Defect Module helps users isolate unwanted variables within the paint shop environment and develop and test a variety of corrective actions.

Equipment Cleaners

E-coat carriers, racks and other equipment are common sources of contamination. Optima Solutions offers a series of innovative, easy-to-clean PPG OptiGuard™ coatings that not only resist buildup of e-coat, paint and other materials, but also reduce the time, effort and expense of cleaning this equipment.

Purge Solvents and Maintenance Products

We also offer an array of specialized purge solvents, maintenance products and e-coat cleaners that complement a total “Clean Car” strategy.

Detackification

Using the right detack product can help reduce spray booth maintenance and minimize the risk of contamination. PPG Green Logic® paint detackifier has been singled out by OEMs and Tier suppliers as “best in class” and nominated for numerous environmental awards.



...e customers, providing outstanding value,
...rior technology and knowledge.





Your Opportunity:

Application, Color and Process Optimization

The paint shop is arguably the most complex and cost-intensive area of many OEM and Tier supplier production facilities. But this sophisticated environment can also be the source of measurable quality, productivity and cost improvements given the proper insight, strategy and execution.

Our team members know what works and what doesn't in real-life operating conditions. By combining their expertise, we can help deliver the changes you're looking for.

Common projects include:

- Process optimization
- Quality improvement
- Labor cost reduction
- Robot programming
- Custom training
- Application and pilot testing
- Technical laboratory services

Lead with 'In-Sites'

PPG has developed proprietary tools for the collection – both on-site and remote – and analysis of paint shop data. We use these solutions to help customers identify and anticipate issues related to overall appearance, film build, color appearance and color harmony. This insight helps drive fast, smart decisions that generate measurable results.





Partnership Solutions

Our in-plant professionals can help generate savings in a variety of functional areas, including mix room, paint booth, water system, warehouse, logistics, detack management and more. In many cases, we can assume these responsibilities to allow customer personnel to attend to core activities.

Training

Optima Solutions regularly creates custom, expert-led training programs that foster improved performance within OEM and Tier supplier facilities. We can help address virtually any knowledge or skill gap – and any coating layer – impacting quality, productivity, cost, safety, sustainability or other concern.

Troubleshooting

Are you experiencing color, appearance or film build compliance issues? We can apply multiple tools, including data analytics, to pinpoint and eliminate these problems, saving time and money while improving unit quality.

Application and Pilot Testing

Every application test or pilot launch can consume countless hours of production time and manpower. Similarly, each paint shop technology and/or process change – unless fully validated under real-world conditions – can introduce unwanted risk to a high-volume production environment.

Optima Pilots enables customers to reduce the costs and eliminate the risk associated with these often complicated projects, no matter the scale, by handling all necessary validation within one of PPG's full-service application test facilities.

Many OEMs and Tier suppliers use this service to validate new layering strategies, coat and test pilot units – including electric vehicles – and, above all, reduce costs and eliminate risk. Our capabilities range from sophisticated technical laboratory services and application testing available in multiple facilities worldwide to cleaning, pretreatment, e-coat, sealer application, topcoat and curing of complete vehicles at the Optima Pilots campus in Flint, Michigan.

The success of any business is now measured not only in sales and profits but also environmental sustainability.

Your Opportunity:

Increased Sustainability

The success of any business is now measured not only in sales and profits but also environmental sustainability. Vehicle OEMs and Tier suppliers have made tremendous strides in reducing their environmental impact, but corporate targets and regulatory requirements become tougher each year.

Optima Solutions has a strong track record of helping customers boost sustainability in a variety of ways, including:

- Reducing water and energy consumption
- Improving wastewater management
- Reducing VOC emissions
- Eliminating hazardous chemicals
- Implementing lifecycle management practices

Water Treatment

Optima Solutions has helped customers reduce water consumption and wastewater treatment costs through a comprehensive strategy that includes a detailed assessment of equipment, processes and systems; elimination of waste; and the use of improved water treatment products and practices. In the case of one manufacturer, this approach resulted in an annual savings of nearly \$26,000.

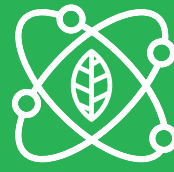
Dry Booth Cleaning

Dry spray booths used in some production operations require time-intensive manual cleaning using potentially hazardous cleaning agents. Optima Solutions helps customers eliminate this risk through the use of highly effective, non-toxic, solvent-free paint, grease and adhesive remover.

Lifecycle Management

When is a “sustainable” product not environmentally friendly? Our professionals can help your facilities identify chemicals that purport to be environmentally friendly but have negative post-use and end-of-life impacts.







Your Opportunity:

Plant and Equipment Protection

PPG is not only one of the world's largest coatings providers – we're also a leading global supplier of paint and other coatings for the industrial, architectural, marine and other markets. Our vast portfolio includes thousands of innovative products that can address the needs of customers in multiple categories – including the floors, walls, equipment and other surfaces within your facilities.

Ask your PPG Optima Solutions representative how we can bring additional value – and help further reduce your operating costs – in multiple projects, whether plant expansion, maintenance and renovation, equipment protection or other.

OptiGuard™ Series

The PPG OptiGuard Series of easy-to-clean solutions helps dramatically reduce the time, cost and safety concerns associated with maintaining vehicle racks, carriers, jigs and rigs in the paint shop. Optima Solutions works with qualified applicators to offer a turnkey solution that includes blasting and painting, transportation and logistics management, carrier removal and installation, and overall project management.

Reduce Cost and Risk

Conventional coatings used on carriers, rigs and other paint shop equipment can be very difficult to clean, often requiring the use of expensive labor and potentially dangerous high-pressure spray equipment. OptiGuard Series coatings help dramatically reduce build-up of overspray and other materials and can be quickly cleaned using lower spray pressures.





For more information visit the Automotive OEM Coatings website:

PPGAutoCoatings.com

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PITTSBURGH, PA

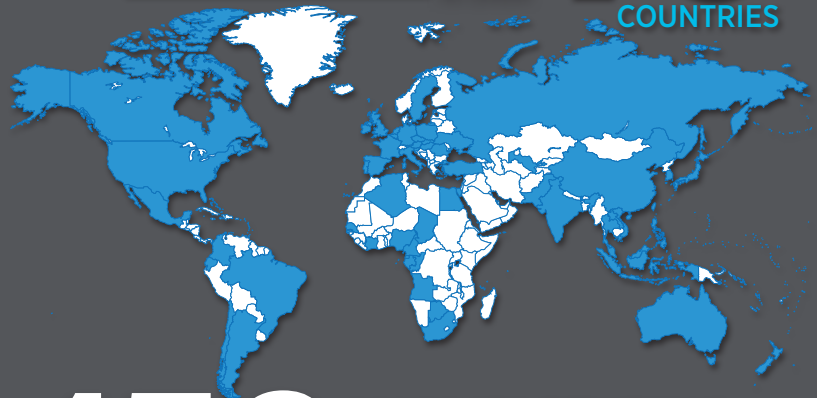
GLOBAL
LEADER IN
INNOVATION
COLOR
and
SUSTAINABILITY



LEADER
IN THE
INDUSTRIAL
TRANSPORTATION
CONSUMER PRODUCTS
& AFTERMARKETS



OPERATIONS
IN OVER **70**
COUNTRIES



156 MANUFACTURING
FACILITIES

 **1,000**
R&D EMPLOYEES



We protect and
beautify the world™

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