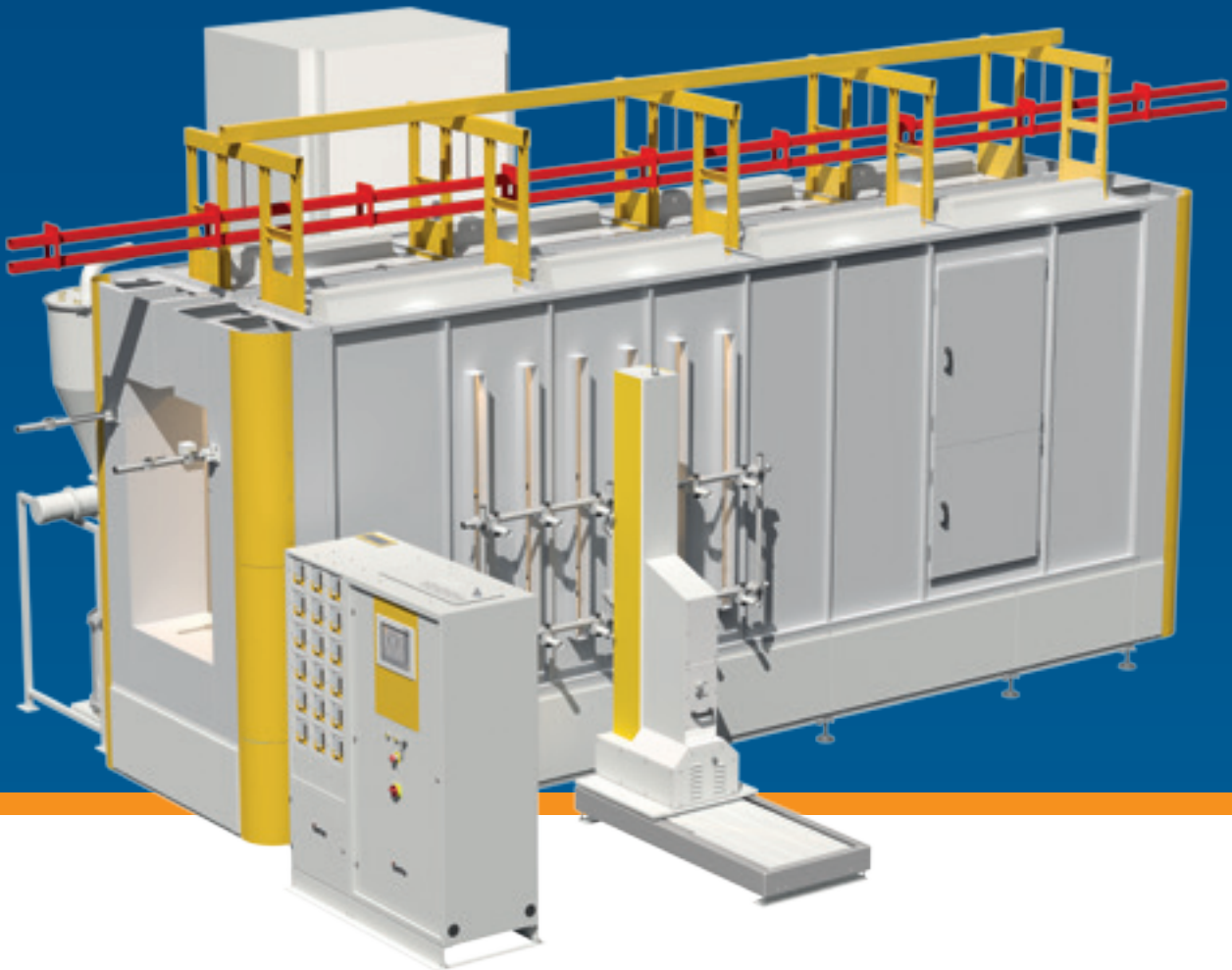


Enamel Application Concepts

Perfect coating results with abrasive enamel powder



Enamel powder coating systems

Gema offers a full range of solutions, developed specifically for the enamel coating.

Wear-resistant design, high transfer efficiency, outstanding application performance and short return on investment are the common advantages of our enamel systems.

Your global partner for high quality powder coating

 **Gema**

Enamel Application

Concepts: Ideal solutions for abrasive enamel powder



The best enameling conditions

The Gema booth systems create ideal airflow conditions for an efficient enamel application. The outstanding separation efficiency of the sinter-lamella filters avoids enamel losses and contamination of the working environment.



Compact and gentle powder recovery

The recovery system is integrated in the booth wall. This very compact solution preserves the enamel powder quality in the recovery circuit. The compact design and mounting ensures no enamel deterioration and better application quality.

Robust and user-friendly

The simple and robust design, long life filters and other system components makes the Gema enamel booths the ideal solutions for a reliable system with reduced maintenance costs and quick return of investment.

MRS Single-Color Booth: Automated floor cleaning

The squeegee system cleans the floor of the booth continuously and powder is automatically reclaimed.

EquiFlow Multi-Color Booth: Intelligent air distribution

EquiFlow technology ensures a harmonized air flow in the automatic coating zone and optimal air extraction at the booth entry and exit.

Compact and flexible, tailor-made to your needs:

The **MRS** system for **Single-Color Applications** can be designed in a wide variety of configurations. Suitable for white or ground enamel, for flat parts, boilers or for cavities, in a pure automatic configuration or combined with one or more manual coating stations - the MRS is the perfect solution for all kind of applications. Its compact design is very easy to integrate into any plant layout.

The **EquiFlow BA04-E** booth is specially designed for **Multi-Color Applications** that require color changes.

The use of non-conductive plastic materials for the booth construction and its self-cleaning floor prevent powder accumulations. One operator can clean the booth in minimal time. Air extraction is concentrated where it is needed most, at the booth's entry and exit. This prevents a contamination of the environment and creates an ideal airflow.

OptiFlex:

The core of the electrostatic coating process



OptiGun® - Designed for wear resistance and ease of color change

The OptiGun GA03-E automatic powder gun is compact and easy to maintain. During color changes, the gun is rapidly cleaned and ready to be used again. All the components are easy to clean and designed for wear resistance.



OptiSelect® manual gun with remote control

Keep eyes on the work piece, not on the control unit! With the remote control on the back of the OptiSelect GM03-E, the right program can be selected, even if the control module is out of reach.

OptiStar® - All parameters at a glance

With the OptiStar and MagicControl® control modules you have precise control of all coating parameters. Clear symbols, easy programming and perfect reproduction of coating results contribute to significantly increased coating quality.



The most advanced powder application technology

The enamel powder guns are perfectly matched to the OptiStar control unit and offer the highest degree of coating efficiency and user-friendliness:

- High transfer efficiency with every type of powder thanks to the 100 kV high-performance cascade
- Constant powder delivery and continuous powder charging for a uniform coating thickness
- The precise charge control (PCC) mode ensures greater accuracy and adjustability of current settings below 10 microamperes
- Patented Digital Valve Control (DVC) for accurate powder delivery control
- A display pilot ensures easy access to pre-set and customized coating programs
- Reduced maintenance costs through wear-resistant design

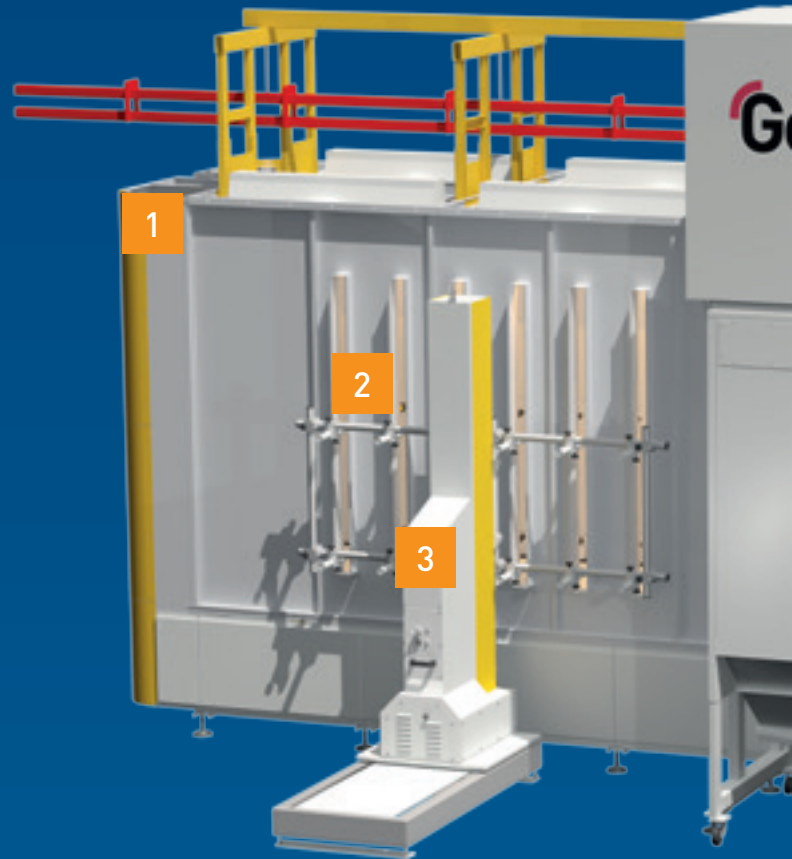


SuperCorona®

The optional SuperCorona ring neutralizes free ions and avoids crater formation.



MRS Single-Color Booth



1

Booth design customized to your needs

The booth floor is flat and allows an easy and safe access for maintenance. Booth walls made of stainless steel guarantee highest robustness and wear resistance.

2

The heart of the enamel coating

High transfer efficiency, uniform enamel application, optimal penetration into any geometry, the Gema enamel powder guns represent the heart of the enamel coating process. The robust construction with wear-resistant components is another highlight of the guns.

3

Coating in every direction

The Gema reciprocators and axes cover all movements. No matter what configuration you need, whether horizontal, vertical or synchronizing axis, in-out or rotary axis, Gema has a solution for all your requirements. The high precision synchronized axes ensure the best quality for internal applications.



4

For a good atmosphere

The new sinter-lamella filter elements have an outstanding separation efficiency of 99.99%. The fan motors fully comply with the standards of European Motor Efficiency Class IE3. As a result the filters are extremely energy efficient. Thanks to their very robust construction they have an exceptionally long life with the lowest maintenance costs.

5

Control the coating process

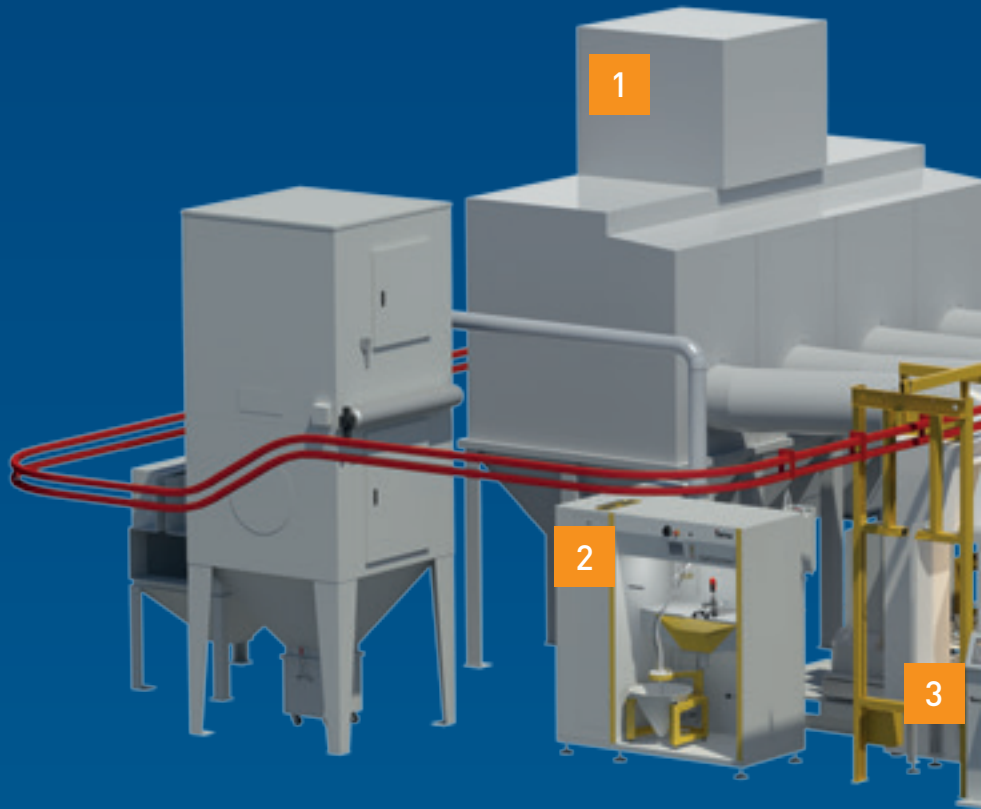
Do you want to save enamel powder? Do you insist on high user comfort combined with the highest coating quality? The versatile CM30 touch panel with integrated PLC for axes and gun controlling enables easy access to all coating parameters at any time.

6

Apply the right amount of enamel powder at any time

The compact MRS enamel powder circuit aims for ease-of-use, continuous and consistent enamel feed and extended life of components. The injectors, hopper and recovery system match perfectly with one another and feature a robust design. A wide variety of fresh powder feed systems and sieving solutions are designed to meet your quality requirements.

EquiFlow BA04-E Multi-Color Booth



1

For a good atmosphere

The high-performance extraction of the MagicCompact EquiFlow Enamel version guarantees that the system meets all safety regulations. The filter units are characterized by their extremely long lifetime, and their high separation efficiency.

2

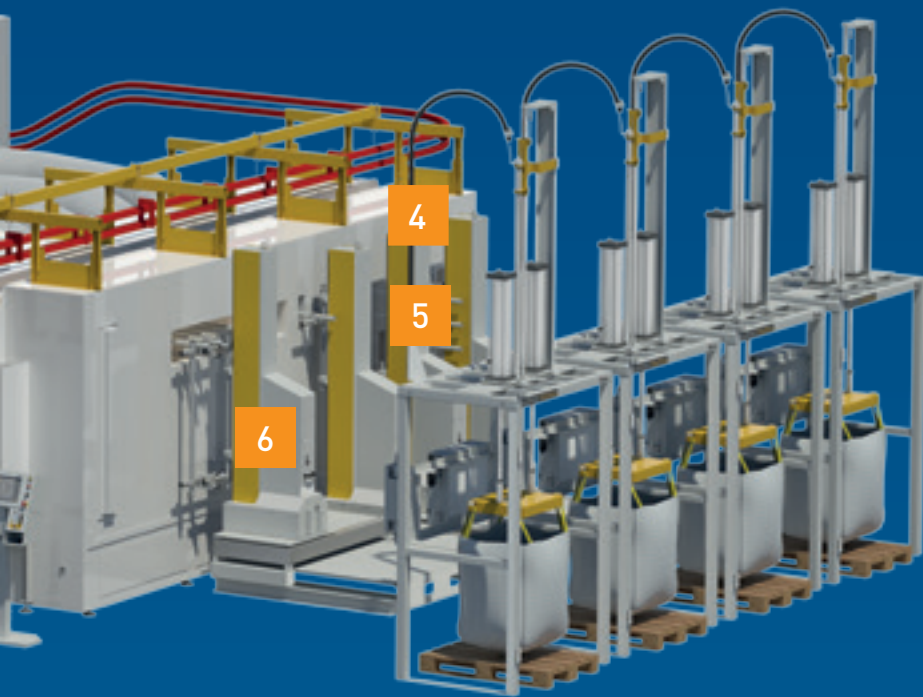
Apply enamel powder in different colors

The Enamel powder circuit guarantees continuous and consistent powder feed. All powder management components are optimally matched and ensure perfect working conditions. The fresh powder feed and sieving solutions are designed to meet challenging quality requirements. The OptiCenter OC02-E version with OptiFlow EI08 injectors is designed for color changes. The advanced version OC03-E with OptiSpray AP01-E pumps is designed for quick color changes and constant powder outputs.

3

Control all coating parameters

Powder savings are important. Repeatable coating results and operator comfort have priority. The versatile control system CM30 with touch panel provides continual access to all parameters of the coating process.



4

A completely different kind of sandwich

The MagicCompact EquiFlow Enamel BA04-E version features a sandwich-wall booth construction. As a result powder accumulation is minimized on the booth walls. The booth floor is equipped with an automatic blow-off system to prevent powder deposition.

5

The heart of the powder coating

High transfer efficiency, consistent powder output and uniform powder application: Gema enamel powder guns are the heart of the powder coating process. A design with wear-resistant components is a prerequisite for optimal enamel applications. The robust design of the Gema enamel guns guarantees highest coating efficiency.

6

Coating in every direction

The Gema reciprocators and axes cover all movements. No matter what configuration you need, whether horizontal, vertical or synchronizing axis, in-out or rotary axis, Gema has the right solution for all your requirements. The high precision synchronized axis ensures the best quality for inside coating applications.

OptiCenter: Multi-color powder management

Efficient powder management

The core of the OptiCenter is the OptiSpeeder powder hopper. This unique container concept prevents powder loss during operation. Control of the entire powder circuit is done fully automatically and precisely. The result is extremely low powder consumption and an excellent coating result.



Improved coating quality

The suction pipes for the injectors are considerably shorter than in conventional powder centers. These features result in improved uniformity of the powder flow and improved coating quality. The OptiCenter can be equipped with different fresh powder supply systems and therefore ensures a constant powder level inside the hopper.



Color change

The overall design of the OptiCenter allows an optimal and easy color change.

Versions

Two OptiCenter versions are available:

- OptiCenter OC02-E equipped with OptiFlow EI08 injectors
- OptiCenter OC03-E equipped with OptiSpray AP01-E application pumps

OptiFlow Enamel Injector: robust and precise

- Precise and reproducible powder output
- Low compressed air consumption
- Minimized wear of the injectors, guns and hoses
- Long lifetime of the wear parts

OptiFlow EI08



OptiSpray AP01-E



OptiSpray AP01-E: constant and reproducible output

- Stable powder output over long period of time
- Powder output 50 - 300 g/min
- Constant film build by reproducible powder output
- Automatic cleaning for color changes
- Easy Maintenance
- Easy system integration
- Equipped with automatic diagnostic function

Manual Coating with Enamel Powder

OptiSelect® for enamel powder

The OptiSelect GM03-E gun is made of high performance Ceramic materials. The light-weight and ergonomic design gives you the power and control to achieve the best looking finish with enamel powder.

- The integrated 100 kV cascade delivers the highest transfer efficiency. This means more powder on the work piece, less powder in the recovery system!
- With the remote control on the back of the OptiSelect GM03-E, the right program can be selected, even if the control module is out of reach.



Manual unit OptiFlex®2 FE

The OptiFlex 2 FE manual unit is specially designed for manual enamel applications. The unit with 50-litre fluidized powder container is equipped with an OptiSelect GM03-E enamel manual gun and OptiStar gun control. The product highlights are:

- State-of-the art design and high-performance materials for application of abrasive enamel powder
- OptiSelect GM03-E enamel gun and OptiFlow injectors made of robust and wear-resistant Ceramic materials
- Wear-resistant and versatile nozzle assortment compatible for automatic equipment
- Compatible with all enamel powder types
- Best coating results even for complex geometries



Manual application of enamel powder

The OptiFlex 2 FE puts the world's most advanced manual powder coating technology in the palm of your hand. Spray enamel powders with ease, coat complex geometries with outstanding efficiency and quality. Complex part geometries won't slow you down. OptiFlex 2 FE simplifies the coating of difficult shapes by applying the enamel powder precisely where needed.

Wear-resistant spray nozzles provide excellent powder distribution and penetration needed to coat difficult parts.

Enamel Powder Circuit



MRS Single-Color Booth

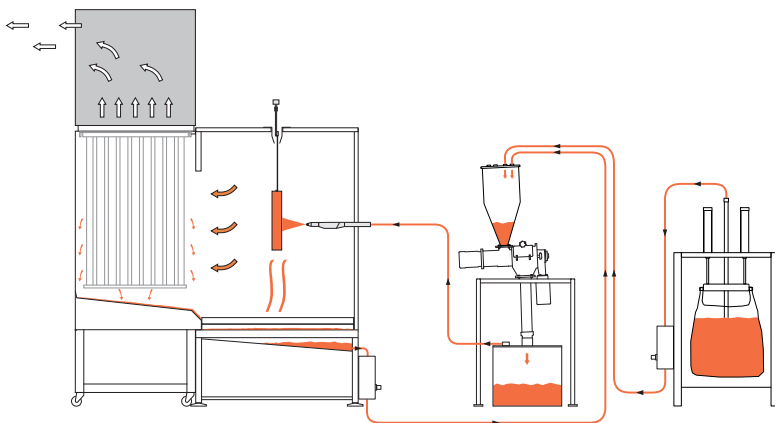
The enamel overspray is recovered by the filter unit that is directly integrated in the booth wall. The reclaimed powder is continuously removed from the booth floor by the squeegee unit and reclaimed via the fluidized channels. Before returning into the main hopper the enamel powder passes through a magnetic separator and a sieving machine that remove all metallic contaminations.



EquiFlow BA04-E Multi-Color Booth

The booth floor is equipped with an automatic cleaning system to prevent powder deposition. The enamel overspray is recovered via a central suction channel in the booth floor and short ducting into the separate filter unit. Before returning to the main hopper, the enamel passes through a magnetic separator and a sieving machine that remove all metallic contaminations. An automatic switching device connected to a second filter allows the operation with an additional color.

Closed and efficient powder circuit



Powder circuit MRS booth - single-color application

Gema Enamel Booths: Boost your productivity and profitability

Compact and space-saving design

The booth can be easily integrated into a broad variety of systems concepts.

Ideal handling of the enamel powder

The gentle and efficient recovery system prevents the deterioration of the recovered enamel powder and ensures its optimal usage.

Low maintenance cost

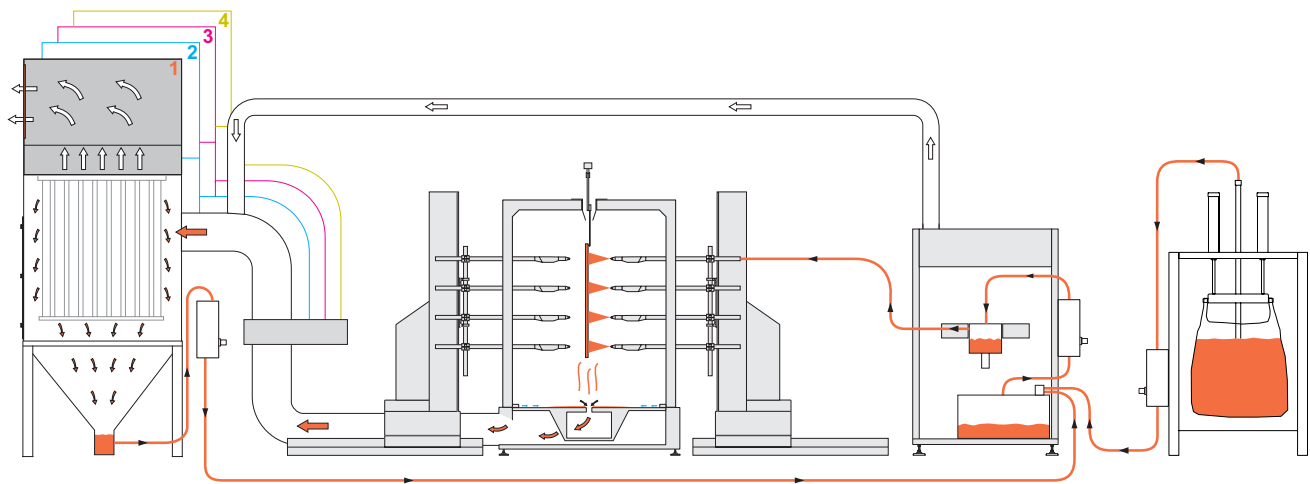
All the main components are made of long-life ceramic material. This significantly reduces the maintenance requirements and costs.

Highest quality and reproducible results time after time

Our user friendly interface allows you to store your valuable object-related programs and to repeat perfect coating results at any time.

Enamel powder savings

Accurate powder delivery, optimal electrostatic charging, high transfer efficiency are the key to obtain uniform coating thickness and optimal enamel consumption.



Powder circuit MagicCompact EquiFlow BA04-E booth - multi-color application

Gema Switzerland

Your global partner for high quality powder coating

Take advantage of our expertise and experience from more than 50 years of electrostatic powder coating applications. From simple hand coating through to fully automated powder coating, we offer solutions that meet the demands and requirements of customers around the world in a wide range of industrial sectors. A global service network ensures you always get professional support, at any time and any place!

Gema is part of Graco Inc. Our goal is to help our customers to increase their productivity while creating attractive, long-lasting products. Our experts continually set new standards in the surface coating industry.



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