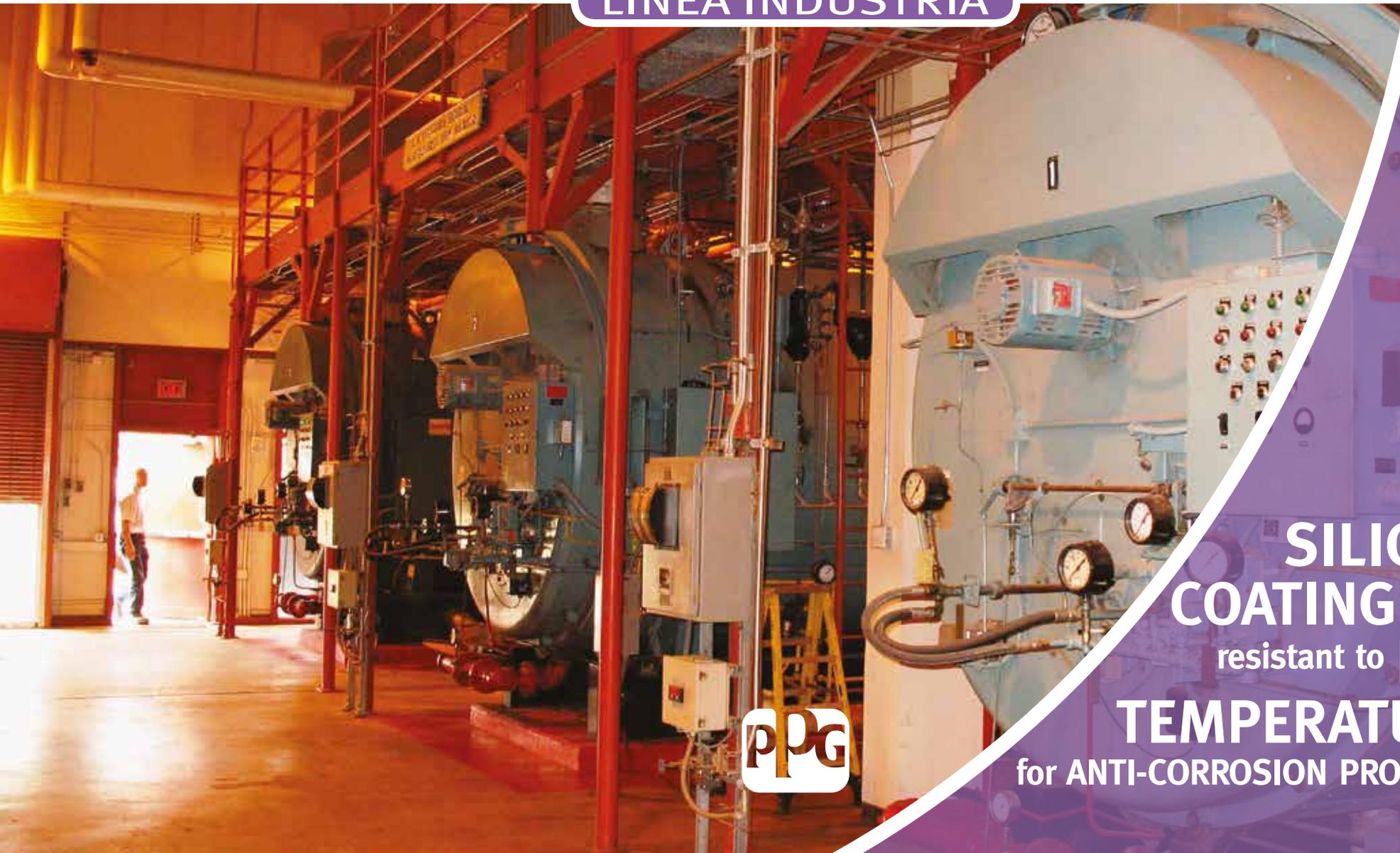


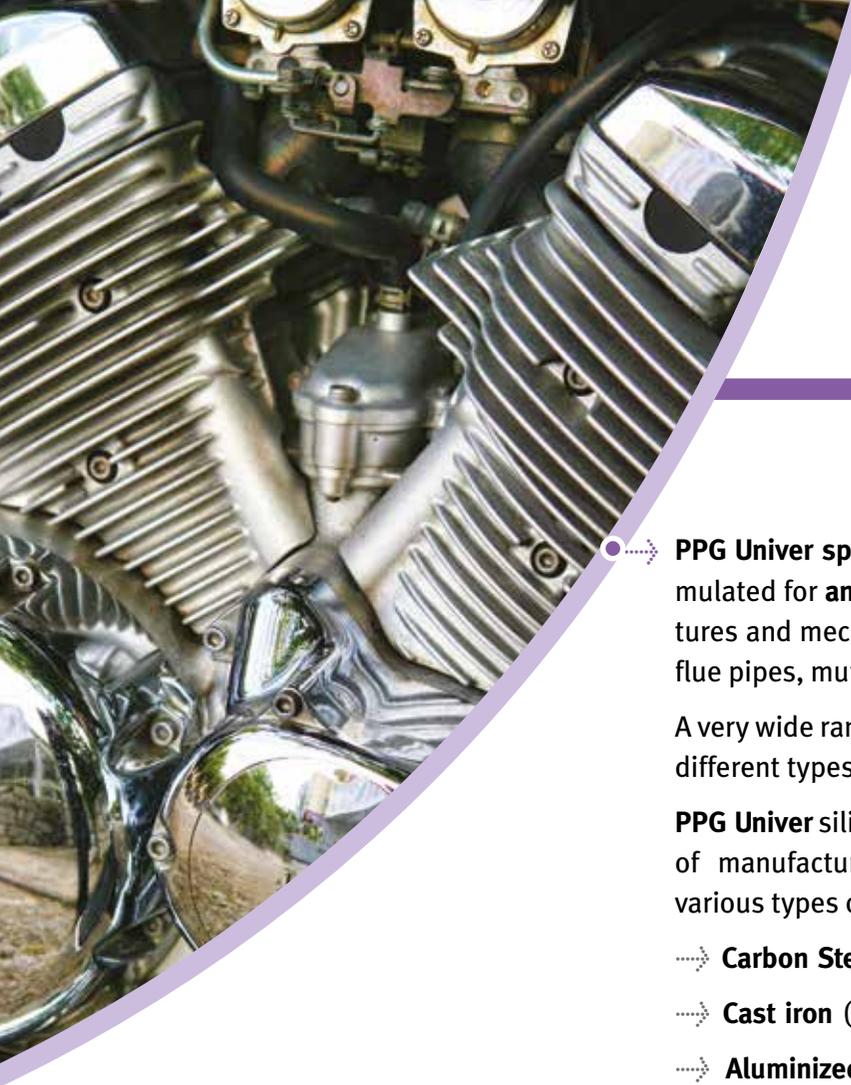


LA FABBRICA DEL COLORE.

LINEA INDUSTRIA



**SILICONE
COATING** systems
resistant to **HIGH
TEMPERATURES**
for ANTI-CORROSION PROTECTION



Silicone products

- PPG Univer spa is European leader in the production of heat resistant silicone coating systems at high temperatures formulated for **anti-corrosion protection** and aesthetic finish of all metals used in industry for the production of steel structures and mechanical components subject to very **severe thermal pressure**. To give some examples: boilers, chimneys, flue pipes, mufflers and silencers for combustion engines, engine cylinder heads, reactors, smokestacks.

A very wide range of liquid coatings, formulated on a complex silicone system, allows to achieve the best performance on different types of supports with products and specialized coating systems for use on each specific type of metal.

PPG Univer silicon paints and thermo stable anti-corrosion protection coating systems are used by an increasing number of manufacturers of machinery, equipment and components that operate in severe thermal and mechanical strain on various types of supports:

- **Carbon Steel** (with resistance up to **650°C** subject to continuous and abrupt changes in temperature - thermal shock)
- **Cast iron** (with resistance up to **750°C** in continuous phase and subject to thermal shock)
- **Aluminized steel** (with resistance up to **650°C**, temperature close to the melting point of aluminum, in both continuous phase and subject to thermal shock)
- **Stainless steel** (with resistance up to **800°C** in continuous phase and subject to thermal shock)
- **Aluminum and aluminum alloys** (with resistance up to **650°C**, temperature close to the melting point of aluminum, in both continuous phase and subject to thermal shock).



The research and development of our laboratories, guided by motivation and focus on the issues of environmental protection, health and quality of life in general, has allowed us to develop **formulations free from toxic pigments and low solvent emissions into the atmosphere**, resulting in **drastic reductions in pollution and risk factors**.

In addition to the traditional range of silicone solvent systems, PPG Univer's testimony to this commitment, has produced two different lines of **"environmentally friendly"** products with low environmental impact:

- **Line LOW VOC** - Silicon solvent **totally free from toxic components with a VOC content less than 15%**. The **LOW VOC** line is a **result of exclusive research of the PPG Univer brand** and presents **innovative formulation solutions that are unrivaled on the market**.
- **Water based Line - Water Soluble Silicone** **totally free from toxic components**.

An increasing number of manufacturers of machinery and equipment that are subject to severe thermal stress during operations, are currently choosing products and solutions of **PPG Univer**.



Products

THERMOZINC anticorrosive silicone primer with metallic zinc

It is the ideal primer in all coating systems for use on steel, which requires a **good passivation protection and corrosion inhibitor in addition to resistance to high temperatures.**

Resistant to severe thermal stress up to **750°C**, even in conditions of repeated thermal shock (rapid increase in temperature followed by a sudden cooling process).

Due to its special formula, rich in zinc metal, even in relatively thick surfaces (25-30 microns), **THERMOZINC** ensures good anti-corrosive performance. Resistant to **300 hours** of Salt Spray test in conformance to ASTM B 117 standards.

Especially recommended as first coat corrosion inhibitor for carbon steel and cast iron, it is also widely used on aluminumized steel and ferritic stainless steel (eg AISI 409 - AISI 439).

Silicon system air/oven “Sicodur”

Given that all the liquid silicone coating systems harden in drying ovens at a temperature of at least 180°C for a time lapse of 25/30 minutes, the products of the range **SICODUR** are designed to achieve a sufficient degree of drying even at room temperature and can therefore be used in all those cases where a coating plant equipped with drying oven is not available.

SICODUR is a silicone coating finish with matt or semi-matt aspect (max 25 gloss), available in black, micaceous gray and in different shades of metallic gray. It tolerates temperatures of **650°C** even under repeated thermal shock, and when in contact and abrasion with gasoline, alcohols and detergents.

Can be applied on the primer Thermo zinc or directly in a single coat on carbon steel, cast iron, aluminumized steel, aluminum and aluminum alloys.

Hardens in the drying oven (180°C for 20/25 minutes), can also reach a satisfactory degree of drying in the atmosphere at ambient temperature (touch dry in 30/40 minutes at 20°C).



Oven drying silicone systems

PPG Univer offers a wide range of oven drying silicone coatings formulated to meet the different needs of aesthetic finish and performance: products and specialized coating systems, stable at high temperatures and especially formulated for different types of metals to be coated. Semi-gloss or matt finish (up to 30 gloss), with smooth or textured aspect, from deep-black to metallic greys and from micaceous to silver grey.

THERMOBLACK Matt Black Silicone enamel

Thermoblack is a silicone coating enamel, with black matt finish. Hardens in a drying oven (at least 180°C for 20/25 minutes).

It can be applied on the primer Thermozinc or in a single coat directly on carbon steel, cast iron, aluminized steel and aluminum. Tolerates continuous temperatures of **650°C**, and extreme conditions of repeated thermal shock.

Resistant to immersion and in direct contact and abrasion with gasoline, alcohols, aromatic solvents and detergents.

THERMOSILVER Metallic Silver Grey Silicone enamel

Thermosilver is a silicone light gray silver (aluminum) finish. Hardens in the drying oven (at least 180°C for 20/25 minutes).

It can be applied on the primer Thermozinc, or in a single coat directly on carbon steel, cast iron, aluminized steel, aluminum and stainless steel. Tolerates continuous temperature of **650°C**.





Products

THERMOSINT K1 Semi matt black Silicone Enamel

Semi matt black Silicone finish (8-10 gloss), formulated with **specific stabilizing pigments that significantly limit chromatic variation in function of the operating temperature.**

For use on Thermo zinc primer or in a single coat on all types of supports. Resistant to operating temperatures of **650°C**, and in conditions of thermal shock on carbon steel, aluminized steel and on aluminum.

On cast iron and stainless steel the product is resistant to temperatures of up to **750°C and in conditions of thermal shock.** Hardens in a drying oven (minimum 180°C per 20/25 minutes). Resistant to immersions and to direct contact and abrasion with gasoline, alcohols, aromatic solvents and detergents.

Excellent stability of colors with moderate toning up to temperatures of 500°C - 550°C.

THERMOSINT K1 is therefore particularly suitable for the coating of aesthetic parts.

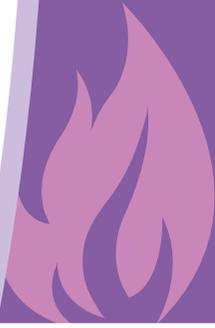
THERMOCERAMIC Silicone Extra Enamel

Silicone finish available in matt (gloss 3-5) and semi-matt version (8-10 gloss). **THERMOCERAMIC** is currently the top performance product of the entire PPG Univer range. Applied in a single coat (20-30 microns dry) on supports in stainless steel (AISI 304 austenitic and AISI 439 ferritic), It is **resistant to extreme strain up to 900°C and thermal shock with immersion in water at 20° C.** This product tolerates immersions, and direct contact and abrasion with gasoline, alcohol, aromatic solvents and detergents.

It hardens in a drying oven (at least 180 ° C for 30 minutes) and adheres to all metal surfaces in a single coat.

THERMOCERAMIC is applicable in a single layer on stainless steel, however, when treating supports vulnerable to corrosion, the product can be used on the primer Thermo zinc. Excellent color stability, it has very modest variations up to 500°C - 600°C.

The ability to tolerate extremely severe thermal stresses, combined with excellent aesthetic and mechanical characteristics and the excellent color stability of the color, makes **THERMOCERAMIC** particularly suitable for use in extreme conditions where high reliability to thermal stress is required.



INOXIL Silicone corrosion inhibitor enamel

Formulated with specific anti-corrosive and metallic pigments, **INOXIL** has a pleasant metallic grey aspect and is suitable for use in a single coat as anti-corrosion thermo-stable inhibitor on carbon steel and cast iron. A relatively modest layer of **INOXIL**, (30/40 microns), provides a good resistance to corrosion.

Hardens in a drying oven (at least 180°C for 20/25 minutes). This product tolerates immersions and direct contact and abrasion with gasoline, alcohol, aromatic solvents and detergents.

On carbon steel **INOXIL** is resistant to a temperature of **650°C** even in conditions of thermal shock. On cast iron can withstand a temperature of **750°C**.

TECNOBLACK - TECNOSILVER Silicon Enamels for Aluminum and Aluminum Alloys

Silicone coating products specifically formulated with special attention for the specific treatment of aluminum supports and aluminum alloys.

Both products harden in the drying oven (at least 180°C for 20/25 minutes). These products tolerate immersions and direct contact and abrasion with gasoline, alcohol, aromatic solvents and detergents.

TECNOBLACK and **TECNOSILVER** are equipped with excellent properties, thus enabling the mechanical rework of parts of equipment that have already been painted.

These products tolerate operating temperatures of **450°C - 500°C**. Semi-matt aspect, they are available in the colors black, metallic silver and tones of metallic greys.

The products **TECNOBLACK** and **TECNOSILVER** are especially recommended for coating engine cylinder heads in aluminum alloy and components for the motor and automobile industry.



The **eco-friendly** silicones

Silicone Low Voc - Environmentally friendly coating systems

The commitment of the research and development laboratory at **PPG Univer**, geared towards enhancing and improving environmental sustainability and safety conditions in workplaces, has enabled us to develop a complete range of silicone liquid coating paints with low impact on health and the environment.

The products of the **LOW VOC** range are totally free from toxic substances and have a **VOC content of less than 15%**.

The Volatile Organic Compound (VOC) is defined according to the EC Directive 1999/13 of 11/03/99.

The particular range of products of the **LOW VOC** formulation are **exclusively the result of research and development of PPG Univer and are currently unrivaled on the market.**

THE LOW VOC PRODUCTS ARE:

- 1- **Thermozinc Low Voc**
- 2- **The range Thermoblack Low Voc**
- 3- **The range Thermosilver Low Voc**
- 4- **The range Thermosint K1 Low Voc**
- 5- **The range Thermoceramic Low Voc**
- 6- **The range Tecnoblack - Tecnosilver Low Voc**

The technical and performance characteristics of each product and each product range can be referred to as already described for the corresponding non LOW VOC. The only variation is substantially constituted by the **drastic reduction of the VOC content and consequent improvement of emissions into the atmosphere.**

Water soluble silicone - Environmentally friendly water-based coating systems

The range of water - based silicone enamels is presented as an additional significant improvement in reducing environmental impact, especially with regard to the quality and quantity of emissions into the atmosphere.

This range consists of coating systems in water based solutions which harden in the drying oven (at least 180°C for 20/25 minutes). The products are all resistant to immersion and to direct contact and abrasion with gasoline, alcohols, aromatic solvents and various detergents. These products can tolerate a continuous temperature of **500°C - 550°C**, and to conditions of thermal shock (on carbon steel, aluminized steel, aluminum).

On cast iron, they resist to temperatures higher than **600°C** and thermal shock.

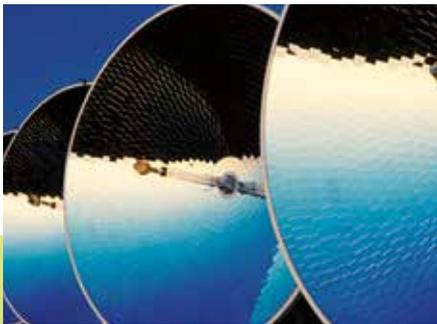




Bringing innovation
to the surface.™

**PPG Industries.
World leader,
and a great partner.**

PPG Industries is a global supplier of paints and varnishes for construction, marine, anti-corrosion, automotive and industrial sectors in addition to coatings, optical products, innovative materials, chemicals, glass and fiber glass. The **PPG Group, Pittsburgh Plate Glass Company**, is a world leader in technological research, with an ongoing and constant pursuit of innovation since 1883.



LA FABBRICA DEL COLORE.



UNIVER is an affiliate of the multinational PPG Group world leader in the production of paint products. **Since 1978** the company is involved in the production of **paints, enamels and coatings for the building construction, industry and anti-corrosion sectors.**

The development strategy, adapted over the years to the progressive needs of the market, has led the company to gain positions of prestige in a very competitive field and open to innovations.

With its **modern factory** in Cavallirio, in the province of Novara, the company produces and distributes its **products for the mechanical industry and industrial maintenance** in Italy and abroad and guarantees service on the territory thanks to the flexibility of the **Tecna Industry** tinting system.

In the **industrial sector**, following a collaboration with important companies on the market, several specific painting systems have been developed to respond to the specific needs of customers.

Years of experience in the field of professional tinting has permitted **PPG Univer** to develop and propose specific products for industrial maintenance, integrating the existing range with **“problem solving”** products.

In addition to the traditional industrial paints and fast drying nitro, epoxy, polyurethane and acrylic painting cycles, **PPG Univer** produces **high temperature resistant silicone products** (approved by the most prestigious manufacturers of motorcycles) **epoxy vinyl systems for protection under aggressive strain and anti-rust enamels** that guarantee a good level of finish in addition to a good protection.





Particular attention is placed on the environment: PPG Univer has developed products free from toxic pigments with low emission solvents, which allow a drastic reduction of pollutants (the entire range complies with legislation on VOC 2010). The development of water-based products, and the constant research in this direction, has contributed significantly to the radical change taking place in the sector, which is working to eliminate components that are harmful to health, and to preserve and protect the environment.

PPG Univer's commitment is geared to the research, study and development of new products and highly specialized paint systems, strict control of production, guided by the principles of respect and protection of the environment. In view of the ongoing research to obtain the optimum solution for every requirement, PPG Univer organizes technical and commercial training courses at its headquarters and at points of sale.



References

Agip-ip deposito di Marghera

Aprilia

Bombardier

Carinci Group

Centrale AEM gas Milano

Centrali Enel - Tavazzano e Treviglio

CLAM Caminetti

CNH New Holland

Condotta forzata Enel Sondrio

De Marinis

Ducati

Edilkamin

Enichem

Euratom Ispra

Expo 2015

Gilera

Gruppo MCZ

Gruppo Palazzetti

Iveco

Jolly Mec Caminetti

Klover stufe e camini

Linde

Malaguti

MM Metallurgica Marcegaglia

Mc Laren

Moto Guzzi

Peugeot Motorcycle

Piaggio

Plamen

Remus Sebring

Same Deutz trattori

Vulcano

Wekos termostufe

Yamaha





SILICONE COATING systems resistant
to **HIGH TEMPERATURES**
for **ANTI-CORROSION PROTECTION**



A PPG brand

AZIENDA CON SISTEMA QUALITÀ
CERTIFICATO DA DNV
=**UNI EN ISO 9001/2008**=

PPG Univer S.p.a. - Via Monte Rosa, 7 - 28010 Cavallirio (No)
Telefono: 0163/806611 - Fax: 0163/806696
www.univer.it - univer@ppg.com