

FORTEC PU FAST 123

Technical Data Sheet

DESCRIPTION

Solvent free, non-toxic polyurethane coating applied by twin feed hot airless spray, enabling the application of this extremely fast reactive product. Its chemical inertia and its very good cathodic disbondment resistance make it an anti-corrosion coating very **well suited for the external protection of buried or immersed metal structures**.

APPLICATION AREAS

Thick anticorrosion coating for the protection of buried pipes and accessories. Its rapid polymerisation makes it an ideal product not just for workshop application but also on-site application for new work and rehabilitation jobs. The standard temperature resistance range of **FORTEC PU Fast 123** in dry environments is between - 30° C and + 80° C.

CHARACTERISTICS

| | |
|--|-----------------|
| Number of components | 2 |
| Colour and appearance of dry film | Satin green |
| Density at 23° C | Around 1.3 g/ml |
| Calculated dry solids (by volume) | 100 % |

NOMINAL DRY FILM THICKNESS

FORTEC PU Fast 123 is designed to be applied at a nominal dry film thickness range between 1000 and 2000 µm, in several wet on wet passes around 500 µm thick. The final choice of the thickness will be determined by the end use specification.

THEORETICAL COVERAGE

| | |
|----------------------|--|
| Airless spray | 0.75 m ² /kg, i.e. 1 m ² /l for 1000 µm DFT |
| | 0.38 m ² /kg, i.e. 0.50 m ² /l for 2000 µm DFT |

DRYING TIME (for 1500 µm dry film)

| | At 20° C | At 40° C | At 60° C |
|-------------------|------------|------------|------------|
| Dust free | 10 minutes | 8 minutes | 5 minutes |
| Hard dry | 1 h | 30 minutes | 15 minutes |
| Fully dry* | 7 days | 4 days | 2 days |

* Depending on the application and environment parameters.

CLEANING SOLVENT

DILUANT PU 123

STANDARD PACKAGING

500 kg doses (A+B) in 2 separate 200 litre drums. Depending on the application equipment, other specific packaging is available.



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STORAGE

Use by date: For standard packaging, 12 months under shelter at a temperature between + 5°C and + 35°C in the original unopened packaging.

HEALTH AND SAFETY

Flash point: Part A (polyol): > 100°C - Part B (isocyanate): > 100°C
Always consult the legal labelling on the packaging and the material safety data sheet before use.

SUBSTRATES

- Steel.
- Other substrates: Please consult us.

SPECIFIC RECOMMENDATIONS

Part B (isocyanate) must be protected from humidity.
After prolonged exposure to ultra violet rays, **FORTEC PU Fast 123** may undergo surface chalking. This does not alter the characteristics of the polymerised film.

PROPERTIES OF THE CURED COATING

| Physical and mechanical properties | Standard | Substrate | Thickness | Result |
|--|----------|--------------|-----------|------------------------|
| Electrical non porosity at 20°C (10 V/µm) | EN 10290 | Steel Sa 2.5 | 1500 µm | No porosity |
| Pull off resistance at 20°C | ISO 4624 | Steel Sa 2.5 | 1000 µm | >12 MPa |
| Shore D hardness at 20°C (after 24 h at 50°C) | ISO 868 | Steel Sa 2.5 | 1000 µm | Around 70 |
| Adhesion test – resistance to removal | EN 10329 | Steel Sa 2.5 | 1000 µm | Rating 1 |
| Elongation at break at 23°C | ISO 527 | Free film | 1000 µm | Around 2.5 % |
| Tensile strength at 23°C | ISO 527 | Free film | 1000 µm | > 20 N/mm ² |
| Impact resistance at 23°C | EN 10290 | Steel Sa 2.5 | 1000 µm | > 10 J/mm |
| Indentation resistance (after 48 h at 80°C) | EN 10290 | Steel Sa 2.5 | 1000 µm | < 20 % |
| Examples of chemical resistance* | | | | |
| Cathodic disbondment after 28 days at 23°C | EN 10290 | Steel Sa 2.5 | 1000 µm | < 6 mm |
| Cathodic disbondment after 2 days at 80°C | EN 10290 | Steel Sa 2.5 | 1000 µm | < 6 mm |
| Specific electrical insulation resistance 100 days at 23°C | EN 10290 | Steel Sa 2.5 | 1000 µm | > 108 Ω.m ² |

* Please consult us for other chemical substances and temperatures.

DISCLAIMER

The information given in this sheet is not intended to be exhaustive and any person using the product for other purpose other than that specifically recommended in this sheet does so at his own risk. Unless specifically agreed beforehand we do not accept any liability whatsoever or however arising for the performance of the product or for any loss or damage arising out of the use of the product as we have no direct control over the quality or condition of the substrate or the many factors affecting the use and application of the product. The information contained in this sheet is liable to change, and it is the user's responsibility to check that this sheet is current prior to using the product.

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Instructions for use

1. Preparation of the metal surface

Surface preparation is a very important phase and must be carried out with particular care.

The quality of the stripping and dust removal phases has a considerable influence on the adhesion performance of the coating.

Before applying the coating, the surface to be coated must be dry and free of any soiling (such as existing coatings, paints and non-adherent particles, grease, oil, etc.) that can adversely affect surface preparation. Contaminants should be eliminated by any appropriate means, using products that are compatible with the coating to be applied.

The substrates to be coated should be blast cleaned by projection of abrasives so as to obtain a Sa 2.5 surface finish (ISO 8501-1). The abrasive should be chosen to obtain an ideally angular surface **roughness** profile and must not contain more than 0.05 % of water soluble materials. The compressed air must be dry and oil-free.

The abrasive cleaned surface must have a roughness **Rz** (ISO 8503-4) **of around 70 µm** and it must be coated in as short a time as possible. It is recommended that the following times are not exceeded:

- 3 hours for a relative humidity above 70 %.
- 4 hours for a relative humidity below 70 %.

After abrasive cleaning, the surface must be inspected. Any slivers, scale, weld splatter and imperfections made visible by the abrasive cleaning must be eliminated.

If after preparing the surface to be coated it becomes contaminated or covered with rust, it must be partially or totally abrasive cleaned once again in order to enable application of the coating in accordance with all of the previous instructions.

Before applying the coating, any abrasive remaining on the surface must be eliminated by an appropriate means.

If an adjacent coating is to be over-coated, the area in question should be roughened or finely abrasive blasted to promote inter-coat adhesion. In the case of a very thick coating, the edge should be chamfered. Carefully remove all traces of dust before application. In the case of a polyolefin coating (polyethylene or polypropylene), the chamfered area should be flame treated at a temperature between 120°C and 160°C for 5 to 10 seconds.

2. Application

The temperature of the substrate should be between + 10°C and + 60°C and maintained at least 3°C above the dew point during the application and drying of **FORTEC PU Fast 123** in order to avoid any condensation.

The ambient temperature should be at least + 10°C and the relative humidity should not exceed 80 %.

To accelerate the hardening of the coating, the substrate may be preheated. The time the substrate is heated should not lead to any surface oxidation, which can adversely affect the good quality and resistance of the coating. Before use, carefully mix part A with a slow continuous mechanical mixer until fully homogeneous.

Do not dilute.



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FORTEC PU Fast 123 is applied by airless spray (minimum 200 bars pressure, 24 to 43/1000 → nozzle) in several wet on wet passes, with spray equipment that enables automatic and controlled metering and mixing of the two components (by volume 1 part A, 1 part B – by weight 56 % part A, 44 % part B) and also enables the temperature of both components to be maintained (part A 60°C to 75°C, part B 20°C to 45°C) from the supply tanks to the spray gun.

During application, the wet film thickness should be measured using, for example, method n° 6 of the ISO 2808 Standard.

The compressed air used in the application equipment must be dry and oil-free.

While in use, the drums should be stored sealed and under shelter.

Since the pot life of the mixture on 100 g is only several seconds at 60°C, the application equipment should be immediately rinsed and cleaned after use with **DILUANT PU 123**.

To accelerate hardening, post-curing at 80°C is possible.

In the case of pipes, in order not to adversely affect the good quality of the weld or coating, the length of the uncoated ends should be around 50 to 100 mm.

The film attains a sufficient level of hardness to be handled after around 10 to 15 minutes. This time depends on the ambient temperature, the weight and the shape of the coated parts.

3. Control of the coating

When the film has attained a sufficient degree of hardness (minimum 4 h at 20°C), the following controls should be carried out:

- The appearance and the continuity of the entire coating should be visually inspected. The coating should have a uniform colour and appearance, exempt of any defects that could adversely affect the quality of the coating.
- The thickness of the coating measured according to the EN 10290 Standard, Appendix A should comply in every respect with the contract or the specification.
- The non porosity of the coating should be checked according to the EN 10290 Standard, Appendix B. The voltage applied should be 8 volts per micron dry film thickness, with a maximum of 20 kV.
- The Shore D hardness (ISO 868 Standard) of the coating should be measured and must be at least 60.

4. Repairs

All defects should be repaired with **FORTEC PU Fast 123** mixed up in small quantities.

The defective area should be stripped bare. All non-adherent elements should be removed. The area of overlap with the adjacent coating should be roughened. In the case of a very thick coating, the edge should be chamfered. These operations should be followed by careful removal of dust.

All repairs should be controlled again for porosity and thickness as described above.

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