

Primax Defend

PRODUCT DESCRIPTION

This powder coating product is zinc-free offering to meet standard service requirements for blast-cleaned, phosphated and galvanized steel objects and structures. This product is designed to provide the advantage of very good corrosion protection and inter-coat adhesion properties.

For the combined benefit of corrosion protection with UV exposure and attractive finish, this product can be top coated with suitable exterior durable product offerings from Jotun. The exterior durable product offering from Jotun includes Jotun Facade, Jotun Super Durable, Reveal Era and many more.

The combined coating system of Primax Defend and Jotun Facade is tested at third-party test laboratory for corrosion protection for up to C4 Very High corrosivity category as per ISO-12944-6.

Application areas

Objects that require enhanced corrosion protection, such as:
Building structures
Agricultural machinery
Electrical enclosures and panels
Steel fences
Equipments exposed to coastal environments

POWDER PROPERTIES

| Property | Standard | Result |
|------------------|------------|--------------------------------|
| Specific gravity | Calculated | 1.57 ± 0.05 kg/dm ³ |

Storage

Keep in a dry cool area. Maximum temperature 25 °C. Maximum relative humidity 60 %. If stored longer than 12 months a quality test must be performed.

APPLICATION

Pretreatment

The overall quality of the coating system is largely dependent on the type and quality of surface preparation, pretreatment, and the topcoat. Recommended type of surface preparation is grit blasting which must be performed according to specification provided in Jotun's "Application Guide of Jotun Powder Coatings' products on Steel". Grit blasted surfaces are suitable to provide a moderate level of protection. For higher demand, it is recommended to use suitable mechanical and/or chemical surface treatment (e.g. blasting, phosphating). Detailed advice should be sought from the pre-treatment supplier.

For hot dipped galvanized steel, sweep blasting is recommended. Please refer to Jotun's "Application Guide for Jotun Powder Coatings' products on Hot Dipped Galvanized Steel".

Chemical pretreatment

Available methods of pretreatment include zinc phosphating and chromating of galvanized steel. Recommended types of pretreatment depend on specific design requirements and on the need for corrosion resistance which is specified in the Performance section of the document.

Powder application

Partial cure of the primer is recommended to enhance inter-coat adhesion between primer and a topcoat following the below schedule.

| | | |
|---------------------|--------|---------------|
| Partial cure | 160 °C | 5-10 minutes* |
| | 170 °C | 3-5 minutes* |
| | 180 °C | 2-4 minutes* |

The application of a topcoat must take place no later than 8 hours at the same site after the application of this product. The shortest possible interval is recommended.

The primed substrates must be stored away from sunlight, covered with clean and clear plastic sheet, in a dust-free, cool and dry place.

The inter-coat adhesion properties and the complete system cure must always be verified. When directly fired gas ovens are used, sample of complete system needs to be tested to ensure inter-coat adhesion between the primer and a top coat. For the same reason it is also recommended not to exceed 180°C oven temperature.

The most suitable partial cure time of the Primax Defend at temperature selected from the given range is recommended to be defined by a practical experiment. That will help to secure the best decorative and functional performance, considering differences in coated objects and curing ovens.

* Top coat is then applied and the system should be cured in accordance to the recommended curing schedules of the selected Jotun topcoat. Please refer to the relevant curing schedules.

Recommended film thickness (µm): >70

Equipment

Suitable for Corona or Tribo charging equipment.

APPEARANCE

| | | |
|---------------|--------------------------------------|--------|
| Colour | Only available in light grey colour. | |
| Gloss | ISO 2813 (60°) | 85± 15 |
| Finish | Smooth | |

If the significant surface is too small or unsuitable for the gloss to be measured with the glossmeter, the gloss should be compared visually with the reference sample (from the same viewing angle).

PERFORMANCE

| Property | Standard | Result |
|---|--|---|
| Adhesion* | EN ISO 2409 | Cross-cut rating Gt0 (100 % adhesion) |
| Impact resistance* | ASTM D2794 (5/8 " ball) | ≥ 40 inch-pounds without film cracking |
| Cupping test* | ISO 1520 | Pass 5 mm without film cracking |
| Resistance to water condensation | ISO 6270-1 ISO 4628-2 ISO 4628-3 ISO 4628-4 ISO 4628-5 | Passes or exceeds C4H requirements of ISO 12944-6 ** Passes or exceeds C5H requirements of ISO 12944-6 *** |
| Resistance to neutral salt spray | ISO 9227 ISO 4628-2 ISO 4628-3 ISO 4628-4 ISO 4628-5 | Pass C4H requirements of ISO 12944-6 ** Pass C5H requirements of ISO 12944-6 *** |

| | | |
|----------------------|----------|--|
| Pull off test | ISO 4624 | Passes or exceeds the 2.5 MPa requirement of ISO 12944-6** Passes or exceeds the 2.5 MPa requirement of ISO 12944-6*** |
|----------------------|----------|--|

* Typical for this product when applied on zinc-phosphated steel panels (0.8 mm) with coating film thickness 70-90 μm using full cure schedule.

** System 1: Grit blasted (Sa 2½) steel panels, Primax Defend +Jotun Facade. Total film thickness ~160 μm (primer 80 μm and 60-80 μm topcoat).

*** System 2: Grit blasted (Sa 2½) zinc phosphated steel panels, Primax Defend +Jotun Facade. Total film thickness ~160 μm (primer 80 μm and 60-80 μm topcoat).

*** System 3: Hot dip galvanized steel with sweeping, Primax Defend +Jotun Facade. Total film thickness ~160 μm (primer 80 μm and 60-80 μm topcoat).

Sustainability

Powder coating is applied in air-and-powder mix in a strictly controlled factory process using electrostatic gun and a high temperature curing oven to create film. Virtually no VOCs are released in the process compared to traditional liquid paints. Unused or oversprayed powder can be recycled with minimal wastage, and disposal is easy and safe. In addition, all Jotun Powder Coatings' products do not contain intentionally added lead.

Disclaimer

The information in this document is given to the best of Jotun's knowledge, based on laboratory testing and practical experience. Jotun's products are considered as semi-finished goods and as such, products are often used under conditions beyond Jotun's control. Jotun cannot guarantee anything but the quality of the product itself. Minor product variations may be implemented in order to comply with local requirements. Jotun reserves the right to change the given data without further notice.

Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.