

Penguard Express ZP

Product description

This is a two component amine cured epoxy coating. It is a fast drying, zinc phosphate pigmented, high solids, high build product. Specially designed for new construction where short dry to handle and over coating times are required. Can be used as primer, mid coat, finish coat or as single coat system in atmospheric environments. Suitable for properly prepared carbon steel substrates. It can be applied at sub zero surface temperatures.

Typical use

Suitable for structural steel and piping to be exposed to highly corrosive environments, C5I or C5M (ISO 12944-2). Recommended for offshore environments, refineries, power plants, bridges, buildings and mining equipment.

Other variants available

Penguard Express
Penguard Express MIO
Penguard Express CF
Refer to separate TDS for each variant.

Colors

grey, red

Product data

| Property | Test/Standard | Description |
|-----------------------|---|---------------|
| Solids by volume | ISO 3233 | 74 ± 2 % |
| Gloss level (GU 60 °) | ISO 2813 | matt (0-35) |
| Flash point | ISO 3679 Method 1 | 90 °F (32 °C) |
| Density | calculated | 1.6 kg/l |
| VOC-US/Hong Kong | US EPA method 24 (tested) (CARB(SCM)2007, SCAQMD rule 1113, Hong Kong) | 2.17 lbs/gal |

The provided data is typical for factory produced products, subject to slight variation depending on color.

Gloss description: According to Jotun Performance Coatings' definition.

Film thickness per coat

Typical recommended specification range

| | | |
|----------------------------|--|--|
| Dry film thickness | 3 mils (75 µm) | - 10 mils (250 µm) |
| Wet film thickness | 4 mils (100 µm) | - 13 mils (340 µm) |
| Theoretical spreading rate | 400 ft ² /gal (9.9 m ² /l) | - 120 ft ² /gal (3 m ² /l) |

Surface preparation

Surface preparation summary table

| Substrate | Surface preparation | |
|-------------------|---|--|
| | Minimum | Recommended |
| Carbon steel | St 2 (ISO 8501-1) or SSPC SP-2 | Sa 2½ (ISO 8501-1) or NACE No. 2 / SSPC SP-10 |
| Shop primed steel | Dry, clean and approved inorganic zinc shopprimer. | Sweep blasted or alternatively blasted to Sa 2 (ISO 8501-1) or SP 6 / NACE No. 3 (SSPC-VIS 1) of at least 70 % of the surface. |
| Coated surfaces | Clean, dry and undamaged compatible coating | Clean, dry and undamaged compatible coating |
| Galvanized steel | The surface shall be clean, dry and appear with a rough and dull profile. | Sweep blast-cleaning using non-metallic abrasive leaving a clean, rough and even pattern. |

Optimum performance, including adhesion, corrosion protection, heat resistance and chemical resistance is achieved with recommended surface preparation.

Application

Application methods

The product can be applied by

Spray: Use airless spray.

Brush: Recommended for stripe coating and small areas. Care must be taken to achieve the specified dry film thickness.

Product mixing ratio (by volume)

Penguard Express ZP Comp A 4 part(s)
Penguard Express Comp B 1 part(s)

Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 17

Guiding data for airless spray

Nozzle tip (inch/1000): 13-23

Pressure at nozzle (minimum): 150 bar/2100 psi

Drying and Curing time

Temperatures:

-10°C = 14°F / -5°C = 23°F / 0°C = 32°F / 5°C = 41°F / 10°C = 50°F / 15°C = 59°F / 23°C = 73°F / 35°C = 95°F / 40°C = 104°F / 100°C = 212°F

| Substrate temperature | -5 °C | 0 °C | 5 °C | 10 °C | 23 °C | 40 °C |
|-----------------------------|-------|------|------|-------|-------|--------|
| Surface (touch) dry | 16 h | 11 h | 4 h | 2 h | 1 h | 30 min |
| Walk-on-dry | 38 h | 24 h | 10 h | 6 h | 3 h | 2 h |
| Dried to over coat, minimum | 24 h | 14 h | 8 h | 4 h | 2 h | 1 h |
| Dried/cured for service | | 21 d | 13 d | 8 d | 4 d | 3 d |

For maximum overcoating intervals, refer to the Application Guide (AG) for this product.

Drying and curing times are determined under controlled temperatures and relative humidity below 85 %, and at average of the DFT range for the product.

Surface (touch) dry: The state of drying when slight pressure with a finger does not leave an imprint or reveal tackiness.

Walk-on-dry: Minimum time before the coating can tolerate normal foot traffic without permanent marks, imprints or other physical damage.

Dry to over coat, minimum: The recommended shortest time before the next coat can be applied.

Dried/cured for service: Minimum time before the coating can be permanently exposed to the intended environment/medium.

Induction time and Pot life

Temperatures: 15°C = 59°F / 23°C = 73°F

| Paint temperature | 23 °C |
|-------------------|-------|
| Pot life | 2 h |

Heat resistance

| | Temperature | |
|------------------|-------------|--------|
| | Continuous | Peak |
| Dry, atmospheric | 120 °C | 140 °C |

Peak temperature duration max. 1 hour.

The temperatures listed relate to retention of protective properties. Aesthetic properties may suffer at these temperatures.

Product compatibility

Depending on the actual exposure of the coating system, various primers and topcoats can be used in combination with this product. Some examples are shown below. Contact Jotun for specific system recommendation.

Previous coat: inorganic zinc silicate shop primer, epoxy, epoxy mastic, zinc epoxy, zinc silicate, organic shop primer
Subsequent coat: acrylic, epoxy, polyurethane, polysiloxane

Packaging (typical)

| | Volume (liters) | Size of containers (liters) |
|----------------------------|----------------------------|--|
| Penguard Express ZP Comp A | 4 / 16 | 5 / 20 |
| Penguard Express Comp B | 1 / 4 | 1 / 5 |

1 l = 0.26 gal
4 l = 1.06 gal
16 l = 4.23 gal

The volume stated is for factory made colors. Note that local variants in pack size and filled volumes can vary due to local regulations.

Storage

The product must be stored in accordance with national regulations. Keep the containers in a dry, cool, well ventilated space and away from sources of heat and ignition. Containers must be kept tightly closed. Handle with care.

Shelf life at 73°F (23 °C)

| | |
|----------------------------|-------------|
| Penguard Express ZP Comp A | 24 month(s) |
| Penguard Express Comp B | 24 month(s) |

In some markets commercial shelf life can be dictated shorter by local legislation. The above is minimum shelf life, thereafter the paint quality is subject to re-inspection.

Note

This product is for professional use only. The applicators and operators shall be trained, experienced and have the capability and equipment to mix/stir and apply the coatings correctly and according to Jotun's technical documentation. Applicators and operators shall use appropriate personal protection equipment when using this product. This guideline is given based on the current knowledge of the product. Any suggested deviation to suit the site conditions shall be forwarded to the responsible Jotun representative for approval before commencing the work.

Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not inhale spray mist. Avoid skin contact. Spillage on the skin should immediately be removed with suitable cleanser, soap and water. Eyes should be well flushed with water and medical attention sought immediately.

Color variation

When applicable, products primarily meant for use as primers or antifoulings may have slight color variations from batch to batch. Such products and epoxy based products used as a finish coat may chalk when exposed to sunlight and weathering.

Color and gloss retention on topcoats/finish coats may vary depending on type of color, exposure environment such as temperature, UV intensity etc., application quality and generic type of paint. Contact your local Jotun office for further information.

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.
