

## Penguard HSP ZP E

### Product description

This is a two component amine cured epoxy coating. This product is LEED compliant and contains no solvents on the Hazardous Air Pollutants (HAPs) list. 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. To be used as primer in atmospheric environments. Suitable for properly prepared carbon steel substrates.

### Typical use

Suitable for structural steel and piping to be exposed to corrosive environments. Recommended for power plants, airports, buildings, refineries and mining equipment. Designed as a primer for Jotun's SteelMaster intumescent thin film passive fire protection coatings.

### Approvals and certificates

This product contributes to the Green Buildings Standard credits. Please see section Green Building Standards. Additional certificates and approvals may be available on request.

### Other variants available

Penguard HSP E  
Penguard HSP MIO E  
Refer to separate TDS for each variant.

### Colours

selected range of colours

## 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	29 °C
Density	calculated	1.6 kg/l

Region	Regulation	Test Standard	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	Calculated	246 g/l
Hong Kong	Air Pollution Control (VOC) Regulation	Calculated	246 g/l
EU	European Paint Directive 2004/42/CE	Calculated	246 g/l
EU IED	Industrial Emission Directive 2010/75/EU	Calculated	246 g/l
Korea	Korea Clean Air Conservation Act	Calculated	246 g/l

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

Gloss description: According to Jotun Performance Coatings' definition.

The VOC values refer to grey colour.

## Film thickness per coat

### Typical recommended specification range

Dry film thickness	60 - 250	µm
Wet film thickness	80 - 340	µm
Theoretical spreading rate	12.3 - 3	m <sup>2</sup> /l

## Surface preparation

### Surface preparation summary table

Substrate	Surface preparation	
	Minimum	Recommended
Carbon steel	St 2 (ISO 8501-1)	Sa 2½ (ISO 8501-1)
Shop primed steel	Dry, clean and intact shop primer.	Sweep blasted or alternatively blasted to Sa 2 (ISO 8501-1) of at least 70 % of the surface.
Coated surfaces	Clean, dry and undamaged compatible coating	Clean, dry and undamaged compatible coating

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 HSP ZP E Comp A	4 part(s)
Penguard HSP E Comp B	1 part(s)

### Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 26

Thinning is not normally required. Consult the local representative for advice during application in extreme conditions. Do not thin more than allowed by local environmental legislation.

### Guiding data for airless spray

Nozzle tip (inch/1000):	17-23
Pressure at nozzle (minimum):	150 bar/2100 psi

## Drying and Curing time

Substrate temperature	0 °C	5 °C	10 °C	23 °C	40 °C
Surface (touch) dry	11 h	5 h	2 h	1 h	30 min
Walk-on-dry	18 h	12 h	6 h	3 h	2 h
Dry to over coat, minimum	18 h	12 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

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: epoxy, epoxy mastic, zinc epoxy, zinc silicate  
Subsequent coat: acrylic, epoxy, polyurethane, polysiloxane

## Packaging (typical)

	Volume (litres)	Size of containers (litres)
Penguard HSP ZP E Comp A	16	20
Penguard HSP E Comp B	4	5

The volume stated is for factory made colours. 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, shaded, cool, well-ventilated space and away from sources of heat and ignition. Containers must be kept tightly closed. Handle with care.

### Shelf life at 23 °C

Penguard HSP ZP E Comp A 12 month(s)  
Penguard HSP E 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.

## Environmental Documentation

This product contributes to Green Building Standard credits by meeting the following specific requirements:

LEED®v4 (2013)

EQ credit: Low emitting materials

- VOC content for Industrial Maintenance Coatings (250 g/l) (CARB (SCM) 2007) and emissions lower than or equal to 0.5 mg/m<sup>3</sup> (CDPH method 1.1).

MR credit: Building product disclosure and optimization

- Material Ingredients, Option 2: Material Ingredient Optimization, International Alternative Compliance Path - REACH optimization: Fully inventoried chemical ingredients to 100 ppm and not containing substances on the REACH Authorization list – Annex XIV, the Restriction list – Annex XVII and the SVHC candidate list.  
- Environmental Product Declarations. Product-specific Type III EPD (ISO 14025;21930, EN 15804).

LEED® (2009)

- IEQ Credit 4.2: The VOC requirements of Green Seal Standard GC-03, 1997.

BREEAM® International (2016)

- Mat 01: Product-specific Type III EPD (ISO 14025;21930, EN 15804).

BREEAM® International (2013)

- Hea 02: VOC content for Two-pack performance Coatings SB (500 g/l) (EU Directive 2004/42/CE).

BREEAM® NOR (2012/2016)

- Hea 9/02: VOC content for Two-pack performance Coatings SB (500 g/l) (EU Directive 2004/42/CE) and emission demands (ISO 16000-9/10).

- Mat 1.5/01: This product Safety Data Sheet confirms that the product does not contain any substances on the Norwegian A20 list.

This product is tested by RISE Research Institutes of Sweden/SP Technical Research Institute of Sweden or Eurofins in accordance with ISO 16000-9/10 (2006) and CDPH method 1.1 (2010)/1.2 (2017).

The EPDs are available at [www.epd-norge.no](http://www.epd-norge.no)

---

## Caution

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.

---

## Colour variation

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

Colour and gloss retention on topcoats/finish coats may vary depending on type of colour, 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.

---