

Penguard Express WF II

Product description

This is a two component waterborne epoxy coating for corrosion protection. It is a versatile, fast drying product containing flash rust inhibitors. It cures down to 5 °C. Specially designed for new construction where short dry to handle and over coating times are required. Can be used as primer or mid coat in atmospheric environments. Suitable for properly prepared carbon steel, aluminium, concrete, stainless steel and galvanised steel substrates. It is part of a complete waterborne system with a recommended Jotun waterborne topcoat.

Typical use

Marine:
Recommended for accommodation and engine rooms.

Protective:
Suitable for structural steel and piping exposed in corrosivity categories up to C5 (ISO 12944-2). Recommended for refineries, power plants, bridges, buildings and mining equipment.

Colours

grey, red, off-white

Product data

Property	Test/Standard	Description
Solids by volume	ISO 3233	55 ± 2 %
Gloss level (GU 60 °)	ISO 2813	matt (0-35)
Flash point	ISO 3679 Method 1	100 °C
Density	calculated	1.35 kg/l

Region	Regulation	Test Standard	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	Calculated	70 g/l
EU	European Paint Directive 2004/42/CE	Calculated	28 g/l
China	GB 30981-2020 Limit of harmful substances of industrial protective coatings	GB/T 23985-2009 8.4	25 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.

Film thickness per coat

Typical recommended specification range

Dry film thickness	80 - 200	µm
Wet film thickness	145 - 365	µm
Theoretical spreading rate	6.9 - 2.75	m ² /l

Surface preparation

Surface preparation summary table

Substrate	Surface preparation	
	Minimum	Recommended
Carbon steel	St 2 (ISO 8501-1)	Sa 2½ (ISO 8501-1)
Aluminium	The surface shall be hand or machine abraded with non-metallic abrasives or bonded fibre machine or hand abrasive pads to impart a scratch pattern to the surface.	Abrasive blast cleaning to achieve a surface profile using non-metallic abrasive media which is suitable to achieve a sharp and angular surface profile.
Galvanised 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.
Concrete	Minimum 4 weeks curing. Moisture content maximum 5 %. Mechanically prepare the existing concrete surface by scabbling, needle gun, mechanical disc grinding.	Minimum 4 weeks curing. Moisture content maximum 5 %. Prepare the surface by means of enclosed blast shot or diamond grinding and other appropriate means to abrade the surrounding concrete and to remove laitance.
Stainless steel	The surface shall be hand or machine abraded with non-metallic abrasives or bonded fibre machine or hand abrasive pads to impart a scratch pattern to the surface.	Abrasive blast cleaning to achieve a surface profile using non-metallic abrasive media which is suitable to achieve a sharp and angular surface profile.

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.
Roller:	Recommended for small areas, care must be taken to achieve the specified dry film thickness.

Product mixing ratio (by volume)

Penguard Express WF II Comp A	2.35 part(s)
Penguard Express WF II Comp B	1 part(s)

Thinner/Cleaning solvent

Thinner: Deionized water

Thinning max.
Air spray: 15%
Airless spray: 10%

Metal ions in tap water may lead to early corrosion failure.
If deionized water is not available, fresh clean water can be used. If thinning with water is required, this shall be done after mixing of the two components.

Thinning:
Care must be taken to the amount of water used for thinning. More thinning means slower drying. If the amount of water added exceeds the recommended limit, paint defects such as flash rusting / blistering / cracking and bad curing may happen, especially when application is done at high humidity with poor air movement.

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	5 °C	10 °C	23 °C	40 °C
Surface (touch) dry	6 h	5 h	2.5 h	1 h
Walk-on-dry	24 h	20 h	8 h	5 h
Dry to over coat, minimum	24 h	20 h	8 h	5 h
Dried/cured for service	15 d	12 d	7 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 80 %, 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	5 °C	10 °C	23 °C	40 °C
Pot life	1.5 h	1.5 h	1.5 h	1 h

Visible end of pot life.

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

Packaging (typical)

	Volume (litres)	Size of containers (litres)
Penguard Express WF II Comp A	11.8	20
Penguard Express WF II Comp B	5	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 Express WF II Comp A 12 month(s)

Penguard Express WF II 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.

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 antifoulings 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.