

## Penguard WF

### 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 41 °F (5 °C). 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, aluminum, concrete and galvanized steel substrates. Available with hardener for application at low substrate temperatures.

### Typical use

Suitable for structural steel and piping to be exposed to corrosive environments up to high. Recommended for offshore environments, refineries, power plants, bridges, buildings and mining equipment. Suitable for over coating with waterborne acrylics, waterborne epoxy and suitable solvent borne coatings.

### Approvals and certificates

This product contributes to the Green Buildings Standard credits. Please see section Green Building Standards.

Meets VOC content requirements for Estidama  
Meets VOC content requirements for GSAS  
Meets requirements for China Environmental Label  
Fire test approved for use under SteelMaster 1200WF

Additional certificates and approvals may be available on request.

### Colors

grey, grey XO, red

### Product data

Property	Test/Standard	Description
<b>STANDARD GRADE</b>		
Solids by volume	ISO 3233	51 ± 2 %
Gloss level (GU 60 °)	ISO 2813	matt (0-35)
Flash point	ISO 3679 Method 1	144 °F (62 °C)
Density	calculated	1.3 kg/l

  

Region	Regulation	Test Standard	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	Calculated	0.55 lbs/gal

### WINTER GRADE

Solids by volume ISO 3233 51 ± 2 %  
Flash point ISO 3679 Method 1

Density calculated 144 °F (62 °C)  
1.3 kg/l

Region	Regulation	Test Standard	VOC Value
US	CARB(SCM)2020 / SCAQMD rule 1113	Calculated	0.58 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.

The VOC values refer to grey colour.

## Film thickness per coat

### Typical recommended specification range

#### STANDARD GRADE

Dry film thickness	3 mils (75 µm)	6 mils (150 µm)
Wet film thickness	6 mils (145 µm)	12 mils (295 µm)
Theoretical spreading rate	280 ft <sup>2</sup> /gal (6.8 m <sup>2</sup> /l)	140 ft <sup>2</sup> /gal (3.4 m <sup>2</sup> /l)

#### WINTER GRADE

Dry film thickness	3 mils (75 µm)	- 6 mils (150 µm)
Wet film thickness	6 mils (145 µm)	12 mils (295 µm)
Theoretical spreading rate	277 ft <sup>2</sup> /gal (6.8 m <sup>2</sup> /l)	139 ft <sup>2</sup> /gal (3.4 m <sup>2</sup> /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
Aluminum	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.
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.
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.

## 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: May be used for small areas but is not recommended for first primer coat. However, when using roller application care must be taken to apply sufficient material in order to achieve the specified dry film thickness.

### Product mixing ratio (by volume)

#### STANDARD GRADE

Penguard WF Comp A	2 part(s)
Penguard WF Comp B	1 part(s)

#### WINTER GRADE

Penguard WF Comp A	2 part(s)
Penguard WF Wintergrade Comp B	1 part(s)

### Thinner/Cleaning solvent

- Thinner: Fresh water
- Cleaning solvent: Jotun Thinner No. 17 / Jotun Thinner No. 4
- Jotun Thinner No. 28 can replace Jotun Thinner No. 4 as an alternative cleaning solvent.

When thinners are used as a cleaning solvent, the use must be in accordance with prevailing local regulations.

### Guiding data for airless spray

Nozzle tip (inch/1000):	19-23
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	41 °F	50 °F	73 °F	104 °F
<b>STANDARD GRADE</b>				
Surface (touch) dry			1.5 h	30 min
Walk-on-dry			10 h	4 h
Dried to over coat, minimum			4.5 h	2.5 h
Dried/cured for service			7 d	5 d
<b>WINTER GRADE</b>				
Surface (touch) dry	1.5 h	1.5 h	1 h	
Walk-on-dry	3 d	1 d	8 h	
Dried to over coat, minimum	15 h	5 h	3.5 h	
Dried/cured for service	21 d	14 d	7 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	50 °F	73 °F	104 °F
<b>STANDARD GRADE</b>			
Induction time	15 min	15 min	15 min
Pot life	1.5 h	1.5 h	1 h
<b>WINTER GRADE</b>			
Pot life	1 h	1 h	

Visible end of pot life.

Induction time is for Standard variant. Winter grade variant can be used immediately after thorough mixing.

## 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 (liters)	Size of containers (liters)
Penguard WF Comp A	10	20
Penguard WF Comp B	5	5
Penguard WF Wintergrade Comp B	5	5

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, 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 73°F (23 °C)

Penguard WF Comp A	12 month(s)
Penguard WF Comp B	24 month(s)
Penguard WF Wintergrade 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.

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## Green Building Standards

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 emission 0.5 - 5.0 mg/m<sup>3</sup> (CDPH method 1.2).

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 coating WB (140 g/l) (EU Directive 2004/42/CE)

This product is tested by RISE Research Institutes of Sweden/SP Technical Research Institute of Sweden or Eurofins in accordance with California Department of Public Health (CDPH) Standard Method v1.1-2010.

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

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## 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.

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## 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.

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## 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.

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## Disclaimer

# Technical Data Sheet

## Penguard WF



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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.

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