# Tankguard Plus

## Product description

This is a two component polyamine cured phenolic/novolac epoxy coating. It has a high resistance to most sour crude oils and a wide range of chemicals and solvents. It has outstanding chemical resistance to crude oil at temperatures up to 160 °C. Can be used as primer, mid coat or finish coat in atmospheric and immersed environments. Suitable for properly prepared carbon steel, galvanised steel, stainless steel and concrete substrates.

### Typical use

Protective:
Specially designed as an internal lining for offshore, onshore and buried tanks and pipes such as chemical storage, waste water, grey water, process water, concrete bund, fire service lines and drilling mud tanks. This coating has very good resistance to high temperature products. Refer to Protective Product Resistance List.

### Colours

buff, white

## Product data

| Property | Test/Standard | Description |
|---|---|---|
| Solids by volume | ISO 3233 | 70 ± 2 % |
| Gloss level (GU 60 °) | ISO 2813 | semi gloss (35-70) |
| Flash point | ISO 3679 Method 1 | 28 °C |
| Density | calculated | 1.6 kg/l |

| Region | Regulation | Test Standard | VOC Value |
|---|---|---|---|
| US | CARB(SCM)2020 / SCAQMD rule 1113 | Calculated | 342 g/l |
| Hong Kong | Air Pollution Control (VOC) Regulation | Calculated | 342 g/l |
| EU | European Paint Directive 2004/42/CE | Calculated | 342 g/l |
| EU IED | Industrial Emission Directive 2010/75/EU | Calculated | 342 g/l |
| Korea | Korea Clean Air Conservation Act | KS M ISO 11890-1 | 259 g/l |
| China | GB 30981-2020 Limit of harmful substances of industrial protective coatings | GB/T 23985-2009 8.3 | 237 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.



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# Film thickness per coat

**Typical recommended specification range**

| | | | | |
|---|---|---|---|---|
| Dry film thickness | 100 | - | 150 | µm |
| Wet film thickness | 140 | - | 215 | µm |
| Theoretical spreading rate | 7 | - | 4.7 | m²/l |

# Surface preparation

### Surface preparation summary table

| Substrate | Surface preparation | |
|---|---|---|
| | **Minimum** | **Recommended** |
| Carbon steel | Sa 2½ (ISO 8501-1) | Sa 2½ (ISO 8501-1) |
| 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. |
| 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 | Dry abrasive blast cleaning to SSPC-SP 13/NACE No. 6. | Dry abrasive blast cleaning to SSPC-SP 13/NACE No. 6. |

# 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: | Roller application only to be used for scallops, ratholes, small pipes etc. |



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## Product mixing ratio (by volume)

| | |
|---|---|
| Tankguard Plus Comp A | 4 part(s) |
| Tankguard Plus Comp. B | 1 part(s) |

## Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 17 / Jotun Thinner No. 23

## Guiding data for airless spray

| | |
|---|---|
| Nozzle tip (inch/1000): | 17-21 |
| Pressure at nozzle (minimum): | 150 bar/2100 psi |

# Drying and Curing time

| Substrate temperature | 5 °C | 10 °C | 15 °C | 23 °C | 30 °C | 40 °C |
|---|---|---|---|---|---|---|
| Surface (touch) dry | 24 h | 16 h | 6 h | 4 h | 3 h | 2 h |
| Walk-on-dry | 36 h | 24 h | 10 h | 7 h | 5 h | 3 h |
| Dry to over coat, minimum | 52 h | 36 h | 30 h | 20 h | 14 h | 10 h |
| Dried/cured for service | 14 d | 10 d | 7 d | 5 d | 4 d | 3 d |

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

If a hot cure is performed Tankguard Plus can be returned to service in half the "Dried/cured for service" time, as stated below:

5 °C: 7 d included 8 h @ 60 °C
10 °C: 5 d included 8 h @ 60 °C
15 °C: 3.5 d included 8 h @ 60 °C
23 °C: 2.5 d included 8 h @ 60 °C
30 °C: 2 d included 8 h @ 60 °C
40 °C: 1.5 d included 8 h @ 60 °C

Hot cure (by air) can be initiated after the last coat has become "Dry to overcoat", and can be achieved by heating with hot air until a steel temperature of 60 °C is held for 8 hours. Total curing time must be as outlined above.

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.



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## Induction time and Pot life

| Paint temperature | 23 °C |
|---|---|
| Induction time | 15 min |
| Pot life | 2 h |

## Heat resistance

| | Temperature | |
|---|---|---|
| | Continuous | Peak |
| Dry, atmospheric | 160 °C | - |
| Immersed, sea water | 90 °C | 95 °C |
| Immersed, crude oil | 160 °C | - |

Further resistance information can be found in Protective Product Resistance List available on Jotun's website, or contact your local Jotun office.

Peak temperature duration max. 1 hour.

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

Note that the coating will be resistant to various immersion temperatures depending on the specific chemical and whether immersion is constant or intermittent. Heat resistance is influenced by the total coating system. If used as part of a system, ensure all coatings in the system have similar heat resistance.

## 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: | itself only |
| Subsequent coat: | itself only |

## Packaging (typical)

| | Volume (litres) | Size of containers (litres) |
|---|---|---|
| Tankguard Plus Comp A | 16 | 20 |
| Tankguard Plus 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.



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### Shelf life at 23 °C

| | |
|---|---|
| Tankguard Plus Comp A | 24 month(s) |
| Tankguard Plus 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.



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