# Technical Data
# Tankguard 412

Jotun Protects Property

## Product description
Tankguard 412 is a solvent-free, two-pack epoxy tank coating.

## Recommended use
Tankguard 412 is designed for use in Potable Water (drinking water) tanks.
Tankguard 412 can also be used for corrosion protection for the internal lining of steel storage tanks and for friction reduction in gas pipes - please contact Jotun for specific recommendations.

## Film thickness and spreading rate

| As tank coating | Minimum | Maximum | Typical |
|---|---|---|---|
| **Film thickness, dry (µm)** | 150 | 500 | 200 |
| **Film thickness, wet (µm)** | 150 | 500 | 200 |
| **Theoretical spreading rate (m²/l)** | 6,7 | 2 | 5 |

| As internal pipe coating | Minimum | Maximum | Typical |
|---|---|---|---|
| **Film thickness, dry (µm)** | 60 | 500 | 200 |
| **Film thickness, wet (µm)** | 60 | 500 | 200 |
| **Theoretical spreading rate (m²/l)** | 16,7 | 2 | 5 |

## Comments
When used in drinking water tanks, do not thin.
When used for pipe coating at raised temperature it is recommended to aim for an average DFT between 80 - 100 microns DFT above the profile of the steel. These low DFTs are only possible with paint material at 40°C.

Applied on horizontal areas a DFT of 1000µm is possible

## Approvals
1. The Norwegian Institute of Public Health (Nasjonalt Folkehelseinstitutt) has approved Tankguard 412 for use in contact with potable water. The approval requires curing at temperature min 23°C for 7 days after application.
2. AS/NZS 4020:2005, Australian Water Quality Centre
3. ANSI/NSF Standard 61 for potable water in USA, Underwriters Laboratories Inc.

## Physical properties

| | |
|---|---|
| **Colour** | Black, Green, Red , White |
| **Solids (vol %)*** | 100 ± -2 |
| **Flash point** | >100ºC (Setaflash) |
| **VOC** | 0,83 lbs/gal (100 gms/ltr) USA-EPA Method 24<br>40 gms/ltr UK-PG6/23(97). Appendix 3 |
| **Gloss** | Glossy |
| **Water resistance** | Excellent |
| **Abrasion resistance** | Very good |
| **Solvent resistance** | Very good |
| **Chemical resistance** | Very good |
| **Flexibility** | Good |

*Measured according to ISO 3233:1998 (E)

Hong Kong rules:
Category of paints - Tank lining coatings; VOC 130 gms/ltr HK EPD method (Ready to use); Exempt compound - N/A;  Specific gravity: 1.50 (A+B); Both VOC and Specific gravity values provided are typical values, subject to changes when different colour involved.

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## Surface preparation

All surfaces should be clean, dry and free from contamination. The surface should be assessed and treated in accordance with ISO 8504.

**Bare steel**
Cleanliness: Blast cleaning to min. Sa 2 ½ (ISO 8501 1:2007). Roughness: using abrasives suitable to achieve Grade Medium G (50 - 85 µm, Ry5) (ISO 8503-2).

**Other surfaces**
The coating may be used on other substrates. Please contact your local Jotun office for more information.

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## Condition during application

The temperature of the substrate should be minimum 10°C and minimum 3°C above the dew point of the air. Best intercoat adhesion is obtained by utilising the induction time indicated after mixing of the two components and with Relative Humidity below 60% during the application process. The temperature and the relative humidity should be measured in the vicinity of the substrate. Good ventilation is usually required in confined areas to ensure proper drying. The coating should not be exposed to oil, chemicals or mechanical stress until cured.

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## Application methods

| | |
|---|---|
| **Spray** | Use airless spray. |
| **Brush** | Recommended for stripe coating and small areas, care must be taken to achieve the specified dry film thickness. |

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## Application data

| | |
|---|---|
| **Mixing ratio (volume)** | 2:1 |
| **Mixing** | 2 parts Comp. A (base) to be mixed thoroughly with 1 part Tankguard 412, Comp. B (curing agent). |
| **Induction time** | 10 minutes. |
| **Pot life (23°C)** | 1 hour (reduced at higher temperature). |
| **Cleaner** | Flush the application equipment with Jotun Thinner No. 28 prior to application. Use Jotun Thinner No. 17 for cleaning equipment after application. |
| **Guiding data airless spray** | |
| **Pressure at nozzle** | 25 - 35 MPa (3600 - 5000 p.s.i.) |
| **Nozzle tip** | 0.53 mm - 0.66 mm (0.021" - 0.026") |
| **Spray angle** | 40° - 80° |
| **Filter** | Filters should be removed, both in the pump and the spray gun, due to the viscosity of the paint. Should, however, air bubbles in the paint be a problem a coarse filter may be employed. If used, check to ensure that filters are clean. |
| **Note** | * It is of vital importance that the nozzle and other parts of the spraying equipment are cleaned properly directly after the work is done due to the short pot life.<br>* The hoses should be of good quality and not longer than necessary.<br>* An extra whip 1 m prior to the spray gun may be used.<br>* Preferably store both paint components at 23 – 28 degrees C. Be aware that higher storage temperature will shorten the pot life after mixing.<br>For stripe coating, however, a lower paint temperature may be favourable, in order to get a sufficient pot life. |

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## Drying time

Drying times are generally related to air circulation, temperature, film thickness and number of coats, and will be affected correspondingly. The figures given in the table are typical with:

* Good ventilation (Outdoor exposure or free circulation of air)
* Typical film thickness
* One coat on top of inert substrate

| **Substrate temperature** | **10°C** | **23°C** | **40°C** |
|---|---|---|---|
| **Surface dry** | 15 h | 6 h | 1.5 h |
| **Through dry** | 30 h | 12 h | 4 h |
| **Cured** [1] | 15 d | 7 d | 4 d |
| **Dry to recoat, minimum** | 30 h | 12 h | 4 h |
| **Dry to recoat, maximum** [2] | 5 d | 5 d | 3 d |

1. For potable water tanks intended to be used under Norwegian government regulations, the coating shall be cured at minimum 23°C for 7 days, i.e. immediately after coating application.
2. The surface should be free from chalking and contamination prior to application. If the maximum dry to recoat time is exceeded, please contact Jotun for advice.

The given data must be considered as guidelines only. The actual drying time/times before recoating may be shorter or longer, depending on film thickness, ventilation, humidity, underlying paint system, requirement for early handling and mechanical strength etc. A complete system can be described on a system sheet, where all parameters and special conditions could be included.

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## Typical paint system

| | | |
|---|---|---|
| **As tank coating** | | |
| **Tankguard 412** | **2 x 200 microns** | **(Dry Film Thickness)** |
| **or** | | |
| **Tankguard 412** | **1 x 300 microns** | **(Dry Film Thickness)** |
| | | |
| **As internal pipe coating** | | |
| **Tankguard 412** | **1 x 80 -100 microns** | **(Dry Film Thickness)** |

**Other systems may be specified, depending on area of use**

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## Optional washing procedures for potable water tanks

After the coating is fully cured, and before the tank is taken into use for potable water it should be thoroughly cleaned.

The letter of approval from the Norwegian Institute of Public Health specifies several possible procedures. Alternatively, one of the following procedures may be employed:

- High pressure fresh water washing using a temperature of minimum 30**°C**.
- Steam cleaning.
- Manually scrubbing the tank with warm water and an alkaline detergent.

Afterwards the tank surfaces should be flushed with clean fresh water.

On completion of the washing the tank shall be emptied of water by pumping. The remaining water after pumping shall be removed by the use of towels and rags in order to ensure that contaminants are removed.
Evaporation will only concentrate remaining contaminants.

Please contact Jotun's local technical service team for further information, or refer to the Application guide.

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## Storage

The product must be stored in accordance with national regulations. Storage conditions are to keep the containers in a dry, cool, well ventilated space and away from source of heat and ignition. Containers must be kept tightly closed.

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## Handling

Handle with care. Stir well before use.

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## Packing size

15 litre unit: 10 litres Comp. A (Base) in a 20 litre container and 5 litres Tankguard 412, Comp. B (curing agent) in a 5 litre container.

Also available on special order in 1000 litre IBC containers, please contact Jotun for further information

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## Health and safety

Please observe the precautionary notices displayed on the container. Use under well ventilated conditions. Do not breathe or inhale 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.

**For detailed information on the health and safety hazards and precautions for use of this product, we refer to the Material Safety Data Sheet.**

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**DISCLAIMER**

The information in this data sheet is given to the best of our knowledge based on laboratory testing and practical experience. However, as the product can be used under conditions beyond our control, we can only guarantee the quality of the product itself. We also reserve the right to change the given data without notice. Minor product variations may be implemented in order to comply with local requirements.
If there is any inconsistency in the text the English (UK) version will prevail.

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