# Technical Data Sheet

# Hardtop Optima

## Product description

This is a two component chemically curing polysiloxane resin based coating. The product does not contain isocyanates, neither does it generate di-isocyanates during hotwork / welding or fire. It has a high gloss finish with excellent gloss retention. It is a high solids product. The product is fully recoatable at any stage of curing. The product has good application properties with low dry spray. To be used as topcoat in atmospheric environments.

### Typical use

Marine:
Recommended for topside, deck and superstructure.

Protective:
Recommended for offshore environments, refineries, power plants, bridges and buildings. Used as a topcoat in pre-qualified NORSOK systems.

### Approvals and certificates

Pre-qualified in accordance with NORSOK M-501 in selected systems

Certified in accordance with IMO 2010 FTP code – Low Flame Spread

Consult your Jotun representative for details.

Additional certificates and approvals may be available on request.

### Other variants available

Hardtop Optima Alu

Refer to separate TDS for each variant.

### Colours

according to colour card and Multicolor Industry tinting system (MCI)

## Product data

| Property | Test/Standard | Description |
|---|---|---|
| Solids by volume | ISO 3233 | 76 ± 2 % |
| Gloss level (GU 60 °) | ISO 2813 | high gloss (85+) |
| Flash point | ISO 3679 Method 1 | 30 °C |
| Density | calculated | 1.4 kg/l |

| Region | Regulation | Test Standard | VOC Value |
|---|---|---|---|
| US | CARB(SCM)2020 / SCAQMD rule 1113 | Calculated | 145 g/l |
| Hong Kong | Air Pollution Control (VOC) Regulation | Calculated | 146 g/l |
| EU | European Paint Directive 2004/42/CE | ISO 11890-2 | 155 g/l |



This Technical Data Sheet supersedes those previously issued.
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| | | | |
|---|---|---|---|
| EU IED | Industrial Emission Directive 2010/75/EU | Calculated | 146 g/l |
| Korea | Korea Clean Air Conservation Act | KS M ISO 11890-1 | 195 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 white colour.

# Film thickness per coat

**Typical recommended specification range**

| | | | | |
|---|---|---|---|---|
| Dry film thickness | 60 | - | 100 | µm |
| Wet film thickness | 80 | - | 130 | µm |
| Theoretical spreading rate | 12.7 | - | 7.6 | m²/l |

Bright colours may need film thickness in the high end of the recommended specification range to achieve opacity.

# Surface preparation

### Surface preparation summary table

| Substrate | Surface preparation | |
|---|---|---|
| | Minimum | Recommended |
| Coated surfaces | Clean, dry and undamaged compatible coating | Clean, dry and undamaged compatible coating |

# Application

## Application methods

The product can be applied by

| | |
|---|---|
| Spray: | Use air spray or airless spray. |
| Brush: | Recommended for stripe coating and small areas. Care must be taken to achieve the specified dry film thickness. |
| Roller: | Recommended for stripe coating and small areas. Care must be taken to achieve the specified dry film thickness. |



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## Product mixing ratio (by volume)

| | |
|---|---|
| Hardtop Optima Comp A | 4 part(s) |
| Hardtop Optima Comp B | 1 part(s) |

## Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 7 / Jotun Thinner No. 17 / Jotun Thinner No. 10

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): | 13-19 |
| 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 | 10 h | 5 h | 3 h | 2 h |
| Walk-on-dry | 12 h | 7 h | 4 h | 3 h |
| Dry to over coat, minimum | 12 h | 7 h | 4 h | 3 h |
| Dried/cured for service | 15 d | 10 d | 5 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 above 30 %, 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 | 6 h |



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# 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 |
| Subsequent coat: | polysiloxane |

# Packaging (typical)

| | Volume (litres) | Size of containers (litres) |
|---|---|---|
| Hardtop Optima Comp A | 4/16 | 5/20 |
| Hardtop Optima Comp B | 1/4 | 1/5 |

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

| | |
|---|---|
| Hardtop Optima Comp A | 48 month(s) |
| Hardtop Optima 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 can contribute to Green Building Standard credits. Please refer to Jotun.com for more information or contact your local Jotun representative.

Environmental Product Declaration (EPD) is available at www.epd-norge.no



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## Caution

This product is for professional use only. The applicator and operator 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 should 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 in 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 sought medical attention 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 data given 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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