Hardtop XP

Product description

This is a two component chemically curing aliphatic acrylic polyurethane coating. It has a glossy finish with very good gloss retention. It is a high solids product. 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. Suitable for a wide range of industrial structures. Used as a topcoat in pre-qualified NORSOK systems.

Approvals and certificates

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

Pre-qualified in accordance with NORSOK M-501 in selected systems
Grain, Newcastle Occupational Health
Food, Compliant with USA, FDA Title 21, Part 175.300 for dry solids

When used as part of an approved scheme, this material has the following certification:
- Low Flame Spread in accordance with EU Directive for Marine Equipment. Approved in accordance with parts 5 and 2 of Annex 1 of IMO 2010 FTP Code, or Parts 5 and 2 of Annex 1 of IMO FTPC when in compliance with IMO 2010 FTP Code Ch. 8

Consult your Jotun representative for details.

Additional certificates and approvals may be available on request.

Other variants available

Hardtop XP Alu
Hardtop XPL
Hardtop XPF (Winter grade version)

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	63 ± 2 %
Gloss level (GU 60 °)	ISO 2813	gloss (70-85)
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	320 g/l
Hong Kong	Air Pollution Control (VOC) Regulation	Calculated	320 g/l
EU	European Paint Directive 2004/42/CE	Calculated	320 g/l
EU IED	Industrial Emission Directive 2010/75/EU	Calculated	320 g/l
Korea	Korea Clean Air Conservation Act	KS M ISO 11890-1	385 g/l
China	GB 30981-2020 Limit of harmful substances of industrial protective coatings	GB/T 23985-2009 8.3	330 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	50	-	100	µm
Wet film thickness	80	-	160	µm
Theoretical spreading rate	12.6	-	6.3	m²/l

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

Special effect colours may have diverging specification range. Refer to the Application Guide (AG) for additional information or contact your nearest Jotun office.

Surface preparation

Surface preparation summary table

	Surface preparation	
Substrate	**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:	May be used. Care must be taken to achieve the specified dry film thickness.

Product mixing ratio (by volume)

Hardtop XP Comp A	10 part(s)
Hardtop XP Comp B	1 part(s)

Thinner/Cleaning solvent

Thinner: Jotun Thinner No. 10 / Jotun Thinner No. 26

Jotun Thinner No. 26 is supplied and used in USA due to legislation.

Jotun Thinner No 63 can be used for faster curing. Max addition; 5%. Please note that addition of Thinner No 63 will give reduced polife depending on ambient temperature.

Guiding data for airless spray

Nozzle tip (inch/1000):	13-19
Pressure at nozzle (minimum):	150 bar/2100 psi

Guiding data for air spray

Nozzle tip:	HVLP: 11-19 (inch/1000) / Pressure pot: 1.1-1.9 (mm)
Pressure at nozzle (minimum):	HVLP: 2.1 bar/30 psi / Pressure pot: 2.1 bar/30 psi

Drying and Curing time

Substrate temperature	5 °C	10 °C	23 °C	40 °C
Surface (touch) dry	16 h	6 h	3.5 h	2 h
Walk-on-dry	24 h	14 h	7 h	4 h
Dry to over coat, minimum	24 h	14 h	7 h	4 h
Dried/cured for service	21 d	14 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 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

Paint temperature	23 °C	40 °C
Pot life	1.5 h	50 min

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, zinc epoxy, epoxy mastic, polyurethane

Packaging (typical)

	Volume (litres)	Size of containers (litres)
Hardtop XP Comp A	4.55 / 18.2	5 / 20
Hardtop XP Comp B	0.45 / 1.8	1 / 3

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 XP Comp A	48 month(s)
Hardtop XP Comp B	48 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.

Green Building Standards

This product contributes to Green Building Standard credits by meeting the following specific requirements:

LEED®v4 (2013)
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).

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 Coatings SB (500 g/l) (EU Directive 2004/42/CE).

The EPDs are available at www.epd-norge.no

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.