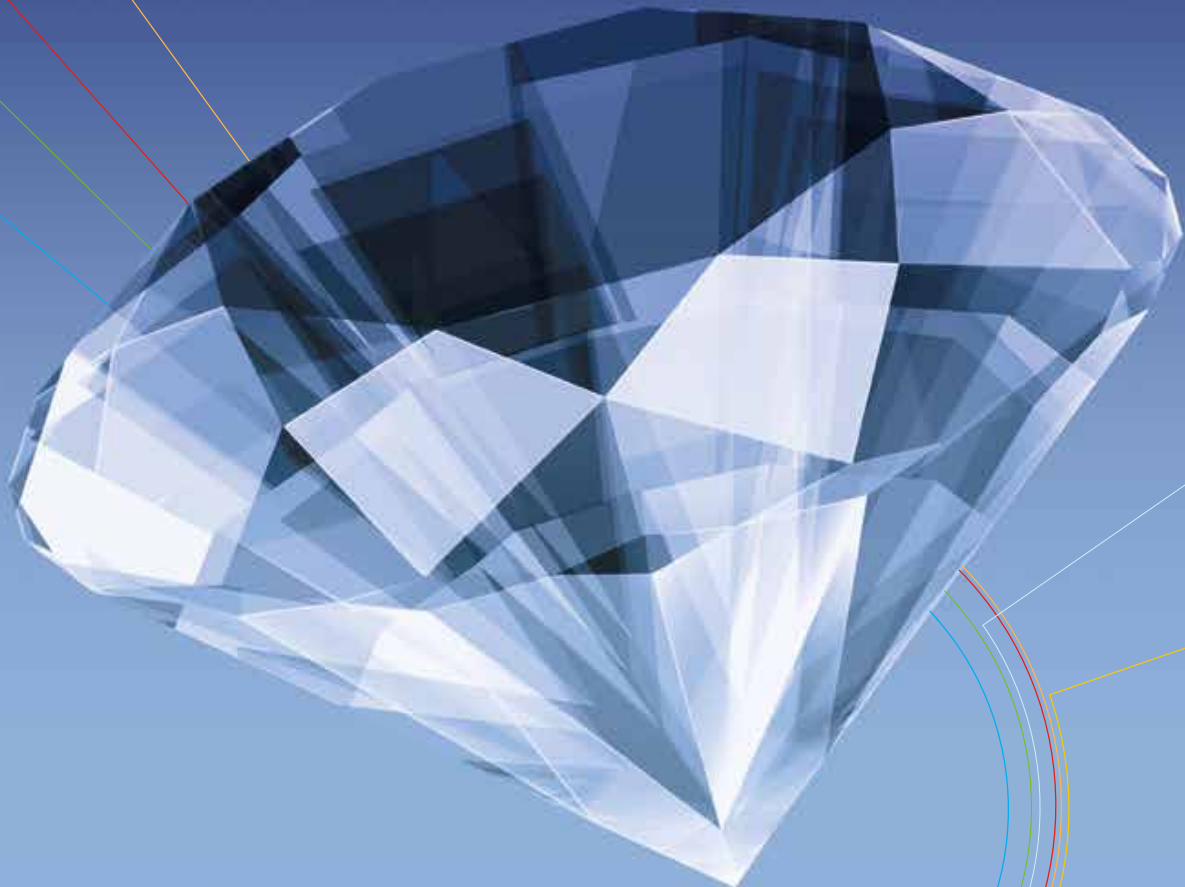




**JOTUN**

# Topcoats

FOR SUPERIOR FINISHES



A topcoat is the finishing coating layer of a coating system. It plays an important role protecting the anticorrosive coating system while also beautifying your asset. Jotun's long experience and extensive testing have resulted in a wide range of topcoats suitable for different climatic conditions and usage areas.

### **PROLONGED DURABILITY**

The topcoat protects the primer system, and hence prolongs the life time of the anticorrosive coating system.

### **PERFECT FINISH**

Perfect finish on your asset is achieved through superior flow properties, a wide range of colors and various gloss levels.

### **PROVEN PERFORMANCE**

Jotun has developed and supplied high performing topcoats for various climatic conditions worldwide for more than 90 years.



COLOUR AND GLOSS RETENTION



CHEMICAL RESISTANCE



ABRASION RESISTANCE



HEALTH AND SAFETY



EASY TO APPLY BY BRUSH AND ROLLER



EASY TO APPLY BY AIRLESS SPRAY



GREEN



FAST DRYING



DIRECT TO METAL

# SELECTED TOPCOATS

Jotun's topcoats are tailor made for different usage situations and comprise various technologies. The Pilot product range represents products where high performance can be expected for a certain time period whereas the Hardtop product range are products where high performance can be expected for a longer period of time.

## **Hardtop** | OPTIMA

Polysiloxane with excellent colour and gloss retention and an extremely tough paint film reducing maintenance need to a minimum. The topcoat is isocyanate free.



## **Hardtop** | PRO

Polysiloxane with very good colour and gloss retention, and a tough paint film reducing maintenance need substantially.



## **Hardtop** | ECO

A premium finish polyurethane with no solvents defined as HAPs and low VOC.



## **Hardtop** | AX

Polyurethane with a robust finish, easily achieved by a hassle free application.



## **Hardtop** | SMART PACK

Chemically curing modified acrylic tailor made for maintenance situations. 1:1 mixing ratio and excellent manual application properties.



## **Hardtop** | XP

Polyurethane with an extensive worldwide track record for all-around use.



## **Pilot** | WF

Water-borne acrylic that dries fast and has an excellent HSE-profile.



## **Pilot** | ACR

Fast drying acrylic that can be used direct to metal.



# Hardtop

## OPTIMA



### ULTRA LONG LASTING POLYSILOXANE PERFORMANCE



#### FEATURES

- Excellent colour and gloss retention
- Very good abrasion resistance
- Very good chemical resistance
- Isocyanate free

Maintenance of your asset can be very costly and time consuming, and hence should be reduced to a minimum. Some assets are difficult to maintain and should therefore be protected by an extremely durable paint system ensuring a very long life time.

The excellent colour and gloss retention of Hardtop Optima prolong the maintenance intervals to a maximum. Hardtop Optima satisfies the highest demand for extreme durability supported by very good abrasion and chemical resistance. The extreme durability combined with low VOC and no isocyanates make Hardtop Optima represent safety for the applicator and sustainability for the environment.



# Hardtop | PRO



LONG LASTING POLYSILOXANE PERFORMANCE



The long-lasting polysiloxane performance of Hardtop Pro reduces maintenance of your asset substantially.

Hardtop Pro beautifies and protects your asset for a long time and in a sustainable way through its very good colour and gloss retention, superior chemical and abrasion resistance and by being isocyanate free. Excellent application properties by brush, roller and airless spray make Hardtop Pro the perfect choice for both new construction and maintenance projects in temperatures down to 0°C.

## FEATURES

- Very good colour and gloss retention
- Very good abrasion resistance
- Very good chemical resistance
- Isocyanate free

# Hardtop

ECO



THE PREFERRED POLYURETHANE FOR LEED® PROJECTS



## FEATURES

- Low VOC
- No solvents defined as HAPs

Through the Jotun GreenSteps programme we develop sustainable solutions. Hardtop Eco is tailor made to reduce the impact on both the applicator and the environment. The topcoat contributes towards satisfying Credits IEQ and MR under LEED® 2009 and EQ and MR under LEED® v4, and contains no solvents defined as HAPs.

Good colour and gloss retention combined with very good dirt pick-up resistance ensure a premium finish on your asset.

# Hardtop | AX



ROBUST FINISH – MADE EASY



Unstable climatic conditions and the competence of the applicator can influence the overall performance of a topcoat unfavourably. Hardtop AX is developed to secure a hassle free application despite challenging application situations.

Hardtop AX also ensures a robust and premium finish due to very good colour and gloss retention, chemical and abrasion resistance and good application properties by airless spray, brush and roller.

## FEATURES

- Very good colour and gloss retention
- Very good application properties by airless spray
- Very good chemical resistance
- Very good abrasion resistance



# Hardtop

## SMART PACK



### SIMPLICITY IN MAINTENANCE SITUATIONS



#### FEATURES

- Very good application properties by brush and roller
- Isocyanate free
- 1:1 mixing ratio

Keeping your asset in good condition is a continuous and important task. Hardtop Smart Pack is tailor made for maintenance situations.

The combination of long pot life and a simplified 1:1 mixing ratio enables you to mix correctly, and to mix only the amount needed. Hardtop Smart Pack is tailor made for application by brush and roller and can also be used direct to metal.



# Hardtop

XP



CLASSIC POLYURETHANE PERFORMANCE



In the marine and protective coatings market, polyurethanes represent the largest generic type of two component chemically curing topcoats.

Hardtop XP provides you with classic polyurethane performance combined with good application properties. The topcoat protects and beautifies millions of square meters on assets across the world and has proven its performance over time.

## FEATURES

- Classic polyurethane performance with very good application properties by airless spray

# Pilot

WF



GREEN AND FAST



## FEATURES

- Very low VOC
- Fast drying down to 10°C
- Safe

Through the Jotun GreenSteps programme we develop sustainable solutions. Our water-borne Pilot WF is tailor made to reduce the impact on both the applicator and the environment. This is ensured by very low VOC content and that Pilot WF contributes towards satisfying Credits IEQ and MR under LEED® 2009 and EQ and MR under LEED® v4. Pilot WF has very low VOC, minimizing the risk for explosions.

Pilot WF dries very fast supporting efficiency in your operations. The product is suitable for interior and exterior applications, and gives a very good finish when applied by brush, roller and airless spray.

# Pilot

## ACR



### VERSATILE AND FAST



Pilot ACR is one of the most versatile paints in our topcoat portfolio. The product can be used as a topcoat in a corrosion protection system or direct to metal for less corrosive environments. Pilot ACR has a coat saving potential due to its high build- and direct to metal properties.

Pilot ACR dries fast down to  $-10^{\circ}\text{C}$ , supporting efficiency in operations. The product is suitable for interior and exterior applications.

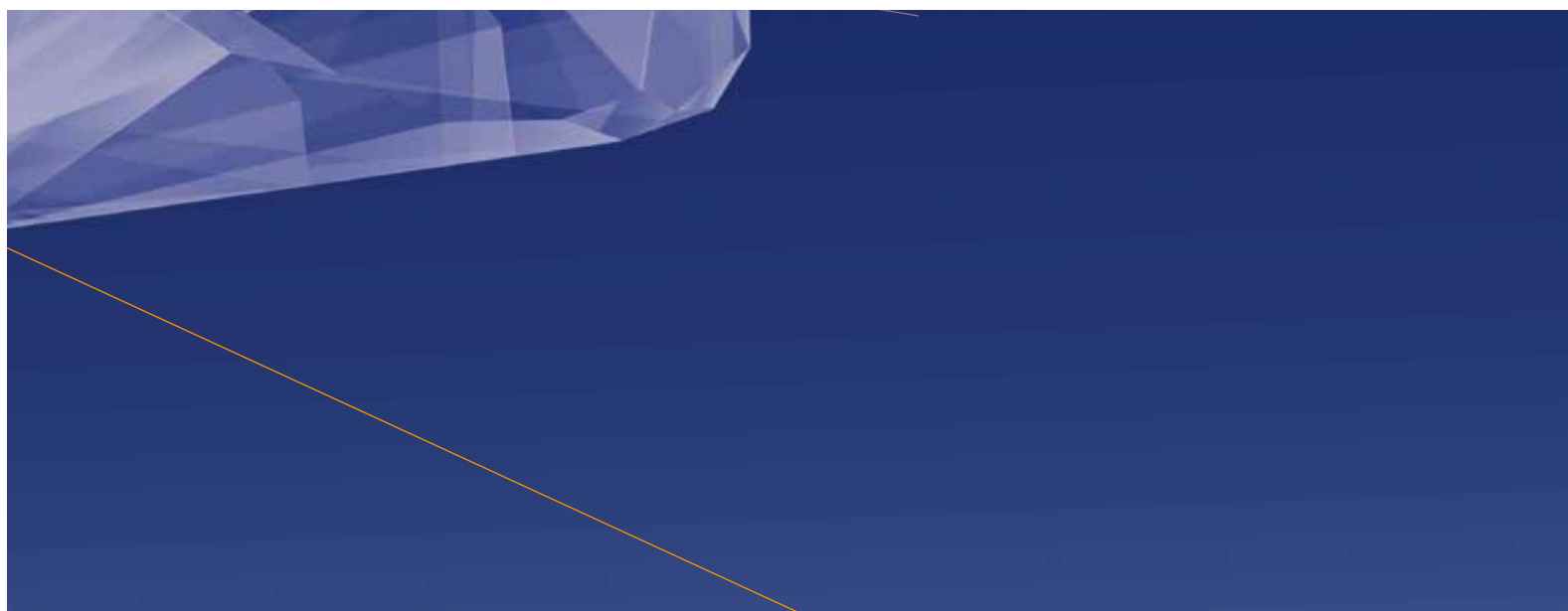
## FEATURES

- Fast drying down to  $-10^{\circ}\text{C}$
- Direct to metal properties

# TECHNICAL COMPARISON

Product	Hardtop Optima	Hardtop Pro	Hardtop Eco
Technology	Polysiloxane	Acrylic Polysiloxane	Polyurethane
Colour and gloss retention	Excellent	Very good	Very good
Isocyanate free	Yes	Yes	No
Contributes towards satisfying Credits IEQ and MR under LEED® 2009 and EQ and MR under LEED® v4.	Yes	No	Yes
Gloss	High gloss	High gloss	Gloss
VOC-US/Hong Kong - US EPA method 24 (tested)	215 g/l	320g/l	243g/l
VOC EU> IED (2010/75/EU) (calculated)	147 g/l	310 g/l	246 g/l
Typical application method	Airless spray	Airless spray, brush and roller	Airless spray
Chemical resistance	Very good	Very good	Good
Colours	Unlimited	Unlimited	Unlimited
Solids (volume %)	76 ± 2%	65 ± 2%	73 ± 2%
Dry film thickness in µm (min-max)	60-100µm	50-130µm	60-100µm
Surface dry (23°C)	3h	5h	1h
Walk on dry (23°C)	4h	8h	8h
Mixing ratio	4:1	3:1	4:1
Pot life (23°C)	6h	3h	2h
Thinner	Jotun Thinner No. 7 or 17	Jotun Thinner No. 7, 10 or 26	Jotun Thinner No. 10 or 26
Typical systems	Penguard Universal Hardtop Optima	Jotamastic 90 Hardtop Pro or Penguard Universal Hardtop Pro	Penguard WF Hardtop Eco or Penguard WF Steelmaster 1200 WF Hardtop Eco





Hardtop AX	Hardtop Smart Pack	Hardtop XP	Pilot WF	Pilot ACR
Polyurethane	Chemically curing acrylic	Polyurethane	Water-borne acrylic	Acrylic
Very good	Good	Good	Good	Good
No	Yes	No	Yes	Yes
No	No	No	Yes	No
Gloss	Gloss	Gloss	Gloss	Semi gloss
325 g/l	390g/l	336 g/l	88 g/l	400g/l
330 g/l	387g/l	336 g/l	57 g/l	395 g/l
Airless spray, brush and roller	Brush and roller	Airless spray	Airless spray, brush and roller	Airless spray
Very good	Good	Good	Good	Good
Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
63 ± 2%	58 ± 2%	63 ± 2%	39 ± 2%	55 ± 2%
50-100µm	60-150µm	50-100µm	40-80µm	60-120µm
1h	2.5h	3.5h	25min	15min
8h	10h	7h	1h	4h
4:1	1:1	10:1	–	–
2h	4h	1.5h	–	–
Jotun Thinner No. 10 or 26	Jotun Thinner No. 17	Jotun Thinner No. 10 or 26	Water	Jotun Thinner No. 7
Jotacote Universal N10 Hardtop AX or Penguard Universal Hardtop AX or Jotamastic 90 Hardtop AX	Jotamastic Smart Pack Hardtop Smart Pack	Jotamastic 90 Hardtop XP or Panguard Universal Hardtop XP or Jotacote Universal N10 Hardtop XP	Penguard WF Pilot WF	Pilot ACR or Penguard Zp Pilot ACR

# A global provider of coatings



Jotun is one of the world's leading manufacturers of paints, coatings and powder coatings.

We have 65 companies in 45 countries and 35 production facilities in 21 countries on all continents, and are represented in more than 100 countries with our network of agents, branch offices, distributors and sales offices around the world.

Our operations cover development, production, marketing, R&D and sales of paints and coatings to protect and decorate surfaces in residential, shipping and industrial markets.



Jotun is organised in four segments and seven geographical regions with its head office located in Sandefjord, Norway.

### PROTECTIVE COATINGS

Our protective coatings are protecting assets in industries such as offshore, energy, infrastructure and hydrocarbon processing.

### MARINE COATINGS

As the world's leading provider of marine coatings we supply to ship owners, management companies and others for newbuilding, seastock and dry-dock.

### POWDER COATINGS

Our powder coatings are supplied to manufacturers of appliances, furniture, building components, pipelines and general industries.

### DECORATIVE PAINTS

Our interior and exterior paints are being used by consumers and professionals worldwide, for protection and decoration.

### UNIFORM STANDARD ACROSS THE GLOBE

- Easy to exchange trained technical personnel across national borders and multi-national projects.
- Compulsory training for all technical and sales personnel in marine and protective segments. Most of our coating advisors and technical personnel have FROSIO and/or NACE certification.
- Same competence in maintaining company standard procedures globally.



### Jotun GreenSteps

#### FOR A MORE COLOURFUL WORLD, WE ALL NEED TO BE A LITTLE GREENER

Jotun recognises the responsibility it has to the environment and has established its own GreenSteps programme.

Through the GreenSteps programme we address market demand for more sustainable coatings solutions.



# Jotun Marine Coatings and Jotun Protective Coatings offices worldwide

Legal Jotun entities worldwide are listed. For details of Branch offices and Jotun representation in countries not listed, please visit [jotun.com](http://jotun.com)

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Jotun Protects Property