



**performance** yacht coatings

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

The company has 38 production facilities in 23 countries,

67 companies in 47 countries and is represented in more than 100 countries 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 SEGMENTS**

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



MARINE COATINGS
As the world's leading provider of marine coatings, we supply to ship owners, management companies and others for newbuilding, seastock and drydock. In addition, Jotun supplies coating solutions for superyachts and yachts.



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



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.

#### **JOTUN VALUES**

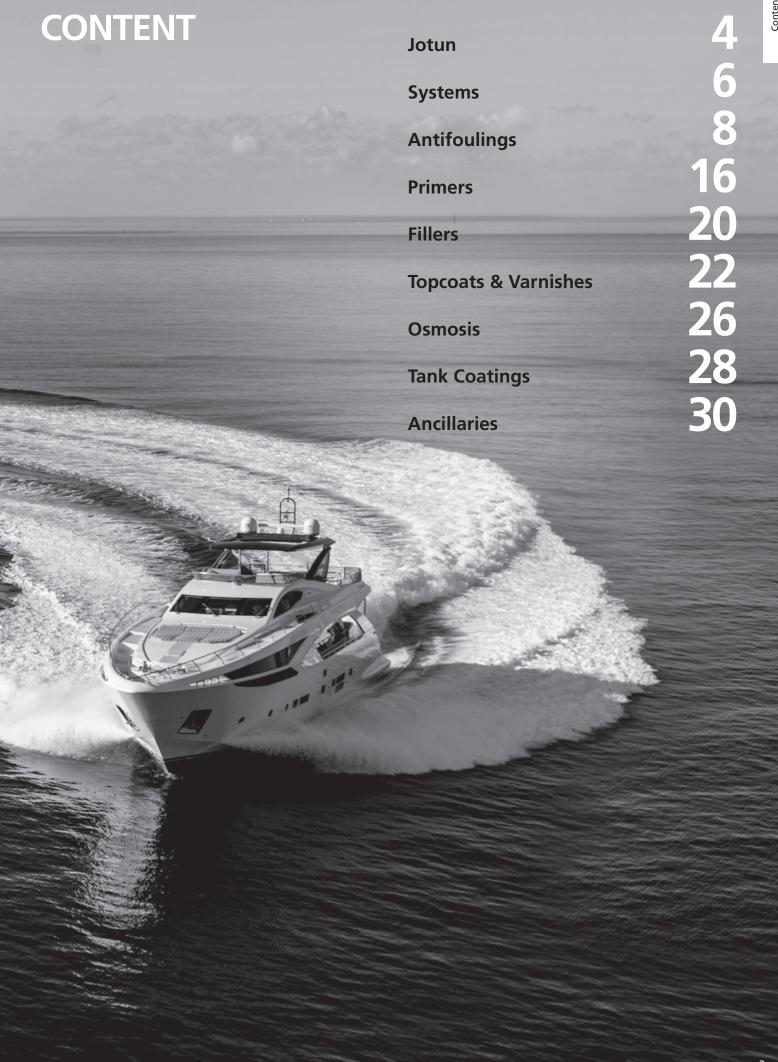
Jotun has deeply rooted values and business principles that give guidance and that are practical in the real world we are operating in. Together with our corporate responsibility these are the core of our corporate culture.











#### PERFORMANCE WITH PASSION

Building on over 90 years' experience in the marine environment, Jotun Yachting delivers high performances coatings combined with the best customer service in the world of professional yachting.

In 2020, the decision to restructure our yachting business and rationalise our product range has seen the development of a more streamlined operational model focused solely on the professional yacht and superyacht markets.

#### This is Jotun Yachting.

Today, by working closely with our global network of dealers and direct with the professional applicators and new build and maintenance yards in the superyacht market, we are building on our heritage to provide a smarter, more specialised, tailored service to every customer.

Recognised as one of the world's leading paint manufacturers – and the number one supplier of antifoulings – we are always passionate about delivering the best possible outcome. Our customers trust our products and our people. Indeed, as their trusted partners, we work closely with every customer to ensure that every project we deliver exceeds expectations.

Jotun performance is proven worldwide – making us the preferred supplier in many markets. We're recognised as the experts – the global Jotun Group has 40 production facilities and more than 9,900 employees – and we openly share our insights and knowledge with our partners.

Our extensive range of high quality products provides a single full system solution – combining complete corrosion protection with primers, a range of fillers and the latest top-coating technologies. And we back up the quality of our products with unrivalled technical support at every stage – before, during and after project completion via the **Jotun Core** lifecycle system.

With the launch of Jotun Yachting in 2020, we have reimagined our business to best meet the needs of all our dealers and direct customers in professional yachting. This is a business where success is shared with our partners and where performance with passion underpins everything we do now and in the future.



#### **TECHNICAL SPECIALIST**

#### **TECHNICAL SUPPORT**

Long before a single litre of paint is applied, technical specification, guarantees and certificates must be made available for discussion and agreement with customer.

Jotun has experienced Technical Support managers to ensure suitable paint specification for the specific customer needs is created and suitable training to application teams are performed to assure correct application work on site later on. (picture of specification and discussion)



#### **TECHNICAL SERVICE**

Statistics show that as much as 95% of all coating failures are a result of poor surface preparation, environmental conditions or application. Best practise routines and correct application are essential to achieve long-term performance.



Jotun offers technical service on major projects for all parties involved: owners, shipyard and applicators.

Jotun is represented all over the world with more than 1000 coating advisors, and they all bring with them the same high standards of knowledge and education to our customers, located where Jotun is promoting and selling its products.

Jotun has dedicated YACHTING coatings advisors with extensive specialist knowledge and experience. All are qualified to FROSIO or NACE, with all having continuous specialist training, ensuring knowledge of application technologies, products and the use of the most advanced test equipment.

Jotun technical team strives for excellence and aims to take the PAIN out of PAINT for our customers.

#### **INNOVATION**

Every Jotun product is the result of intensive research and development, combining state-of-theart technology with innovative thinking, practical knowledge and experience

Jotun has a dedicated team of specialist R&D chemists working on yacht coatings. Using a 5-stage innovation process including a comprehensive testing program, all products are tested in both laboratory and real life including customer testing and feedback before being approved for use, to ensure that our customers receive the highest standard of performance.

As part of the yachting research and development program, Jotun chemists are continuously working to improve current products, ensuring that the Jotun Greensteps programme is followed, together with the design and development of new products, using the latest available technologies.



#### **MULTICOLOR**

The Jotun Multicolor tinting system provides an almost unlimited choice of topcoat colours. These are available in the standard yachting range, together with colour matched or custom-made colours – all helping to achieve a truly unique paint finish for any yacht. The Multicolor concept was successfully introduced around the world in 1974 and incorporates the most innovative and technologically advanced tinting solutions – providing the widest range of colours combined with unparalleled Jotun quality.







#### **SILYL ACRYLATE TECHNOLOGY**

Jotun has been working with silyl acrylate technology since the 1990s, with silyl based products applied on more than 10,000 marine vessels worldwide, Jotun is widely recognised as the industry's leader in this specialist antifouling technology.

### PROVEN PRODUCT PERFORMANCE

After years of development and testing, *Imperial* was launched in 2002, with the development of the silyl acrylate binders conforming to Jotun's strict quality standards and test requirements.

From the years of experience and continual innovation, the 2nd generation silyl acrylate technology seen in today's *Imperial* and *Imperial* | XTR\* was developed offering the superyacht industry the most advanced antifouling system

### DEVELOPED FOR SUPERYACHTS

Silyl acrylate antifoulings are less dependent on vessel movement, providing higher flexibility with regards to vessel activity and speed, which is recommended for low activity vessels like superyachts. This is achieved by the closely controlled reaction between seawater and the silyl acrylate based resin. Relatively low activity reduces the erosion rate of standard ion exchange antifoulings, so the choice of antifouling technology is important to ensure sufficient fouling protection of the hull surface, even when the yacht is static, with minimal build-up of leached layers, which is necessary to maintain the hull fouling free.

### INDUSTRY-LEADING CHEMISTRY

The silyl acrylate based polymer consists of silyl ester functionalised side groups. Upon the reaction with hydroxyl ions present in natural seawater, the silyl ester group reacts in a very controlled way, as the level of hydroxyl ions is constant in the world's oceans making it easy to predict the exact reaction rate. The covalent bond being disrupted in the silyl ester is much stronger than the ionic bonds in the ion exchange technologies under seawater exposure. It is possible to fine-tune and tailor the coating specification to suit a specific yachts' requirements using: voyage factor, average speed and average water temperature.



<sup>\*</sup> Imperial XTR has federal EPA approval for application in the USA. Non-approved paint can be applied to a vessel abroad, and the vessel can subsequently trade in USA waters.

## **Imperial**

**Imperial** provides reliable, long lasting protection by advanced silyl technology, a linear polishing rate and a low leached layer – ensuring a controlled release of biocides over time.



## Imperial XTR

- Premium silyl binder technology
- Service periods up to 36 months\*
- Can be applied over most other antifouling technologies

Kit Size:	5 & 20 ltr
Spreading Rate (m <sup>2</sup> /L):	6,4 @75 µm
(XTR) Spreading Rate (m <sup>2</sup> /L):	7,7 @75 µm

36 months warranty only applies for Imperial.

Imperial XTR has federal EPA approval for application in the USA.

Non-approved paint can be applied to a vessel abroad, and the vessel can subsequently trade in USA waters.

Due to the limitations of colour printing processes these colours are an indication only and may deviate slightly from the delivered product.













#### SUPERYACHT APPLICATION

# NEW BUILD

## AIRLESS SPRAY APPLICATION



#### ROLLER APPLICATION



## MegaCoteCoat 1125 micronsMegaCoteCoat 2125 micronsMegaSealer75 micronsImperialCoat 190 micronsImperialCoat 290 microns

MegaCote Coat 1	125 microns
MegaCote Coat 2	125 microns
MegaSealer	75 microns
Imperial Coat 1	45 microns
Imperial Coat 2	45 microns
Imperial Coat 3	45 microns
Imperial Coat 4	45 microns

# DRY DOCK Hull Existing Underwater System

<b>Imperial</b>	Coat 1	90 microns
<b>Imperial</b>	Coat 2	90 microns

Imperial Coat 1	45 microns
Imperial Coat 2	45 microns
Imperial Coat 3	45 microns
Imperial Coat 4	45 microns

#### **HYDRACTIVE™ TECHNOLOGY**

By nature, antifouling binders are hydrophilic (water attracting) in order to allow biocide release into sea water, but this tends to increase the thickness of the leached layer, becoming like a 'sponge' structure.

To minimize the formation of leached layer affecting the coatings antifouling property, it is critical to control the coating's water uptake... Jotun has coated soluble pigment particles with a molecular layer to change the particle's properties to become Hydrophobic (water repellent) instead of hydrophilic preventing water ingress into the coating and reducing the formation of leached layer.

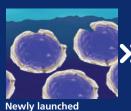
When the predetermined amount of seawater has penetrated the antifouling's surface layer, the particle's coating reacts with the hydroxyl ions (Hydractive™) allowing an element of water ingress, rendering the particle soluble:



Hydrophilic



Hydrophobic







Hydractive™: Particle dissolves in seawater

This provides a controlled release of biocide, protecting the hull from fouling with predictable performance.



#### **Soluble Pigment Particles**

Coated with Hydrophobic molecular layer, preventing water uptake.

Utilising the Hydractive<sup>™</sup> technology, **NonStop** | SUPREME combines:

A. Reduced leached layer, which improves the efficiency of the antifouling coating

B. Improved and predictable biocide release which protects against fouling.

With Hydractive technology, Jotun has improved, taking a further step towards the ultimate fouling protection.

#### LEACHED LAYERS

'Leached layer' is a layer at the surface of an exposed antifouling where the composition has changed. All the water-soluble components in this layer have been dissolved and the biocides released. The remaining structure is therefore full of voids and fragile with reduced mechanical strength.

All antifouling paints develop a 'leached layer'. A thin layer of inert product is inevitable and shows that the paint is selfpolishing and working as it should. However, an excessive thickness of 'leached layer' can have a negative effect, as the efficiency of the biocide release is reduced by the build-up of leached layer.

#### SUPERYACHT APPLICATION



#### **DRY DOCK** Hull Existing Underwater System

#### **AIRLESS SPRAY APPLICATION**



MegaCoto	Coat 1	125 microns
MegaCot	Coat 2	125 microns
MegaSea	ler	75 microns
NonStop	SUPREME Coat	90 microns
NonStop	SUPREME Coat 2	90 microns

	NonStop	SUPREME	Coat 1	75 microns
NonStop   SUPREME Coat 2 75 micro	NonStop	SUPREME	Coat 2	75 microns

#### **ROLLER APPLICATION**



MegaCote	Coat	1	125	microns
MegaCote	Coat	2	125	microns
MegaSea	ler		75	microns
NonStop	SUPREME	Coat 1	45	microns
NonStop	SUPREME	Coat 2	45	microns
NonStop	SUPREME	Coat 3	45	microns
NonStop	SUPREME	Coat 4	45	microns

NonStop	SUPREME	Coat 1	50 microns
NonStop	SUPREME	Coat 2	50 microns
NonStop	SUPREME	Coat 3	50 microns

## NonStop | SUPREME

Premium self-polishing antifouling based on Hydractive (TM) technology providing excellent fouling protection and reducing hull friction and speed loss.





**ROLLER** 

**APPLICATION** 

#### NonStop SUPREME

- Colour stability
- Service periods up to 24 months
- Smooth finish and faster drying

Kit Size:	2,5, 5 & 20 ltr
Spreading Rate (m <sup>2</sup> /L):	6.9 @75 um













Due to the limitations of colour printing processes these colours are an indication only and may deviate slightly from the delivered product.

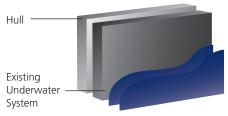
#### **YACHT APPLICATION**

## Hull

**NEW BOAT** 

## AntipestPRIMERCoat 180 micronsAntipestPRIMERCoat 280 micronsAntipestPRIMERCoat 380 micronsNonStopSUPREMECoat 150 micronsNonStopSUPREMECoat 250 microns

#### MAINTENANCE



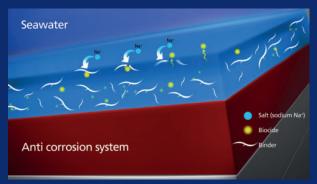
NonStop	SUPREME	Coat 1	50 microns
NonStop	SUPREME	Coat 2	50 microns

<sup>\*</sup> Dependent on vessel speed, usage frequency or sailing hours, water temperature, fouling pressure and geographical location.





#### **ION EXCHANGE**



The ion exchange binder technology of **NonStop** | | MareNostrum | | SP and **Aqualine** | SPRAY are based on a tailor-made binder, developed by Jotun's in-house R&D facility based on several decades of experience in binder development. Ion exchange is the process where a sodium ion is replacing the zinc ion in the binder matrix, which increases the binder solubility. The fine-tuned binder reacts with natural salt (sodium Na+) in seawater and is dissolved in the surrounding water. As water comes in contact with the biocide particles, which are dissolved resulting in a controlled release, preventing fouling settlement. The continued renewal of the coating surface, ensures the required antifouling performance for protection of the yacht.

#### **PROTECTION**

The self polishing technology ensures constant protection of the yacht against fouling. The active ingredients (biocides) and the binders (resin) are dissolved in sea water at a predictable rate, resulting in a continuous new layer of antifouling that is in contact with the sea water keeping a controlled leach rate of the biocides, protecting against marine fouling, throughout the service life of the product.



#### **PERFORMANCE**

**NonStop** | • offers lasting performance for all types of yachts, using ion exchange technology to ensure a service period up to 12 months\*. **NonStop** | • is ideal for both roller and airless spray application, giving a smooth surface finish and dries faster as a result. Compatible with most other self-polishing antifoulings, with no need of a primer or sealer coat and with good in-service stability with little colour change when immersed.

## **MareNostrum** SP

Efficient selfpolishing antifouling based on special binders, assuring an active surface.



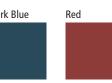


#### MareNostrum

- Reduced leached layer
- Full season performance
- Can be applied over most other antifouling technologies

Kit Size:	2,5, 5 & 20 ltr
Spreading Rate (m <sup>2</sup> /L):	6,9 @75 μm











## NonStop |

Very efficient, long lasting, top-class selfpolishing antifouling product, based on advanced hydrating binders, assuring an active surface which is continuously renewed through its ion exchange self-polishing mechanism.



#### NonStop |

- Reliable performance
- Service period up to 12 months
- Full colour range

Kit Size:	2,5, 5 & 20 ltr
Spreading Rate (m <sup>2</sup> /L):	6,9 @75 μm





















## **Aqualine**

An efficient self-polishing antifouling, based on advanced hydrating binders, assuring an active surface For use on aluminium hulls, drives, flaps, propellers and light metal parts below the waterline.



#### **Aqualine**

- Copper-oxyde free product
- Full season performance
- Slow polishing binder

Kit Size:	2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	6,6 @75 μm











## Aqualine | SPRAY

Designed for protection for drives and other light-metal components below the waterline. In an easy to use aerosol spray can

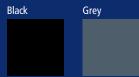


#### Aqualine | SPRAY

- Copper-oxyde free product
- Full season performance
- Slow polishing binder

Kit Size:	0,4 ltr
Spreading Rate (m²/L):	7 @30 μm



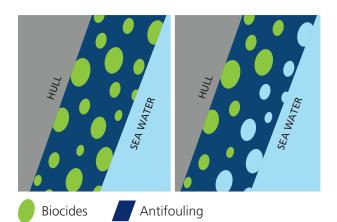






#### HARD ANTIFOULING

Hard types of antifoul use a porous paint film, containing active biocides that dissolve very slowly in seawater, gradually leaching out as the season progresses. The leaching rate of the biocide is not constant, and the performance of the product can decrease progressively throughout the season. The biocide particles are suspended within the insoluble paint film which dries to a hard finish, which enables periodic scrubbing during the season to keep the bottom in perfect condition. Once the biocide is exhausted, the remaining hard paint film remains and is prone to build up over years of application, this will need removing at some point, to prevent it cracking and peeling.



Hard antifoulings are popular on racing yachts and fast planning motor boats as it can be wet sanded and burnished smooth for reduced friction and won't erode too quickly at speed. Even a small amount of growth results in significantly increased drag and therefore impaired performance combined with much higher fuel consumption.

## Racing

Excellent antifouling performance with good colour retention and no chalking. Can be used for trailer boats or boats that have dry moorings.

Racing

Kit Size:

• Smooth finish

Spreading Rate (m<sup>2</sup>/L):

• Developed for speed boats (40 knots+)

• Can be burnished for racing sail boats

2,5 ltr

6,9 @75 μm





Grey



Blue



White









## **VinylSealer**

Vinyl modified sealer, aluminium pigmented for increased water resistance. Good adhesion to wood and previously applied antifoulings



#### **VinylSealer**

- Sealer for old antifoulings
- Fast drying
- Can be recoated with any type of antifouling

Kit Size:	1 & 2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	7,6 @50 μm



Aluminium





## MegaSealer

A high build, epoxy-vinyl tie-coat/sealer with added anti-corrosion protection. Recommended as a tie-coat between an epoxy coating and antifouling, or can be used as a sealer coat on old and existing antifouling systems.



#### MegaSealer

- Dual purpose sealer or tie-coat
- Anti-corrosive
- High build

Kit Size:	4,5 & 18 ltr
Spreading Rate (m <sup>2</sup> /L):	8,2 @75 μm















## VinylSealer SPRAY

Spray version of Vinyl Sealer especially developed for areas to be coated with Aqualine Spray, such as stern drives, flaps, outboard engines, etc.



#### VinylSealer SPRAY

- Sealer for old antifoulings
- Fast drying
- Can be recoated with any type of antifouling

Kit Size:	0.4 ltr
	- /
Spreading Rate (m <sup>2</sup> /L):	7,6 @50 µm



Aluminium







## MegaCote

A universal epoxy primer for use on all yacht substrates and areas – internal, external, above and below water and in any time of the year



#### MegaCote

- Multi-purpose use
- Excellent adhesion and abrasion resistance
- Anti-corrosive properties

Kit Size:	4 & 18 ltr
Spreading Rate (m <sup>2</sup> /L):	5,8 @125 µm

















## MegaPrimer HS

High solid, high build, and low VOC surfacing primer. It has unrivalled application characteristics by both conventional and airless spray application, where limited thinner is needed to deliver a smooth surface with excellent sanding properties.



#### **MegaPrimer** HS

- No risk of pin holes when applied in High Build
- Flexible workability, sandable 4 months after!
- Easy product handling

Kit Size:	9 ltr
Spreading Rate (m <sup>2</sup> /L):	3,1 @250 µm













## MegaPrimer

Sandable epoxy primer used as a barrier between epoxy fillers and finish coats.



#### **MegaPrimer**

- Easy to sand
- Excellent adhesion

Kit Size:	5 & 20 ltr
Spreading Rate (m <sup>2</sup> /L):	4,3 @125 μm













## MegaPrimer LITE

Finishing epoxy primer for use as undercoat before polyurethane topcoats



#### MegaPrimer | LITE

• Quick drying

- Smooth off the gun finish.
- Easy to sand finishing primer.

Kit Size:	1, 5 & 20 ltr
Spreading Rate (m <sup>2</sup> /L):	8,5 @60 μm















## Antipest | PRIMER

Epoxy primer designed to prevent osmosis in fibre glass hulls. Can be used both as primer for most types of substrates, fibre glass, aluminium and marine timber as well as intermediate adhesion sealer for antifoulings.



#### Antipest | PRIMER

- Osmosis prevention with aluminium flakes
- Fast drying and smooth finish
- All-in-one primer and sealer

Kit Size:	1 & 2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	5,6 @75 μm















One component primer, easy to apply with very good filling and levelling especially developed for EasyGloss topcoat.



#### **EasyPrimer**

- Fast drying
- Good hiding power
- Good sanding properties.

Kit Size:	1 & 2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	9,6 @50 μm













## MegaFiller

An ultra lightweight epoxy filler with excellent sanding properties and minimal shrinkage, independently tested and proven to have exceptional adhesion, cohesion and flexibility performance



#### MegaFiller

- Ultra lightweight
- Excellent flexibility
- Easy to sand

Kit Size:	4 & 20 ltr
Specific gravity (kg/L):	0,57



Light Blue





## MegaFiller | SMOOTH

A finishing surface filler with a tough, smooth and fully sandable film for sealing Megafiller or filling small surface defects, providing the perfect finished surface prior to priming.



#### MegaFiller SMOOTH

- Smooth finish
- Good sanding properties
- High tensile strength

Kit Size:	4 ltr	
Specific gravity (kg/L):	1,6	









## MegaFiller | MULTI

A lightweight, multi-purpose filler with superb, smooth application characteristic, reducing surface defects and the need for finishing filler.







#### MegaFiller | MULTI

- Multi-purpose
- High tensile strength and flexibility performance
- Approved for pump mixing machine use

Kit Size:	4, 20, 100 & 400 ltr
Specific gravity (kg/L):	0,9





## MegaFiller | DECK

An ultra lightweight epoxy filler with very strong adhesion and flexibility, that is specifically designed for deck levelling before teak deck application.



#### **MegaFiller** | DECK

- Ultra lightweight
- Excellent sanding properties
- Easy to apply with relatively high thickness

Kit Size:	20 ltr	
Specific gravity (kg/L):	0,57	



Light Brown





## **EasyGloss**

One component alkyd, giving very good application properties when applied by roller or brush. Provides a high gloss finish and good abrasion resistance, while staying flexible at the same time. For all types of boats



#### **EasyGloss**

- High gloss
- Easy to apply and quick drying
- Unlimited colour range with MCI

Kit Size:	1 & 3 ltr
Spreading Rate (m²/L):	7,8 @50 µm











## **TopGloss**

A high gloss acrylic polyurethane topcoat with versatile application, excellent levelling properties and abrasion resistance. For use in all yacht interior spaces, including machinery spaces and engines, offering a tough, easy to clean finish



#### **TopGloss**

- Easy application: spray, roller or brush
- Heat resistant up to 120°C
- Easy to clean

Kit Size:	4,5 ltr
Spreading Rate (m <sup>2</sup> /L):	10 @50 μm



MCI tinting systems









3.5: 1

## **MegaGloss** HG

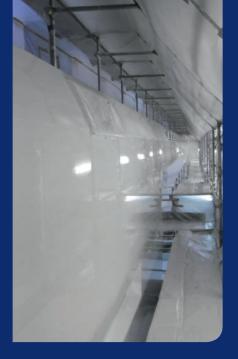
A high gloss, linear polyester polyurethane topcoat, specially formulated for Superyachts. The perfect choice, meeting the demands of both Superyacht owners and applicators seeking a mirror-like finish. Roller grade hardener available for brush and roller application



#### **MegaGloss** | HG

- Excellent gloss and colour retention
- Outstanding abrasion resistance
- High solids low VOC

Kit Size:	4,5 ltr
Spreading Rate (m²/L):	8,7 @60 μm



**MCI Tinting Systems** 









## **MegaGloss** AC

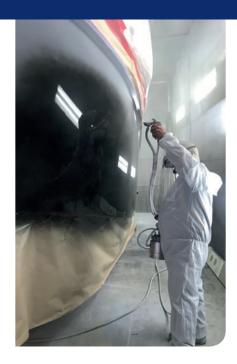
An acrylic polyurethane topcoat with a reflective high gloss finish, using the latest resins and binder technologies, this modern acrylic polyurethane topcoat is easy to apply and to achieve a high gloss finish that can be polished and buffed, if required



#### **MegaGloss** AC

- Excellent gloss and colour retention
- Applicator friendly
- Can be polished and buffed if required

Kit Size:	1, 3 & 5 ltr
Spreading Rate (m <sup>2</sup> /L):	10 @60 μm



MCI Tinting Systems











## MegaGloss | AC CLEAR

Clear varnish of Megagloss AC (clear - MCI base 3) which contains UV stabilizers and filters required for a full protection system.

Can also be used as clear coat on other substrates such as carbon fibre or polyurethane topcoats.



#### MegaGloss ACCLEAR

- Excellent gloss and colour retention
- Applicator friendly
- Contains UV filters for long lasting wood protection

Kit Size:	0,92, 2,78 & 4,6 ltr
Spreading Rate (m <sup>2</sup> /L):	10 @60 μm













## Ravilakk varnish

High gloss varnish with tung oil offering exceptional flexibility and hardness. Gives a professional, light golden, long lasting gloss finish that enhances the natural beauty of wood



#### Ravilakk varnish

- Contains UV filters for long lasting wood protection
- Proven long lasting performance
- Very good levelling and gloss retention

Kit Size:	1 & 2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	10,2 @50 μm



Clear Golden







## **YachtVarnish**

High gloss, clear alkyd varnish, with exceptional hardness and very good penetration properties. Gives a professional, clear finish



#### **YachtVarnish**

- Contains UV filters for long lasting wood protection
- Proven long lasting performance
- Very good levelling and gloss retention.

Kit Size:	1 & 2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	9,2 @50 μm









#### **OSMOSIS**

Osmosis is recognized as the main enemy of fibre glass hull boats. Osmosis occurs as a result of water vapour and humidity transmission through the gelcoat layer, affecting the fibre glass lamination and its structural resistance.

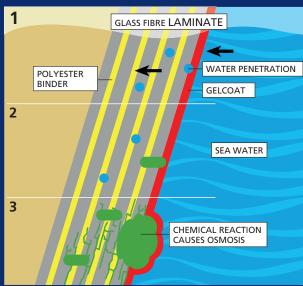
#### THE OSMOSIS PROCESS

Osmosis is the natural process of liquids to equal the differences in pressure between the humidity content of the hull and the sea water. The gelcoat is not a totally waterproof barrier, so humidity will penetrate through the gelcoat down to the fibre glass laminate.

Other factors that contribute to the development of osmosis, are water and moisture in the bilges. This moisture will also penetrate the laminate from inside, thus enabling osmosis to occur. The speed of the osmosis process and the damage it may cause is depending on several factors, such as production speed, glass fibre quality, water temperature etc. Osmosis is a potential problem for gelcoat hulls in the same way corrosion threaten steel and aluminium hulls. To prevent osmosis, it is important to apply a correct paint system as soon as possible.



#### **HOW DOES OSMOSIS OCCUR?**



**Osmosis** is the process where water is transported through a film, e.g gelcoat, from an area with high concentration of water to an area with low concentration of water in order to achieve equal water

concentration in the two areas. These areas may be in the polyester binder itself (yellow area), in the glass fibre laminate (grey area) or between the glass fibre laminate and the gelcoat (red area). After some time, both sides of the gelcoat have an equal concentration of water, which will create blisters with an hydraulic pressure behind the gelcoat.



#### HOW TO DETECT AND TREAT A HULL AFFECTED BY OSMOSIS

It is not always easy to detect osmosis in a hull. Only when blistering can be seen, it is easy to check if the hull has osmosis. If the blistering, blisters (usually of different sizes) contain a brown coloured liquid with a vinegar odour, it is reason to believe that the hull has osmosis and an osmosis treatment must be initiated. If blisters are dry and hard, they are the consequence of air or solvent retention during the painting works, which has no effect on the fibre glass.

If blisters are not visible, this does not mean that hull is osmosis free: as we seen in the "Osmosis process" explanation, the process requires a certain time before blisters are likely to appear. Furthermore preventive treatments will not stop the osmotic process, so it is advisable to get the hull inspected by a professional who can confirm any osmosis status or potential. If so, a repair treatment should be initiated as soon as possible to avoid the progression of osmosis.

If a full osmosis treatment has to be carried out, the gelcoat must be removed completely, the hull must be left to dry and the Jotun Yachting Osmoshell system should be applied to the fibre glass before any primer or antifouling. The most important point is to replace the gelcoat with the correct thickness with epoxy products which are much more waterproof than gelcoat.

## **Osmoshell**

Unique coating for osmosis treatments. It is a high solids, high build, glass flake reinforced product. It provides very high structural resistance and superior adhesion on fibre glass substrates.

Osmoshell





#### Glass flake pigmented to provide exceptional

- 5 year guarantee when applied by approved Jotun Osmosis Center
- Excellent abrasion and water resistance

Kit Size:	2,5 ltr
Spreading Rate (m <sup>2</sup> /L):	1 @1000 µm





Due to the limitations of colour printing processes these colours are an indication only and may deviate slightly from the delivered product.

#### **APPLICATION**

#### PAINT SYSTEM WITH OSMOSHELL

Recommended painting process for an osmosis treatment of a fibre glass hull



- 1 High pressure fresh water washing and degrease with BoatWash if necessary
- 2 Remove the existing paint and gelcoat completely and rinse the hull with fresh water (warm if possible) adding some abrasive material(\*)
- **3** Let the hull dry (less than 1% water In the fibre glass), wash with fresh water every week
- 4 Apply a first coat of Osmoshell with a smooth spatula to fill in all defects, hollows etc.
- **5** 1.000 microns (1 mm) with Osmoshell by tooth and smooth spatula after surface preparation
- **6** One coat of Megafiller Smooth\*\* if necessary to achieve a smooth surface
- **7** Antipest Primer (1 coat)
- **8** Antifouling (2 coats)

Small osmosis damage may be repaired with Epoxy Repair.

Osmoshell is a solvent-free epoxy coating, reinforced with glass flakes, giving a very high structural surface, being virtually waterproof. This is a curative coating system for hulls affected by osmosis.

(\*) If abrasive material cannot be used, coarse sanding with P40 – P80 dry paper is recommended in order to ensure the correct surface roughness and full adherence of the system. (\*\*) Megafiller Smooth is recommended to obtain a smooth surface, as Osmoshell will leave certain roughness after application and should not be sanded to avoid film thickness reduction. Finishing Filler can be easily sanded to get a smooth surface. Moisture content of the hull has to be less than 1% before application of any coating.



Jotun has a growing network of Yachting dealers covering the needs of the market and supporting customers.

The dealers network is a key element for **Jotun** *Core* service, for support and supply of coatings to the growing Jotun superyacht fleet.

## 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.











Reducing waste

## **Tankguard** DW

A solvent free epoxy tank coating designed and certified for potable water tanks.





#### Tankguard

- Solvent free
- Low VOC application
- Smooth easy clean surface

Kit Size:	15 ltr
Spreading Rate (m <sup>2</sup> /L):	3,3 @300 µm









## Tankguard | SPECIAL ULTRA

A phenolic epoxy tank coating with superior chemical resistance and good levelling properties leaving a smooth surface for easy cleaning designed for grey and black water tanks as well as for fuel tanks



#### **Tankguard** | SPECIAL ULTRA

- Applicator friendly
- Flexible
- Superior chemical resistance

Kit Size:	20 ltr
Spreading Rate (m <sup>2</sup> /L):	7 @100 um

















## YachtCare | CLEANER

pH neutral & biodegradable, concentrated yacht cleaning detergent, for the manual cleaning of all yacht external surfaces. Specials polymers provide a unique self air-drying effect to leave a streak free finish. Wash using a sponge or mop. Rinse and let dry.





#### YachtCare | CLEANER

- pH Neutral
- Biodegradable Compliant to MARPOL Annex 5 1.7.5
- Self air-drying & streak free

Mix Ratio:	1:50	
(1L water per 20ml of YachtCare Cleaner)		
Kit Size:	1 & 5 ltr	

## MegaMatt | AGENT

MegaMatt (Flattening) additive can be used with Megagloss topcoat to achieve various gloss levels, flat or semi-gloss finishes.



#### MegaMatt AGENT

- Easily incorporated in the topcoat
- Made for spray application

Mix Ratio to suit need: example 2:1 (2 parts Megagloss HG: 1 part MegaMatt agent) gives 30GU

Kit Size: 2,25 ltr



## **Antiskid**

A fine anti-skid mixture of polymer bead particles for effective slip-resistant finish. Used to coat deck or similar surfaces like step areas, with a non-skid coating. Mix with paint for an anti-skid finish for application by spray or roller or simply sprinkle this additive onto wet paint.





#### **Antiskid**

- Fine, anti-skid surface
- Can be applied by spray
- Compatible with any **MegaGloss** topcoat

Mix Ratio: typical mix ratio = 5 parts mixed topcoat:1 part Yachting Anti-Skid

Kit Size: 1 ltr

#### **THINNERS**

PRODUCT	ТҮРЕ	FOR USE WITH	JOTUN PRODUCTS
JOTUN THINNER NO. 2	Alkyds and urethane alkyds	One component topcoats and varnishes	Yacht Varnish, Ravilakk Varnish, EasyPrimer, EasyGloss
JOTUN THINNER NO. 7	Vinyl acrylics and urethane alkyds	One and two component topcoats, primers and antifoulings	All antifoulings, Vinyl Sealer
JOTUN THINNER NO. 12	Polyurethane	Two component topcoats and varnishes	Megagloss products
JOTUN THINNER NO. 17	Epoxy coatings	Two component primers	AntiPest Primer, Osmoshell, MegaCote, MegaPrimer, MegaPrimer lite
JOTUN THINNER NO. 18	Polyurethanes, medium evaporation	Two component topcoats and varnishes	Megagloss products
JOTUN THINNER NO. 19	Polyurethanes, fast evaporation	Two component topcoats and varnishes	Megagloss products

Jotun Thinner No. 17 and Jotun Thinner No. 18 can be used for cleaning tools and other equipment.

Do not add excessive solvent to coatings. Carefully check the coating manual and the technical data sheet of each product before adding any thinner. Solvents can affect in drying times, film formation and curing properties.

Important: Do not add any solvent to fillers. Solvents will affect drying times, film formation and water/solvent resistance properties.

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