



# MARINE COATINGS



Queen Mary 2



Ferries



Investigator



OSV + PHT



Super Yachts



Sailing Craft

MARINE COATINGS

# **PAINTING GUIDE MARINE**

## ***Above & Below Waterline***

- **Aluminium**
  
- **Fibreglass**
  
- **Steel**
  
- **Timber**







# PAINTING SYSTEMS FOR Timber Vessels

## ABOVE WATERLINE

### MINIMUM SURFACE PREPARATION

- Loose paint to be removed by scraping. Oil, grease, salts and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing topcoat to be removed back to sound primer, ensuring that this remaining primer is sanded to a minimum 36g profile.
- Damaged timber areas, and areas where the existing primer is not stable to be power-tool sanded with 36g discs to remove this and expose fresh timber. Edges to remaining intact primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove debris, and solvent wipe the sanded paint surface. Commence initial primer application to exposed, clean timber before surface is contaminated.

Present System	Primer Coat to exposed timber	Coats x DFT um	Intermediate Coat to whole surface	Coats x DFT um	Finishing Coat	Coats x DFT um
Epoxy	Jotamastic 90 or Jotacote 605 or Penguard HB <i>First coat thinned 20%</i>	1 x 50 1 x 50 1 x 50	Jotamastic 90 or Jotacote 605 or Penguard HB	1 x 200 1 x 200 1 x 150		
Epoxy / Polyurethane	Jotamastic 90 or Jotacote 605 or Penguard HB <i>First coat thinned 20%</i>	1 x 50 1 x 50 1 x 50	Penguard HB (sandable)	1-2 x 150	Imperite 300 or Hardtop Range	2-3 x 40 2-3 x 40
Epoxy / Acrylic Enamel	Jotamastic 90 or Jotacote 605 or Penguard HB <i>First coat thinned 20%</i>	1 x 50 1 x 50 1 x 50	Penguard HB (sandable) or Alkyd Primer	1-2 x 150 2 x 50	Pioner Topcoat or Pilot II	2 x 50 2 x 40
Acrylic Enamel	Vinyguard Slivergrey 88 (thin first coat by 10%)	2 x 50	Alkyd Primer	2 x 50	Pilot II	2 x 40

The *Acrylic Enamel* system is most preferable for timber vessels.

Finishing coat may be deleted if colour and gloss retention is not of high importance.

Jotun Non-Skid/Non-Spark Additive may be used at the applicator's discretion between topcoats to achieve the desired level of non-skid textured finish for deck areas. The additive may be broadcast into the first wet coat of topcoat then sealed with the second coat. Alternatively spray additive with the second coat.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.



## DESCRIPTION OF PRODUCTS

Products	Description
Alkyd Primer	<i>Alkydprimer is a single-pack alkyd based primer. As a primer for steel and aluminium structures as part of a suitable alkyd system.</i>
Vinyguard Silvergrey 88	<i>Vinyguard Silvergrey 88 is a single-pack quick drying, modified vinyl primer. Also as a tie coat or as a sealer for an antifouling system. Can also be used as a primer/touch-up primer under alkyd and acrylic coatings for steel structures.</i>
Hardtop Ultra, AX, XP, Flexi	<i>Hardtop is a two-pack polyurethane topcoat. As topcoat over an epoxy/epoxymastic system where a durable finish is required in aggressive atmospheric exposure.</i>
Imperite 300	<i>Imperite 300 is a high gloss two-pack polyester-polyurethane topcoat with excellent gloss and colour retention. As a topcoat over an epoxy system where a durable, high gloss finish is required in aggressive atmospheric exposure.</i>
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Jotamastic 90	<i>Jotamastic 90 is a two-pack surface-tolerant, abrasion resistant, high solids, polyamine cured epoxy mastic coating. Gives excellent corrosion protection both in salt and fresh water. If exposed to sunlight chalking may occur.</i>
Penguard HB	<i>Penguard HB is a high build, two-pack epoxy coating based on epoxy resin with high molecular weight. Easy to sand.</i>
Pilot II	<i>Pilot II is a single-pack alkyd based topcoat for both exterior and interior use. Topcoat in a traditional alkyd system suitable for steel and woodwork. Good weather and colour stability. Good hiding power.</i>
Pioner Topcoat	<i>Pioner Topcoat is a single-pack acrylic resin based topcoat. Finishing coat for protection of steel and concrete in a variety of climatic conditions, exterior and interior.</i>

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# PAINTING SYSTEMS FOR Timber Vessels

## BELOW WATERLINE

### MINIMUM SURFACE PREPARATION

- Fouling, loose paint and heavy corrosion to be removed by scraping. Oil, grease, salts, fouling and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing antifoul should be wet or dry sanded to a minimum 80g profile. All unstable antifoul should be removed. Rinse with fresh water.
- Damaged timber areas, and areas where the existing primer is not stable to be power-tool sanded with 36g discs to remove this and expose fresh timber. Edges to remaining intact antifoul and/or primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove debris, and wipe clean the sanded paint surface. Commence initial primer application to exposed, clean timber before surface is contaminated.

Present System	Primer Coat to exposed timber	Coats x DFT um	Intermediate Coat to primed areas	Coats x DFT um	Antifoul Coat	Coats x DFT um
Epoxy / Vinyl	Jotamastic 90 or Jotacote 605 <i>First coat thinned 20%</i>	1 x 250 1 x 250	Safeguard Universal ES or Vinyguard Silvergrey 88	1 x 150 1 x 80	Seavictor 40 or Seaguardian or Seavictor 50	2-3 x 100 1-2 x 100 1-2 x 100
Vinyl	Vinyguard Silvergrey 88 (thin first coat by 10%)	2 x 50	Vinyguard Silvergrey 88	1 x 80	Seavictor 40 or Seaguardian or Seavictor 50	2-3 x 100 1-2 x 100 1-2 x 100

The *Vinyl* system is most preferable for timber vessels.

Excess and/or aged coats of antifoul can become unstable over time, impeding the antifoul coating and vessel performance. A Jotun representative can advise on the condition of your vessel's below waterline system and offer recommendations once it is slipped.

Not all antifoul coatings are compatible. Selection of antifoul and its performance can vary according to vessel type, vessel use, film thickness applied, etc. A Jotun representative can advise options if you wish to change products or are unsure of your existing system.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available and only outline re-application to an existing system. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.



## DESCRIPTION OF PRODUCTS

Products	Description
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Safeguard Universal ES	<i>Safeguard Universal ES is a two-pack epoxy vinyl-based coating. Safeguard Universal ES is normally used as an anti-corrosive undercoat for various paint systems or as a sealer coat on antifouling. It provides very good adhesion for self-polishing antifouling.</i>
Seaguardian	<i>Seaguardian is a tin-free ablative antifouling based on a copolymer binder for low and high speed vessels.</i>
Seavictor 40	<i>Seavictor 40 is a tin-free self-polishing antifouling based on a copolymer binder for low speed vessels.</i>
Seavictor 50	<i>Seavictor 50 is a tin-free self-polishing antifouling based on a copolymer binder for low speed vessels. It has an additional active agent for improved control of algae.</i>
Vinyguard Silvergrey 88	<i>Vinyguard Silvergrey 88 is a single-pack quick drying, modified vinyl primer. Also as a tie coat or as a sealer for an antifouling system. Can also be used as a primer/touch-up primer under alkyd and acrylic coatings for steel structures.</i>

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# PAINTING SYSTEMS FOR Aluminium Vessels

## ABOVE WATERLINE

### MINIMUM SURFACE PREPARATION

- Loose paint and heavy corrosion to be removed by scraping. Oil, grease, salts and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing topcoat to be removed back to sound primer, ensuring that this remaining primer is sanded to a minimum 36g profile.
- Corroded and damaged aluminium areas, and areas where the existing primer is not stable to be power-tool cleaned to minimum St. 2 (ISO 8501-1:2007), grinding with 24g-36g discs to remove this and expose fresh aluminium. Edges to remaining intact primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove filings from aluminium, and solvent wipe the sanded paint surface. Commence initial primer application to exposed, clean aluminium before surface is contaminated, and in any event within 6-8 hours.

Present System	Primer Coat to exposed aluminium	Coats x DFT um	Intermediate Coat to whole surface	Coats x DFT um	Finishing Coat	Coats x DFT um
Epoxy	Jotacote 605	1 x 200	Jotacote 605	1 x 200		
Epoxy / Polyurethane	Jotacote 605 or Penguard HB or Penguard Special	1 x 200 1 x 150 1 x 150	Penguard HB	1-2 x 150	Imperite 300 or Hardtop Range AX, XP, Ultra	2-3 x 40 2-3 x 40
Epoxy / Acrylic Enamel	Jotacote 605	1 x 200	Penguard HB or Alkyd Primer	1-2 x 150 3 x 50	Pioner Topcoat or Pilot II	2 x 50 2 x 40

Finishing coat may be deleted if colour and gloss retention is not of high importance.

Jotun Non-Skid/Non-Spark Additive may be used at the applicator's discretion between topcoats to achieve the desired level of non-skid textured finish for deck areas. The additive may be broadcast into the first wet coat of topcoat then sealed with the second coat. Alternatively spray additive with the second coat.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.





## DESCRIPTION OF PRODUCTS

Products	Description
Alkyd Primer	<i>Alkydprimer is a single-pack alkyd based primer. As a primer for steel and aluminium structures as part of a suitable alkyd system.</i>
Hardtop Ultra, AX, XP, Flexi	<i>Hardtop is a two-pack polyurethane topcoat. As topcoat over an epoxy/epoxymastic system where a durable finish is required in aggressive atmospheric exposure.</i>
Imperite 300	<i>Imperite 300 is a high gloss two-pack polyester-polyurethane topcoat with excellent gloss and colour retention. As a topcoat over an epoxy system where a durable, high gloss finish is required in aggressive atmospheric exposure.</i>
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Penguard HB	<i>Penguard HB is a high build, two-pack epoxy coating based on epoxy resin with high molecular weight. Easy to sand.</i>
Penguard Special	<i>Penguard Special is a high build, two-pack zinc phosphate pigmented epoxy coating based on epoxy resin with high molecular weight. As an anti corrosive primer and intermediate coating for corrosion protection. Easy to sand.</i>
Pilot II	<i>Pilot II is a single-pack alkyd based topcoat for both exterior and interior use. Topcoat in a traditional alkyd system suitable for steel and woodwork. Good weather and colour stability. Good hiding power.</i>
Pioner Topcoat	<i>Pioner Topcoat is a single-pack acrylic resin based topcoat. Finishing coat for protection of steel and concrete in a variety of climatic conditions, exterior and interior.</i>

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# PAINTING SYSTEMS FOR Aluminium Vessels

## BELOW WATERLINE

### MINIMUM SURFACE PREPARATION

- Fouling, loose paint and heavy corrosion to be removed by scraping. Oil, grease, salts, fouling and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing antifoul should be wet or dry sanded to a minimum 80g profile. All unstable antifoul should be removed. Rinse with fresh
- Corroded and damaged aluminium areas, and areas where the existing primer is not stable to be power-tool cleaned to minimum St. 2 (ISO 8501-1:2007), grinding with 24g-36g discs to remove this and expose fresh aluminium. Edges to remaining intact antifoul and/or primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove filings from aluminium and wipe clean the sanded paint surface. Commence initial primer application to exposed, clean aluminium before surface is contaminated, and in any event within 6-8 hours.

Present System	Primer Coat to exposed aluminium	Coats x DFT um	Intermediate Coat to primed areas	Coats x DFT um	Antifoul Coat	Coats x DFT um
Epoxy / Vinyl	Jotacote 605 Penguard HB	1 x 250 1 x 150	Safeguard Universal ES or Vinyguard Silvergrey 88	1 x 150 1 x 80	Seasafe Ultra	2-3 x 100

Excess and/or aged coats of antifoul can become unstable over time, impeding the antifoul coating and vessel performance. A Jotun representative can advise on the condition of your vessel's below waterline system and offer recommendations once it is slipped.

Not all antifoul coatings are compatible. Selection of antifoul and its performance can vary according to vessel type, vessel use, film thickness applied, etc. A Jotun representative can advise options if you wish to change products or are unsure of your existing system.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available and only outline re-application to an existing system. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.



## DESCRIPTION OF PRODUCTS

Products	Description
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Safeguard Universal ES	<i>Safeguard Universal ES is a two-pack epoxy vinyl-based coating. Safeguard Universal ES is normally used as an anti-corrosive undercoat for various paint systems or as a sealer coat on antifouling. It provides very good adhesion for self-polishing antifouling.</i>
Seasafe Ultra	<i>Seasafe is a tin-free self-polishing antifouling based on a copolymer binder that has been specifically designed for safe use on aluminium hulls. It has an additional active agent for improved control of algae.</i>
Vinyguard Silvergrey 88	<i>Vinyguard Silvergrey 88 is a single-pack quick drying, modified vinyl primer. Also as a tie coat or as a sealer for an antifouling system. Can also be used as a primer/touch-up primer under alkyd and acrylic coatings for steel structures.</i>

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# PAINTING SYSTEMS FOR Fibreglass Vessels

## ABOVE WATERLINE

### MINIMUM SURFACE PREPARATION

- Loose paint to be removed by scraping. Oil, grease, salts and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing topcoat to be removed back to sound primer, ensuring that this remaining primer is sanded to a minimum 36g profile.
- Damaged fibreglass areas, and areas where the existing primer is not stable to be power-tool cleaned, grinding/sanding with 24g-36g discs to remove this and expose fresh fibreglass. Edges to remaining intact primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove debris, and solvent wipe the sanded paint surface. Commence initial primer application to exposed, clean fibreglass before surface is contaminated.

Present System	Primer Coat to exposed fibreglass	Coats x DFT um	Intermediate Coat to whole surface	Coats x DFT um	Finishing Coat	Coats x DFT um
Epoxy	Jotamastic 90 or Jotacote 605	1 x 200 1 x 200	Jotamastic 90 or Jotacote 605	1 x 200 1 x 200		
Epoxy / Polyurethane	Jotamastic 90 or Jotacote 605 or Penguard HB	1 x 200 1 x 200 1 x 150	Penguard HB	1-2 x 150	Imperite 300 or Hardtop Range	2-3 x 40 2-3 x 40
Epoxy / Acylic Enamel	Jotamastic 90 or Jotacote 605 or Penguard HB	1 x 200 1 x 200 1 x 150	Penguard HB or Alkyd Primer	1-2 x 150 3 x 50	Pioner Topcoat or Pilot II	2 x 50 2 x 40

Finishing coat may be deleted if colour and gloss retention is not of high importance.

Jotun Non-Skid/Non-Spark Additive may be used at the applicator's discretion between topcoats to achieve the desired level of non-skid textured finish for deck areas. The additive may be broadcast into the first wet coat of topcoat then sealed with the second coat. Alternatively spray additive with the second coat.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.



## DESCRIPTION OF PRODUCTS

Products	Description
Alkyd Primer	<i>Alkydprimer is a single-pack alkyd based primer. As a primer for steel and aluminium structures as part of a suitable alkyd system.</i>
Hardtop Range - Ultra, AX, XP, Flexi	<i>Hardtop is a two-pack polyurethane topcoat. As topcoat over an epoxy/epoxymastic system where a durable finish is required in aggressive atmospheric exposure.</i>
Imperite 300	<i>Imperite 300 is a high gloss two-pack polyester-polyurethane (linear) topcoat with excellent gloss and colour retention. As a topcoat over an epoxy system where a durable, high gloss finish is required in aggressive atmospheric exposure.</i>
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Jotamastic 90	<i>Jotamastic 90 is a two-pack surface-tolerant, abrasion resistant, high solids, polyamine cured epoxy mastic coating. Gives excellent corrosion protection both in salt and fresh water. If exposed to sunlight chalking may occur. Can be tinted using Jotun MCI system</i>
Penguard HB	<i>Penguard HB is a high build, two-pack epoxy coating based on epoxy resin with high molecular weight. Easy to sand.</i>
Pilot II	<i>Pilot II is a single-pack alkyd based topcoat for both exterior and interior use. Topcoat in a traditional alkyd system suitable for steel and woodwork. Good weather and colour stability. Good hiding power.</i>
Pioner Topcoat	<i>Pioner Topcoat is a single-pack acrylic resin based topcoat. Finishing coat for protection of steel and concrete in a variety of climatic conditions, exterior and interior.</i>

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# PAINTING SYSTEMS FOR Fibreglass Vessels

## BELOW WATERLINE

### MINIMUM SURFACE PREPARATION

- Fouling, loose paint and heavy corrosion to be removed by scraping. Oil, grease, salts, fouling and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing antifoul should be wet or dry sanded to a minimum 80g profile. All unstable antifoul should be removed. Rinse with fresh water.
- Damaged fibreglass areas, and areas where the existing primer is not stable to be power-tool cleaned, grinding/sanding with 24g-36g discs to remove this and expose fresh fibreglass. Edges to remaining intact antifoul and/or primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove debris and wipe clean the sanded paint surface. Commence initial primer application to exposed, clean fibreglass before surface is contaminated.

Present System	Primer Coat to exposed fibreglass	Coats x DFT um	Intermediate Coat to primed areas	Coats x DFT um	Antifoul Coat	Coats x DFT um
Epoxy / Vinyl	Jotamastic 90 or Jotacote 605	1 x 250 1 x 250	Safeguard Universal ES or Vinyguard 88	1 x 150 1 x 80	Seaguardian or Seavictor 40 or Seavictor 50	2-3 x 100 2-3 x 100 2-3 x 100

Excess and/or aged coats of antifoul can become unstable over time, impeding the antifoul coating and vessel performance. A Jotun representative can advise on the condition of your vessel's below waterline system and offer recommendations once it is slipped.

Not all antifoul coatings are compatible. Selection of antifoul and its performance can vary according to vessel type, vessel use, film thickness applied, etc. A Jotun representative can advise options if you wish to change products or are unsure of your existing system.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available and only outline re-application to an existing system. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.



## DESCRIPTION OF PRODUCTS

Products	Description
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Jotamastic 90	<i>Jotamastic 90 is a two-pack surface-tolerant, abrasion resistant, high solids, polyamine cured epoxy mastic coating. Gives excellent corrosion protection both in salt and fresh water. If exposed to sunlight chalking may occur. Can be tinted using Jotun MCI system</i>
Safeguard Universal ES	<i>Safeguard Universal ES is a two-pack epoxy vinyl-based coating. Safeguard Universal ES is normally used as an anti-corrosive undercoat for various paint systems or as a sealer coat on antifouling. It provides very good adhesion for self-polishing antifouling.</i>
Seaguardian	<i>Seaguardian is a tin-free ablative antifouling based on a copolymer binder for low and high speed vessels.</i>
Seavictor 40	<i>Seavictor 40 is a tin-free self-polishing antifouling based on a copolymer binder for low speed vessels.</i>
Seavictor 50	<i>Seavictor 50 is a tin-free self-polishing antifouling based on a copolymer binder for low speed vessels. It has an additional active agent for improved control of algae.</i>
Vinyguard 88	<i>Vinyguard Silvergrey 88 is a single-pack quick drying, modified vinyl primer. Also as a tie coat or as a sealer for an antifouling system. Can also be used as a primer/touch-up primer under alkyd and acrylic coatings for steel structures.</i>

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# PAINTING SYSTEMS FOR Steel Vessels

## ABOVE WATERLINE

### MINIMUM SURFACE PREPARATION

- Loose paint and heavy corrosion to be removed by scraping. Oil, grease, salts and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing topcoat to be removed back to sound primer, ensuring that this remaining primer is sanded to a minimum 36g profile.
- Corroded and damaged steel areas, and areas where the existing primer is not stable to be power-tool cleaned to minimum St 2 (ISO 8501-1:2007), grinding with 24g-36g discs to remove this and expose fresh steel. Edges to remaining intact primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove filings from steel, and solvent wipe the sanded paint surface. Commence initial primer application to exposed, clean steel before surface is contaminated, and in any event within 4 hours.

Present System	Primer Coat to exposed steel	Coats x DFT um	Intermediate Coat to whole surface	Coats x DFT um	Finishing Coat	Coats x DFT um
Epoxy	Jotamastic 90 or Jotacote 605	1 x 200 1 x 200	Jotamastic 90 or Jotacote 605	1 x 200 1 x 200		
<b>Recommended</b> Epoxy / Polyurethane	Jotamastic 90 or Jotacote 605	1 x 200 1 x 200	Jotamastic 90 Jotacote 605	1 x 200 1 x 200	Imperite 300 (glossy) or Hardtop Range	2-3 x 40
Epoxy / Acrylic Enamel	Jotamastic 90 or Jotacote 605	1 x 200 1 x 200	Penguard HB or Alkyd Primer	1-2 x 150 2 x 50	Pioner Topcoat or Pilot II	2 x 50 2 x 40
Vinyl	Vinyguard Silvergrey 88	2 x 80	Vinyguard Silvergrey 88	1 x 80	Pioner Topcoat	2 x 50
Acrylic Enamel	Jotaprime 250 or Alkyd Primer	1 x 100 2 x 50	Alkyd Primer	2 x 50	Pilot II	2 x 40

Finishing coat may be deleted if colour and gloss retention is not of high importance.

Jotun Non-Skid/Non-Spark Additive may be used at the applicator's discretion between topcoats to achieve the desired level of non-skid textured finish for deck areas. The additive may be broadcast into the first wet coat of topcoat then sealed with the second coat. Alternatively spray additive with the second coat.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.





## DESCRIPTION OF PRODUCTS

Products	Description
Alkyd Primer	<i>Alkydprimer is a single-pack alkyd based primer. As a primer for steel and aluminium structures as part of a suitable alkyd system.</i>
Hardtop Ultra, AX, XP, Flexi	<i>Hardtop is a two-pack polyurethane topcoat. As topcoat over an epoxy/epoxymastic system where a durable finish is required. <b>Hardtop AX</b> is a highbuild, high solids version for greater coverage.</i>
Imperite 300	<i>Imperite 300 is a high gloss two-pack polyester-polyurethane topcoat with excellent gloss and colour retention. As a topcoat over an epoxy system where a durable, high gloss finish is required in aggressive atmospheric exposure.</i>
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Jotamastic 90	<i>Jotamastic 90 is a two-pack surface-tolerant, abrasion resistant, high solids, polyamine cured epoxy mastic coating. Gives excellent corrosion protection both in salt and fresh water. If exposed to sunlight chalking may occur. Can be tinted to almost any colour.</i>
Jotaprime 250	<i>Jotaprime 250 is a single-pack high build air drying primer with enhanced zinc phosphate pigments. Jotaprime 250 does not contain chromates. An anti-corrosive primer for ferrous metals.</i>
Penguard HB	<i>Penguard HB is a high build, two-pack epoxy coating based on epoxy resin with high molecular weight. Easy to sand.</i>
Pilot II	<i>Pilot II is a single-pack alkyd based topcoat for both exterior and interior use. Topcoat in a traditional alkyd system suitable for steel and woodwork. Good weather and colour stability. Good hiding power.</i>
Pioner Topcoat	<i>Pioner Topcoat is a single-pack acrylic resin based topcoat. Finishing coat for protection of steel and concrete in a variety of climatic conditions, exterior and interior.</i>
Vinyguard 88	<i>Vinyguard Silvergrey 88 is a single-pack quick drying, modified vinyl primer. Also as a tie coat or as a sealer for an antifouling system. Can also be used as a primer/touch-up primer under alkyd and acrylic coatings for steel structures.</i>

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Please refer to relevant Technical Data Sheets (TDS) for further information, recoating and curing conditions, or contact Jotun for details. Unless otherwise agreed in writing, all product supplied and technical advice given by us are subject to our standard terms and conditions of sale. In the event that supplies are made and technical advice is given by one of our associated companies or dealers, then such supplies and technical advice shall be subject to the standard terms of sale of that company, a copy of which is available upon request. The given data must be considered as guidelines only.  
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# PAINTING SYSTEMS FOR Steel Vessels

## BELOW WATERLINE

### MINIMUM SURFACE PREPARATION

- Fouling, loose paint and heavy corrosion to be removed by scraping. Oil, grease, salts, fouling and other contaminants etc to be removed with a suitable detergent and high pressure fresh water wash.
- All existing antifoul should be wet or dry sanded to a minimum 80g profile. All unstable antifoul should be removed. Rinse with fresh water.
- Corroded and damaged steel areas, and areas where the existing primer is not stable to be power-tool cleaned to minimum St. 2 (ISO 8501-1:2007), grinding with 24g-36g discs to remove this and expose fresh steel. Edges to remaining intact antifoul and/or primer to be feathered, if not removing system completely.
- Blow down surface with dry, filtered air to remove filings from steel and wipe clean the sanded paint surface. Commence initial primer application to exposed, clean steel before surface is contaminated, and in any event within 4 hours.

Present System	Primer Coat to exposed steel	Coats x DFT um	Intermediate Coat to primed areas	Coats x DFT um	Antifoul Coat	Coats x DFT um
Epoxy / Vinyl	Jotamastic 90 or Jotacote 605	1 x 250 1 x 250	Safeguard Universal ES or Vinyguard Silvergrey 88	1 x 150 1 x 80	Seavictor 40 or Seaguardian or Seavictor 50	2-3 x 100 1-2 x 100 1-2 x 100

Excess and/or aged coats of antifoul can become unstable over time, impeding the antifoul coating and vessel performance. A Jotun representative can advise on the condition of your vessel's below waterline system and offer recommendations once it is slipped.

Not all antifoul coatings are compatible. Selection of antifoul and its performance can vary according to vessel type, vessel use, film thickness applied, etc. A Jotun representative can advise options if you wish to change products or are unsure of your existing system.

Typical Dry Film Thickness in Microns (DFT um) recommended to achieve by spray application. When brushing/rolling, extra coats may be required to achieve the specified film thickness. Brushing/rolling application achieves on average 80um DFT per coat.

The systems shown are minimum examples of the many options available and only outline re-application to an existing system. Jotun can further advise on the system which offers the most economical and effective solution to your needs. Contact Jotun per reverse-side details.



## DESCRIPTION OF PRODUCTS

Products	Description
Jotacote 605 Fast Cure	<i>Jotacote 605 is a two-pack high build, high solids surface-tolerant epoxy coating. For protection of steel, galvanized steel, aluminium and concrete in aggressive locations.</i>
Jotamastic 90	<i>Jotamastic 90 is a two-pack surface-tolerant, abrasion resistant, high solids, polyamine cured epoxy mastic coating. Gives excellent corrosion protection both in salt and fresh water. If exposed to sunlight chalking may occur. Can be tinted to almost any colour using Jotun MCI system</i>
Safeguard Universal ES	<i>Safeguard Universal ES is a two-pack epoxy vinyl-based coating. Safeguard Universal ES is normally used as an anti-corrosive undercoat for various paint systems or as a sealer coat on antifouling. It provides very good adhesion for self-polishing antifoulings.</i>
Seaguardian	<i>Seaguardian is a tin-free ablative antifouling based on a copolymer binder for low and high speed vessels.</i>
Seavictor 50	<i>Seavictor 50 is a tin-free self-polishing antifouling based on a copolymer binder for low speed vessels. It has an additional active agent for improved control of algae.</i>
Seavictor 40	<i>Seavictor 40 is a tin-free entry-level antifouling for low speed vessels.</i>
Vinyguard 88	<i>Vinyguard Silvergrey 88 is a single-pack quick drying, modified vinyl primer. Also as a tie coat or as a sealer for an antifouling system. Can also be used as a primer/touch-up primer under alkyd and acrylic coatings for steel structures.</i>

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PRIMERS & ANTICORROSIVES		TOPCOATS		ANTIFOULINGS							
VINGUARD SILVERGREY 88		A single pack quick drying, non tar modified vinyl primer, suitable for below & above waterline use. Mainly used on Steel and Aluminium surfaces as a touchup primer, but also certified as a sealer coat over Antifoulings containing TBT.		IMPERITE 300		A two pack polyurethane topcoat with superior gloss and colour retention under full UV exposure. Imperite 300 has excellent abrasion and chemical resistance when applied as part of a complete system.		SEAQUANTUM ULTRA (PREMIUM)		A high performance self-polishing & self-smoothing antifouling coating, based on hydrolyzing organosilyl polymer as binder. This binder dissolves in sea-water at a rate permitting the continuous exposure of fresh antifouling.	
	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>	Single Pack Jotun No. 7 5L & 20L Aluminium No Flat	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>		A(3) : B(1) by Volume Jotun No. 19 4L & 20L packs White, Black Yes, AS2700/Jotun std. High Gloss	<b>Operational:</b> <b>Life:</b> <b>Spread Rate:</b> <b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Launch Time:</b> <b>Vessel Speed:</b>	Up to 60 months Effective service 5sqm per litre, per coat Single Pack Jotun No. 7 20L Lt Red, Dk Red Up to 30 Days				
SAFEGUARD UNIVERSAL ES		A two-pack corrosion preventing epoxy vinyl-based coating.		HARDTOP Ultra, AX, XP, Flexi		A two pack acrylic modified recoatable polyurethane, with good gloss & colour retention. Suitable for application by airless spray over epoxy primers/undercoats, or by brush/roller for small areas. Cures at low temperatures.		SEAVICTOR 50		Is a self-polishing antifouling based on a copolymer binder, suitable for vessels operating in global waters, constructed of Steel GRP or Timber. Seavictor 50 has an additional active agent giving improved control of green algae.	
	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>	A(5) : B(1) by Volume Jotun No. 17 5L & 18L packs Plum No Flat	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>		A(4) : B(1) by Volume Jotun No. 10 5L & 20L packs White, Black Yes, AS2700 & Jotun Std Gloss	<b>Operational:</b> <b>Life:</b> <b>Spread Rate:</b> <b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Launch Time:</b> <b>Vessel Speed:</b>	Up to 48 months Effective service 5 sqm per litre, per coat Single Pack Jotun No. 7 10L Red, Black, Blue Between 8 & 48 hours Up to 20 Knots				
BARRIER		An epoxy zinc primer for use on blast cleaned steel. Barrier provides superior corrosion protection in a range of environments. Typically used under an epoxy coating as part of a complete system.*		HARDTOP ULTRA		A two pack acrylic modified recoatable polyurethane. Hardtop Ultra is suitable for application over an epoxy primer such as Penguard HB with excellent gloss and colour retention. Suitable for application by conventional spray, brush or roller.		SEAGUARDIAN		Is an abrasive antifouling based on a copolymer binder, suitable for vessels operating in global waters, constructed of Steel, GRP or Timber.	
	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>	A(3) : B(1) by Volume Jotun No. 17 4L & 9L packs Grey No Flat	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>		A(4) : B(1) by Volume Jotun No. 10 5L & 20L packs White, Black Yes, AS2700 & Jotun std. High Gloss	<b>Operational:</b> <b>Life:</b> <b>Spread Rate:</b> <b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Launch Time:</b> <b>Vessel Speed:</b>	Up to 36 months Effective service 5sqm per litre, per coat Single Pack Jotun No. 7 5L & 10L Red, Black, Blue Between 8 & 48 hours 10 to 30 Knots				
JOTAMASTIC 90		A surface tolerant abrasion resistant high solids epoxy-based primer/topcoat. Used in high film thickness's as part of the anticorrosive system for steel, in immersed and atmospheric conditions. Usually applied by airless spray, with brush or roller for small areas.		PILOT II		A single pack, reinforced alkyd based topcoat for exterior and interior use, suitable for brush and roller application, displaying good weather and colour stability.		SEAVICTOR 40		Is a tin-free self-polishing antifouling based on a copolymer binder for low speed vessels.	
	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>	A(6) : B(1) by Volume Jotun No. 17 4.7L & 18.7L packs 4.4L & 17.4L packs - Al White, Black, Grey No Semi Gloss	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>		Single Pack Jotun No. 2 5L & 20L White, Black Yes, AS2700 & Jotun std Gloss	<b>Operational:</b> <b>Life:</b> <b>Spread Rate:</b> <b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Launch Time:</b> <b>Vessel Speed:</b>	Up to 30 months Effective service 5sqm per litre, per coat Single Pack Jotun No. 7 10 L Dark Red, Black Between 8 & 48 hours Up to 20 Knots				
PENGUARD HB		A high build epoxy primer/undercoat, which sands easily and compatible with all Jotun topcoats. May be applied direct to clean, prepared GRP and Aluminium surfaces, and is suitable for immersion.		PIONEER TOP COAT		A single pack acrylic resin based topcoat for use over single and two pack anti-corrosive systems for steel. Pioneer is quick drying, has very good water resistance, and may be used at low temperatures.		SEASAFE & SEASAFE ULTRA (ALUMINIUM)		A tin-free cuprous-oxide-free high performance self-polishing antifouling, based on a hydrolyzing polymer as binder. This binder dissolves in seawater at a rate permitting the continuous exposure of fresh antifouling.	
	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>	A(4) : B(1) by Volume Jotun No. 17 4L & 20L Packs Off White No Flat	<b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Tintable:</b> <b>Finish:</b>		Single Pack Jotun No. 7 5L & 20L White, Black Yes, AS2700 & Jotun std Gloss	<b>Operational:</b> <b>Life:</b> <b>Spread Rate:</b> <b>Mix Ratio:</b> <b>Thinner:</b> <b>Pack Sizes:</b> <b>Colours:</b> <b>Launch Time:</b> <b>Vessel Speed:</b>	Up to 30 months Effective service 5 sqm per litre, per coat Single Pack Jotun No. 7 5L & 10L Black, Blue Between 8 & 48 hours Up to 30 Knots				
						<a href="http://jotun.com">jotun.com</a>					

# COATINGS SYSTEMS GUIDE – Ready Reckoner

## Above Waterline / Topside Areas

Substrate	Primer	DFT µm	Intermediate	DFT µm	*Finish	DFT µm	*Finish (option 2)	DFT µm	*Finish (option 3)	DFT µm
<b>STEEL CRAFT</b>										
Single Pack	Alkyd Primer or Vinyguard S/G 88	2x50 60	Alkyd Primer or Vinyguard S/G 88	2x50 40	Pilot II Pilot II or Pioneer Topcoat	2x40 40 40		0		
Two Pack (epoxy)	Jotamastic Range Jotacote 605	200	Penguard HB (sandable)	125	Hardtop Range	40	Hardtop Range	50	Imperite 300	2x40
Two Pack (zinc rich)	Barrier	50	Jotamastic Range Jotacote 605		Hardtop Range	40	Hardtop Range	50	Imperite 300	2x40
<b>ALUMINIUM</b>										
Two Pack	Penguard HB or Penguard Special	75 125	Penguard HB or Penguard Special	125 125	Hardtop Range	40-50	Imperite 300	2x40		
<b>G.R.P. CRAFT (Fibreglass)</b>										
Single Pack	Alkydprimer (white)	40	Alkydprimer	40	Pilot II	40	Pioneer Topcoat	40		
Two Pack	Penguard HB	125	Penguard HB	125	Hardtop Range	40-50	Imperite 300	2x40		
<b>TIMBER</b>										
Single Pack	Alkydprimer	50 50	Alkydprimer	2x50	Pilot II	40				
Two Pack	Penguard HB	125	Penguard HB (sandable)	125	Hardtop Range	40-50	Imperite 300	2x40		

## Below Waterline / Underwater Hull Areas

Substrate	Primer	DFT µm	Intermediate	DFT µm	Tiecoat	DFT µm	*Antifouling	*Antifouling
<b>STEEL CRAFT</b>							<p>A/F selection &amp; DFT's depend on performance &amp; application requirements – selection listed below.</p> <p style="text-align: center;"><b>Seaguardian</b> Tin Free Ablative</p> <p style="text-align: center;"><b>Seavictor 50 / 40</b> Tin Free Self Polishing</p> <p style="text-align: center;"><b>SeaQuantum Ultra S</b> The Ultimate Fuel Saver</p> <p>SeaQuantum Ultra is not to be applied over Single Pack Primers and Tie Coats.</p>	
Single Pack	Vinyguard S/G 88	75	Vinyguard S/G 88	75	Vinyguard S/G 88	74		
Two Pack (epoxy) Option 1	Jotamastic Range	150	Jotamastic Range	150	Safeguard Universal ES	50		
Two Pack (epoxy) Option 2	Jotamastic Range	200			Safeguard Universal ES	150		
<b>G.R.P. CRAFT (fiberglass)</b>								
Single Pack	Vinyguard S/G 88	60	Vinyguard S/G 88	60	Vinyguard S/G 88	50		
Two Pack	Penguard	150			Safeguard Universal ES	100		
<b>TIMBER</b>								
Single Pack	Alkydprimer Vinyguard 88 SG	50	Vinyguard S/G 88	50	Vinyguard S/G 88	50		
Two Pack	Penguard HB	125	Penguard HB	125	Vinyguard S/G 88	50		
<b>ALUMINIUM</b>							<p><b>Seasafe Ultra</b> with additional anti algae biocide ingredient or <b>SeaQuantum Ultra**</b> The Ultimate Fuel Saver.</p> <p>** provided all surfaces are suitably primed</p>	
Two Pack Option 1 Repair Specification	Penguard HB or Jotacote 605	150	Optional Penguard HB	TBA	Safeguard Universal ES	100		
Two Pack Option 2 Newbuild Specification	Jotacote 605 or Jotacote Universal	150			Safeguard Universal ES	100		

**\*Note:** Refer over for Antifouling options.

\*\* Advice given is a guide only, please consult Jotun for specific advice, and most appropriate system for your vessel.

\*\*\* Jotun has a policy of continual development and all systems should be confirmed by your local representative before application