



Jotacote Universal

The **truly** universal newbuilding primer

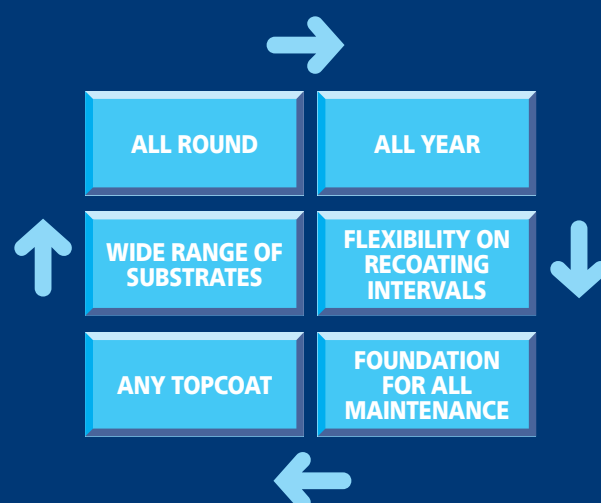


Jotacote Universal

The **truly** universal newbuilding primer

Jotacote Universal is specially designed to meet the challenges and requirements for an all round primer. Its universal nature, combined with the finest protection capabilities, makes Jotacote Universal the best solution for both shipowners and shipyards. It simply provides *optimum protection* at *maximum efficiency*.

To truly achieve the status of 'Universal Primer' requires the product to live up to every single element of the Universal Foundation Block.



THE UNIVERSAL FOUNDATION BLOCK

ALL ROUND

The basic concept of a universal primer is its suitability as the main primer virtually all round the vessel. Jotacote Universal meets the requirements for an all round* primer and is ideal for the protection of:

- ▶ Underwater hull
- ▶ Water ballast tanks
- ▶ Decks
- ▶ Topsides
- ▶ Superstructures
- ▶ Cargo holds
- ▶ All internal areas

*Except potable water tanks and chemical tanks

ALL YEAR

Jotacote Universal can be applied all round the vessel, all year round.

- ▶ Jotacote Universal can be used in different climatic conditions and temperatures as low as -5°C
- ▶ No wintergrade or cold climate version is necessary. Use the same product for all four seasons

WIDE RANGE OF SUBSTRATES

Jotacote Universal has excellent adhesion properties for a wide range of substrates minimising the need for specialised products according to substrate.

It can be applied directly on:

- ▶ Gritblasted steel (Sa 2½)
- ▶ Any intact shopprimer
- ▶ Power tool cleaned weld seams (St 2)
- ▶ Galvanised steel
- ▶ Stainless steel
- ▶ Aluminium

FLEXIBILITY ON RECOATING INTERVALS

To maximise flexibility at shipyards a truly universal primer must offer fast drying properties and allow long recoating intervals. Jotacote offers this remarkable combination:

- ▶ Fast drying primer allowing short recoating intervals
- ▶ No overcoating time limit provided the surface is dry, clean and free from chalking

ANY TOPCOAT

Jotacote Universal is very flexible when it comes to overcoating. Any generic coating can be applied, for example:

- ▶ Alkyds (for light exposure)
- ▶ Polyurethanes
- ▶ Epoxies
- ▶ Acrylic (1 and 2 pack)
- ▶ Polysiloxane
- ▶ Water-borne

FOUNDATION FOR ALL MAINTENANCE

Making the product truly universal:

- ▶ For maintenance Jotacote Universal can be overcoated with any generic coating
- ▶ It is compatible with all coatings used at subsequent maintenance
- ▶ It simplifies the systems and procedures for maintenance situations
- ▶ It ensures the foundation is right from the start for the long term protection of the vessel

Key product features

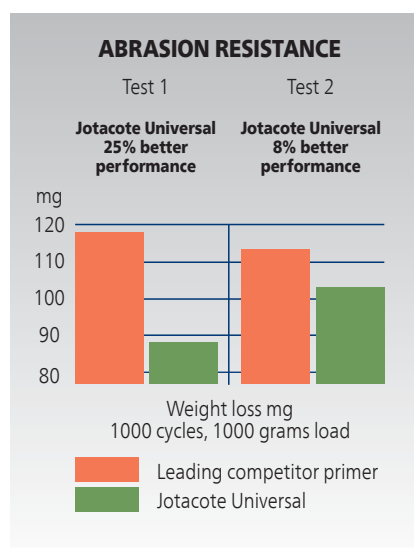
Jotacote Universal is a two-pack, abrasion resistant, high solids, pure epoxy based coating

ANTI-CORROSION

- Jotacote Universal is specially designed as an anti-corrosive primer for newbuildings.
- Its special selection of pure epoxy and curing agent is made to ensure optimum corrosion protection at newbuilding.
- Tested against cathodic disbondment, Jotacote Universal is proven to give excellent resistance and is therefore perfect for use in combination with cathodic protection at the construction stage.
- During ballast tank simulation tests Jotacote Universal achieved the rating Class B1 when tested by DNV (B1 is the best rating, B6 is the worst).

ABRASION RESISTANCE

Jotacote Universal is designed to withstand strong mechanical impact and offers a truly high level of resistance to any kind of abrasion. What competitors claim to be true is correct – all abrasion resistant anti-corrosives are not the same. Jotacote Universal was compared with the leading competitor primer in two separate tests. The results showed Jotacote Universal to be best in class. Both tests showed significant differences, including up to 25% better performance by Jotacote Universal. Clearly this identifies a benefit for a vessel in operation.



GUIDELINES FOR PRIMER COLOUR

TOPCOAT COLOUR

Buff	White
	Yellow
	Yellow – orange
	Orange
Light Red	Red – orange
	Red
	Bordeaux
Turquoise	Violet
	Blue
	Green
	Greenish – yellow

Colour management

Choose the colour that will ensure the topcoat hiding. Fewer coats, less material costs, less application costs, less downtime, improved cosmetic appearance.

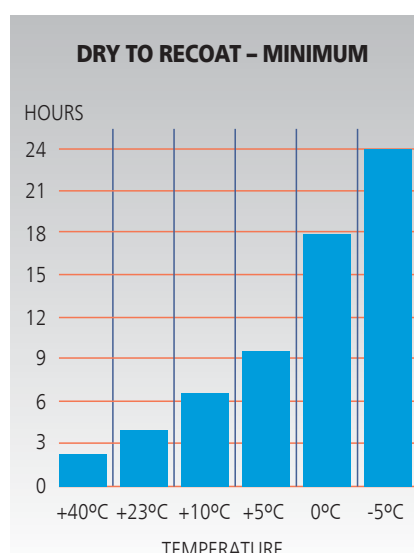
For some areas of colour it is almost impossible to produce a paint, that with a low film thickness, will produce a hiding coat. The organic pigments needed are rather transparent and are generally expensive.

Achieving the required finish needs a number of topcoats, increasing material and labour costs. Fewer topcoats can be achieved by choosing the most suitable colour of Jotacote Universal.

The Jotacote Universal colour can be selected using the guidelines (above).

Drying time

Using cutting edge technology Jotacote Universal has a high level of cross linking which allows curing to take place over a large temperature range. This permits fast overcoating and early handling without damaging the coating.

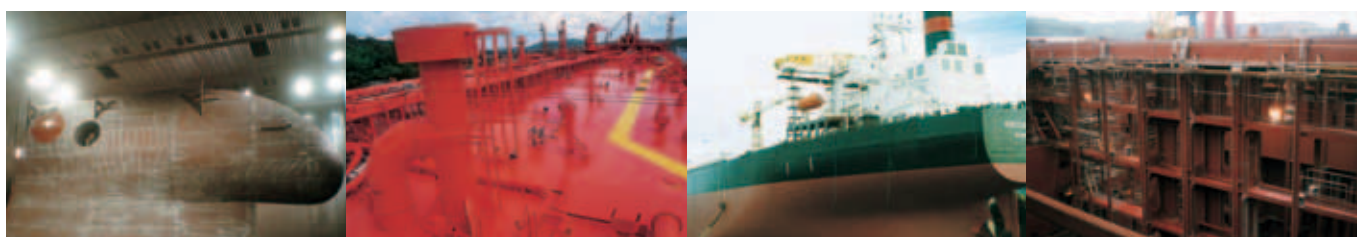


Jotacote Universal

Optimum protection – all round

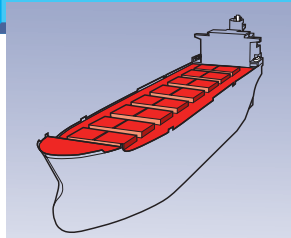
Jotun recommends Jotacote Universal in aluminium colour as the first coat all round the vessel* followed by a second coat of Jotacote Universal in a suitable colour. This will ensure the ideal protection of the vessel and simplify the application process.

Examples describe main vessel areas with typical system solutions.



*Except potable water tanks and chemical tanks

DECKS



Decks by their very nature are subjected to the most severe operating conditions, regularly awash with seawater, exposed to salt spray, extremes of temperature, impact, mechanical damage and chemical and oil spillage.

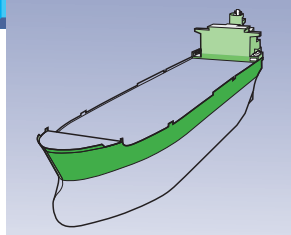
JOTACOTE UNIVERSAL SOLUTION

The superior anti-abrasive and excellent anti-corrosive properties of Jotacote Universal, when compared with other system solutions, combine to reduce the need for on board maintenance and the costs of repair at drydocking.

RECOMMENDED SYSTEM SOLUTION

1 x 125µm Jotacote Universal, aluminium
1 x 125µm Jotacote Universal, colour
1 x 50µm Hardtop AS

TOPSIDES & SUPERSTRUCTURES



Normally topsides and superstructures are not the areas most exposed to corrosion damage, however, they give a highly visible first impression of the condition of the vessel. To present a favourable impression of the vessel operator it is important to select a system that gives the best combination of anti-corrosive properties together with a durable cosmetic finish.

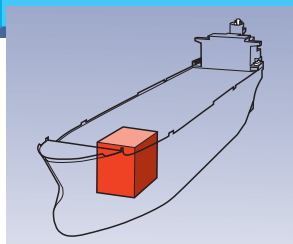
JOTACOTE UNIVERSAL SOLUTION

Jotacote Universal offers this combination. A suitable base colour will provide the best hiding power for the selected topcoat. As any topcoat can be used, Jotacote Universal is the right choice for any desired finish on these areas.

RECOMMENDED SYSTEM SOLUTION

1 x 125µm Jotacote Universal, aluminium
1 x 125µm Jotacote Universal, colour
1 x 50µm Hardtop AS

CARGO HOLDS



Cargo areas are widely exposed to various kinds of mechanical impact. Imagine the damage to the coating system caused when carrying coal and ore if it is not abrasion resistant. Cargo holds are also of great importance with regard to vessel structure and safety.

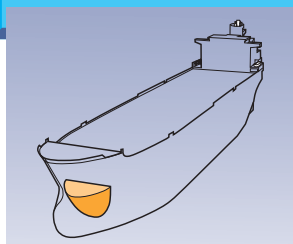
JOTACOTE UNIVERSAL SOLUTION

Jotacote Universal has excellent properties for all kinds of dry cargo holds including all necessary grain certificates. The abrasion resistant properties of Jotacote Universal provide long term protection of holds and the structure of the vessel, ensuring future maintenance costs are minimised.

RECOMMENDED SYSTEM SOLUTION

1 x 150µm Jotacote Universal, aluminium
1 x 150µm Jotacote Universal, colour

WATER BALLAST TANKS



Water ballast tanks are known to be susceptible to coating degradation and corrosion attack. In these areas corrosion can quickly result in rapid deterioration of the steel and eventually lead to structural failures. The right choice of anti-corrosive primer for these areas is of the utmost importance if the vessel is to achieve a long life.

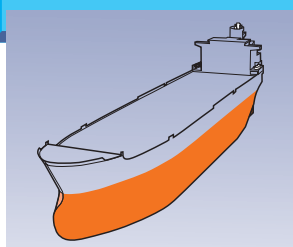
JOTACOTE UNIVERSAL SOLUTION

Jotacote Universal offers the highest level of corrosion protection of water ballast tanks. It has achieved B1 in the DNV certification for ballast tanks. The light buff colour provides two primary advantages – easier application and improved conditions for inspection.

RECOMMENDED SYSTEM SOLUTION

1 x 150µm Jotacote Universal, aluminium
1 x 150µm Jotacote Universal, buff

UNDERWATER HULL



At newbuilding, the selection of the best anticorrosive properties combined with the optimum level of antifouling and foul release systems, is the key to the protection of the underwater hull area. This will ensure long term protection of the vessel and keep maintenance costs to a minimum.

JOTACOTE UNIVERSAL SOLUTION

Jotacote Universal has superior abrasion resistance and corrosion protection properties which, with Safeguard Universal ES as the sealer between the Jotacote Universal and the subsequent antifouling solution, provides the best choice for optimum hull protection.

RECOMMENDED SYSTEM SOLUTION

1 x 125µm Jotacote Universal, aluminium
1 x 125µm Jotacote Universal, colour
1 x 50µm Safeguard Universal ES
+ suitable antifouling system

Optimum protection – right for the owner

ACHIEVE OPTIMUM PROTECTION

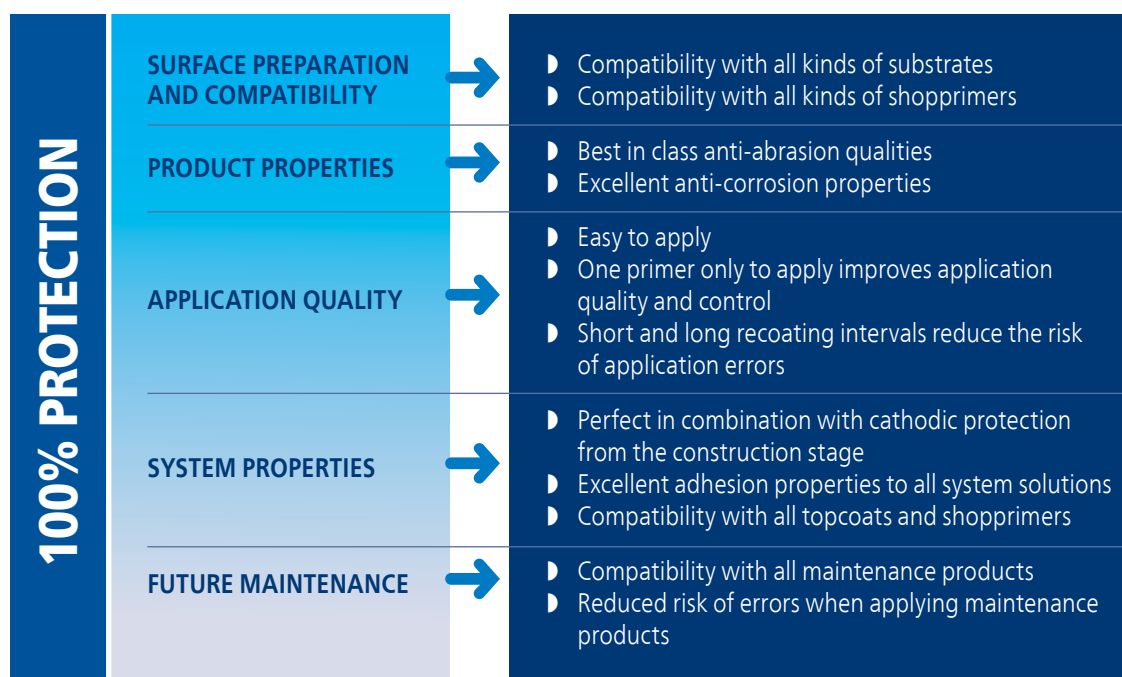
To secure the *optimum protection* of a vessel the best mix of several elements must be achieved.

Product quality in itself is not enough to optimise the life cycle costs.

Good product quality can be ruined by poor standards of surface preparation, uneven application or total system solutions that do not deliver optimum protection.

The elements below contribute toward the total protection of a vessel from the construction stage to the end of the vessel's lifetime. The properties of Jotacote Universal ensure each element is maximised and contributes to achieving 100% protection.

Control of the elements that influence total protection makes Jotacote Universal special – for ship owners and operators.



LASTING ANTICORROSIVE PROTECTION

Jotacote Universal is designed to achieve the highest standards of corrosion protection. It has been awarded B1 in DNV's ballast tank certification, proving excellence in corrosion protection. Jotacote Universal has also achieved NORSOK approvals for offshore corrosion protection.

ABRASION RESISTANCE

Jotacote Universal is best in class for abrasion resistant properties for newbuilding primers.

ADHESION PROPERTIES

The technology behind Jotacote Universal ensures excellent adhesion to a wide range of substrates and also to subsequent coats.

LOW MAINTENANCE

The anti abrasive properties of Jotacote Universal reduce damages to a minimum which can be quickly repaired. It is compatible with maintenance products. It simplifies the systems and procedures, saving on downtime whilst maintaining high standards of protection.

ENVIRONMENTALLY FRIENDLY

High volume solids and low solvents makes Jotacote Universal an environmentally friendly product that also meets future environmental legislation.

UPGRADING VESSEL QUALITY

The application of Jotacote Universal all round the vessel also means certain areas will be upgraded when it comes to protection.



Maximum efficiency – right for the yard



Fulfilment of the Universal Foundation Block ensures the benefits of reduced complexity and increased productivity for shipyards.

Jotacote Universal is simply the foundation for the achievement of *maximum efficiency*.

REDUCED COMPLEXITY

- Reduced number of paint products
- Reduced paint volume
- Reduced use of thinner
- Reduced cleaning and downtime
- Reduced waste
- Reduced stock and capital tied up
- Reduced manpower needs
- Reduced logistics complexity

INCREASED PRODUCTIVITY

- One product – all round – all year. Different first coats for different vessel areas not necessary
- Fast drying, short recoating and handling intervals
- Long overcoating intervals secures shipyard flexibility
- Simplification of the painting process
- Easy application
- Wide range of dry film thickness
- Compatibility to all substrates and subsequent coating systems

IMPROVED QUALITY

- Simplified production process leads to better control of quality standards
- One primer all round reduces the risk of application errors
- Applicator experience and competence build up around one primer
- Its hard abrasion surface is a benefit for shipyards during construction stage



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PRODUCT DATA*	JOTACOTE UNIVERSAL	LEADING COMPETITOR PRIMER	BENEFITS – JOTACOTE UNIVERSAL
Colour	Aluminium, Grey, Red, Buff, Light Red, Turquoise	Aluminium, Bronze	<ul style="list-style-type: none"> • Lighter colour for ballast tanks • Colour management to topcoats
Solids (vol %)**	72%	60%	<ul style="list-style-type: none"> • Environmentally friendly
VOC	248 g/ltr	399 g/ltr	<ul style="list-style-type: none"> • VOC compliant in Europe from 2007
Film thickness			
Dry (µm)	75 – 300µm	125 – 200µm	<ul style="list-style-type: none"> • Wider tolerances >more universal
Wet (µm)	105 – 415µm	208 – 333µm	<ul style="list-style-type: none"> • Adapted for usage on more areas
Theoretical spreading rate (m ² /ltr at 125µm)	5.76 m ² /ltr	4.81 m ² /ltr	<ul style="list-style-type: none"> • 20% less volume needed
Drying/overcoating time (+ 23°C)			
Surface dry	2.5 hrs	3 hrs	<ul style="list-style-type: none"> • Faster drying
Dry to recoat, minimum	4 hrs	7 hrs	<ul style="list-style-type: none"> • Shorter recoating intervals
Pot life (+ 23°C)	1.5 hrs	2.5 hrs	<ul style="list-style-type: none"> • No benefit
Flash point (+ 23°C)	35°C	28°C	<ul style="list-style-type: none"> • Lower threshold

* Product data based on Technical Data Sheet October 2003

** Jotacote Universal also available in 80% volume solids in Korea

CERTIFICATES/APPROVALS JOTACOTE UNIVERSAL

- | | |
|------------------------------|--|
| • Ballast tanks | B1 classification by DNV |
| • Offshore corrosion control | NORSOK approval for system 1 and 7, rev. 4 |
| • Food contact | Grain certificate (NHS) |
| • Fire resistance | IMO FTPC, part 2; Smoke & toxicity (QinetiQ) |
| | IMO FTPC, part 5; Surface flammability (QinetiQ) |

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Jotun Protects Property