

13: ALUMINIUM – ABOVE THE WATERLINE

DESCRIPTION

This system describes how the area above the waterline of an aluminium yacht may be coated with a two component polyurethane system.

PRINCIPAL CHARACTERISTICS

This coating system may be applied directly to properly pre-treated aluminium. This system is scratch resistant, resistant to a wide range of chemicals and provides excellent colour and gloss retention.

SURFACE CONDITION

Steel, in good condition.

SURFACE PREPARATION

New building

1. Remove all corrosion products, preferably by low pressure blasting with aluminium oxide or by sanding;
2. The surface should be dry and free from grease, loose particles and other contamination;
3. Apply as soon as possible the first coat of IJmopox ZF primer.

Maintenance

1. Clean the surface thoroughly to remove all contamination such as salt deposits, dirt, grease and other foreign matter, preferably by high pressure water cleaning and with a suitable cleaner;
2. Remove all corrosion products and paint layers with insufficient adhesion (including one component paints in good condition), preferably by low pressure blasting with aluminium oxide or by sanding;
3. Previous layers of two component paints which have good adhesion and which are in good condition should be abraded; preferably by low pressure blasting with aluminium oxide or by sanding;
4. Clean and dry the surface thoroughly;
5. Apply as soon as possible the first coat of IJmopox ZF primer.

MATERIALS AND SPREADING RATES

The following materials are used in this paint system:

| | |
|----------------------------|---|
| Variopox Plamuur | spreading rate depends on surface condition |
| Variopox Finishing plamuur | spreading rate depends on surface condition |
| IJmopox ZF primer | spreading rate approx. 0,18 l/m ² |
| IJmopox HB coating | spreading rate approx. 0,15 l/m ² |
| IJmopox Verdunner | spreading rate depends on application method |
| Double Coat | spreading rate approx. 0,30 kg/m ² |
| Double Coat Kwastverdunner | spreading rate depends on application method |
| Double Coat Ontvetter | spreading rate depends on surface condition |

APPLICATION

New building

1. Apply immediately after surface preparation one to two coats of IJmopox ZF primer to a total dry film thickness of 100 µm (minimum spreading rate approx. 0,18 l/m²);
2. When necessary, repair small damages and dents with Variopox Plamuur or Variopox Finishing plamuur;
3. Apply one to two coats of IJmopox HB coating to a total dry film thickness of 100 µm (minimum spreading rate approx. 0,15 l/m²);
4. Apply two to three coats of Double Coat to a total dry film thickness of 80 µm (minimum spreading rate approx. 0,2 kg/m²)

Maintenance, previously coated aluminium

1. Apply as spot-repair to damaged and bare areas one to two coats of IJmopox ZF primer to a total dry film thickness of 100 µm (minimum spreading rate approx. 0,18 l/m²);

13: ALUMINIUM – ABOVE THE WATERLINE

2. When required, repair small damages and dents with Variopox Plamuur or Variopox Finishing plamuur;
3. Apply one to two coats of IJmopox HB coating to a total dry film thickness of 100 μm (minimum spreading rate approx. 0,15 l/m²);
4. Apply two to three coats of Double Coat to a total dry film thickness of 80 μm (minimum spreading rate approx. 0,2 kg/m²);

ADDITIONAL INFORMATION

- Properties of aluminium
To achieve good adhesion it is necessary to clean the surface thoroughly. Apply immediately after cleaning the first coat of IJmopox ZF primer.
- Previous paint: one or two component?
When it is not known if the previous coating system was based on one- or two component products, this can be determined with a simple test. Soak a small piece of cloth in Double Coat Ontvetter and leave this for 15 minutes on the surface. Remove the cloth and check the surface. When the previous paint has not dissolved, is not softened and cannot be easily removed it is most probably a two component paint. Only then it is possible to apply a fresh coat of two component paint.
- Repair of damages and dents
Damaged areas and dents may be repaired with Variopox Plamuur. Use Variopox Finishing plamuur as last layer of filler when a smooth, fine finish is required. Grit paper the surface after application and curing of the filler and clean and degrease area with Double Coat Ontvetter. Touch-up repaired areas with the following layer of the coating system to eliminate absorption of the filler.
- Durability and surface preparation
The durability of any paint system depends on a number of variables, amongst others: total dry film thickness, method of application, skill of labour, the conditions during which the coating is applied and cured, the exposure conditions during service and the preparation of the surface. Insufficient surface preparation might lead to blistering and loss of adhesion.
- Overlap with paint system below the waterline
When an overlap is made with the paint system applied below the waterline, please note that anti-fouling is not recoatable with two component products such as Double Coat, IJmopox ZF primer or IJmopox HB coating.
- Sanding
A durable adhesion will be obtained by thorough preparation of the surface. This may be achieved by sanding the surface. Sanding is also necessary when the time elapsed between application of each coat exceeds the maximum recoating interval.
During application of the finishing coats, we recommend to use for each coat a finer grit paper. The table gives the recommended grit sizes:

13: ALUMINIUM – ABOVE THE WATERLINE

| | |
|-----------------|--|
| Grit paper: | Recommended for: |
| P24 – P36 | Suitable for steel prior to application of IJmopox ZF primer. |
| P60 | Suitable for polyester gelcoat prior to the use of epoxy adhesives and bonding pastes. |
| P60 – P80 | Suitable for: <ul style="list-style-type: none"> Removal of old coats of paint, Sanding aluminium prior to application of IJmopox ZF primer. |
| P120 | Suitable for: <ul style="list-style-type: none"> Sanding polyester gelcoat prior to repair with fillers, Sanding of Variopox Injectiehars, Variopox Impregneerhars and Variopox Universele hars. |
| P120 – P180 | Suitable for: <ul style="list-style-type: none"> Wood, after application of first coat of paint, Epoxy fillers, Polyester fillers, Sanding of IJmopox ZF primer and/or IJmopox HB coating between each coat. |
| P180 – P220 | Suitable for: <ul style="list-style-type: none"> Sanding of Variopox Injectiehars, Variopox Impregneerhars and Variopox Universele hars, Sanding of IJmopox ZF primer or IJmopox HB coating prior to application of Double Coat. |
| P220 – P280 | Suitable for sanding gelcoat prior to application of Double Coat. |
| P320 – P400 | Suitable for sanding Double Coat between each coat. |
| P600 | Suitable for sanding Double Coat prior to application of the final coat Double Coat when dark colours are used such as DC 855, DC 854 and RAL 5011, etc. |
| Finer then P600 | Suitable to remove dull areas prior to polishing. |

• Example application schedule

| Step | | Dry film thickness (µm) | Spreading rate (m ² /l) | Recoating interval at 20 °C | Preparation before next step |
|------|--|-------------------------|------------------------------------|-----------------------------|---|
| 1 | Pre-treatment | | | | |
| 2 | Application first coat IJmopox ZF primer | 50 | 11,0 | 16 hours | When recoated within 72 hours no preparation is required, otherwise sanding with P180. |
| 3 | Application second coat IJmopox ZF primer | 50 | 11,0 | 16 hours | |
| 4 | Repair with Variopox Plamuur | n.a. | n.a. | 48 hours | Sanding P180. |
| 5 | Application first coat IJmopox HB coating grey or white | 50 | 14,0 | 8 hours | When recoated within 72 hours no preparation is required, otherwise sanding with P180. |
| 6 | Application second coat IJmopox HB coating black or grey | 50 | 14,0 | 8 hours | |
| 7 | Application first coat Double Coat | 40 | 10,8 | 24 hours | When recoated within 48 hours no preparation is required, otherwise sanding with P240 - P320. Use between layers finer grit paper to avoid scratches in finish. |
| 8 | Application second coat Double Coat | 40 | 10,8 | 24 hours | |
| 9 | Application third Double Coat | 40 | 10,8 | 24 hours | |

13: ALUMINIUM – ABOVE THE WATERLINE

- Relation dry/wet film thickness

| | | | | | |
|---|----|----|----|----|-----|
| Volume % IJmopox thinner | 0 | 3 | 6 | 9 | 12 |
| Wet film thickness IJmopox ZF primer at 50 µm dry film thickness | 91 | 94 | 96 | 99 | 102 |
| Wet film thickness IJmopox HB coating at 50 µm dry film thickness | 71 | 74 | 76 | 78 | 80 |
| Volume % Double Coat brush thinner | 0 | 2 | 4 | 6 | 8 |
| Wet film thickness Double Coat at 40 µm dry film thickness | 77 | 78 | 80 | 82 | 84 |

For detailed information on the products mentioned in this sheet, please refer to our technical information sheets.

Date: January 15

Disclaimer

Although the information and recommendations are presented in good faith and believed to be correct at date of issue, De IJssel Coatings B.V. makes no representations as of the completeness or accuracy thereof. In no event De IJssel Coatings B.V. will be responsible for damages of any nature whatsoever resulting from the use of this information. De IJssel Coatings B.V. reserves the right to change the information sheet without prior notifications. This information sheet supersedes any previous publications.