YachtCoatings

DEFENDER

TECHNICAL DATA SHEET

Product description

Modified two-component epoxy primer which can be used on any type of surface both as primer and as undercoat in painting cycles. It is perfect not only for hulls but also for outboard and superstructures. DEFENDER has a high build formulation with mica platelets, which form a layered barrier within the coating. Applying more than one coat, it can protect fiberglass hulls from potential osmotic processes. One of its strengths is that it can be covered after a certain time (within three months) with any type of antifouling, with no need to previously sandpaper.

Product information

Finish	Matt	
Colour	White .001, Grey .259	
Solids (by volume)	ASTM D2369	55 ± 2%
Specific gravity	UNI EN ISO 2811-1	1,30 ± 0,02 g/cm^3
Flash point	UNI EN ISO 13736	23 °C
VOC (calculated average content)	ISO 11890-2/2006	411 g/l
Packaging	0,75 – 2,5 – 10 Lt	

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Application and use

SURFACE PREPARATION

For surfaces that have been treated with other coatings in bad condition, it is important to remove the previous coat up to the surface.

Steel: Pressure wash with fresh water (200-300 bar) and remove any trace of oil and grease. Perform a sanding treatment of grade Sa 2½ (ISO 8501-1/3). For surfaces covered with shop-primer, perfectly intact and fitted, it is possible to perform a commercial sanding Sa 2 or a mechanical cleaning of degree St 3 (ISO 8501-1/3). The recommended roughness value Rz, obtained after a shot- blasting treatment or a mechanical cleaning, is 50 - 90 µm. Cover the treated metal with DEFENDER, according to the above mentioned standard, before the appearance oxidation principles or colour variations.

Aluminium, Lead and Alloys: Wash under pressure with fresh water (200-300 bar) and remove all traces of oil and grease. Sandpaper with coarse-grained discs no. P 36 (mechanical cleaning) or, alternatively, carry out the sandblasting treatment, using suitable abrasives: the surface layer of the metal must be completely and uniformly renewed, removing any residual oxidation, and covered with DEFENDER on the day of preparation. Be careful not to polish the surface without exceeding it with the engraving; the recommended roughness value of Rz is 50 - 90 µm (ISO 8503).

Wood: The support must be dry, the humidity of the wood must not exceed 18%. All surfaces to be painted must be clean, dry and free of contaminants. Sand with P80-P120 paper. Before applying DEFENDER, blow with clean, dry air to remove any residual sanding and dirt.

Composite (fiberglass carbon fibre, etc.): Degrease the surface to be treated with a solvent or suitable detergent. Pressurize with fresh water and remove all traces of oil and grease. All surfaces to be painted must be clean, dry and free of contaminants. Sand with sandpaper no. P180 - P220 and primer the treated surface. Before applying DEFENDER, blow with clean, dry air to remove any residue of sanding and dirt.

Cycle before osmosis on new or brought to new gelcoat; sandpaper with P180 – P220 abrasive paper and apply two 150 µm coats (DFT).

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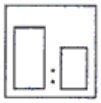
Application data

Mixing ratio by volume		3:1	
Mixing ratio by weight Base (comp. A) 613.--- Hardener (comp. B) 613.000C		 82 w/w 18 w/w	
Pot-life NB do not use this product when Pot-life time is exceeded		5 hrs at 20 °C	
Thinner/Cleaning tools NB: the indicated dilution % is considered on the catalyzed product		**693** - Roller/Brush (5% max) **693** – Conventional spray/Airless: (25% max)	
Application methods		Airless Pressure 150 bar Nozzle 0.3 – 0.6 mm Angular range: 65° - 80°	
		Conventional Pressure 3,5 bar Nozzle 1,7 – 1,9 mm	
			
Film thickness per coat [sandblasting as undercoat]]	Dry	Standard application range	100 – 200 µm
		Recommended	150 µm
	Wet	Standard application range	180 – 360 µm
		Recommended	270 µm
Film thickness per coat [sandblasting as holding primer]	Dry	Standard application range	50 – 70 µm
		Recommended	60 µm
	Wet	Standard application range	90 – 120 µm
		Recommended	110 µm

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Theoretical coverage	150 µm	3,6 m^2/l
	60 µm	11 m^2/l
Practical coverage [loss value 30%]	150 µm	2,5m^2/l
	60 µm	7,7 m^2/l
Notes	This product is provided in two tins to be mixed entirely and carefully before use. In case it is required, dilution has to be performed after the mixing of the two components. The physical data of two-component products refer to components that have been already mixed.	

Drying time

Temperature °C			10		15		20		30	
			Min	Max	Min	Max	Min	Max	Min	Max
Coverage	Defender		8 h	6 months	6h	6 months	4 h	6 months	3 h	6 months
	AF		9 h	3 months	7 h	3 months	6h	3 months	4 h	3 months
Touch dry			3,5 h		2 h		1,5 h		45 min.	
Depth dry			30 h		18 h		12 h		8 h	
Full curing			10 days		7 days		7 days		5 days	

N.B. *The drying times and the overcoating intervals increase with higher thickness of the applied film. Always check that the existing painting film is perfectly dry before applying a further product coat.*

CONDITIONS DURING APPLICATION

In order to avoid the formation of condensation, the surface temperature should be at least 3 °C above dew point. During application and curing, the min. ambient temperature must not be lower than 10°C or higher than 30 °C; substrate temperature must not be lower than 5 °C, since curing is remarkably reduced at lower temperatures.

Application is not advisable when relative humidity exceeds 80%. The term-hygrometric survey should be carried out near the surface to be coated. Make sure there is enough ventilation when the application takes place in closed areas.

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Storage

It is recommended to avoid exposure to air and extreme temperatures. To maximize the shelf life in the can, it is worth checking that the container is well closed during the storage and the temperature is between 10 °C and 35 °C. Avoid exposure to direct sunlight.

Safety rules

Comply with the provisions set by the local health and safety at work regulations. Avoid contact with the skin, for example. Operate in well ventilated places and, if in closed areas, use vacuum cleaners, fans and air conveyors. During the application use appropriate protections (masks, gloves, glasses, etc.). Before using, read sections 7-8 of the SDS.
INSTRUCTIONS FOR THE DISPOSAL OF PRODUCTS AND PACKAGING
Empty packaging that contained products: Dispose of empty packaging according to the requirements of the waste disposal law, for example by taking them to the recycling center.
Packages containing the unused products: Dispose of the unused product in accordance with the law of disposal of such waste, for example by taking it to a recycling center, recycling of packaging is prohibited in this case. Do not empty into drains or watercourses. Product packaging must be kept indoor, and the temperature in the storage place must be between 10 °C and 35 °C. Do not expose to sunlight.

Notes

The values indicated in the present technical sheet can have slight variations from one batch to another. All data refer to the mixed product. The applied product must not come in contact with water, chemicals or subjected to mechanical stress before the curing is complete. The above information is the result of accurate laboratory tests and practical experience; however, since the product is predominantly used outside the manufacturer's control, Boero Bartolomeo S.p.A. can only guarantee its quality. The information contained in this sheet may be subject to revision by the Company. For clarification, updates or further information, it is recommended to contact Boero Bartolomeo S.p.A. directly. The present datasheet annuls and replaces every other precedent to this one.

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