

DEFENDER

700.613

Description

Two-component modified epoxy primer with anticorrosive properties, which can be used as a multiple use primer and as an anti-fouling tie coat. Defender has a non-sanding overcoating time of up to 3 months for any type of Boero anti-fouling.

Use

Recommended as anti-corrosive epoxy primer suitable for above and below the waterline, as well as interior coating system. Anti-fouling tie coat as part of the underwater system. Can be used as part of an osmosis protection system on composite hulls.

Certifications

LFS MED class II

Informations

Finish	Matt	
Colours	.001 White - .259 Grey	
Pack	0.75 - 2.5 - 10 l	
Solids by Volume	55 ± 2%	ISO 3233-2
Specific Gravity	1.30 ± 0.02 g/cm ³	ISO 2811-1
Flash Point	23 °C	ISO 3679
VOC	411 g/l	Calculated
Shelf Life	Comp. A 36 months Comp. B 24 months	

Application

SURFACE PREPARATION

Remove all trace of contamination, grease and oil by high pressure freshwater cleaning. Proceed with degreasing using a suitable detergent or solvent cleaning if necessary and repeat freshwater cleaning. Composites should be free from any wax or mould release coating. All surfaces must be clean, dry and free of contaminants before application of recommended products. Supplied air for surface preparation and cleaning must be dry and clean.

NEW BUILD

Steel, aluminium, lead, stainless steel and alloys: abrasive blasting to grade Sa 2½ (ISO 8501-1). Areas with intact shop-primer abrasive blast to grade Sa 2 (ISO 8501-1). Use a suitable abrasive (non-metallic abrasive for non-ferric metals). Alternatively, for small areas, use mechanical grinding with abrasive disks P36 (coarse) until achieving grade St.3 (ISO 8501-1): the metal surface must be clean and uniformly rough, avoiding polishing the surface. Surface profile after surface preparation between 50 - 90 µm (Rz value) (Medium Grade ISO 8503-1). Apply the first coat over the prepared metal before losing the indicated standard.

Wood: The humidity content of the wood should be 18% maximum. Provide superficial surface roughness by mechanically sanding with sandpaper grade P80-P120.

Composites with peel ply: remove the peel ply. If the exposed substrate is fully cured, in good condition and clean, apply the recommended products. If the exposed substrate is not in good condition and/or contaminated, degrease, using sandpaper P40-P80 to create good surface roughness and clean before application of recommended products. Apply the first coat over the prepared surface within a maximum of 48 hours

DEFENDER

700.613

Composites without peel ply: the composite must be fully cured before starting surface preparation. Provide general surface roughness by sanding uniformly with sandpaper P120-P150. Damages reaching GRP (glass fibres) without gelcoat: Sand using sandpaper P60-P80 to create surface roughness. Apply the first coat over the prepared surface within a maximum of 48 hours

MAINTENANCE & REPAIR

Coated surfaces: remove all loose / poor adhered paint. Provide superficial rugosity with sandpaper grade P120 to all exposed primers until obtaining a uniform non-shiny surface. Touch-up with an epoxy primer and/or tie-coat to re-build the primer thickness for corrosion protection.

Steel, aluminium, lead, stainless steel and alloys: corrosion spots and degraded material: spot abrasive blasting grade P Sa 2½ (ISO 8501-1) of new plates, welds, corrosion and degraded materials with an adequate abrasive. Alternatively use mechanical grinding with abrasive disks P36 coarse until achieving grade St.3 (ISO 8501-1): the metal surface must be clean and uniformly rough, avoiding polishing the surface. Remove all loose / poor adhered paint. Avoid sharp edges between spots of remaining intact paint and the surface by feathering it. Touch-up with an epoxy primer and/or tie-coat to re-build the primer thickness for corrosion protection.

Wood: maximum humidity content in the wood 18%. Provide superficial rugosity by mechanically sanding with sandpaper grade P80-P120.

Composites: composites must be fully cured before starting surface preparation. Damages reaching GRP without gelcoat (glass fibres): provide surface roughness with sandpaper P60-P80. Damages reaching GRP with gelcoat: provide surface roughness with sandpaper P120-P150. Remove all loose / poor adhered paint. Avoid sharp edges between spots of remaining intact paint and the surface by feathering it. Touch-up with an epoxy primer and/or tie-coat to re-build the primer thickness for corrosion protection.

How to Apply

Standard		Brush and roller (roller is not recommended for first coat when blasting)
Conventional Spray		Pressure 3,5 bar Nozzle 1,6 – 1.8 mm
Airless		Pressure 150 bar Nozzle tip 17 – 21 mm

Film Thickness per Coat

DFT	<u>As primer</u> Recommended: 100 µm Standard application range: 100 - 150 µm <u>As tie coat</u> Recommended: 100 µm Standard application range: 70 - 100 µm
WFT	<u>As primer</u> Recommended: 270 µm Standard application range: 180 - 270 µm <u>As tie coat</u> Recommended: 270 µm Standard application range: 130 - 270 µm

DEFENDER

700.613

Additional Application Information

Theoretical spreading rate	Application range at the recommended thickness: 100 µm - 5,5 m ² /l
Thinner	693 - Roller/Brush (5% max) 693 - Conventional spray: (10% max) 693 - Airless: (5% max)
Hardener	613.000C - DEFENDER COMP. B
Mixing ratio by volume	3:1
Mixing ratio by weight	82:18
Pot-life at 20 °C	3 h

Application notes

Prepare the painting by mixing the components in the correct proportions.

It is recommended to mix complete kits to avoid a wrong mixing ratio that may reduce the paint designed protection. If less paint is needed, smaller amount may be prepared in a mixing ratio cup.

Dilute the mixed product, not the components separately. Extra thinning will result in lower film build and slower drying.

If the maximum overcoating interval is exceeded, roughening of the surface is necessary to ensure intercoat adhesion.

The physical data of two-component products refer to components that have been already mixed.

Compatibility

Previous Coat

Epotar Free, Boeroguard

Subsequent Coat

All Boero Anti-foulings, Epolight Win, Epolight EU, Epoyacht, Epoply, Smalto Poliuretano 953.

Drying Time

		10 °C		15 °C		20 °C		30 °C	
		Min	Max	Min	Max	Min	Max	Min	Max
Overcoating interval	Defender	8 h	6 months	6 h	6 months	4 h	6 months	3 h	6 months
	AF	9 h	3 months	7 h	3 months	6 h	3 months	4 h	3 months
Touch dry		3,5 h	3,5 h	2 h	2 h	1,5 h	1,5 h	45'	45'
Depth dry		30 h	30 h	18 h	18 h	12 h	12 h	8 h	8 h
Complete curing		10 days	10 days	7 days	7 days	7 days	7 days	5 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. The surface must be superficially sanded if the overcoating interval is exceeded.

Conditions during application

During application and curing:

Ambient temperature: minimum 10 °C, maximum 35 °C.

Minimum substrate temperature 10 °C (if during the curing the temperature drops below 10 °C, overcoating will take additional time).

Avoid the formation of condensation, the surface temperature should be at least 3 °C above dew point.

Maximum relative humidity 85%.

Painting area should be well ventilated, during application and drying/curing.



DEFENDER

700.613

Storage

It is recommended to avoid exposure to air and extreme temperatures. To maximize the shelf life in the can, check that the container is closed during the storage and the temperature is between 5 °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, operate in well-ventilated places and, if in closed areas, use vacuum cleaners, fans and air conveyors. During the application use appropriate PPE - Personal Protections Equipment (masks, gloves, glasses, etc.). Before using, read sections 7-8 of the SDS

INSTRUCTIONS FOR THE DISPOSAL OF THE BIOCIDAL PRODUCTS AND PACKAGING

Empty packaging containing biocidal products: disposal of empty packaging according to the requirements of the waste disposal law, for example by taking them to the recycling centre. Packages containing the unused biocidal product: Dispose of the product not used in accordance with the law of disposal of such waste, for example by taking it to a recycling centre, recycling of packaging is prohibited in this case. Do not empty into drains or watercourses.

INSTRUCTIONS FOR THE SAFETY SECURITY OF THE BIOCIDAL PRODUCTS AND PACKAGING

Empty containers and containers still containing the biocidal product: Packaging must be disposed of as hazardous waste under the full responsibility of the holder of such waste. Do not empty into drains or watercourses.

Disclaimer

The values indicated in the present technical sheet can have slight variations from one batch to another. The applied product must not come in contact with water, chemicals or subjected to mechanical stress before the curing is complete. The wet film thickness refers to the undiluted product. In case of dilution, this value increases. 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 their 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.