



EURONAVY ENGINEERING EE01

Solvent free epoxy coating for wet surfaces

Technical Data Sheet

Description:

EURONAVY ENGINEERING EE01 is a *high performance*, modified solvent free epoxy (amine cured), designed to be applied directly on wet or dry surfaces. It has excellent anticorrosive properties, good chemical resistance and excellent impact resistance. It has no dew point nor humidity restrictions. It has been designed for *long service* (up to 35 years).

Use:

EURONAVY ENGINEERING EE01 can be applied as a primer, intermediate or finishing coat (however, there may be small color and gloss changes from batch to batch and in the final shade depending on the temperature and relative humidity during application and cure). Can be applied on ships, marine structures, offshore platforms and many other industrial applications – steel or concrete.

Technical Data:

Colours	Red Oxide – EE01062; Light Grey – EE01010; White - EE01000; Black - EE01099.		
Finish	Semi gloss.		
Mixing Ratio	By weight: 5,2:1 – By volume: 3,3:1.		
Curing Agent	KEE01M (M version); KEE01H (H version).		
Specific Gravity (mixture)	1,31 ± 0,05 Kg/dm ³ .		
Volume of Solids	100% (theoretical).		
Flash Point	>102°C (ASTM D56).		
Theoretical spreading rate	8 m ² /Lt – 125 microns.		
VOC	Solvent free product.		
Pot Life (25°C)	<u>H Version</u>	<u>M Version</u>	
	3 hours	45 minutes	
Dry to touch (max.) and overcoating period		<u>H Version</u>	<u>M Version</u>
	DRY TO TOUCH (25°C)	14 hours	10 hours
	OVERCOATING PERIOD (25°C)	Min. 16 hours; Max. 7 days	Min. 16 hours; Max. 7 days
Ambient and substrate temperature		<u>H Version</u>	<u>M Version</u>
	AMBIENT TEMPERATURE	Min. 15°C	Min. 5°C
	SUBSTRATE (min)	10°C	5°C
	SUBSTRATE (máx)	50°C	50°C
Packing	4Lt ; 20 Lt		



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Application Guide:

SURFACE PREPARATION

New steel: Oil and grease shall be properly removed. Wash the surface with high pressure water to remove salt and other soluble contaminations. Abrasive blasting to Sa 2½, accordingly to ISO 8501-1. After blasting the surface should be carefully cleaned to remove abrasive dust.

Maintenance: Oil and grease shall be properly removed. **EURONAVY ENGINEERING EE01** can be applied over hydroblasted, abrasive blasted or mechanical treated surfaces. **EURONAVY ENGINEERING EE01** moisture tolerance allows a clean water surface washing before painting. Thus, salt contaminations can be highly reduced. **EURONAVY ENGINEERING EE01** iron oxides tolerance allows to proceed with the coating application even over flash rusted surface equivalent to M grade at SSPC VIS4(I) / NACE N.º7 standard.

MIXING AND THINNING

EURONAVY ENGINEERING EE01 is a two-pack product. Both containers contain the proper ratio of base and curing agent. The entire contents of each container must be mixed together as supplied. Stir base to obtain smooth homogeneous condition not longer than 2 minutes. Add the curing agent slowly to the base under continuous stirring for 3 minutes. **Use the total content of each container.** Use a speed adjustable power mixer. **Thinning is not recommended.** However, if necessary due to operation limitations, thinning is allowed with T003 - epoxy thinner (max. 3% v/v). If the H Version is to be applied below 15°C, keep a 30 minutes induction time without stirring the mixture.

APPLICATION

Recommended primer: **EURONAVY ENGINEERING EE01** can be used as a primer.

Film thickness: can be applied with various thickness, depending on the purpose, application method and application area. Consequently, the theoretical spreading rate will depend of the applied thickness and could change the dry to touch and the cure time.

EURONAVY ENGINEERING EE01 can be applied by roller, brush or airless spray. When airless equipment is used, a 60:1 (or larger) with a 6 bar inlet pressure is recommended. Use a 0,19 to 0,21 tip size.

Dehumidification is not necessary, since **EURONAVY ENGINEERING EE01** can be applied on wet surfaces. Avoid applying over a running water film, water puddles or under direct rain impact.

When working in confined spaces, good ventilation should be provided.



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If the maximum recoating period is exceeded it is necessary to reactivate the surface with: high pressure wash (400 bar) or grinding. In the last case the surface should be carefully cleaned before the repainting.

EURONAVY ENGINEERING EE01 should be stored in a cool well-ventilated place, protected from high temperatures. The packs must be kept tightly closed.

Shelf life: 18 months.

Thinner for cleaning purposes: epoxy (T003) or cellulosic type (T077).

SAFETY

Cause eye and skin irritation. Reaction vapor may cause respiratory irritation in sensitive individuals. May cause allergic skin reaction. Avoid breathing vapors. Do not get in eyes on skin or clothing. Ear, eye and skin protective equipment. Use of appropriate respiratory is recommended to avoid potential respiratory irritation (particularly in confined spaces). Wash skin thoroughly after use and water. In case of eye contact immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin contact area with soap.

Specific Testing Data:

Testing Data	Result
Salt fog ASTM B117	Rating 10 (0-10, ASTM D1654) after 1000 h.
Condensation ASTM D4585	Rating 10 (0-10, ASTM D1654) after 1000 h.
Edge-retention (procedure of MIL-PRF 23236 C standard)	edge retention ratio of 74% - 101%, for edge radius from 0,1 mm to 2,4 mm, respectively.
Adhesion (pull-off)	<i>ASTM D4541 or equivalent</i>
After 1000 h salt fog	9,3 – 10,8 MPa
After 700 h salt fog	10,0 MPa NF EN 24624
After 1000 h condensation	11,5 – 13,8 MPa
Atmospheric exposure (2,5 years)	<i>Ratings 0-10 accordingly to ASTM D1654</i> Rust: 10; Blistering: 10; Scribe undercut 0,5 mm.
Cathodic disbonding	No defects (90 days, "pass") MIL P24647
Choc resistance (falling weight)	6,4 – 8,3 J (fall from 65 to 85 cm, EN ISO 6272)
Fire resistance ASTM E84-01	Rating A (NFPA N°101, evaluating flame spread and smoke liberation)



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Physical Properties:

Adhesion (Pull Off) (ASTM D4541)	Wet surface: 120 Kg/cm ² (2180 psi. / 15,03 MPa) Dry surface: 170 Kg/cm ² (2417 psi. / 17,04 MPa)
Abrasion Strength (ASTM D4060)	60 mg (1000 cycles / 1000 g / CS10)
Coefficient of Thermal Expansion	15 x 10 ⁻⁶ /°C
Impact Resistance	853 KgF/cm ² (12,132 psi.)
Barcol Resistance (ASTM D2583)	28
Elasticity Modulus (ISO/R 527)	100,000 KgF/cm ²
Salt spray resistance (ASTM B117)	2,000 hr – Without defects
Humidity (ASTM D2247)	Without defects
Maximum elongation (ISO/R 527)	3%
Compressive Strength (ISO 844)	1.050 KgF/cm ² (~ 15,000 psi.)
Flexural Strength (ISO 178)	650 KgF/cm ² (9245 psi.)
Condensation Resistance (ASTM D4585)	2000 hours – Without defects
Exterior Exposure (ASTM D1014)	2 years- “Chalking” (ASTM D659): rating 4
Immersion in water (ASTM D870)	5200 hr. – Without defects
Immersion in water modified for salt (ASTM D870)	5200 hr. – Without defects
QUV (Using A340 & B313 bulbs)	2000 hr. – “Chalking” (ASTM D659): rating 4
Adhesion (Tape test, ASTM D3359)	Rating - 5B
Deformation/Impact test (ASTM D2794)	30 Kg.cm
Flexibility (ASTM D522 – Mandrel belt)	Without defects
Absorption (ASTM D570)	0,30 %
Prohesion (ASTM G85)	2000 hr – Without defects

This is not a specification and all information is given in good faith. Every values presented as Theoretical were calculated from the product formula, unless otherwise mentioned, and can deviate from laboratory measurements using standard methods that may be not applicable, giving the nature of the products. If requested, Euronavy Engineering can inform any internal measurement method used to determinate any given value presented. This Technical Data Sheet content can be changed without previous notice. Since conditions of use are beyond the manufacturers control information contained herein is without warranty, implied or otherwise, and final determination of the suitability of any information or material for the use contemplated, the manner of use and whether there is any infringement of patents is the sole responsibility of user. The product is intended for professional use only. Manufacturer does not assume any liability in connection with the use of the product relative to coverage, performance or injury. For application in special conditions please consult Euronavy Engineering for detailed recommendations.