

WANARMOR®ES210

Solvent-Free Underwater

Epoxy Coating

Product Description

WANARMOR®ES210 is a two-component epoxy coating designed for direct underwater application. Solvent-free, it cures on damp substrates or underwater and can be applied directly to steel structures and concrete.

Product Characteristics

Excellent corrosion resistance, easily applied underwater using conventional tools, no drying environment required, directly applied to underwater substrates, zero VOCs, and no pollution risk during application.

Recommended Uses

Underwater repair of pier steel piles and dock gates; wet construction of subsea pipelines and concrete pile foundations, etc.

Technical Specifications

Physical Parameters

Color	Gray, or as per user requirements
Gloss	Semi-gloss
Specific Gravity	Approx. 1.4 kg/L
Solids By Volume	Approx. 100%
Theoretical Spreading Rate	5 m ² /L, DFT:200 μm
Flash Point	>100°C
VOC	30 g/L

Surface Preparation

Prior to painting, the entire surface is treated using a pneumatic rotary machine. Remove all loose dust, dirt, grease, and loose coatings. Note that if the surface is contaminated with grease, the coating will bead up and fail to adhere. Clean the surface using soap or detergent to ensure thorough cleanliness.

Application Guidance

Application Method

Brush application, roller application.

Mixing Ratio

Mass Ratio : 5(Base) : 1(Hardener)

Pot Life : 40 minutes/20 °C

Hardener

CES2100

Thinner

None

Cleaning Agent: WANARMOR®TH003

Film Thickness

Film Thickness	
Wet Film	200 μm
Dry Film	200 μm

Drying Time

Surface Temperature	20°C
Surface Dry	12 hours
Hard Dry	24 hours
Fully Cured	7days

DFT:200 μm

Overcoating Interval

Product Name		10°C	20°C	30°C
Solvent-Free Underwater Epoxy Coating	Lowest	40 hours	24 hours	12 hours
ES210	Highest	Extendable	Extendable	Extendable

If more than 7 days have passed, the surface must be roughened.

Ambient Temperature

10°C~40°C.

Surface Temperature

Above the dew point by 3°C or more.

Mixing and Thinning

WANARMOR®ES210 is a two-component product with a pre-determined mixing ratio. First, stir the Base until uniform and free of lumps for no longer than 2 minutes. Then slowly add the hardener and stir for 3 minutes. Use a variable-speed power mixer. Avoid over-mixing, as this accelerates curing and reduces product lifespan. High temperatures shorten the mixture's pot life, while low temperatures extend it. Do not dilute this material.

Ventilation

For the safety of construction personnel and the proper performance of this product, all areas of the construction site must be well ventilated.

Packaging and Storage

Packaging

Two-component, 24 kg combination packaging.

Storage

Products must be stored in accordance with national regulations. Keep in a cool, well-ventilated area away from heat and ignition. Containers must be kept tightly closed.

Shelf life

1 year

Safety Precautions

Warning

May cause eye and skin irritation. Vapors may cause respiratory irritation in sensitive individuals. May cause skin sensitization. Avoid breathing vapors. Avoid contact with eyes and skin. Use eye, ear, and skin protection, and wear an appropriate respirator to avoid potential respiratory irritation. After use, thoroughly wash skin with water. If discomfort occurs, consult a physician. Wash clothing before reuse. If breathing has stopped, perform artificial respiration, preferably mouth-to-mouth, and seek medical attention. Burns: Exothermic reactions may cause product to become excessively hot. Handle mixtures with caution. Wear gloves. First Aid: If product contacts eyes, immediately flush with water for at least 15 minutes. Remove contaminated clothing and shoes. Wash exposed skin with soap.

Before and during use, observe all safety labels on the packaging. Consult the Safety Data Sheet and comply with relevant national or local government safety regulations.

Statement

The information listed in this document is reliable. Each value provided is calculated as theoretical data based on the product formulation. Upon request, our company can disclose the internal standard measurement methods used to determine any of the above data. Since usage conditions are beyond the manufacturer's control, this information is provided without warranty. The product is intended for professional use only. For any inquiries, please contact our company.

Our Technical Support and Customer Service Center is available to provide consultation and application technical services regarding the product. We welcome your inquiries via mail or phone. National Customer Service Hotline: 400-059-1116 ext. 3.