



WINKEL PRO W-UW UNDERWATER REPAIR EPOXY PUTTY

TECHNICAL DATA

Product Name: Winkel Pro W-UW Underwater Repair Epoxy Putty
Product Code: 20056
Product Description: Wet surface (underwater) repair epoxy putty cures at room temperature and is designed for filling, rebuilding and bonding metal, concrete, wood surfaces in wet and dry environments.
And also can be used for effective repairs to equipment which must be returned to service.

Features:

1. Easily applies to upright surfaces.
2. Fix to aluminum, steel and many other metals, as well as concrete.
3. Machine casting to metallic finish.
4. 100% solids.
5. Non-rusting repairs.
6. Resistant to chemicals and most acids, bases, solvents and alkalis.
7. Bonds to wet surfaces, patches, and seals metals

Product Data:

The color of Part A (Resin): Gray
The color of Part B (Hardener): Light gray
The mixed color: Gray
Ratio: 1:1 (by volume), 1:1 (by weight)

Storage condition & Shelf-Life: 24 months from date of production if stored properly in original unopened, sealed and undamaged packaging in cool and dry conditions at temperatures between +5°C and +25°C. Protect from direct sunlight.

Technical Data:

TYPICAL PHYSICAL PROPERTISE	RESULTS	TEST METHOD
Uncured		
% Solids by Volume	100	-
Mixed Viscosity	Paste	-
Specific Gravity	Resin: 1.52	-
	Hardener: 1.52	
	Mixed: 1.52	
Working time	35~40 mins (500g, @25°C)	-
Full cure time	24 hours	-
Maximum Operating Temperature	Wet: 49°C, Dry: 150°C	-
Cure 7 days @25°C		
Shear Strength	1845 psi	Ref. ASTM D 1002-10
Tensile Strength	2960 psi	ASTM D638-14 (Type I, V= 5 mm/min.)
Glass Transition Temperature	116.96 (T _g) °C	DSC
Flexural Strength	5195 psi	ASTM D790-17 Procedure AI
Comperssive Strength	8273 psi	ASTM D695-15
Hardeness	81 Type D/1 sec	Ref. ASTM D2240-15 ^{el}
Temperature Limitations	Continuous: -30 to 150 °C	-
	Intermittent: -30 to 200 °C	

*** For information only - not for specification purposes. ***

Application Instructions:

1.Surface Preparation

Winkel W-UW(underwater) repair epoxy putty only be applied to clean and well roughened surfaces.

- (1) Remove all loose material and surface contamination and clean with a suitable solvent which leaves no residue on the surface after evaporation such as acetone, MEK, isopropyl alcohol, etc.
- (2) If necessary, apply moderate heat to remove ingrained oil and clean again with solvent.
- (3) Roughen surface by abrasive blasting, grinding, rotary file or other appropriate means.

Note: When metals are exposed to seawater or any other salt solution, it is recommended to perform grit-blasting and high-pressure water-blasting on the affected area. Afterward, leave it overnight to facilitate the migration of salts to the surface of the metal. Repeat the blasting process to extract all soluble salts. Additionally, conduct a chloride contamination test to measure the level of soluble salt content, which should not exceed 40ppm.

2.Mixing & Application

Using an appropriate tool, apply the mixed epoxy putty to the prepared surface, pressing firmly to insure intimate contact and eliminate any air pockets at the bond line or within the material.

Some applications such as holed pipes or tanks and cracked casings may require the use of reinforcement tape to bridge the damaged area(s) followed by the application of additional material to completely cover the reinforcement tape.

3.Cleaning Equipment

Wipe excess material from tools immediately. Use acetone, MEK, isopropyl alcohol or similar solvent as needed.

*** Not recommended for long term exposure to concentrated acids or to organic solvents ***

Health and Safety Information:	For information and advice on the safe handling, storage and disposal, users shall refer to MSDS containing physical, ecological, toxicological and other safety-related data.
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