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Technical Bulletin

Armor Plate – Steel –Regular - K-033

Description:

Armor Plate - Steels are two-component, steel filled epoxy systems specifically designed for repair of worn shafts, sheaves, and castings or for tool and die making applications.

Ordering Information:

K-033-2 (2LB Unit), K-033-15 (15LB Unit)

Application Guidelines:

MAXIMUM SERVICE TEMP 250°F
WORKING TIME 40 minutes
FUNCTIONAL CURE 8 Hours
MIX RATIO 3/1 by Volume (5/1 by weight)

Product Advantages:

All Armor Plate - Steel systems may be drilled, tapped, filed or machined.

Coverage:

Approximate coverage per pound is 20 $in.^2$ at 0.5 in. thickness.
The working time of Armor Plate-Steel (the time you have to apply the material before it sets) will vary according to the air temperature, the temperature of the material itself, and the surface to which it is applied. Higher temperatures reduce working time and curing time. Lower temperatures increase working time and curing time. Ultimate hard cure is obtained in 2 to 12 hours depending on the system being used, the air temperature, and the temperature of the surface being coated.

Physical Properties:

		Tests Conducted
Tensile Strength	4,000 psi	ASTM D 638
Flexural Strength	7,500 psi	ASTM D 790
Compressive Strength	12,000 psi	ASTM D 695
Tensile Shear Strength	2,000 psi	ASTM D 1002
Wear Resistance (weight loss) %	0.5	
Hardness, Shore D	90	ASTM D 2240

Surface Preparation:

The surface to be coated must be free of all rust, scale, dirt, dust, grease, oil, release agents, or other contaminants. Preheat the surface to 100 °F (this will drive off any moisture). For smooth surfaces or where vibration is a concern, tack weld an open mesh screen or expanded metal approximately 1/16 to 1/8 inch above the surface. Chip off weld slag

Measuring:

Armor Plate - Steel kits are supplied with the resin and hardener pre-measured in the correct mixing ratio. It is best to empty the entire contents of both the resin and hardener containers on to the mixing board to insure the proper mixing ratio is maintained. If less than a full kit is required for the job, both the resin and hardener **must** be **accurately** measured out. DO NOT ATTEMPT TO "EYEBALL" THE AMOUNT NEEDED. Use a scale to weigh out each component or use measuring cups to measure by volume. Adding more or less hardener will only degrade the physical properties

If the kit is colder than 60 °F, preheat both the resin and hardener by placing the cans in a hot water bath. The material temperature should not exceed 90 °F as higher heat will reduce the working time of the mix. Heating of the cans with a torch or other direct flame is highly dangerous and should **NEVER BE DONE.**

Mixing:	After the components have been measured on a clean, flat mixing board, mix thoroughly with a trowel until the mixture becomes a uniform color (about 2 minutes). For mixing the largest kits, a mixing paddle and heavy duty, slow speed drill may be used. However, the mechanical energy put into the mix by the drill may result in a shortened working time and a lessening of the non-sag characteristics of the Armor Plate. Remember, incomplete mixing will result in poor curing, loss of physical properties, and "soft spots".
Application:	Apply the mixture immediately with a trowel or putty knife. Cover large holes or cracks with screen, paper or fiberglass cloth and apply Armor Plate - Steel over the patch and onto an adjacent solid area. Pipes can be repaired by coating a cloth "bandage" with Armor Plate - Steel and wrapping the bandage around the pipe. An additional layer of Armor Plate - Steel should be applied over the bandage.
Curing Procedures:	Armor Plate - Steel (R) - Cure at least 8 hours at 77 °F before returning the equipment to service. Curing procedures may be shortened by applying heat with a heat gun or heat lamps. **DO NOT EXCEED 120 °F.**

SAFETY PRECAUTIONS

Avoid breathing of vapors. Forced local exhaust is recommended to effectively minimize exposure. NIOSH approved, organic vapor respirators and forced exhaust are recommended in confined areas, or when conditions (such as heated polymers, sanding) may cause high vapor concentrations. **DO NOT WELD ON, BURN OR TORCH ON OR NEAR, ANY EPOXY MATERIAL. HAZARDOUS VAPOR IS RELEASED WHEN AN EPOXY IS BURNED.**

Avoid skin or eye contact. Wash skin with soap and water if contact occurs. If eye contact occurs flush with water for 15 minutes and obtain medical attention. Read and understand all cautions on can labels and safety data sheets before using this material.

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