AT 4440 - EPOXY CERAMIC COATING

NANO-CERAMIC COATING

APPLICATION INSTRUCTIONS

1. PRODUCT DESCRIPTION

AT-4440 Epoxy Ceramic Coating is a unique high performance coating that offers best in class insulation, anti-corrosion and moisture protection performance.

2. SURFACE PREPARATION

- Surfaces should be free of loose rust, mill scale, paint, grease, oil, loose Portland cement and any other film-forming foreign material.
- An **example** of recommended prep work is to water blast with high-pressure water (3,000 PSI minimum) to thoroughly clean off all debris, dirt, loose rust, mill scale, paint, grease, oil, loose Portland cement and any other film-forming foreign material and other contaminates.
- Objective is to have a clean, tight solid cured substrate by whatever means is necessary for the given application.
- Optimum results are obtained if the surface is dry, although entirely satisfactory protection may be obtained if the surface is damp.
- Surplus water on the surface should be removed to prevent excessive bubbling of the coating.
- Coverage is dependent upon application when covering old corroded metal in that the tight rust cannot be taller than the coating is thick. The coating must cover all of the peaks of the rust.

3. MIXING

- AT-4440 is a 2K system that must be mixed prior to application.
- **Prior to combining** Part A and Part B, mechanically mix each part separately for 2 minutes each.
- **NOTE:** Part A and Part B **MUST BE MIXED SEPERATELY PRIOR TO THE NEXT STEP.**
- **NOTE:** Part A will change color from a transparent (slightly yellow) color to a cloudy/milky color when mixed properly.
- Combine and mix thoroughly at a 4 to 1 ratio (4 parts B with 1 Part A) using a power mixer until all streaks and/or lumps disappear and the mixture has uniform color and consistency. Standard mixing times are:
  - 5 minutes in a 5 gallon pail.
  - **OR** for 1 minute in one gallon pail.
- Be sure to allow mixing blades to rub on the sides and bottom of the mixing container in order to prevent settling.
- **Allow to stand (ingest) for 45 minutes to one hour before using.**
- Thinner may be used but is not recommended for most applications

- Use of thinner increases possibility of sag, retards cure time and reduces dry film thickness.
- Thinning may necessitate applying additional coats to achieve the desired thickness.
- If thinning is required, use MEK or similar thinner.

4. APPLICATION (REGULAR)

- As with any new material, always test application and finished properties on a low value test article or panel before working on valuable surfaces.
- No primer is needed on metal surfaces thereby reducing total job cost. Airless spray is the most efficient application method for larger projects.
- Standard recommended sprayer: Graco 5900 with 0.021 to 0.035 tip size, 3500 PSI capability and a reversible self-cleaning tip. Remove all filters from gun and hose, including bung hose, before application.
- Brushes and rollers may be used for detail work such as edge termination, filling of voids, pinholes, and small cracks.
- Apply 13.3 mils (.0133 inches or 0.337 mm) wet to achieve a final dry thickness of 10 mils (0.010 inches or 0.254 mm).
- Application of multiple coats is possible. Each coat should be around 10 mils dry thickness for optimal results without sagging.
- When applying multiple coats, it is best to cure the previous coat as much as possible before applying another layer of coating. If not, some blistering may occur from trapped vapors as the temperature rises when the substrate (e.g. pipe) is heated during operation.
- Wait as long as practical between coats. At a minimum, the preceding coat should be dry to the touch before another coat is applied.
- Refer to the plural spray system outlined in APPLICATION (ACCELERATED) section for fastest application in mass production environments.
- To speed up curing under other circumstances, it is optimal to expose the coating to heat not to exceed 115^0F (46^0C). This can be achieved by creating a warm airflow over the coated substrate. In the event that the coating is applied on a pipe, heating the pipe will also be effective to accelerate drying & curing.

5. APPLICATION (ACCELERATED)

- Plural spray system is recommended when a high speed, continuous application process is required for coating pipe or flat surfaces. Plural spray system (with pre-heaters) can significantly reduce cure time. If followed by a warming tunnel, full cure will be further accelerated.
- If pumping out of 55-gallon drums, barrel mixers are needed to keep all contents in proper suspension.
- Additional advantages are no waste of pre-mixed batches and less equipment cleaning required between uses.

7. DRYING & CURING TIMES

Solids	75%
Pot Life	4 to 6 hours at 80^0F (26.5^0C).
Drying Time (Regular Application)	1 to 2 hours at 80^0F (26.5^0C).
Curing time (Regular Application)	**Initial:** 8 hours at 80^0F (26.5^0C). **Complete:** 3 days at 80^0F (26.5^0C).

8. COVERAGE RATE

- Cover approximately 120 square feet per gallon at 10 mils (3 square meters per liter at 0.254 mm).

9. STORAGE STABILITY & SHELF LIFE

The shelf life is one year when stored in the original, unopened container. Store containers in a well-ventilated and covered area away from extreme heat and moisture. Contact your ALPHATEK representative if you have any questions about the products or its uses.

10. SAFETY

Refer to the Safety Data Sheet for this product prior to use. Use in a well ventilated area. If that is not possible, use a NIOSH approved self-contained breathing apparatus or vapor filters on a mask. Protective gloves and safety glasses should be worn at all times. Only very high abrasion cleaners will remove the coating.