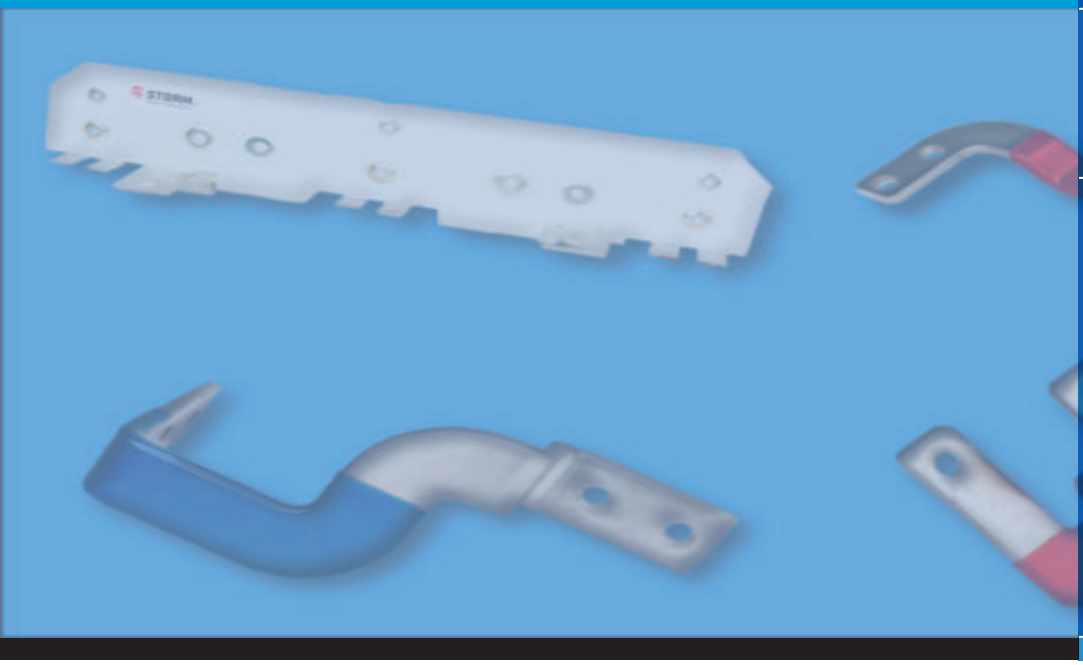

STORM POWER COMPONENTS

DIELECTRIC EPOXY POWDER COATING

AN IDEAL SOLUTION FOR BUS BAR INSULATION

For OEMs in need of insulated copper or aluminum conductors for tight-fitting, durable bus systems, **STORM Power Components** provides the expertise, capabilities and equipment to manufacture high dielectric, epoxy powder-coated bus bar.

Epoxy powder-coated insulation offers a high dielectric strength while creating durable insulation, impervious to most elements, and allows for closer bus bar location in a system ideal for single conductors or multiple conductor assemblies that may have numerous forms. Epoxy powder coating is also well suited for insulating thick conductors, in addition to conductors with multiple electrical contact points.

EPOXY

powder coating is a free-flowing, thermosetting dry powder. Think of this process as a way of "melting" paint over a bus bar's surface to create a durable, protective surface with thicknesses ranging from 6 to 120 mils or .006 to .120 inches. When the epoxy powder cures, a cross-link occurs, increasing molecular weight and insulation capability.

EPOXY POWDER

is chemical resistant and eliminates high-voltage arcing and current-induced magnetic fields that affect the surrounding area of the electrical bus bar. It not only protects against corrosion, it carries a high insulation rating of 800 volts per mil (.001 inches) for up to 3,000 volts of protection. Due to safety considerations, a recommended hipot test is performed rather than rely on film thickness.

TENSILE

strength on raw and plated copper bar is in the range of 7500 PSI, while the UL rating is 130° C. Epoxy powder coating's high dielectric strength can be varied based on the application process, thickness, and component preparation.

STORM POWER COMPONENTS
www.stormpower.com

Phone: 1-800-394-4804
Responsive Manufacturing™

DIELECTRIC EPOXY... (CONT)

Electrostatic Spray or Fluidized Bed?

The choice is determined by the dielectric strength of a copper or aluminum bus bar. The rule of thumb: a high-voltage bar should be fluid dipped to achieve a thickness greater than .12 inches. Size and shape also play a part. Bus bars or other components with flat, open geometry are more suitable for spraying, while components with turns and bends are better suited for fluidized bed powder coating.

ELECTROSTATIC SPRAY

Before spraying onto the part, **STORM Power** conducts a set prodedure to determine the amount of powder to deposit by varying the ratio of voltage, airflow, and powder. Next, this electrostatic system imparts a negative electric charge to the powder to deposit it onto the grounded component.

Components are then placed into a curing oven that has the capacity to handle parts up to 12 ft. length. As the thermo-set powder is heated, it begins to melt and flow out to form a higher molecular weight polymer fused to itself and the substrate.

OR

FLUIDIZED BED

Epoxy powder is suspended by air pumped into a sealed chamber, and through a porous plate, into an aerated hopper, where the powder floats in a fluidized state.

Then, heated copper connectors are lowered into the hopper, causing the powder to adhere to the surface and then flow out. This creates a smooth, durable, and continuous epoxy coating that is thicker than the coating on sprayed components.

As with sprayed components, coated parts are sent to a curing oven.

COLORS

Black Gray Red Blue Yellow

PREPARATION

- Cleaning - We conduct a final cleaning process to remove all contaminants.
- Edge Conditioning - Edges are smoothed and burrs are removed for uniform coating.
- Masking - Hi-temp masking tape is applied to each part where coating is not needed.
- Pre-Heating - Parts are preheated to enable the epoxy powder to melt more evenly.

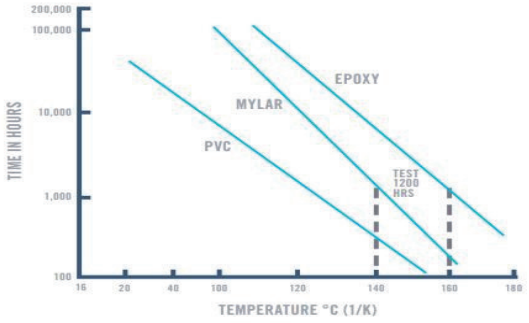

Fig. 4. Insulation life curves plotted according to the Arrhenius reaction theory.

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