



The H-J Family of Companies is a global leader in the manufacture and supply of components to the transformer and switchgear OEM and utility markets

The H-J Family of Companies and epoxy resin portfolio

The H-J Family of Companies is a global leader in the manufacture and supply of components to the transformer and switchgear OEM and utility markets. H-J was founded in 1969 and is headquartered outside of St. Louis, Missouri, USA. Today we continue to be the leading supplier of distribution transformer bushings, connectors and associated components in North, Central and South America. Our commercial

locations in Brazil, Canada, China, Colombia, India, Mexico, the Philippines, Spain, and throughout the United States serve our domestic and international customers. H-J employs state of the art manufacturing technology, producing a wide range of insulating components and non-ferrous castings such as brass, bronze, copper, and aluminum. As an engineered solutions company, we have vast expertise in custom engineered

products designed and manufactured to customer specifications.

H-J is a market leader in expanding the application and use of epoxy resin systems as a base insulation in the global components market. While epoxies have been used throughout Europe and North America since the 1960s, significant improvements in development of new epoxy formulations and continued improve-

ments in manufacturing technology have allowed H-J to provide greater value to customers. Epoxy based components offer excellent performance and durability in all applications and — together with H-J's vertical integration — provide cost-competitive solutions.

There are several advantages that an Epoxy Insulation System can offer:

- Lightweight – Cast epoxy is lighter than ceramic material, thus allowing easier handling, lower structural loading and lower shipping costs.
- Homogenous material – Chips or scratches on the surface of the material will not cause degradation of the insulation quality.
- High impact strength – Cast epoxy will withstand much higher impact forces than ceramic insulation.
- High electrical strength – Cast epoxies display excellent anti-tracking and hydrophobic qualities. The epoxy material is a self-extinguishing, non-propagating material.
- Superior partial discharge characteristics – The casting process used by H-J allows placement of integrally-cast HV and ground shields within the insulation cross section to control the electrical field and minimize discharge.
- Flexibility of design – The casting process allows versatility of complicated shapes and designs, encapsulation of metal inserts, conductors and stress grading parts, exact dimensional repeatability.
- Customization of materials to application – Epoxies can be modified to specific application requirements.

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veloped by H-J, and independently verified at third-party test labs such as UL™.

- Bisphenol-A: Indoor or enclosed outdoor applications (non-UV exposed)
 - Typical applications are transformer LV secondary bushings, bus insulators for enclosed switchgear applications, through-wall bushings for enclosed switchgear applications.
- Cycloaliphatic: Outdoor applications (UV exposed)
 - Typical applications are roof- or cover-mounted bushings, LV secondary bushings, larger and more complex moldings with internal electrical stress grading, designs with challenging geometries where slower processing may be required.

Our in-house test lab then verifies all mechanical, electrical, thermal, and chemical properties and performance of the manufactured part as required by the customer. Routine tests of raw materials are performed on every batch to verify characteristics such as: density, viscosity vs temperature, gel time, Tg (Glass Transition Temperature), and moisture content.

All of these factors together with our excellent employees are what allow H-J to offer our customers quality products of international reputation.

Markets served:

- Distribution transformers
- Instrument transformers
- Dry-type transformers
- Power transformers
- Specialty transformers
- MV circuit breaker – Vacuum, Oil, SF6 / Repair / Retrofit
- MV switchgear
- Isolated phase bus ducts

For more information please contact our team.

H-J General Contact Information

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We utilize state of the art product development services such as 3D parametric modeling, electrical and mechanical design analysis tools, and mold flow analysis software

The manufacturing process of epoxy has three basic steps:

1. Formulation and mixing
2. Molding
3. Curing

H-J performs all three steps in-house through sophisticated vertical integration in order to ensure the highest quality standards.

H-J's expertise begins before any epoxy is ever molded with the part design, simulation, and tooling fabrication. We utilize

state of the art product development services such as 3D parametric modeling, electrical and mechanical design analysis tools, and mold flow analysis software. This allows us to greatly reduce the tooling fabrication time, which is done in-house in H-J's dedicated tool room. This in-house collaboration allows us to find modern solutions to new and retrofit applications, and to cut weeks or months from typical industry lead-times.

H-J produces several different proprietary epoxy blends based in two epoxy technologies. These epoxy formulations are de-

