



Science.  
Applied to Life.™

# Transformers for tomorrow

3M™ OEM solutions help  
manufacturers of today's  
electrical transformers  
evolve their products to  
meet demand

As electrical needs evolve, demand for reliable, constant electricity continues to grow. According to a study by Global Market Insights, Inc., the global transformers market size is set to reach beyond \$24.5 billion in valuation through 2027.<sup>1</sup>

When building transformers and motors to meet this growing demand, OEMs will need materials that help them insulate, protect, and connect their equipment for long-lasting and reliable operation. 3M™ Flexible Insulation Papers and Electrical Tapes can help them achieve their goals in these growing market segments:



### Grid modernization

Around the world, aging grid infrastructure is being modernized and upgraded to handle this new demand—and transformer reliability will play a central role in this modernization.

### Data centers

Businesses from banks to software developers rely on data centers to keep their operations moving. Data center transformers have non-linear loads that generate excess heat, increasing the need for effective insulation.



### Electric vehicle charging stations

As high speed, high voltage charging stations become the norm, the need for transformers to power them could increase. Transformers will need to be optimized with insulation solutions and tapes that help customers address overloads and outages.



### Wind turbines

As demand for renewable energy sources grows, so will demand for wind farms. OEMs can make their power wind turbines function longer and more reliably when they're insulated and protected with 3M™ Papers and Tapes.

1. "Power transformers to play a key role in global grid modernization efforts," Smart Energy International, March 12, 2021, <https://www.smart-energy.com/industry-sectors/business/power-transformers-to-play-a-key-role-in-global-grid-modernisation-efforts>

# Choose the right solution.

**3M™ Electrical Insulating Tapes** have a broad range of backings and adhesives that have been optimized for different transformer applications. These include:

- Glass cloth backings that are flexible and conformable with high temperature resistance, high tensile strength, excellent absorption of resins and varnishes, and cut-through and edge-tear resistance.

- Filament reinforced tapes that deliver the dielectric strength of polyester film and the high mechanical strength of glass fibers, in a more cost-effective alternative to glass cloth tapes.
- Composite film tapes for insulation, anchoring, and banding in motors and transformers, with high dielectric strength and edge-tear and puncture resistance.



### Product options:

- **3M™ Filament-Reinforced Electrical Tape 1076** has a paper/glass filament backing for oil-filled transformer applications.
- **3M™ Glass Cloth Electrical Tape 69** is a high-temperature (200° C/392°F) glass cloth tape that is UL510A flame retardant.
- **3M™ Glass Cloth Electrical Tape 27** is a high-performance glass cloth tape that is tough and conformable.
- **3M™ Composite Film Electrical Tape 44HT** is a composite film tape with aggressive adhesive for motor applications.
- **3M™ Filament-Reinforced Electrical Tape 1046** is a tough, durable filament tape with a thermosetting rubber resin adhesive system.
- **3M™ Filament-Reinforced Electrical Tape 1039** is a solvent-resistant filament tape with an acrylic adhesive that is more conformable.

**3M™ Flexible Insulation Solutions** for low-voltage, open-ventilated, dry-type transformers offer the following benefits:



**Inorganic content** helps improve electrical, thermal, and dimensional stability of the insulation, enhancing reliability and processing performance.



**High voltage endurance**, even after exposure to high temperatures or continuous electrical stress, may improve transformer reliability.



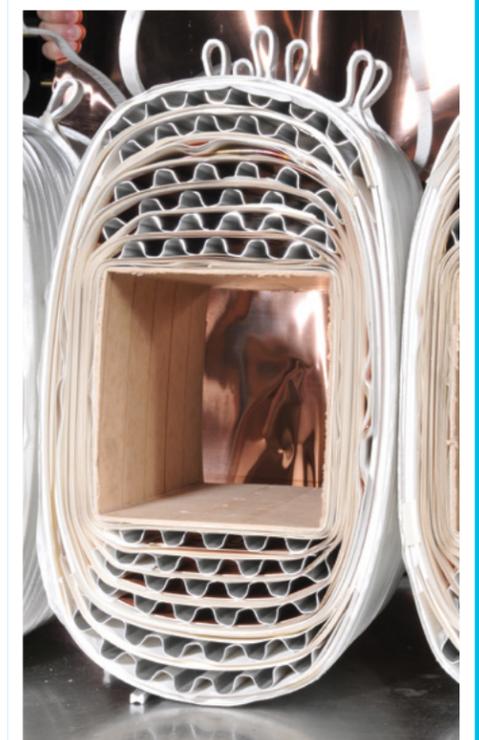
**High thermal conductivity** helps promote better heat dissipation, which may enable cooler running and greater efficiency.



**Low moisture absorption**, even when exposed to humid environments, gives the insulation dimensional stability and helps reduce the need for extended drying cycles.

### Product options:

- **3M™ ThermaVolt Calendered Inorganic Insulating Paper** meets the high performance required for use in high-temperature, dry-type transformers and are a better option for use as interwinding insulation in strip-wound coils.
- **3M™ CeQUIN Inorganic Insulating Paper** is the highest inorganic content electrical insulation paper from 3M, promoting improved thermal, dimensional, and electrical stability.



**Visit [www.3M.com/oem](http://www.3M.com/oem) to learn more.**

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