

# 3M™ Scotchcast™ Electrical Resin 275

## One-Part, Epoxy Powder Resin

- Formulated for use in electrostatic applications as well as conventional fluid bed hot dipping
- Superior thermal shock and impact resistance
- Excellent heat, chemical and moisture resistance
- Excellent flexibility
- Excellent flow

3M™ Scotchcast™ Electrical Resin 275 is a general purpose, epoxy powder resin. It is a one-part, green pigmented, heat-curing coating. It is designed to provide a continuous, tough, moisture and chemical resistant dielectric coating to

a variety of metal substrates through fluid bed hot dipping or electrostatic application processes.

Scotchcast Electrical Resin 275 has excellent flexibility characteristics which makes it suitable for use as an insulation coating for assemblies requiring forming after application.

3M Scotchcast Electrical Resin 275 is manufactured by a fusion blend process insuring that each individual particle of powder contains all the components necessary to effect a complete cure.

## Scotchcast™ Electrical Resin 275-Typical Properties

Property	Value
Color	Green
Specific Gravity <sup>1</sup> (cured)	1.21
Dielectrical Strength <sup>3</sup> 12 to 15 mil / 305 µm to 375 µm coating	1000 V/mil (39 V/micron)
Thermal Shock <sup>2</sup> 10 cycles - 75°C (167°F) to 155°C (311°F) 12-15 mil / 305 µm to 375 µm coating 1/8" s Sand blasted steel panel	Passes
Impact Resistance <sup>2</sup> 12-15 mil / 305 µm to 375 µm coating 1/8" Sand blasted steel panel Gardner 5/8" Radius Impact Tester	160 inch-lbs / 18.2J
Gel Time <sup>2</sup> @ 204°C (400°F) hot plate	15-20 seconds
Thermal Conductivity <sup>4</sup>	6x10 <sup>-4</sup> Cal/sec/cm°C (0.25 W/mK)
Abrasion Resistance <sup>5</sup> CS-17 1000g weight/1000 cycle	5 mg loss
Bendability <sup>5</sup> 180° Bend, 3.13" diameter mandrel	No cracks or tears

\*Not recommended for specification purposes. Product specifications will be provided upon request..

### Test Methods

- 1 ASTM D-792
- 2 3M Test Method
- 3 ASTM D-149
- 4 MIL- I - 16923E
- 5 ASTM A775



## Method of Application

The rapid cure of 3M™ Scotchcast™ Electrical Resin 275 permits the use of efficient production methods. The powder can be applied by electrostatic fluid bed, electrostatic spray as well as venturi spray and fluid bed dip techniques of preheated parts.

## Curing

The cure of Scotchcast 275 to a thermoset condition involves a time/temperature relationship. The chart below represents nominal guidelines for obtaining the resin's adhesion, impact and chemical resistance characteristics.

The times do not include that required to reach the cure temperature. The user must determine the time required for the coated substrate to reach listed temperatures.

Scotchcast 275 Coating Cure Guide

Cure Temperature	Time
350°F (177°C)	20 minutes
375°F (191°C)	12 minutes
400°F (204°C)	8 minutes
425°F (218°C)	6 minutes
450°F (232°C)	5 minutes

## Handling and Safety Precautions

Read all Health Hazard, Precautionary, and First Aid statements found in the Material Safety Data Sheet and/or product label prior to handling or use.

## Storage

Laboratory evaluation indicates that the usable shelf life of this product is twelve (12) months from the date of manufacture when stored at temperatures not exceeding 27°C (80°F), provided the material is stored in its original container. Care should be taken when removing the resin from the original container to prevent inclusion of foreign material. After resin removal, the bag should be retied immediately. This will help to avoid agglomeration caused by excess moisture. For best results, store in a cool, dry place.

## Ordering Information/Customer Service

For ordering technical or product information, or a copy of the Material Safety Data Sheet, call:

Phone: 800/722-6721

Fax: 877/601-1305

## Important Notice

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### Infrastructure Protection Division

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