

Thermosets

Polyester BMC Styrene-Free Polyester Phenolic Melamine/Phenolic

Electrical Insulation

Plenco Thermoset materials provide an exceptional combination of electrical insulation, UL Flammability, creep resistance and dimensional stability across the widest range of temperatures. This makes them ideal materials to insulate electrical devices used in high and low voltage industrial power transmission, automotive switches and relays, home appliance controls and many other areas where close tolerances must be maintained for years across varying environmental conditions.



Applications

- Plenco 00714** Switch housings, high-wear switch gear components.
- Plenco 03356** Appliance switch and relay housings, water heater thermostat housings, bi-metallic switch housings, terminal strips.
- Plenco 04311** Circuit breaker switchgear components, terminal strips, capacitor housings and covers.
- Plenco 08122** Bus duct insulation, solenoid encapsulation, circuit breaker housings, electric motor brush holders and end bells.
- Plenco 08218** Industrial switchgear, high-voltage bushings, transformer junctions, power transmission devices.
- Plenco 08230** Arc suppression chutes, switch plates.

UL Performance Ratings

Plenco Thermosetting Polyester materials receive a standard Relative Thermal Index (RTI) rating of 130°C with some grades being rated at 150°C and 170°C at 3.0mm. Plenco phenolic materials receive a typical rating of 150°C with Plenco 06582 meeting 180°C.

Plenco Thermoset materials do not use brominated or halogenated flame retardants. They do not drip flaming plastic when ignited. Therefore, they all have a minimum UL Flammability rating of HB and many achieve the highest ratings of V-0 and 5-V.



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Compressive Strength and Modulus



The compressive strength and modulus of Plenco Thermosets approach those of aluminum and zinc die castings.

This provides exceptional creep resistance, bolt torque retention and molded-in thread strength with the electrical insulating properties of plastics.

Compressive Strengths to 56,500 psi
Compressive Modulus 1.8MM psi

Thread Strength Comparisons

#10 - 5/8" coarse thread self tapping screw

| | |
|---|---------------------|
| 06310 - glass/mineral reinforced phenolic | 126.0 in·lbs torque |
| 06401 - glass/mineral reinforced phenolic | 114.0 in·lbs torque |
| 03356 - mineral reinforced phenolic | 76.8 in·lbs torque |
| 08218 - glass fiber reinforced polyester | 53.0 in·lbs torque |



Surface Hardness and Wear

The high surface hardness and smooth finish of Plenco Thermosets makes them the best choice for dynamic electrical switchgear components.

For additional wear resistance, Plenco offers phenolic and polyester grades with added PTFE lubricant.

Adaptability

While Plenco offers a wide range of materials already suited to many electrical insulation applications, we stand ready to develop the material you need to meet your specific requirements. With 85 years of experience manufacturing thermoset parts and materials we are highly skilled in part design, tool design, molding methods, material development, process enhancement and post-mold operations.

Contact a Plenco representative for more information.



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