



# G-7 Glass-Silicone Laminate Phenolic

## Description and Overview

G-7 phenolic differs from other glass composites in that its resin is silicone-based. Silicone laminate gives G-7 a few advantages: it has the highest maximum operating temperature of phenolic glass composites as well as an incredibly low dissipation factor compared to other phenolic materials. These properties make G-7 a natural fit for parts that will have prolonged exposure to high heat or arc. However, this material has moderate structural strength when compared to other heat-resistant phenolic grades like G-10 or G-11.

With a fire rating of UL94 V-0, G-7 phenolic is a self-extinguishing material.

## Applications and Uses

G-7 phenolic's electrical qualities and high heat resistance make it a desirable material for electrical applications. It is also preferred for heating and appliance insulation. Arc plates, transformers, and sleeves all have parts typically made from G-7 phenolic.

G-7 phenolic complies with Mil-I-24768/17, Type GSG specifications.

- Spacers
- Arc plates
- Terminal boards
- Welding tips
- Sleeves
- Transformers
- Heating and appliance insulation



Max sheet size: 36" x 48" (.062" to 1.5" thickness)

## Properties and Specifications

| GLASS SILICONE G-7      |                         |
|-------------------------|-------------------------|
| Military / Fed Spec     | Mil-I-24768/17 Type GSG |
| SPECIFIC GRAVITY        | 1.78                    |
| TENSILE STRENGTH (psi)  | 18,000                  |
| COMP. STRENGTH (psi)    | 45,000                  |
| FLEXURAL STRENGTH (psi) | 25,000                  |
| HARDNESS, M SCALE       | 105                     |
| BOND STRENGTH (psi)     | 900                     |

Continued - See Table Below

Properties are typical.  
Chem is an abbreviation for chemically affixed with glues, chemicals, or adhesive.  
Mech is an abbreviation for mechanically affixed bonding.  
Field testing is recommended for any application.



# Typical Properties

| Property                                        | GLASS SILICONE G-7      |
|-------------------------------------------------|-------------------------|
| Military / Fed Spec                             | Mil-I-24768/17 Type GSG |
| SHEAR STRENGTH (psi)                            | 17,000                  |
| DISSIPATION FACTOR 106 cycles, Cond A           | 0.003                   |
| DIELECTRIC CONSTANT 106 cycles, Cond A          | 4.20                    |
| ELECTRIC STRENGTH V/MIL Cond A                  | 400                     |
| FLAMMABILITY RATING                             | 94V-O                   |
| MAX OPER. TEMP°C/F                              | 220/428                 |
| COEFF. THERMAL EXP. IN/IN/°C X 10 <sup>-5</sup> | 1.00                    |
| WATER ABSORPTION % - 24 hrs                     | 0.20                    |
| Izod Impact Strength (ft/lb/in) @49°C           | 6.50                    |

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