

MATERIAL SPECIFICATION

G10 / FR4

General Description

G10/FR4 is a versatile, all-around electrically insulating material. G10 is an epoxy impregnated laminate which meets UL94-V0 requirements. G10 can be machined or die-cut to meet any custom requirement.

| PROPERTIES | UNITS | VALUE |
|----------------------------------|--|---------|
| Tensile Strength | Lengthwise, psi | 40,000 |
| | Crosswise, psi | 35,000 |
| Compressive Strength | Flatwise, psi | 60,000 |
| | Edgewise, psi | 35,000 |
| Flexural Strength | Lengthwise, psi | 55,000 |
| | Edgewise, psi | 45,000 |
| Modulus of Elasticity in Flex | Lengthwise, psi x 10 ⁶ | 2.7 |
| | Crosswise, psi x 10 ⁶ | 2.2 |
| Shear Strength, psi | | 19,000 |
| Izod Impact | Flatwise, ft/lb per inch of notch | 7 |
| | Edgewise, ft/lb per inch of notch | 5.5 |
| Rockwell Hardness M Scale | | 110 |
| Specific Gravity | | 1.82 |
| Coefficient of Thermal Expansion | Cm/cm deg C x 10 ⁻⁵ | .9 |
| Water Absorption | 0.062 in. thick, % per 24 hours | 0.25 |
| | 0.125 in. thick, % per 24 hours | 0.15 |
| | 0.500 in. thick, % per 24 hours | 0.10 |
| Dielectric Strength (volts/mil) | 0.062 in thick (perpendicular to laminations; short) | 500 |
| | 0.125 in thick (perpendicular to laminations; short) | 400 |
| Dissipation Factor | Condition A, 1 megacycle | 0.025 |
| Dielectric Constant | Condition A, 1 megacycle | 5.2 |
| Insulation Resistance | Condition; 96 hrs at 90% relative humidity (mega ohms) | 200,000 |
| Flame Resistance | Underwriters Labs, Classification | 94V-0 |
| Bond Strength | lbs | 2,000 |
| Max Continuous Operating Temp. | Approximate degrees °F | 285 |

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