

KINGBOARD COPPERCLAD LAMINATES



Throughout the production processes, WIP is tested on a sampling basis. Resins are tested for their viscosity and composition. Prepregs are tested for resin content, gel time and scale flow. Laminates are verified for glass transition temperature, thickness tolerance and surface defects. And prior to packaging, each lot of material is inspected for flexural and peel strength.

- UL File No. E123995, UL 94V-0,
- UV Blocked, less than 0.5% penetration
- Double Sided & Multi-Layer designation, ANSI, NEMA Grade FR-4
- IPC-4101A, Class B Thickness Tolerance, Class A Surface

| Properties | Unit | Test Condition | IPC-4101A Method | IPC-4101A Requirement | KB-6160 | KB-6164 | KB-6167 |
|---------------------|-------------------|----------------|------------------|-------------------------|----------------------|----------------------|----------------------|
| Flexural Strength | Kg/m ² | Lengthwise | 2.4.4 | >4.23 x 10 ⁷ | 5.58x10 ⁷ | 5.58x10 ⁷ | 5.71x10 ⁷ |
| Flexural | Kg/m ² | Crosswise | 2.4.4 | >3.52 x 10 ⁷ | 4.54x10 ⁷ | 5.03x10 ⁷ | 4.48x10 ⁷ |
| Peel Strength | Kg/cm | A | 2.4.8 | >1.43 | 2.0 | 2.0 | 2.08 |
| Glass Transition | °C | E2/105 DSC | 2.4.25 | >130 (IPC/21) | 135 | - | - |
| Glass Transition | °C | E2/105 DSC | 2.4.25 | >140 (IPC/21) | - | 142 | - |
| Glass Transition | °C | E2/105 DSC | 2.4.25 | >170 (IPC/24) | - | - | 173 |
| Flammability | Sec | E24/23 | 2.3.10 | Avg Burn <5 | 1.6 | 2 | 1 |
| Flammability | Sec | E24/23 | 2.3.10 | Max Burn <10 | 7.0 | 6 | 4 |
| Thermal Stress | Sec | Float 288°C | 2.4.13.1 | +60 | >180 | >150 | >130 |
| Surface Resistance | MΩ | C96/35/90 | 2.5.17.1 | >1.0x10 ⁴ | 1.0x10 ⁶ | 1.0x10 ⁷ | 1.2x10 ⁶ |
| Volume Resistivity | MΩ-cm | C96/35/90 | 2.5.17.1 | +1.0x10 ⁶ | 1.0x10 ⁹ | 1.0x10 ⁹ | 1.7x10 ⁷ |
| Permittivity DK | - | Etched/@1Mhz | 2.5.5.3 | <5.4 | 4.6 | 4.7 | 4.0 |
| Loss Tangent | - | Etched/@1Mhz | 2.5.5.3 | <0.035 | 0.02 | 0.021 | 0.014 |
| Moisture Absorption | % | D24/23 | 2.6.2.1 | <0.5 | 0.1 | 0.09 | 0.13 |

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