

Grades FHT & SG -200

Grade FHT – Flexible, High-Temperature Laminate

- Highly Flexible
- Excellent Dielectric Strength
- High Heat Resistance
- Ideal For Dry-Type Transformers
- Easily Fabricated
- Asbestos-Free

Glastic® Grade FHT (Flexible High Temperature) Laminate provides numerous high-performance features and benefits, such as high flexibility and excellent dielectric strength at elevated temperatures. It also exhibits the highest UL temperature index in the industry for a flexible glass-reinforced polyester in 1/32 inch and 1/16 inch thicknesses:

- 1/32 inch – 190° C Electrical
- 1/16 inch – 200° C Electrical
- 1/32 inch – 190° C Mechanical
- 1/16 inch – 200° C Mechanical

With its high resistance to heat, Glastic's FHT Laminate offers a cost-effective alternative to aramid paper in 220° C insulation systems. Typical applications include layer and core insulation for dry-type transformers.

Glastic Grade FHT Laminate standard color is tan.

Grade SG-200 – High-Strength & High-Temperature Laminate

- Extremely Strong
- Excellent Retention Of Properties At Elevated Temperatures
- Ideal For High Temperature Applications
- Easily Fabricated
- Asbestos-Free

Glastic Grade SG-200 High-Strength & High-Temperature Laminate offers the same high-performance features and benefits as Glastic's FHT Laminate. In addition, SG-200 offers much higher mechanical strengths than FHT with temperature ratings of up to 210° C.

Because of its capabilities, Glastic SG-200 is ideal for a wide variety of product applications requiring high-temperature NEMA GPO-1 products. Grade SG-200 is also a superior replacement material for epoxy-bonded mica in layer insulation applications. SG-200 has a UL Temperature Index of 210° C Electrical and 210° C Mechanical.

Glastic Grade SG-200 is available in thicknesses of 1/32" to 1-1/4" and in a natural tan color. Special sheet sizes of 64" x 64" are available for large lifting magnets.



Ventilated Dry-Type Transformer Coil. Both Glastic SG-200 and FHT Laminates are used in a wide variety of dry-type transformer applications.

Grades FHT & SG -200

GLASTIC LAMINATES PROPERTY TABLE

TYPICAL AVERAGE VALUES¹

| GENERAL INFORMATION | UNIT | ASTM/UL NUMBER | GLASTIC GRADE SG-200 | GLASTIC GRADE FHT |
|--|--------------------------------|----------------|------------------------------|--------------------------------|
| Part Number | | | 1906 | 1800 |
| Color, Standard | | | Natural/Tan | Natural/Cream |
| MECHANICAL PROPERTIES | | | | |
| NEMA Grade | ---- | ---- | GPO-1 | ---- |
| Tensile Strength | Psi | D638 | 12,500 | 10,500 |
| Tensile Modulus | Psi x 10 ⁶ | D638 | 1.7 | ---- |
| Flexural Strength | Psi | D790 | 29,000 | ---- |
| Compressive Strength | Psi | D695 | 36,000 | 14,000 |
| Shear Strength | Psi | D732 | 11,100 | ---- |
| IZOD Impact Strength (notched) | ft.lb./in. | D256 | 12.0 | 10.0 |
| Water Absorption | % by wt. | D570 | 0.3 | 1.1 |
| Specific Gravity | ---- | D792 | 1.70 | 1.60 |
| ELECTRICAL PROPERTIES | | | | |
| Electrical Strength - Perpendicular S/T in air | Vpm | D149 | 500 | 450 |
| Electrical Strength - Perpendicular S/T in oil | Vpm | D149 | 625 | 570 |
| Electrical Strength - Parallel S/S in oil | kV | D149 | 50 | 60 |
| Arc Resistance | Sec. | D495 | 120/180 ² | 139 |
| IEC Track Resistance (CTI) | V. | UL746A | 500+ | 500+ |
| UL High Voltage Track Rate | In./Min. | UL746A | 0 | 0 |
| Permittivity, 60 Hz | ---- | D150 | 4.6 | 6.4 |
| Dissipation Factor, 60 Hz | ---- | D150 | 0.037 | 0.070 |
| Permittivity, MHz | ---- | D150 | 3.7 | 4.2 |
| Dissipation Factor, MHz | ---- | D150 | 0.013 | 0.033 |
| Insulation Resistance | Ohm x 10 ¹² | D257 | 145.0 | ---- |
| FLAME-RESISTANCE PROPERTIES | | | | |
| UL Subject 94 | ---- | UL94 | HB | HB |
| UL Hot Wire Ignition | Sec. | UL746A | 0.028 in./35 0.058 in./39 | 0.028 in./49 0.058 in./102 |
| UL High Amp Ignition | #Exposure | UL746A | 200+ | 200+ |
| Oxygen Index | %O ₂ | D2863 | 21.8 | 21.8 |
| THERMAL PROPERTIES | | | | |
| Coefficient of Thermal Expansion | In/In/° C x 10 ⁻⁵ | D696 | 2.0 | ---- |
| Thermal Conductivity | BTU/Hr/Ft ² /In/° F | C177 | 1.7 | ---- |
| UL Temperature Index - Electrical | ° C | UL 746B | 210 | 0.028 in./190 0.058 in./200 |
| - Mechanical | ° C | UL 746B | 210 | 0.028 in./190 0.058 in./200 |
| UL Recognition File Number | ---- | ---- | E81928 | E81928 |

¹ Typical average values for testing 0.063 inch thick material. Values will vary somewhat from thickness to thickness within a material grade.

² Post-cured

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