# Tuffak® GP

Polycarbonate

**Plaskolite, Inc.**

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## Technical Data

### Product Description

GENERAL PURPOSE

TUFFAK GP sheet is a polished surface, UV stabilized, transparent polycarbonate product. It features outstanding impact strength, superior dimensional stability, high temperature resistance, and high clarity. This lightweight thermoformable sheet is also easy to fabricate and decorate. TUFFAK GP sheet is offered with a five (5) year Limited Product Warranty against breakage. The terms of the warranty are available upon request.

APPLICATIONS

Industrial glazing, machine guards, structural parts, thermoformed and fabricated components

### General

| | | | |
|---|---|---|---|
| Material Status | • Commercial: Active | | |
| Literature [1] | • Technical Datasheet (English) | | |
| UL Yellow Card [2] | • E87887-10218713<br>• E87887-10232290 | | |
| Search for UL Yellow Card | • Plaskolite, Inc.<br>• Tuffak® | | |
| Availability | • North America | | |
| Additive | • UV Stabilizer | | |
| Features | • High Clarity<br>• High Dimensional Stability | • High Heat Resistance<br>• High Impact Resistance | • UV Stabilized |
| Uses | • Structural Parts | | |
| Appearance | • Clear/Transparent | | |
| Forms | • Sheet | | |
| Processing Method | • Thermoforming | | |

| Physical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Density / Specific Gravity | 1.20 | g/cm³ | ASTM D792 |
| Water Absorption (24 hr) | 0.15 | % | ASTM D570 |

| Mechanical | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Tensile Modulus | 2340 | MPa | ASTM D638 |
| Tensile Strength | | | ASTM D638 |
| Yield | 62.1 | MPa | |
| Ultimate | 65.5 | MPa | |
| Tensile Elongation (Break) | 110 | % | ASTM D638 |
| Flexural Modulus | 2380 | MPa | ASTM D790 |
| Flexural Strength | 93.1 | MPa | ASTM D790 |
| Compressive Modulus | 2380 | MPa | ASTM D695 |
| Compressive Strength | 86.2 | MPa | ASTM D695 |
| Shear Modulus | 786 | MPa | ASTM D732 |
| Shear Strength | | | ASTM D732 |
| -- [4] | 68.9 | MPa | |
| -- [5] | 41.4 | MPa | |
| Poisson's Ratio | 0.38 | | ASTM E132 |



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| Impact | Nominal Value | Unit | Test Method |
|---|---|---|---|
| Notched Izod Impact (3.18 mm) | 960 | J/m | ASTM D256 |
| Unnotched Izod Impact (3.18 mm) | 3200 | J/m | ASTM D256 |
| Instrumented Dart Impact (3.18 mm) | 63.7 | J | ASTM D3763 |
| **Hardness** | **Nominal Value** | **Unit** | **Test Method** |
| Rockwell Hardness | | | ASTM D785 |
| M-Scale | 70 | | |
| R-Scale | 118 | | |
| **Thermal** | **Nominal Value** | **Unit** | **Test Method** |
| Deflection Temperature Under Load | | | ASTM D648 |
| 0.45 MPa, Unannealed | 138 | °C | |
| 1.8 MPa, Unannealed | 132 | °C | |
| Brittleness Temperature | -129 | °C | ASTM D746 |
| CLTE - Flow | 6.8E-5 | cm/cm/°C | ASTM D696 |
| Thermal Conductivity | 0.19 | W/m/K | ASTM C177 |
| **Electrical** | **Nominal Value** | **Unit** | **Test Method** |
| Volume Resistivity | 8.2E+16 | ohms·cm | ASTM D257 |
| Dielectric Strength (3.18 mm, in air) | 15 | kV/mm | ASTM D149 |
| Dielectric Constant | | | ASTM D150 |
| 10 Hz | 2.96 | | |
| 60 Hz | 3.17 | | |
| Dissipation Factor (60 Hz) | 9.0E-4 | | ASTM D150 |
| Arc Resistance | | | ASTM D495 |
| -- [6] | 10.0 | sec | |
| -- [7] | 120 | sec | |
| **Flammability** | **Nominal Value** | **Unit** | **Test Method** |
| Flame Rating | | | UL 94 |
| 1.5 mm | HB | | |
| 10.0 mm | V-0 | | |
| **Optical** | **Nominal Value** | **Unit** | **Test Method** |
| Refractive Index | 1.586 | | ASTM D542 |
| Light Transmittance [8] (2997 µm) | 86.0 | % | ASTM D1003 |

## Notes

[1] These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

[2] A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

[3] Typical properties: these are not to be construed as specifications.

[4] Ultimate

[5] Yield

[6] Stainless Steel Strip electrode

[7] Tungsten electrode

[8] Clear



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