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<tr>
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<th>Key Product Features</th>
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<tbody>
<tr>
<td>HV</td>
<td>UV and abrasion resistant; high optical quality thick gauge sheet; meets ANSI Z26.1 AS-4</td>
<td>Forestry equipment, agricultural and industrial vehicle glazing</td>
</tr>
<tr>
<td>TX</td>
<td>Extended UV and abrasion resistant; glazing for windows; meets ANSI Z26.1 AS-4 and FMVSS 302</td>
<td>RV construction, and commercial truck rear windows</td>
</tr>
<tr>
<td>BG</td>
<td>UV and abrasion resistant; optical performance meets ANSI Z26.1 AS-4 and FMVSS 302</td>
<td>Bus window glazing</td>
</tr>
<tr>
<td>TS</td>
<td>High optical performance with enhanced UV and abrasion resistance; meets FMVSS 200 for flammability, smoke, ballistics, and impact</td>
<td>Passenger rail car glazing</td>
</tr>
<tr>
<td>Marine 1</td>
<td>High optical clarity; low optical distortion; UV, abrasion, and chemical resistant</td>
<td>Marine flexible enclosures, tent and awning enclosures</td>
</tr>
<tr>
<td>VR</td>
<td>High optical quality; low optical distortion; high clarity</td>
<td>Marine flexible enclosures, tent and awning enclosures</td>
</tr>
<tr>
<td>Bagblend MTB</td>
<td>Opaque sheet for mass transit interiors. Meets FRA 49 CFR 238 standards for flame and smoke; meets SMP-800C toxic gas generation</td>
<td>Thermoformed rail interior parts such as structural seating components, wall cladding, window reveals, ceiling panels</td>
</tr>
<tr>
<td>Bagblend MTR AG</td>
<td>Opaque sheet with anti-graffiti, scratch, and stain resistance; meets FRA 49 CFR 238 standards for flame and smoke; meets SMP-800C toxic gas generation</td>
<td>Thermoformed rail interior parts such as structural seating components, wall cladding, window reveals, ceiling panels</td>
</tr>
<tr>
<td>Bagblend MTR AG Deco</td>
<td>Opaque sheet with anti-graffiti, scratch and stain resistance customizable first service print. Meets FMVSS 200 for flammability, smoke, and impact; meets SMP-800C toxic gas generation</td>
<td>Thermoformed rail interior parts such as structural seating components, wall cladding, window reveals, ceiling panels</td>
</tr>
<tr>
<td>SF</td>
<td>Long lasting abrasion, chemical and outdoor weathering performance; customizable edge finishing</td>
<td>Heavy equipment cab safety glazing, marine and mass transit glazing</td>
</tr>
<tr>
<td>AL</td>
<td>High optical quality; abrasion, chemical and UV resistant</td>
<td>Automotive laminates</td>
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### About this guide

**Design as a quick reference tool,** this guide summarizes the main features, differences, and applications for TUFFAK® sheet products. **Organized by industries,** it shows typical applications for each product. Products with broader uses are listed in several industry categories. For complete information on properties, warranty and agency compliance, visit www.plaskolite.com

### Information under column headings

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### TUFFAK polycarbonate sheet products

...Technology adapted to the performance and aesthetic demands of specific industries.

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<td>Non-reflective; UV resistant; proprietary matte surface; impact strength</td>
<td>Display and screen protection, signage, lenses, and menu boards.</td>
</tr>
<tr>
<td><strong>NR+</strong></td>
<td>Non-reflective; UV resistant; one side hand-coated; textured surface</td>
<td>Covered pedestrian walkways, entryway canopies, awnings, skylights, barrel vaults, glazed archways, and sloped, vertical, and curved glazing.</td>
</tr>
<tr>
<td><strong>UV</strong></td>
<td>High optical quality; enhanced outdoor weathering performance and can be cold formed on site</td>
<td>Optically clear, UV resistant, and can be cold formed on site, ideal for applications requiring high optical quality and durability.</td>
</tr>
<tr>
<td><strong>SK</strong></td>
<td>Designed as inner light of a dual domed skylight</td>
<td>Aesthetically pleasing, energy-efficient skylight solution.</td>
</tr>
<tr>
<td><strong>SK1</strong></td>
<td>Smooth and prismatic optimized to diffuse and distribute light with high light transmission; UV resistant</td>
<td>Aesthetically pleasing, energy-efficient skylight solution.</td>
</tr>
<tr>
<td><strong>multi UV</strong></td>
<td>Light weight; high structural strength; multiple geometries for different structural and insulating properties</td>
<td>Optically clear, UV resistant, and can be cold formed on site.</td>
</tr>
<tr>
<td><strong>AR</strong></td>
<td>Long lasting abrasion and chemical resistance, and outdoor weathering performance</td>
<td>Optically clear, UV resistant, and can be cold formed on site.</td>
</tr>
<tr>
<td><strong>IS</strong></td>
<td>Long lasting abrasion and chemical resistance, and outdoor weathering performance; Fifteen (15) year limited product warranty</td>
<td>Optically clear, UV resistant, and can be cold formed on site.</td>
</tr>
<tr>
<td><strong>PC</strong></td>
<td>Cold formable and drape formable; meets ANSI 23.1 A-1G-6</td>
<td>Optically clear, UV resistant, and can be cold formed on site.</td>
</tr>
<tr>
<td><strong>C3750, CG500, CG750</strong></td>
<td>Meets ASTM F 1910; ASTM F 1233; H.P. White TP 0050</td>
<td>Optically clear, UV resistant, and can be cold formed on site.</td>
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### TUFFAK Grade

**Key Product Features**

- **NR** Non-reflective; UV resistant; proprietary matte surface; impact strength
- **NR+** Non-reflective; UV resistant; one side hand-coated; textured surface
- **UV** High optical quality; enhanced outdoor weathering performance and can be cold formed on site
- **SK** Designed as inner light of a dual domed skylight
- **SK1** Smooth and prismatic optimized to diffuse and distribute light with high light transmission; UV resistant
- **multi UV** Light weight; high structural strength; multiple geometries for different structural and insulating properties
- **AR** Long lasting abrasion and chemical resistance, and outdoor weathering performance
- **IS** Long lasting abrasion and chemical resistance, and outdoor weathering performance; Fifteen (15) year limited product warranty
- **PC** Cold formable and drape formable; meets ANSI 23.1 A-1G-6
- **C3750, CG500, CG750** Meets ASTM F 1910; ASTM F 1233; H.P. White TP 0050

### Typical Applications

- Display and screen protection, signage, lenses, and menu boards.
- Covered pedestrian walkways, entryway canopies, awnings, skylights, barrel vaults, glazed archways, and sloped, vertical, and curved glazing.
- Optically clear, UV resistant, and can be cold formed on site, ideal for applications requiring high optical quality and durability.
- Aesthetically pleasing, energy-efficient skylight solution.
- Aesthetically pleasing, energy-efficient skylight solution.
- Optically clear, UV resistant, and can be cold formed on site.
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### TUFFAK polycarbonate sheet products

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TUFFAK polycarbonate sheet products

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TUFFAK Grade | Key Product Features | Typical Applications
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NR | Non-reflective; UV resistant; proprietary matte surface, impact strength | Display and screen protection, signage, lenses, and menu boards.
NR-IR | Non-reflective; UV resistant; one-sided textured surface | Covered pedestrian walkways, entryway canopies, awnings, skylights, barrel vaults, glazed archways, and sloped, vertical, and curved glazing.
UV | High optical quality, enhanced outdoor weathering performance and can be cold-formed on site | Awning, skylights, entryway canopies, barrel vaults, sloped, vertical and curved glazing.
SK | Smooth and prismatic pattern designed as inner light of a dual domed skylight | Awning, skylights, entryway canopies, barrel vaults, sloped, vertical and curved glazing.
SK1 | Smooth and prismatic optimized to diffuse and distribute light with high light transmission, UV resistant | Awning, skylights, entryway canopies, barrel vaults, sloped, vertical and curved glazing.
SK1C | Advanced IR blocking to reduce solar heat gain, maximizing visible-light transmission, UV resistant | Awning, skylights, entryway canopies, barrel vaults, sloped, vertical and curved glazing.
AR | Long lasting abrasion and chemical resistance, and outdoor weathering performance | Replacing glazing, industrial guarding, safety components.
IS | Long lasting abrasion and chemical resistance, and outdoor weathering performance; Fifteen (15) year limited product warranty | Architectural glazing for residential, retail, transportation centers, psychiatric facilities.
FC | Cold formable and drape formable; meets ANSI Z23.1 A-6 | Motorcycle and recreational vehicle windshields, face shields, and formed applications.
CG375, CG500, CG750 | Meets ASTM F 191, ASTM F 333, H.P. White TP 0500 | Jaclin, prisons, detention and psychiatric containment glazing.
BR750 | Most UL, 752 Level 1 | Ballistic resistant glazing for government, institutional and commercial installations.
BR1250 | Most UL, 752 Level 2; ASTM F 1233; ASTM F 191; H.P. White TP 0500 | Ballistic resistant glazing for government, institutional, banks and commercial installations.
BR250 | Most UL, 752 Level 3; NIJ Level II, IIIA; ASTM F 1233; ASTM F 191; H.P. White TP 0500 | Ballistic resistant glazing for government, institutional, banks and commercial installations.
MS1250 | Most UL, 752 Level 6 Rating; multi-shot 9 mm (.35) ballistic and supplemental shotproof | Ballistic resistant glazing for severe threat.
Lumen XT | Superior LED and conventional light diffusion; wide range of diffusion levels | Interior LED and conventional lighting fixtures.
Lumen XT-V | Most UL, 94 V-0, VFA | Interior LED and conventional lighting fixtures.
DS-NR | Specifically formulated for superior LED light diffusion with enhanced weathering performance | Exterior LED and conventional lighting fixtures.
IR | Meets welding shades 3 and 5; complies with ANSI Z87.1, EN 169: CSA Z94.3, Face shields for flame welding and cutting, general anti-scratch, protection welder, curtain | Face shields for flame welding and cutting, general anti-scratch, protection welder.
MG | 0.750” - 2.0” thick for machining, textured surface | Machined parts such as mantisills, insulators, dielectric, semiconductor, military applications.
WG | 0.750” - 2.0” thick, transparent | Slight windows for tanks/vessels, viewpoints, medical parts, military applications.
AU | UV and abrasion resistant; ultra clear; high light transmission | Specialty laminates.
UC | High light transmission; and high optical clarity | Military aircraft canopies, specialty laminates.
SG | High optical quality | High optical quality with specifications tailored to end-use application.

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<td>GR</td>
<td>High impact; clarity; and temperature resistance</td>
<td>Industrial glazing, machine guards, structural parts, thermofomed and fabricated components.</td>
</tr>
<tr>
<td>GP</td>
<td>Electrical devices, equipment housings, switchgear covers, and interior aircraft components. Industrial glazing, sealing, lighting covers, and light shelled laminates.</td>
<td></td>
</tr>
<tr>
<td>FD</td>
<td>Electrical devices, equipment housings, switchgear covers, light shelled laminates, aerospace components. Electrical devices, equipment housings, switchgear covers, and interior aircraft components.</td>
<td></td>
</tr>
<tr>
<td>SL</td>
<td>Flat and formed sign faces and channel letters. Flat and formed sign faces, channel letters and digital displays.</td>
<td></td>
</tr>
<tr>
<td>LD</td>
<td>Flat and formed sign faces and channel letters. Flat and formed sign faces and channel letters using LEDs.</td>
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<tr>
<td>TX</td>
<td>Extended UV and abrasion resistant glazing for windows; meets ANSI Z261 AS-4 and FMVSS 302</td>
<td>RV construction, and commercial truck rear windows</td>
</tr>
<tr>
<td>BG</td>
<td>UV and abrasion resistant; optical performance meets ANSI Z261 AS-4 and FMVSS 302</td>
<td>Bus window glazing</td>
</tr>
<tr>
<td>TS</td>
<td>High optical performance with enhanced UV and abrasion resistance; meets FMVSS 302, 49 CFR 223 &amp; 49 CFR 308 for flammability, smoke, ballistics, and impact</td>
<td>Passenger rail car glazing</td>
</tr>
<tr>
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<td>High optical clarity; low optical distortion; UV, abrasion, and chemical resistant</td>
<td>Marine flexible enclosures, tent and awning enclosures</td>
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<td>High optical quality; low optical distortion; high clarity; enhanced UV resistance</td>
<td>Marine flexible enclosures, tent and awning enclosures</td>
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<td>Extended UV and abrasion resistant; optical performance meets ANSI Z26.1 AS-4 and FMVSS 302</td>
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<td>BG</td>
<td>UV and abrasion resistant; optical performance meets ANSI Z26.1 AS-4 and FMVSS 302</td>
<td>Bus window glazing</td>
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<tr>
<td>BS</td>
<td>High optical performance with enhanced UV and abrasion resistance; meets FMVSS 302, 49 CFR 322.5, 49 CFR 238 for flammability, smoke, ballistics, and impact</td>
<td>Passenger rail car glazing</td>
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