

# Data Sheet

## SafetyShield G2 1500

**SAFETYSHIELD® G2**  
BY MADICO

### Tested to Protect Against:



Accidental Breakage



Natural Disasters



Forced Entry



Acts of Terrorism



School Threats

SafetyShield® by Madico is the world's clearest, most rigorously tested, and now strongest safety and security film system with the advanced SafetyShield G2 series. Keeping glass in place to protect people and property from breakage, disasters, forced entry, and even terrorism, SafetyShield is trusted worldwide in government facilities, schools, businesses and homes.

### Physical Properties

| Test   | Unit                         | Result    |
|--|------------------------------|-----------|
| <b>Standard ASTM D 6988 Determination of Thickness</b>           |                              |           |
| Film Thickness   | Inch                         | 0.017     |
|  | Micron                       | 432       |
| Structural Component   | Inch                         | 0.015     |
|  | Micron                       | 380       |
| <b>Standard ASTM D 882 Tensile Properties</b>                    |                              |           |
| Longitudinal Tensile Strength                                    | psi (lbs/inch <sup>2</sup> ) | 29,000    |
|  | MPa                          | 200       |
| Transverse Tensile Strength                                      | psi (lbs/inch <sup>2</sup> ) | 34,000    |
|  | MPa                          | 235       |
| Break Strength   | lbs / inch width             | 473       |
|  | N / 2.54 cm width            | 2104      |
| Longitudinal Elongation at Break                                 | %                            | 160       |
| Transverse Elongation at Break                                   | %                            | 130       |
| Yield Strength   | psi – Ave MD / TD            | 14,000    |
|  | MPa – Ave MD / TD            | 96        |
| Elongation at Yield  | %                            | 5         |
| <b>Standard ASTM D 3330 Peel Adhesion</b>                        |                              |           |
| Peel Strength  | lbs / inch width             | 10 – 12   |
|  | kg / 2.5 cm width            | 4.5 – 5.5 |
| <b>Standard ASTM D 1044 Resistance to Surface Abrasion</b>       |                              |           |
| Abrasion Resistance (Δ Haze 100 cycles)                          | %                            | < 5       |
| <b>Standard ASTM D 4833 Puncture Resistance</b>                  |                              |           |
| Puncture Resistance  | Newtons                      | 831.5     |
|  | Pounds                       | 187       |
| <b>Standard ASTM D 1004 Tear Resistance (Graves Tear)</b>        |                              |           |
| Graves Tear Machine Direction                                    | Newtons                      | 212       |
|  | Pounds                       | 47.6      |
| Graves Tear Transverse Direction                                 | Newtons                      | 226       |
|  | Pounds                       | 50.9      |
| <b>Standard ASTM D 2582 Puncture-Propagation Tear Resistance</b> |                              |           |
| Puncture Propagation Tear Resistance (MD)                        | Newtons                      | 76.7      |
|  | Pounds                       | 17.2      |
| Puncture Propagation Tear Resistance (TD)                        | Newtons                      | 98.7      |
|  | Pounds                       | 22.2      |
| <b>Standard ASTM E 84 Surface Burning Characteristics</b>        |                              |           |
| International Building Code / NFPA Life Safety Code              | Flame Spread Index           | Class A   |
|  | Smoke Developed Index        | Class A   |

\*Near IR range (780-2500nm)  
Performance measurement definitions can be found at [www.madico.com](http://www.madico.com). Read in accordance with National Fenestration Rating Council (NFRC) standards on 6mm clear glass. Independent test reports available upon request.

### Specification Use Statement

Reported values are typical properties and should not be used as a specification. Since the user is aware of the specific conditions in which the product is to be used, it is the user's responsibility to determine whether the product is suitable for intended use. If you need verification regarding specific use or additional information, please contact Madico Window Films or your local Madico Authorized Dealer. Since there can be variations in published data between printed materials, please visit [madico.com](http://madico.com) for the latest reported performance measurements.

### Performance Measurements

| Property                           | 1/8" (3mm) Clear | Dual 1/8" (3mm) Clear | 1/4" (6mm) Clear | Dual 1/4" (6mm) Clear |
|------------------------------------|------------------|-----------------------|------------------|-----------------------|
| <b>Visible Light</b>               |                  |                       |                  |                       |
| Transmitted                        | 86%              | 78%                   | 85%              | 77%                   |
| Reflected Out                      | 10%              | 16%                   | 10%              | 16%                   |
| Reflected In                       | 10%              | 16%                   | 10%              | 16%                   |
| Glare Reduction                    | 4%               | 4%                    | 4%               | 4%                    |
| <b>Solar Energy</b>                |                  |                       |                  |                       |
| Transmitted                        | 77%              | 65%                   | 71%              | 57%                   |
| Reflected Out                      | 9%               | 14%                   | 8%               | 12%                   |
| Absorbed                           | 14%              | 10%                   | 21%              | 15%                   |
| <b>Ultraviolet Light</b>           |                  |                       |                  |                       |
| Rejection (300 to 380 nm)          | >99%             | >99%                  | >99%             | >99%                  |
| Tdw-ISO (300 to 700 nm)            | 60%              | 55%                   | 60%              | 53%                   |
| Fade Reduction                     | 28%              | 26%                   | 27%              | 24%                   |
| <b>Infrared Light</b>              |                  |                       |                  |                       |
| Infrared Rejection*                | 33%              | 46%                   | 41%              | 57%                   |
| Infrared Energy Rejection          | 20%              | 30%                   | 27%              | 37%                   |
| <b>Thermal Performance</b>         |                  |                       |                  |                       |
| U Factor                           | 1.07             | 0.56                  | 1.04             | 0.48                  |
| Emissivity                         | 0.90             | 0.90                  | 0.90             | 0.90                  |
| Shading Coefficient (SC)           | 0.94             | 0.85                  | 0.89             | 0.80                  |
| Solar Heat Gain Coefficient (SHGC) | 0.82             | 0.74                  | 0.78             | 0.70                  |
| Total Solar Energy Rejected (TSER) | 18%              | 26%                   | 22%              | 30%                   |
| Light to Solar Gain (LSG)          | 1.06             | 1.06                  | 1.10             | 1.10                  |

### Test Data

| Test  | Condition                                  | Result                           |
|---|--|----------------------------------|
| <b>Standard ANSI Z97.1 Safety Glazing Materials</b>                     |  |                                  |
| Safety Glazing  | ANSI Z 97.1                                | Class A                          |
|   | CPSC 16 CFR Part 1201                      | Category II                      |
| <b>Standard ASTM F 1642 / F 2912 Blast Mitigation</b>                   |  |                                  |
| Wet Glaze (Structural silicone bead)                                    | 7psi / 53psi*msec<br>48 kPa / 365 kPa*msec | H2<br>Minimal Hazard             |
| Mechanical (4 side FrameGard®)  | 7psi / 53psi*msec<br>48 kPa / 365 kPa*msec | H2<br>Minimal Hazard             |
| <b>Standard EN 356 Resistance Against Manual Attack</b>                 |  |                                  |
| Anti-Intrusion / Security Glazing                                       | 6mm (1/4 inch) Annealed                    | P2A                              |
| <b>Standard ASTM F 3561 Forced Entry after Simulated Active Shooter</b> |  |                                  |
| Forced Entry  | 6mm (1/4 inch) Tempered                    | Level 1 Glazing Component Rating |