FROM DESIGN TO REALITY

ARCHITECTURAL FLAT, BENT AND SECURITY GLASS FABRICATORS
- Annealed, Heat Strengthened or Tempered.
- Maximum Sizes up to 90” x 137” Depending on Glass Options
- Clear, White or Colored PVB and DuPont SentryGlas® Interlayers and Spallshield®
- Hurricane Interlayers Certified to Applicable Codes
- Laminated Insulating glass products available in sizes up to 84” x 137” ASTM 2190 Certified.
- Laminated Pattern Glass
- meets Safety Codes; ANSI Z97, ANSI Z96, and CPSC 16 CFR 1201 CAT I or II
- Fabricated according to ASTM 1172

- Heat Treated Glass available in thicknesses from 1/8” to 3/4”
- Maximum Size 84” x 180”
- Fabricated according to ASTM C1048, Meets CPSC 16 CFR 1201 CAT I & II as well as ANSI Z97.1
- Heat Soak Option Available

- High Performance IGU’S available for all Security Glass
- Maximum Size 84” x 130”
- Fabricated according to ASTM C2190
BENT GLASS

- Bent Tempered, Sizes up to 98” x 138”, Minimum Radius of 40”
- Annealed Laminated or Insulating up to 96” x 170”, Contact us for Details
- Bent Reflective and Low E Glass
- Compound Bends
- Fabricated to ASTM C 1464

SILK SCREEN PRINTED DESIGN GLASS

- Custom and Standard Patterns
- Wide Array of Fired on Ceramic Frit Colors
- Standard Sizes up to 80” x 130”
  Larger Sizes can be Reviewed Upon Request
- Available in Monolithic, Heat Strengthened, Tempered, Laminated or Insulating Units
  (80” x 130”) ASTM E 2190 Certified
- Curved Units Available, Call for Details
### Glass Clad Polycarbonate Products

**Product Number** | **Forced Entry Protection** | **Ballistic Protection** | **Thickness Tolerance** | **Weight lbs/sq ft** | **Visible Light Transmittance** | **Winter U-Value** | **Solar Heat Gain Coefficient** | **Shading Coefficient**
--- | --- | --- | --- | --- | --- | --- | --- | ---
DGC1233DGCP437 | ASTM F1915-05 Grade 3 20 Min. Forced Entry | HPW-TP-0500.03 Level B Ballistics .38 Special Modified Spall No Penetration | .458" | .436" | .508" | 1.46 | 82.2% | .868 | .720 | .832
DGC1233DGCP500 | ASTM F1915-05 Grade 3 20 Min. Forced Entry | HPW-TP-0500.03 Level B Ballistics .38 Special Modified Spall No Penetration | .506" | .455" | .557" | 1.31 | 72.2% | .762 | .770 | .888
DGC1233DGCP750 | ASTM F1915-05 Grade 3 20 Min. Forced Entry | HPW-TP-0500.03 Level B Ballistics .38 Special Modified Spall No Penetration | .500" | .455" | .557" | 1.31 | 72.2% | .762 | .770 | .888
DGC1233DGCP812 | ASTM F1915-05 Grade 3 20 Min. Forced Entry | HPW-TP-0500.03 Level B Ballistics .38 Special Modified Spall No Penetration | .455" | .418" | .518" | 1.26 | 72.2% | .762 | .770 | .888

### Laminated Polycarbonate

- Mar-Resistant Polycarbonate Surfaces
- Maximum Impact Resistance with no Worry of Glass Breakage
- High Impact Polycarbonate Core, Single or Multi-Layered
to Meet Desired Protection Level
- Urethane Interlayers Create High-Strength Bond

### All Polycarbonate Products

**Product Number** | **Forced Entry Protection** | **Ballistic Protection** | **Thickness Tolerance** | **Weight lbs/sq ft** | **Visible Light Transmittance** | **Winter U-Value** | **Solar Heat Gain Coefficient** | **Shading Coefficient**
--- | --- | --- | --- | --- | --- | --- | --- | ---
DLP1250 | HPWTP0500.03 Level 4 Thru Step | HPW-TP-0500.03 Level B Ballistics .38 Special Modified Spall No Penetration | .455" | .418" | .518" | 1.26 | 72.2% | .762 | .770 | .888
DLP1000 | HPWTP0500.03 Level 4 | HPW-TP-0500.03 Level B Ballistics .38 Special Modified Spall No Penetration | .506" | .455" | .557" | 1.31 | 72.2% | .762 | .770 | .888
**FIRE-PROTECTION-RATED SECURITY GLAZING**

**Wired Glass-Clad Polycarbonate Laminates**

Dlubak’s Wired Glass-Clad Polycarbonates are intended for installation in fire windows, fire doors, and fire door frames with transoms and/or sidelights that are provided with suitable glazing frame members. The wired-glass surfaces, bonded to a polycarbonate core create a product that not only resists extreme impact from physical and ballistic attack but is also UL Classified Fire-Protection-Rated. These are the ultimate glazing product for detention or correctional facilities and other applications that require protection against physical attack and fire.

Our Fire-Protection-Rated products are available in several standard makeups that offer a full range of protection against physical attack and ballistics as well as 20, 45 and 90 min fire ratings. The chart below shows our standard products along with testing and technical data. Please contact us at 800-336-0562 for additional technical information or questions. You can also visit our website at www.dlubakglass.com

### Fire-Protection-Rated Security Glazing Products

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Forced Entry Protection</th>
<th>Ballistic Protection</th>
<th>Thickness Tolerance</th>
<th>Weight lbs/sq ft</th>
<th>Visible Light Transmittance</th>
</tr>
</thead>
<tbody>
<tr>
<td>DFR437WW</td>
<td>ASTM 1233-95 Class 1 Forced Entry</td>
<td>HPW-TP-0500.03 Level A Ballistics .38 Special Modified (Spall No Penetration)</td>
<td>.718” .696” .834”</td>
<td>7.88</td>
<td>80.0%</td>
</tr>
<tr>
<td>DFR687WW</td>
<td>ASTM F1915-05 Grade 3 20 Min Forced Entry</td>
<td>HPW-TP-0500.03 Level B Ballistics 9mm Modified (Spall No Penetration)</td>
<td>.975” .928” 1.117”</td>
<td>9.48</td>
<td>73.3%</td>
</tr>
<tr>
<td>DFR750WW</td>
<td>ASTM F1915-05 Grade 2 40 Min Forced Entry</td>
<td>HPW-TP-0500.03 Level B Ballistics 9mm Modified (Spall No Penetration)</td>
<td>.963” .917” 1.104”</td>
<td>9.39</td>
<td>71.4%</td>
</tr>
<tr>
<td>DFR812WW</td>
<td>ASTM F1915-05 Grade 3 20 Min Forced Entry</td>
<td>HPW-TP-0500.03 Level B Ballistics .357 Magnum Modified (Spall No Penetration)</td>
<td>1.004” .953” 1.149”</td>
<td>9.63</td>
<td>71.1%</td>
</tr>
<tr>
<td>DFR937WW</td>
<td>ASTM F1915-05 Grade 2 40 Min Forced Entry</td>
<td>HPW-TP-0500.03 Level C Ballistics .387 Magnum Modified (Spall No Penetration)</td>
<td>1.106” 1.045” 1.281”</td>
<td>10.27</td>
<td>67.3%</td>
</tr>
<tr>
<td>DFR1000WW</td>
<td>ASTM F1915-05 Grade 1 60 Min Forced Entry</td>
<td>HPW-TP-0500.03 Level C Ballistics .387 Magnum Modified (Spall No Penetration)</td>
<td>1.22” 1.149” 1.387”</td>
<td>10.99</td>
<td>65.5%</td>
</tr>
<tr>
<td>DFR1250WW</td>
<td>ASTM F1915-05 Grade 1 60 Min Forced Entry</td>
<td>HPW-TP-0500.03 Level C Ballistics .44 Magnum Modified (Spall No Penetration)</td>
<td>1.261” 1.185” 1.432”</td>
<td>11.24</td>
<td>63.8%</td>
</tr>
</tbody>
</table>

All of the products above are Fire-Protection-Rated for the following applications. Please review the chart below for size and framing restrictions as well as building codes for each rating and application.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20 Min</td>
<td>Window Frame, Transom Frame, Sidelite</td>
<td>1764 sq in 42” 42” 1” (3/4” Bite)</td>
<td>D-NH-NT-20</td>
<td></td>
</tr>
<tr>
<td>20 Min</td>
<td>Door With Light Kit</td>
<td>1344 sq in 32” 42” 1-1/4” (1” Bite)</td>
<td>D-NH-NT-20</td>
<td></td>
</tr>
<tr>
<td>45 Min</td>
<td>Window Frame, Transom Frame, Sidelite</td>
<td>1764 sq in 42” 42” 1-1/4” (1” Bite)</td>
<td>D-H-NT-45</td>
<td></td>
</tr>
<tr>
<td>45 Min</td>
<td>Door With Light Kit</td>
<td>1344 sq in 32” 42” 1-1/4” (1” Bite)</td>
<td>D-H-NT-45</td>
<td></td>
</tr>
<tr>
<td>90 Min</td>
<td>Door With Light Kit</td>
<td>100 sq in 10” 33” 1-1/4” (1” Bite)</td>
<td>D-H-NT-90</td>
<td></td>
</tr>
</tbody>
</table>

Due to the specialized nature of this product, detailed installation instructions will be provided with each assembly. This product is intended for interior installations only, as wire glass breakage can occur due to thermal stress.
BULLET RESISTANT

- UL 752 Listed, NIJ & EN No-Spall Ballistic Protection, Handguns to High-Powered Rifles
- All Glass & Thinner and Lighter Glass/Polycarbonate Makeups Available
- Insulating Units Available (ASTM E 2190 Certified)
- Custom Designs & Low Spall Units Available for Government, Military and Commercial Applications

UL 752 Listed Bullet Resistant Laminates

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Protection Level</th>
<th>Thickness Tolerance</th>
<th>Weight lbs/sq ft</th>
<th>Visible Light Transmittance</th>
<th>Winter U-Value</th>
<th>Solar Heat Gain Coefficient</th>
<th>Shading Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBP01 (All Glass)</td>
<td>Level 1</td>
<td>9mm Handgun FMJ Lead Core, 3 shots</td>
<td>1.29&quot; 1.209&quot; 1.381&quot;</td>
<td>16.29</td>
<td>77.1%</td>
<td>.850</td>
<td>.577</td>
</tr>
<tr>
<td>DBP01 (Glass/Polycarbonate)</td>
<td>Level 1</td>
<td>9mm Handgun FMJ Lead Core, 3 shots</td>
<td>1.29&quot; 1.209&quot; 1.381&quot;</td>
<td>16.29</td>
<td>77.1%</td>
<td>.850</td>
<td>.577</td>
</tr>
<tr>
<td>DBP03 (Glass/Polycarbonate)</td>
<td>Level 3</td>
<td>.44 Mag SWC Gas Checked, 3 shots</td>
<td>1.078&quot; .998&quot; 1.145&quot;</td>
<td>12.54</td>
<td>76.0%</td>
<td>.828</td>
<td>.610</td>
</tr>
<tr>
<td>DBP04 (Glass/Polycarbonate)</td>
<td>Level 4</td>
<td>30-60 Rifle Lead Core Soft Point, 1 shot</td>
<td>1.238&quot; 1.134&quot; 1.307&quot;</td>
<td>14.64</td>
<td>74.5%</td>
<td>.814</td>
<td>.591</td>
</tr>
<tr>
<td>DBP05 (Glass/Polycarbonate)</td>
<td>Level 5</td>
<td>7.62 mm Rifle Lead Core FMJ, 1 shot</td>
<td>1.238&quot; 1.134&quot; 1.307&quot;</td>
<td>14.64</td>
<td>74.5%</td>
<td>.814</td>
<td>.591</td>
</tr>
<tr>
<td>DBP08 (Glass/Polycarbonate)</td>
<td>Level 6</td>
<td>7.62 mm Rifle Lead Core FMJ, 5 shots</td>
<td>2.350&quot; 2.211&quot; 2.562&quot;</td>
<td>26.30</td>
<td>56.1%</td>
<td>.592</td>
<td>.525</td>
</tr>
<tr>
<td>DPA750 (Polycarbonate/Acrylic)</td>
<td>Level 1</td>
<td>9mm Handgun FMJ Lead Core, 3 shots</td>
<td>.808&quot; .727&quot; .889&quot;</td>
<td>4.42</td>
<td>83.7%</td>
<td>.675</td>
<td>.799</td>
</tr>
<tr>
<td>DLP1000 (All Polycarbonate)</td>
<td>Level 2</td>
<td>.357 Mag JL Soft Point, 3 shots</td>
<td>1.061&quot; .956&quot; 1.169&quot;</td>
<td>6.56</td>
<td>62.6%</td>
<td>.585</td>
<td>.741</td>
</tr>
<tr>
<td>DLP1250 (All Polycarbonate)</td>
<td>Level 3</td>
<td>.44 Mag SWC Gas Checked, 3 shots</td>
<td>1.311&quot; 1.180&quot; 1.443&quot;</td>
<td>8.14</td>
<td>60.7%</td>
<td>.524</td>
<td>.736</td>
</tr>
<tr>
<td>DPA1250 (Polycarbonate/Acrylic)</td>
<td>Level 6</td>
<td>9mm (UZI) Lead Core FMJ, 5 shots</td>
<td>1.283&quot; 1.154&quot; 1.412&quot;</td>
<td>7.396</td>
<td>70.8%</td>
<td>.535</td>
<td>.760</td>
</tr>
</tbody>
</table>

Size Restrictions: Minimum 12" x 12" , Maximum; Ask for Details

NIJ 0108.01 and EN 1063 No Spall Bullet Resistant Laminates

<table>
<thead>
<tr>
<th>Product Number</th>
<th>Protection Level</th>
<th>Thickness Tolerance</th>
<th>Weight lbs/sq ft</th>
<th>Visible Light Transmittance</th>
<th>Winter U-Value</th>
<th>Solar Heat Gain Coefficient</th>
<th>Shading Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBR20NS (Glass/Polycarbonate)</td>
<td>NIJ Level 2</td>
<td>.357 Mag, JSP, 5 shots 9mm FMJ, 5 shots EN Class B4</td>
<td>.828&quot; .761&quot; .882&quot;</td>
<td>8.87</td>
<td>79.3%</td>
<td>.842</td>
<td>.657</td>
</tr>
<tr>
<td>DBR32NS (Glass/Polycarbonate)</td>
<td>NIJ Level 3A</td>
<td>.357 Mag, JSP, 5 shots 9mm FMJ, 5 shots EN Class B4</td>
<td>1.338&quot; 1.216&quot; 1.409&quot;</td>
<td>15.36</td>
<td>74.2%</td>
<td>.784</td>
<td>.588</td>
</tr>
<tr>
<td>DBR34NS (Glass/Polycarbonate)</td>
<td>NIJ Level 3</td>
<td>7.62 x 51 M9 Ball FMJ Rifle, 5 shots</td>
<td>1.338&quot; 1.248&quot; 1.432&quot;</td>
<td>15.96</td>
<td>73.1%</td>
<td>.801</td>
<td>.577</td>
</tr>
<tr>
<td>DBR40NS (Glass/Polycarbonate)</td>
<td>NIJ Level 3</td>
<td>7.62 x 51 M9 Ball FMJ Rifle, 5 shots</td>
<td>1.718&quot; 1.562&quot; 1.807&quot;</td>
<td>19.90</td>
<td>76.0%</td>
<td>.734</td>
<td>.558</td>
</tr>
<tr>
<td>DBR54NS (Glass/Polycarbonate)</td>
<td>NIJ Level 4</td>
<td>30-60 AP Rifle, 1 shot</td>
<td>2.288&quot; 2.135&quot; 2.449&quot;</td>
<td>27.40</td>
<td>66.8%</td>
<td>.697</td>
<td>.529</td>
</tr>
<tr>
<td>DBR72NS (Glass/Polycarbonate)</td>
<td>EN Class BR7</td>
<td>7.62 x 51 NATO Rifle FCJ, Steel Core, 3 shots</td>
<td>2.848&quot; 2.703&quot; 3.093&quot;</td>
<td>34.54</td>
<td>59.9%</td>
<td>.642</td>
<td>.505</td>
</tr>
<tr>
<td>DBR105NS (Glass/Polycarbonate)</td>
<td>NIJ Modified to .50-cal</td>
<td>695-grain AP/M2, Single shot (2800-2850 fps)</td>
<td>4.140&quot; 3.934&quot; 4.489&quot;</td>
<td>50.99</td>
<td>49.7%</td>
<td>.552</td>
<td>.486</td>
</tr>
</tbody>
</table>

Size Restrictions: Minimum 19-3/4" x 19-3/4", Maximum; Ask for Details

Depending on which product you chose, additional options may be available such as: Tinted Glass, Reflective Glass, One Way Mirror, Frosted Glass, Colored Interlayers, Wire Glass, Self-Cleaning Glass, Insulating Units With Low E Coatings, Holes and Pass Thru, Custom Shapes
TRANSPARENT ARMOR

Glass

- Transparent Armor for Military Applications
- Built to ATPD 2352 Specifications
  Current Solutions for 1b, 2b, 3a
- Heated Windscreens Available
- Rock Strike Capability
- High Volume Production Capacity to Handle Thousands of Parts Per Month
- Custom Design and Solutions

BLAST RESISTANT

Glass

- Tempered Glass Laminates
  (Cost effective & Maximum Durability)
- DuPont SentryGlas® & Spall Shield®
  (Dupont’s Ionoplast Interlayer Technology)
- Glass/Polycarbonate Laminates
- Insulating Units Available
  (ASTM E 2190 Certified)
- Custom Designs Available for Government,
  Military and Commercial Applications

BLAST DESIGN: It is important to note that a blast resistant window operates as a system. It involves not only the glass itself, but also the framing system, anchoring system and even the structure of the building. A frame that is not designed for blast or that is not anchored properly may not hold the glazing during a blast situation causing unnecessary failure and possible injury. A qualified blast engineer should be consulted for the design of each project.
Blast Resistant
- Armored Vehicles, Courthouses, Embassy, etc

Curved Glass
- Tempered & Annealed, Laminated, Insulated

Display Case
- Jewelry, Refrigeration, Sneeze Guard, etc

Edge work, Holes (NC machined) / Notches, Water-Jet Cutting

Graphics & Design
- Logos, Sandblasting, etc

Hurricane
- DuPont Butacite® PVB, SentyGlas® and Spallshield®
- Solutia Saflex® PVB, Saflex® HP, Vanceva™ Storm
- Hyzod® Polycarbonate Sheet

Insulating / Bystronic Line (ASTM E 2190 Certified)
- High Performance, Screen Printed / Spandrel, Security / Ballistic

Laminated Glass / Interlayer
- Butacite® by DuPont - .015”, .030”, .060”, .090” interlayer
- SentyGlass® by DuPont - .035”, .060”, .090”, .100” interlayer
- Spallshield® by DuPont
- Saflex® by Solutia - .015, .030”, .060”, .090” interlayer
- Polyurethane interlayers
- Colored PVB Interlayers by DuPont, Solutia (Vanceva™) and Trosifol

Security / Bullet Resistant
- All Glass, Glass Clad Polycarbonate and all Polycarbonate Laminates
- UL 752 Listed Ballistic Levels I, II, III, IV, V, VI, VIII
- NJ Ballistic Levels II, III, IIIA, IV
- EN Ballistic Levels BR4, BR5, BR6, Br7
- UL 9,10B &10C Classified Fire-Protection-Rated Gazing
- UL CAN4-S104-10 & CAN4-S106-80 Classified Fire-Protection-Rated Gazing
- Transparent Armor for Military Vehicles tested to the ATPD2352 Standard

Screen Printing
- Dots, Holes, Stripes, Custom Patterns and Colors

Spandrel
- Standard and Custom

Heat Strengthened and Tempered Glass
- 1/8” to 3/4” thickness