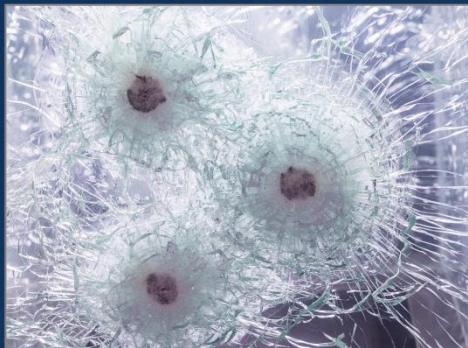


# Security Glazing Products From Curbell Plastics



# Security Glazing - Threats

- **Ballistics (bullet resisting)**
  - UL 752 and NIJ 018.01
- **Blasts**
  - GSA-TS01-2003
  - UFC 4-010-01 DoD Anti-Terrorism Standard
- **Forced Entry**
  - UL 972 - smash and grab
  - ASTM F 1233 – higher level breaking and entering
- **Detention Centers**
  - ASTM F 1915 Glazing for Detention Center
- **Hurricanes**
  - Model, State and City Building Code
- **Covid 19**
  - No standard to date



# Types of Security Glazing Products



**Monolithic Plastics**



**Laminated Plastics or  
Glass/Plastics**



**Products Used in the  
Lamination Process**

# Bullet Resisting Products

- **UL 752 Level I and Level II acrylic sheet**
  - Available with or without an AR coating
  - Banks, convenience stores and school offices
  
- **TUFFAK® HYGARD® - UL 752 and NIJ tested all plastic laminates**
  - Available in UL 752 Levels 1, 2, 3 and 6 and NIJ Levels
  - All with abrasion resistant coatings



# Blast Resistant Products

- Highly specialized
- Laminators who specialize in blast resistant glazing are available



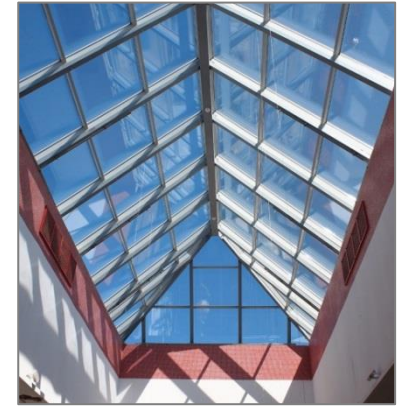
# Forced Entry and Detention Center Products

- **TUFFAK® GP or AR - UL 972 Forced Entry**
- **TUFFAK® HYGARD® CG .375**
  - ASTM F-1233 Class 1.5 (contraband passage) and 2.8 (body passage)
  - ASTM F-1915 Grade 3
  - ASTM F-1233, Class HGI, .38 special LRN
- **TUFFAK® HYGARD® CG .500**
  - ASTM F-1233 Class 1.5 (contraband passage) and 2.8 (body passage)
  - ASTM F-1915 Grade 1
  - ASTM F-1233, Class HGI, .38 special LRN
- **TUFFAK® HYGARD® CG .750**
  - ASTM F-1233 Class 2.4 (contraband passage) and 3.5 (body passage)
  - ASTM F-1915 Grade 1
  - HP White TP 0500.03 Level B 9 mm Luger



# Hurricane Products

- **TUFFAK® AR**
  - Abrasion resistant coating 2 sides
- **TUFFAK® UV**
  - UV blocking cap layer
- **TUFFAK® SK**
  - SK – uncapped for the inside layer of a double glazed skylight
  - SK1 – UV blocking cap layer
  - SKHD – Maximum light transmission
  - SKCC – IR blocking to reduce solar heat gain
- **SentryGlas® Interlayer**
  - 5 times stronger and 100 times stiffer than standard interlayers
  - Super clear and super strong



# Covid 19 Barrier Products

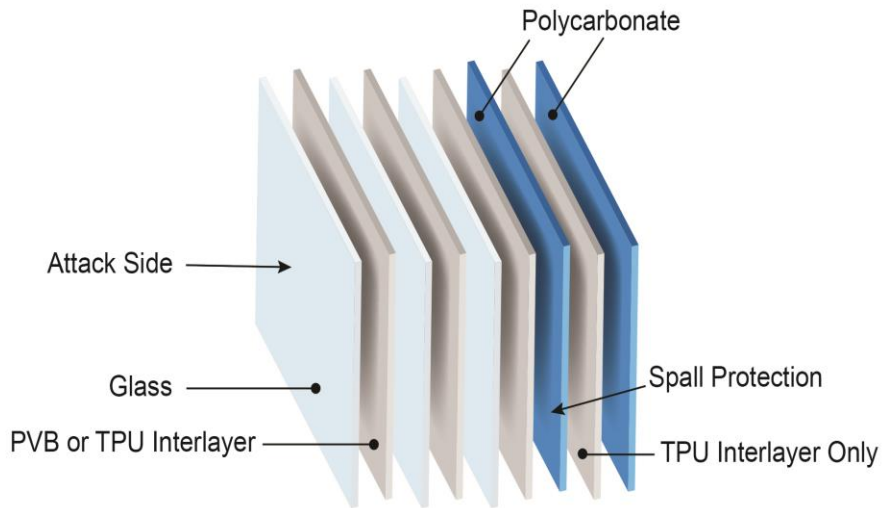
- **TUFFAK® polycarbonate sheet**
  - With or without an abrasion resistant coating
- **Plexiglas® and OPTIX® acrylic sheets**
  - With or without an abrasion resistant coating
- **PALCLEAR® clear PVC sheets**
  - Chemically resistant



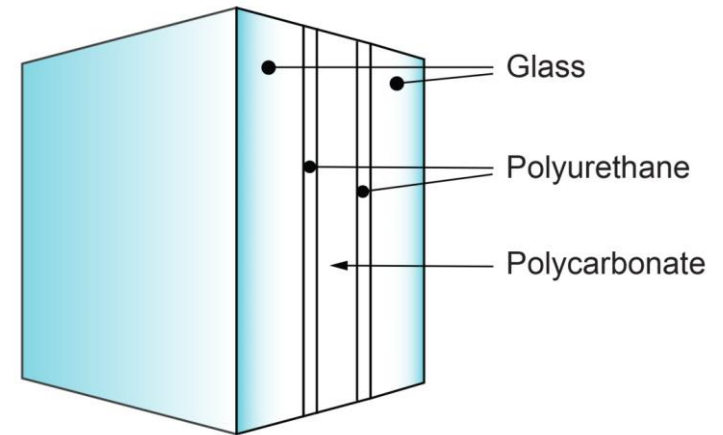


# Glass Lamination Products

- TUFFAK® GP, OP and AR-1 polycarbonate sheets
- Dureflex® A4700 thermoplastic polyurethane interlayer



**Asymmetric Glass Clad Polycarbonate**



**Symmetric Glass Clad Polycarbonate**

# SentryGlas® Interlayer

- **Curbell SentryGlas® Interlayer Program**

- Quick-Ship on cut-to-size and stock sheet
- 3 locations (Pittsburgh PA, Phoenix AZ, and Hartford CT)
- Stock sheet sizes 48" x 96" to 84" x 144"
- 60 mil and 90 mil – 35 mil in cut-to-size only
- Pricing on cut-to-size is determined by yield
- Stock sheet pricing is 5% higher than Kuraray list pricing
- Star – AA – 197 Adhesion Promoter for SentryGlas®



# Curbell Services

- Highly trained technical experts
- Online, email, phone or Zoom meetings
- Glass Clad Polycarbonate lamination training



Prisons



Embassies



Military Vehicles



Hurricane Areas

**Thank you for your attention. Contact us for more information  
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