

Hygard® BR750 polycarbonate sheet

BALLISTIC GLAZING - LEVEL 1

Hygard BR750 ballistic grade sheet is a 0.750", 3-ply polycarbonate and acrylic laminate that meets the UL 752 Level 1 rating for 9 mm ballistic attack. All Hygard products incorporate TUFFAK polycarbonate sheet produced for high optical quality in security glazing laminates. Exterior surfaces have a proprietary TUFFAK AR hardcoat that facilitates cleaning and resists marring, chemical, and graffiti attack. Hygard BR750 sheet has a seven (7) year Limited Product Warranty against coating failure, yellowing, and hazing. The terms of the warranty are available upon request.

APPLICATIONS

Government and detention facilities, banks, specialty retailers, 24 hour convenience stores, cash transaction windows

Typical Properties*

Property	Values
Gauge / Tolerance	0.780 in ± 5%
Weight	5.1 lbs / sq ft
Shading Coefficient	0.89
U-Value	0.65
Light Transmission	88%

*Typical properties are not intended for specification purposes

Product Performance Ratings

BALLISTIC

UL 752 Level 1 (9 mm Full Metal Copper Jacket with lead)

AGENCY INFORMATION

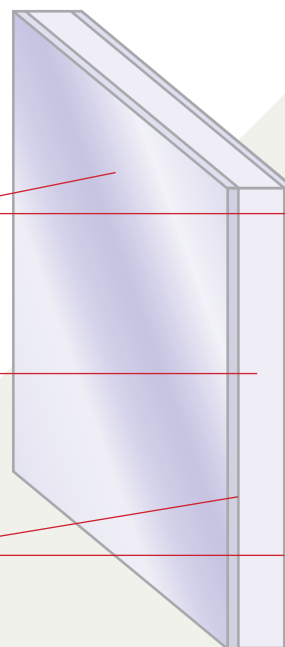
Combustibility Class CC2
Florida Building Code 2017, 6th Ed.
Miami-Dade NOA: NOA
UL File: BP6864

Hygard BR750 Sheet Construction

1/8" TUFFAK AR-1 sheet

1/2" acrylic sheet

Interlayer Bond



Hygard® BR1000 polycarbonate sheet

BALLISTIC GLAZING - LEVEL 2

Hygard BR1000 ballistic grade sheet is a 1.000", 4-ply polycarbonate laminate that meets the UL 752 Level 2 rating for .357 Magnum ballistic attack and HP White TP 0500 Level IV. Unlike glass-clad products, this all-polycarbonate laminate resists spalling and white-out after repeated high force and ballistic impacts, an advantage in maintaining visibility of a threat during an attack. All Hygard products incorporate TUFFAK polycarbonate sheet produced for high optical quality in security glazing laminates. Exterior surfaces have a proprietary TUFFAK AR hardcoat that facilitates cleaning and resists marring, chemical attack, and graffiti. Hygard BR1000 sheet has a seven (7) year Limited Product Warranty against coating failure, yellowing, and hazing. The terms of the warranty are available upon request.

APPLICATIONS

Government and detention facilities, banks, specialty retailers, 24 hour convenience stores, cash transaction windows

Typical Properties*

Property	Values
Gauge / Tolerance	1.05 in ± 5%
Weight	6.5 lbs / sq ft
Shading Coefficient	0.85
U-Value	0.60
Light Transmission	72%

*Typical properties are not intended for specification purposes

Product Performance Ratings

BALLISTIC

UL 752 Level 2 (.357 Magnum jacketed lead soft point)

FORCED ENTRY & CONTAINMENT

ASTM F 1233.08 Class 5 Body Passage

ASTM F 1233.08 Class 2.4 Contraband Passage

ASTM F 1915.03 Grade 1

H.P. White TP 0500.03 Level IV Sequence 43

AGENCY INFORMATION

Combustibility Class CC1

Florida Building Code 2017, 6th Ed.

Miami-Dade NOA

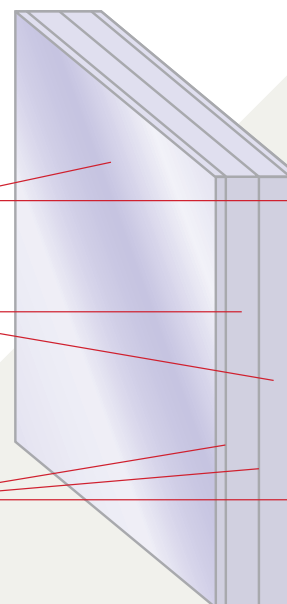
UL File: BP6864

Hygard BR1000 Sheet Construction

1/8" TUFFAK AR-1 sheet

3/8" TUFFAK sheet

Interlayer Bond



Hygard® BR1250 polycarbonate sheet

BALLISTIC GLAZING - LEVEL 3

Hygard BR1250 ballistic grade sheet is a 1.250", 4-ply polycarbonate laminate that meets UL 752 Level 3 rating for .44 Magnum ballistic attack, HP White TP 0500 Level IV, and ASTM F 1233 Class 5. Unlike glass-clad products, this all-polycarbonate laminate resists spalling and white-out after repeated high force and ballistic impacts, an advantage in maintaining visibility of a threat during an attack. All Hygard products incorporate TUFFAK polycarbonate sheet produced for high optical quality in security glazing laminates. Exterior surfaces have a proprietary TUFFAK AR hardcoat that facilitates cleaning and resists marring, chemical, and graffiti attack. Applications include security doors, windows, and other areas that require these specific levels of protection. Hygard BR1250 sheet has a seven (7) year Limited Product Warranty against coating failure, yellowing, and hazing. The terms of the warranty are available upon request.

APPLICATIONS

Government and detention facilities, banks, specialty retailers, 24 hour convenience stores, cash transaction windows

Typical Properties*

Property	Values
Gauge / Tolerance	1.30 in ± 5%
Weight	8.1 lbs / sq ft
Shading Coefficient	0.81
U-Value	0.51
Light Transmission	72%

*Typical properties are not intended for specification purposes

Product Performance Ratings

BALLISTIC

UL 752 Level 3 (.44 Magnum lead semi-wadcutter gas checked)

NIJ Level II, Level IIIA

FORCED ENTRY & CONTAINMENT

ASTM F 1233.08 Class 5 Body Passage

ASTM F 1233.08 Class 2.5 Contraband Passage

ASTM F 1915.03 Grade 1

H.P. White TP 0500.03 Level IV Sequence 43-44

AGENCY INFORMATION

Combustibility Class CC1

ICC-ES ESR-2728

Florida Building Code 2017, 6th Ed.

Miami-Dade NOA: NOA

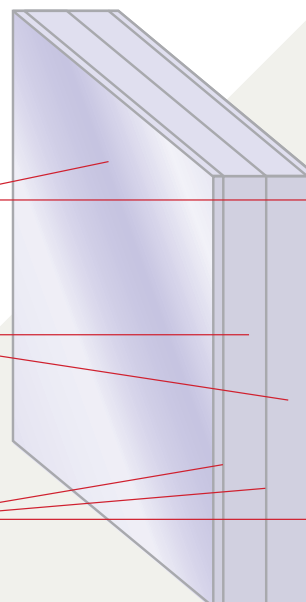
UL File: BP6864

Hygard BR1250 Sheet Construction

1/8" TUFFAK AR-1 sheet

1/2" TUFFAK sheet

Interlayer Bond



Hygard BR polycarbonate sheet

Glazing recommendations

- » Structural security framing systems with equal or greater forced entry and/or ballistics ratings as the selected Hygard laminate are recommended
- » Hygard laminate should be cut to allow for a minimum of one (1) inch edge engagement in the frame, with sufficient rabbet depth for material expansion (approx. 1/16"/ft.)
- » Use wet or dry sealants/gaskets that are compatible with polycarbonate
- » Remove protective masking after glazing operations are completed and before prolonged exposure to direct sunlight, moisture, or high temperature

Standard sheet size

48" x 60", 48" x 72", 38" x 78", 38" x 96", 48" x 96", 60" x 72", 60" x 96"

Product specification

Hygard BR750 polycarbonate and acrylic laminate:

- » Three-ply, clear TUFFAK polycarbonate sheet constructed as follows:
 - 1/8" TUFFAK AR-1 abrasion resistant surface
 - Polyurethane bonding interlayer
 - 1/2" acrylic sheet
 - Polyurethane bonding interlayer
 - 1/8" TUFFAK AR-1 abrasion resistant surface

Product specification

Hygard BR1000 polycarbonate laminate:

- » Four-ply, clear TUFFAK polycarbonate sheet constructed as follows:
 - 1/8" TUFFAK AR-1 abrasion resistant surface
 - Polyurethane bonding interlayer
 - 3/8" TUFFAK polycarbonate sheet
 - Polyurethane bonding interlayer
 - 3/8" TUFFAK polycarbonate sheet
 - Polyurethane bonding interlayer
 - 1/8" TUFFAK AR-1 abrasion resistant surface

Product specification

Hygard BR1250 polycarbonate laminate:

- » Four-ply, clear TUFFAK polycarbonate sheet constructed as follows:
 - 1/8" TUFFAK AR-1 abrasion resistant surface
 - Polyurethane bonding interlayer
 - 1/2" TUFFAK polycarbonate sheet
 - Polyurethane bonding interlayer
 - 1/2" TUFFAK polycarbonate sheet
 - Polyurethane bonding interlayer
 - 1/8" TUFFAK AR-1 abrasion resistant surface

These suggestions and data are based on information we believe to be reliable. They are offered in good faith, but without guarantee, as conditions and methods of use are beyond our control. We recommend that the prospective user determine the suitability of our materials and suggestions before adopting them on a commercial scale.

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PLASKOLITE

400 Nationwide Blvd, Suite 400
Columbus, OH 43215
800.254.1707 • Fax: 800.457.3553
plaskolite@plaskolite.com
www.plaskolite.com

PDS007



Alro Plastics

alroplastics.com

CHICAGO

279 Madsen Drive
Suite #102
Bloomington, IL 60108
Ph: (888) 877-2576

CLEARWATER

12171 62nd Street
Suite #150
Largo, FL 33773
Ph: (727) 573-1480

DETROIT

1750 E. Heights Drive
Madison Heights, MI 48071
Ph: (800) 877-2576

GRAND RAPIDS

4670 60th S.E.
Grand Rapids, MI 49512
Ph: (616) 656-2820

JACKSON

2218 Enterprise
Jackson, MI 49204
Ph: (517) 787-5500

LOUISVILLE

5500 Shepherdsville Rd
Suite #300
Louisville, KY 40228
Ph: (502) 968-9980