

LABORATORY PERFORMANCE TESTING

CRITICAL SCRATCH LOAD TEST A

Cutlery (stainless steel silverware)

STANDARD GLASS	DIAMONDGUARD GLASS
Failure at 3 lbs.	Failure at 55 lbs.

CRITICAL SCRATCH LOAD TEST B

Baking dish (borosilicate glass)

STANDARD GLASS	DIAMONDGUARD GLASS
Failure at 3 lbs.	Failure at 26 lbs.

CRITICAL SCRATCH LOAD TEST C

Ceramic mug (25% alumina and 75% silica)

STANDARD GLASS	DIAMONDGUARD GLASS
Failure at 3 lbs.	Failure at 8.4 lbs.

CRITICAL SCRATCH LOAD TESTING: INFREQUENT HIGH-LOAD CONTACT

Conclusion: DiamondGuard glass withstands from 2.8 to 18 times more pressure before scratching than ordinary glass.

Methodology: Add identical weight to identical tabletop items and slide across standard and DiamondGuard glass surfaces.

CORROSIVES TESTING

Conclusion: Meticulous testing in Guardian labs shows DiamondGuard glass maintains like-new clarity after extended contact with solvents, acids, bases, oxidizers and a collection of common household corrosives.

Methodology: Exhibited no visual or chemical changes after 24-hour continuous contact with substances such as lighter fluid, ammonia, hydrogen peroxide and permanent marker.

HEAT TESTING

Conclusion: Extensive testing in Guardian labs shows DiamondGuard glass maintains like-new clarity after prolonged contact with hot cookware removed from boiling water.

Methodology: Sustained contact of 212° F / 100° C cookware on DiamondGuard glass.

Industry-wide baseline methodologies

ASTM: D1003-11: Standard test method for haze and luminous transmittance of transparent plastics. **ASTM: C1624-05:** Standard test method for adhesion strength and mechanical failure modes of ceramic coatings by quantitative single point scratch testing.

**GUARDIAN
INGLASS®**
Advanced Interior Glass

DiamondGuard® is a featured product from Guardian InGlass®, forward-thinking interior glass solutions.

To learn more about the breadth of Guardian InGlass products and services, visit GuardianInGlass.com, a comprehensive glass resource for interior architects and designers.



See what's possible™

Guardian Glass is a leading international manufacturer of float, value-added coated, and fabricated glass products and solutions for architectural, residential, interior, transportation and technical glass applications. To learn more, visit GuardianGlass.com.

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**ALL GLASS
STARTS OUT
BEAUTIFUL.**

**OURS STAYS
THAT WAY.™**

GUARDIAN DIAMONDGUARD GLASS, fused with the strength of diamond-like carbon, has an extremely low coefficient of friction that permanently protects it from scratching, smudging and staining. Created with Guardian's patented vacuum deposition process, DiamondGuard glass provides superior endurance, aesthetics and value in commercial, residential, transportation and OEM applications.

DIAMONDGUARD FEATURES	DIAMONDGUARD BENEFITS
In high-traffic environments, maintains like-new appearance far longer than ordinary glass	Longer lifecycle; less frequent replacements
High resistance to scratching from contact with everyday items and heavy traffic; high resistance to discoloration from contact with hot objects	Expanded range of commercial and residential applications including tabletops, bars, counters and railings
Resistance to scratching from contact in fabrication and installation	Less waste and greater efficiency
High optical transmission retained after use	Expanded range of applications requiring lasting clarity and endurance

OPTIONS



Photos: Ana Lúcia Jucá (top);
Aldomar Caprini (bottom)

COLOR

Clear: Standard glass with characteristic greenish tint

UltraClear: Low-iron glass with virtual absence of color and distortion-free strength

SAFETY

Stabilized by controlled cooling; can be laminated for safety glass applications

OFFERING

DG 97 allows 97% light transmission (relative to uncoated glass) with high endurance

DG 95 allows 95% light transmission (relative to uncoated glass) with high endurance

DIMENSIONS

Standard sheet size; also available up to 96" x 144"

Available thicknesses: 2.7 mm to 12 mm Clear; 6, 10, 12 mm UltraClear; may be specified in other thicknesses upon request

	PRE-TEST		POST-TEST MEASUREMENT		
	LIGHT TRANSMISSION	HAZE	ENDURANCE HAZE* (Ceramic mug)	ENDURANCE HAZE (Key ring)	ENDURANCE HAZE (Cutlery)
Standard Glass					
Clear	87.7 ± 0.4	< 0.5%	9.59	3.47	2.20
DiamondGuard					
Clear (DG 97)	84.9 ± 1.2	< 0.5%	0.17	0.17	0.21
Clear (DG 95)	82.9 ± 1.2	< 0.5%	0.20	0.20	0.20

* The measurement of haze, or reduction of optical clarity, is a universal practice for gauging the clarity of glass and other transparent materials. The lower the haze rating, the greater the optical clarity. Acceptable haze threshold: 0.7 per ASTM: D1003-11.

CUSTOMER EXPERIENCES

In extreme desert environments with blowing sands, the windshields on military vehicles became scratched so significantly—and rapidly—that service personnel were forcibly removing them to improve visibility. When replaced with DiamondGuard® glass, the windshields function for extended periods under these harsh conditions, and provide substantial protection against both scratching and reduced visibility.

In a Las Vegas casino, maintenance crews were replacing mirrors in high-traffic areas every six to eight weeks. New DiamondGuard mirrors extend this lifecycle to over six months, paying for themselves by eliminating five replacements each year.



LABORATORY PERFORMANCE TESTING

ABRASION TESTING: REPEATED CONTACT

Conclusion: Rigorous testing in Guardian labs shows DiamondGuard® glass maintains like-new clarity after thousands of contacts with everyday items—many times longer than standard glass.

Methodology: Repeated contact with identical objects using identical pressure on standard and DiamondGuard (DG 95) glass.

ABRASION TEST A

Base of ceramic mug (25% alumina and 75% silica)

STANDARD GLASS	DIAMONDGUARD GLASS
Extreme failure after 50 cycles	Minimal failure after 4,000 cycles
Endurance haze: 9.59*	Endurance haze: 0.20*



Top: Standard glass
Bottom: DiamondGuard glass

ABRASION TEST B

Key ring (key ring and three aluminum and brass keys)

STANDARD GLASS	DIAMONDGUARD GLASS
Moderate failure after 100,000 cycles	No failure after 100,000 cycles
Endurance haze: 3.47*	Endurance haze: 0.20*



Top: Standard glass
Bottom: DiamondGuard glass

ABRASION TEST C

Cutlery (stainless steel silverware)

STANDARD GLASS	DIAMONDGUARD GLASS
Moderate failure after 100,000 cycles	No failure after 100,000 cycles
Endurance haze: 2.20*	Endurance haze: 0.20*



Top: Standard glass
Bottom: DiamondGuard glass