



BULLET RESISTANT GLASS CARE & HANDLING INSTRUCTIONS



Please ask the supplier of your armoured vehicle to explain the warranty terms and conditions, which the customer declares to know and to accept since the vehicle is delivered.

CONTACT US

COMMERCIAL UNITS

- AGP DEFENSE**
Ft Worth, Texas, USA
+ 1 817 730 9996
agpdefense@agpglass.com
- EUROPE**
Bochum, Germany
+ 49 0 2327 965 36 67
agpeurope@agpglass.com
- MIDDLE EAST**
Dubai, UAE
+ 971 4 214 64 80
agpmiddleeast@agpglass.com
- ARGENTINA**
Provincia de Buenos Aires, Argentina
+ 54 11 2002 73 9
agpargentina@agpglass.com
- INDIA**
Kerala, India
+ 91 9645 95 81 80
agpindia@agpglass.com
- SPAIN**
Madrid, Spain
+ 34 9 1766 28 00
agpespana@agpglass.com
- CENTRAL AMERICA**
Ciudad de Guatemala, Guatemala
+ 502 5205 42 02
agpcentroamerica@agpglass.com
- JAPAN**
Tokyo, Japan
+ 81 356 75 15 41
agpjapan@agpglass.com
- UNITED STATES OF AMERICA**
Knoxville, TN, USA
+ 1 865 675 05 25
agpusa@agpglass.com
- eGLASS**
Texas, USA
+ 1 817 730 9996
eglass@agpglass.com
- MEXICO**
Mexico D.F, Mexico
+ 52 55 5207 44 25 / 26
agpmexico@agpglass.com
- VENEZUELA**
Caracas, Venezuela
+ 58 212 361 93 40
agpvenezuela@agpglass.com

PRODUCTION FACILITIES

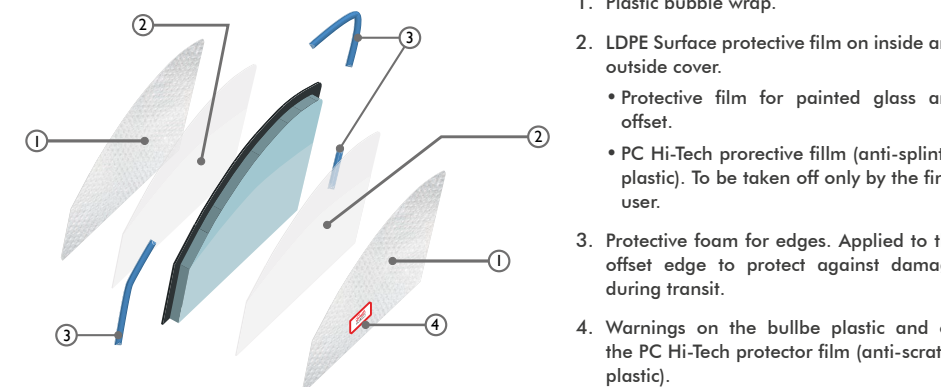
- AGP eGLASS**
Lima, Peru
+ 51 1 702 46 00
eglass@agpglass.com
- AGP BRAZIL**
Parana, Brazil
+ 55 41 338 155 00
agpbrazil@agpglass.com
- AGP COLOMBIA**
Bogota, Colombia
+ 57 1 360 88 11
agpcolombia@agpglass.com
- AGP PERU**
Lima, Peru
+ 51 1 702 46 00
agpperu@agpglass.com

www.agpglass.com

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AGP BULLET RESISTANT GLASS

AGP packaging system is composed by:



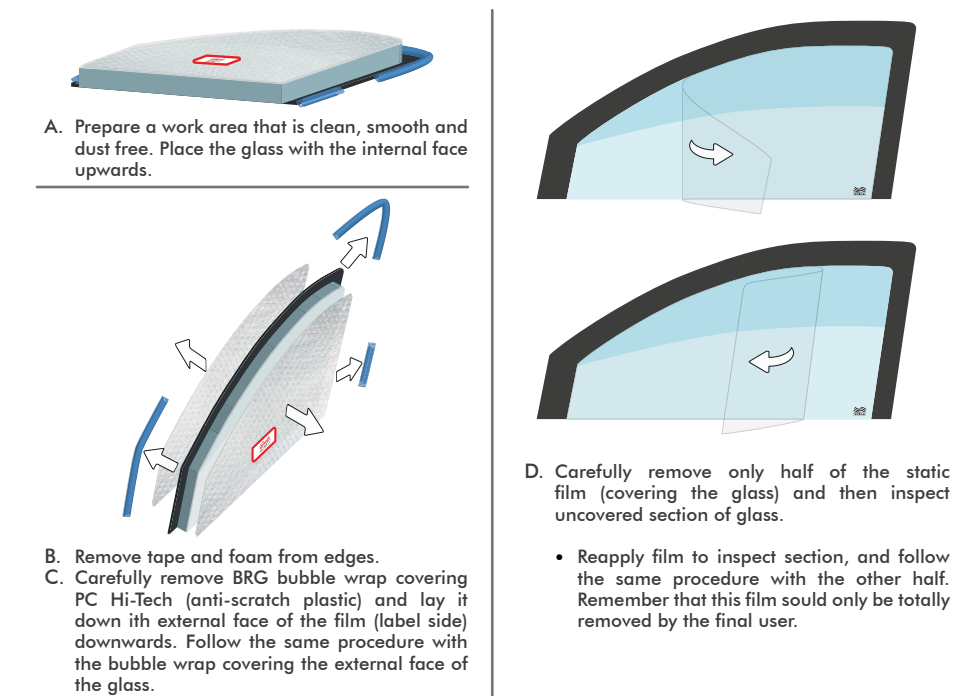
- Plastic bubble wrap.
- LDPE Surface protective film on inside and outside cover.
 - Protective film for painted glass and offset.
 - PC Hi-Tech protective film (anti-splinter plastic). To be taken off only by the final user.
- Protective foam for edges. Applied to the offset edge to protect against damage during transit.
- Warnings on the bubble plastic and on the PC Hi-Tech protector film (anti-scratch plastic).

BULLET RESISTANT GLASS INSPECTION

It is important that you wash, rinse and dry your hands thoroughly each time you handle the BRG. Before handling remove any sharp, rough or hard objects like rings, watches, zippers or belt buckles that could come in to contact with the BRG product and cause damage.

The interior facing side of the BRG is composed by a sheet of anti-spall Polycarbonate (PC- Hi tech) which requires special handling and cleaning.

Please follow the handling and cleaning procedures below to avoid permanent damages to the Bullet Resistant Glass (see figure):



STORAGE AND HANDLING

- Transport and store the BRG with temperatures around 20°C. Avoid temperatures below 0°C as well as over 30°C.
- Store the BRG in a dry and clean environment. Protect the BRG from direct sunlight.
- Do not support the BRG on its inner side (PC) over a long time. During storage and transport always store the BRG on his outside (Glass). This will help you to avoid pressure marks, scratches or other damages on the PC layer.

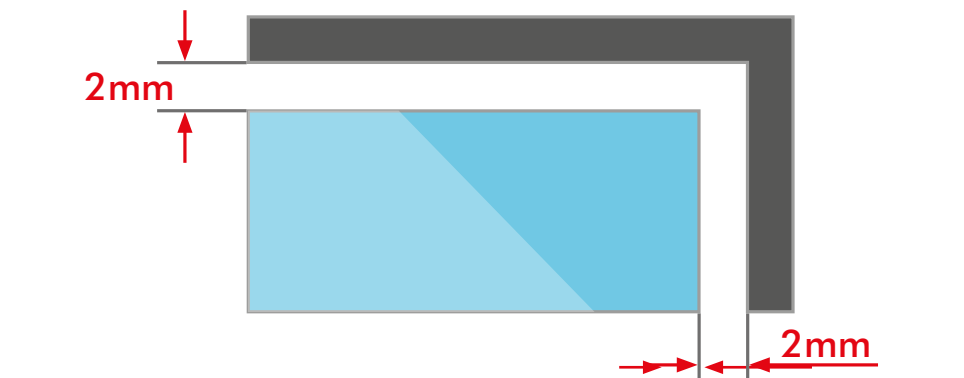
BULLET RESISTANT GLASS INSTALLATION

RECOMMENDATIONS FOR OPTIMAL INSTALLATION.

- Do not remove the plastic protective films provided with the BRG. These protective films must be kept during the whole installation process and only can be removed by the final user.
- There are some protective films in the market with components that can attack chemically the PC Hi-Tech. For this reason we highly recommend the exclusive use of the internal facing protective film provided with the product.
- Just in a special case where is necessary to change the protective film please use the authorized materials shown on the chart **Protective layers for bullet resistant glass**.

SPECIFICATIONS FOR INSTALLATION

- Handle carefully the BRG during the entire installation process. Avoid hits, scratches and any high pressure to the glass.
- Avoid chipping the Glass edges. It is highly likely that such failure extend through the glass in service due to vibration and temperature variations.
- Supporting frames and mechanisms within the vehicle must be adequate to carry the weight of the window.
- Never modify the edge of the BRG (Tecoflex, Polyurethane, Premium Edge Seal). The edges of the BRG are the main protection against chemical agents attacks that can affect the product durability. Avoid any kind of grinding, deburring and in any case removal of the edge protection.
- Avoid direct contact between the glass and other car components such as frames, steel armor, opaque armor, accessories, etc.
- The BRG needs a minimum clearance to all car body parts, steel armor components, interior parts, to cope with the expansion generated by temperature changes.
- A minimum clearance of 2 mm is acceptable in most cases.
- In the case of using the differential with "TNT Plus" installation must be performed with respect to the installation guide delivered.



For the proper Installation, use only structural adhesives and primers approved by AGP.

- Regular brand adhesives, primers, base, sealants, solvents or additives can contain some substances or chemical components that affect the BRG, creating premature deterioration of the product including: delamination, cracking, and other defects.
- The use of other materials different to the ones indicated in the table: **Structural adhesives and primers for glass**, must be authorized previously by AGP.
- Never apply glue to the PC layer. Besides chemical attack problems, the adhesion could not be enough and the PC layer will not be able to take the load of the BRG over life time.

PROTECTIVE LAYERS FOR BULLET RESISTANT GLASS

NAME	SUPPLIER	COMMENTS
LDPE film (low density polyethylene) with water based adhesive.	BISCHOF & KLEIN (B&K)	www.bkinternational.com
	NOVACELL	www.novacelinc.com
	POLIFIM	www.polifilm.de

STRUCTURAL ADHESIVES AND PRIMERS FOR GLASS

TYPE	NAME	SUPPLIER	CHARACTERISTICS
CLEANER	Mama Lemon	Lion Corp	Sustancia para limpieza antes de aplicación del promotor de adherencia y el adhesivo.
CLEANER	Armour CarParts	Armour CarParts	
ADHESIVE + PRIMER	Sika 256 + Primer 206 G + P	Sika	Aplicar según las recomendaciones del fabricante.
	Sika 265 + Primer 206 G + P	Sika	
	Sika 255FC + Primer 206 G + P	Sika	
	3M 590	3M	
	3M 760 + 3M P590	3M	
PRIMER	3M P595	3M	
	3M 8602	3M	
	3M 590	3M	
	5404A	DOW	
SILICONE	Superflex	Loctite	Sellante de Poliuretano

STRUCTURAL ADHESIVES FOR INSTALLATION

TYPE	NAME	SUPPLIER
ADHESIVE SMP	Bostik 7008	Bostik
	ISR 70-08 AP SIMSON	Bostik
	70-08A Black Hybrid Moisture	Bostik
ADHESIVE MS	Hercuseal High Tack 301	Hercuseal
	Screen Fix 212	Kent
POLYURETHANE SEALANT	Rotabond MS 85083 27	Kent
	Sika 260	Sika

IF THE ADHESIVE SEALANT OR PRODUCT THAT IS GOING TO BE USED ON THE GLASS IS NOT INCLUDED IN THE LIST, PLEASE CONTACT AGP WHICH WILL PERFORM THE TESTS REQUIRED TO VALIDATE THE WORKING CONDITIONS OF THE PRODUCT ALONG WITH THE GLASS.

NOT RECOMMENDED MATERIALS

Avoid contact of the BRG with any of the following substances or compounds that contain them: Acetone, Acetic Acid (Vinegar), Amines, Ammonia and derivatives, Benzene, Chloroform, Esters, Phenol, Gasoline, Sodium Hydroxide (Caustic Soda), MEK (methyl ethyl ketone), Brake Fluid, Methanol, Flexible PVC, Refrigerants, Screenvin, Carbon Tetrachloride, Turpentine, Toluene, Lacquer Thinner, Xylene.

REMARK: THE LIST ABOVE IS SHOWN AS AN USER GUIDELINE TO UNDERSTAND BETTER THE NATURE OF SUBSTANCES AND COMPONENTS THAT CAN AFFECT THE BRG. IT DOES NOT REPRESENT AN EXHAUSTIVE LIST.

CLEANING AND BASIC CARE OF BULLET RESISTANT GLASS

Certain chemicals substances can cause structural and surface damages. Following precautions need to be taken to avoid an aggressive cleaning agents

Cleaning procedure:

- First blow the dust or dirt off with clean, dry and oil free air. Remove grit particles by blowing with clean filtered air, preferably ionised to minimize "static" attraction.
- For cleaning the external face of the BRG please use any of the cleaning agents listed in the table **Detergents and cleaning solutions**.
- Clean your glass only with a fully clean cotton cloth, ensuring that it is absent of particles or abrasive fibers. Gently wash with a down and straight motion. Rinse the cloth and change the water often.
- Just in case of stubborn stains wash polycarbonate sheet with a solution of lukewarm water and mild soap or isopropanol (IPA) indicated in the table: **Detergents and cleaning solutions**.
- Don't leave cleaners on inner side of the BRG for long periods, rinse immediately with clean and cold water
- Dry thoroughly with a soft cloth to prevent water spotting.

DETERGENTS AND CLEANING SOLUTIONS

TYPE	NAME	SUPPLIER	CHARACTERISTICS
ALCOHOL	Alcohol Isopropilico	Generic	Apply pure or diluted in water with a cloth.
	Shampoo Johnson baby	Johnson & Johnson	Dilute in water and apply with cloth.
TENSOACTIVE	Suma light	Johnson & Diversey	Dilute 1-4 ml solution per 1 liter of water.
	Mr Clean	Procter & Gamble	Application with spray and cloth.
	Joy	Procter & Gamble	Dilute 1-4 ml solution per 1 liter of water.

BRG WARRANTY: TERMS AND CONDITIONS

American Glass Products ("AGP"), subject to the conditions and limitations set forth below, warrants to the buyer ("Buyer") of the Bullet Resistant Glass (the "Product"), and to no other person or entity, that for a period of two (2) years from the date of the invoice, the Product will be free from manufacturing defects (the "Warranty").

In the event of a manufacturing defect covered by this warranty, the Buyer shall follow the claim procedure set by AGP. The Buyer's sole and exclusive remedy and AGP's sole obligation shall be limited to AGP's option of replacing or repairing the defective Product or providing a refund of the original purchase price paid by the Buyer. If AGP decides to replace the defective Product, the replacement Product shall be sent and delivered under the previously agreed to commercial conditions. The original Warranty shall continue on repaired or replaced Product and shall extend for the balance of the Warranty period in effect at the time the Product proved non-conforming.

LIMITED WARRANTY
Warranty shall not cover:

- Product defects caused by improper storage, cleaning, and/or installation, use of sealants, adhesives, reflective films, or other materials not compatible with the Product; and/or handling contrary to the conditions set in the Manual Bullet Resistant Glass Care & Handling Instructions Prior to Installation delivered with the Products, and which Buyer as from this moment acknowledges to understand and accept;
- Scratches, scrapes, or streaks, among other handling defects, which occurred after Product delivery;
- Defects due to Product maintenance, repair, inspection, or alteration by non-qualified persons or entities and/or due to Product modification;
- Product defects or flaws resulting from failure to follow the instructions/precautions set in the Manual Bullet Resistant Glass Care & Handling Instructions Prior to Installation;

- Don't use liquid cleaners, structural adhesives, primers or any other chemicals that are not approved by AGP.
- Avoid the use of any abrasive cleaning cloths like paper, mop, thick sponges or brushes.
- Do not wipe the inside face of the window with the hand, whether glove or not.
- Never use dirty or dry clothes to clean the glass surface. Finally use only a dry cloth after effectively removing dust, dirt and any particle.
- Never use sharp instruments like scrapers, razor blades or squeegees to clean hard to remove substances.
- Do not stick any label or stickers to the inside face.
- Do not install any gadget direct on the glass, such as GPS, mirror support, chargers, etc.
- Do not install any security or solar control film on the inner surface of bulletproof glass. These films may be incompatible with polycarbonate or accumulate too much heat.
- Do not clean BRG products in direct sunlight or at elevated temperatures as this can lead to staining.
- Avoid pressure washing with hot water or sudden temperatures changes.
- Do not leave your vehicle exposed to the sun. If unavoidable use a cover on the outside of the glass to protect it from long term sun exposure.
- Do not close the car door with windows open (BRG down). This reduces fracture probability of the glass.

Failure of the recommendations presented in this document invalidates the warranty of AGP product.

- Product performance failures or defects derived from exposure to: (i) temperatures below 0° C or above 40° C; or (ii) corrosive agents;
- breakage caused by reasons other than manufacturing and/or reported three (3) months from the invoicing date;
- damages or defects caused by the improper connection of the electric terminals of the glass to the vehicle;
- installation, performance and resistance of steel frames;
- delamination except when it (i) becomes evident prior to Product installation; or (ii) affects the visibility to drive the vehicle.

As a result of the foregoing, delamination around the glass edge shall be accepted provided and to the extent that the vehicle may be normally driven and operated. Likewise, Product edge delamination shall not be considered as a manufacturing defect.

The application of the conditions and instructions set in the Manual Bullet Resistant Glass Care & Handling Instructions Prior to Installation is essential for the proper ballistic performance of the Product.

AGP reserves its right to reject claims for defects reported after installing the Product where such defects do not impair visibility and/or functionality. AGP shall not be liable for any costs related to defective Product removal or replacement, or new Product installation, including but not limited to, manpower, technicians' and/or Product transfer; supplies or raw materials, lost profits, commercial name use, lost business, etc. In any case, AGP's maximum liability to Buyer shall be equal to the aggregate price paid by Buyer for the Products.

Furthermore, (i) AGP shall not be liable for any failure that occurs under conditions different from those included in the stated ballistic standard; (ii) AGP does not and will not warrant the performance if the Buyer has requested AGP to manufacture a product to a specification other than one of the international

standards that AGP is certified to manufacture.; (iii) AGP will be released from any liability due to the performance of the Product once the warranty term is elapsed.

AGP guarantees that the raw materials used in its Products comply with high-quality standards and that they are regularly tested so as to ensure their ballistic performance in accordance with international standards; notwithstanding the foregoing, AGP shall not become liable for the consequences derived from failures that result from the manufacturing process of such raw materials.

In order to meet the operational and availability needs regarding raw materials, AGP reserves its right to stop and amend the Product composition without providing prior notice to Buyer.

This Warranty shall become invalid if the Product is in any manner altered without AGP's written consent.

OTHER CONDITIONS:

AGP submits its Products for testing by industry leading testing facilities for acceptance to the most widely recognized international standards, which validates the capabilities of AGP's Products. However, AGP shall not in any manner be liable to the Buyer and/or third parties for any material and/or personal consequences resulting from acts engaged in by third parties. Nor will AGP be liable in any case resulting from the ballistic performance failure of the Product, a random and/or unexpected acts and/or acts of nature or that might constitute an Act of God. Moreover, AGP shall not assume any liability when damages caused to Buyer and/or third parties are consequences of the victim's actions alone.

Whereas AGP is not involved in the designing of the system made by the armoring company, corporation contracted by the consumer to armor his vehicle, therefore AGP shall not be liable against the Buyer or Third Persons for the performance, design, manufacturing and adaptation of opaque armor designs manufacturing, or fitting or the final armoring project done by the armoring company. The Buyer shall perform its own tests to determine the Product's fitness and good condition for the intended use, as well as for the risk level to which the end user shall potentially be exposed.

The Buyer shall provide the instructions for the Proper Use and Care of the products to their customers based in the Manual Bullet Resistant Glass Care & Handling Instructions Prior to Installation and the updates that AGP will develop later. In this regard, the Buyer shall inform its Customers the care measures required for the Product's proper performance, as well as information on the coverage of the warranty.

In the event of Product resale, regardless of modification or adaptation of the Product, the Buyer shall limit its own liability to its customers to the original purchase price.

Despite meeting the highest standards of production, products protection may be affected by the conditions of raw materials, the ammunition used on the product or by the variability in the production process.

Buyer agrees that AGP shall in no event become liable for third-party claims made for an eventual patent infringement. In this sense, Buyer waives its right to demand or claim any compensation for damages, redress, whichever its nature may be, or recovery from AGP if there is any damage or loss by reason or as a result of an action for patent infringement filed against the Buyer.

This Warranty replaces and supersedes all other warranty, whether written or not, as well as any liability or obligation undertaken by AGP. AGP shall in no case be liable for implied warranties of merchantability or fitness for a particular purpose, or for consequential, indirect, remote, incidental or punitive damages, whichever their nature may be, including but not limited to any damages resulting for contract breach or lost profits or lost business opportunities or reputation damage, or damage to the vehicles, their content, or any person therein.

Any amendment to the terms and conditions of this Warranty shall be made in writing, signed by a representative of AGP's Corporate Ballistic Committee.

HOW TO FILE A CLAIM?

For the purposes of a claim being submitted, the Product must be paid in full. Claims shall be filed directly by the Buyer as stated in the invoice. AGP may (i) request Buyer to send a sample of the defective Product for analysis; or (ii) appoint an officer to visit the Buyer's facilities and determine the cause of the Product damage. Where replacement applies, AGP at its sole discretion, shall decide the destination of the Product to be replaced, requesting to the Buyer the return of the Product or the filing of the destruction certificate provided by AGP. Buyer may not in any manner use or dispose the Product to be replaced.

Any claim to enforce this Warranty shall conform to the terms and conditions contained herein; otherwise, AGP at its sole discretion, may accept or reject such claim.

WARRANTY IN FORCE AS FROM 01 FEBRUARY 2016