

# Bullet Resistance Glass



**Auto Commercial International GTD  
FZCO**  
[www.acigtd.com](http://www.acigtd.com)



## Centigon Glass

A Centigon Security Group Company

**We Care About Your Safety**



**Reliable**

**Global reach**

**Delivery on time.**

**Fleet order support**

**Automotive Applications**

**Architectural applications.**



### Automotive Spare Parts & Accessories

- Genuine OEM
- After Market
- 4x4 Vehicles
- Civilian Vehicles

### Armoured Vehicle Components

- Intercoms & Electronics
- Bullet Resistance Glass
- Run Flats
- Mobility Solutions
- High Performance Materials
- Accessories

### Architectural solutions

- Intercoms & Electronics
- High Performance Glass

### Logistic Solutions

### SERVICE AND SUPPORT

- ✓ We pay personalized attention and time in order to meet all your expectations.
- ✓ The products are developed and manufactured professionally and we respond in the shortest time.
- ✓ Our prices and services are competitive.
- ✓ Global Logistics



**Auto Commercial International  
GTD FZCO**





# PRODUCTION PROCESS



Please click on the links below to view graphical description of the glass production process

<http://centigon.com.co/glasses/>

<https://www.youtube.com/watch?v=8wTZKmbD8N0&feature=youtu.be>

## Worldwide Representation.

Production plants:

Europe:

- **Lamballe, France.**

America:

- **Monterrey , Mexico.**
- **Distrito Federal , Mexico.**
- **Caracas, Venezuela.**
- **Bogota, Colombia.**
- **Bogota , BRG, Columbia**



## Our Glass Around The World

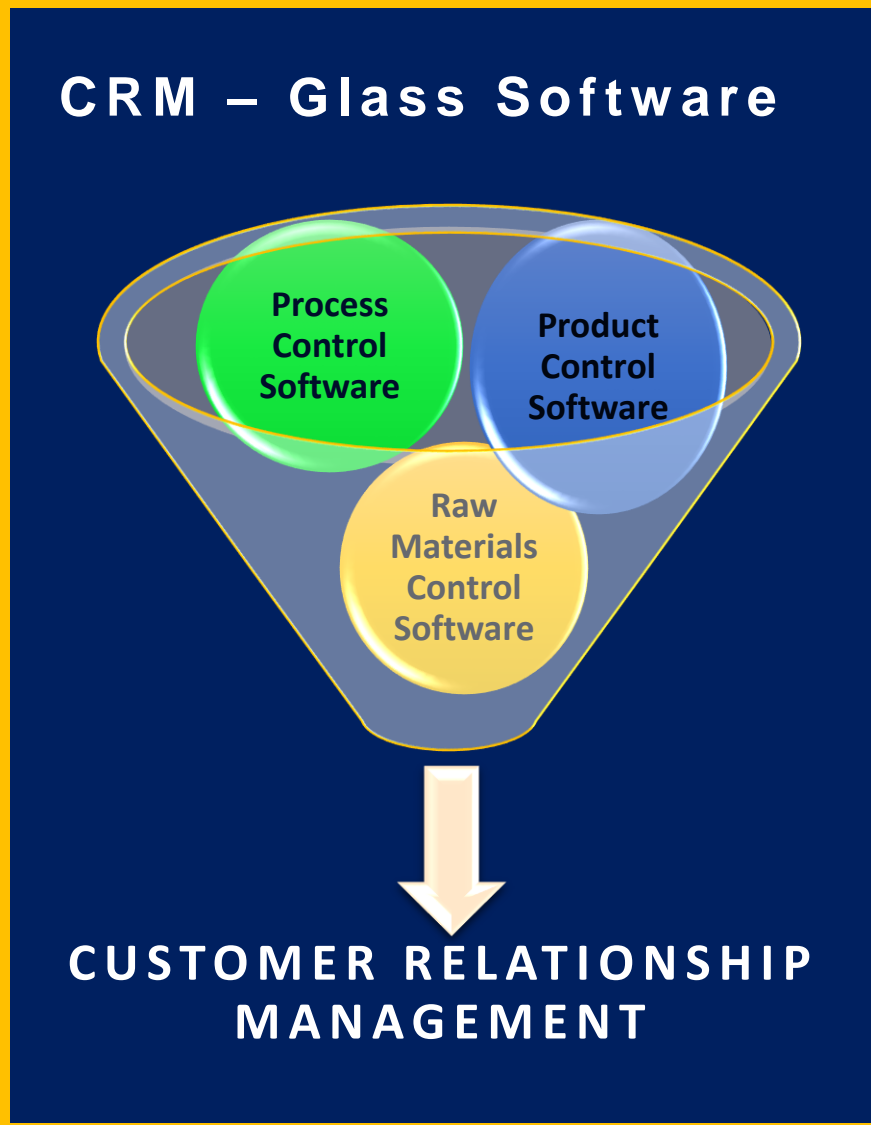
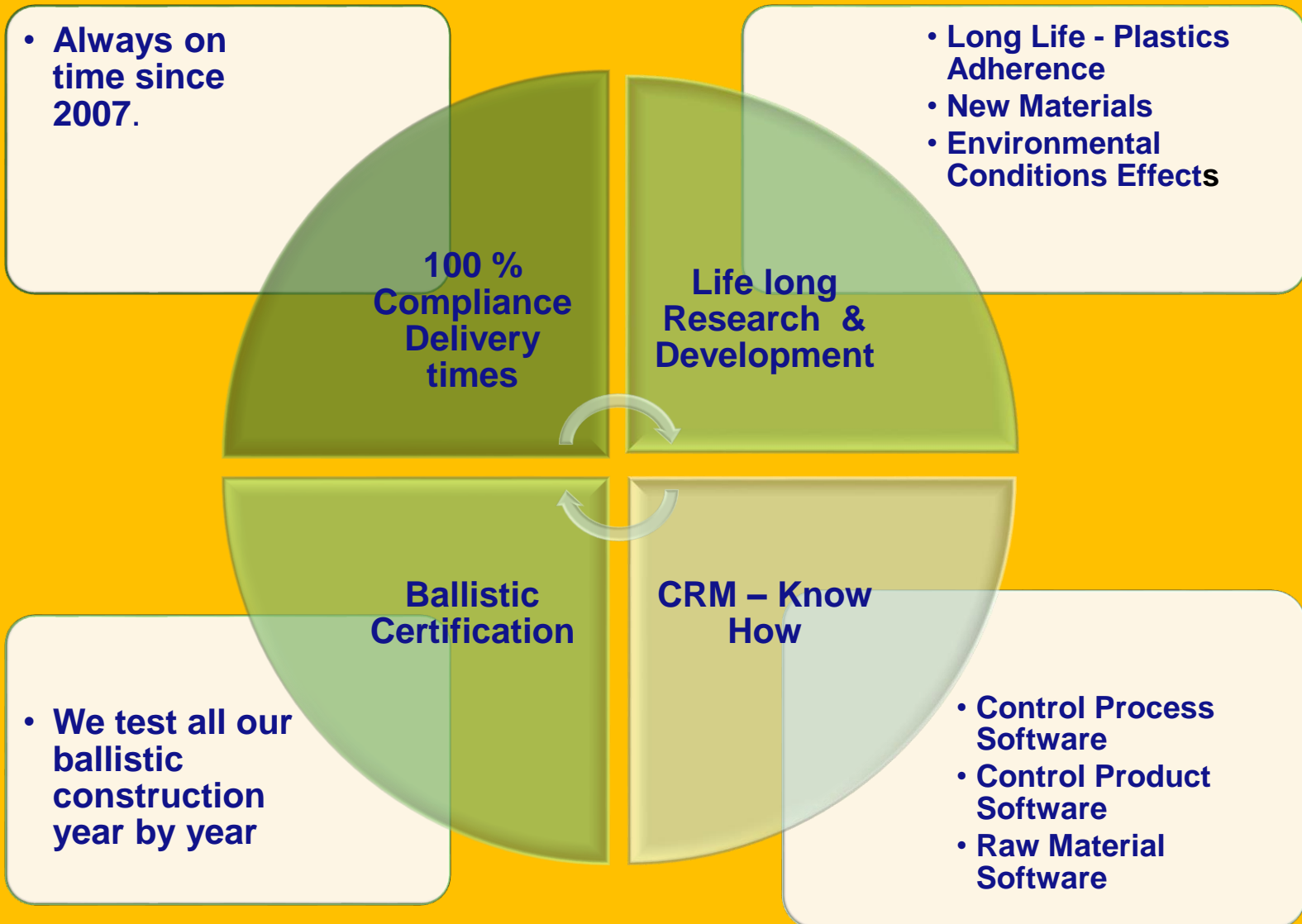
United States	Mexico	Venezuela	Colombia
Ecuador	Peru	Chile	France
Philippines	Belgium	Germany	Salvador
Guatemala	Honduras	Iraq	Costa Rica
Oman	Bahrain	South Africa	U.A.E



# Why are we different ?



**Centigon Glass**  
A Centigon Security Group Company





Authorized  
Distributor

# Products and Technology



**Centigon Glass**  
A Centigon Security Group Company

## Steel Frame

- Bulletproof glass where the glass offset is replaced by a steel framework.
- Generally this product is requested by the military, where the care of the vehicles is low.
- This type of frame prevents broken glass offset caused by closing the car door too hard with the window down

**Various Color - Currently we have the ranges of colors that the market demands**

Color	Description
Clear	No Tint
Light Gray	Soft Gray
Medium Gray	Medium Gray
Dark Gray	Strong Gray

## Scratch Shield

- Bulletproof glass with translucent glass materials.
- High tech polymers.
- Excellent optical properties.
- In compliance with NATO requirements.
- The inside has high quality polycarbonate, which allows the glass have greater internal resistance against scratches generated in the installation process.

## Steel Insert

Bullet proof glass for ballistic resistance of less than .44 magnum ammunition. Offset made of glass & 2mm of ballistic steel

## Architecture

Flat armored glass and optical ballistic characteristics identical to those used in the automotive sector, also used for military units and trucks.



# Process Control Software

Production Plan

Planning program with agendas with the production capacity

Operations Control

- Production Station – Sections Plant
- Program production by day, with all the glasses in that section order by date

GLOBAL PRODUCTION

Production Control, in real time with code bars.

NOVIEMBRE 2010

NOVIEMBRE DE 2010

LUNES	MARTES	MIÉRCOLES	JUEVES	VIERNES	SÁBADO	DOMINGO
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

VOLVER

24 NOVIEMBRE 2010

ORDEN	CLIENTE	VEHICULO	PZS	SET	FECHA ENTREGA
721	CENTIGON COLOMBIA	TOYOTA - PRADO ( G127BC )	8	1	09/12/2010
7221	CENTIGON COLOMBIA	TOYOTA - FORTUNER ( G1602P )	8	1	09/12/2010
7220	SPARTAN VENEZUELA	TOYOTA - 4 RUNNER ( G1006C )	8	1	09/12/2010
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	
			0	0	

VOLVER

24 3





# Product Control Software

Serial Tracking

Unit specification by codes of each design and client

Production Order

PO for each glass with complete information (Tools, Ballistic Construction, Client Requirements, and Drawing)

## DATOS PEDIDO

ORDEN DE PRODUCCIÓN: 0330 FECHA PEDIDO: 27.05.2009 TIPO: CE NUMERO: 2250  
CLIENTE: CERTIGON VENEZUELA

## DATOS VEHICULO

VEHICULO: JEEP - GRAND CHEROKEE ( 614760 ) MODELO: 2005-2008

PIEZAS DISPONIBLES: [VD] [VH] [VDO] [VH] [VTD] [L] [LD]  
CLICK PARA MAS INFORMACION: [R1C] [SRF (C)] [SRF (F)]

DISÑO - PLANTAS: MEXICO-VENEZUELA-COLOMBIA

## PIEZAS A FABRICAR

[X] R51 [X] R1 [X] R20 [X] R11 [X] R10 [X] R12  
[ ] R11 [ ] R10 [X] L1 [X] L2 [ ] R10 [ ] R12  
[ ] SRF (C) [ ] SRF (F) [ ] R10 [ ] R11 [ ] R12

## FOTOS VEHICULO

[VF] [VL] [VT]



## TONALIDAD

SELECCION TONALIDAD: [R25]

## NIVEL BALISTICO

SELECCION NIVEL BALISTICO: [LAV-4000 20]

TONALIDAD GENERAL: [2.0R1E]

NIVEL GENERAL: [LAV-4000 20]

PARABRISAS: [INCOLORO]

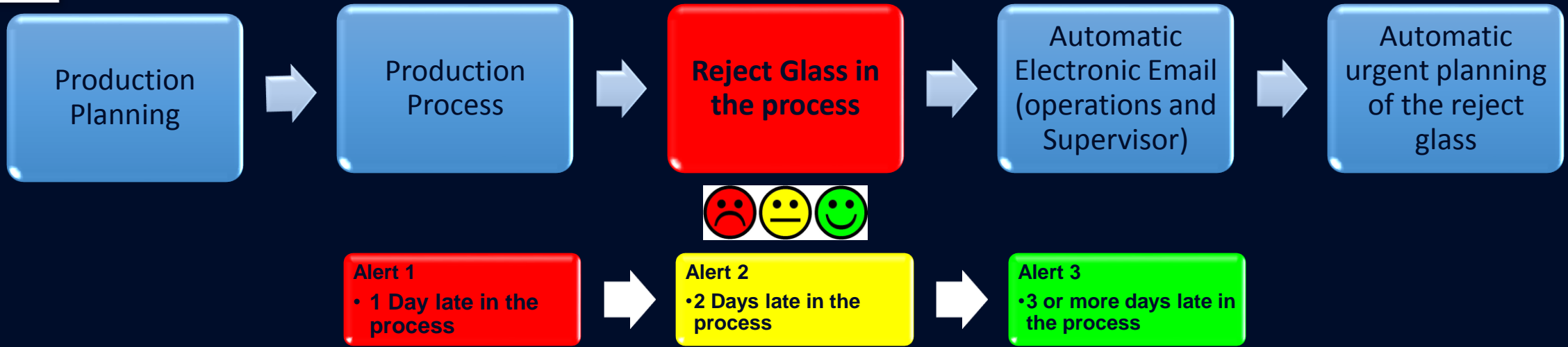
ORDEN DE PRODUCCIÓN: Orden: CP No. 1995 ST: 0833 Fecha: 18/07/2010 12:00:2010  
 Cliente: CERTIGON COLOMBIA Designación: PCD 003  
 Automovil: CHEVROLET SUUV(SUV) 2007-2010 C. LAV Nivel: LAV 4000 20  
 Descripción: PUERTA DELANTERA DERECHA Laminado: PCHC Color: J.ERIS

HERRAMIENTAS DE PRODUCCION		CONEXIONES Y/O LAMINADO		CONT. LAMINADO			
CODIGO	HERRAMIENTA	Modelo	Car	Bordo	Botóns	Operador	Prod
P1304C-00	PLAVILLA PESTIÑÓN	CRISTAL PESTIÑA	NEGLORS	8			
P1304C-00	PLAVILLA PESTIÑÓN	CRISTAL PROTECTOR PANTANA	NEGLORS	3			
T1304C-00	TECERIBÓN	PULCRIMANO (PE)	NEGLORS	1,22			
00184C-01	FLAVO	CRISTAL SNI	OPAL	6			
M0184C-01	MELOE	PULCRIMANO (PS)	NEGLORS	6,01			
U0184C-00	DISPOSITIVO DE VERIFICACION	CRISTAL SNI	OPAL	6			
		PULCRIMANO (PE)	NEGLORS	1,22			
		PULCRIMANO (PS)	NEGLORS	1,22			
		PULCRIMANO ANTIBAYAS (PCHC)	NEGLORS	3			
		CRISTAL TAPA	NEGLORS	6			

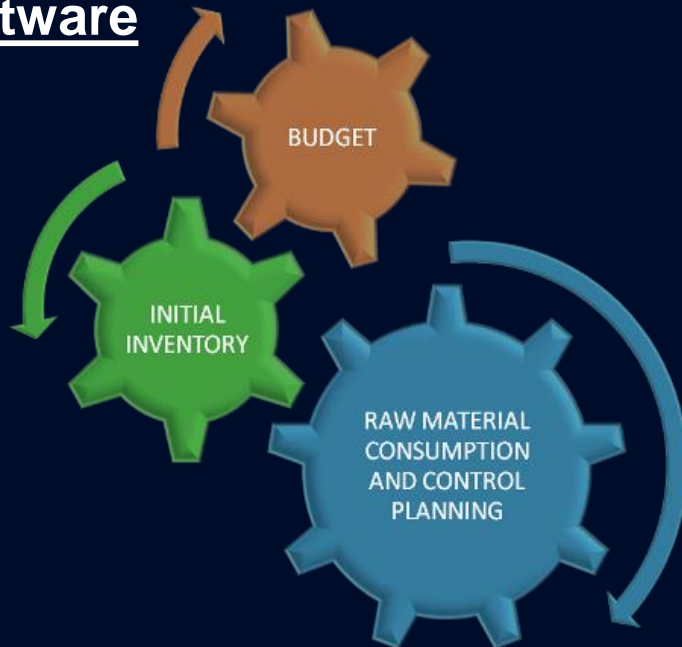
10759



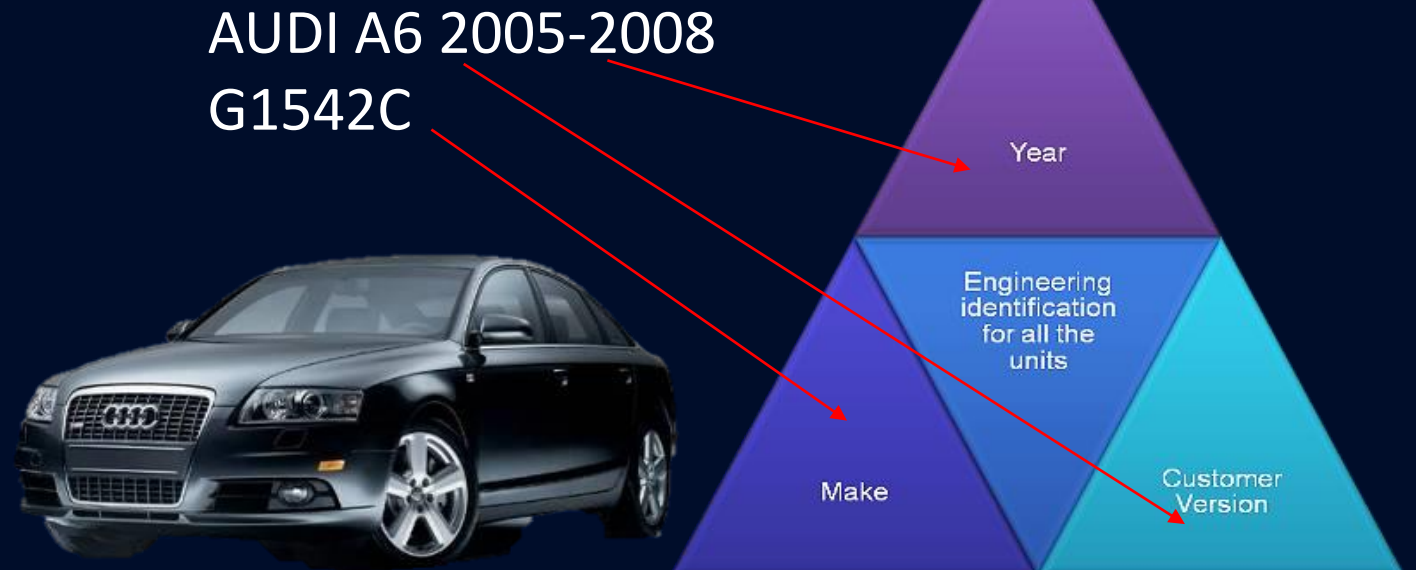
# Process Control Software - Reject Glass



## Raw Materials Control Software



## Glass Designs





# Research And Development



Long Life - Plastics Adherence



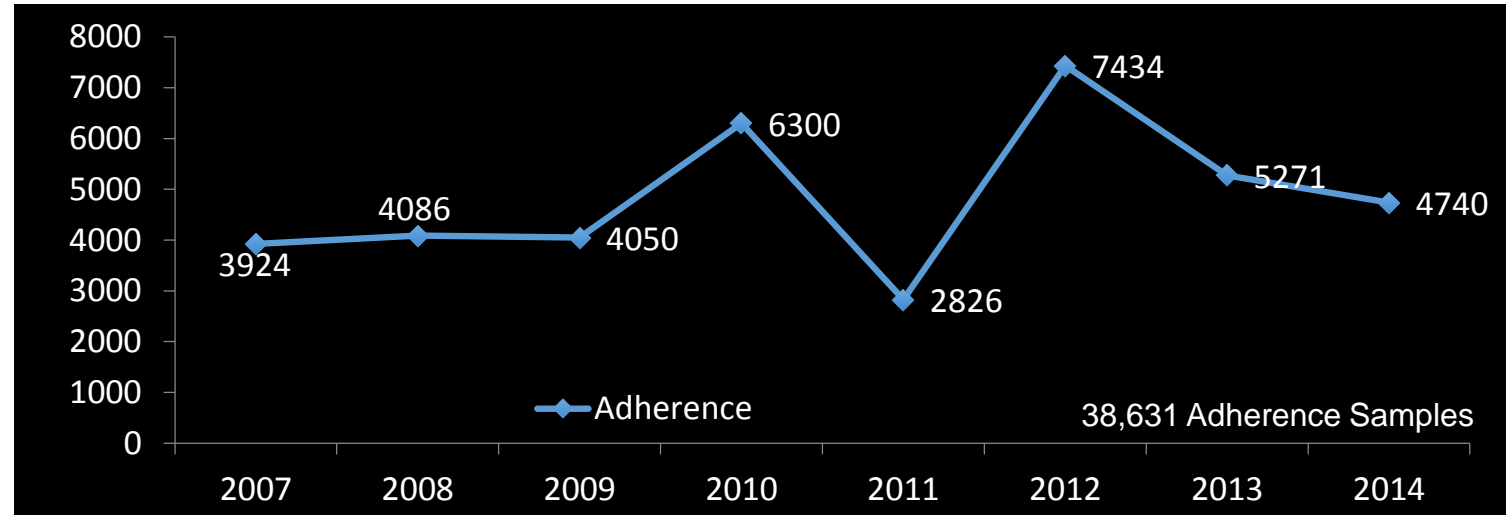
New Materials



Environmental Conditions Effects



**Statistical process control (SPC)** is a method of quality control which uses statistical methods. SPC is applied in order to monitor and control which ballistic construction could have delamination problems in the future. Monitoring and controlling the process ensures that it operates at its full potential. The glass process can make as much conforming product as possible with a minimum of quality claims

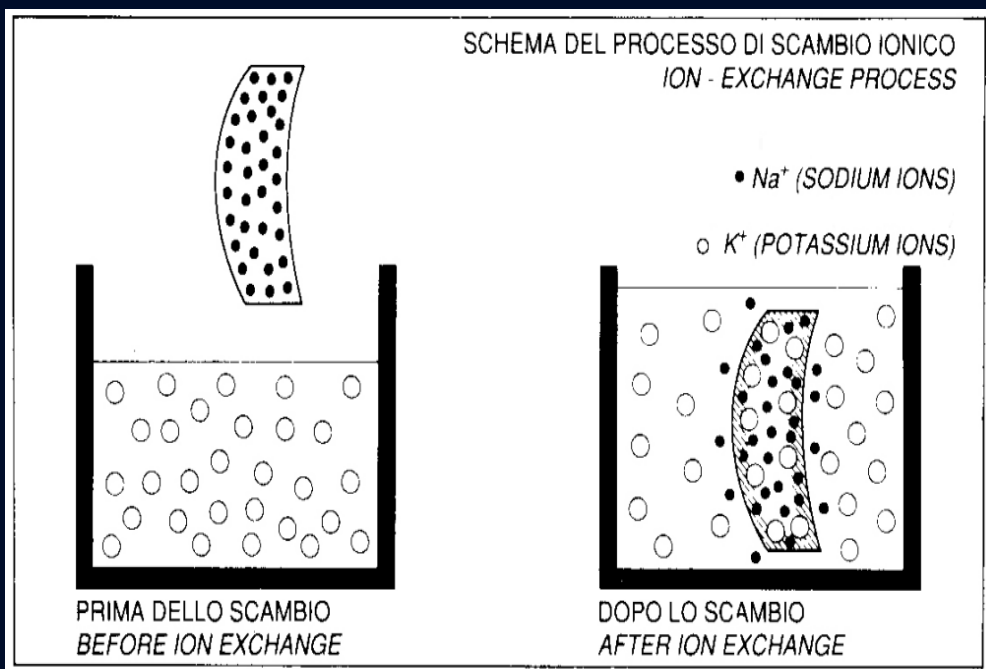


Identification	Peel Adherence Newton's / mmm	Product Durability	Quality interpretation
	> 7	> 3 years	Approved Material
	4,6 >> 6,9	3 years	Approved Material
	< 4,5	< 3 years	Reject Material



# Products and Technology – Chemical Tempering

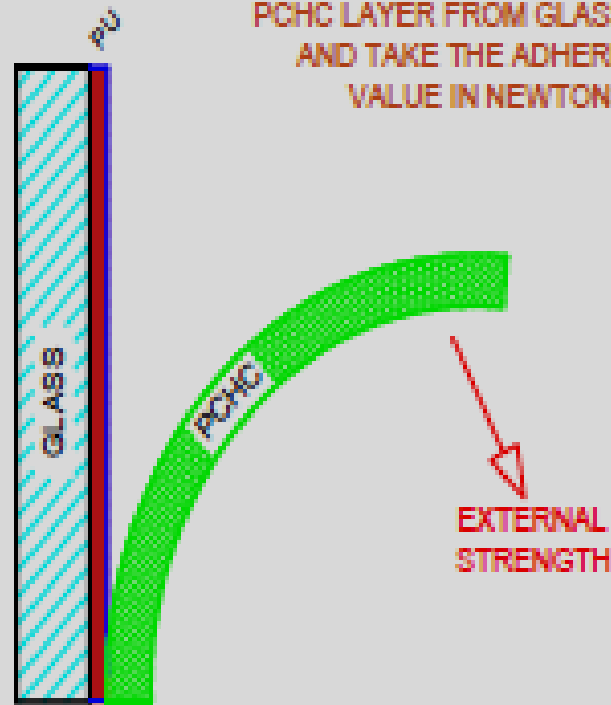
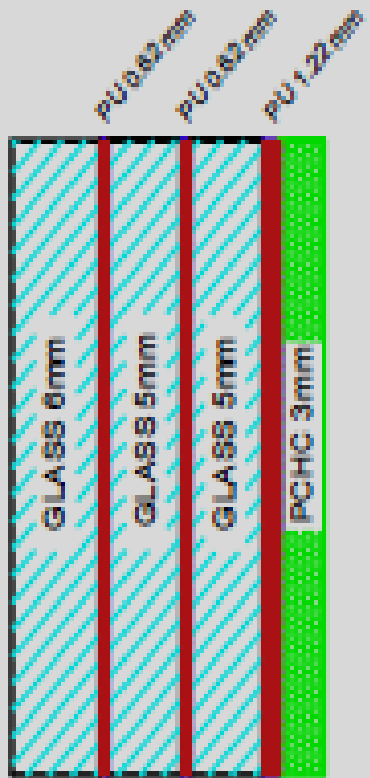
Chemical tempering is a surface treatment made at a temperature under vitreous transition. Glasses are dipped into a bath with melted potassium salt at a temperature superior to 380°C for a period of 16 hours. Under these conditions, an exchange takes place between the potassium ions in the salt and the sodium ions at the surface of the glass. The introduction of potassium ions larger than the sodium ones, involves as a consequence, the establishment of residual stress characterized by a compressed tension on the surface compensated by stress tension inside the glass.





# Research And Development – Peel Test

BULLET RESISTANT  
GLASS BR4 LEVEL  
COMPOSITION



USING AN UNIVERSAL TESTING MACHINE, WE SEPARATE THE PCMC LAYER FROM GLASS LAYER AND TAKE THE ADHERENCE VALUE IN NEWTONS.

TESTING THE ADHERENCE

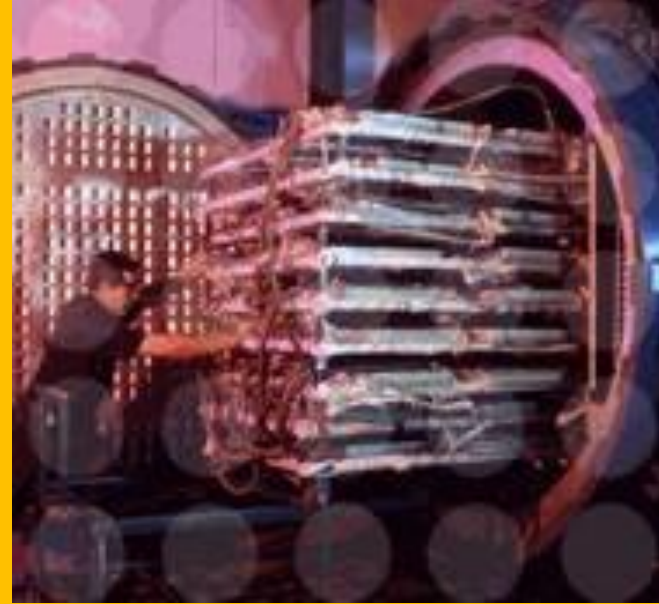


FINAL OUTCOME



# OPA Bullet Resistant Glass

- **OPA Bullet Resistant Glass, manufactures its own ballistic glass, reproducing the original Vehicle Features .**
- **OPA Bullet Resistant Glass exceeds the highest ballistics standards of the market.**
- **We use translucent and high tech polymers, with an excellent optical properties**
- **Only the best raw material available in the market is used in our glasses**



## BRG BALLISTIC PROTECTION CHART & PROFILES

MULTIHIT (mm)	13	16	21	34	42	75
LIGHT WEIGHT (mm)	13	13	18	27	35	68
CEN (EN 1063)	BR2	BR3	BR4	BR5	BR6	BR7
NIJ	IIA	II	IIIA		III	IV
CALIBER	.357 Magnum	9mm	.44 Magnum	5.56x45 SS109	7.62x51	7.62x51
		.357 Magnum		7.62x39 MSC		30-06 M2AP
TYPE	FJ1/RN/SC	FJ1/CB/SC	FJ2/FN/SC	MSC/JSP/FMJ	FMJ	AP

### BALLISTIC AND QUALITY CERTIFICATIONS

Products and Processes are certified by international accredited bodies. Every batch meets standards for delamination and Ballistic performance.



NATIONAL  
HIGHWAY  
TRAFFIC SAFETY  
ADMINISTRATION



SGS ISO  
9001:2008  
ANSI SAE Z:26



DAYTON  
UNIVERSITY



BESCHUSSAMT  
MELLRICHSTADT

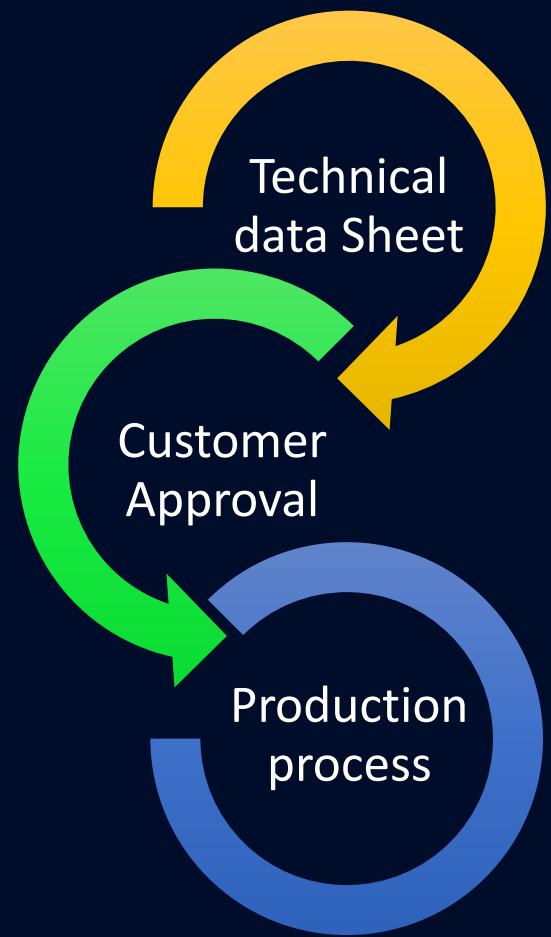


# Available Ballistic Constructions

Laboratory	Country	Ballistic level	thickness (mm)	Type of gun	Ammunition	Impacts required	Samples by test
DAYTON UNIVERSITY	USA	NIJ IIA	14	Pistol	9mm / .357 Magnum	5	2
DAYTON UNIVERSITY	USA	BR2	18	Pistol	9mm	3	3
DAYTON UNIVERSITY	USA	NIJ IIIA	19	Pistol	.44 Magnum	5	2
DAYTON UNIVERSITY / BESCHUSSAMT MELLRICHSTADT	USA	BR4	22	Pistol	.44 Magnum	3	3
DAYTON UNIVERSITY	USA	BR4	21	Pistol	.44 Magnum steel Offset	3	3
DAYTON UNIVERSITY	USA	BR4+	33	Rifle	7, 62 X 39mm	3	3
BESCHUSSAMT MELLRICHSTADT	GERMANY	BR 6	39	Rifle	7, 62 X 51mm	3	3
DAYTON UNIVERSITY	USA	BR 6	42	Rifle	7, 62 X 51mm	3	3
DAYTON UNIVERSITY	USA	M193	42	Rifle	5, 56 X 45mm	3	3
DAYTON UNIVERSITY	USA	STANAG II	60	Rifle	7, 62 X 39mm	3	8
DAYTON UNIVERSITY	USA	NIJ IV	70	Rifle	7, 62 X 51mm AP	1	2

# Technical Data Sheet

		PLANTA DE VIDRIOS ESPECIFICACIONES DE PRODUCTO VIDRIO DELANTERO			Form.01.PR.DI-02 Versión:2 Página:1	
FECHA	02-Feb-10	ELABORÓ	MIGUEL NORIEGA	REVISÓ	FABIAN VEGA	
MARCA	FORD	LINEA	EXPLORER	MOD.	2006-2010	CÓDIGO G1577C
TIPO DE CONSTRUCCIÓN		SERIGRAFÍA			CURVATURA	
EMPACHADO <input type="checkbox"/>		CON PESTAÑA <input checked="" type="checkbox"/>		SCREEN <input checked="" type="checkbox"/>	ENCINTAD. <input type="checkbox"/>	PLANO <input type="checkbox"/> MOLDE <input checked="" type="checkbox"/>
ÁREA PROCESADA: 1,37 m²		ÁREA INSTALADA: 1,14 m²				
PLANO DEFINITIVO DG1577C-01 VERSIÓN: A						
<b>VIDRIO DISEÑADO PARA LOS SIGUIENTES NIVELES BALÍSTICOS</b> NIJ 8A (10mm) <input checked="" type="checkbox"/> BR2 (10mm) <input checked="" type="checkbox"/> BR4 (23mm) <input checked="" type="checkbox"/> BR4+ (23mm) <input checked="" type="checkbox"/> BR5 (26mm) EXT GLASS 9mm <input type="checkbox"/> BR5 (26mm) EXT GLASS 9mm <input type="checkbox"/> BR6 (42mm) <input checked="" type="checkbox"/>						
<b>AUMENTO BANDA NEGRA</b> B.N LATERAL = B.N.O + 30    B.N SUPERIOR = B.N.O + 40    B.N INFERIOR = B.N.O. + 30						
<b>CHAFLANES</b> CHAFLÁN LATERAL 0°    CHAFLÁN SUPERIOR 0°    CHAFLÁN INFERIOR 0°						
<b>TOLERANCIAS PARA OFFSET</b> OFFSET LATERAL +2mm    OFFSET SUPERIOR +2mm    OFFSET INFERIOR +2mm						
<b>CURVATURA / MOLDES</b> LEVANTAMEN ESQUINAS SUPERIORES: 0mm    LEVANTAMIENTO ESQUINAS INFERIORES: 0mm GAP CENTRAL: N/D    GAP LATERAL: N/D    ANGULO INSTALACION: 40°						
<b>SERIGRAFÍA</b> ANTENA <input type="checkbox"/> SI <input checked="" type="checkbox"/> NO    RED DESEMPAÑ. <input type="checkbox"/> SI <input checked="" type="checkbox"/> NO    VIN <input checked="" type="checkbox"/> SI <input type="checkbox"/> NO    SENSOR LLUVIA <input type="checkbox"/> SI <input checked="" type="checkbox"/> NO <input checked="" type="checkbox"/> POSICIÓN DEL LOGO INT. IZQ. INF. (CONDUCTOR) <input checked="" type="checkbox"/> INT. DER. INF. (COPILOTO) <input type="checkbox"/> RED DESEMPAÑANTE / ANTENA IMPRESA EN: <input type="checkbox"/> EL PAQUETE <input type="checkbox"/> LA PESTAÑA						
<b>ACABADO</b> PESTAÑA <input type="checkbox"/> BRILLANTE <input checked="" type="checkbox"/> MATE    PAQUETE <input checked="" type="checkbox"/> CINTA LOMO <input type="checkbox"/> NO CINTA LOMO <input type="checkbox"/> <input checked="" type="checkbox"/> BRILLANTE <input type="checkbox"/> MATE						



Certified & tested



Extended warranties





# Customer Information

DEPARTAMENTO DE LOGISTICA Y EXPORTACIONES CENTIGON COLOMBIA

05/02/2013

ESTADO GENERAL ORDENES DE COMPRA

CE	DIA	MES	AÑO	ST	BORES	CUSTOMER	DESTINAT	CEWORKS VA	MAKE	MODEL	TEL	PCORNO	01	02	03	04	05	06	07	08	09	10	DELIVERY D	PLANT	
3245	17	1	2013	4458	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	JEEP	GRAND CHEROKEE	2012	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3246	17	1	2013	4459	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	JEEP	GRAND CHEROKEE	2012	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3239	22	1	2013	4448	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	TOYOTA	SEQUOIA	2010	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3260	22	1	2013	4473	1	CENTIGON VENEZUELA	Venezuela	\$1.000,00	TOYOTA	HILUX	2011	2001	01										01	2	2013
3261	22	1	2013	4449	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	JEEP	GRAND CHEROKEE	2012	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3262	22	1	2013	4470	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	JEEP	GRAND CHEROKEE	2012	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3263	22	1	2013	4471	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	JEEP	GRAND CHEROKEE	2012	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3264	22	1	2013	4472	2	CENTIGON VENEZUELA	Venezuela	\$4.000,00	JEEP	GRAND CHEROKEE	2012	2001	01	01	01	01	01	01	01	01	01	01	01	2	2013
3267	30	1	2013	4477	1	CENTIGON VENEZUELA	Venezuela	\$100,00	TOYOTA	CAMRY	2009	2001	01										01	2	2013
3281	30	1	2013	4701	1	CENTIGON VENEZUELA	Venezuela	\$4.200,00	MERCEDES	BENZ E350W	2004	2001	01										01	2	2013
3282	30	1	2013	4490	1	CENTIGON VENEZUELA	Venezuela	\$0,00	JEEP	GRAND CHEROKEE	2012	2001											01	2	2013

Initial Date

Commitment Date

## RELIABILITY

Centigon takes pride in the promise of superior protection and delivery of your armor package. This promise ensures:

**ON TIME DELIVERY** – WE know your business depends on it

**SHORT LEAD TIMES** – Adaptable systems for order processing and delivery

**FLEET** - deployable order processing – Additional processes and controls added to provide fleet order support

ORDER RECE	ORDER PRODUCT	ORDER REAL SHIP	ORDER SHIP	REAL SHIP DATE	INVOICE	DATE	EXPORTAC	AVD NUM	CONTROL EMBARQUE
				31/01/2013	22148	23/01/2013	1726	530-30464744	PROG
				31/01/2013	221489	23/01/2013	1726	530-30464744	PROG
				04/02/2013	22177	01/02/2013	1733	530-30293200	PROG
									X PROG
				04/02/2013	22179	01/02/2013	1733	530-30293200	PROG
				04/02/2013	22180	01/02/2013	1733	530-30293200	PROG
				04/02/2013	22181	01/02/2013	1733	530-30293200	PROG
				04/02/2013	22182	01/02/2013	1733	530-30293200	PROG
				04/02/2013	22193	01/02/2013	1733	530-30293200	PROG
									X PROG
									X PROG

Real Date

Always on time.....



# Special Projects (Maybach – Bentley - Mercedes)





Affiliated with WCA and ecommerce with 6,476 members in 190 countries, 787 cities and ports worldwide

We notify our clients of current competitive freight rates, priority and scheduled services, as well as full assistance on logistics

**Cost effective solutions for all types of cargo**

- General Cargo
- DGR / Radio Active
- Military Cargo
- Armored Vehicles
- Out sized Cargo
- Project cargo
- Trans shipment Cargo
- Perishables
- Emergency relief
- Consolidation



## Logistic Services

- ✓ Documentation and customs clearance
- ✓ In-house QA and QC
- ✓ 3 PL services
- ✓ Door-to-door delivery services
- ✓ Temperature controlled storage
- ✓ Paperless Logistic support via web-based technology
- ✓ Expert in project handling / Out of gauge cargo handling
- ✓ Barcoding / Track by serial number, lot number and/or expiration date
- ✓ Multi country consolidation cargo handling
- ✓ 24/7 dedicated operations experts
- ✓ Transit facilities

