



ALTUGLAS[®] SHIELDUP INTRODUCTION

Jean-Marc.BOUTILLIER@arkema.com

ALTUGLAS
INTERNATIONAL
ARKEMA GROUP



ALTUGLAS® SHIELDUP : key properties

50% lighter than Glass

More transparent than glass and polycarbonate

Naturally resistant to UV

Very high impact resistant

High scratch resistant and « polishable »

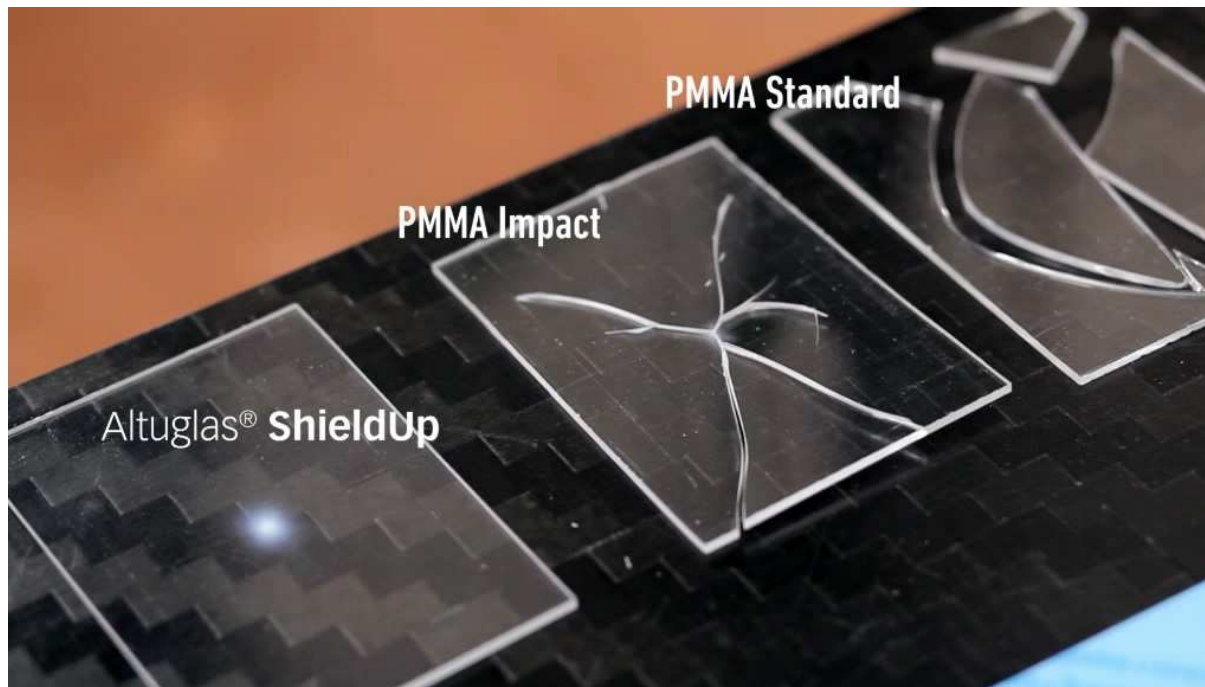
Exceptional chemical resistance

Fragrance diffusing

Suitable with many coatings

ALTUGLAS® SHIELDUP : very high impact resistance

Falling weight impact test performed under the same conditions

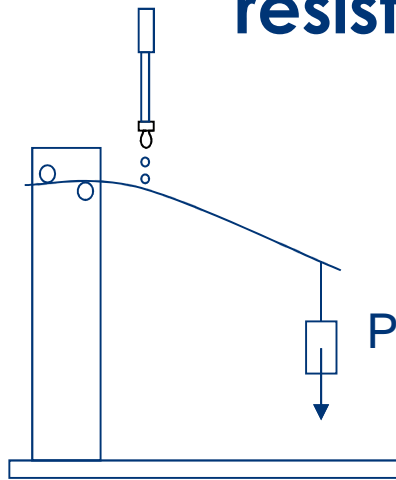


Example 2 (Example 2.MOV)

Compatible with Automotive Glazing regulation (ECE R43)

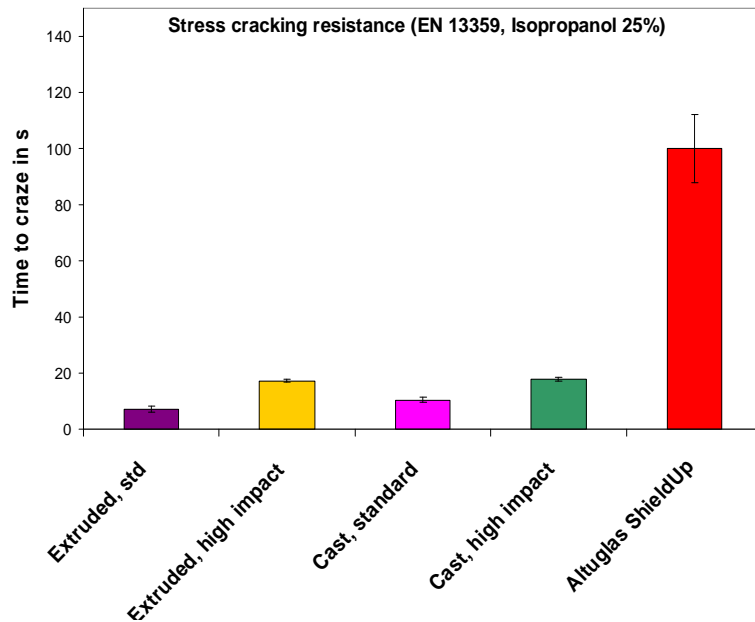
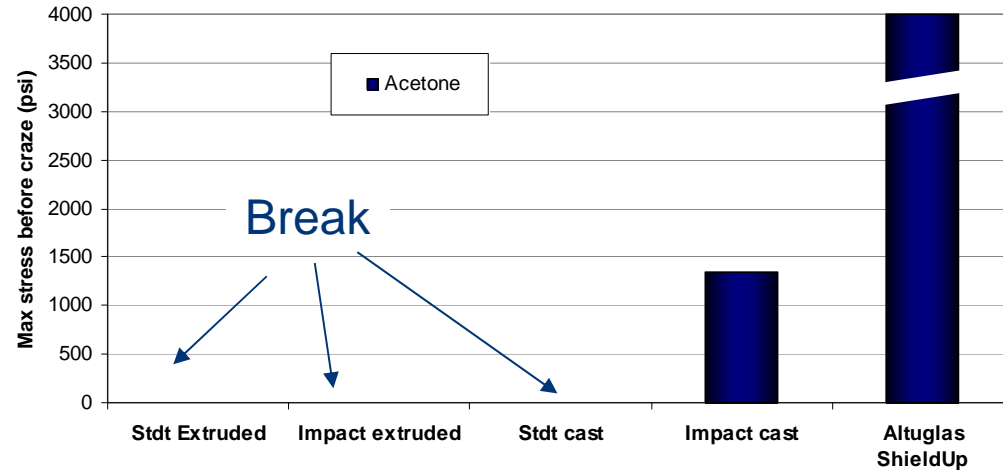


Altuglas® ShieldUp : an unmet chemical resistance



ECE R43, MILSPEC

No craze

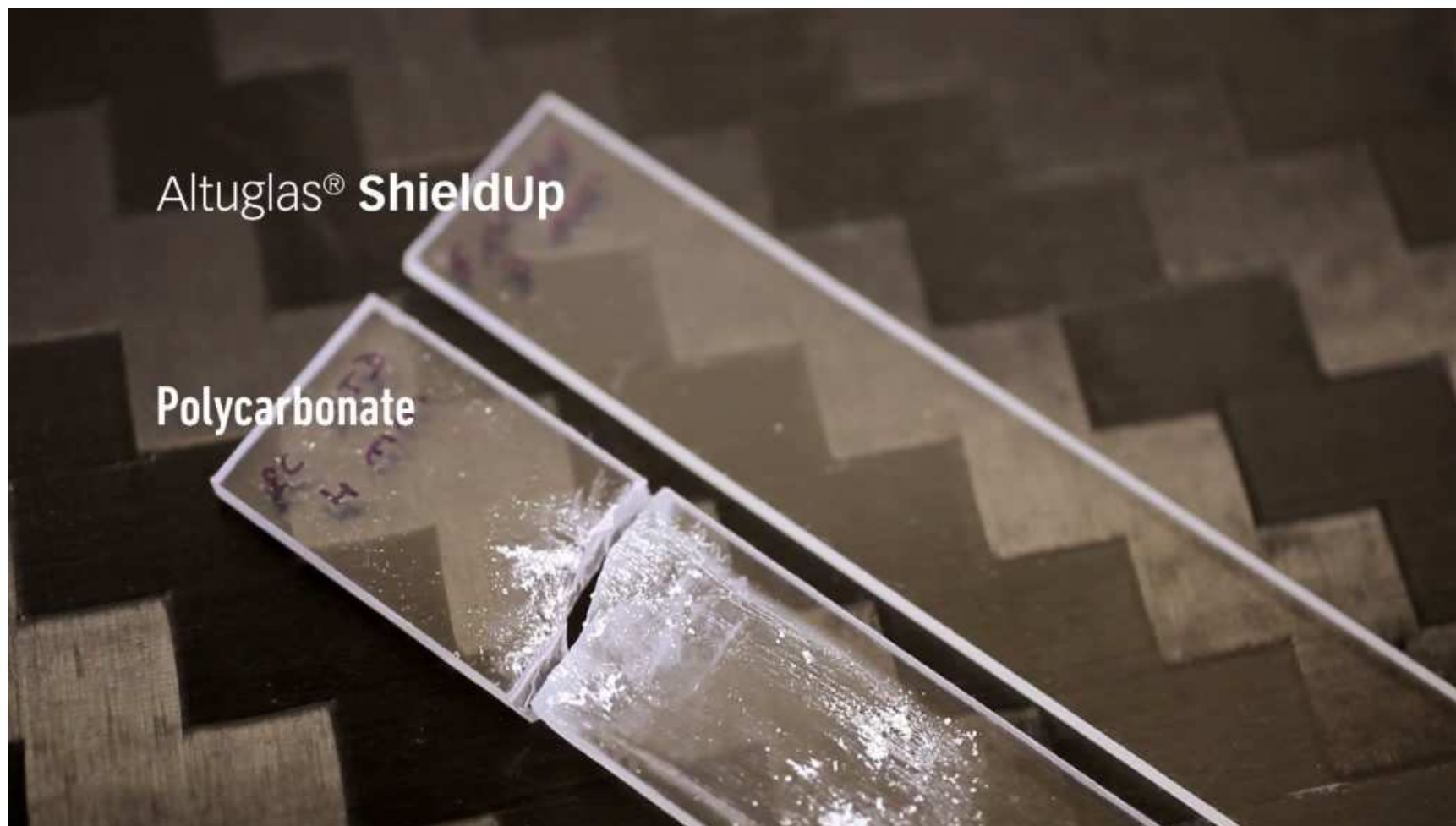


Chemical Test of ECE R43 (Automotive Glazing)

	Altuglas ShieldUp	Standard cast PMMA	Extruded PC
Gazoline	OK	OK	Scratches + whitening
Glazing washing solution	OK	OK	Scratches + whitening
Antifreeze solution (glycol)	OK	OK	Scratches + whitening
Acetone	OK	Crazes	Crack + whitening
Isopropanol	OK	OK	Scratches + whitening

Altuglas® ShieldUp : an unmet chemical resistance

Resistance to acetone :



Properties summary of Altuglas® ShieldUp

	Measurement method	Unit	Value
General characteristics			
Density	ISO 1183	g/cm ³	1,17
Water absorption	ISO 62	%	0,36
Mold shrinkage	145°C - 1h	%	2,5
Mechanical properties			
Flexural modulus	ISO 178	MPa	2300
Charpy unnotched	ISO 179/2eU	kJ/m ²	50
Charpy notched	ISO 179/1eA	kJ/m ²	2,8
Rockwell hardness	ASTM D 785		M86
Thermal properties			
Vicat (50N)	ISO 306	°C	106
Coefficient of expansion	ASTM D 696	µm/m/°C	70
Thermal conductivity	DIN 52 612	W/mK	0,20
Thermoforming temperature		°C	130 - 160
Optical properties			
Refractive index	D 652		1,492
Light transmittance (3 mm)	ASTM D 1003	%	> 92
Haze (20 °C) (sheet e = 3mm)	ASTM D 1003	%	< 1
Haze (80 °C) (sheet c = 3mm)	ASTM D 1003	%	< 2
Chemical properties			
Chemical resistance (Isopropanol 25%)	EN 13359	Second	> 100
Chemical resistance (Acetone)			Limited attack

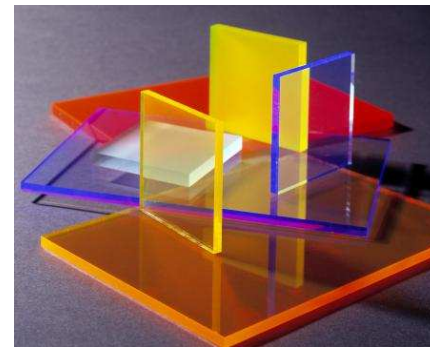


ClipShield_Master_3.mp4



ALTUGLAS® SHIELDUP OFFER

- Clear or colored versions**
- High gloss or matt surface finish**
- Available in any quantity**
- Thickness : from 2 to 12 mm**
- Size : up to 2.03 x 3.05 m**



Typical applications with Altuglas® ShieldUp

