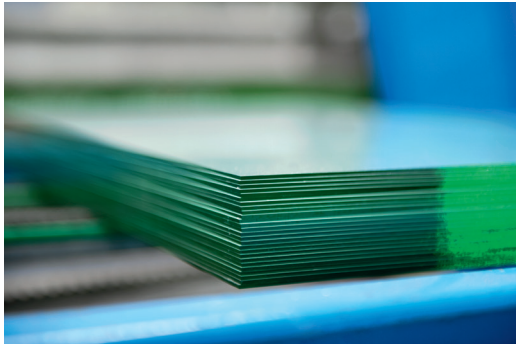


# Thin and ultra-thin glass



# for an extended range of applications



AGC Glass Europe's thin and ultra-thin glass is available in a wide range of compositions, thicknesses and dimensions for an extended range of applications. Furthermore, surface treatments can be applied in-house to the glass to give it special properties such as anti-glare or anti-warping. Last but not least, AGC offers a large selection of processing options that can be done in its own facilities. The glass you select will perfectly match your needs.

## High quality float glass down to 0.5 mm

What's so special about it? | What does this mean for you?

- |   |  |
|---|--|
| <b>Lightweight</b>  | – Opens up a wide range of design possibilities for various applications                                     |
|   | – Reduces CO <sub>2</sub> emissions in the automotive industry   |
| <b>Perfect flatness</b>   | – Offers excellent optical properties thanks to AGC's industrial float process with rigorous quality control |
| <b>Wide range of compositions</b>                               | – Available in clear and extra-clear soda-lime and alumino-silicate glass                                    |
| <b>Industrial process</b>                                       | – Very cost-effective option thanks to industrial production   |
| <b>Good surface quality</b>                                     | – The glass surface is scratch-resistant, meeting high quality standards                                     |
| <b>Large choice of surface treatment and processing options</b> | – Allows to adapt the product to each customer's specific needs (more info on page 2)                        |

What can you use it for | ... be inspired

- |                                    |   |
|------------------------------------|---|
| <b>Displays</b>                    | – PCs, laptops, tablets, e-readers, smartphones   |
|                                    | – Digital signage, interactive flat panel displays  |
|                                    | – Anti-glare screens and protective screens   |
| <b>Automotive</b>                  | – Trains, aerospace, automotive interiors and exteriors                                     |
|                                    | – Lightweight laminated windshields   |
|                                    | – Rear-view mirrors, electrochromic mirrors   |
| <b>Buildings</b>                   | – Lightweight assemblies, creative designs, etc.  |
| <b>Cosmetics</b>                   | – Cosmetic mirrors  |
| <b>Medical</b>                     | – Microslides for microscopy and other medical uses   |
| <b>Substrate for solar mirrors</b> | – Special mirrors for solar energy projects   |
| <b>Picture framing</b>             | – Protective glass for framing photographs, posters, adverts, maps, documents, awards, etc. |



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www.stemmerich.com | 314-832-7726 | sales@stemmerich.com

## Performances

Properties	Substrate	Parameters	1.6 mm	0.5 mm
Optical properties	Clear soda-lime	LT (D65,2°)	90.7	91.5
		ET (ISO 9050)	89.2	91
		Refractive index (visible)	1.52+/-0.005	
		Photoelastic constant	26.9 nm/cm/MPa	
	Extra-clear soda-lime	LT (D65,2°)	91.7	91.8
		ET (ISO 9050)	91.3	91.8
		Refractive index (visible)	1.52+/-0.005	
		Photoelastic constant	26.9 nm/cm/MPa	
	Alumino-silicate	LT (D65,2°)	91.6	92.1
		ET (ISO 9050)	91.5	92.1
		Refractive index (visible)	1.515+/-0.005	
		Photoelastic constant	27.2 nm/cm/MPa	
Mechanical properties	Soda-lime and alumino-silicate	Density	~2.48 g/cm <sup>3</sup>	
		Young's Modulus	71-73 GPa	
		Poisson's Ratio	0.22	
Chemical strengthening properties	Soda-lime	Depth of Layer	> 20 µm	
		Compressive Stress	> 350 MPa	
	Alumino-silicate	Depth of Layer	> 40 µm	
		Compressive Stress	> 500 MPa	
Thermal properties	Soda-lime	Tg	~555°C	
		Coefficient of thermal expansion	87.10 <sup>-6</sup>	
	Alumino-silicate	Tg	~565°C	
		Coefficient of thermal expansion	90.10 <sup>-6</sup>	
Chemical resistance	Soda-lime	Hydrolytic class	3	
	Alumino-silicate	Hydrolytic class	2	

## Processing options

Safety	Toughening (chemical)
Cutting	Straight or circular
Shaping and edge finishing	Edge grinding, drilling
Special treatments	Anti-warping
	Silkscreen printing
	Bending (thermo-forming and cold-bending)
	Acid etching (single or double)
	Anti-reflective coating
	Wet coating application (anti-fingerprint/hydrophobic coating)
	Safe foil application
	UV gluing

## Availability

Standard thicknesses	Standard tolerance	Typical max sheet size
0.5 mm	+/-0.05 mm	1245*3210 mm
0.7 mm		1350*3210 mm
0.9 mm		1480*3210 mm
1.1 mm	+/- 0.1 mm	1600*3210 mm
1.3 mm		
1.6 mm		

Other thicknesses, dimensions or specific properties (flatness, parallelism, roughness, cutting tolerance, etc.) are possible upon agreement between the customer and AGC.



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### AGC GLASS EUROPE, A LEADER IN FLAT GLASS

AGC Glass Europe is the European branch of AGC, the world's leading flat glass producer. Its baseline, Glass Unlimited, reflects its core assets: innovative strength in advanced glass technologies, a global sales network and an industrial presence stretching from Spain to Russia. AGC Glass Europe has representatives worldwide.



AGC GLASS EUROPE - Avenue Jean Monnet 4, 1348 Louvain-la-Neuve, Belgium - T +32 2 409 30 00 - F +32 2 672 44 62

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