

SUNMAX PREMIUM RANGE

Arsenic- and antimony-free ultra low-iron float glass for solar applications



Glass made for the sun

SunMax Premium is a low-iron float glass specially optimised for solar applications. AGC's industrial float glass process complies with the most stringent production tolerances, ensuring the lowest possible defect density. This is a critical technical advantage for downstream processing such as toughening. The heat strengthened only 2 mm thick float glass has been awarded general approval (DIBT) No. Z-70.4-194 by the German building supervisory authority (DIBt) in Berlin.

Combined with our easy-to-process and **ultra-durable antireflective coating**, SunMax Premium HT is the product of choice for the latest generation of glass-glass photovoltaic modules and large solar thermal collectors. We guarantee that our low-iron float glass is **arsenic- and antimony-free**, consists primarily of natural raw materials, and does not release any harmful substances during disposal. It is the ideal choice for **trouble-free recycling**.

The SunMax range is Cradle to Cradle Certified™ Bronze.



SunMax Premium range

Wide range of applications

- Anti-reflective front glass and low-iron back glass for glass-glass PV modules
- Double-sided anti-reflective cover glass for large solar thermal collectors
- Low-iron substrate for high-end solar mirrors

Our product range at a glance

Brands	Main applications	Main characteristics
SunMax Premium	Substrates for solar mirrors	<ul style="list-style-type: none">• Processed low-iron float glass• Available thickness: 2 mm to 4 mm 1 mm upon request
SunMax Premium T	Back glass for bi-facial glass-glass PV modules	<ul style="list-style-type: none">• Processed extra-clear (low-iron) float glass• Thermally toughened or heat strengthened• Available with predrilled holes for electrical connections• Available thickness: 2 mm to 4 mm
SunMax Premium HT	Anti-reflective front glass for PV modules and solar thermal collectors	<ul style="list-style-type: none">• Processed extra clear (low-iron) float glass• Thermally toughened or heat strengthened• Coated with a single-sided or double-sided ultra-durable anti-reflective coating• Available thickness: 2 mm to 4 mm

In addition to its SunMax Premium range, AGC offers a large range of glass solutions for solar applications. E.g. the low-iron float glass Planibel Clearvision (thickness of ≥ 5 mm) is perfectly suitable for BIPV applications while Planibel Clearlite, clear float glass (2 to 4 mm thickness) is a good choice for back glass for glass-glass PV modules.

Performance

Photometric and solar radiation characteristics*

Light transmission (%)	91.8 % ± 0.5 % at 2 mm thickness	Illuminant D65 at 2° (acc. ± 0.2 %)
	91.7 % ± 0.5 % at 3 mm thickness	Illuminant D65 at 2° (acc. ± 0.2 %)
	91.6 % ± 0.5 % at 4 mm thickness	
Energy transmission TE _{PV}	91.6 % ± 0.5 % at 2 mm thickness	With reference to ISO 9050, table 2 AM 1.5 restricted to wavelength range 300 to 1200 nm
	91.3 % ± 0.5 % at 3 mm thickness	
	91.1 % ± 0.5 % at 4 mm thickness	
Substrate-related comparative Hub TE _{PV ri} (%)	2.5 % ± 0.5 %	Single-sided anti-reflective coating, measured after a purification and tempering process (TE _{PV test} - TE _{PV substrate}) / (TE _{PV substrate})

AGC can help evaluate these values to ensure they comply with other standards and/or with the specific requirements of the final application.

Mechanical Characteristics*

Mechanical strength (MPa)	45	Annealed
	70	Heat strengthened, EN 1863
	120	Thermally toughened, EN 12150
Young's modulus (GPa)	70	EN572
Poisson's ratio	0.2	EN572
Mohs hardness (scratch resistance)	6	
Knoop hardness (indentation)	470	Indenter load 500 g
Density (kg/m ³)	2500	EN 572, at 18°C

Thermal characteristics*

Hemispherical emissivity (corrected)	0.84	Between -18°C and 66°C
Expansion coefficient (10 ⁻⁶ 1 / K)	9	EN 572, between 20 °C and 300°C
Specific heat (J/kg/K)	720	EN572
Thermal conductivity (W/m/K)	1	EN572
Softening point (°C)	722	
Annealing point (°C)	552	
Strain point (°C)	500	

Chemical composition*

Silicon dioxide (SiO ₂ , %)	69 to 74	EN572
Sodium oxide (NaO, %)	12 to 16	EN572
Calcium oxide (CaO, %)	5 to 12	EN572
Magnesium oxide (MgO, %)	0 to 6	EN572
Aluminium oxide (Al ₂ O ₃ , %)	0 to 3	EN572
Trace elements (FeO, etc., %)	<1	

Conformity

The products described comply with the most recent version of DIN EN 572-2 - Glass in building - Basic soda lime silicate glass products - Part 2: Float glass.

The thermally toughened products described comply with the most recent version of DIN EN 12150 - Glass in building - Thermally toughened soda lime silicate safety glass.

The heat strengthened products described comply with the most recent version of DIN EN 1863 - Glass in building – Heat strengthened soda lime silicate glass.

The coated products described comply with the most recent version of DIN EN 1096 - Glass in building - Coated glass.

Heat strengthened 2 mm float glass has been awarded general approval (DIBT) No. Z-70.4-194 by the German building supervisory authority (DIBt) in Berlin.

**The information contained in this datasheet is intended to assist you in designing with AGC materials. It is not intended to and does not create any warranties, express or implied, including any warranty of merchantability or fitness for a particular purpose. The user is responsible for determining the suitability of AGC materials for each applications.*

AGC GLASS EUROPE, A EUROPEAN LEADER IN FLAT GLASS

Based in Louvain-la-Neuve (Belgium), AGC Glass Europe produces, processes and markets flat glass for the construction industry (external glazing and interior decoration), car manufacture and other industrial sectors (transport, solar power and high-tech). It is the European branch of AGC, a world leader in flat glass. It has over 100 sites throughout Europe, from Spain to Russia. AGC Glass Europe has representatives worldwide - More info on www.agc-glass.eu.

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