



Anti-Reflective Glass

1. General Properties of Anti-Reflective Glass:

1.1 Coating Type: Single Side Coating

1.2 Material: SiO₂

1.3 Solar Energy Transmittance: improvement ≥ 2%

1.4 Coating Properties

Pinholes (Permitted Quantity per m ²)	
≤ 0.8 – 1.2 mm	Unlimited, No Clusters
1.2 – 1.6 mm	Middle Part: 3; Edge Part:8
1.6 – 2.5 mm	Middle Part: 2; Edge Part: 5
> 2.5 mm	Not Permitted

1.5 Qualification Tests

Item	Testing Procedure	Applied Standards	Results
UV-exposure	> 2000 h Standard	GBIT1865-1997	Passed
Anti-acid and anti-alkali	> 48 h, No Change	GBIT9755-2001	Passed
Anti-neutral fog	> 48 h, No Change	GBIT9755-2001	Passed
Substrate adhesion	Standard Test	GBIT7748-1999	Passed
Pencil Hardness	> H	GBIT7730-1993	Anti-scratch
Visible Light Transmittance	Improve > 2%	GBIT18915.1-2	PV Modules Power Output Increase

Remarks (pinhole):

- 1) Cluster means in excess of 20 in the area of 100 mm;
- 2) Middle part means the area which is 75 mm from the glass edge, the other means edge part.

2. General Properties of Fully Tempered Glass:

2.1 Solar Energy Transmittance ($\pm 1\%$): $\geq 91\%$				
2.2 Heat Resistance:		Permanent Temperature Resistance up to 250 °C		
Softening Point:		720 °C		
Strain Point:		500 °C		
Annealing Point:		550 °C		
2.3 Elemental Concentrations				
Iron Oxide (Fe ₂ O ₃) content:		$\leq 0.02\%$		
Alkali (Na ₂ O plus K ₂ O):		$\leq 14.5\%$		
Cerium (ppm):		≤ 10 ppm		
2.4 Mechanical Properties				
Compressive Strength:		700 – 900 N/mm ²		
Mechanical Resistance (bending strength):		90 N/mm ²		
Wind-pressure Resistance:		2400 Pa		
Tensile Strength:		42 MPa		
Thermal Expansion Coefficient:		$9.03 \times 10^{-6} / ^\circ\text{C}$		
Minimum Values from the Particle Count:		≥ 40		
(Test Area of 50 x 50 mm, Longest Fragment: 75 mm)				
2.5 Weight:		Glass thickness (mm) X 2.5 kg/m ²		
2.6 Surface Condition (Surface Roughness)				
Surface Finish FRONT SIDE (Matte Side):		0.4 – 1.9 μm		
Surface Finish BACK SIDE (Pattern Side)				
2.7 Dimensional Accuracy				
Thickness:		3.2 \pm 0.2 mm, 4.0 \pm 0.2 mm		
Dimensional Tolerance:		± 2 mm		
Angularity:		2 mm/m (Max. Diagonal Diff. 3 mm)		
Edge Processing:		Polished, Ground or Seamed Edge		
Shells LxWxD:		Maximum Permissible 12x2x1 mm		
Cut Corners:		Maximum 3mm		
2.8 Planarity				
General Bow:		3 mm/m		
Local Bow:		0.5 mm/300 mm		
2.9 Glass Quantity per Sheet				
Bubbles/Core/Inclusions				
	< 1 mm	Unlimited		
	1-2 mm	6		
	2-3 mm	2		
	> 3 mm	0		
Longitudinal Bubbles/Core/Inclusions				
	Length (mm)	4 – 10	10 – 25	> 25
	Width < 1 mm	4	1	0
	Width 1 – 1.5 mm	2	0	0
	Width > 1.5 mm	0	0	0
Scratches				
	Length (mm)	< 5	5 – 10	> 10
	Width < 1 mm	4	2	1
	Width > 1 mm	0	0	0



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