

## *Extra clear low-iron glass*

## *Meeting Your Aesthetics Needs*

### Description

Golden Faith clear low-iron glass is a highly transparent extra clear glass, which has very little residual colour. It has a unique appearance and very specific optical qualities.

Golden Faith clear low-iron glass is a float glass manufactured using the same process as Golden Faith clear low-iron glass. Its very low iron oxide content gives it optimum clarity.

### Applications

Golden Faith clear low-iron glass is designed for numerous applications in which its unique transparent appearance and optical qualities are of particular advantage. It can be used for:

- ◆Museums :for displaying and protecting exhibits with virtually no colour distortion
- ◆Architecture and furniture :for its greater transparency and neutrality than that of Golden Faith clear low-iron glass .

#### ***Main applications***

- ◆Interiors :partitions ,doors, shower screens ,display cases in museums ,screens in banks.
- ◆Furniture :extra-thick glass table tops, shelves and countertops.
- ◆Shop windows and commercial frontages: Structural glass assemblies to emphasize the transparency and lightness of the facade .

#### ***Special applications***

- ◆Golden Faith clear low-iron glass is suitable for all applications where maximum UV transmission is enquired :
- ◆photocopiers, medical equipment etc.
- ◆Golden Faith clear low-iron glass is also used as the base glass for anti-reflective laminated glass.  
It increases the transparency of the anti-reflective glass and improves colour rendering.

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### **Advantages**

Golden Faith clear low-iron glass has the following advantages compared to ordinary clear float glass

- ✦ Excellent transparency: its light transmittance is greater than that of conventional glass, in particular when using extra thick substrates or assemblies
- ✦ High neutrality in transmittance: optimized colour rendering and contrast .The colours of objects remain vivid and natural. This quality is very important in applications such as display cases in museums and jewellers etc .
- ✦ Virtually colourless: when used in thick configurations (for example :Golden Faith laminated glass),the use of extra clear glass results in a virtually colourless product .The green tinge ,inherent of ordinary clear float and more noticeable in greater thickness ,is substantially reduced
- ✦ Brightness and depth :without the green reflection along the edge of the glass , Golden Faith clear low-iron glass produces a particularly bright ,true colour when used  
the manufacture of lacquered or enameled glass (for example: Lacquered glass, silk-screened glass, tempered glass, mirror glass ).This quality is especially evident when white lacquer or enamel is used.

### **Range**

- \* Golden Faith clear low-iron glass is available in a range of thickness , from 3 mm to 19 mm.
- \* Size: 3660/3300/3210\*2250/2134mm
- \* Max size: 3660\*12000mm.

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### **Product Technical Parameters**

1) **Optical Parameters**

<b>Ultra Clear Glass Optical Parameters</b>													
	Visible Light Transmittance	Visible Light Reflectivity	Solar Radiant Heat				Shading Coefficient			U value ( W/m <sup>2</sup> K)	Sound Insulation		UV Penetration
			Direct Penetrate	Reflect	Absorb	Total penetrate	Short wave	Long Wave	Total		Rm(dB)	Rw(dB)	
	%	%	%	%	%	%							%
3mm	92	8	91	8	1	91	1.05	0.01	1.05	5.8	26	30	85
3.2m	91.8	8	91	8	2	91	1.03	0.01	1.05	5.8	26	30	84
4mm	91.6	8	90	8	2	91	1.03	0.01	1.05	5.8	27	30	82
5mm	91.5	8	90	8	2	9	1.03	0.01	1.03	5.8	29	32	81
6mm	91.4	8	89	8	3	9	1.02	0.01	1.03	5.7	29	32	79
8mm	91	8	88	8	4	89	1.01	0.01	1.02	5.7	31	34	76
10mm	91	8	88	8	4	89	1.01	0.02	1.02	5.6	33	36	74
12mm	91	8	87	8	5	88	1	0.02	1.01	5.5	34	37	72
15mm	90	8	86	8	6	87	0.99	0.02	1	5.5	35	38	71
19mm	90	8	84	8	7	86	0.97	0.02	0.99	5.5	37	40	70

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**2) Mechanical Parameters**

Elasticity Modulus	73.1Gpa
Rupture Modulus (Tensile Strength –ultimate)	41.4 Mpa
Knoop hardness	456kgf/mm2

**3) Physical Parameters**

Density	2.5076 g/cm3
Linear Coefficient of Expansion 20-300°C	9.28×10-6/°C
20-450°C	9.75×10-6/°C
Transformation Temperature	556°C
Intenerate Temperature or Yield Point	606°C
Softening Point	710°C
Annealing Point	547°C
Strain Point	513°C
High Temperature Viscosity log 2	1392°C
log 3	1152°C
log 4	996°C
Liquid Phase Temperature	1008°C

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**Chemical Characteristics**

Fe2O3 %	SiO2 %	Na2O %	CaO %	MgO %	Al2O3 %	K2O %	SO2 %	FeO%	Redox
0.0145	73.20	15.10	11.25	0.06	0.15	0.04	0.17	0.0065	0.45

thickness	3.2	4	5	6	8	10	12	15
Bottom Iron %	0.018	0.018	0.020	0.021	0.022	0.023	0.030	0.035
Cps Bottom Tin Absorption	11.8	20.7	27.4	34.0	50.8	62.9	77.8	94.8

**Quality Guarantee****1) Process Guarantee**

The production of ultra clear float glass is authorized by American PPG Industries Inc, PPG provides technical support and remote monitoring and controlling for its whole production process: from raw material formula, producing technology to products inspection. During its production, PPG technical experts provided on-site assistance and RMC service.

**2) Main functions of ultra-clear glass:**

Ultra-clear glass is high grade glass, can be widely used, and to boost products upgrade in each application area.

- \* High grade exterior decoration (separator, door & window, glass curtain, etc): Ultra-clear glass with high light transmittance can make the buildings looks more natural, clear and modern; this fits the modern design style better. Also ultra-clear glass can save more energy than regular glass. Ultra-clear glass has now been widely used in foreign market, e.g., The Germany Leipziger Messe Neues Messegelaende Exhibition Hall is one of the masterpiece made from ultra-clear glass. High grade architectural decoration
- \* Household electrical Appliance: Ultra-clear glass can be used as plasma TV screen, refrigerator door, microwave oven glass, refrigerator cover plate, and kitchen sucking blower glass. Using ultra-clear glass to replace regular glass or compound material of appliance will improve not only the appearance but also the quality of the final products, and this will boost products upgrade. Small appliance

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- \* Showcase: Ultra-clear glass can be used to fabricate showcases for museums, exhibition hall, and jewelry store, etc. It can fully demonstrate the exhibiting items' real quality and color, make the visitor feel they are touching the items on display. Especially jewelry showcases made from ultra-clear glass, it can fully display the jewelry's real quality and inspire customer's aspiration to buy.
- \* Green house, sunlight collecting roof, fish tank, etc.: This can provide the indoor area with adequate sunlight, and beautiful vision enjoyment.
- \* Craftworks, and light decorations: Craftworks and light decorations made from ultra-clear glass is clear as crystal, elegant and grace, leave people with perfect impression.
- \* Solar energy PE module: After its surface is specially treated, ultra-clear glass will has even higher light transmittance ratio, and lower light reflection ratio, so it can be used as a module or system to transform light into electricity or heat, e.g., flat plate solar energy heater.
- \* Glass furniture and bath room series products: Ultra-clear glass is very clear, this make glass furniture and bath room products made from it very modern and distinguished.

