Pilkington TEC Glass Performance Data

Pilkington **TEC Glass™** Product Properties

Product	Thickness (mm)	Visible Transmittance (%)	Sheet Resistance (Ohms/sq.)	Haze (%)	Hemispherical Emmitance
TEC 7	2.2, 3.0, 4.0	80 - 82	6 - 8	5	0.12
TEC 8	2.2, 3.2	80 - 81.5	6 - 9	12	0.12
TEC 15	2.2, 3.0, 3.2, 4.0, 5.0, 6.0	82 - 84.5	12 - 14	≤ 0.74	0.15
TEC 35	3.2, 6.0	82 - 84	32 - 48	≤ 0.65	0.34
TEC 70	3.2, 4.0	82 - 84	58 - 72	0.5	0.45
TEC 250	3.2, 4.0	84 - 85	260 - 325	0.7	0.67
TEC 1000	3.2	88	≤	0.5	0.78
Clear	3.2	90	-	-	0.84

Notes: Nominal values shown. Specifications subject to change.
Substrate = Clear soda lime glass.

Pilkington **TEC Glass™** Refrigerator Door Passive Applications***

Glazing (Room/Cool side)	Airspaces (Number)	U-Value (W/m^2-°C)	Room-Side Glass Temp. (°C)	Condensation RH** (%)	RH Improvement (%)	Heat Flow Through Glass (W/m^2)	Heat Flow Reduction (%)	Power Density (W/m^2)
Clear/Clear	1	2.8	19	62	Base Case	64	Base Case	0
Clear/Clear/Clear	2	2.2	20	67	8	52	19	0
TEC 15/Clear	1	1.9	22	72	16	43	33	0

*Room-side temperature = 27°C, refrigeration temperature = 4°C.

Pilkington **TEC Glass™** Freezer Door Power Applications*

Glazing (Room/Cool side)	Airspaces (Number)	U-Value (W/m^2-°C)	Room-Side Glass Temp. (°C)	Condensation RH** (%)	RH Improvement (%)	Heat Flow Through Glass (W/m^2)	Heat Flow Reduction (%)	Power Density (W/m^2)
Triple Clear***	2	2.1	15	47	Base Case	101	Base Case	0
TEC 70/Clear/Clear	2	2.0	23	77	64	94	7	82
TEC 70/TEC 15	1	1.8	24	81	72	86	14	82
TEC 70/TEC 15/ Clear	2	1.7	25	86	83	82	19	82

*Room-side temperature = 27°C, freezer temperature = -20°C.
**Condensation along the room-side glass surface away from the frame when the relative humidity (RH) within the room is greater than the value noted.
***No power.

Notes:
All glass 3.2mm.
Airspace 12mm for doubles, 6mm for triples.
Airspaces filled with air.
All simulations utilizing LBNL Window 5.2
Demist heater power of 100 Watts (82 W/m2). Input voltage = 120 volts.
Unit 800 mm x 1,700 mm, bus bars along 800 mm dimensions.

Technical Bulletins

ATS 129
Properties

ATS 171
Optics and Window 5 Procedures

Performance Data Notes

1. Some combinations or installations may require heat treating to prevent glass breakage from thermal stress.

2. Visible, Solar and UV data are based on laboratory spectrophotometric measurements weighted by an appropriate weighting function(s) using LBNL Window 5.2 software. Wave length ranges of the sun's energy used to calculate properties: Visible from 0.38 to 0.78 microns, Solar from 0.30 to 2.5 microns and UV from 0.30 to 0.38 microns.

3. Transmittance – Percentage of normally incident visible light or solar energy passing directly through the glazing.

4. Reflectance – Percentage of normally incident visible light or solar energy reflected away from the glazing.

5. U-Factor (Btu/hr.sq ft.°F) – Measure of the heat gain or loss through glazing due to environmental differences between the outdoor and indoor air. U-Factors given are center-of-glass values calculated using LBNL Windows 5.2. Winter U-Factors are based on an outdoor temperature of 0°F (-18°C), an indoor temperature of 70°F (21°C) and a 12.3mph (5.5m/s) wind velocity with no sun. Summer U-Factors are based on an outdoor temperature of 90°F (32°C), an indoor temperature of 75°F (24°C), a solar intensity of 248 Btu/hr.sq ft.°F (783 W/sq m) and a 6.3mph (2.8m/s) wind. To obtain metric U-Factor (W/sq m.°C), multiply by 5.678. "U-Factor" is identical to the previously known term of "U-Value".

6. European U-Factor (W/sq m.K) is based on EN 410/673 (CEN) standard.

7. Solar Heat Gain Coefficient or SHGC – The ratio of the total solar heat gain through the glass relative to the incident solar radiation. The solar heat gain includes both the solar energy directly transmitted through the glass, plus the solar energy absorbed by the glass and subsequently convected and thermally radiated inward.

8. Shading Coefficient or SC – The ratio of solar heat gain through the glass relative to that through 1/8" (3mm) clear glass at normal incidence. Note that Relative Heat Gain or RHG (Btu/hr.sq ft.), which is the amount of heat gained through the glass at assumed summer conditions, can be calculated using the following equation: RHG = SC x 200 + Us x 14. To obtain metric RHG (W/sq m), multiply by 3.154.

9. Use of Pilkington **Energy Advantage™** Low-E, **Eclipse Advantage™** or **Solar-E™** Glass with the coating on the exposed interior surface may increase the possibility of condensation formation during winter conditions.

10. Typical values of Pilkington production are provided.

Design and Uniform Static Loads
ASTM Standard Practice E 1300 contains design load evaluation procedures for different glass thickness and failure probabilities. For a copy of this standard visit www.ASTM.org or write to:

ASTM
100 Bar Harbor Drive
West Conshohocken, PA 19428

For design and comprehensive technical data, please visit the Pilkington Web site:
www.pilkington.com/na