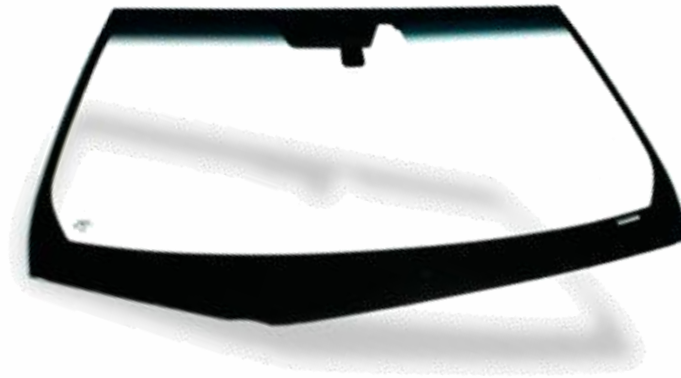
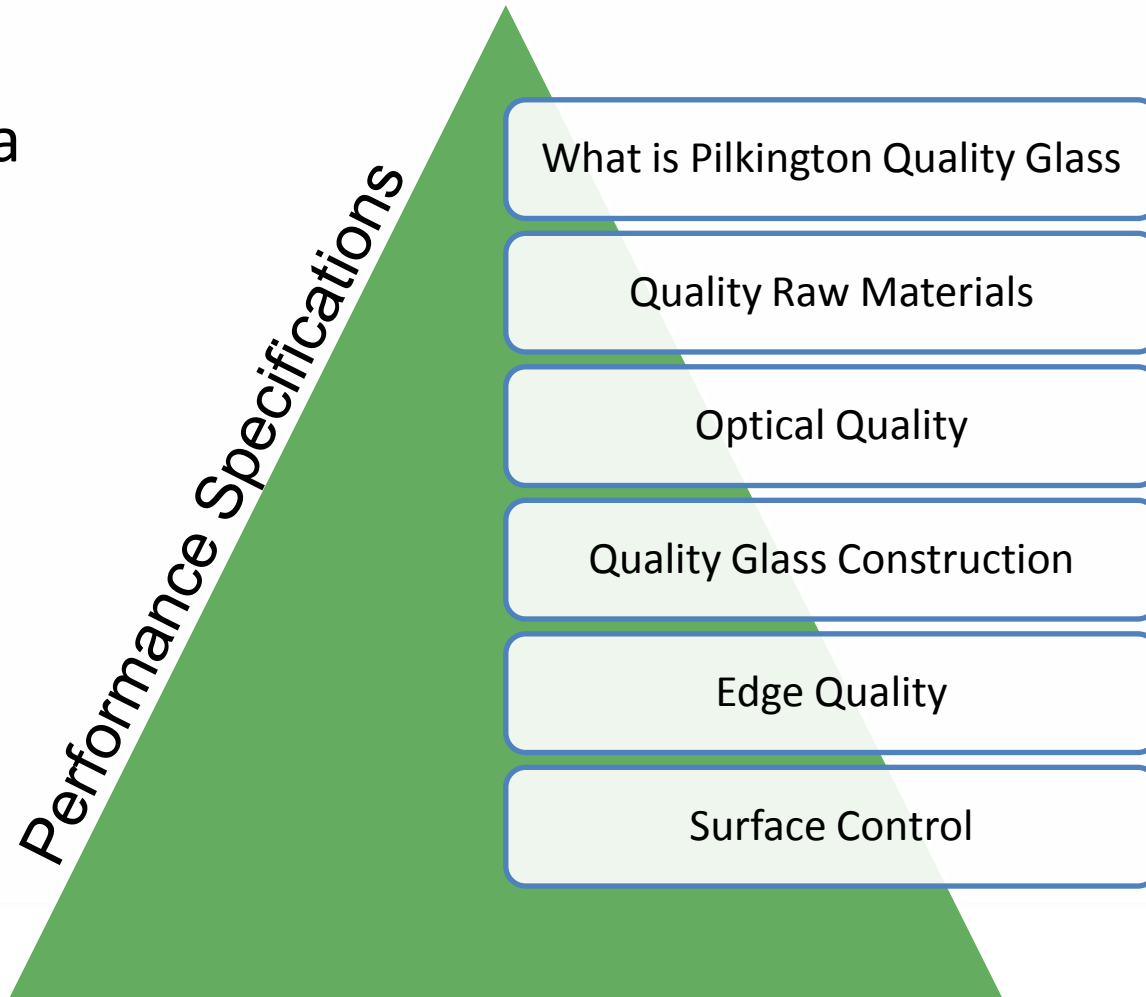


The Pilkington Clear Advantage™



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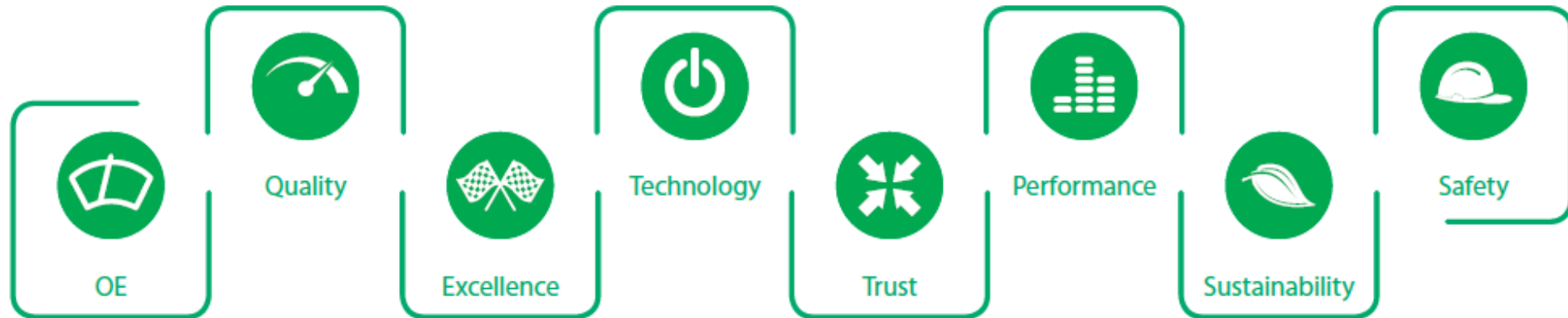
- Agenda



Why Quality?

The Pilkington Clear Advantage™

- How does Pilkington define quality?
 - Quality is these attributes built into our products:



Safety. Sustainability. Performance.

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What Is Glass? – Raw Materials = Quality

- Take high quality sand, soda ash, limestone, salt cake and dolomite and melt at white heat to a highly viscous consistency.
 - Let the mixture digest for a time - and you are well on the way to making one of the world's most important materials.

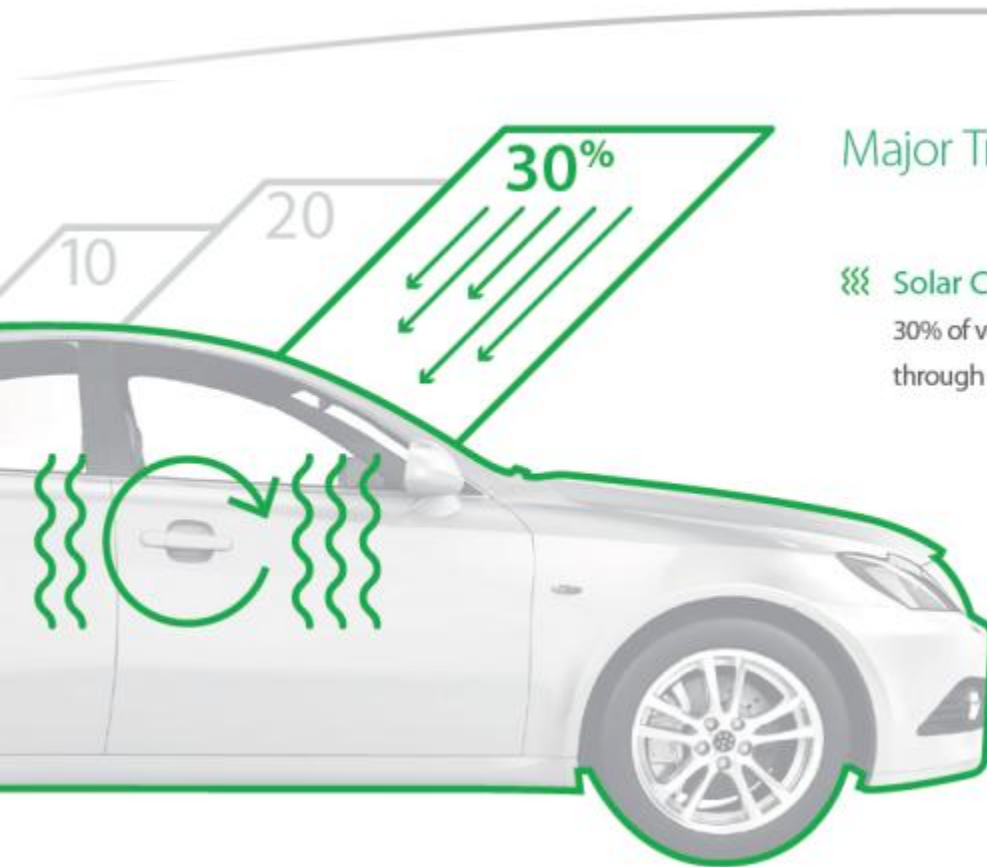
- **Material Glass Composition & Reason for Adding**

— Sand	51%	Base Material
— Soda Ash	16%	Easier melting
— Recycled Glass	15%	Sustainability
— Dolomite	13%	Working & Weathering
— Limestone	4%	Durability
— Other	<1%	<i>Solar Optimization</i>



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Glass Construction in View



Major Trend for 2011–2013

☄ Solar Control

30% of vehicle heat enters cars through the windshield.

✓ Direct Heat Radiation

enters via infrared rays and causes instant heat sensation on the skin.


↻ Re-Radiated Heat

is absorbed through the car's interior and re-radiated throughout the vehicle.

Heat build up in a vehicle can be up to 40 degrees greater without solar optimized glass

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Glass Construction in View

 Clear Advantage	Percent of Infrared light passing into vehicle	Percent of Ultraviolet light passing into vehicle
	20% increase in Infrared	454% increase in Ultraviolet
Pilkington Laminated 4.9mm sidelite EZKOOL™	44.88%	2.64%
Generic 4.9 mm Sidelite	54.01%	14.64%

Do consumers understand the difference?

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Glass Construction in View



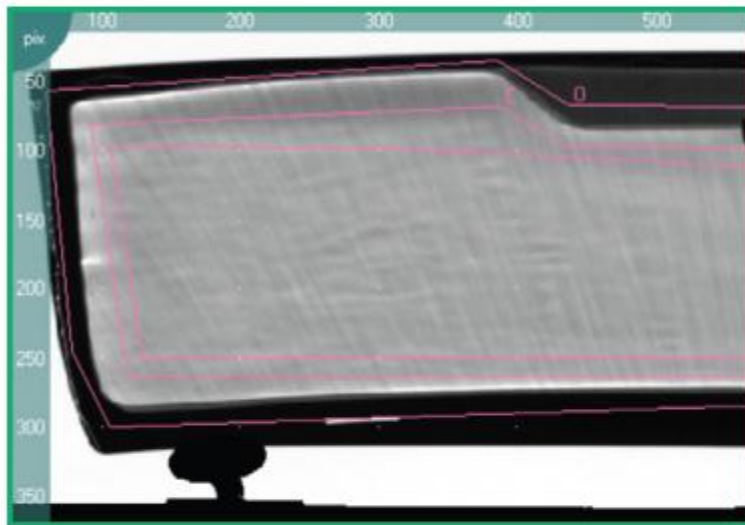
- *The Need For Speed*

How it's Made? – Process = Quality

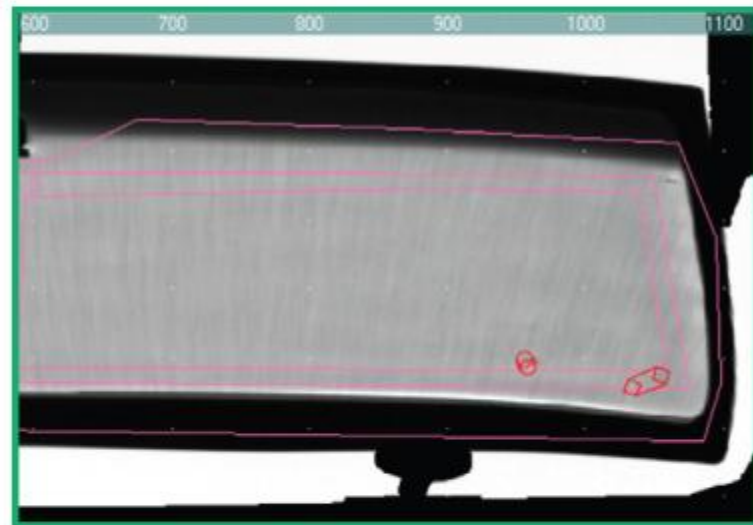
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Glass Construction in View

Flow Rate is a Primary Driver of Optical Distortion



Generic glass construction is clearly inferior and can never match the quality of OE specifications, resulting in visible optical distortions.



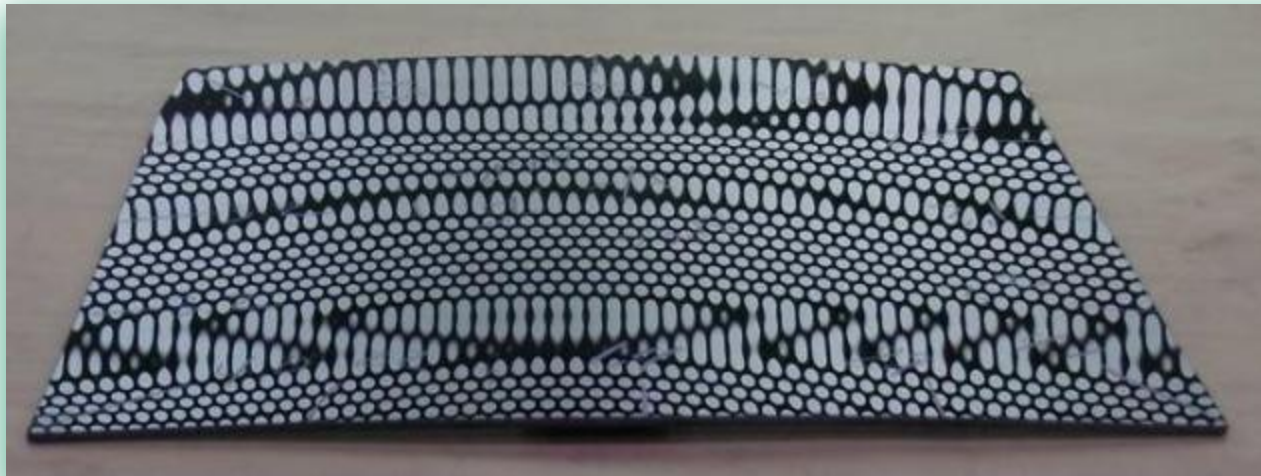
The fabrication process of Pilkington's float glass ensures OE quality every time.

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Glass Construction in View

Flow Rate is a Primary Driver of Optical Distortion

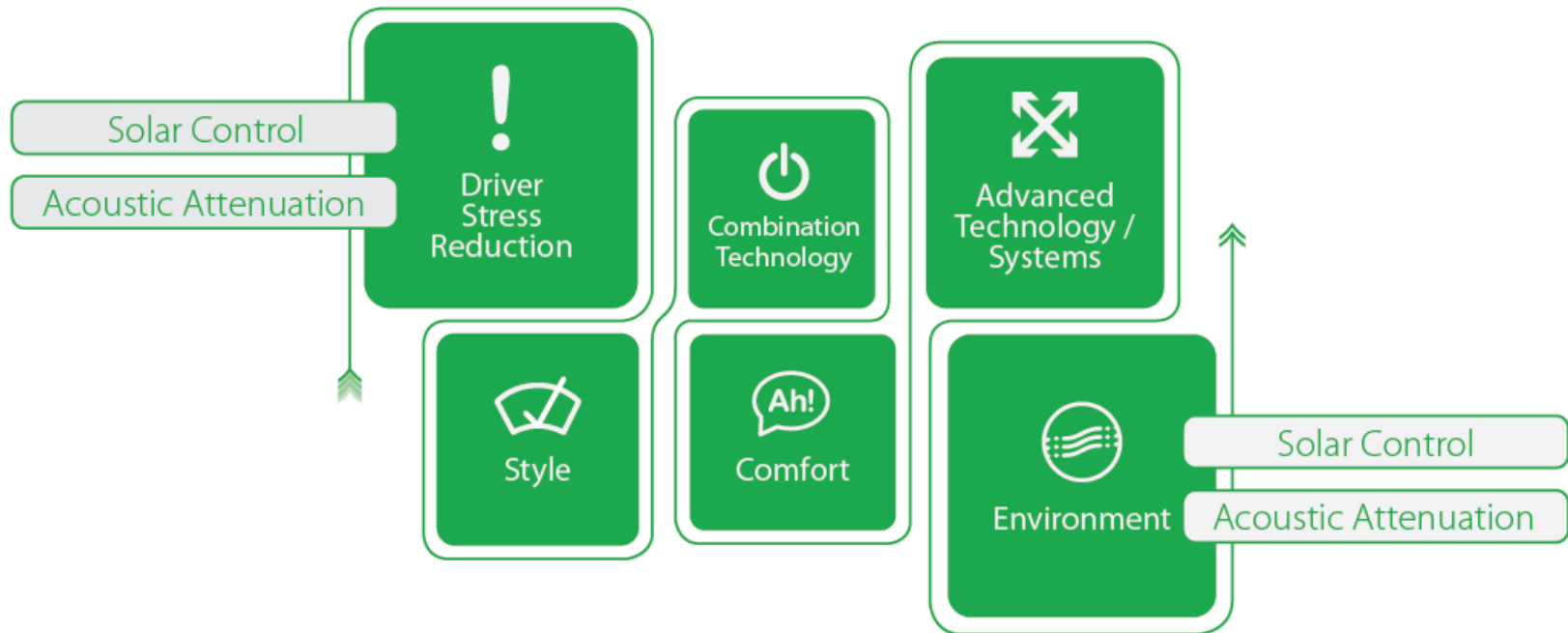
Millidiopters?



Glass Distortion accounts for driver fatigue, eye strain, headaches, and overall optical distortion

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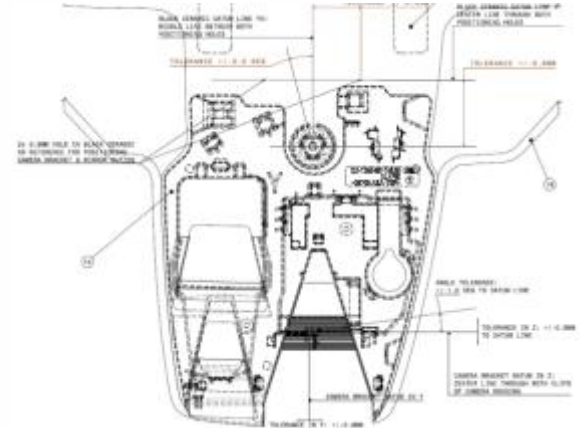
Current Market Trends



Glass is Getting More Complex!

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Quality Construction – Makes Quality Glass



Precise reverse engineering is required to achieve OE tolerances

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Quality Equipment – Makes Quality Glass

Edging? - K1 Edge? - Moldings? - Roof Line Symmetry?

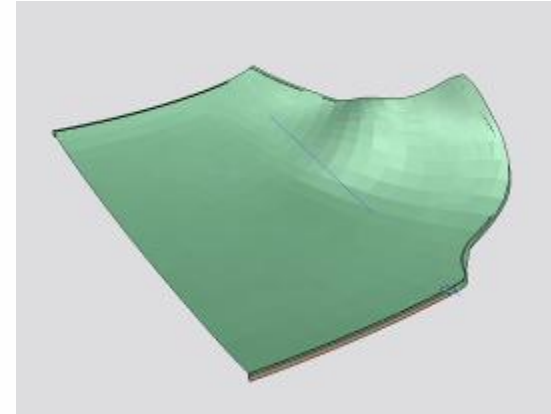


Flush Glazing – Polished Edge

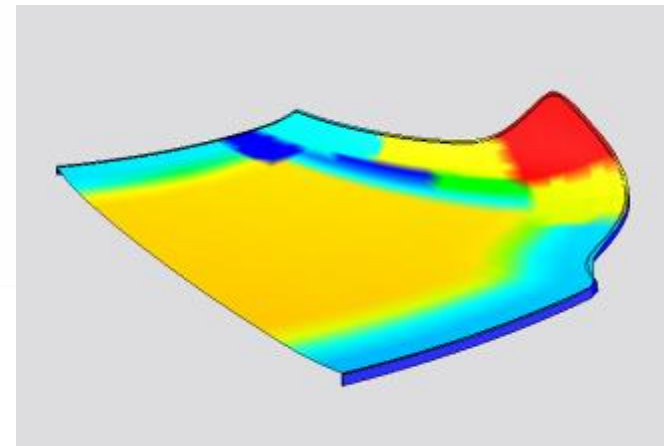
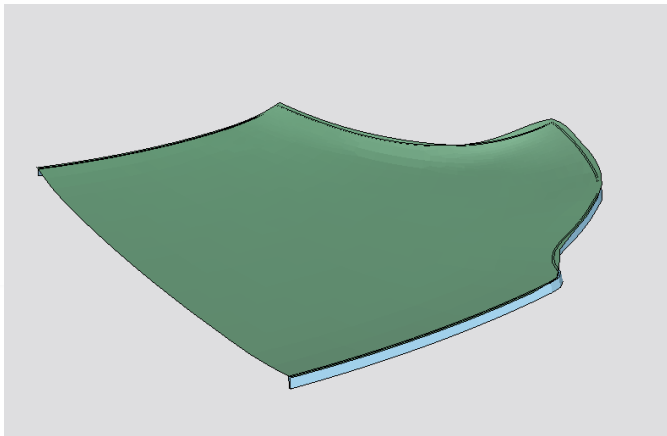


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Quality Engineering – Makes Quality Glass

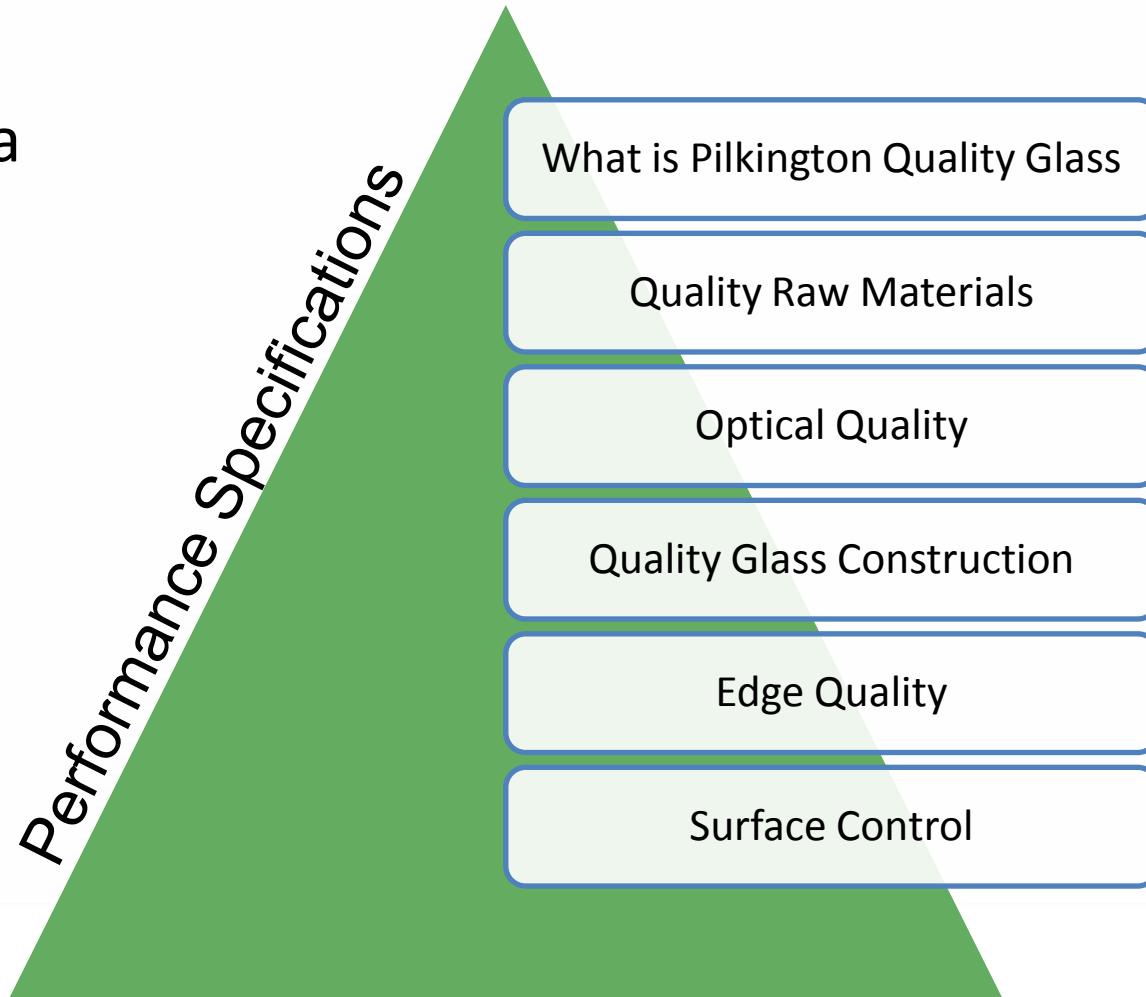


Bending in 2 stages with optimised temperatures produces good shape




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- Agenda



Why Quality?



The Pilkington Clear Advantage™ Is Quality Defined