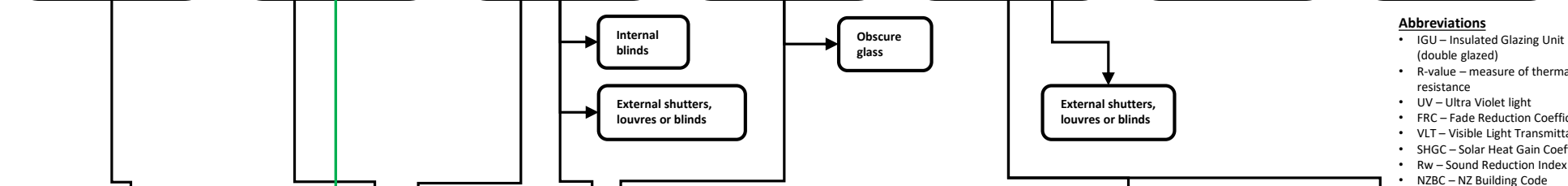
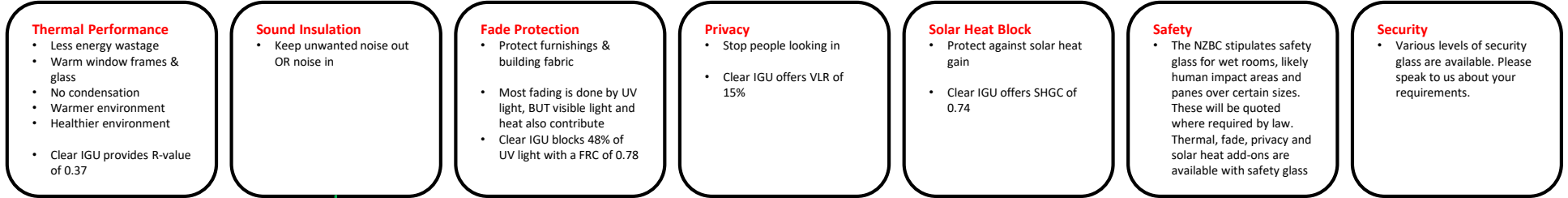
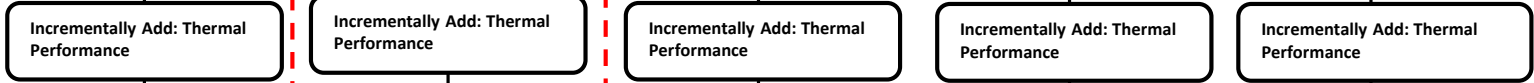
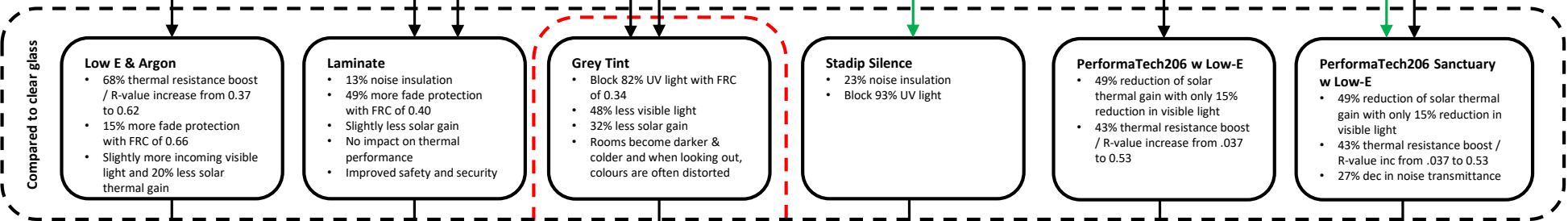


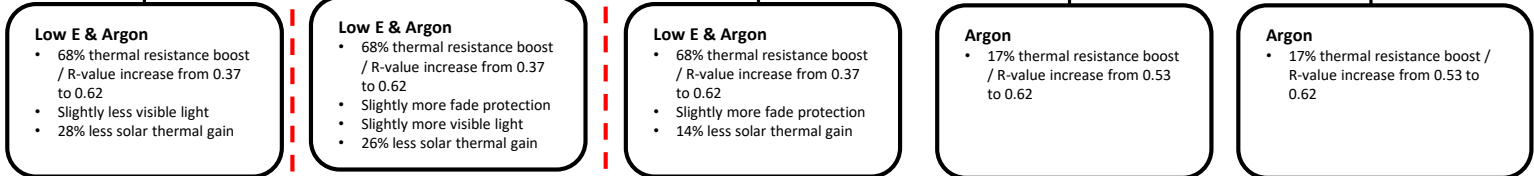
# Glass Selection Flow Chart: What Do You Want To Achieve?



- Abbreviations**
- IGU – Insulated Glazing Unit (double glazed)
  - R-value – measure of thermal resistance
  - UV – Ultra Violet light
  - FRC – Fade Reduction Coefficient
  - VLT – Visible Light Transmittance
  - SHGC – Solar Heat Gain Coefficient
  - Rw – Sound Reduction Index
  - NZBC – NZ Building Code



Clear glass with Low E & Argon is selected by more than 80% of our clients. It's a high-volume manufactured product so offers very good value for money.



**Risks**

- The combination of tints and Low E & Argon increase the risk of glass thermal stress, so toughened glass must be used.

# Glass Selection: Facts and Figures

IGU	Outer	Inner	Argon	VLT %	VLR %	UV Elim %	FRC	R-value	SHGC	Rw
4-12-4	Clear	Clear		80	15	48	0.78	0.37	0.74	30
5-12-6.4	Clear	Clear Lam		79	14	99	0.40	0.37	0.71	34
4-12-4	Clear	Clear	Y	80	15	48	0.78	0.39	0.74	30
4-12-4	Clear	Low E		81	13	51	0.66	0.53	0.59	30
6.4-12-6	Low E	Clear Lam		72	13	99	0.35	0.53	0.51	35
4-12-4	Clear	Low E	Y	81	14	51	0.66	0.62	0.59	30
6.4-12-4	Clear Lam	Low E	Y	77	14	99	0.35	0.62	0.51	33
5-12-4	Grey	Clear		42	8	80	0.39	0.37	0.50	31
6-12-6.4	Grey	Clear Lam		34	8	99	0.22	0.37	0.38	35
5-12-4	Grey	Low E		43	7	82	0.34	0.53	0.37	31
5-12-4	Grey	Low E	Y	43	7	82	0.34	0.62	0.37	31
6.76-12-4	Stadip Silence	Clear		79	14	93	0.40	0.36	0.71	37
4-12-6.76	Low E	Stadip Silence	Y	77	14	95	0.35	0.62	0.61	37
5-12-4	PerformaTech206 - base level incl Low E			68	13	76	0.35	0.53	0.38	31
6-12-6.75	PerformaTech206 - Sanctuary (Stadip) incl Low E			68	13	76	0.35	0.53	0.38	38
5-12-4	PerformaTech206 - base level incl Low E		Y	68	13	76	0.35	0.62	0.38	31
6-12-6.75	PerformaTech206 - Sanctuary (Stadip) incl Low E		Y	68	13	76	0.35	0.62	0.38	38

**IGU** - Insulated Glazing Unit: figures represent glass thickness / air gap / glass thickness.

**VLT** - Visible Light Transmittance: the percentage of visible light that is transmitted through the glass.

**VLR** - Visible Light Reflectance: the percentage of visible light that is reflected by the glass surface.

**UV Elim**: The percentage of ultraviolet radiation eliminated by the glass. The higher the percentage the less UV is transmitted.

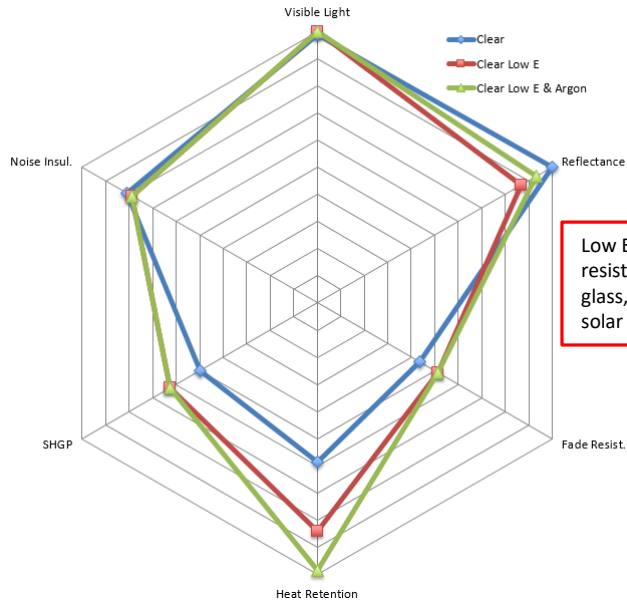
**FRC** - Fade Reduction Coefficient: The ratio of fading reduction of a glass type when compared to the fading protection of 3mm clear float. The FRC of 3mm clear float is by definition 1.0 and represents the minimum fading protection offered by standard glazing. The lower the fading reduction coefficient, the better the fading protection offered.

**R-value**: a measure of thermal resistance used in the building and construction industry. The higher R-value, the greater the thermal resistance. The figures above describe glass-only figures i.e. not an entire window or door. NK Windows entire window R-values are up to 0.84 for double glazing and 1.20 for triple glazing.

**SHGC** - Solar Heat Gain Coefficient: The measure of the total solar energy transmittance entering a building through the glazing as heat gain. The lower the SHGC the better the glass restricts heat energy transmission.

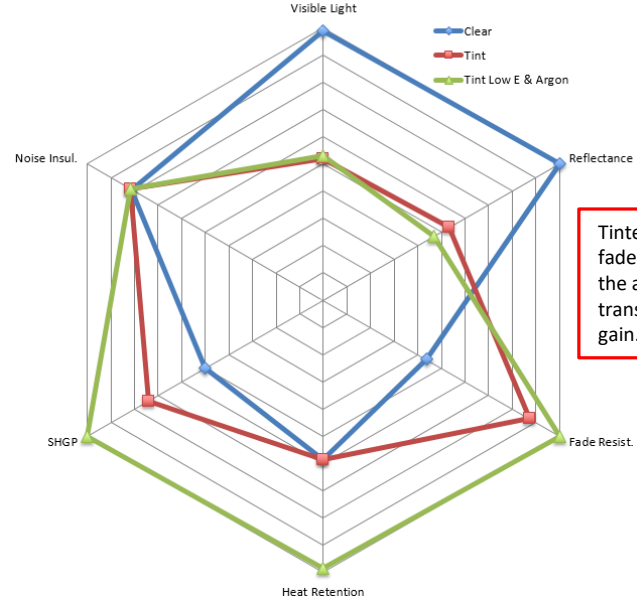
**Rw** - Weighted Sound Reduction Index: The higher the Rw, the greater the reduction of noise transmittance.

### Benefits of Low-E & Argon



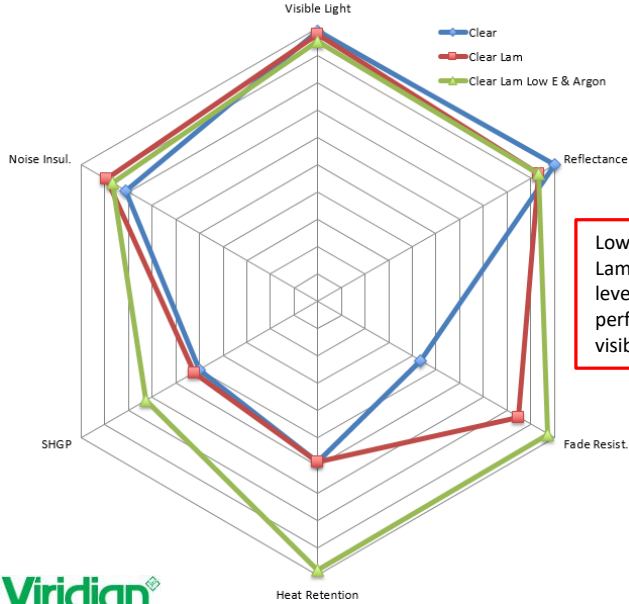
Low E & Argon provide 68% thermal resistance improvement over clear glass, fade reduction of 15% and solar heat gain reduction of 20%.

### Benefits of Tinted Glass



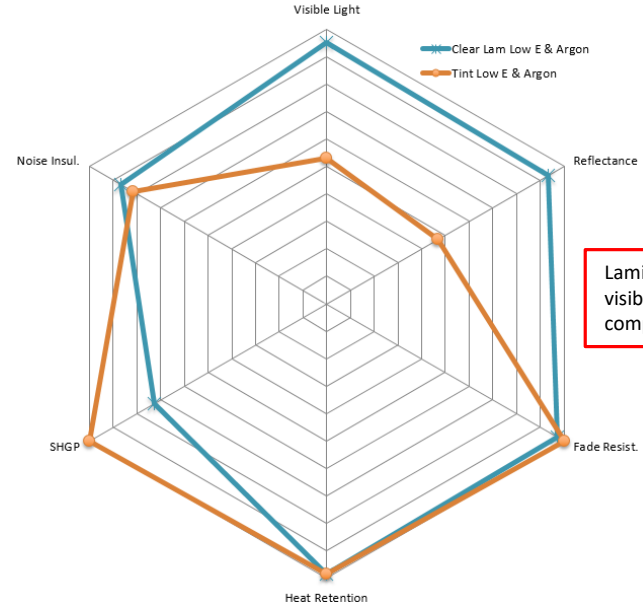
Tinted glass provides significant fade protection, but greatly reduces the amount of visible light transmittance and solar thermal gain.

### Benefits of Laminated Glass



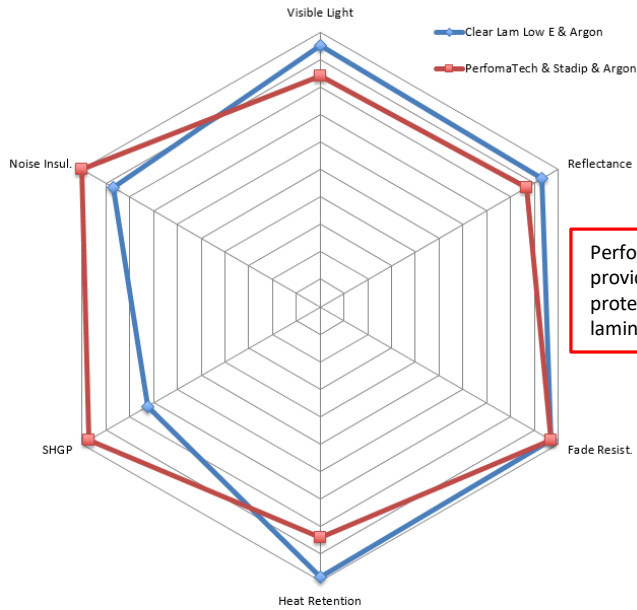
Low E & Argon combined with Laminated glass provide the highest levels of fade reduction and thermal performance whilst only affecting visible light transmittance slightly.

### Tinted Glass vs Laminated Glass - both with Low E & Argon



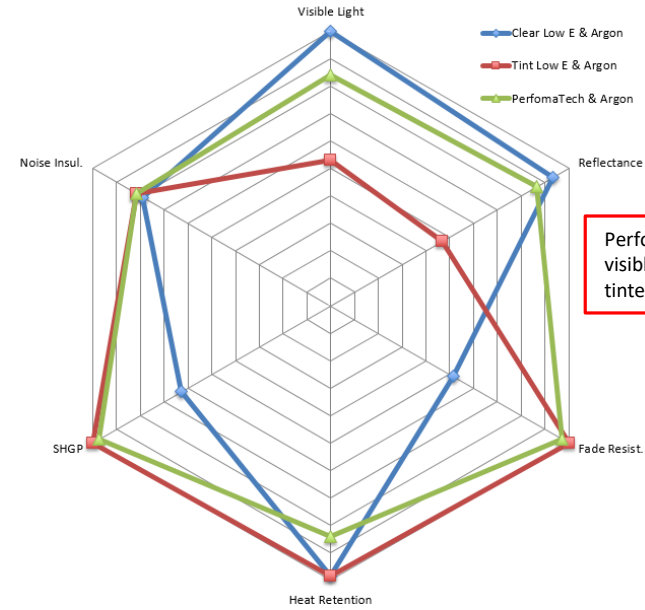
Laminated glass provides superior visible light transmittance compared with tinted glass.

### Laminated Glass vs PermaTech206



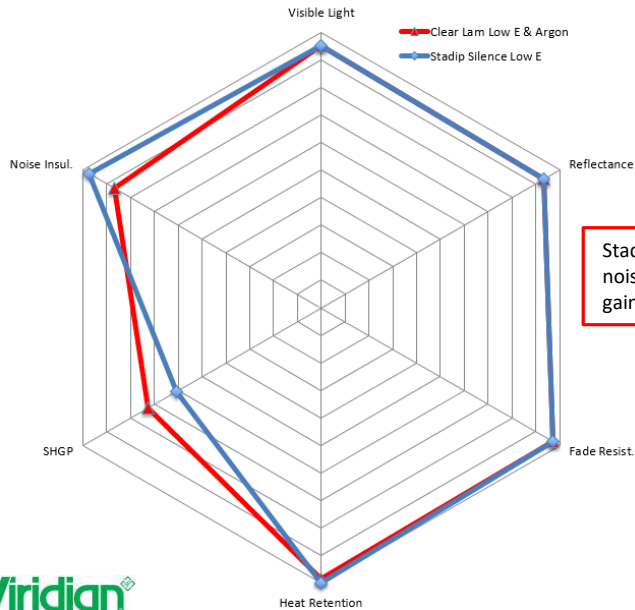
PermaTech with Stadip Silence provides superior solar heat gain protection and noise insulation over laminate glass.

### Tint vs PermaTech206



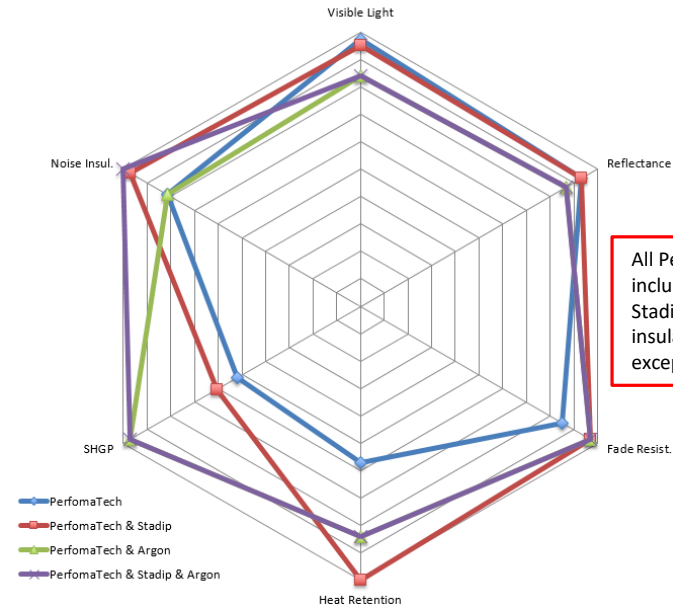
PermaTech provides superior visible light transmittance over tinted glass.

### Laminate vs Stadip Silence - both with Low E & Argon



Stadip Silence provides superior noise insulation but less solar heat gain protection over laminate glass.

### Comparing PermaTech206 Options



All PermaTech206 options include Low E. Options that include Stadip Silence exceptional noise insulation and Argon provide exceptional all-round performance.