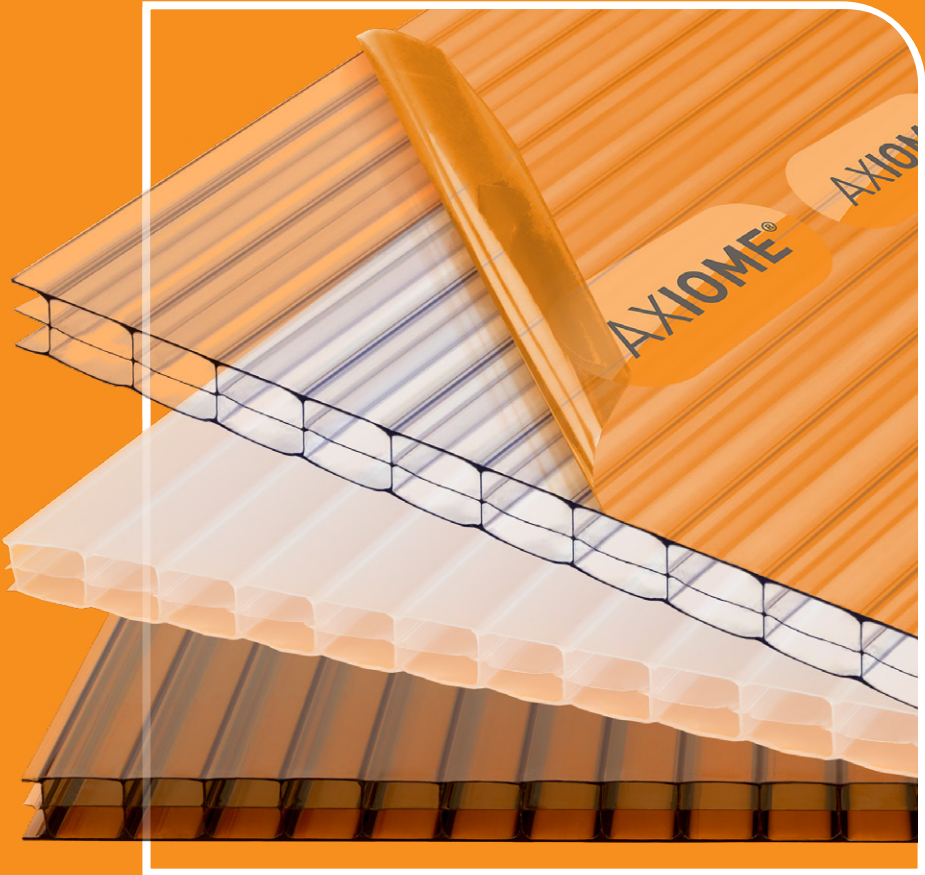




# Multiwall Polycarbonate Roofing Technical Guide



# High Quality Multiwall Roofing Sheet

Over the past two decades Axiome® multiwall polycarbonate sheet has become an increasingly popular roofing and screening material for a large range of applications. A few examples of these are shown in these pages.

Axiome® multiwall is the result of years of technical development and embodies a wide range of beneficial qualities, making it the ideal solution for an extensive array of requirements in the conservatory, construction, horticulture and internal design industries.

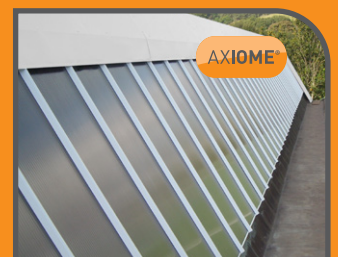


## Common uses:

- ✓ Commercial Roof lights and Barrel Vaults
- ✓ Airport Walkways
- ✓ Covered School Play Areas
- ✓ Bus Shelters and Smoking Shelters
- ✓ Swimming Pool Roofs
- ✓ Commercial Chicken Shed Windows
- ✓ Carports
- ✓ Acoustic Barriers
- ✓ Orangeries and Conservatories
- ✓ Greenhouse Glazing

## Qualities:

- ✓ Lightweight Reducing Stress on Structures
- ✓ Easy to Cut On Site as Required
- ✓ Excellent Rigidity
- ✓ UV Stabilised
- ✓ Highly Weather Resistant
- ✓ Excellent Fire Rating
- ✓ Good Thermal Insulation
- ✓ Does Not Shatter Like Glass With Impact



# Axiome® : Clear

Clear Axiome® sheets are the most common option, offering the greatest light transmission. The Axiome® sheets are widely used for an incredible range of applications around the globe. From canopies and covered walkways, to carports and conservatories, equestrian areas, childrens' play areas, cold frames and horticultural uses, Axiome® is a truly versatile product.

## Axiome® Clear Sheet Sizes

4mm Twinwall\*

6mm Twinwall\*

10mm Twinwall\*

16mm Triplewall\*

25mm Multiwall\*

35mm Multiwall\*



\* Internal structure of all Axiome® sheets are for illustrative purposes only, and may vary from batch to batch.

## Axiome® Clear

Thickness (code)	Metric Lengths										
	1000mm	2000mm	2500mm	3000mm	3500mm	4000mm	4500mm	5000mm	6000mm	7000mm	10,000mm
	(4mm Twinwall - standard widths are 690mm, 1050mm and 2100mm or cut to size)										
4mm (AS4C)	✓	✓	✓	✓	-	-	-	✓	-	-	-
	(6mm Twinwall - standard widths are 690mm, 1000mm (2, 3 & 4m only), 1050mm and 2100mm or cut to size)										
6mm (AS6C)	✓	✓	-	✓	-	✓	-	-	✓	✓	-
	10mm Twinwall - standard widths are 690mm, 1000mm (2, 2.5, 3, 4 & 5m only), 1050mm, 1400mm (2-7m only) and 2100mm or cut to size										
10mm (AS10C)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	16mm Triplewall available in standard widths of 690mm, 840mm (2-7m only), 1000mm (2, 2.5, 3, 4 & 5m only), 1050mm, 1250mm (2-7m only), 1400mm (2-7m only), 1700mm (2-7m only) & 2100mm or cut to size										
16mm (AS16C)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	25mm Multiwall available in standard widths of 690mm, 840mm, 1000mm (2, 2.5, 3, 4 & 5m only), 1050mm, 1250mm, 1400mm, 1700mm & 2100mm or cut to size										
25mm (AS25C)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
	35mm Multiwall available in standard widths of 690mm, 840mm, 1050mm, 1250mm, 1400mm, 1700mm & 2100mm or cut to size										
35mm (AS35C)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-



## Axiome® : Bronze

The Axiome® Bronze sheet provides shading from glare and a popular aesthetic appearance. Being a darker colour, choosing Bronze tint Axiome® will increase heat absorption creating a warmer inside temperature when located in areas of direct sunlight.



### Axiome® Bronze

Thickness (code)	Metric Lengths									
	1000mm	2000mm	2500mm	3000mm	3500mm	4000mm	4500mm	5000mm	6000mm	7000mm
10mm Twinwall - standard widths are 690mm, 1050mm and 2100mm or cut to size										
10mm (AS10B)	-	✓	✓	✓	✓	✓	✓	✓	✓	-
16mm Triplewall, available in standard widths of 690mm, 840mm, 1050mm, 1400mm, 1700mm and 2100mm or cut to size										
16mm (AS16B)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
25mm and 35mm Multiwall available in standard widths of 690mm, 840mm, 1050mm, 1250mm, 1400mm, 1700mm and 2100mm or cut to size										
25mm (AS25B)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓
35mm (AS35B)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓

## Axiome® : Opal

The Opal tint Axiome® sheet provides a white tint impression. The advantages of this Opal Axiome® tint are that it provides a degree of privacy whilst maintaining a good light transmission and a bright overall appearance. In addition the Opal tint reduces the level of solar energy entering the sheet, keeping covered areas cooler when installed in areas exposed to higher levels of direct sunlight.



### Axiome® Opal

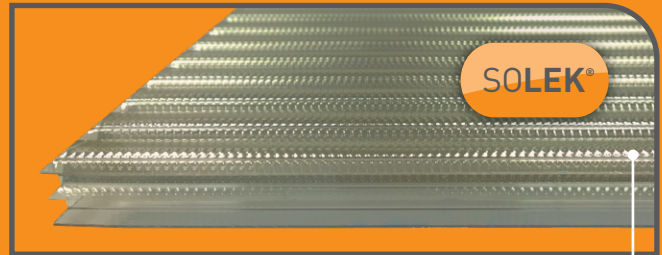
Thickness (code)	Metric Lengths										
	1000mm	2000mm	2500mm	3000mm	3500mm	4000mm	4500mm	5000mm	6000mm	7000mm	10,000mm
10mm Twinwall - standard widths are 690mm, 1050mm, 1400mm and 2100mm or cut to size											
10mm (AS10O)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
16mm Twinwall - standard widths are 690mm, 840mm, 1050mm, 1400mm, 1700mm and 2100mm or cut to size											(980mm W)
16mm (AS16O)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25mm and 35mm Multiwall available in standard widths of 690mm, 840mm, 1050mm, 1250mm, 1400mm, 1700mm and 2100mm or cut to size											
25mm (AS25O)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-
35mm (AS35O)	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	-



## Solek® : Clear and Bronze Sheets

(Technical brochure available for more details)

Axiome® Solek® sheets have a silver foil insert in every flute which provides up to 80% rejection of solar energy. Solek® has the effect of keeping indoor areas cooler whilst allowing in an acceptable level of light.



16mm Clear Triplewall

### Solek®

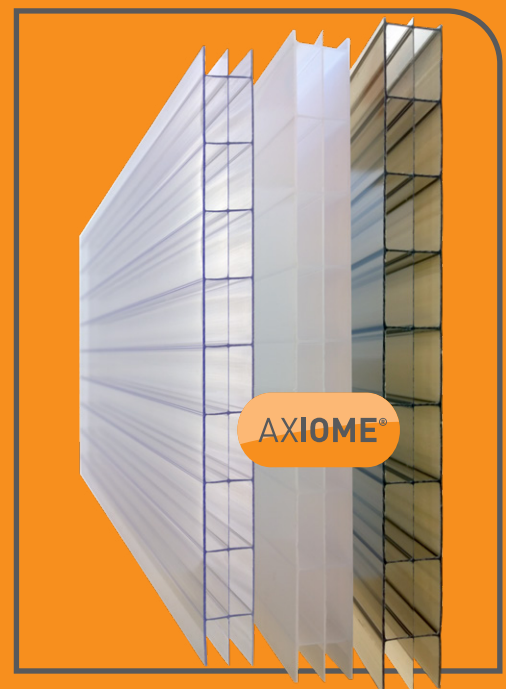
Thickness (code)	Metric Lengths							
	2000mm	2500mm	3000mm	3500mm	4000mm	4500mm	5000mm	6000mm
<b>Clear Sheets</b>	16mm Triplewall, 25mm and 35mm Multiwall available in standard widths of 690mm, 840mm, 1050mm, 1250mm, 1400mm, 1700mm and 2100mm or cut to size							
<b>16mm</b> (AS16SK)	✓	✓	✓	✓	✓	✓	✓	✓
<b>25mm</b> (AS25SK)	✓	✓	✓	✓	✓	✓	✓	✓
<b>35mm</b> (AS35SK)	✓	✓	✓	✓	✓	✓	✓	✓
<b>Bronze Sheets</b>	16mm Triplewall, 25mm and 35mm Multiwall available in standard widths of 690mm, 840mm, 1050mm, 1250mm (25mm Bronze - 1250mm wide x 2000mm is not available), 1400mm, 1700mm and 2100mm or cut to size							
<b>16mm</b> (AS16SKB)	✓	✓	✓	✓	✓	✓	✓	✓
<b>25mm</b> (AS25SKB)	✓	✓	✓	✓	✓	✓	✓	✓
<b>35mm</b> (AS35SKB)	✓	✓	✓	✓	✓	✓	✓	✓

## Colour Concepts

There are several myths surrounding each tint, for example whilst bronze sheet offers a shading effect, it does not reduce the heat, in fact it attracts more heat. We have set out the guidelines to explain the properties provided by each shade.

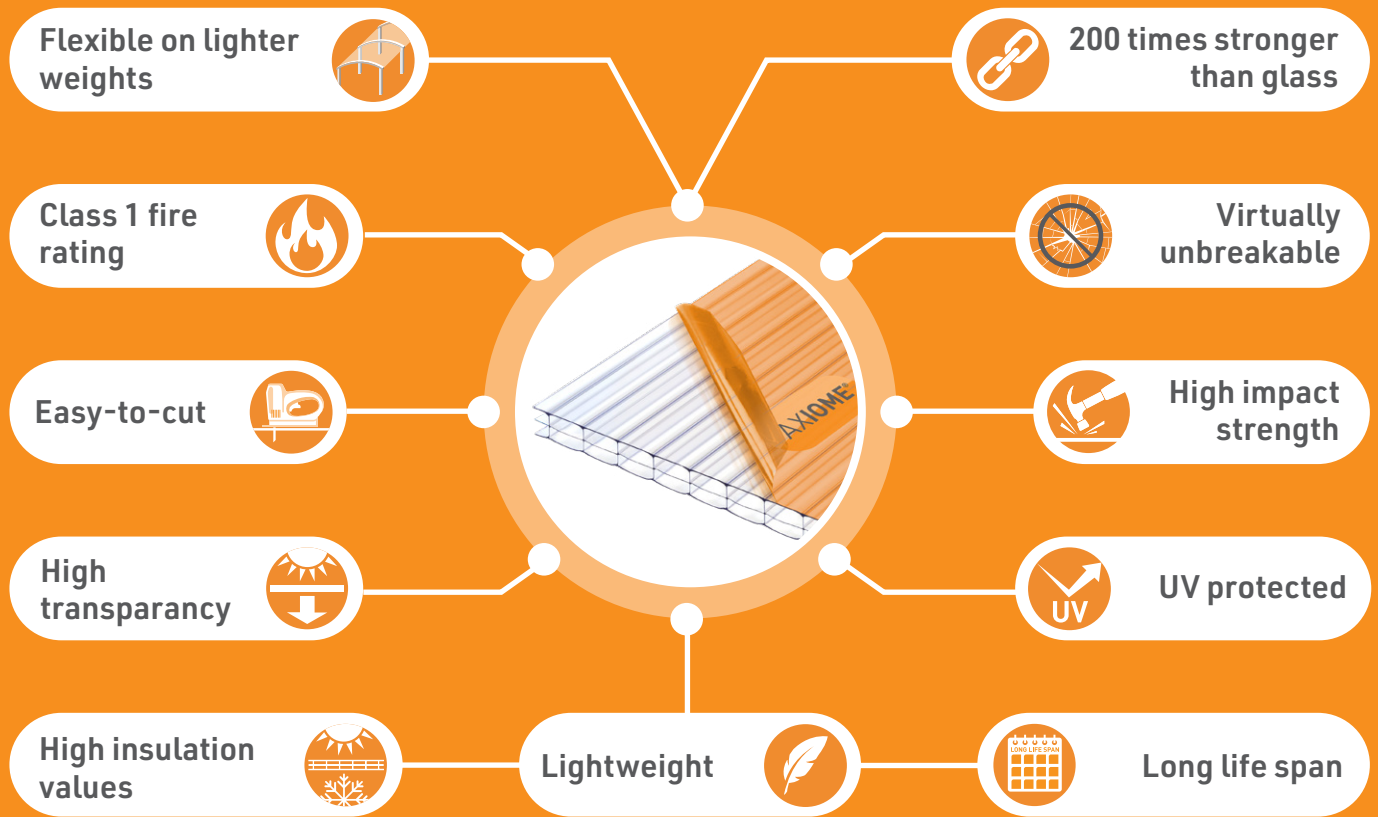
### What Colour?

Colour	Qualities / Benefits
Clear	Maximum light transmission and brightness; protects from harmful UV
Opal	Reflects some heat, provides shading and privacy
Bronze	Reduces glare and provides shading, will tend to increase heat build up
Clear Silver Solek®	Rejects approximately 80% of the solar energy dramatically reducing heat build up
Silver Bronze Solek®	Rejects a high degree of solar energy, reducing heat build up and provides shading



## Axiome® : Benefits

This guide provides a quick at-a-glance guide to the wide range of benefits of using our Axiome® Roofing Sheets.



[▶ View Our Axiome® Polycarbonate Roofing Sheet Overview Video](#)

## Axiome® : Thicker or Thinner Specification

Axiome® sheets come in several thicknesses which provide solutions for various applications. This chart shows the relative benefits between each option.

Thickness	Qualities / Benefits
4 and 6mm Twinwall	<ul style="list-style-type: none"> <li>Fits most Greenhouse beads, high light transmission.</li> <li>Best bending radius.</li> </ul>
10mm Twinwall	<ul style="list-style-type: none"> <li>Good bending radius.</li> </ul>
16mm Triplewall	<ul style="list-style-type: none"> <li>Stronger structure than twinwall, average insulation value.</li> </ul>
25mm Multiwall	<ul style="list-style-type: none"> <li>Good Insulation, good structural loading capacity.</li> </ul>
35mm Multiwall	<ul style="list-style-type: none"> <li>Higher insulation value, best structural loading capacity.</li> </ul>

**PLEASE NOTE:** 10mm Axiome® Twinwall is the minimum suggested thickness for roofing applications.

## Axiome® : Compatible Glazing Bars

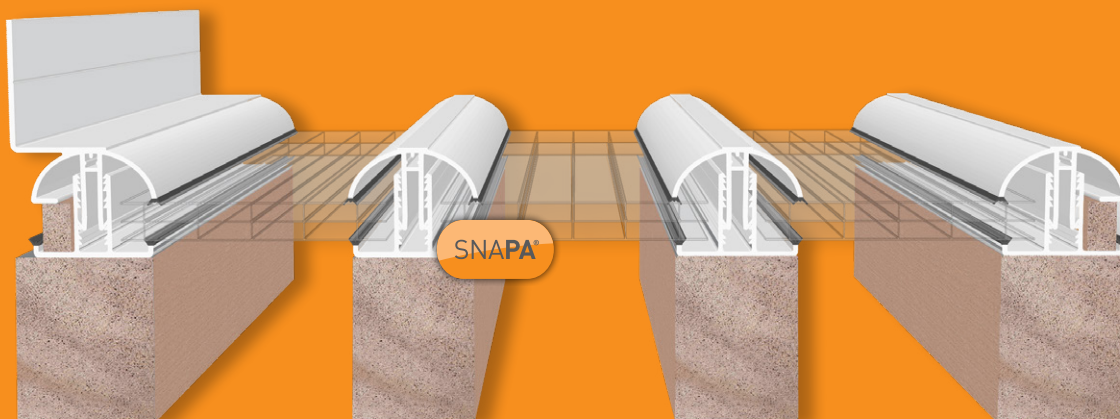
### Alukap®-SS Self-Supporting Aluminium Glazing Bar System



### Alukap®-XR Rafter-Supported Aluminium Glazing Bar System



### Snapa® Rafter-Supported PVC Glazing Bar System

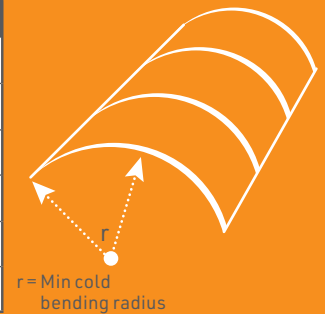


# Axiome® : Technical Data

The huge diversity of applications for which Axiome® Multiwall is used inevitably means that a perceived strength for one project can be a disadvantage for another use. The tables below are intended for guideline use when seeking particular qualities for any specification. Our vast range provides an option for probably every eventuality.

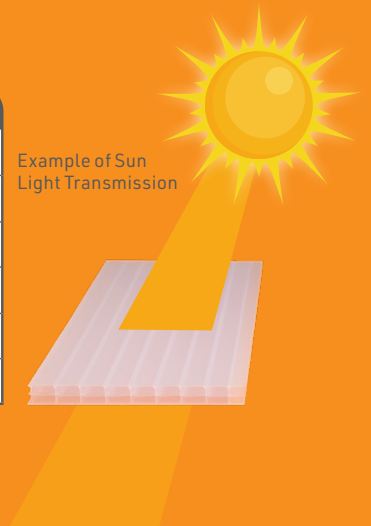
## Physical Properties

Thickness	Area Weight Kg/m <sup>2</sup>	U-Value W/m <sup>2</sup>	Sound reduction level db	Min cold bending radius mm
Axiome® 4mm Twinwall	0.8	-	-	-
Axiome® 6mm Twinwall	1.3	3.5	18	1250
Axiome® 10mm Twinwall	1.5	3.0	20	1750
Axiome® 16mm Triplewall	2.4	2.3	20	2750
Axiome® 25mm Multiwall	3.0	1.7	22	5000
Axiome® 35mm Multiwall	3.4	1.3	22	7000



## Light Transmission

Thickness	Clear %	Bronze %	Opal %	SOLEK® %
Axiome® 4mm Twinwall	81	-	-	-
Axiome® 6mm Twinwall	81	-	-	-
Axiome® 10mm Twinwall	81	52	48	-
Axiome® 16mm Triplewall	74	31	42	25
Axiome® 25mm Multiwall	62	22	34	23
Axiome® 35mm Multiwall	51	20	25	20



## Fire Performance

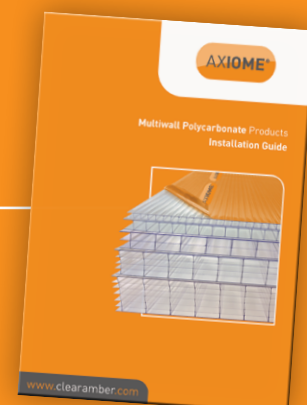
Thickness	Method	Fire rating class
Axiome® 4mm Twinwall	-	-
Axiome® 6mm Twinwall	-	-
Axiome® 10mm Twinwall	BS476: Part 7	1Y
Axiome® 16mm Triplewall	BS476: Part 7	1Y
Axiome® 25mm Multiwall	BS476: Part 7	1Y
Axiome® 35mm Multiwall	BS476: Part 7	1Y



[View Our Axiome® Intense Fire Test Video](#)

## View our Axiome® Fitting Instructions

The *Axiome® Fitting Instructions* shows you the tools required and method for preparing the glazing sheets to be installed with the different types of glazing bars.

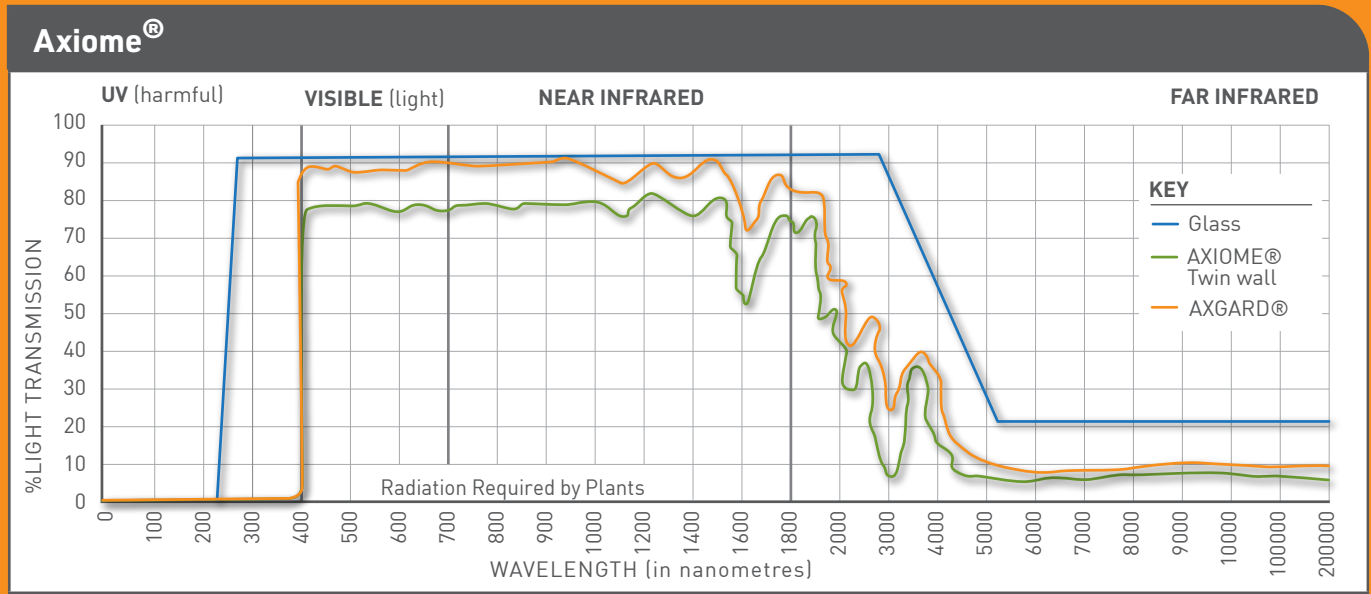




# Axiome® : Light Transmission

Axiome® polycarbonate almost totally blocks harmful UV radiation whilst still allowing exceptional levels of visible light transmission.

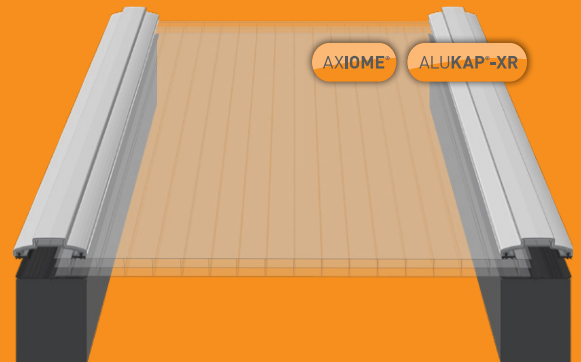
## Light Transmission



# Axiome® : Spanning Guide

The following chart below provides a spanning guide for Axiome® sheets when clamped on 2 sides.

Uniform Load	Thickness				
	KG/m2	6mm	10mm	16mm	25mm
50	450	680	990	1050	1050
80	320	500	900	900	900
100	-	450	800	800	800
120	-	400	700	700	700



### 2 Sides Fixed



*These figures are guidelines only and it is important that you check your final design with a structural engineer as there may be several additional site-specific factors to consider.*

Inasmuch as Clear Amber have no control over the circumstances in which our material may be used, or site specific parameters, we cannot guarantee that any particular results will be achieved. Users should carry out their own tests to determine the suitability of the material for their application. Installers should satisfy themselves that published permissible loadings for Axiome® glazing,

together with any supporting posts, frames, or walls and fixings, are sufficient to provide adequate strength for the intended use and to meet regional loading requirements. Installers should also obtain their own job-specific structural engineer's report for their individual site. Samples are readily available to users to test and verify the exact sizes according to their site requirements.

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## WARNING : REGISTERED DESIGNS & PATENTS

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### Disclaimer

Once Axiome® multiwall polycarbonate sheet has left our warehouse, we cannot control transportation, storage, installation or handling, nor can we influence installation conditions, Clear Amber Group cannot be held responsible in any

way for condensation issues or other installation problems that may arise, or any associated remedial work. All advice is offered in good faith based on our experience. Installers should apply best practices before and during installation.

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