

PRODUCT DESCRIPTION

ALSYNITE ULTRA - Cool is a premium quality translucent sheeting with all the qualities of ALSYNITE ULTRA but with the added advantages of controlled solar heat transmission. It is identified by its ultra white finish. ALSYNITE ULTRA - Cool provides an economical means of transmitting diffused natural light to the building interior, whilst at the same time reflecting unnecessary solar heat, resulting in substantial cost savings in lighting and cooling expenses.

KEY FEATURES

- Excellent long term weathering properties.
- Superior 25 year performance warranty.
- Non delaminating surface technology.
- Resistant to degradation and embrittlement.
- Outstanding surface erosion properties.
- Resistant to common place chemicals.
- Superior long-term diffused light properties.
- Superior long term reduction of solar heat.
- Provides substantial savings in energy costs

TYPICAL APPLICATIONS

- Industrial and commercial skylights.
- Building skylight sidings.
- Nursery retail areas.
- Light diffusers.
- Sports venues & shopping centre skylights
- Any building or structure requiring diffused light with minimum heat transmission.

PERFORMANCE WARRANTY

ALSYNITE ULTRA - Cool is backed by a premium performance warranty for twenty five (25) years. Specific attention is paid to the surface erosion and the non-delamination of our unique surface coating technology. For full warranty details, please contact your authorised Alsynite Distributor.

PRODUCT OPTIONS & GENERAL

- **Colours:** ALSYNITE ULTRA - Cool is only available in an ultra white finish.
- **Profiles:** Due to Alsynite's global presence, we have an extensive range of profiles within our portfolio. Non standard profiles are also easily catered for, with off line samples generally available within four (4) weeks of an approved drawing.
- **Resin Systems:** Alsynite can produce a variety of resin systems from general purpose, orthophthalic grades to specialty fire retardant and corrosive resistant systems. For further details, please contact your authorised Alsynite distributor.
- **General:** For various wind loading, design, safety and storage information please refer to the relative sections of this technical manual, or consult your authorised Alsynite distributor.

PRODUCT

The sheeting is classified as General Purpose (GP) Grade and is of Surface Treated (ST) type.

PROFILES

Popular stock profiles include: Custom Orb, Trimdek, Kliplik 406, Super Six, Spandek and Speedek 500. An extensive range of other profiles to match popular metal profiles are available to special order.

NOMINAL WEIGHTS

The standard weight is 2400g/m² however other weights are available to special order. Typical weights are: 1800, 3050, 3660, 4270 and 4880g/m².

SHEET LENGTHS

Standard sheet lengths are available up to 12.2m. Other non standard lengths are available subject to special order and shipping parameters.

COLOURS

ALSYNITE ULTRA - Cool is only available in an ultra white finish.

RESIN SYSTEM

The resin system is a general purpose grade orthophthalic polyester. Fire retardant resin systems 50FR and 25HTH are available. Refer to fire retardant section within this manual.

SURFACE COATING

Weather surface is Melinex[®] A15 improved U.V. protection surface coating system developed by DuPont containing U.V. inhibitors and is 20 micron nominal thickness.

The non weather surface is a specialised 25 micron "PLDS" ultra white surface film, developed to reduce transmitted heat.

REINFORCEMENT

Equi-distributed, chopped "E" glass rovings at minimum of 22%.

LIGHT TRANSMISSION

Diffused light transmission: 36%

HEAT TRANSMISSION

Solar Heat Gain: 227W/m²,

GENERAL OVERVIEW

The following tables reflect the general physical, mechanical and solar optical properties of ALSYNITE ULTRA-Cool.

PHYSICAL PROPERTIES

Properties	Value	Test Method
Specific Gravity (gm/cc)	1.41	ASTM-D792-86A
Thermal Expansion (10^{-5} cm/cm/°C)	2.2	ASTM-D696-81
Water Absorption (%)	0.52 to 0.60	ASTM-D570-81
Thermal Conductivity (W/m ² K)	0.158	ASTM-C177-81
Heat Distortion Temperature (°C)	+180 to 200	ASTM-D648-86
Operating Temperatures (°C)	-40 to +110	-

MECHANICAL PROPERTIES

Properties	Value	Test Methods
Barcol Hardness	Greater than 50	AS/NZS 4256.3
Glass Content (%)	26.3	AS/NZS 4256.3
Tensile Strength (Mpa)	94	ASTM D638-89
Flexural Strength (Mpa)	177	ASTM D790-86
Flexural Modulus (Gpa)	6.7	ASTM D790-86
Mean Impact Strength (J)	8.9	AS/NZS 4256.3
Compressive Strength (MPa)	135	ASTM695-82
Shear Strength (MPa)	90	ASTM732-82
Impact Resistance	PASS	AS/NZS 4256.3

SOLAR OPTICAL PROPERTIES

Properties	Ultra-White
Solar transmittance	0.22
Luminous Transmittance	0.18
Diffused Light Transmission (%)	36
Shading Coefficient	0.33
U-Value (W/m ² K)	5.7
Solar Heat Gain (W/m ²)	227
Solar Heat Gain Coefficient	0.29
Transmittance 380-320nm(UV-A)	-
Transmittance 320-280nm (UV-B)	-

- Results of tests are based on 2400g/m² sheet.

ULTRA - Cool

GENERAL OVERVIEW

The following specification instruction is suitable for ALSYNITE ULTRA - Cool glass reinforced polyester sheeting. If further specification details are required, please contact the Alsynite Roofing Products Technical Department.

PRODUCT SPECIFICATION

- **Description:** The product shall be ALSYNITE ULTRA - Cool Glass Reinforced Polyester (GRP) Sheeting.
- **Profile:** The profile shall be
- **Class/Weight:** g/m²
- **Colour:** The colour shall be Ultra White.
- **Resin System:** Polyester general purpose orthophthalic resin with UV inhibitors.
- **Surface Coating:** Melinex[®] A15, 20 micron nominal thickness, protection film. The non weather surface is a specialised 25 micron "PLDS" ultra white surface film, developed to reduce transmitted heat.
- **Cure Level:** In accordance with AS/NZS 4256.3:1994, the residual styrene level is less than 2% as measured by Gas Liquid Chromatograph.
- **Reinforcement:** Equi-disposed, chopped glass rovings at a minimum of 22%.
- **Quality:** Manufactured in accordance with Australian/New Zealand Standards AS/NZS 4256.3:1994.
- **Installation:** To be carried out in accordance with the Australian/New Zealand Design and Installation of sheet roof and wall cladding products AS/NZS- 1562.3:1996 and Alsynite Roofing Products Pty Ltd Installation and Maintenance procedures.

ULTRA - Cool

PRODUCT DESCRIPTION & COMPOSITION

- **Product Name:** ALSYNITE ULTRA - Cool
- **Dangerous Goods Class:** Not applicable
- **Use:** Generally, as a translucent, light emitting panel in roofs or walls of buildings. May be used in specialty applications where corrosion resistance is required.
- **Physical Description:** ALSYNITE ULTRA - Cool is produced by the polymerisation of halogenated polyester resin and the addition of a suitable catalyst. The resin is supported by a matrix of chopped glass reinforcement and polyester carrier films. The sheeting is glass like in appearance and odourless.
- **Ingredients:** Polyester resin is an unsaturated thermosetting resin, resulting from the esterification of polybasic acids and polyhydric alcohols dissolved in vinyl monomers. The catalyst system is a 1% addition of cumene hydroperoxide solution. The reinforcing is translucent sheet roving manufactured from E- Type Glass. The process results in an inert resinous material.
- **UN Number:** Not applicable.
- **Hazchem Code:** Not applicable.

PRODUCT DESCRIPTION & COMPOSITION

	Health Effects	First Aid Recommended
Swallowed	Not applicable	Not applicable
Eye	Fragments generated by cutting, drilling, etc may become lodged in eye.	Flush with copious amounts of water. If irritation persists, seek medical attention.
Skin	Possible minor irritation from particles generated by cutting, handling, etc	Wash with water. Any irritation will only be minor and temporary.
Inhaled	Nil effect. Particles not respirable.	Not applicable.

- **Protective Clothing:** Eye protection and a dust mask should be worn during the machining of ALSYNITE ULTRA sheeting. A well ventilated work area is also recommended. Gloves, a long sleeved shirt and heavy duty trousers, should also be worn, as the sheet edges may be sharp.
- **Fire:** All normal extinguishing equipment may be used. Self contained breathing apparatus is required.
- **Handling & Disposal:** Store sheets off the ground, and on a flat surface and under cover. Do not incinerate. Dispose all product to approved land fill locations.
- **Contact Point:** Alsynite Roofing Products Pty Ltd, 25 Loyalty Road, North Rocks, N.S.W. Australia Telephone: 61 2 9890 9922 Fax: 61 2 9683 5031.

This information should be used as a guide only. For specific MSDS details, contact the Alsynite Technical Department