

PRODUCT DESCRIPTION

ALSYNITE ULTRA - Safe is a premium quality fibreglass sheeting with excellent long term weathering properties. This unique product is a trafficable high performance sheeting, with excellent chemical and corrosion resistance. Economically priced, it eliminates the need for wire mesh in corrosive environments and various building applications. Additionally, it has been designed to replace metal roofs and cladding in part, or as a total system.

KEY FEATURES

- Exceptionally strong, durable with outstanding impact resistance.
- Superior 25 year performance warranty.
- Economical alternative to metal roofing and cladding.
- Excellent corrosion resistance and surface erosion properties.
- Non delaminating surface technology.

TYPICAL APPLICATIONS

- Building roofs and cladding for corrosive and aggressive environments.
- Cooling towers.
- Water treatment plants.
- Chemically aggressive storage facilities.

PERFORMANCE WARRANTY

ALSYNITE ULTRA - Safe 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 - Safe is available in standard colours of clear, opal and opaque grey. Customised colours are available, subject to minimum order quantities and pigment availability.
- **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 including specialty fire retardant and specific corrosion resistant grades for unique applications. 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 in this technical manual, or consult your authorised Alsynite distributor.

PRODUCT

The sheeting is classified as Chemical Resistant (CR) Grade and is of Surface Treated (ST).

PROFILES

An extensive range of profiles are available to match popular metal profiles.

NOMINAL WEIGHTS

The standard weight is 3660g/m² but other heavier weights can be produced subject to special order quantities.

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

Standard colours are Clear, Opal and Opaque Grey. Other colours can be produced subject to commercial viability and pigment availability.

RESIN SYSTEM

The standard resin is a specialty grade chemical resistant system. To suit more aggressive applications, the use of other vinyl ester or fire retardant packages are available.

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.

REINFORCEMENT

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

TECHNICAL SERVICE

Alsynite Roofing Products Technical Department is available to provide professional advice on specific applications. ALSYNITE ULTRA - Safe is a highly versatile product and can be designed to fit a wide spectrum of requirements.

GENERAL OVERVIEW

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

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 Method
Barcol Hardness	Greater than 50	AS/NZS 4256.3
Glass Content (%)	35.6	AS/NZS 4256.3
Tensile Strength (MPa)	131	ASTM D638-89
Flexural Strength (MPa)	196	ASTM D790-86
Flexural Modulus (GPa)	6.5	ASTM D790-86
Mean Impact Strength (J)	8.9	AS/NZS 4256.3
Compressive Strength (MPa)	170	ASTM695-82
Shear Strength (MPa)	105	ASTM732-82
Impact Resistance	PASS	AS/NZS 4256.3

SOLAR OPTICAL PROPERTIES

Properties	Natural	Opal	Opaque (Grey)
Solar transmittance	0.54	0.45	0.18
Luminous Transmittance	0.53	0.41	0.17
Diffused Light Transmission (%)	58	43	10
Shading Coefficient	0.65	0.55	0.26
U-Value (W/m ² K)	5.4	5.4	5.4
Solar Heat Gain (W/m ²)	427	352	187
Solar Heat Gain Coefficient	0.55	0.45	0.19
Transmittance 380-320nm (UV - A)	0.04	-	-
Transmittance 320-280nm (UV - B)	0.006	-	-

- Results of tests are based on a 3660g/m² sheet.

Product Specification

ULTRA - Safe

GENERAL OVERVIEW

The following specification instruction is suitable for ALSYNITE ULTRA - Safe 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 - Safe Glass Reinforced Polyester (GRP) Sheeting.
- **Profile:** The profile shall be
- **Class/Weight:** g/m² (minimum 3660 g/m²)
- **Colour:** The colour shall be
- **Resin System:** Polyester Isophthalic chemical resistant resin with U.V. inhibitors.
- **Surface Coating:** Melinex[®] A15, 20 micron nominal thickness, protection film.
- **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 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 - Safe

Safety Data Sheet

PRODUCT DESCRIPTION & COMPOSITION

- **Product Name:** ALSYNITE ULTRA - Safe
- **UN Number:** Not applicable.
- **Dangerous Goods Class:** Not applicable
- **Hazchem Code:** 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 - Safe 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.

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 - Safe 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