

AMPELITE WEBGLAS GC+ PRODUCT TECHNICAL STATEMENT

PRODUCT DESCRIPTION

Webglas GC+ has a sheet thickness of 2.2mm or 3660 grams per square metre and is reinforced with a heavy gauge woven glass mat which provides continuous strength and protection in every direction. The overall strength is such that wire safety mesh is not required. This is of particular importance in chemically aggressive and corrosive environments where safety mesh can be eroded and traditional steel cladding can quickly deteriorate.

Webglas GC+ is used:

- In extreme highly acidic or alkaline environments where steel and other roofing or wall cladding materials deteriorate or corrode at an unacceptable rate.
- In extreme highly acidic or alkaline environments on buildings/structures that require a trafficable translucent roof solution.

What really sets Webglas GC+ apart is its combination of strength, high resistance to a wide range of chemicals and very low surface erosion. The warranty covers surface erosion for 20 years.

FEATURES

Webglas GC+ uses a Vinylester resin base with Silmar S-996 gel coat which was specifically designed as a clear gel coat for roofing. The composition of our gel coat has not changed since we started supplying Webglas S-996 in 1995 and continues to be a preferred solution for commercial buildings throughout the country. The same special resin technology used in the highly UV resistant surface coating is used for Ampelite's premium grade Webglas GC+, now very widely used in major projects around New Zealand and Australia. Webglas GC+ therefore provides a low maintenance roofing and cladding guaranteed for a specific lifetime.

The additional reinforcing provided by the heavy woven mat construction eliminates the need to install wire mesh below the sheeting. This makes Webglas GC+ particularly suitable for use in public buildings and schools, or wherever there may be access to the roof.

- Manufactured to most New Zealand long run metal roofing profiles.
- Strong looking. Weave pattern has good visual appeal. The product will remain structurally sound and shatter resistant under normal conditions for a period of 20 years.
- The standard thickness of 2.2mm has greater spanning capacity due to being heavy gauge combined with the additional strength of the woven mat.
- The top (weather side) is gel coated with S-996 highly UV resistant resin. This part of the process is identical with all of Ampelite's GC+ premium grade sheeting and provides virtually undiminished performance for 20 years.
- Loss of light transmission after 10 years is just 10% compared to a loss of 30% for standard fibreglass. Very high resistance to yellowing and discolouration. Over 10 years change is negligible and covered by Warranty, only minor changes occur in later years. In addition, inbuilt UV protection eliminates 99% of harmful rays.
- Webglas GC+ uses Ampelite's Proprietary SL Group 3 "Bromine Free" Fire Retardant Resin System as standard. Webglas GC+ manufactured in New Zealand after the 15 October 2020 will now use Ampelite's proprietary Group 3 Bromine Free fire retardant resin system that is currently used to manufacture our SL sheeting products.
- Surface erosion is eliminated and covered by Warranty for 20 years. Low surface erosion also improves weathering properties. The gel coated surface provides an almost impenetrable barrier and is warranted against water penetration for 20 years.

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Chemical Resistance

Chemical Group

	Webglas GC	Webglas GC+
Organics		
Acetic Acid 25%	LS	R
Ethanol	R	R
Heptane	R	R
Kerosene	R	R
Turpentine	R	R
Urea	R	R
Acids		
Hydrochloric Acid Conc.	LS	R
Hydrochloric Acid 10%	R	R
Hydrofluoric Acid 40%	NR	R
Nitric Acid	R	R
Oleic Acid Concentrate	R	R
Phosphoric Acid Conc.	LS	R
Phosphoric Acid 30%	LS	R
Sulphuric Acid 30%	LS	R
Sulfurous Acid	NR	R
Sulphuric Acid 3%	R	R
Alkalines		
Amonium Hydroxide 10%	LS	R
Amonium Sulphate	LS	R
Sodium Hypochlorite (Chlorine)	LS	R
Sodium Hydroxide 10% (Caustic)	LS	R
Sodium Hydroxide 25% (Caustic)	LS	R
Salts		
Ammonium Carbonate	R	R
Copper Chloride	R	R
Nickel Chloride	R	R
Pottasium Carbonate	R	R
Sodium Carbonate	R	R
Zinc Sulphate	R	R

KEY: R = Recommended LS = Limited Service NR = Not Recommended
Recommendations are based on total immersion at 40°C and therefore may be conservative.

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LIGHT & HEAT TRANSMISSION 2.2 mm		
COLOUR	LIGHT %	HEAT %
Clear	60	66
Opal	56	60

INSTALLATION

Webglas GC+ sheeting shall be installed in accordance with Ampelite fixing instructions and with AS/NZS 1562.3:1996, Design and installation of sheet roof and wall cladding, Part 3: Plastic, the requirements of the NZ building code and the NZ Metal Roofing Manufacturers Association Code of Practice.

FOR FULL INSTALLATION DETAILS PLEASE DOWNLOAD A COPY OF OUR INSTALLION GUIDE:

Please note these additional important requirements:

Webglas GC+ shall be installed using the fastening length applicable to the chosen profile. The sheeting must be installed by pre-drilling 12mm oversize holes to allow for expansion and contraction. The fixing screws shall be located in the centre of the rib must not be over tightened to an extent that the sheet buckles, allowing water penetration at the seal or sheet overlap. Fixing should be made at every second crest at both ends of the sheet, and every third crest at intermediate purlin's. Webglas GC+ sheeting shall only be installed using Metal profiled washer along with an EPDM washer which fits the profile correctly ensures the fixings remain watertight.

To ensure accuracy Ampelite recommends the following:

- 1- Install screws into the Webglas GC+ sheeting in the same manner as metal.
- 2- When completed, remove fixings from the Webglas GC+ sheet.
- 3- Using the existing screw hole as a guide, re drill over sizing the hole.
- 4- Re install the fixing screw. (Note how the screw is centrally located in the hole.)
- 5- Do not over tighten the screw putting undue pressure on the Webglas GC+ sheet.

SPAN TABLES BY ROOF PROFILE – 1.5Kpa Wind Load

Profile	Strip Lighting	Complete Roof Maximum
Corrugated	1900	1500
Low Rib Trapezoidal, 5 Rib, Trimdek, etc	2500	1700
High Rib Trapezoidal, Steelspan, Topspan, MultiRib, etc	2900	2100
Metric, Windek, MC1000	2400	1600
BB900, ST900, LT7, RT7, ST7, MultiRib, ST963, DP955, etc	2700	1700
Supersix	2900	2100

Concentrated loads as per AS1170.2. F

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BUILDING CODE COMPLIANCE

The product will, if used in accordance with the Ampelite installation and maintenance requirements, assist with meeting the following provisions of the building code for a period of 20 years:

- Clause B2 Durability: Performance B2.3.1
- Clause C3 Fire affecting areas beyond the fire source: Buildings C3.3
- Clause E2 External moisture: Performance E2.3.1, E2.3.2
- Clause F2 Hazardous building materials: Performance F2.3.1
- Clause G7 Natural Light

EVIDENCE MEETS NZBC

Test information available from Ampelite (NZ) Ltd and past history of use of Webglas GC+ products in New Zealand indicate that, provided the product use and maintenance is in line with the guidelines contained in the current literature referenced, Ampelite S-996 gel coated roofing & wall cladding systems can be expected to meet the performance criteria in clause B2, C3, E2, F2 and G7 of the New Zealand Building Code, for a period of not less than 20 years.

TESTING & SUPPORTING EVIDENCE

The product has and can make available the following additional evidence to support the above statements:

Wonderglas GC (now Wonderglas S-996) has been tested at the Allunga Exposure Laboratory in Allunga QLD, a world renowned testing facility. All methods of testing are performed to strict Standards. The Altrac system (in which the sample tracks the sun), is generally accepted to have a 5 to 1 weathering value. The Wonderglas S-996 result was a light loss of 22% over a period equivalent to 20 years exposure. The test samples still displayed a very smooth, glossy surface with no fibre show at all

AS1562.1: 1992 – Design and installation of sheet roof and wall cladding, Part 1: Metal Concentrated Load Tests. (This code is for metal roofing and is not required for plastic sheeting; however in the interest of safety Ampelite initiated the study). Tests conducted by the CSIRO

Building, Construction and Engineering in accordance with AS4040.1: 1992, “Methods of testing sheet roof and wall cladding – Part 1: Resistance to concentrated loads”. Report DTS522 dated 24 August 1998 provides details of concentrated loads for various Webglas GC profiles over varying spans.

AS/NZS1562.3: 1996, “Design and installation of sheet roof and wall cladding, Part 3: Plastic”, Section 5.2 “Resistance to wind forces”. Limit State Testing for resistance to wind loads has been performed as per the requirements of this standard.

AS4040.2: 1996 “Methods of testing sheet roof and wall cladding – Part 2: Resistance to wind pressures for non-cyclone regions”. Tests conducted by Vipac Engineers and Scientists Ltd. Vipac Report Series 360176_TST_2949_00 dated February to June 2004 details varying Webglas GC profiles over varying spans determining strength limit state for non cyclone regions.



World Class, Quality
PLASTIC ROOFING PRODUCTS

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Cyclonic Wind Loading Tests: Extensive testing regarding fixings and Webglas GC within cyclonic conditions to 10,000 cycles required for approval within Darwin has also been performed. The University of Adelaide EngTest, The Department of Civil & Environmental Engineering details Cyclonic Wind Loading Tests to comply with the requirements of the Building Code of Australia, Northern Territory Annexure.

References for the testing include;

AAS/NZS1170.2: 2002 "Structural Design Actions – Wind Actions".

S/NZS1562.3: 1996, "Design and installation of sheet roof and wall cladding, Part 3: Plastic".

AS4040.0:1992 "Methods of testing sheet roof and wall cladding – Part 0: Introduction, list of methods and general requirements".

AS4040.3: 1992 "Methods of testing sheet roof and wall cladding – Part 3 Resistance to wind pressures for cyclone regions". Details are listed in Report Number C980304 dated March 1998.

ISO5660 (2002), "Reaction to fire test". Fire Group 3 Rating Testing conducted by Centre of Advanced Composite Metals, Engineering, University of Auckland.

NZ Metal Roofing Manufacturers Association Inc. (NZMRM)
Code of Practice

STANDARDS

Ampelite NZ Limited is an AS/NZS ISO 9001: 2002 SAI Global Certification accredited company providing Quality Assurance in Manufacturing, Supply and Servicing. License number QEC 4787 was certified and issued to the company on the 20 June 1995.

Ampelite Manufactures its products to Australian/New Zealand Standard AS4256.3: 1994, described as "Plastic roof and wall cladding materials – Part 3 – Glass fibre reinforced polyester (GRP)".

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