AMPELITE SS40 PRODUCT TECHNICAL STATEMENT

PRODUCT DESCRIPTION

SS40 Group 1-S Industrial Polycarbonate is a high performance polycarbonate skylight sheet used on commercial, industrial, and other buildings to admit natural light. SS40 Group 1-S Industrial Polycarbonate can form complete roof coverings or be incorporated into profiled metal roofing and cladding systems, and ranges from simple single-skinned to double-skinned applications.

SS40 Group 1-S Industrial Polycarbonate is a very durable roofing material, many times tougher than glass, with excellent light transmission and fire safety performance. It has a very low heat deformation temperature and melting point, similar to that of industrial fiberglass sheeting, and is compatible with most commercial roofing profiles sold in New Zealand.

FEATURES

Features of Ampelite SS40 Industrial Polycarbonate*

- Available in Opal finish.
- UV protected top surface for long term weather resistance blocking 99% of harmful UV.
- Good light transmission/light diffusion characteristics.
- Extremely high stiffness.
- High impact strength.
- 15 year light and water transmission warranty

Fire Test Performance
Ampelite SS40 Industrial Polycarbonate has achieved an Internal Surface Finish Group number of 1-S according to performance determined under the conditions described in ISO 9705:1993 required by NZBC clause C3.4(A). Performance is achieved through MBIE Guidance on European Classication.

Impact strength
Ampelite SS40 Industrial Polycarbonate has outstanding impact performance over a wide temperature range of· -40ºC up to +100ºC. The product is capable of withstanding the extremes of weather – storms, hailstones, snowfall and ice formation.

UV protection
Ampelite SS40 Industrial Polycarbonate has UV protection to the top surface to help protect the system against the degrading effects of ultra violet radiation. The co-extruded layer on the outer surface of the sheet forms a protective barrier against the detrimental effects of UV light, blocking 99% of UV minimizing long term yellowing and maintaining mechanical properties.

INSTALLATION

Ampelite SS40 Industrial Polycarbonate shall be installed in accordance with Ampelite (NZ) Limited fixing instructions and with AS/NZS 1562.3:1996, Design and Installation of Sheet Roof and Wall Cladding, Part 3: Plastic. Also, Ampelite SS40 Industrial Polycarbonate Glazing sheets shall be installed in accordance with the NZ Building Code and the NZ Metal Roofing and Cladding Manufacturers Association Code of Practice.

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

AMPELITE SS40 PRODUCT TECHNICAL STATEMENT (Cont'd)

Cutting: Should cutting of the SS40 sheet onsite be necessary the use of an circular saw with a small tooth blade suitable for plastic sheeting is recommended. Care should be taken to achieve a cut with minimal damage to the sheet.

Ampelite SS40 shall be installed using the fastening length applicable to the main roof. 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 crest at both ends of the sheet, and every crest at intermediate purlins and midspan supports if used. SS40 Polycarbonate sheeting shall only be installed using the unique SS40 Metal profiled washer along with a EPDM washer which ensures the fixings remain watertight.

To ensure accuracy Ampelite recommends the following:

Install screws into the SS40 sheeting in the same manner as metal.

2- When completed, remove fixings from the SS40 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 SS40 sheet.

Purlin Protection

Safety mesh must be incorporated under the SS40 roof sheeting. Where the SS40 roof sheeting passes over safety mesh sitting on the supporting purlin, a SS40 profiled foam strip must be placed directly under the SS40 sheeting. This profile strip will protect the SS40 from damage and support the profile when fastened.

Side laps

SS40 has its own profile with an effective cover of 1000mm, which will side lap with most 40mm steel profiles commonly sold in NZ. The metal roof sheets will need be laid with the correct spacing's left for the skylights. Each individual SS40 sheet is manufactured to overlap and be supported by the adjacent roof or wall cladding. A 25x5mm compressive foam tape will need to be applied at the side laps between the steel and SS40 sheeting

End Laps

All end laps must have a minimum of 300mm overlap. A polycarbonate compatible sealent must be used, Ampelite recommend the use of a bead of sealant at the top and bottom of the fastening point. Use a co-polymer sealant specifically formulated for use with polycarbonate. Incompatible sealants weaken the sheeting and their use voids the warranty. End lapping should only be applied to roofs with a minimum pitch of 3 degrees.

Mid Span Supports

Where a single SS40 sheet has been used as a skylight placed between metal roofs sheets, the SS40 sheet may be installed on purlin spacing's that exceed Ampelite's maximum span limitations for the sheet by using a mid span support. Where two or more SS40 sheets are laid side by side purlin spacing's must be reduced to suit the maximum span stated in the Ampelite spanning chart.

Sealing at flashings

The use end stops are required to prevent wind driven water from running past the flashing and into the building. Typically a metal angle is folded A polycarbonate compatible sealent is then applied where the SS40 sheet meets the metal angle. Alternatively a closed foam strip matching the SS40 profile sheeting can be bonded to the pans or valleys of the sheet with A polycarbonate compatible sealent. Ideally the strip should be fitted at least 100mm behind the turn down of the flashing.

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Wall Cladding
Pan fixing is required at each girt, and use of Ampelite grey dome 22 mm weather seals ensures a weather tight seal. Over tightening or flattening the weather seal must be avoided. Fixing shall occur in every pan at both ends of the sheeting, and every other pan at intermediate grits.

End Closure Strip
Foam filler strip is available to suit most profiles. This strip should be installed at the ends of the sheets to exclude dirt, birds and vermin.

Storage: The sheeting should always be stored in a dry and fire safe area. Do not store heavy materials on top of sheets as they may fracture.

Recycling and disposal: Polycarbonate sheeting is fully recyclable and can also be disposed of in a land fill.

Non-trafficable
Ampelite translucent sheeting is a non-trafficable material. Sheets should be handled with care to avoid damage to the surface coating (polyester film). Guarantees will not apply to sheeting that has been damaged in handling, or mechanical damage as a result of foot traffic.

Cleaning & Maintenance
Refer to Ampelite's recommended cleaning and maintenance guidelines.

SPAN INFORMATION

WIND LOAD							
SPAN-NING	1.0 Kpa		1.5 Kpa		2.0 Kpa		DRAPE CURVE RADIUS
1.2 mm	Mid	End	Mid	End	Mid	End	1.2 mm
SS40/1000	1400mm	1200mm	1300mm	1100mm	1200mm	1000mm	14 MTR

BUILDING CODE COMPLIANCE

The product will, if used in accordance with the Ampelite installation and maintenance require-ments, assist with meeting the following provisions of the building code for a period of 15 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

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EVIDENCE MEETS NZBC

Test information available from Ampelite (NZ) Ltd and past history of use of Ampelite SS40 Industrial Polycarbonate 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 SS40 Industrial Polycarbonate 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 15 years.

TESTING & SUPPORTING EVIDENCE

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

AS/NZS1170 Part 2. Wind Actions.

Sustainability Document. Environmental Declaration—Sabic Innovative Plastics

EN 13501-1+A1:2009 Fire Classification of construction products & building elements—Part 1: classification using data from reaction to fire tests. Testing conducted by Laboratoire de Trappes, France. The co-relation of wall and ceiling surface finishes derived from Australian or European classifications to the Group Number requirements of NZBC Clause 3.4 (a) can, without the need for further testing, be taken as described in the following table:

New Zealand Group Number according to NZBC Clause C3.4(a) using ISO 9705:1993	Australian Group Number according to NCC Specification C1.10 Clause 4 using AS ISO 9705:2003	European Classification using to EN 13501-1:2007+A1:2009
Group Number 1-S	Group 1, and a smoke growth rate index not more than 100	Class A1, A2 or B and Smoke production rating s1 or s2

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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.

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