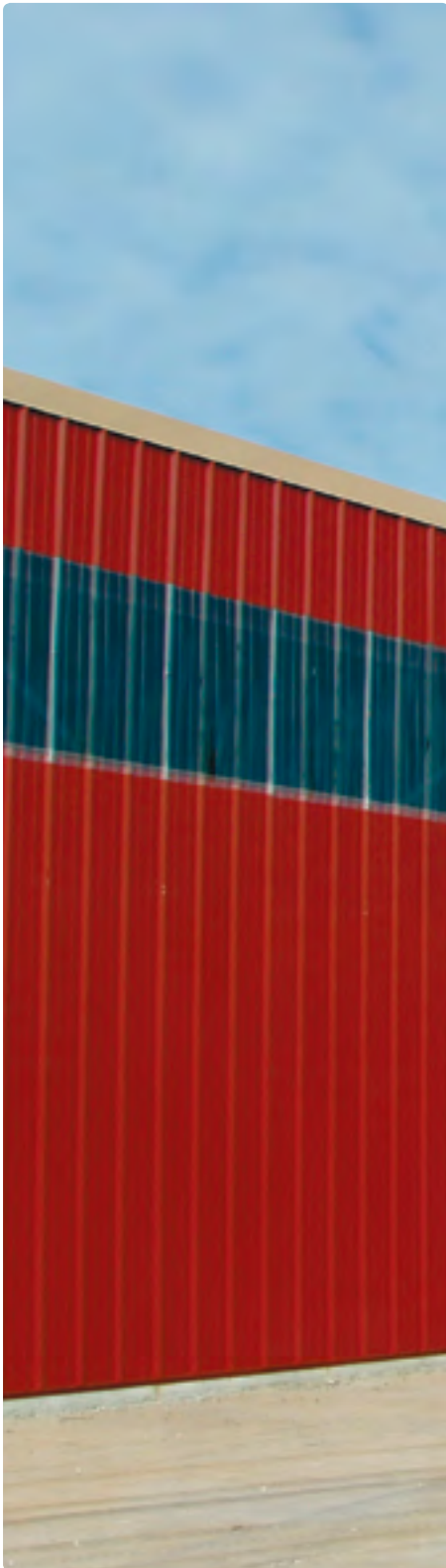




SUNTUF[®] Industrial

Profiled Polycarbonate for Skylights & Sidelights

SUNTUF® Industrial Profiled Polycarbonate Skylights & Sidelights



Content

| | |
|----------------------------------|----|
| Introduction | 2 |
| Main Benefits of SUNTUF® | 4 |
| Benefits of Natural Daylight | 5 |
| Effective Lighting Comparison | 6 |
| Profile Offering | 8 |
| Colours | 8 |
| SUNTUF® Product Range | 9 |
| Project Gallery | 10 |
| Manufacturer's Lifetime Warranty | 14 |

Introduction

SUNTUF Industrial offers multiple advantages over alternatives. It stands up to demanding exterior applications and maintains high light transmission for very long periods. It ideally integrates as in-plane skylight and sidelight into profiled metal roofs using an advanced profile matching technology that allows Palram to adapt SUNTUF to any metal profile. SUNTUF panels form a complete shield against harmful UV rays while admitting most of the visible light. In fully exploiting natural daylight, the panels contribute to the conservation of energy and also improve the quality of the working environment. The wide colour range of SUNTUF Industrial enables optimal specification of solar transmission: clear panels will maximize lighting, while various colours and diffusions will filter visible light and reduce heat loads. SolarSmart Infrared blocking tints can also be used to reduce heat-buildup even further.





Main Benefits of SUNTUF®

Clarity

Natural, clear SUNTUF polycarbonate sheeting exhibits the clarity of glass, transmitting up to 90% of natural light.

Energy Saving

By transmitting natural daylight into the structure, SUNTUF skylights reduce energy consumption of electric lighting.

Matching Any Profile

Palram's proprietary corrugation technology enables SUNTUF to be quickly matched into any given profile, opening infinite corrugation possibilities.

Strength

SUNTUF sheets, manufactured from polycarbonate are virtually unbreakable. SUNTUF is extremely resistant to impact, hail and loads.

Protection from Harmful UV Radiation

SUNTUF blocks over 99.9% of harmful UV radiation and completely protects from its harmful effects. A built in co-extruded layer protects SUNTUF from chemical degradation, yellowing and colour loss by UV radiation.

Resistance to UV Radiation

SUNTUF Industrial's resistance to UV radiation is far superior to that of fibreglass. SUNTUF Industrial will not yellow, and retains its clarity for many years. Simulated UV exposure results are graphically shown on the right.



Fire performance

SUNTUF polycarbonate sheeting has a low flammability rating and does not release strong toxic gases when burning. SUNTUF has been tested with a procedure conforming to AS1530, 3-1982 (Australian Standard Methods for Fire Tests on Building Materials and Structures, Part 3 - Tests for Early Fire Hazards Properties of Materials).

Low Weight

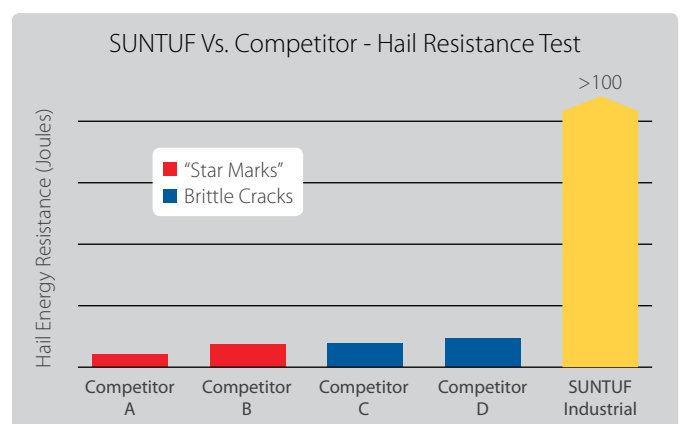
Light in weight, SUNTUF sheets are easy to handle and install.

Weather Resistance

SUNTUF withstands strong winds, hail and extreme temperatures from -50°C to +120°C.

Hail Resistance

SUNTUF Industrial exhibits much greater resistance to high velocity impact (hail simulation tests) than a leading fibreglass panel.



Benefits of Natural Daylight

Daylight is an essential natural asset with numerous benefits:

Health

Natural daylight helps people feel better by triggering the release of serotonin. Studies have proven that recovery rate of hospital patients is accelerated where levels of natural light are increased. Seasonal Affective Disorder (or SAD) is a clinically diagnosed condition in which the lack of sunlight in winter makes people feel ill; increased exposure to daylight will reduce the risk of SAD and also aid the healing process. Natural Ultraviolet light creates Vitamin D through our skin, which produces calcium for healthier bones & teeth.

Education

Research demonstrates a clear correlation between classrooms with good natural light and improved student performance and even attendance. This is because in natural light children concentrate better so are more focused and less easily distracted. Some studies suggest that better health helps to explain the improved attendance.

Workplace

Daylight improves concentration so that working environments tend to achieve increased productivity. Research in retail areas suggests that many sales outcomes tend to improve in naturally lit locations. Colours are more vivid and true, making goods appear attractive and encouraging customers to spend more time in these areas. Leading retail organizations include large areas of skylights in specifications for all new building projects to ensure a high percentage of evenly distributed natural daylight within the interior.

Energy Saving

Skylights can be extremely effective in reducing energy consumption in any given structure. Since lighting represents a significant and controllable part of a structure's expense, energy saving has an undeniable economical benefit. This will also help the environment by reducing the structure's carbon footprint. Specially tinted skylights with Near-Infrared blocking can reduce heat gain and consequently air conditioning requirements



Effective Lighting Comparison

White diffuser SUNTUF Rooflights were installed in a 26,000sqm warehouse in Mexico. As the photos show, the abundance of natural daylight admitted through a mere 5% of the roof's surface provides all the lighting necessary for the structure. The White Diffuser Rooflights also creates a pleasant working environment by softening the transmitted light.

Without Skylights



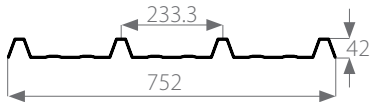
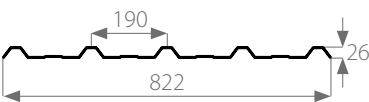
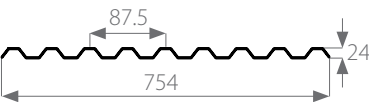
SUNTUF® Skylights Installed





Profile Offering

Standard Profiles

| Property | KingKlip (SUNTUF 8000) | Trimdek (SUNTUF 5000) | Spantuf (Spandek) |
|------------------------|---|--|---|
| Drawing |  |  |  |
| Standard length | 7.2m | 7.2m | 7.2m |
| Overall width | 752mm | 822mm | 754mm |
| Cover width | 700mm | 760mm | 700mm |
| Thickness | 1.2mm | 1.0mm | 1mm |
| Profile height | 42mm | 26mm | 24mm |
| Minimum Curving radius | 17000mm | 11000mm | 12000mm |
| Maximum overhang | 150mm | 150mm | 150mm |
| Maximum end spans | 1800mm | 1000mm* | 1200mm* |
| Maximum mid spans | 2100mm | 1500mm* | 1500mm* |

*SAND BAG Test Compliance

For installation instruction please contact Palram's Representative.

Unlimited Profile Matching

Palram's unique corrugation technology allows SUNTUF to be quickly matched to virtually any given profile.

- Maintaining an even and consistent roof assembly
- Simple and convenient installation
- Special fitting accessories become redundant
- Reducing installation time and cost
- Maximum impermeability
- Maximum flexibility with new or when used in a existing roof design

SUNTUF is currently available in over 150 known profiles. For a complete profile listing please refer to "SUNTUF Rooflights Profile Catalog", which is available as part of the SUNTUF marketing kit and can also be downloaded from the SUNTUF Rooflights section of the www.Palram.com website.

We Match Any Profile!

- ✓ SUNTUF® can be matched into any corrugation shape!
- ✓ No additional costs!
- ✓ Matching in no time!

How to order a custom profile:

- Submit a detailed drawing or a full width sample.
- Palram will return a profile drawing for approval.



Colors

| Group | Description | Colors |
|-------------|---|---|
| Clear | Transmits up to 90% natural daylight, resulting in high lighting within the structure. | <div>Clear</div> <div>LT 90% HT 80%</div> |
| Transparent | Low haze colors offering high clarity. Breeze and Smart colors offer advanced heat blocking that reduces heat buildup while allowing a clear view through the sheet. | <div>Solar Gray</div> <div>LT 20% HT 46%</div> <div>Bronze</div> <div>LT 25% HT 66%</div> <div>Sky Blue*</div> <div>Transparent Green*</div> <div>Smart Gray</div> <div>Breeze*</div> |
| Translucent | White Opal: Transmits 24-45% visible light with high light dispersion, produces mild and even lighting within the structure. Diffuser: Transmits 85% visible light with complete light dispersion, produces diffused and consistent lighting within the structure. | <div>White Opal</div> <div>LT 45% HT 46%</div> <div>White Diffuser</div> <div>Solar Control (Solar Metallic Grey)</div> <div>LT 20% HT 30%</div> <div>Solar Ice (Metallic Ice)</div> <div>LT 25% HT 33%</div> <div>Smooth Cream</div> |
| Opaque* | Colors that transmit very little to no light. | <div>White*</div> <div>Green*</div> <div>Blue*</div> <div>Red Brick*</div> |

* Non-standard colors are subject to a minimum quantity order.

** LT= Light Transmission | HT=Heat Transmission

SUNTUF® Product Range

| Product | Description |
|------------------------|---|
| SUNTUF® | Profiled polycarbonate sheet with integrated UV protective layer on one side. |
| SUNTUF® UV2 | Profiled polycarbonate sheet with integrated UV protective layer on both sides. |
| SUNTUF® Plus* | UV protective layer on the exterior side and anti-condensation treatment applied to the interior side. |
| SUNTUF® Solar Control* | Transmits selected percentages of daylight (20%, 35%, or 50%) while reflecting and absorbing some of the heat-generating Infra-Red radiation. |
| SUNTUF® Embossed* | Embossed or Hair Cell finish on one sides. |
| SUNTUF® Smart | Advanced heat blocking combined with low haze. |

*Also available with co-extruded UV protective layer on both sides.

Project Gallery

SUNTUF® Industrial is installed in numerous projects around the globe; a few of which are presented in the following pages.



Hangar - Odessa, Ukraine

SUNTUF Skylights are installed across the entire slope with PALRUF roofing in a huge hangar on the shores of the Black Sea.



William Cox - Ireland

Industrial warehouse of a major Irish roofing materials distributor.



Industrial Warehouse - South Africa



Cow Shed - USA

Project Gallery



Storage Shed - USA



Central Bus Station - Argentina



Industrial Warehouse - UK



Industrial Warehouse - Israel

Manufacturer's Lifetime Warranty

Manufacturer's Details

Address: Palram Industries (1990) Ltd. c/o Palram Australia Pty Ltd ACN 102 673 932, 16 Merri Concourse, Campbellfield VIC 3061
Tel: 03 9357-9240 Email: salesvic@palram.com.au

Light Transmission – Lifetime warranty

In addition to any rights and remedies under Australian Consumer Law, the Manufacturer warrants (subject to the conditions set out below) that the Product shall not lose more than 7% of its light-transmitting capability (hereinafter "decrease") for a period of 10 years from the commencement date and shall not lose more than 1% per year from the end of the period of 10 years from the commencement date, as defined below, as a direct and exclusive result of solar radiation impact (as measure pursuant to the procedures specified in ASTM E-313-05).

Breakage – 10 year warranty

The Product shall not break due to loss of impact strength as a direct and exclusive result of weathering and/or, shall not break as a direct and exclusive result of the impact of hail, measuring up to 25mm (1") diameter, attaining a velocity of up to 20 m/s (44.7mph) (Loss of above capability shall be hereinafter referred to as "breakage"). Excessive loss of impact strength will be determined by test according to ISO 6603/1-1985(E) and/or ASTM D-5628-95 method F, to be applied on a sample of the broken sheet. This warranty applies only if the sample will be brittle broken in this test into separate pieces (shatter).

Commencement Date

The commencement date shall be the date of the Product's manufacture or – if such date does not appear on the product – the date upon which the Product was purchased from the Manufacturer.

Limitations

This warranty shall be valid only if the product is handled, stored, cleaned, installed and maintained in accordance with Manufacturer's written instructions.

Claims and Notifications

Every warranty claim must be notified in writing to the Manufacturer within the warranty period and immediately after occurrence of decrease or breakage, enclosing the original sales receipt and this warranty. The claimant must allow the Manufacturer to inspect any or all of the sheets involved and the installation site itself while the sheets are still in their original position and have not been removed or moved or altered in any way and/or return the sheets to the Manufacturer for testing. The Manufacturer reserves the right to investigate independently the cause of any failure.

Compensation

If the Manufacturer is duly notified of decrease or breakage within 3 (Three) years of the commencement date, and a claim upon such decrease or breakage is properly made and approved, the Manufacturer may either provide free substitute product or, at its exclusive option, refund the original purchase price.

If the Manufacturer is duly notified of decrease or breakage after more than 3 (Three) years from the commencement date, and claim upon such decrease or breakage is properly made and approved, the Manufacturer may either sell substitute product to the purchaser at a discounted replacement price or, at its exclusive option, may refund the difference between the Manufacturer's effective price at the time of replacement and the discounted replacement price.

The discounted replacement price to be paid by the purchaser will be 10% of the Manufacturer's effective price at the time of replacement, multiplied by the number of years from commencement date to replacement time, but not exceeding 90% of the Manufacturer's then effective price.

The Manufacturer at its exclusive option may refund the difference between the effective price and the replacement price as above, instead of providing substitute product. The Manufacturer's liability does not include any costs of removal and installation of sheets and the Manufacturer will not be liable under this limited warranty for any other claim for direct or indirect damage or loss or for consequential loss arising from failure.

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if goods fail to be of acceptable quality and the failure does not amount to a major failure.

02/2015 The data in this publication supersedes previous releases. For the latest update refer to our website: www.palram.com.au

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02.2015

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