



AGRICULTURE



CONSTRUCTION



DIY

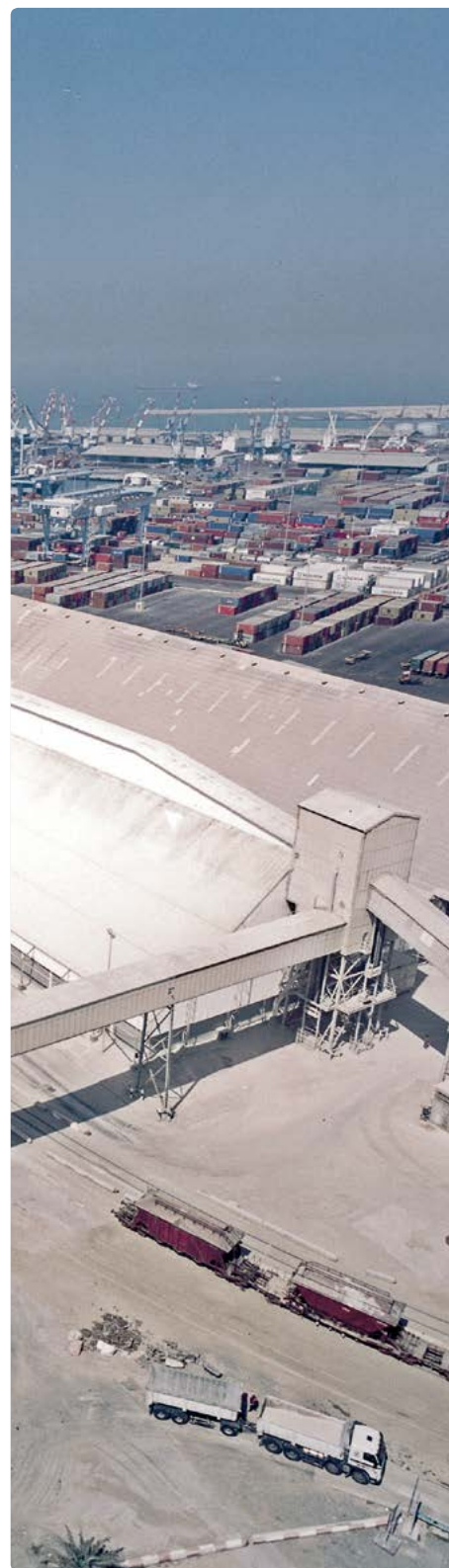
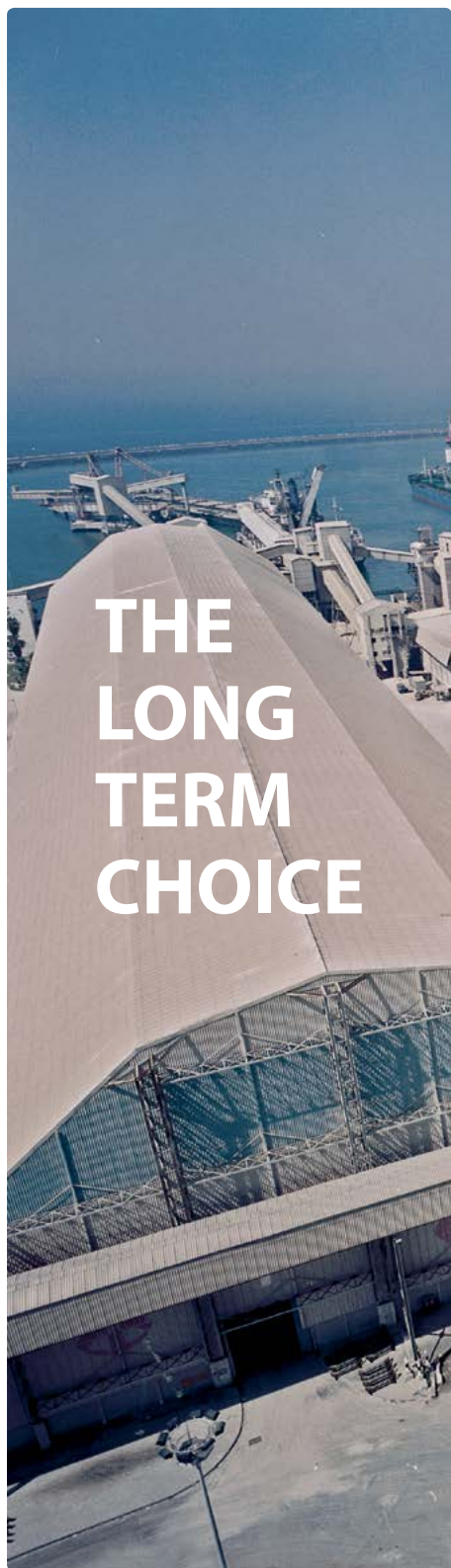


PALRUF®

Corrugated PVC Sheet



PALRUF® Corrugated PVC Sheet



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About Palram

A Global Leader in Thermoplastic Panels

Established 50 years ago, Palram has grown into a leading global manufacturer of semi-finished extruded thermoplastic sheets, panel systems and finished products. Palram sheets, manufactured mainly from polycarbonate and PVC, are designed to suit a diverse range of applications in various markets, which include DIY, construction, architectural projects, advertising, agricultural, glazing, and fabrication. Palram panel systems are offered as part of the company's advanced products and services bundle for the construction and architectural markets. A variety of consumer products are marketed through DIY chain stores across the globe.

Palram delivers excellence to a global marketplace, backed by professional support and service on both local and regional levels.

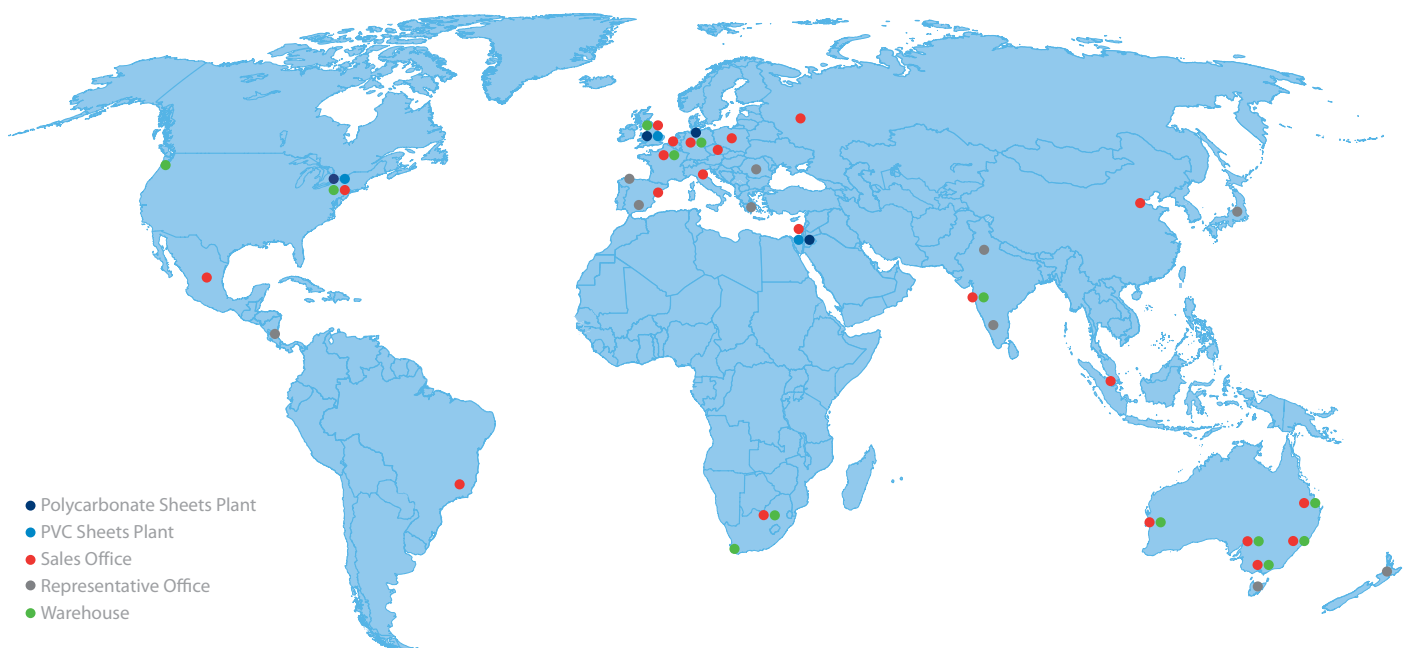
Palram is proud of its unique corporate culture that makes us agile, creative and committed to all our customers.

Research and Development

Palram pioneered the extrusion of PVC panels and has relied on innovative product culture ever since. The company constantly adapts new technologies to improve its manufacturing methods and keeps track with market demands. This production expertise results in an evolving product range, which refines the company's ability to match the most suitable product to each project.

Global Presence

Palram operates production plants in Europe, the Americas and on the shores of the Mediterranean, allowing constant logistic support and supply of PALRUF sheets.



PALRUF® - For the Long Term

PALRUF corrugated PVC panels combines excellent resistance to chemicals, fire and impact, resulting in an extremely durable roofing solution. PALRUF withstands harsh chemical environments where conventional roofing quickly corrodes, which makes it ideal for long-term use in demanding industrial applications such as chemical plants and storage facilities, mines and ports. For domestic applications, it is ideal as a clear (in cold northern climates) or opaque roofing material that is easy to install and maintain. PALRUF evolved into the high quality product it is today based on the experience of 50 years of service. It is lightweight, safe, extremely easy to handle and install using conventional tools and requires minimum maintenance.

Replacing asbestos with PALRUF® in the roof of a chemicals warehouse.



Main Benefits of PALRUF®

Excellent Chemical Resistance

PALRUF withstands a wide variety of chemicals, making it ideal for long term applications in chemically aggressive environments.

UV and Weather Resistant

Offering long service periods in cold or hot climates.

Flexibility

Suitable for curved roofing.

Non-Corrosive

PALRUF is ideal for seaside projects, mines, livestock farms and similar areas.

Minimum Maintenance

Freedom from high maintenance and frequent roofing replacement.

High Impact Strength

Excellent resistance to hail, wind and snow loads.

Fire Resistance

PALRUF is self-extinguishes and meets the highest flammability standards in the field.





PALRUF® - Any Place, Any Conditions.

PALRUF® Project Gallery

Roofing and Cladding Applications in Chemically Agressive Environments

PALRUF prevails where alternative materials fail. It provides a long term solution for roofing and cladding in industrial environments and reduces overall maintenance work and expenditure.

- Chemical processing plants
- Pulp and paper production
- Pharmaceutical Plants
- Oil refineries
- Fertilizer plants
- Power stations
- Steel mills
- Mines
- Ports
- Metal refining & processing
- Conveyor roofing

Project: Coca Cola Plant - Middle East | Type: PALRUF® White 3mm



Project: Dead Sea Plants - Middle East | Type: White Opaque 2mm



Project: Dead Sea Plants - Middle East | Type: PALRUF® White Opaque 2mm



Project: TIS Port - Odessa, Ukraine | Type: PALRUF® 3mm White Opaque and Clear (Clear sheets used as skylights)



Project: Caserones Mine - Chile | Type: PALRUF® White Opaque 3mm



Livestock and Farming Applications

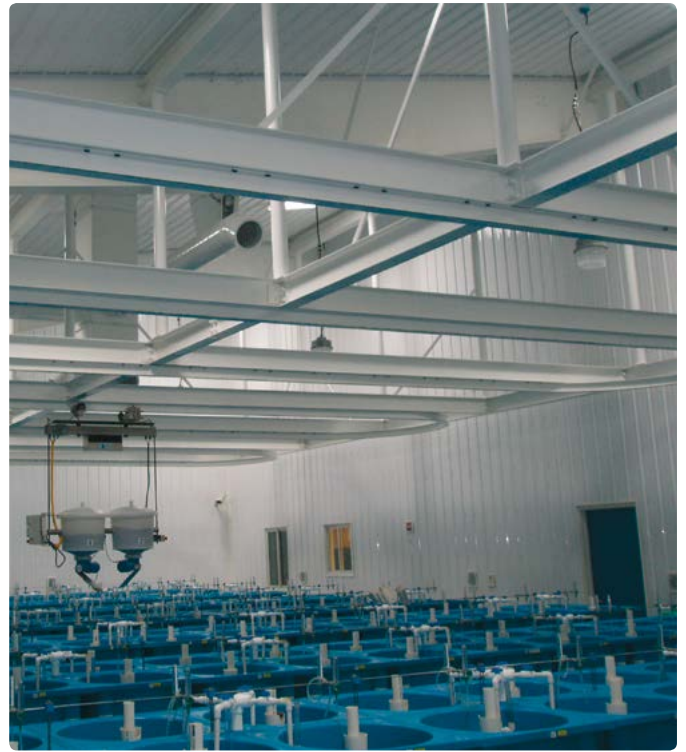
PALRUF withstands aggressive chemical environment typical of livestock structures. It would make an ideal roofing, siding and internal cladding solution for a long service period.

- Poultry farms
- Pig farms
- Dairies
- Fish farms
- Barns
- Fertilizer warehouses

Project: Pig Farm - Middle East | **Type:** PALRUF® White Opaque 2mm



Project: Fish Research Farm - University of Maine, USA
Type: PALRUF® White Opaque 3mm



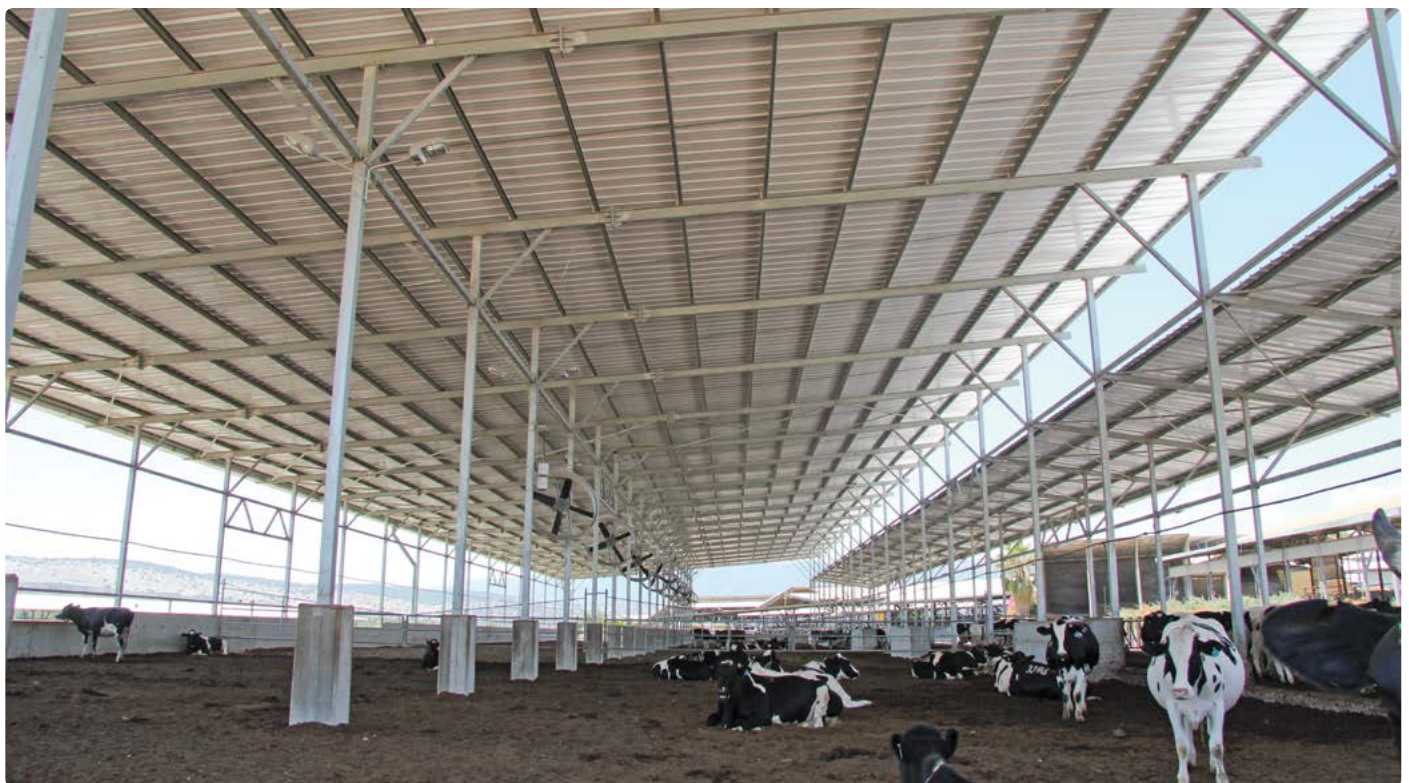
Project: Unicoop Planta UPM Pig Breeding Farm - Paraguay (8,900sqm) | **Type:** PALRUF® Opaque White 3mm



Project: Dairy Farm - Canada | Type: PALRUF® White Opaque 3mm



Project: Dairy Farm - Middle East | Type: PALRUF® White Opaque 3mm



Do It Yourself (DIY) Applications

PALRUF® is lightweight and extremely easy to handle and install around the house. The sheets will maintain their appearance with minimum maintenance and withstand extreme weather conditions for a long period.

- Pergolas
- Small warehouses
- Carports
- Canopies
- Patios

Project: Residential Carport - Middle East | Type: White 1mm



Project: Residential Pergola - Canada | Type: PALRUF® Clear 1mm



Project: Residential Pergola - Germany | Type: PALRUF® Clear 0.8mm



Project: Residential Pergola - USA | Type: PALRUF® Clear 0.8mm







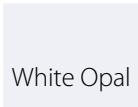

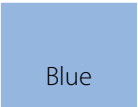
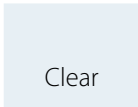
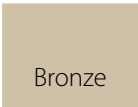




PALRUF® Colors

When specifying PALRUF colors, it is important to consider the climactic conditions where the sheets will be installed, as described in the table below. Opaque White PALRUF is suitable for any climate and geographical region and will serve as a cost effective roofing solution in most cases. PALRUF is also available in a range of transparent, translucent and other opaque colors, which should be specified according to the weather conditions in the area of installation: clear and standard colors are suitable for relatively cold climates, whereas special cool colors can be applied in warmer regions. For more details and professional consultation regarding color application please contact your Palram distributor.

Colors

| Group | Description | Colors |
|---------------------|---|---|
| White Opaque | Ideal for any climatic conditions. Does not transmit light. |  |
| Opaque Colors | Suitable for most regions - please consult with your Palram distributor before specifying. Does not transmit light. |   |
| Special Cool Opaque | Suitable for any climatic conditions due to a unique feature that stabilizes the sheet's temperature. Available with any color on special orders only, subject to a minimum order. |    |
| Opal | Suitable for cold climates only. PALRUF Opal sheets transmit 20-40% of incident light. |    |
| Transparent | Suitable for cold climates only. Transparent colors offer good light transmission and clarity, and can be either clear or tinted. |   |

Please consult your Palram distributor on the following:

- Select the right color for your location and application
- Receive a sample color chip
- Order custom colors

Physical Properties

| Property | Method* | Conditions | Units | Value |
|---|------------|---------------|-------------------|------------------------|
| Density | D-792 | | g/cm ³ | 1.4 |
| Heat deflection temperature (H.D.T) | D-648 | Load: 1.82 MP | °C | 61 - 67 |
| Service Temperature Range | | | °C | -20 to +50 |
| Thermal conductivity | C-177 | | W/m K | 0.16 |
| Coefficient of linear thermal expansion | D-696 | | cm/cm°C | 6.3 x 10 ⁻⁵ |
| Impact strength | ISO 6603/1 | 2 mm sheet | J | 45 - 60 |
| Tensile strength at yield | D-638 | 10 mm/min | MPa | 50 - 66 |
| Tensile strength at break | D-638 | 10 mm/min | MPa | 39 - 53 |
| Elongation at yield | D-638 | 10 mm/min | % | 3 |
| Elongation at break | D-638 | 10 mm/min | % | >80 |
| Tensile modulus of elasticity | D-638 | 1 mm/min | MPa | 2,900 |
| Flexural strength | D-790 | 1.3 mm/min | MPa | 90 - 100 |
| Flexural modulus | D-790 | 1.3 mm/min | MPa | 2,700 |
| Rockwell hardness | D-785 | | R Scale | 105 - 115 |

* ASTM method except where noted otherwise.

Flammability, Building and Construction Standards

PALRUF complies with stringent international building and construction standards shown in the table below.

| Standard | Country | Method | PALRUF® Type | Designation or Rating |
|--|-----------|---------------------------------|---------------------|-----------------------|
| Cyclonic Test | Australia | AS2424 | Industrial Profile | Passed |
| Flammability | Australia | AS1530-3 | | Conforms* |
| Flammability | France | NFP 92501, NFP 92505 | | M-1* |
| Flammability | Germany | DIN 4102 | | B-1* |
| Flammability | UK | BS 476/7 | | Class 1* |
| Flammability | USA | ASTM D-635 | | CC1* |
| Flammability | USA | ASTM E-84, D-3286, D-1929 | | Class 1* |
| Flammability | USA | Flame Spread Rating | | 12 – Class A* |
| Flammability | Israel | 755 | | V 2 3* |
| Retention of Profile and Impact Resistance | Australia | AS2376-1980 | | Complies |
| ITB | Poland | AT-15-5324/2002 | | Approved |
| Static and Impact Tests | Australia | AS2424-91 | American Industrial | Passed* |
| Windstorm Classification | UK | FMRC 4470 Approval Requirements | | I-60 and I-90* |

Weather Resistance

PALRUF sheets retain their physical properties and attractive appearance despite exposure to various climactic conditions. They withstand humidity, rain and snow and provide weather protection over a large temperature range, from -20°C to 50°C (-4°F to 120°F). Proven weather resistance ensures the long-term flawless performance of PALRUF sheets.



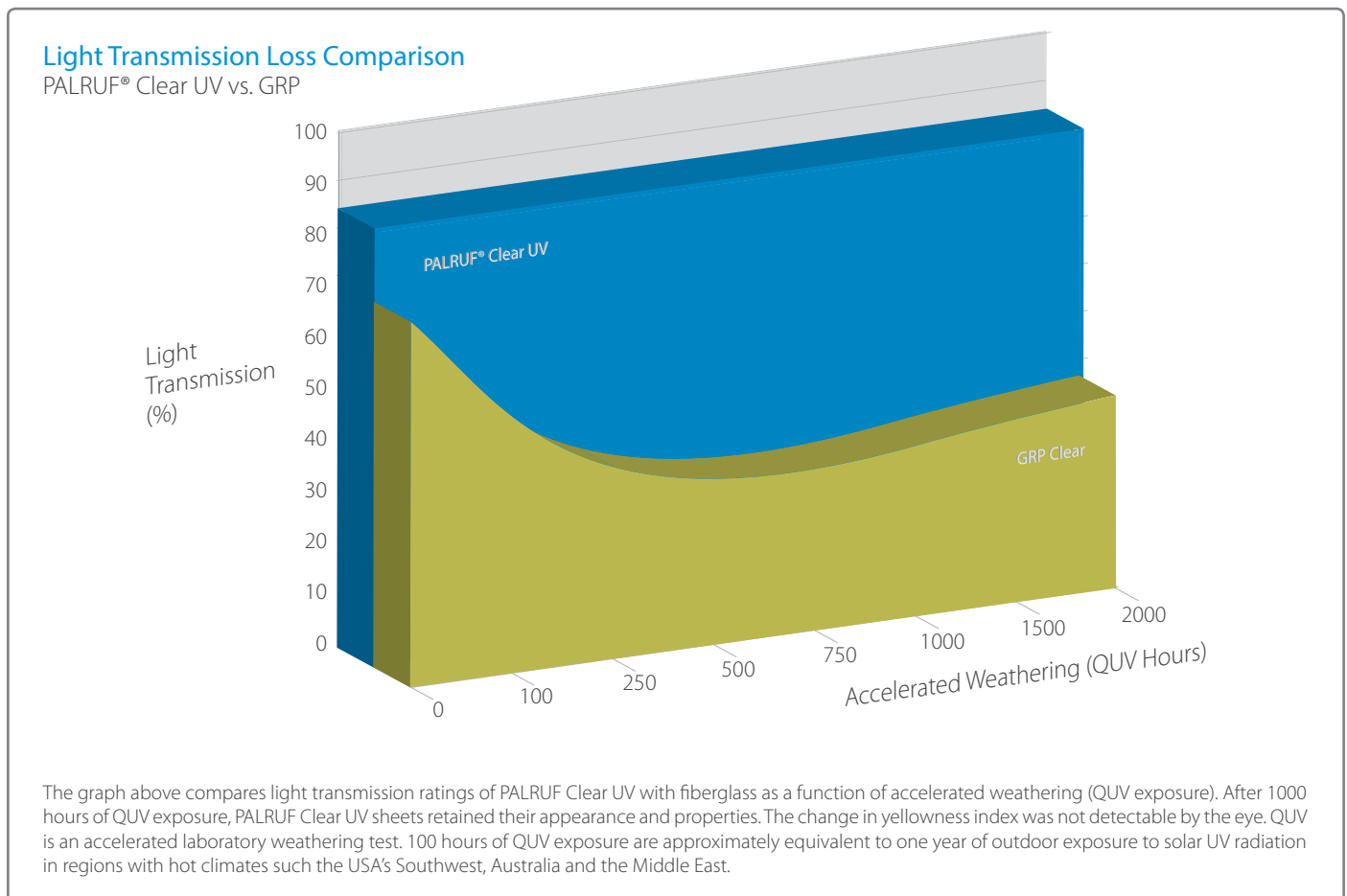
Resistance to UV Radiation

PALRUF® Opaque - Inherently protected by an internal UV absorber and offered in White, Light Grey and Beige colors.

PALRUF® Clear - UV stabilized sheet, recommended for use in regions where heat and the sun's radiation are limited.

PALRUF® UV - A protective layer on the outer side makes this sheet resistant to UV radiation and helps it retain its properties for many years. PALRUF UV is recommended for regions characterized with intense UV radiation.

PALRUF® Clear UV - UV stabilized sheet with protective layer on the outer side for outdoor use in any climate. This sheet will resist hard chemical environments and maintain its clarity far better than some alternatives, as seen in the graph below.



Chemical Resistance

The mechanism of chemical attack on thermoplastics in general, and Palram PVC sheets in particular, differs significantly from the mechanism of corrosion of metals. Corrosion of metals results in a gradual loss of surface material as a result of electrolytic action by the relevant chemicals. Chemical attack on Palram PVC sheet, where it occurs, consists generally of absorption of the chemical by the PVC sheet and its subsequent swelling.

PALRUF corrugated pvc sheets provide exceptional resistance against the following classes of chemicals in both liquid and vapor form: mineral acids, alkalis plating solutions, paper making chemicals, pickling solutions, most inorganic compounds, alcohols aliphatic hydrocarbons, glycols, amines and phenols. PALRUF PVC sheets should not come into contact with acetone, ethers, esters or aromatic hydrocarbons.

A detailed chemical resistance list is available in the "Chemical Resistance of Palram PVC Sheets" file, available at your Palram distributor and the Palram international website.

Detailed information on sealants chemically compatible with PALRUF is available in the "Adhesives and Sealants for Palram PVC Sheets" list, which is available for download from the PVC product pages in all Palram websites.

Standard Profiles*

*Custom designed profiles are available upon request, subject to a minimum order.

| PALRUF® | Designation | Cover Width mm (Inch) | Standard Width mm (Inch) | Drawing |
|--------------------|-------------|--|---|---------|
| 100 | 40/250 | 1000 (39.4") | 1063 (41.8") | |
| 2800 | 14/67.8 | 610 (24") | 660 (26") | |
| 5100 | DV4 | 1000 (39.4") | 1090 (42.9") | |
| 6500 | 36.5/171.5 | 686 (27") | 756 (29.8") | |
| 5,6 Wave | 51/177 | 1062 (41.8") 1062 (41.8") 885 (34.8") 708 (27.9") | 1170 (46") 1100 (43.3") 1020 (40.1") 920 (42.9") | |
| American 2.6" | 20/68 | 949 (37.4") | 1020 (40") | |
| American 4.2" | 27/107 | 1284 (50.6") 963 (37.9") 856 (33.7") | 1390 (55") 1070 (42.1") 1017 (40") | |
| Big 6 | 48/146 | 1025.8 (40.3") | 1086 (42.7") | |
| Big 6 IM Sunlux | 38.8/146.5 | 1016 (40") | 1086 (42.7") | |
| Astoria | 38/305 | 915 (36") | 1025 (40.4") | |
| B5 130/30 | 30/130 | 910 (35.8") | 1020 (40") | |

*Custom designed profiles are available upon request, subject to a minimum order.

| PALRUF® | Designation | Cover Width mm (Inch) | Standard Width mm (Inch) | Drawing |
|--------------|--------------------------|--------------------------|-----------------------------|---------|
| Greca 70 | 18/70 | 1120 (44.1") | 1160 (45.5") | |
| | | 1120 (44.1") | 1140 (45") | |
| | | 1050 (41.3") | 1103 (43.4") | |
| | | 1050 (41.3") | 1090 (42.9") | |
| | | 700 (27.6") | 765 (30.1") | |
| | | 490 (19.3") | 550 (21.7") | |
| Greca 70 Ond | 18/70 | 1050 (41.3") | 1090 (42.9") | |
| Greca 75 | 20/75 | 1275 (50.2") | 1285 (51.6") | |
| | | 1200 (47.2") | 1274 (50") | |
| | | 1125 (44.3") | 1135 (44.7") | |
| | | 1050 (41.3") | 1060 (41.7") | |
| | | 600 (23.6") | 642 (25.3") | |
| | | 600 (23.6") | 637 (25") | |
| Greca 76 | 18/76 | 1140 (44.9") | 1190 (46.8") | |
| | | 1140 (44.9") | 1145 (45") | |
| | | 988 (38.9") | 1060 (41.7") | |
| | | 988 (38.9") | 1045 (41") | |
| | | 912 (35.9") | 980 (38.5") | |
| | | 912 (35.9") | 963 (38") | |
| Iron 76 | 18/76 | 1140 (44.9") | 1150 (45.3") | |
| | | 988 (38.9") | 1067 (42") | |
| | | 836 (32.9") | 900 (35.4") | |
| | | 836 (32.9") | 860 (33.8") | |
| | | 608 (23.9") | 660 (26") | |
| Mini | 8/32 | 1024 (40.3") | 1040 (41") | |
| | | 732 (28.8") | 750 (30") | |
| | | 640 (25.2") | 660 (26") | |
| 3" | 19/72 | 648 (25.5") | 755 (29.7") | |
| 7.2" | 38.1/82.9 (1.5"/7.2") | 1098 (43.2") | 1217 (47.9") | |
| | | 1098 (43.2") | 1150 (45.3") | |
| | | 915 (36") | 967 (38.1") | |
| | | 915 (36") | 965 (38") | |
| 9" | ¾" / 9" | 914 (36") | 965 (37.8") | |

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