



# Palight Foam PVC Sheet

PALIGHT foamed PVC sheets are ideal for indoor and outdoor use in advertising, construction and industry. PALIGHT sheets feature lightweight, durable and versatile surfaces which can be painted, printed, engraved or milled, according to customer specifications. PALIGHT can be fabricated and installed easily using conventional tools and simple handling methods. PALIGHT and PALIGHT 2001 are available in the following colours: white, gray, red, blue, yellow, green, and black.

## Bay Plastics Datasheet

### Features at a Glance

- Half the weight of solid PVC sheets
- Same thickness at lower cost
- Good mechanical properties
- Good insulation, lower heat transmission
- Easily worked with conventional tools, prints and paints
- Can be easily bonded, vacuum formed, nailed and bolted
- Flammability – self extinguishing
- Low water absorption
- High chemical resistance
- Meets various international standards
- Non toxic
- Dust and dirt can easily be cleaned off with water

### Typical Applications

- **Advertising** – signs, displays and exhibition boards
- **Construction** – models, partitions, wall cladding, interior decoration and air conditioning ducts
- **Industry** – control cabinets and panels, structures for corrosive environments and ducts
- **Screen printing** – Palight

Property	Conditions	ASTM Method	Units - SI	Value (3mm)	Value (10mm)
Density			g/cm <sup>3</sup> (lb/ft <sup>3</sup> )	0.6 - 0.65	0.55 - 0.6
Water Absorption	24 hr @ 23°C	D 570	%	0.5	0.8

Mechanical Property	Conditions	Method	Units	Machine Direction 3mm	Transverse Direction 3mm	Machine Direction 10mm	Transverse Direction 10mm
Tensile Strength at Yield	10mm / min (0.4 in./min)	D-638	MPa (psi)	15 - 16 (2180-2300)	8 - 9 (1100-1300)	10 - 11 (1450-1600)	10 - 11 (1450-1600)
Tensile Strength at Break	10mm / min (0.4 in./min)	D-638	MPa (psi)	14 - 15 (2050-2180)	8 - 9 (1100-1300)	10 - 11 (1450-1600)	10 - 11 (1450-1600)
Elongation at Yield	10mm / min (0.4 in./min)	D-638	%	2 - 3	10 - 11	3 - 4	24 - 25
Elongation at Break	10mm / min (0.4 in./min)	D-638	%	29 - 30	10 - 11	19 - 20	30 - 31
Flexural Strength at Yield	1mm / min (0.04 in./min)	D-790	MPa (psi)	27 - 28 (3900-4050)	13 - 14 (1900-2050)	21 - 22 (3050-3200)	15 - 16 (2180-2300)
Impact Strength Notched Izod	23°C (73°F)	D-256	J/m (ft.lbf/in.)	33 - 35 (0.62 - 0.66)	11 - 12 (0.21 - 0.23)	-	-
Impact Strength Notched Charpy	23°C (73°F)	D-256	J/m (ft.lbf/in.)	27 - 29 (0.51 - 0.54)	12 - 13 (0.23 - 0.24)	16 - 17 (0.30 - 0.32)	14 - 16 (0.26 - 0.30)
Impact Falling Weight	-	ISO 6603/1	J (ft.lbf)	1 - 2 (0.7 - 1.5)	1 - 2 (0.7 - 1.5)	8 - 9 (6 - 7)	8 - 9 (6 - 7)

Thermal Property	Conditions	Method	Units	Value 3mm	Value 10mm
Service Temperature	-	-	°C (°F)	-10 to 55°C	-10 to 55°C
Heat Deflection Temperature	Load: 1.82 MPA	D-648	°C (°F)	59 - 63	59 - 63
VICAT Softening Temperature	Load: 1kg	D-1525	°C (°F)	74 - 75	74 - 75
Coefficient of Linear Thermal Expansion	-	D-696	10 <sup>-5</sup> /°C	6.7	6.7
Thermal Conductivity	-	-	W/m K	0.07	0.07

Electrical Property	Conditions	Method	Units	Value 3mm	Value 10mm
Surface Resistance	-	D-257	Ohm	5x10 <sup>15</sup>	5x10 <sup>-5</sup>
Volume Resistance	-	D-257	Ohm - cm	2.6 - 21x10 <sup>16</sup>	2.6 - 21x10 <sup>16</sup>

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## Flammability

PALIGHT sheets are self-extinguishing and comply with the most demanding international fire resistance standards defined in the field of plastics, as indicated by representative results in the table.

Standard	Classification
DIN 4102	B-1
BS 476/7	Class 1
NSP 92501,5	M-1
CSE RF 3/77	Class 1
UL 94	V-0
ASTM D-635	SE

## Fabrication

PALIGHT, PALIGHT 2001 and 2002 can be easily and economically worked with any standard tools used in metal and wood industries. All are especially easy to handle, transport and store, thanks to their exceptionally light weight.

## Cutting

PALIGHT, PALIGHT 2001 and 2002 sheets are easily cut using a straight, finely serrated blade mounted on a hand-saw, band-saw, disk-saw or jig-saw. As a rule, it is recommended to use low cutting feed rates and high cutting speeds. In extreme cases, it is recommended that the cutting blades be cooled with compressed air. PALIGHT is cut easily by using a cutting knife.

## Drilling

PALIGHT, PALIGHT 2001 and 2002 sheets can be drilled using any conventional drill.

## Fastening

PALIGHT, PALIGHT 2001 and 2002 can be screwed, nailed and bolted in place. It is recommended that a large washer be used to distribute load on a wider area.

## Printing

All conventional printing techniques may be applied to PALIGHT, PALIGHT 2001 and 2002. Sheets must be clean and dry before printing.

## Adhesive Bonding

Standard formulations for PVC bonding may be used, as well as most solvent based adhesives. For maximum structural bonding strength, two-part adhesive kits are recommended. To fix temporarily, pressure-sensitive self-adhering tapes or pads may be used.

## Welding

PALIGHT, PALIGHT 2001 and 2002 sheets can be welded to each other or to other rigid PVC sheets with standard hot-air welding equipment, or using the Hot-Blade method. PALIGHT, PALIGHT 2001 and 2002 require the same treatment as other thermoplastic materials, as follows: Proper preparation of the surfaces to be joined. Selecting the appropriate welding temperature. Correct joining pressure or force.

## Thermoforming

PALIGHT, PALIGHT 2001 and 2002 can be thermoformed using vacuum forming, pressure forming or a combination of the two. Standard tools used in thermoforming of sheet plastics may be used on PALIGHT, PALIGHT 2001 and 2002. Larger PALIGHT, PALIGHT 2001 and 2002 sheets require air support to avoid excessive sagging. For shallow forms almost any type of equipment for conventional thermoforming will produce satisfactory results. For more complex deep draw forms, double-sided (sandwich-type) heaters are necessary, PALIGHT's, PALIGHT 2001's and 2002's reaction to working is markedly different from solid plastics. The working cycle is usually shorter, and the radius and depth of draw are limited to the extent that the surface of the material will stretch.

The data are typical values and are not intended to represent specifications. Their aim is to guide the user towards a material choice. All statements, technical information and recommendations in this product datasheet are presented in good faith, based upon tests believed to be reliable and practical experience. However, Bay Plastics Ltd cannot guarantee accuracy or completeness of this information, and it is the buyer's responsibility to determine the suitability of products in any given application. Therefore no liability whatsoever shall attach to Bay Plastics Ltd for any infringement of the rights owned or controlled by a third party in intellectual, industrial or other property by reason of application, processing or use of the aforementioned information products by the buyer.

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