



PALGARD™

Flat Abrasion-Resistant Solid Polycarbonate Sheet



► Introduction

PALGARD has a powerful combination of physical properties that allow it to resist vandalism, graffiti spray and physical attack. All these make PALGARD ideal for safety glazing in public and commercial projects, and also in vehicles. It is also more resistant to a wider variety of chemicals and the increased wear typical of high traffic areas. Blocking harmful UV rays, PALGARD is ideal for skylights and PALGARD can also be glass-laminated for ballistic application purposes.

► Main Benefits

- High Abrasion Resistance on one or both sides
- Impact Resistant: Virtually unbreakable
- Up to 90% light transmission
- Excellent acoustical Insulation
- Blocks UV radiation better than sun-screens
- Resistant to acts of vandalism
- Improved chemical resistance
- Easy to mount and install
- Lightweight

► Applications

- Safety glazing
- Security and ballistic resistant glazing
- Anti-vandal glazing
- Anti-graffiti protection for displays
- Prison windows
- Sound barriers
- Industrial protective shielding
- Bus stops and telephone booths
- Shields for police and security forces
- Protective helmet visors
- Applications requiring high impact and abrasion resistance



► Dimensions and Colors*

Width x Length (mm)	Thicknesses (mm)	Colors
2000 x 3000	3 to 12	Clear, Bronze
1220 x 2440		
1830 x 2440		

*Special dimensions and colors are available subject to minimum order.

► Flammability

PALGARD meets various international fire codes, as presented in the attached table. For additional details please contact your PALGARD distributor.

Standard	Classification*
BS 476/7	Class 1, Class 1Y
DIN 4102	B1, B-2
NSP 92501, 4, 5	M1, M2
CSE RF 2/75/A, CSE RF 3/77	Class 1

*Depends on thickness

► Mounting and Cleaning

PALGARD can be mounted into most existing frames made of PVC, aluminum or other metals. It is recommended to use neoprene or EPDM packing (never use soft PVC) in order to secure the sheet in its frame, rather than fixing with screws. Butyl rubber sealing strip or silicone sealant are also permissible. Any of the above materials, chemical substances or cleaning agents must explicitly receive the manufacturers approval before their use with or on PALGARD.

PALGARD can easily be cleaned with a soft cloth made from 100% cotton using mild soap solution and rinsing with cold water. It is best to use mild dish cleaning preparations. Commercial spray cleaners are available. Please consult with your local Palram agent or representative for recommended commercial preparations available locally.

Installation instructions and a list of compatible materials are available upon request.

► Typical Physical Properties*

Property	Method*	Conditions	Units	Value
Density	(ISO 1183)		g/cm ³	1.2
Water absorption	(ISO 62)	24h @ 23°C	mg/kg	<8
Tensile strength	(ISO 527)		MPa	60
Elongation at break	(ISO 527)		%	90
Tensile modulus of elasticity	(ISO 527)		MPa	2,200
Abrasion (Taber process)	(ISO 9352)	100 rotations, CS-10F, 500g	% Haze	<1.5
Layer thickness			µm	7 - 15
Adhesive properties		0.5/1.0/2.0 h boiled@100°C		GT 0/0/0
VICAT diluting temperature	(ISO 306)	VST/B 50	°C	150
Constancy temperature HDT/A	(ISO 75)	Load: 1.8 MP	°C	135
Permanent use temperature	(DIN 53446)		°C	115
Service temperature range			°C	-50 to +100
Coefficient of linear thermal expansion	(DIN 53752)		cm/cm °C	6.5 x 10 ⁻⁵
Thermal conductivity	(DIN 52612)	0- 50 °C	W/m K	0.21
Specific heat			J/g K	1.3
Light transmission (380-780 nm)	(DIN 5036)		%	>86
Chamfer angle	(DIN 52305)	3mm sheet	Bg'	<5
Refractive power	(DIN 52305)		dpt	<0.1
Specific volume resistivity	(DIN VDE0303)		Ωcm	10 ¹⁵
Dielectric strength	(DIN EN 60243)		kv/mm	>30

*Aside from abrasion parameters, tests and results apply to the carrier material only.

► Chemical and Abrasion Resistance

The unique coating on PALGARD's surface is the source for its chemical and abrasion resistance. This coating provides PALGARD with a chemical resistance durable to various materials ranging from corrosive elements and solvents to cleaning agents. Graffiti spray can easily be removed and the sheet is ideal for industrial environments where volatile chemicals are present.

In addition, high abrasion resistance, when matched with mechanically superb polycarbonate, allows PALGARD's designation to a variety of specialty applications.



Inasmuch as PALRAM Industries has no control over the use to which others may put the material, it does not guarantee that the same results as those described herein will be obtained. Each user of the material should make his own tests to determine the material's suitability for his own particular use. Statements concerning possible or suggested uses of the materials described herein are not to be construed as constituting a license under any PALRAM Industries patent covering such use or as recommendations for use of such materials in the infringement of any patent. PALRAM Industries or its distributors cannot be held responsible for any losses incurred through incorrect installation of the material. In accordance with our company policy of continual product development you are advised to check with your local PALRAM Industries supplier to ensure that you have obtained the most up to date information.



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