EXTRUDED GENERAL PURPOSE POLYSTYRENE SHEETS

EUROPE

DESCRIPTION

PLASKOLITE EXTRUDED GPPS SHEETS are produced and internally verified to ISO standards and are a cost-effective solution for a wide range of indoor applications, such as indoor glazing, interior designs and decorative solutions.

GPPS sheets have low density and high rigidity, good chemical resistance, good optical properties and a brilliant surface. Sheets are easy to fabricate and vacuum-form and can be used in food-contact applications.

GPPS sheets are available in a range of thicknesses.

TYPICAL PROPERTY

Properties	Method	Units	Value
General			
Density	ISO 1183	gr/cm^3	1.05
Water Absorption (23°C)	ISO 62	%	<0.1
Flammability	UL94		HB
Mechanical			
Tensile Stress at Yield (23°C)	ISO 527-2	MPa	55
Elongation at Break (23°C)	ISO 527-2	%	3
Flexural Strength (23°C)	ISO 178	MPa	80
Flexural Modulus (23°C)	ISO 178	MPa	3300
Impact Resistance (Charpy unnotched) (23°C)	ISO 179/1fu	kJ/m^2	20
Impact Resistance (Izod notched)	ISO 179/1fu	kJ/m^2	1.5
Rockwell Hardness	ISO 180	M-scale	105
Optical			
Refractive Index	ISO 489		1.59
Transmittance (3 mm transparent sheet)	ASTM D1003	%	90
Haze (3mm transparent sheet)	ASTM D1003	%	< 1
Thermal			
Vicat Softening Temp. (50°C/h 50N)	ISO 306	°C	
Heat Deflection Temp.: 1.8 MPa	ISO 75-1	°C	68
Coeff. of Linear Thermal Expansion	ASTM D696	mm/meter for 1°C	0.08
Recommended Continues Service Temperature		°C	60
Recommended Maximum Service Temperature / Short time		°C	80
Minimum Service Temperature		°C	-40
Electrical			
Surface Resistivity	EC 60093	ohms	>1.0E^{+14}
Volume Resistivity	EC 60093	Ohm·cm	>1.0E^{+18}

GPPS - EXTRUDED GENERAL PURPOSE POLYSTYRENE SHEETS

DIMENSIONS

Thickness, mm	Width, mm	Length, mm
0.9 – 10.0	1000, 1250 and 2050	500 – 6000

Sheets are also available cut-to-size according to customer requirements.

TOLERANCES FOR DIMENSIONS

Sheet Thickness, mm	Thickness, %	Width Tolerances, mm	Length Tolerances, mm	Diagonals Tolerances, mm	Flatness Tolerances
<1.5	± 8	Sheets cut in production: -0.0 /+3.0 Sheets cut to size: ± 0.50	Sheets cut in production: -0.0 /+3.0 Sheets cut to size: ± 0.50	Sheets cut in production: Length ≤ 4000 mm - ≤ 2 Length ≤ 4000 mm - ≤ 4 Sheets cut to size: ≤ 0.5	Max allowed bowing - 0.5% from linear dimensions. Max allowed bowing across the width of the sheet - ≤ 5 mm per meter of width. Max allowed bowing along the length of the sheet - ≤ 5 mm per meter of length.
≤ 1.5, < 2.0	± 4				
≤ 2.0, < 10.0	± 3				

COLORS

Extruded GPPS sheets are naturally colorless, however pigments can be added according to customer requirements. The sheets are offered in clear, Non-Reflex, embossed patterns, opal white versions and variety of colors. The light transmission of extruded GPPS colored sheets varies depending on the thickness.

For a details please contact PLASKOLITE Technical Support.

DEFINITIONS

RESISTANCE TO WEATHERING

GPPS is not recommended for long-term use in the open air as it is degraded by UV radiation. The degradation results in yellowing, loss of surface gloss and by a decrease in mechanical strength. Darker formulations perform better than pale or transparent types.

For detailed information please contact PLASKOLITE Technical Support.

FIRE TEST PERFORMANCE

Extruded GPPS sheets are classified by UL 94 vertical burning classification: HB

CHEMICAL RESISTANCE

GPPS is resistant to water, alkalis and dilute mineral acids, as well as to aqueous solutions of most salts. However, it swells in some organic solvents and is dissolved by others. This is true of aromatic and chlorinated hydrocarbons, ethers, esters and ketones. GPPS is also attacked by concentrated sulphuric acid and strong oxidizing agents, e.g. nitric acid, chlorine water, bromine water and sodium hypochlorite solution.

For detailed information please contact PLASKOLITE Technical Support.

GPPS - EXTRUDED GENERAL PURPOSE POLYSTYRENE SHEETS

ENVIRONMENTAL STRESS CRACKING

Environmental Stress Cracking (ESC) is a result of the combination of stress and chemical exposure. The level of stress needed for ESC is lower than the normal failure mechanical stress of PS in a chemical-free environment. Stresses can be created during fabrication, forming and also by improper installation. GPPS is very susceptible to stress cracking. Parts with internal stresses as produced by cold bending can form stress cracks even in media to which PS is usually resistant.

GENERAL GUIDELINES

STORAGE

GPPS sheets must be stored with their original protective masking in a dry, shady and well ventilated area, with NO EXPOSURE to direct sunlight, wind, dirt or hard objects. Avoid storage in areas with excessive heat (not higher than 50°C) or strong solvents.

Sheets should be stored horizontally on their delivery pallets and placed on a soft material (such as cardboard) to prevent damage. Pay attention to avoiding pressure on the unsupported areas.

PROTECTIVE FILM

Both surfaces of GPPS sheet are protected by a fully recyclable polyethylene (PE) film. Keep this film in position as long as possible and remove it immediately after installation.

CLEANING & MAINTENANCE

GPPS extruded sheets are produced in a clean-room environment and do not need to be cleaned before use.

For general purpose cleaning, polystyrene should be washed with clean, cold water to which a little mild detergent has been added. The use of any solvents such as methylated spirits, turpentine, white spirit or any proprietary window cleaning products is neither necessary nor recommended.

Sponges, squeegees, brushes or sharp instruments should not be used for cleaning sheets as they can damage and / or causes scratches in the sheet surface.

ENVIRONMENTAL ADVANTAGES

GPPS sheets are environmental friendly. The sheets and their polyethylene protective layers are fully recyclable. They do not contain any toxic materials which may cause environmental damage or health risks.

GPPS sheets can be used for energy recovery and mechanical recycling.

RE-WORKING

- HANDLING:

  GPPS sheets can be cut, sawn, drilled, and milled easily using standard workshop equipment for wood or metal. However, it is always recommended to use specific tools specially designed for plastics. For details please contact PLASKOLITE Technical Support.

PLASKOLITE

400 W Nationwide Blvd, Suite 400
Columbus, OH 43215
800.848.9124 • Fax: 877.538.0754
plaskolite@plaskolite.com
www.plaskolite.com