Discover Infinite Space

POLYVANTIS

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1. About POLYVANTIS

Reach for the sky with POLYVANTIS!

POLYVANTIS is a world-leading multi-material player for semi-finished plastic products. Our customers from a multitude of different industries can choose from an extensive range of high-quality products provided by a single source, including leading brands such as LEXAN™ Film and Sheet made from polycarbonate resins and PLEXIGLAS® for PMMA semi-finished products.

To make public transportation more environmentally friendly, fuel consumption needs to be lowered – and the best way to achieve this is by reducing the weight of the fleet. That is why lightweight yet robust plastics are required for aircraft and vehicle construction.

POLYVANTIS offers a wide range of semi-finished products that fulfill the high demands placed on materials for the aviation industry. Our specialized products for aircraft construction from the renowned brands PLEXIGLAS®, LEXAN™ Film & Sheet and EUROPLEX® meet the very strictest of standards in the aviation industry, including fire, smoke and toxicity (FST) requirements for aircraft windows and cabin interiors.

2. Transparency Glazing

PLEXIGLAS®
Lightweight Materials for a Clear View

PLEXIGLAS® Aviation Grade

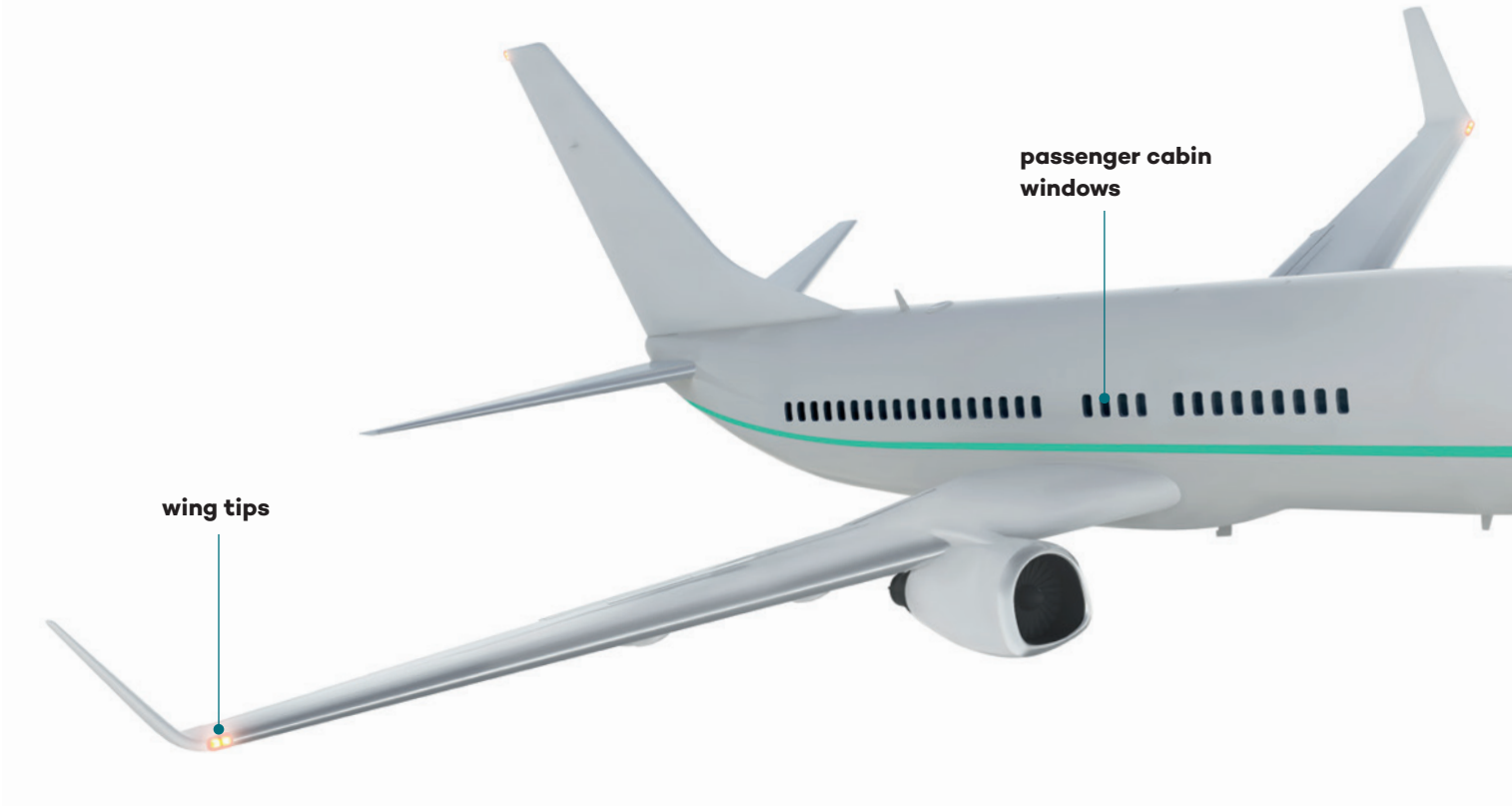
Having spearheaded the development and expansion of continuous manufactured and specialty cell cast sheet products, we have earned a reputation as a leader for innovative technology in aviation transparency glazing. PLEXIGLAS® polymethyl methacrylate (PMMA) cast sheets have been used in the most varied types of aircraft glazing for almost 90 years.

Properties and Applications

PMMA cast aviation grade sheets are used for glazing, edge-lit panels, wing tip lenses and other transparent applications in the aviation industry.

PLEXIGLAS® aviation grade sheet possesses the following properties:

- Excellent light transmission and brilliance
- Outstanding weather resistance
- 100 % recyclable
- Easy to fabricate
- High surface hardness
- Lightweight – half the weight of glass
- 11 times more break-resistant than glass
- Custom colored sheets upon request
- UV IR absorbing feature available



Sales Range, Certifications and Applications

With PLEXIGLAS® GS 241, PLEXIGLAS® GS 245, PLEXIGLAS® GS 249 and PLEXIGLAS® 0T01, there is a wide range of specialized aviation grades available to meet different application and industry standards.

	PLEXIGLAS® GS 241	PLEXIGLAS® GS 245	PLEXIGLAS® GS 249	PLEXIGLAS® OTO1
Application	Aircraft applications	Instrumental panels, wing tip lenses, dust covers, helicopter bubbles and aircraft canopies	A wide variety of commercial, military and rotary-wing transparencies	A wide variety of commercial, military and rotary-wing transparencies
Certification				
AECMA		AECMA 4364	AECMA 4365	AECMA 4366
Germany		WL 5.1412	WL 5.1415	WL 5.1416
UK		DTD 5592 A	DTD 5592 A	
France		AIR9106/A Type I	AIR9106/A Type II	AIR9106/ Type III
US	AMS-LP-391, ASTM-D-4802	MIL-PRF-5425	MIL-PRF-8184 Type I, Class 2	MIL-PRF-25690, Class 2*
Russia		GOST 10667-90	GOST 10667-90	

* automatically qualified to Class 1

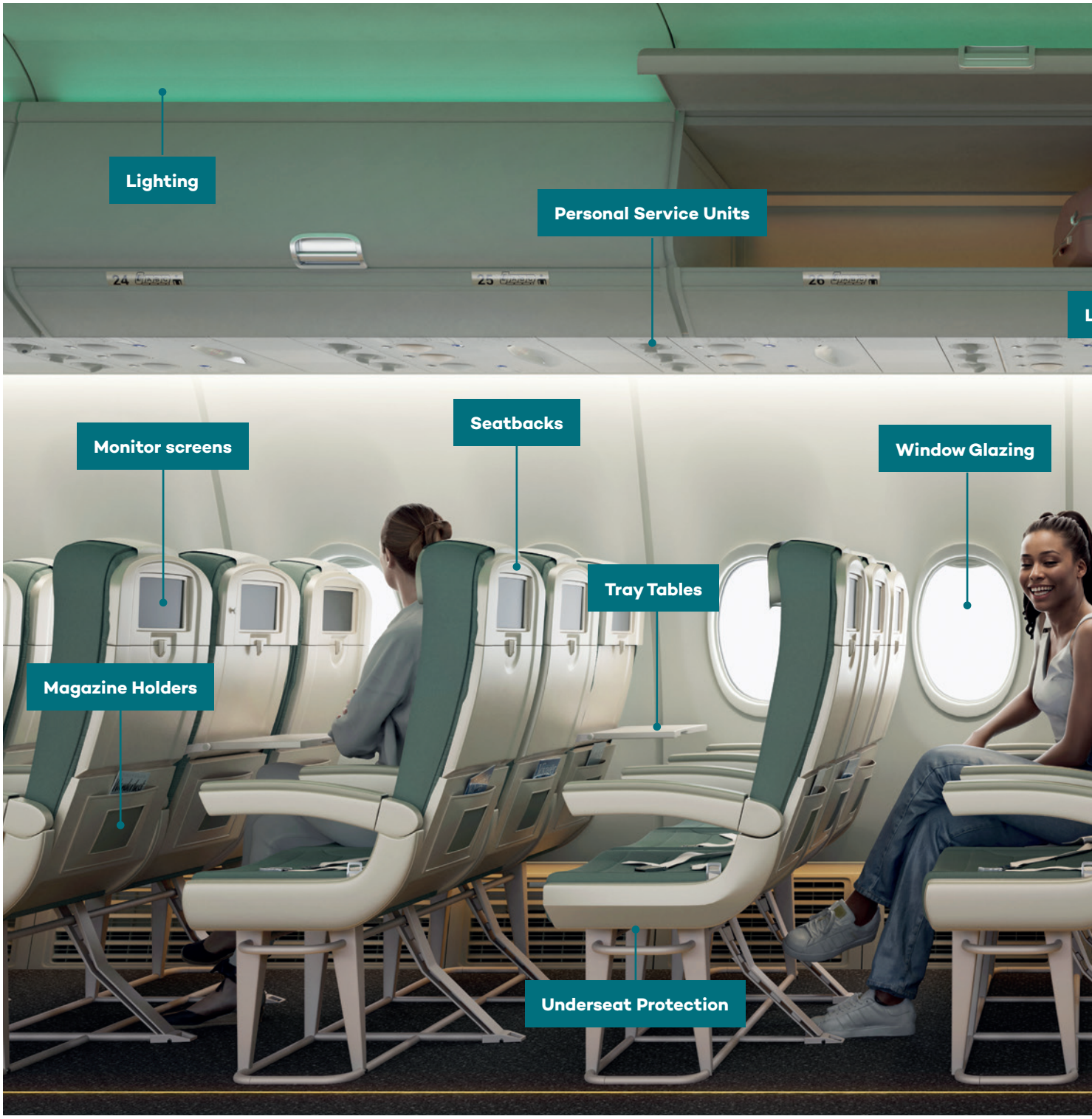
aircraft cockpit windows and edge-lit panels in cockpit

UV IR Absorbing Feature

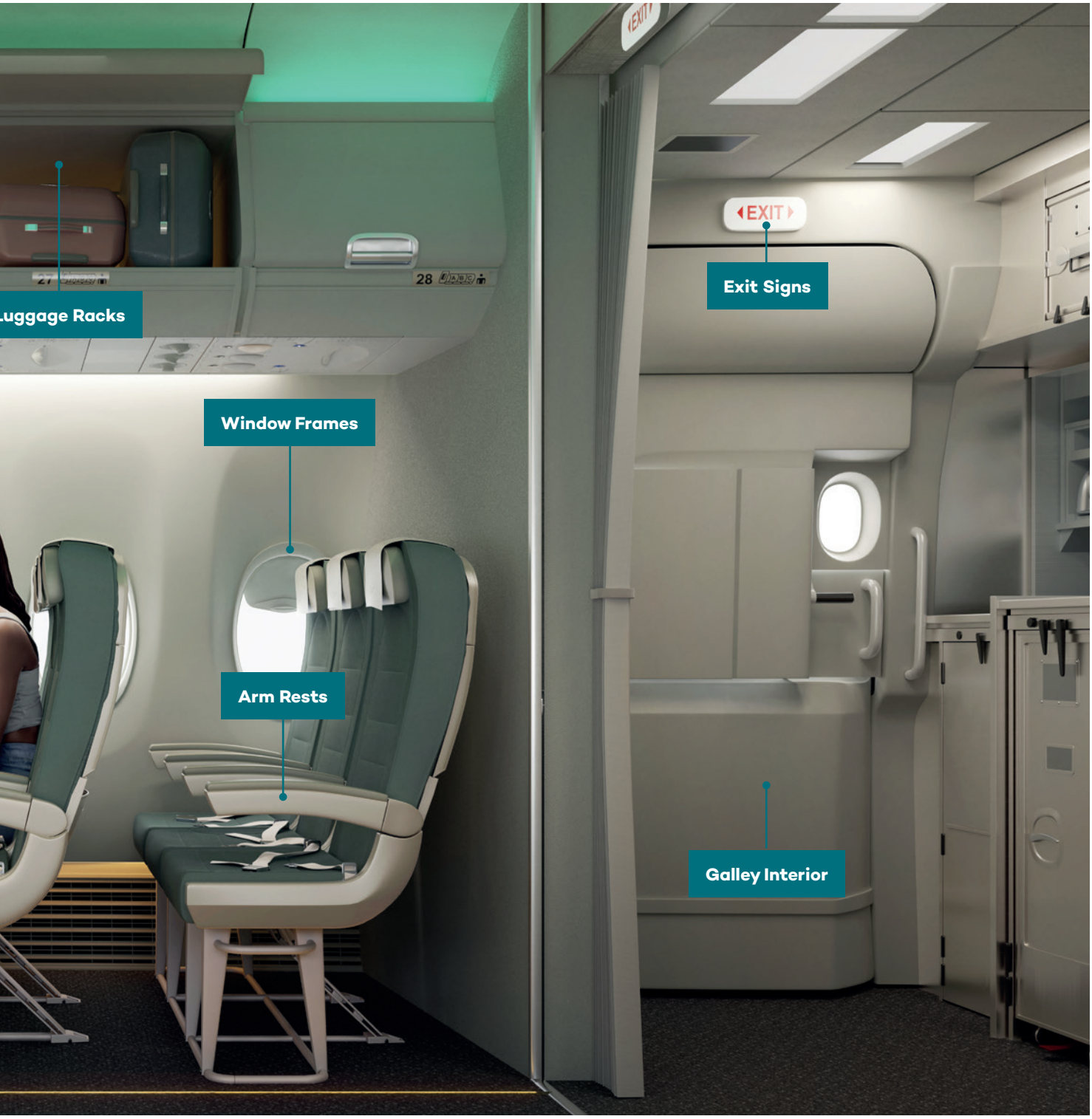
PLEXIGLAS® aviation grade sheets are now available with UV and IR radiation absorbing features. The special color technology provides design flexibility to aircraft cockpits and cabin interiors by filtering out unwanted ultraviolet (UV) and infrared (IR) radiation. This feature works in both ends of the solar spectrum outside the visible range. The reduction of UV and IR radiation exposure helps minimize the weathering of interior fabrics and components, and prevents heat build-up in the aircraft enclosure. The UV and IR absorbing technology is available in all standard and custom colors.

PLEXIGLAS® Stretched Acrylic Sheets

Stretching acrylic sheets increases their resistance to crazing and solvent attack while enhancing mechanical properties. PLEXIGLAS® Stretched acrylic sheets are used in a variety of commercial, military and rotary-wing applications, either in monolithic or laminated form. PLEXIGLAS® Stretched meets and is certified to AECMA 4366 and MIL-PRF-25690 standards.



3. Interior Solutions



Combining Safety and Design Freedom for Aircraft Interiors

Low weight, unrivaled design freedom, robust and safe – the demands on materials for aircraft interiors are tough. We offer our customers a one-stop solution for a wide range of applications in the cabin – from seatbacks, armrests, magazine holders and tray tables to galley interiors, luggage racks, personal service units and lighting.

EUROPLEX® F
Highly Impact-Resistant, Flame-Retardant

EUROPLEX® F sheets are flame-retardant grades of polycarbonate (PC) sheets whose flame-retardant properties have been further improved beyond those of standard polycarbonate sheets. EUROPLEX® F series are used in many interior aircraft applications, such as aircraft seats, back-lit safety signs, cabin glazing and light covers.

The sheets meet the fire standard requirements for public transportation and also offer excellent impact resistance and strength. They are easy to fabricate and can be formed into complex shapes using standard thermoforming equipment.

EUROPLEX® F sheets meet FST requirements in accordance with FAR 25.853 and ABD 0031.

Sales Range, Requirements and Approvals

EUROPLEX® F3, EUROPLEX® F6 and EUROPLEX® F7 deliver a range of versions for different applications.

	EUROPLEX® F3	EUROPLEX® F6	EUROPLEX® F7
Application	Interior panels, seat shells, seat linings, tables, trays and carts in aircraft	Dust covers, lighting covers, emergency lighting systems and other similar applications in aircraft	Dust covers, lighting covers, emergency lighting systems and other similar applications in aircraft
Sales Range			
Thickness mm	0.8–4.0	2.0–3.0	1.5–5.0
Width mm	1250 or 1400	1250 or 1400	1250 or 1400
Length mm	up to 6000	up to 6000	up to 6000
Texture, surface	Hair cell H	Smooth	Smooth or prismatic
Requirements and Approvals			
FAR 25.853 (a) (1) (i) AITM 2.0002; 60 s vertical burn	Pass	Pass*	Pass*
FAR 25.853 (a) (1) (ii) AITM 2.0002; 12 s vertical burn	Pass	Pass	Pass
FAR 25.853 (c) AITM 2.0007 Smoke density	Pass	Pass	Pass
AITM 3.0005; Toxicity	Pass	Pass	Pass
UL 94 Flammability rating		V0**	V0*

* Up to and including 2.0 mm **Up to and including 3.0 mm

EUROPLEX® PPSU
Large Components for Aircraft Interiors

EUROPLEX® PPSU sheets are a preferred material for large-scale components in aircraft interiors, such as for large paneling elements for the wall, door and ceiling areas in the cabin. Its outstanding fire performance, high stability and resistance to chemicals are additional advantages for this application. The opaque sheets feature a matte surface structure (hair cell) and are available in a variety of colors. The transparent sheets have a smooth surface on both sides and also come in different colors.

In addition to FST (Flame/Smoke/Toxicity) standards in line with FAR 25.853 and ABD 0031, EUROPLEX® PPSU also meets the specifications of the OSU Heat Release Rate test (FAR 25.853 (d)).

LEXAN™ Sheet
Aircraft Interiors Portfolio

LEXAN™ polycarbonate (PC) sheets are used extensively in aircraft interiors thanks to their unique combination of strength, low weight, and design versatility. These thermoplastic sheets are cost-effective and offer exceptional impact resistance. In addition to complying with FAR 25.835, they also meet OEM toxicity standards. They are an ideal material for various interior components, such as:

- Seating components, including;
  - tray tables
  - arm restsw
  - seat backs
  - magazine holders
  - and more
- Side panels, cladding, grip rails
- Galley and lavatory components
- Lighting, video screen covers
- Lens covers (exit doors, etc.), exterior wing tip lenses
- Cockpit dashboard enclosures, covers and components, cockpit visors
- Window dust panes, window shades
- Personal service units, panels and monitors, stow bins
- Ventilation covers

LEXAN™ sheet exhibits superior fire resistance and is also easy to mold and customize, ensuring compliance with stringent aviation safety standards while also contributing to reducing the overall weight. This, in turn, enhances fuel efficiency and helps improve aircraft performance. Their durability and ease of maintenance make LEXAN™ PC sheets a reliable choice for modern aircraft cabin designs, delivering both aesthetic design and functional advantages.

LEXAN™ sheets come in a wide range of colors and can be thermoformed to create custom designs. We offer a comprehensive portfolio of flame-retardant opaque, transparent and translucent sheet products that are compliant with FAR 25.853.

Opaque Portfolio

These opaque grades, available in different gauges, sizes and colors are mainly used for applications such as seating, wall/ceiling claddings, galleys, tray tables, kick panels, cockpit dashboards and more...

Grade	Benefits
ULTEM™ 1668A sheet	Halogen free OSU 65/65 compliant (FAR 25.853d) FST compliant (FAR 25.853a) High heat deflection temperature (180°C) Enhanced impact resistance Enhanced chemical resistance & cleanability
LEXAN™ F8000HR sheet	OSU 65/65 compliant (FAR 25.853d) / < 55/55 FST compliant (FAR 25.853a) / UL94 V0 Exceptional stiffness Standard color portfolio Short lead-time
LEXAN™ F6000 sheet	FST compliant (FAR 25.853a) Standard color portfolio Short lead-time

Fire Norm Compliance

Cost-effective

Wide color range

High Stiffness

Lightweight

Thermo-formable

Environmentally friendly

Excellent chemical resistance & cleanability

Transparent/translucent Portfolio

These transparent grades, available in different gauges, sizes and colors are mainly used for applications such as window dust covers, lighting, display covers and light diffusers.

Grade	Benefits
LEXAN™ 9604 sheet	Uncoated Available up to 0.125“ (3.18 mm)
LEXAN™ F2104 sheet	Uncoated Available from 0.125”–0.500” (3.18 mm–12.7 mm)
LEXAN™ F2000A sheet	Uncoated; clear or tinted Available in 2, 3 & 4 mm (0.080”, 0.118” & 0.157”) Improved smoke performance vs. 9604 & F2104 sheet
LEXAN™ MRAC sheet	Hard coating on both sides offers protection against abrasion and UV Available from 0.060”–0.500” (1.50 mm–12.7 mm)
LEXAN™ FMRAC sheet **LEXAN™ FMR604 sheet**	Formable hard coating on both sides allows light bend radius Available from 0.060”–0.250” (1.50 mm–6.4 mm)

Excellent Impact resistance

Abrasion resistance

Robust flame, smoke and toxity performance

Compliant with FAR 25.853

Transparency with light transmission up to 90 %

Eco mark in ACC. with VDE

POLYVANTIS Locations

Please feel free to contact our experts world-wide with any questions you may have.

POLYVANTIS
www.polyvantis.com

Semi-finished polymethyl methacrylate (PMMA) products from POLYVANTIS are sold on the European, Asian, African and Australian continents under the registered trademark PLEXIGLAS®, in the Americas under the registered trademark ACRYLITE®, both owned by Röhm GmbH, Darmstadt, or its affiliates.

Polycarbonate Film & Sheet by POLYVANTIS are sold globally under the registered trademark of LEXAN™ Film & Sheet.