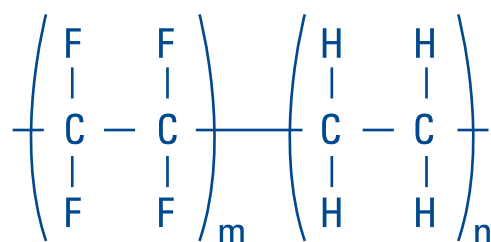




HIGH-PERFORMANCE FLUOROPOLYMER FILM

WHAT IS Fluon® ETFE FILM?

Fluon® ETFE, a thermoplastic fluoropolymer developed by AGC, is the raw material used to produce Fluon®ETFE FILM. It is an ethylene-tetrafluoroethylene copolymer. Fluon®ETFE has good mechanical properties and mouldability and can be extruded, injection moulded and blow moulded. Fluon®ETFE has excellent characteristics that make it suitable for many kinds of applications.



FEATURES

- Transparent thermoplastic film manufactured from ETFE (ethylene tetrafluoroethylene)
- Architectural Fluon® ETFE FILM is available in thicknesses between 100um and 500um
- ETFE melting point is 260°C
- Highly transparent and lightweight

BENEFITS

- Strong mechanical strength to resist high wind loads
- Resistant to UV light providing long durability
- Excellent chemical resistance
- Repairable with ETFE FILM patches or sheets
- Low surface energy, therefore self-cleaning



AGC is the world's largest manufacturer of ETFE and use a unique in-house film-forming process to convert its own ETFE resin into Fluon® ETFE FILM, an ultra-strong fluoropolymer film.

By incorporating our innovative Fluon®ETFE Film into architectural facades not only creates iconic structures of beauty but also revolutionizes the building industry due to its unique features such as light transmission and solar heat control options, anti-stick surface and weatherability. The mechanical strength of our film allows it to replace glass as a viable alternative resulting in a flexible, light weight structure that is non-combustible and provides heat, chemical and UV resistance.

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Creating Beauty
through
innovation

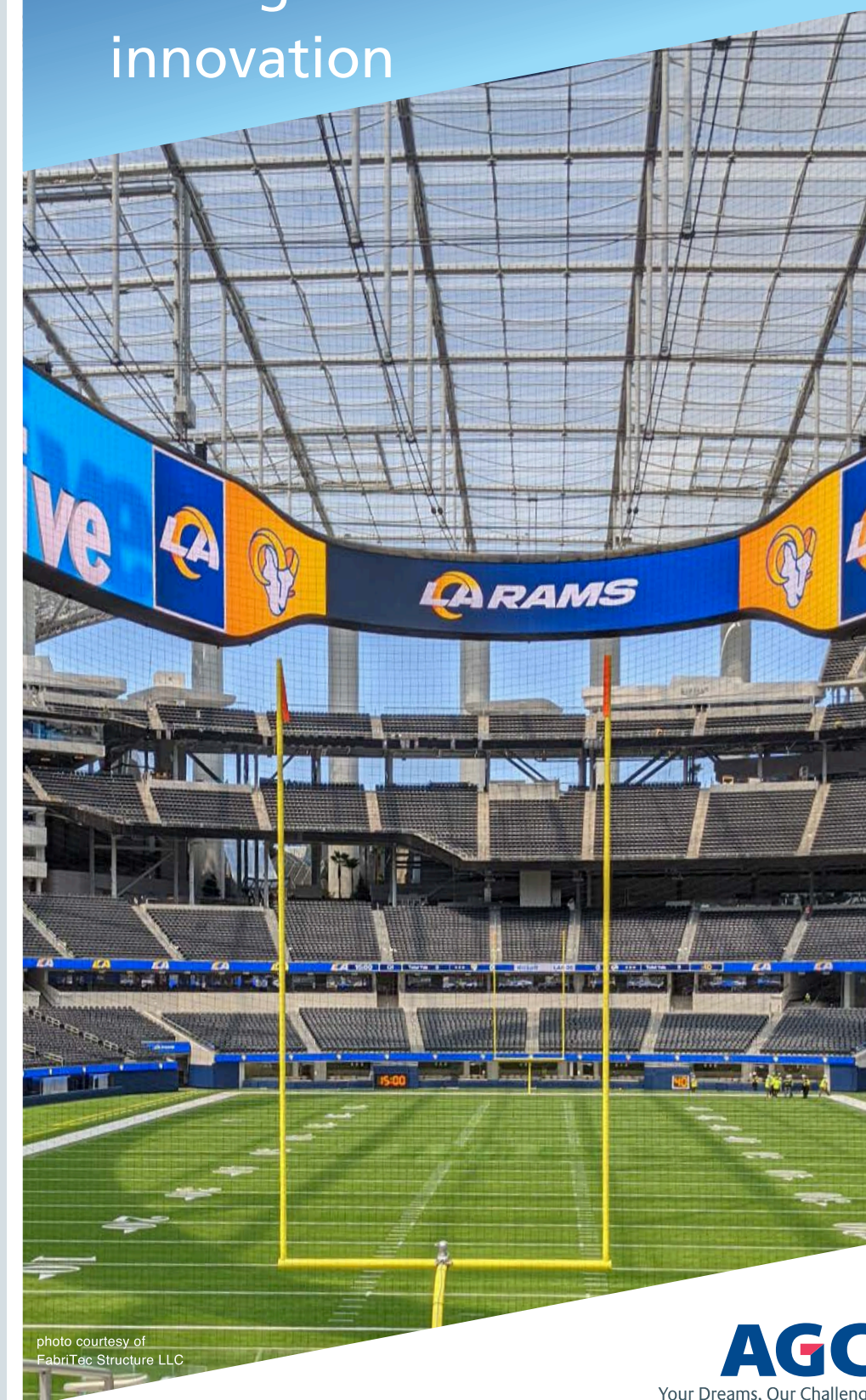
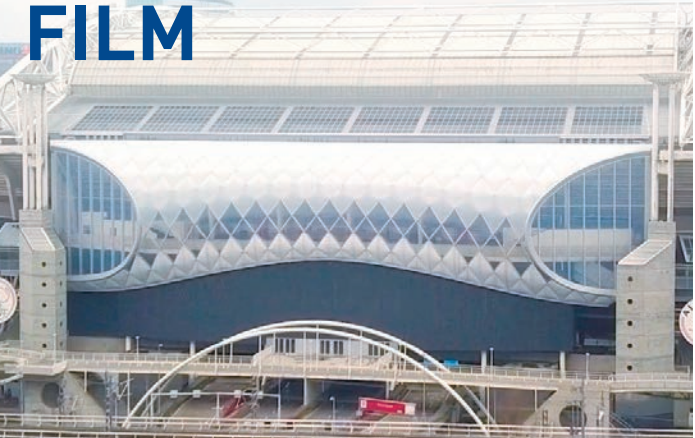


photo courtesy of
FabriTac Structure LLC

2021-04



HIGH-PERFORMANCE FLUOROPOLYMER FILM



04 OPTIMIZING THE LIGHT CONDITIONS

- Colored film and frit print options can optimize the indoor environment
- Diffused light option allows for reduced shadows and scattered light to improve grass growth
- Diffused light provides a pleasant light effect for the user experience



01 TRANSPARENCY

- Stunning and innovative building design possibilities providing bright and open interior space
- High quality visible light and full spectrum UV light to improve user experience
- Best interior growing conditions to yield a robust, natural grass playing field
- Retains transparency for a long period of time (20+years)

05 LOW MAINTENANCE

- Excellent durability, resistant to diverse environmental conditions
- Low surface energy to provide stain resistance and self-cleaning
- Flame resistant, does not support combustion
- Wide range of service application temperatures



03 ENERGY SAVING

- Multilayer film options can provide additional thermal insulation
- Light transmission and solar heat gain control options are available



photo by 加藤純平



02 DESIGN FLEXIBILITY

- Light weight and design flexibility for free form shapes
- Back lighting systems allow for multiple color variations for dramatic color changes
- Colored film and various frit print patterns also an option

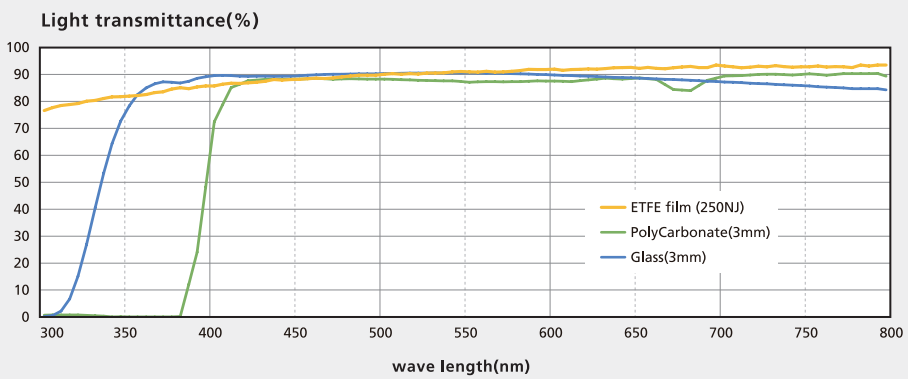
Grades&Size

	Grade	Thickness (μm)	Width (mm)	Length (m/Roll)	Surface condition	Remarks
Transparent	100NJ	100	1600	500	Glossy	—
	150NJ	150		333		
	200NJ	200		250		
	250NJ	250		200		
	300NJ	300		170		
High Clarity	250HC	250	1600	200	Glossy	—
Matted	200HJ	200	1600	250	One side Matted	—
	250HJ	250		200		
	300HJ	300		170		
Color	200TB	200	1600	250	—	Blue
	250TB	250		200		White
	200WT	200		250		
	250WT	250		200		
	250WJ	250		200		
Printed	200NJ P46D16	200	1580	approx.250-270	Printed	Silver dot print(16Φ)
	250NJ P46D16	250		approx.200-220		Silver dot print(04Φ)
	200NJ P63D04	200		approx.250-270		
	250NJ P63D04	250		approx.200-220		

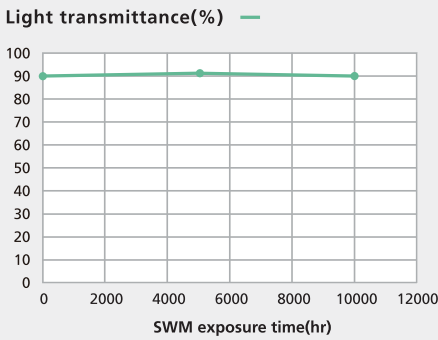
Comparison with galass

	Thickness	Weight (kg/m ²)	Visible light (%)		UV Light transmittance (%)
			Reflection	Transmittance	
Fluon® ETFE FILM(250NJ)	250μm	0.4	7.6	90.8	81.8
Flat Glass(3mm)	3mm	7.5	8.1	90.4	74.3

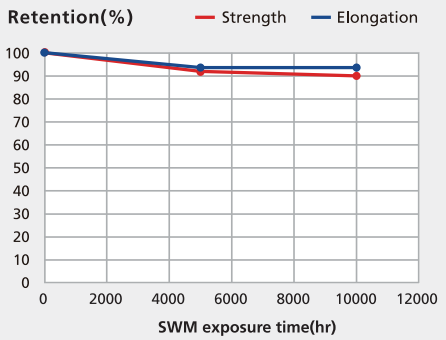
Light transmittance chart by wavelength(Comparison with other materials)



Change in light transmittance with accelerated weathering test



Change in tensile strength and elongation with accelerated weathering test



Test Condition
Name:Sunshine Weather-meter(SWM)
Sample piece:Fluon®ETFE FILM 250μm
Light source:Sunshine carbon arc
Black Panel temp:63°C
Cycle:48min.Light exposure/12min.Light exposure + Water(60minutes=1Cycle)

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2. Please refer to the SDS(Safety Data Sheet) for safety and details.
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