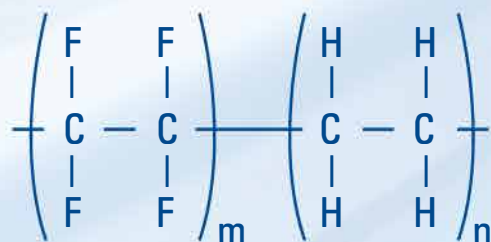




## HIGH-PERFORMANCE FLUOROPOLYMER FILM

### 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

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.

### AGC Chemicals AGC Inc.

Shin-Marunouchi Bldg., 1-5-1, Marunouchi  
Chiyoda-ku, Tokyo 100-8405 Japan  
[www.agc-chemicals.com](http://www.agc-chemicals.com)

### AGC GREEN-TECH CO.,LTD

3-10-4 Iwamoto-cho Chiyoda-ku, Tokyo 101-0032 Japan  
TEL : +81-3-5833-5451  
[www.f-clean.com](http://www.f-clean.com)

### AGC Chemicals Europe Commercial Centre

World Trade Center, Zuidplein 80 - H Tower 1077  
XV Amsterdam, The Netherlands  
TEL : +31-20-880-4174  
[www.agcce.com](http://www.agcce.com)

### AGC Chemicals Americas, Inc.

55 E. Uwchlan Avenue, Suite 201 Exton, PA 19341 USA  
TEL : +1-610-423-4300  
[www.agcchem.com](http://www.agcchem.com)

### AGC Chemicals South America

Al. Ministro Rocha Azevedo, 38, 2 andar - conj, 201  
CEP Sao Paulo, SP, Brasil 01410-000  
TEL : +55-11-2574-5435  
[www.agcbrasil.com/quimicos/](http://www.agcbrasil.com/quimicos/)

### AGC Chemicals Trading (Shanghai) Inc.

Room 4008, T1, Raffles City Changning, No.1133 Changning Road,  
Shanghai China. Post Code : 200051  
TEL : +86-21-63862211  
[www.agcsh.com](http://www.agcsh.com)

### AGC Asia Pacific Pte., Ltd.

460 Alexandra Road #30-02, M Tower, Singapore, 119963  
TEL : +65-6273-5656  
[www.agc-asiapacific.com](http://www.agc-asiapacific.com)

### AGC Chemicals (Thailand) Co., Ltd.

944 Mitrtown Office Tower, 14th Floor, Rama 4 Road,  
Wangmai Sub-District, Pathumwan District, Bangkok 10330, Thailand  
TEL : +66-2-092-6499  
[www.acth.co.th](http://www.acth.co.th)



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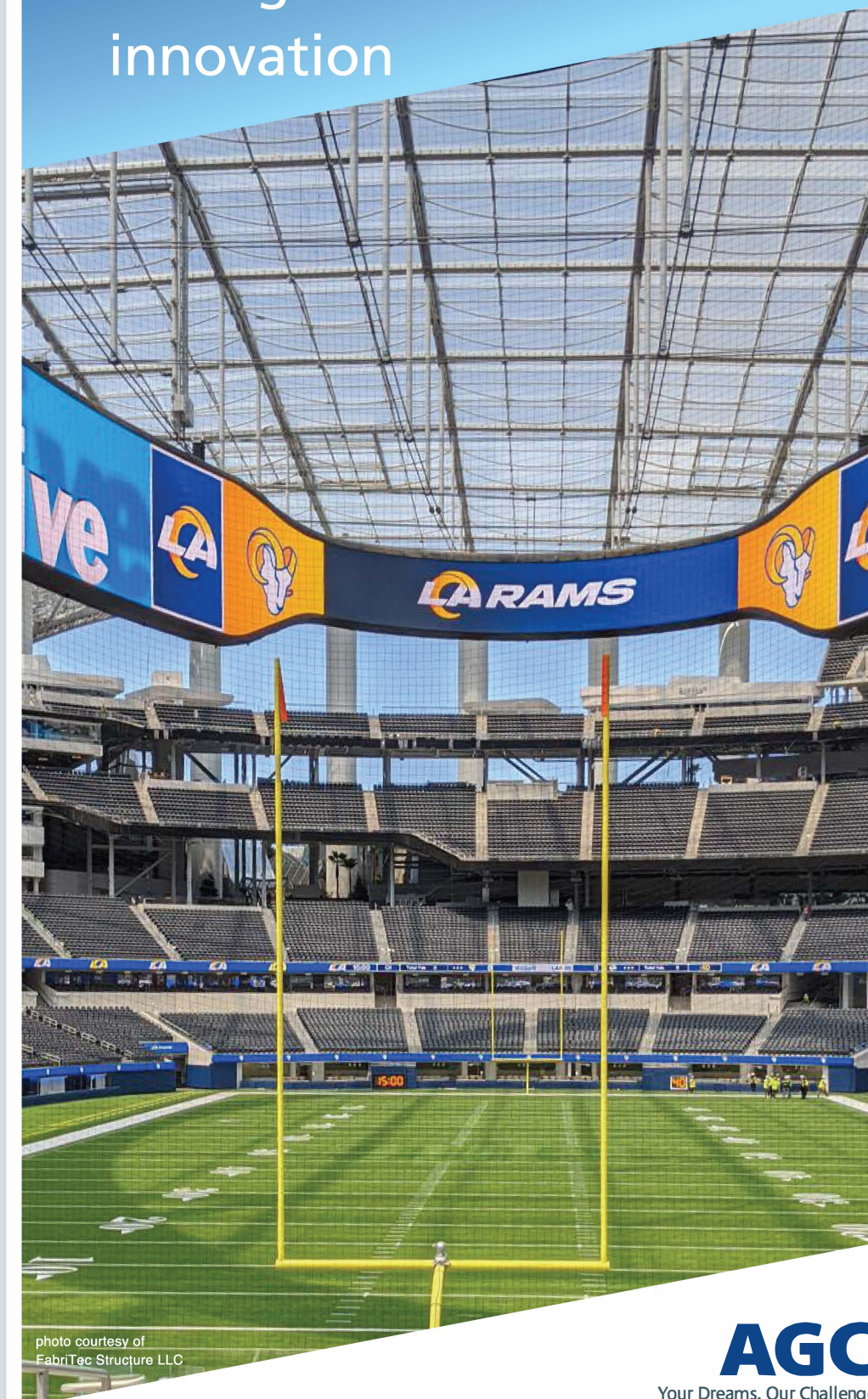
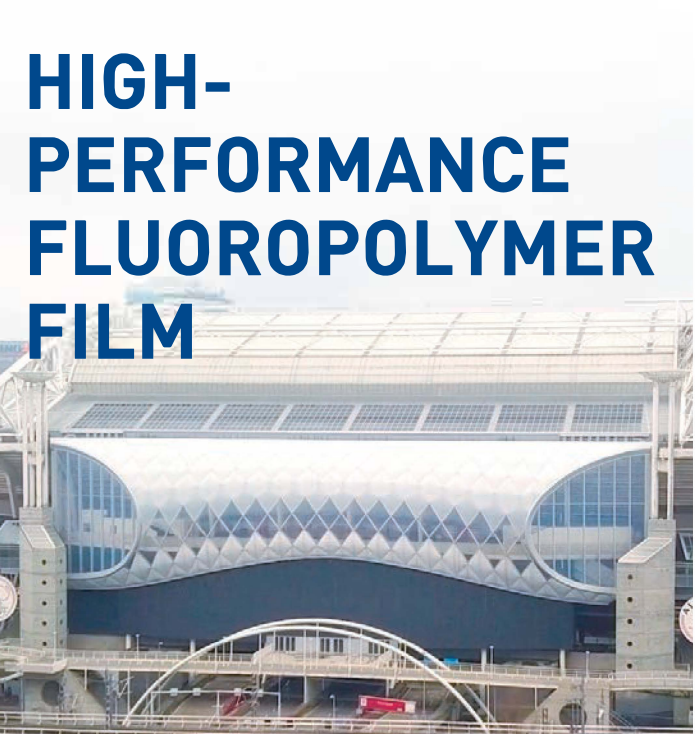


photo courtesy of  
FabriTec Structure LLC

2021-04

**AGC**  
Your Dreams, Our Challenge





# HIGH-PERFORMANCE FLUOROPOLYMER FILM



## 01 TRANSPARENCY

- Stunning and innovative building design possiblities providing bright and open interior spaca
- 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)

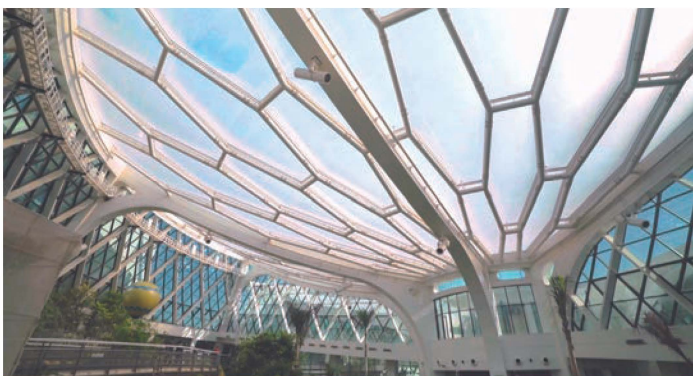


## 04 OPTIMIZING THE LIGHT CONDITIONS

- 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

## 05 LOW MAINTENANCE

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

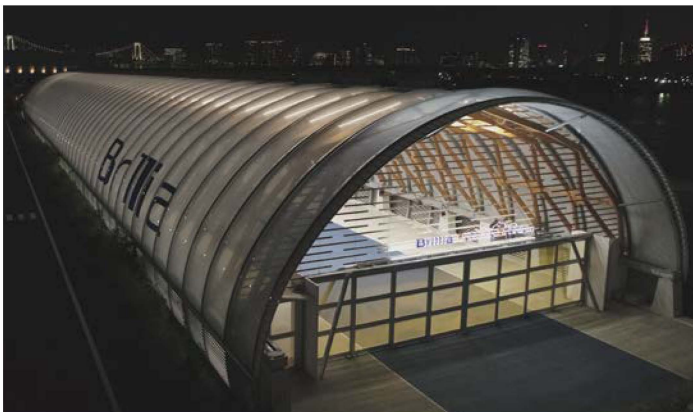


## 03 ENERGY SAVING

- 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

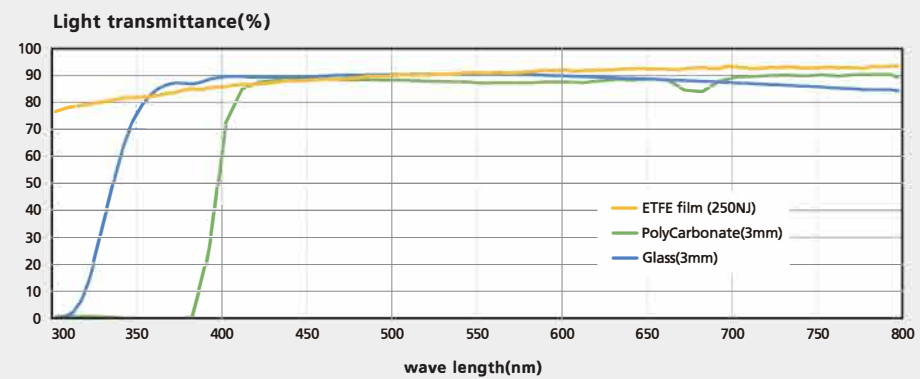
### Grades&Size

	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		

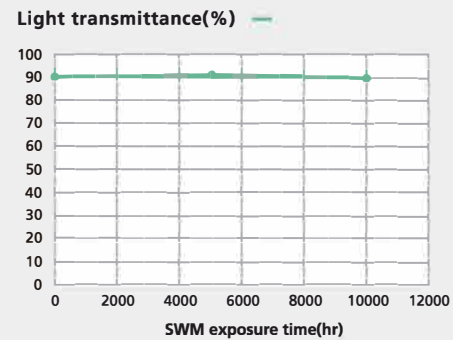
### Comparison with glass

	Thickness	Weight (kg/m <sup>2</sup> )	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

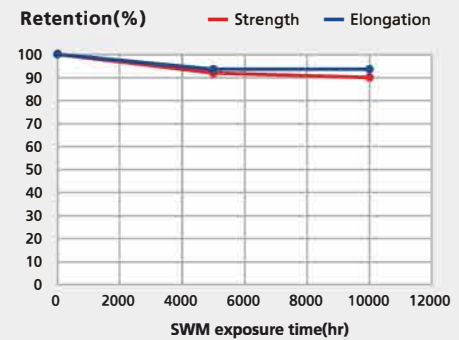
### Light transmittance chart by wavelength(Comparison with other materials)



### 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.
3. The contents are subject to change without prior notice.