



Fluoropolymer Linings and Coatings

Technical Data

FluoroGrip® – ET (ETFE)

Industrial Uses

Type

FluoroGrip® – ET fluoropolymer film is manufactured from a melt-processable fluoroplastic consisting mainly of alternating tetrafluoroethylene monomer units by Integument Technologies, Inc.

FluoroGrip® – ET is available standard with an advanced pressure sensitive adhesive (PSA) of acrylic or high temperature resistant silicone PSA. Special chemical resistant adhesives are available. Consult Integument Technologies for specific material recommendations.

FluoroGrip® – ET is available with either a single-sided or doublesided surface plasma modification treatment.

Uses

FluoroGrip® – ET film is made from high molecular weight resin for applications where chemical resistance, high flex life and stress-crack-resistant performance are required. Typical applications include tank and secondary containment linings, “splash-and-spill” paint replacement, acid brick and the membranes. The outstanding chemical and thermal resistance withstands aggressive environments, making it an excellent candidate for a wide variety of aggressive chemical and thermal environments. Fabricated shapes and contours can be produced via heat sealing and thermoforming. The outstanding weatherability and optical properties of FluoroGrip® – ET film provides excellent performance in outdoor atmospheric environments.

The non-stick surface, chemical resistance, and 300-450° F (depending upon adhesive) usage temperature make FluoroGrip® – ET an ideal release film for internal linings and paint replacement where a “non-stick” surface is desirable such as silos, stock chests and food processing areas (walls, equipment, bulk powder handling equipment, chutes, etc.).

Technical Data

Physical Properties

General

	ASTM Method	Metric Value	Metric Units	English Value	English Units
Specific Gravity	D-792	2.12-2.17		2.12-2.17	
Yield (1mil film)		18	m ² /kg	90	ft ² /lb
Flammability	UL-94	V-0		V-0	
Water Absorption (24 hrs)		<0.01	%	<0.01	%

Available Thicknesses (Film Only; Not Including Adhesive)	2 mil, 3 mil, 5 mil, 10 mil, 20 mil, 30 mil
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Mechanical

	ASTM Method	Metric Value	Metric Units	English Value	English Units
Tensile Strength @ Break	D-882	24	MPa	3500	Psi
Elongation @ Break	D-882	300	%	300	%
Tensile Modulus	D-882	480	MPa	70000	Psi
Initial Tear Strength, 1mil	D-1004	2.2-2.7	N	0.5-0.6	lb _f
Initial Tear Strength, 2mil	D-1004	4.9-5.3	N	1.1-1.2	lb _f
Propagating Tear Strength, 1mil	D-1992	1.4-1.5	N	0.32-0.33	lb _f
Propagating Tear Strength, 2mil	D-1922	2.4-2.7	N	0.55-0.60	lb _f
Fold Endurance (M.I.T.)	D-2176	10000	cycles	10000	cycles

Integument

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Industrial Uses

Uses (cont.)

Single-side modification makes the material suitable as a 30-mil hot-air weldable lining when low surface energy is demanded.

Double-sided treatment is especially useful when installations require seams, overlaps or the application of chemical resistant coatings or top toppings. The double-sided modification makes it an ideal material for pipe wraps and tapes and general purpose film. The modification also creates a superior surface for use as a chemical and temperature resistant underlayment or membrane where the application of chemical resistant toppings permits its use in traffic and secondary containment lining applications.

Note

Refer to FluoroGrip® installation manual and instruction guide for the use and installation of FluoroGrip® films, membranes and lining systems.

Certifications

FluoroGrip® - ET is designed to meet the requirements to comply with the FDA's Register of Food Additive Regulations.

Technical Data

Physical Properties

Electrical

	ASTM Method	Metric Value	Metric Units	English Value	English Units
Dielectric Strength, 1mil	D-149	240	kV/mm	6000	V/mil
Dielectric Constant, 1kHz	D-150	2.1		2.1	
Dissipation Factor, 1kHz	D-150	0.0003		<0.0003	

Thermal

	ASTM Method	Metric Value	Metric Units	English Value	English Units
Melt Point	D-3418	252-282	°C	485-540	°F
Continuous Service Temp.*		A 163 S 206	°C	A 325 S 400	°F
Specific Heat		1172	J/(k•°K)	.28	Btu/(lb•°F)
Coefficient of Thermal Conductivity		0.195	w/(m•°K)	1.35	Btu in/(hr•ft ² •°F)
Coefficient of Linear Thermal Expansion	D-696	9.9x10 ⁻⁵	mm/(mm•°C)	5.5x10 ⁻⁵	in/(in•°F)
Limiting Oxygen Index	D-2863	95	%	95	%

Optical

	ASTM Method	Metric Value	Metric Units	English Value	English Units
Refractive Index	D-542	1.341-1.347		1.341-1.347	V/mil
Solar Transmission	E-424	96	%	96	%

* **A** = Acrylic Adhesive **S** = Silicone Adhesive

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