

EDLON® CUSTOM BONDED LINERS

FEP/PFA/PTFE/ETFE/ECTFE/PVDF

Bonded Liners Offer the Corrosion Protection of Thick Fluoropolymers in Vacuum and Mixing Applications

Description

Edlon, Inc. bonded liners can be fabricated from six different fluoropolymers: FEP, PFA, PTFE, ETFE, ECTFE, and PVDF. Virgin fluoropolymer sheet is laminated to a knit glass or polyester. Liners are fabricated using Edlon's proprietary welding technologies and bonded into the tank or column using one of Edlon's high strength proprietary bonding systems. These systems provide corrosion protection and resist permeation and delamination at temperatures up to 150°C (300°F) even in severe agitation or vacuum.

Applications

Bonded liners are available in a wide range of thicknesses from 0.060" to 0.120". Three proprietary bonding systems are available: a flexible elastomeric, a low temperature and a high temperature system. Edlon will provide technical assistance to determine the proper material, thickness and bonding system for your application. We can install bonded liners in existing metal vessels or provide new equipment. Vessels are fabricated to ASME Code, API Code or even DOT specifications. Typical applications for Edlon Bonded Systems include:

- Mixing tanks
- Columns
- Storage tanks
- Vessel covers & heads
- Pipe sections
- Heat exchanger shells & heads
- Manway covers
- Transport tanks
- High purity applications

Bonded Liner Fabrication

- Liners are engineered for performance. Fusion butt-welded construction provides seams with tensile and elongation properties equal to those of the virgin fluoropolymer. Closure seams are double welded for added strength using state-of-the-art inert gas welding techniques.
- Vacuum thermoforming is used to reduce the number of welds on complex shapes.
- The fluoropolymer materials in the Edlon lining systems are backed with double knit glass, polyester or carbon fabric laminated directly onto the film. Each of our bonding systems is designed to resist chemical corrosion, permeation and vacuum in a wide range of services.

Benefits

- Eliminates corrosion problems
- Superior bond of fluoropolymer to metal substrate
- High resistance to permeation
- Suitable for vacuum or agitated service over a wide range of temperature and chemical service applications
- Resists mechanical damage
- Non-stick surface provides excellent release properties



Features

- Fusion-welded construction
- Full range of application specific materials
- Wide range of thicknesses available
- Customized bonding systems to fit your process conditions
- Field repairable

Edlon® Custom Bonded Liners FEP/PFA/PTFE/ETFE/ECTFE/PVDF

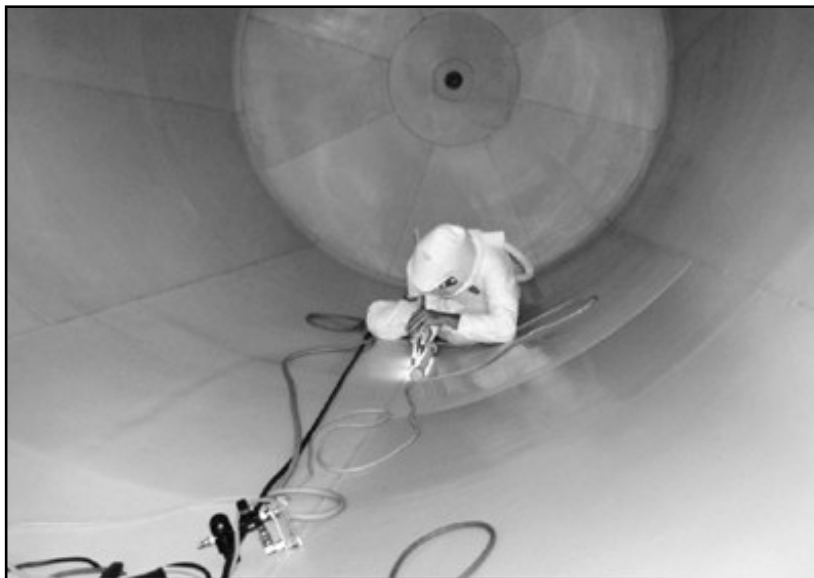


Metal Preparation

- All corners must be radiused to 1/4".
- All welds must be ground smooth and flush.
- Consult Edlon specification MSL-2002 for additional information on preparing metal surfaces for lining.

Testing and Repair

- Bonded liners are repairable in the field; Edlon technicians can make repairs on-site or they can provide field repair training.



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Physical Properties (Material Only)

Property	PTFE	FEP	PFA	ETFE	ECTFE	PVDF
Melt Viscosity (poise)	1x10 ¹²	8-45x10 ⁴	28x10 ⁴	8x10 ⁴	1x10 ⁴	4x10 ⁴
Melting Point, °F (°C)	621 (327)	500 (260)	582 (306)	512 (267)	460 (238)	352 (178)
Tensile Strength, PSI	3000	3400	3600	6500	7000	4500
Specific Gravity	2.13-2.20	2.14-2.17	2.13-2.16	1.70-1.86	1.70	1.78
Flexural Modulus (PSI)	70,000	45,000	90,000	170,000	240,000	250,000
Crystallinity (%)	60-95	55	55	50-65	50	35-65
Coefficient of Thermal Expansion 10 ⁻⁶ in./in./°F	5.5	5.2	6.7	7.6	4.4	4.0-8.0

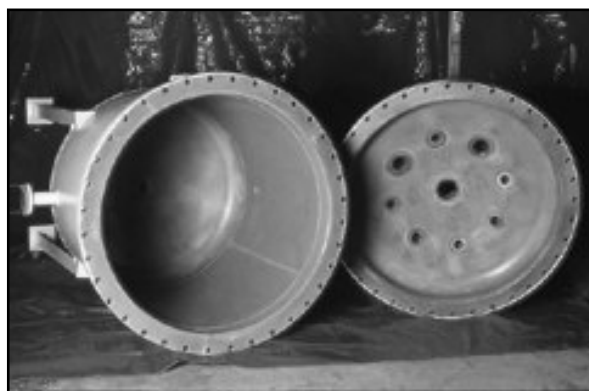
Source: DuPont Literature

Design Parameters

Liner Thickness	0.060" thick to 0.120" thick
Max. Length (per section)	20 feet
Max. Vessel Diameter	12 feet

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Smart Solutions
EDLON
A Unit of Robbins & Myers, Inc.

400 Gallon Reactor with Bonded
FEP Liner