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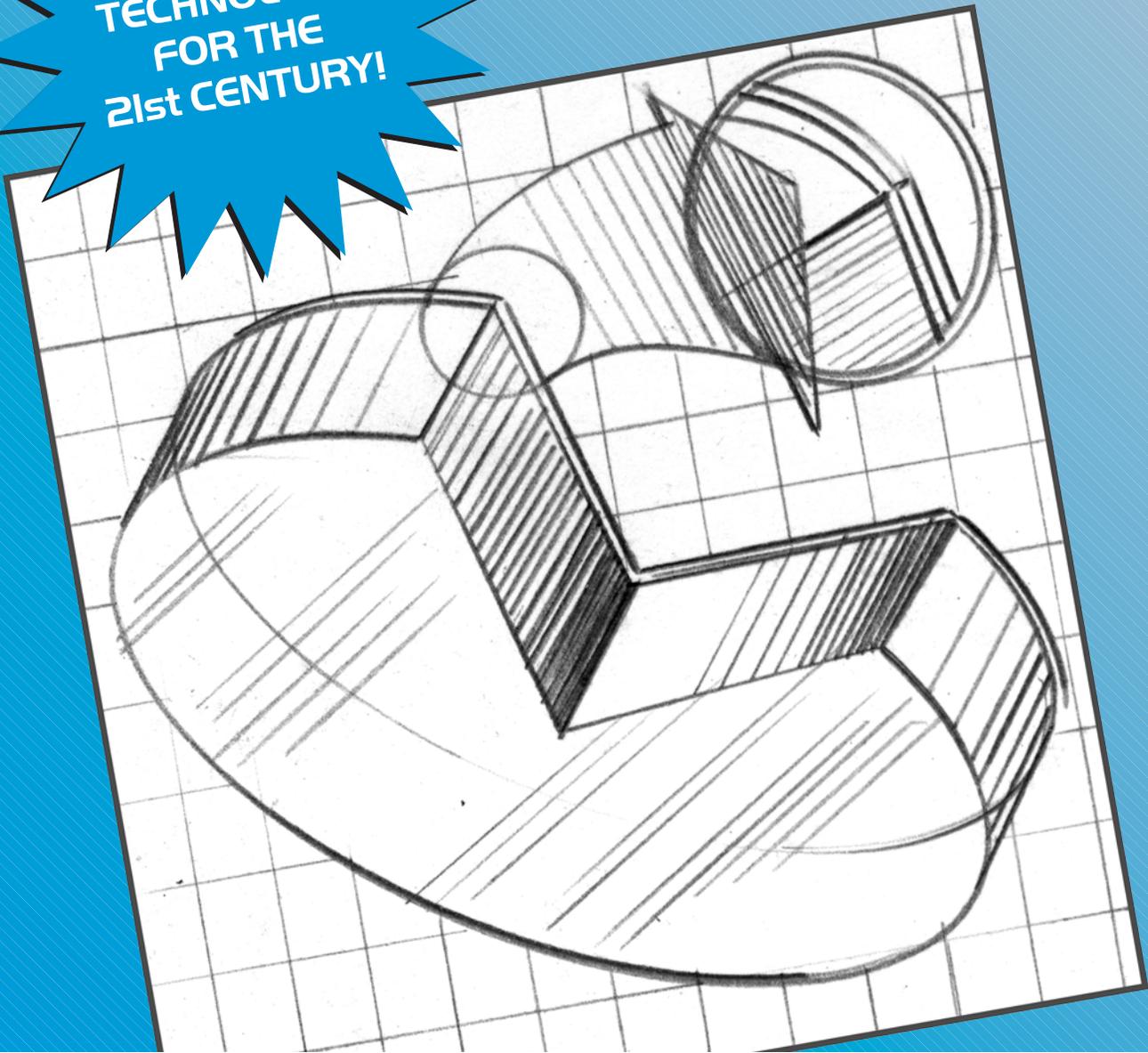
# UniShield® Window Protection

FUSED PFA TEFLON® GLASS SHIELDING  
FOR SIGHT FLOW INDICATORS & SIGHT WINDOWS



A Product Line of  
The Clark•Reliance Corporation  
**Over 80 years of Quality!**

**NEW  
TECHNOLOGY  
FOR THE  
21st CENTURY!**

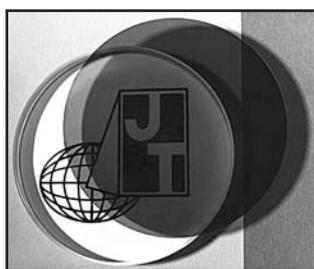


Jacoby-Tarbox's full line of sight flow indicators and sight windows are now available with UniShield, a fused PFA Teflon® glass shield. This latest innovation in glass protection from Jacoby-Tarbox is available for window discs *and* cylinders for both positive pressure *and* VACUUM service. This technology incorporates PFA Teflon fluoro-polymer

powder coating over a clear catalytic primer resulting in the fused PFA Teflon shield.

This technology is the latest addition to the standard loose PFA, Kel-F®, and MICA shields currently employed by process engineers for hazardous service and glass protection.

## SHIELDING OPTIONS AVAILABLE FROM JACOBY-TARBOX



MICA SHIELD



PFA SHIELD



KEL-F SHIELD



UniShield

## GLASS SHIELDING APPLICATIONS

### CHEMICAL ATTACK

- All hydroxides
- Hydrofluoric acid
- Steam
- pH over 7.5 (caustics)
- Phosphoric acid

Borosilicate glass, the standard in all Jacoby-Tarbox process equipment, is corrosion resistant to most chemical processes. However, glass should be protected or enhanced under these known corrosive and difficult applications.

### CORROSIVE VACUUM SERVICES

- Vessels/lines to full vacuum
- NPSH on lines induced by pumps
- Vacuum process tanks

### “STICKY” SERVICES

- High viscosity fluids
- Fatty processes
- Polymers
- Petrochemical/Refining
- Bulk resin production
- Concentrates

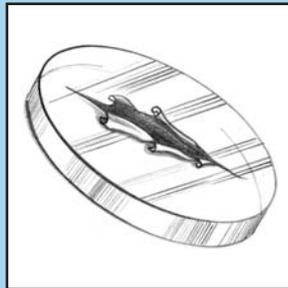


Borosilicate glass under attack by caustic

# WHY UniShield?

## FOUR REASONS WHY LOOSE SHIELDS EVENTUALLY FAIL.

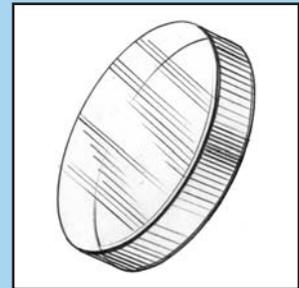
### LOOSE SHIELDING



**TEARING**

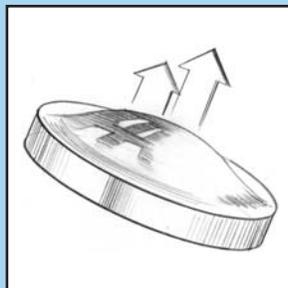
Thermal cycling causes stress in shield, even in the most precise assembly, at the edge of the unsupported area by the gasket.

### UniShield



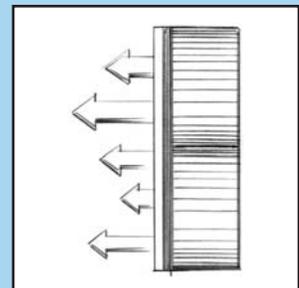
**TEAR FREE**

UniShield does not fail because fused construction results in no unsupported areas on entire surface.



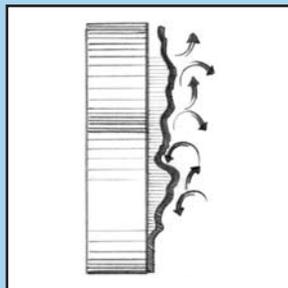
**STRESS CONCENTRATIONS IN VACUUM SERVICE**

Vacuum service induces a stress on the shield, "pulling" at unsupported area of the loose shields, resulting in tearing.



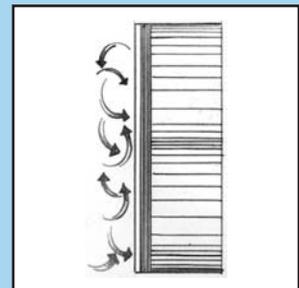
**UNIFORM LOADING IN VACUUM SERVICE**

UniShield, having superior adhesion, results in uniform loading and no concentration of force to "pull" shield to failure.



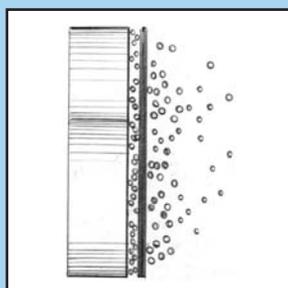
**TURBULENT FLOW (TIME, TEMP. & PRESSURE)**

Turbulent and high vacuum flow after time at varying temperatures or at varying pressures causes fatigue and eventually failure.



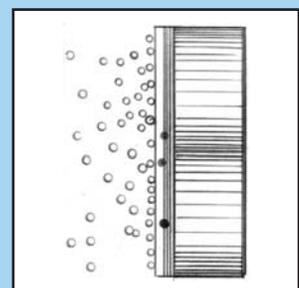
**STRESS FREE IN TURBULENT FLOW**

UniShield is not moved by varying pressures of eddy currents, stressed by changes in temperature, or fatigued by these events over time.



**FULL SURFACE EXPOSED TO PERMEATION**

Permeation occurs through all plastic lining and shielding over time. Field studies have shown that permeation occurs more quickly in loose, unsupported liners and shields.



**POINT EXPOSURE TO PERMEATION**

UniShield's fused construction slows permeation and limits exposure to only permeated area and not entire face upon permeation.

# TYPICAL CONFIGURATIONS OF SIGHT FLOW INDICATORS AND WINDOWS EMPLOYING UniShield TECHNOLOGY.



**BULLS-EYE INDICATORS**



**SIGHT WINDOWS**



**TFE LINED INDICATORS**



**FM® DUAL SIGHT WINDOW**



**TUBULAR INDICATORS**



**UNIGLAS®**  
(where metal ring contacts process)

## UniShield SPECIFICATIONS

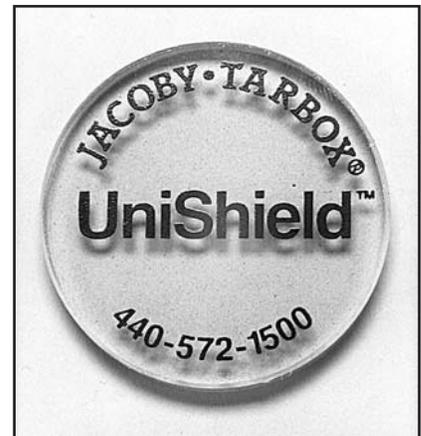
Material: 100% PFA Teflon  
 Construction: Fused  
 Color: Translucent  
 Pressure: Full Vacuum to 3000 PSIG  
 Temperature: -325°F to 500°F  
 Thickness: 5-10 mils  
 Application: Disc and Cylinders

Corrosive environments demand the highest level of protection, especially with critical items such as glass. UniShield protection will prolong the life of the glass and reduce unplanned rush maintenance actions due to premature glass erosion in the unit. For TFE and Fluoropolymer lined sight flows and windows, the addition of FM approved Dual Windows and UniGlas in concert with UniShield results in the most safety oriented equipment one can specify.

## PFA CHEMICAL RESISTANCE DATA

CHEMICAL	TEST TEMPERATURE		% WT. GAIN	
	°F	°C		
<b>MINERAL ACIDS</b>	Hydrochloric (Conc)	248	120	0.0
	Sulfuric (Conc)	248	120	0.0
	Hydrofluoric (60%)	73	23	0.0
	Fuming Sulfuric	73	23	0.0
<b>INORGANIC BASES</b>	Ammonium Hydroxide (Conc)	150	66	0.0
	Sodium Hydroxide (50%)	248	120	0.4
<b>OXIDIZING ACIDS</b>	Aqua Regia	248	120	0.0
	Chromic (50%)	248	120	0.0
	Nitric (Conc)	248	120	0.0
	Fuming Nitric	73	23	0.0
<b>OTHER INORGANICS</b>	Sulfuryl Chloride	156	69*	2.7
	Phosphoric Acid (Conc)	212	100	0.0
	Chlorosulfonic Acid	304	151*	0.7
<b>ACIDS/ ANHYDRIDES</b>	Glacial Acetic Acid	244	118*	0.4
	Acetic Anhydride	282	139*	0.3
	Trichloroacetic Acid	384	196*	2.2
<b>CHLORINATED SOLVENTS</b>	Methylene Chloride	104	40*	0.8
	Perchloroethylene	250	121*	2.0
	Carbon Tetrachloride	171	77*	2.3
<b>POLYMER SOLVENTS</b>	Dimethylformamide	309	154*	0.2
	Dimethylsulfoxide	372	189*	0.1
	Dioxane	214	101*	0.6

**Ask for a UniShield product sample!**



From DuPont's TEFLON® PFA (A-80604)

For additional information, contact your local representative.



**JACOBY-TARBOX®**

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