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Section: T100
Bulletin: T100.82
Date: 9/03
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UniShield®

Window Protection

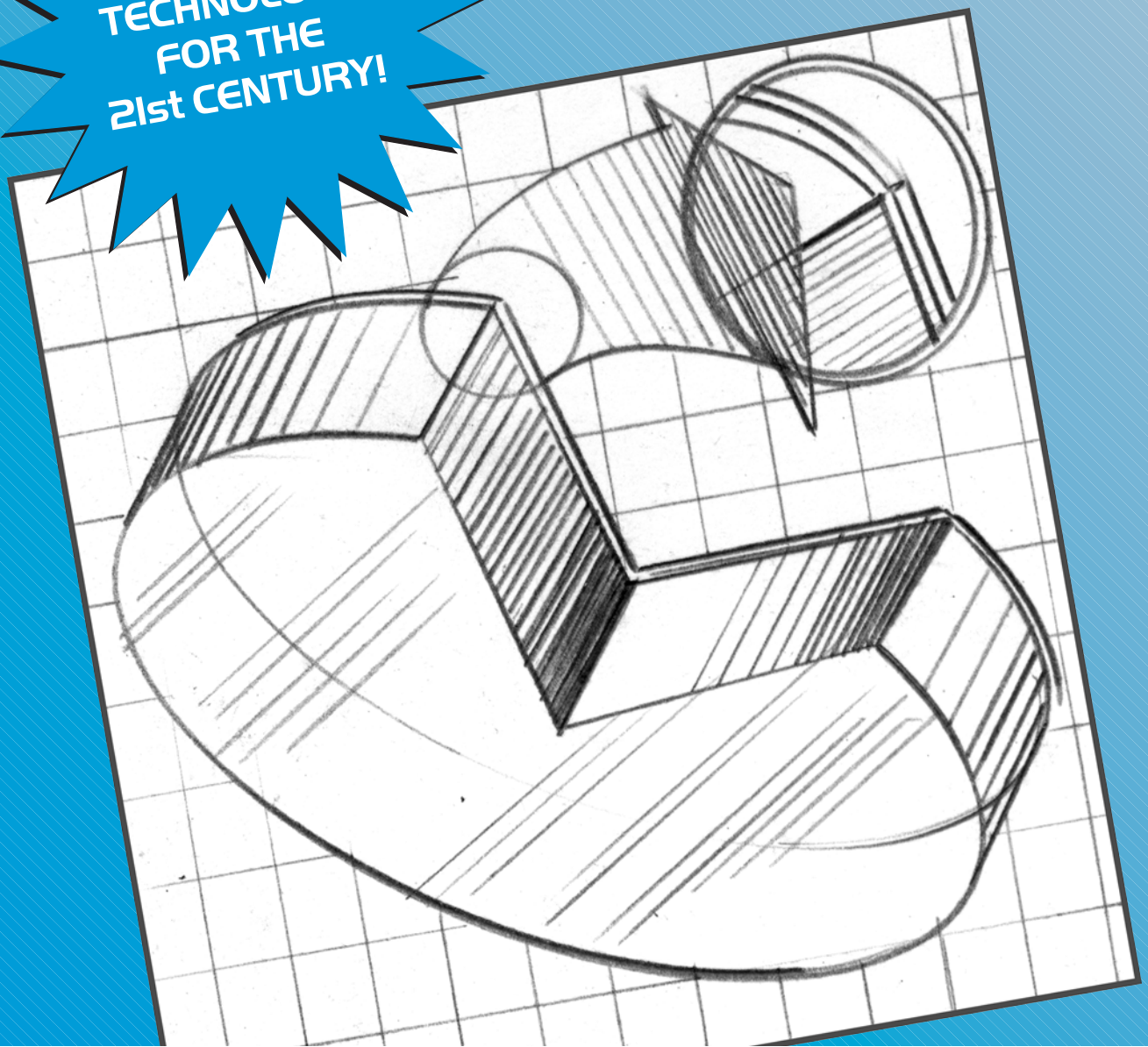
FUSED PFA TEFLON® GLASS SHIELDING FOR SIGHT FLOW INDICATORS & SIGHT WINDOWS

NEW TECHNOLOGY FOR THE 21st CENTURY!

JACOBY·TARBOX®

A Product Line of
The Clark•Reliance Corporation

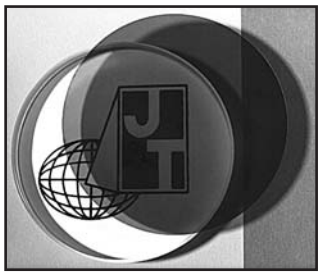
Over 80 years of Quality!



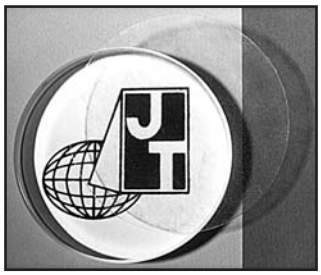
Jacoby-Tarbox's full line of sight flow indicators and sight windows are now available with UniShield, a fused PFA Teflon® glass shield. This latest innovation in glass protection from Jacoby-Tarbox is available for window discs *and* cylinders for both positive pressure *and* VACUUM service. This technology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

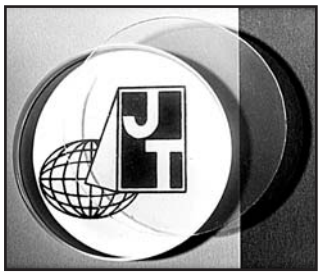
SHIELDING OPTIONS AVAILABLE FROM JACOBY-TARBOX



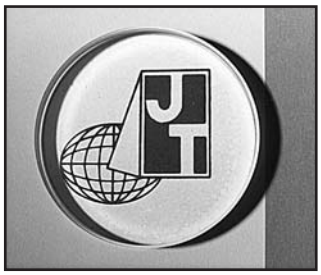
MICA SHIELD



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

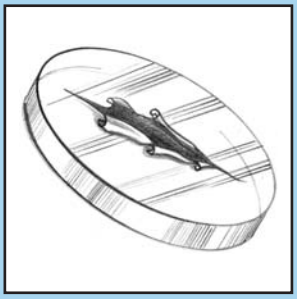
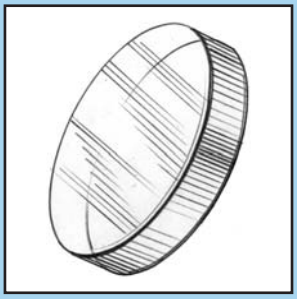
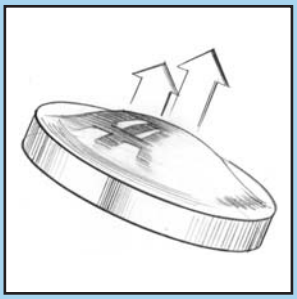
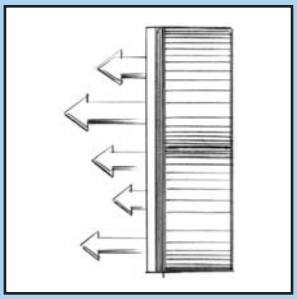
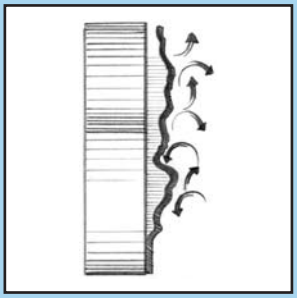
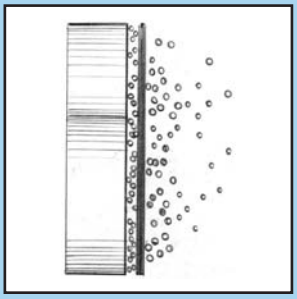
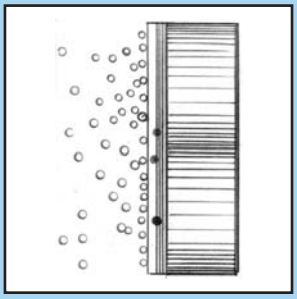
"STICKY" SERVICES

- 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	UniShield
 TEARING	Thermal cycling causes stress in shield, even in the most precise assembly, at the edge of the unsupported area by the gasket.
UniShield does not fail because fused construction results in no unsupported areas on entire surface.	 TEAR FREE
 STRESS CONCENTRATIONS IN VACUUM SERVICE	Vacuum service induces a stress on the shield, "pulling" at unsupported area of the loose shields, resulting in tearing.
UniShield, having superior adhesion, results in uniform loading and no concentration of force to "pull" shield to failure.	 UNIFORM LOADING IN VACUUM SERVICE
 TURBULENT FLOW (TIME, TEMP. & PRESSURE)	Turbulent and high vacuum flow after time at varying temperatures or at varying pressures causes fatigue and eventually failure.
UniShield is not moved by varying pressures of eddy currents, stressed by changes in temperature, or fatigued by these events over time.	STRESS FREE IN TURBULENT FLOW
 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.
UniShield's fused construction slows permeation and limits exposure to only permeated area and not entire face upon permeation.	 POINT EXPOSURE TO PERMEATION

Teflon is a registered trademark of DuPont. Kel-F is a registered trademark of 3M. FM is a registered trademark of Factory Mutual Research Corporation.
Jacoby-Tarbox, UniGlas and UniShield are registered trademarks of the Clark-Reliance Corporation.

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.

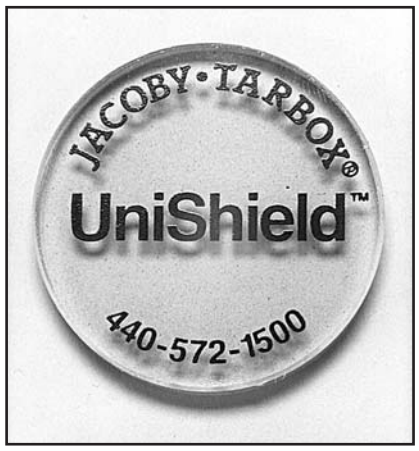
PFA CHEMICAL RESISTANCE DATA

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

From DuPont's TEFLON® PFA (A-80604)

For additional information, contact your local representative.

Ask for a UniShield product sample!



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ISO 9001 REGISTERED Clark•Reliance

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