PAPCO

TEXFLEX®

COMPOSITE FABRICS

Expansion Joint Materials for the 21st Century

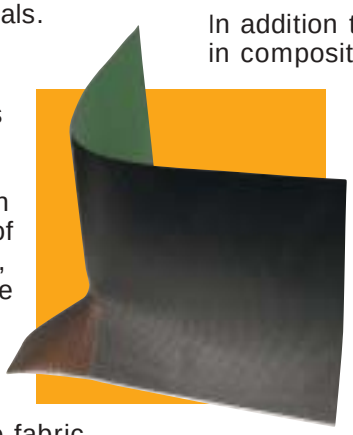
TEXFLEX®
COMPOSITES

...The Proven Standard for Performance and Cost Effectiveness

Papco Industries

Since the development of its benchmark fabric, TEXFLEX, in 1985, PAPCO Industries has been at the forefront of expansion joint technology. When PAPCO's mechanical engineers designed and built the machinery to mass-produce TEXFLEX, they set the standard for high temperature expansion joint materials.

In order to continually maintain this leadership position, PAPCO's management constantly investigates new technologies and processes that can be used to design the most robust non-metallic expansion joints in the world. As a member of the Fluid Sealing Association (FSA), PAPCO has access to and influence on the latest technical data and material specifications.



What is TEXFLEX?

TEXFLEX is a 100% nonpermeable fabric, consisting of nonpermeable PFA and PTFE films reinforced with a high strength PTFE coated fiberglass substrate. Easily field spliced and suitable for extreme temperatures, with excellent resistance to chemical attack and high tensile strength, TEXFLEX is ideally suited for all expansion joint applications.

With TEXFLEX composites, PAPCO Industries provides a 100% nonporous, strong, flexible, and temperature resistant material for flue duct expansion joints. The inadequacies of other fabrics can be traced back to other manufacturer's dependence on antiquated technology and equipment. These other manufacturers use porous PTFE dip coated materials as a starting point for their expansion joint membranes.

PAPCO's TEXFLEX consists of nonpermeable PFA and PTFE films reinforced with a high strength PTFE coated fiberglass cloth substrate.

When incorporated in a properly designed expansion joint, TEXFLEX will provide a long lasting, cost-effective system. Additionally, TEXFLEX is lighter and more flexible than other fabrics and can be field spliced in minutes with equipment no more complex than a hot iron.

In addition to making a major breakthrough in composite materials with TEXFLEX, Papco perfected an innovative procedure and designed the equipment necessary for molding continuous corners in u-shaped expansion joints. Combining fully automated molding machines with a perfected technique, Papco produces the finest integral molded corners in the industry.

PAPCO engineers also developed proprietary formulations of both EPDM and Fluorelastomers to meet the specific request of its worldwide customer base.

TEXFLEX is manufactured under stringent quality control standards in PAPCO's Northvale, NJ facility. By utilizing a state-of-the-art laminating machine that can also be configured to press vulcanize both EPDM and fluorelastomers such as FKM and Fluorel®, PAPCO can control all facets of the production process.

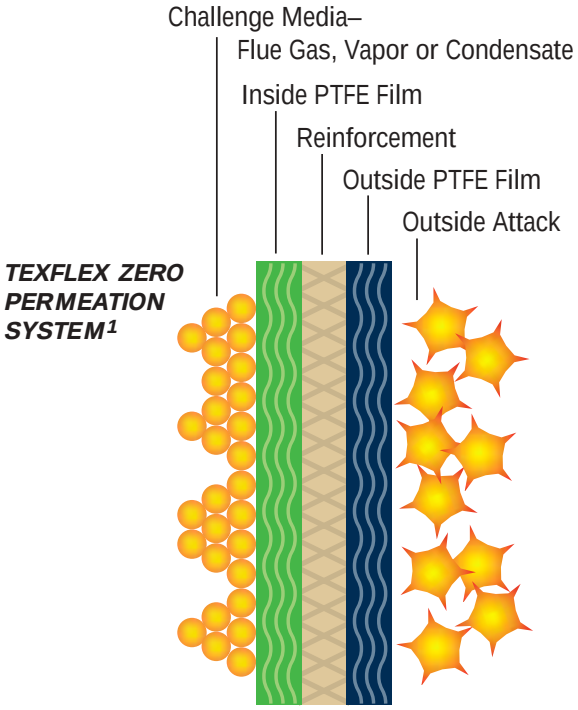
Papco warranties all of its expansion joints to be free from defects under normal use for 36 months from the date of initial system startup. Warranties for up to 5 years are available for specific applications.

Call Papco today for a bid on your specific design requirements.

TEXFLEX®...Engineered for Zero Permeation

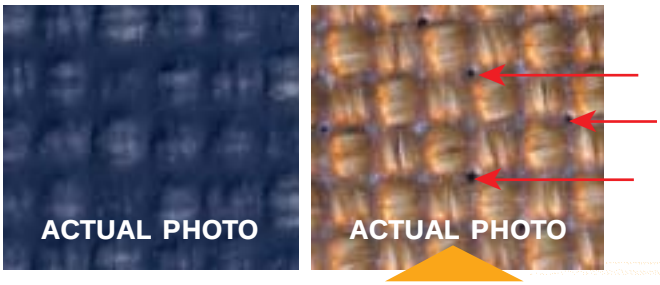
Permeation, the process by which a liquid or gas penetrates and travels through a material on a molecular level, is characterized by three steps: sorption of molecules into the contacted surface; diffusion of the sorbed molecules; and desorption of the molecules from the opposite surface. In older technologies, porous PTFE dip-coated fiberglass is often used as a starting point for the expansion joint membrane. The inclusion of the porous elements has proven to be a serious design flaw. Over time, these fabrics absorb flue gas condensates which speed the deterioration of the joint's integrity.

The TEXFLEX zero permeation system totally encapsulates the high strength reinforcing ply. The reinforcement is free of flue gas and outside contamination, as illustrated below, that could cause deterioration and ultimate failure of the material.



TEXFLEX 1400NP is used for a wide variety of expansion joint applications. For heavier duty installations, SJ2200NP is available. SJ2200NP has greater tensile strength, withstands higher pressure, and provides greater thickness.

Footnote: 1The TEXFLEX® composite was investigated for permeation by an independent laboratory using the ASTM F-739 test method. Sulfuric acid (2N) at 5 psig was used as the test medium. The TEXFLEX composite exhibited ZERO breakthrough and ZERO permeation.



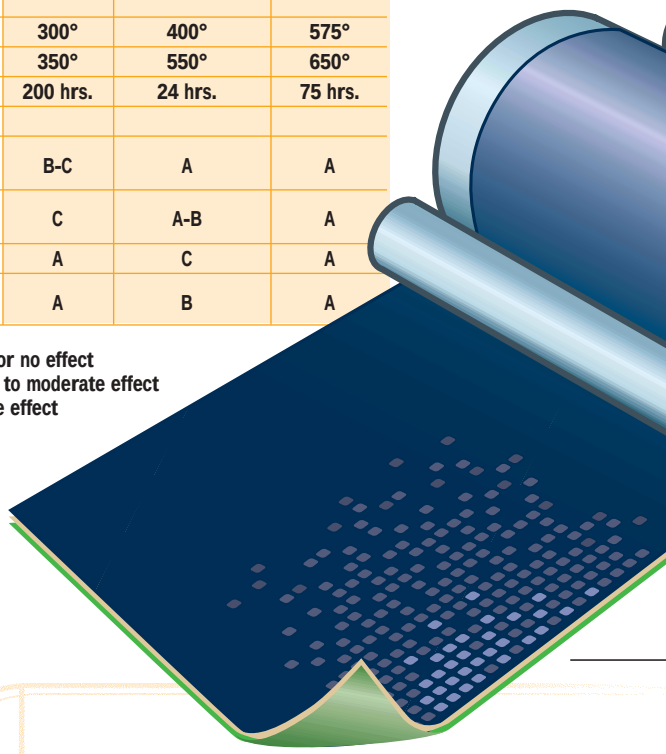
Many manufacturers include fluorelastomer (FKM) in the PTFE Dip Coating Process leaving small holes. At higher temperatures FKM will react with, and ultimately destroy the Fiberglass Substrate. Additionally, ammonia, used in systems such as SCRs will deteriorate the FKM and cause premature expansion joint failure.

PHYSICAL CHARACTERISTICS

	TEXFLEX 1400NP	TEXFLEX SJ2200NP
Maximum Continuous Temperature	575°F	
Excursion Temperature	650°F on an intermittent basis	
Maximum Pressure	±5 psi	±10 psi
Chemical Resistance	Excellent	
Permeation	None from either side Test ASTM F-739-85	
Thickness	0.055 in.	0.100 in.
Weight	69 oz/yd^2	92 oz/yd^2
Tensile Strength	1400 pli	2400 pli
Shelf Life	Unlimited	

	Elastomer (EPDM)	FKM Fluoroelastomer	TEXFLEX Composites
Material Temperature Minimum	-60°	-40°	-110°
Continuous	300°	400°	575°
Intermittent	350°	550°	650°
(Accumulative Time)	200 hrs.	24 hrs.	75 hrs.
Chemical Resistance*			
H_2SO_4 Acid Hot (+) over 50% Concentration	B-C	A	A
HCL Acid Hot (+) Over 20% Concentration	C	A-B	A
Anhydrous Ammonia	A	C	A
NAOH Over 20% Concentration	A	B	A

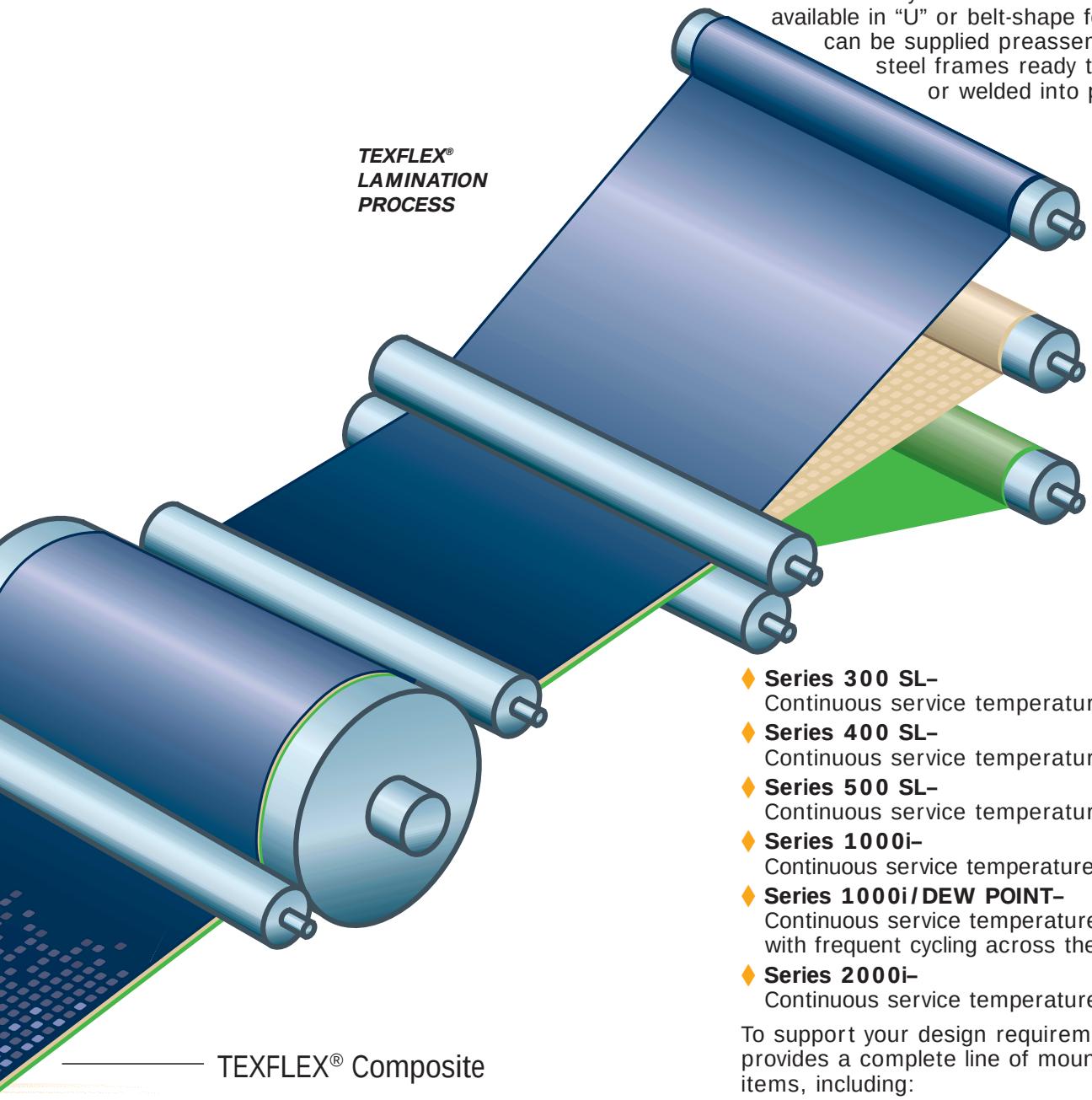
*Rating Code: A = Little or no effect
B = Minor to moderate effect
C = Severe effect



A Complete Line of High Performance Non-Metallic Expansion Joints

For over a quarter of a century, Papco Industries has manufactured a full line of non-metallic expansion joints for customers nationwide and around the world. Papco's line of single-layer or multi-layer composite expansion joints can be fabricated in TEXFLEX or a wide variety of other materials. They are available in "U" or belt-shape form, and they can be supplied preassembled on steel frames ready to be bolted or welded into place.

TEXFLEX® LAMINATION PROCESS



TEXFLEX® Composite

- **Series 300 SL–** Continuous service temperatures up to 300°F
- **Series 400 SL–** Continuous service temperatures up to 400°F
- **Series 500 SL–** Continuous service temperatures up to 550°F
- **Series 1000i–** Continuous service temperatures up to 1,000°F
- **Series 1000i/DEW POINT–** Continuous service temperatures up to 1000°F with frequent cycling across the flue gas dew point
- **Series 2000i–** Continuous service temperatures up to 2,500°F

To support your design requirements, Papco also provides a complete line of mounting and protective items, including:

- Baffle Plates
- Mounting Flanges
- Fly Ash Seals And Insulation Pillows

Cost-Effective Quality Over the Life of the Joint

TEXFLEX fabric expansion joints provide high performance over a long period of time. This longevity makes the use of TEXFLEX extremely cost-effective over the life of the joint. Papco expansion joints, featuring TEXFLEX composites, offer several advantages.

- History of Proven High Performance and Technical Innovation
- Continued Technical Advances in Materials and Design
- Longevity of Materials–No Change in Materials at High Temperatures
- Zero Permeation–PTFE Inside and Outside Protects Joint from Weather and Any Harsh Elements
- Excellent Cost / Performance Ratio Over the Life of the Joint

TEXFLEX–Ideal for Harsh Environment Applications

Papco's non-metallic expansion joints have proven ideal for harsh environment applications. They can accommodate large, multi-plane movements caused by thermal stresses, are corrosion resistant, attenuate sound and vibration, and can withstand high temperatures. These advantages translate into lower system design costs. Papco expansion joints are used in:

- Power boilers
- Recovery boilers
- Turbine waste to energy boilers
- SCRs
- Flue gas ducts
- Stack and breeching seals
- Wet and dry scrubbers
- Absorbers
- Precipitators
- Baghouses
- Fans
- HRSG

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