



The AIRTECH Story

Founded in 1973 by Willam (Bill) Dahlgren, AIRTECH International, Inc. serves four major markets: **Printed Circuit Board, Aircraft / Aerospace, Non-Aerospace Composites, and Wind Energy**.

Utilizing our unique multilayer manufacturing technology, we have been able to help our customers increase their lamination area performance and allow them to lower their production costs.

To support the global nature of these markets, we have facilities in Huntington Beach, California (corporate headquarters); Differdange, Luxembourg; Manchester, England U.K.; and Tianjin, China.



Huntington Beach, CA USA Corporate Headquarters Airtech International, Inc.



Differdange, Luxembourg European Operations Airtech Europe Sarl



Manchester, England U.K. Operations Tygavac Advanced Materials Ltd.



Tianjin, ChinaAsian Operations
Airtech Asia Ltd.

At AIRTECH, we are here for our customers. We have been successful in all of our markets by supplying our customers quality products backed by unsurpassed technical support. We pledge to continue investing in our manufacturing capabilities, product development and our people.

More Than a Manufacturer...A Technical Partner



AIRTECH Lamination System

The "AIRTECH Lamination System" is a system of products designed and manufactured utilizing our unique "multilayer manufacturing technology". This provides the user with high performing, low cost lamination products to improve yields and reduce lamination costs.

Films / Fabrics:

All DAHLAR films are silicone free, uncoated products to eliminate the potential of silicone contamination in the lamination area. Features include release properties, surface protection, via-damming and pressure intensification in rigid, rigid-flex and flexible circuit applications. Temperature ranges to 500°F (260°C) are available.

High Temperature (>200°C) Moderate Temperature (<200°C)

DAHLAR 9000 DAHLAR 9600
DAHLAR 9200 DAHLAR 9100
DAHLAR 9301B DAHLVIA 9119

DAHLVIA 9173MA

DAHLAR 9300Y Release Fabric (>270°C)
DAHLAR 9910-MR 9950 TFNP

DAHLPAD Press Pads:

DAHLPAD press pads provides heat lagging and pressure equalization functions to aid our users in improving lamination yields. Combined with our DAHLAR films, we offer a complete system of yield improvement / cost reduction opportunities.

DAHLPAD One Cellulosic based, unclad, white

Si-Pad Reinforced, silicone rubber, multi cycle, red Si-Pad QL Reinforced, silicone rubber, multi cycle, grey

DAHLBAG "Turkey Bags":

For those applications requiring the use of vacuum bags, we offer our custom made bags in two varieties with sizes to fit your requirements.

DAHLBAG 9840 DAHLBAG 9740



Flex Circuit Applications

Requirements: Surface protection, conformability, easy release. Products:

DAHLAR 9300Y, 9301B, 9610NV, DAHLVIA 9100,

NCF 9500, Si-Pad, Si-Pad QL, 9950 TFNP,

9600. DAHLVIA 9119

Masslam, CCL, Applications

Requirements: Surface protection, breakdown release. Products: DAHLAR 9300Y, 9301B, 9000, NCF 9500

MLB, IVH Applications

Surface protection, breakdown release, block resin Requirements:

flow, prevent adhesive "squeeze out" (Flex).

DAHLAR 9301B, 9300Y, 9000, DAHLVIA 9100, Products:

9119, 9173MA

BGA Applications

Requirements: Prevent resin overflow while protecting critical

surfaces. Provide ease of release.

Reduce costs with our multilayer technology.

DAHLVIA 9100, 9119, 9173MA, DAHLAR 9301B, Products:

9200, 9300Y

HDI - RCC Applications

Eliminate resin voids at laminate surface. Requirements:

Release at breakdown.

Products: DAHLVIA 9100, 9119, 9173MA for

conformability / pressure intensification to

drive resin

Rigid - Flex Applications

Requirements: Prevent resin overflow, protector for dissimilar

surfaces, easy release.

Product: DAHLVIA 9100, 9119, 9173MA

AIRTECH Lamination System





	THICKNESS**		MAX USE			MARKET / APPLICATION				
PRODUCTS	MIL /MM	COLOR	TEMP °F / °C	Rigid Boards		Flexible Circuits				
		Rele	ase Film			Release Film		-		
<u>FILMS</u>			High Temp (> 200° C)	Moderate Temp (< 200 ⁰ C)	Via Damming	High Temp (> 200°C)	Moderate Temp (< 200° C)	Conformable	Pressure Intensifier	
DAHLAR 9910-MR	1.0 / 0.025	Blue	600 F / 315 C	✓			✓			
DAHLAR 9000	1.0 / 0.025	Red	500 F / 260 C	✓			✓			
DAHLAR 9200	1.0 / 0.025	Blue	480 F / 250 C	✓			✓			
DAHLAR 9300Y	1.0 - 2.0 / 0.025 - 0.050	Yellow	450 F / 232 C	✓			✓			
DAHLAR 9301B	1.25 / 0.032	Blue	450 F / 232 C	✓		√ ***				
DAHLVIA 9173MA	5.0 / 0.125	Blue	450 F / 232 C	✓		√ ***	✓		✓	✓
DAHLAR 9600	2.0 / 0.050	Clear	390 F / 198 C					✓	✓	
NCF 9500	1.0 / 0.025	Translucent	390 F / 198 C		✓			✓		
DAHLVIA 9100	6.5 / 0.163	Translucent	390 F / 198 C		✓	✓		✓	✓	✓
DAHLVIA 9119	4.7 / 0.120	Translucent	390 F / 198 C		✓	✓		✓	✓	✓
DAHLAR 9450QL	1.0 / 0.025	Translucent	360 F / 180 C					✓		
	PRESS PADS			Rigid Boards		Flexible Circuits				
PRODUCTS	THICKNESS** MIL / MM	COLOR	MAX USE TEMP °F / °C	Heat High Temp (> 200° C)	Lagging Moderate Temp (< 200° C)	Pressure Equalization	High Temp (> 200 ⁰ C)	Heat Lagging Moderate Temp (< 200° C)	Multi Cycle	Pressure Equalization
DAHLPAD One	.055 / 1.4	White		(✓	✓	(/	(=== -/		✓
Si-Pad	.060 / 1.6	Red	500 F / 260 C	✓		✓	✓		✓	✓
QUICK-LAM PRODUCTS				Rigid Boards		Flexible Circuits				
	THICKNESS**		Duaduat	Heat	Lagging	D	Heat Lagging		D	
PRODUCTS	MIL / MM	COLOR	Product Description	High Temp (> 200° C)	Moderate Temp (< 200 ⁰ C)	Pressure Equalization	High Temp (> 200°C)	Moderate Temp (< 200 ⁰ C)	Multi Cycle	Pressure Equalization
9950 TFNP	3.0/6.0/10.0 / 75/150/250	Tan	Release Fabric				✓		✓	
DAHLAR 9200	1.0 - 5.0 / 25 - 125	Translucent	Release Film				✓			
Si-Pad QL	32 / .8	Grey	Press Pad				✓		✓	✓

^{**} Other thicknesses may be available. Contact AIRTECH for price and minimum quantities

Contact your local AIRTECH distributor for samples or additional literature

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AIRTECH International, Inc. PCB Division - Huntington Beach, CA (USA) - Luxembourg - England - China (714) 899-8100 FAX (714) 899-8179 www.airtechpcb.com

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^{***} Test for appropriateness in your application



DAHLAR 9910-MR

Description:	
	DAHLAR 9910-MR is a fluoropolymer based release film designed
	and manufactured for use in the manufacture of flexible (FPC) and

multi layer (ML) printed circuit boards (PCB).

Suggested Applications:

Use DAHLAR 9910-MR as a release film / surface protector during the lamination process. Can be used in traditional or "Fast Lam" processes.

Technical Data:

Maximum Use Temperature: 600°F / 315°C Thickness: .001" / .025 mm

Elongation: 500% Color: Blue

Yield: 89 sq. ft. per pound per mil (approximate)

Features / Benefits:

Dahlar 9910-MR provides excellent release characteristics along with good conformability to prevent / control unwanted resin flow in very high temperature applications.

Related Airtech Products:

Dahlpad One, Tri-Pad, Si-Pad, Si-Pad QL press pads, 9950 TFNP, Dahlar 9900

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DAHLAR 9000 Release Film					
Description:	A custom compounded, high temper film.	rature, fluoropolymer based release			
Suggested Applications:	High temperature release film / surfa flexible circuit applications.	ce protector for rigid, rigid-flex and			
Technical Data:					
	Maximum Use Temperature: Thickness: Elongation: Color:	500°F / 260°C .001" / .025 mm 350% Red			
Features / Benefits:	DAHLAR 9000 releases easily from a coded for easy identification. High to				
Related Airtech Products	: Si-Pad, Tri-Pad				
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Description:		
B C C C C C C C C C C C C C C C C C C C	9200 is a high performance, fluo	ropolymer based release film.
Suggested Application	ons:	
	High temperature release film / so and flexible circuit applications.	urface protector for rigid, rigid-flex
Technical Data:		
	Maximum Use Temperature: Thickness: Elongation: Color:	480°F / 250°C .001" / .025 mm 350% Blue
Features / Benefits:		
	Color-coded for easy identificatio release from most surfaces.	n, high temperature resistant, easy
Related Airtech Prod	ducts:	
	Si-Pad, Tri-Pad	
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DAHLAR 9300Y Release Film

Description:

A high performance fluoropolymer release film. Engineered to provide easy release over a broad temperature range.

Suggested Applications:

Economical, high temperature release film / surface protector for rigid, rigid-flex and flexible circuit applications.

Technical Data:

Maximum Use Temperature: 450°F / 232°C

Thickness: .001" / .025 mm, .002" / .050 mm

Elongation: 350% Color: Yellow

Features / Benefits:

High temperature capable. Color-coded for identification. Uncoated, silicone free design to prevent contamination. May replace skived PTFE in high performance release applications.

Related Airtech Products:

Dahlpad One, Si-Pad, and Si-Pad QL press pads

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DAHLAR 9301B Release Film

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11111				ш

A high performance fluoropolymer release film. Engineered to provide easy release over a broad temperature range.

Suggested Applications:

Economical, high temperature release film / surface protector for rigid, rigid-flex and flexible circuit applications. Also can function as via damming agent.

Technical Data:

Maximum Use Temperature: 450°F / 232°C
Thickness: .00125" / .032 mm
Elongation: 350%

Elongation: 350% Color: Blue

Features / Benefits:

High temperature capable. Color-coded for identification. Uncoated, silicone free design to prevent contamination.

Related Airtech Products:

Dahlpad One and Si-Pad press pads

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Description:		
	A multilayer, highly conformable designed for use in higher tempe applications.	release sheet / pressure intensifier rature flex, rigid or rigid-flex
Suggested Applica		
	A conformable film with integral in Functions as a pressure intensifient temperature capabilities.	
Technical Data:		
	Maximum Use Temperature: Thickness: Elongation: Color:	450°F / 232°C .005" / .125 mm MD 250% / TD 450% Blue
Features / Benefits	:	
	Utilizing the heat and pressure of DAHLVIA 9173MA conforms to the creating a dam against unwanted providing for easy release from m	ne surface of the circuit thereby acrylic / epoxy intrusion while
Related Airtech Pro		
	Dahlpad One, Tri-Pad, Si-Pad pre release films	ss pads, Dahlar high temperature
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DAHLAR 9600 Release Film					
Description:	DAHLAR 9600 is a custom compour				
	manufactured for use in the manufac	cture of flexible circuits.			
Suggested Applications:	Designed primarily for coverlay lami Good conformability and release cha				
Technical Data:					
	Maximum Use Temperature: Thickness: Elongation: Color:	390°F / 198°C .002" / .050 mm 300% Clear			
Features / Benefits:					
	DAHLAR 9600 exhibits excellent rele the conformability to prevent / contr				
Related Airtech Products					
	Si-Pad, Tri-Pad, Dahlpad One, Dahla	r high temperature release films			
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DAHLVIA 9100 Co	nformable Release Film	
Description:	A multilayer, highly conformable reledesigned for use in flexible and rigid fabrication.	•
Suggested Applications:	A conformable film with integral rele Functions as a pressure intensifier / temperature capabilities.	
Technical Data:		
	Maximum Use Temperature: Thickness: Elongation: Color:	390°F / 198°C .0065"/ .163 mm MD 250% / TD 450% Translucent
Features / Benefits:		
	Utilizing the heat and pressure of the DAHLVIA 9100 conforms to the surf a dam against unwanted acrylic / epo	ace of the circuit thereby creating
Related Airtech Products		
Troidtou Mittour i Foundto	Dahlpad One, Tri-Pad, Si-Pad press release films	pads, Dahlpad high temperature
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DAHLVIA 9119 Conformable Release Film

Description:

A multilayer, highly conformable release sheet / pressure intensifier all in one designed especially for use in flexible circuit lamination applications.

Suggested Applications:

A conformable film with integral release surfaces on two sides. Designed to offer maximum conformability to block resin flow in FPC lamination applications.

Technical Data:

Maximum Use Temperature: 390°F / 199°C

Thickness: .0047"/ .120 mm, .0065" / .163 mm

Elongation: MD 140% Color: Clear

Features / Benefits:

Utilizing a unique combination of PMP outer layer release surfaces and a proprietary conformable inner layer, DAHLVIA 9119 softens and conforms to the substrate creating a dam against unwanted acrylic / epoxy intrusion while providing for easy release from many surfaces.

Related Airtech Products:

Dahlpad One, Tri-Pad, Si-Pad press pads, Dahlar high temperature release films

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NCF 9500 Release	Film	
Description:	A two sided coated release film enginess demanding performance require	
Suggested Applications:	An economical release film with good characteristics for a wide variety of a	-
Technical Data:		
	Maximum Use Temperature: Thickness: Elongation: Color:	390°F / 198°C .001"/ .025 mm MD 120%, TD 100% Translucent
Features / Benefits:	Offers easy release from most surfac	ces.
Related Airtech Products:	Dahlpad One, Tri-Pad and Si-Pad pre	ss pads
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Dahlar 9450QL Release Film				
Description:				
	A matte finished, non-coated release film designed for high performance in Quick-Lam applications.			
Suggested Applications:	A non-contaminating film with good temperature and handling characteristics for fast cycle times.			
Technical Data:				
	Maximum Use Temperature:	360°F / 180°C		
	Thickness:	.001"/ .025 mm 115% MD		
	Elongation: Color:	Translucent		
	00101.	Translationt		
Features / Benefits:	Matte surface offers easy release fro	m most surfaces.		
Related Airtech Products				
	Dahlpad One and Si-Pad press pads			
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9950 TFNP Release Fabric

Description:

9950 TFNP is a non-porous, PTFE coated glass fabric designed both for release and resin flow blockage.

Suggested Applications:

Engineered for flex circuit "Quick Lam" applications. Offers easy release, multiple use capability, prevents mark off.

Technical Data:

Maximum Use Temperature: 550°F / 288°C

Thickness: .003" / 0.075 mm, .006" / .150 mm,

.010" / .250 mm

Elongation: N/A Color: Tan

Features / Benefits:

High temperature capable designed for easy release from all resin systems. Engineered for multi-cycle use.

Related Airtech Products:

Dahlar high performance release films, Dahlpad and Tri-Pad press pads.

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DAHLPAD One Press Pad

Description:

DAHLPAD One is a cellolosic based presspad used in the manufacture of printed circuit boards.

Suggested Applications:

This popular press pad offers excellent performance as a pressure intensifier, pressure equalizer, heat lagging medium for rigid, rigid-flex and flex circuit applications.

Technical Data:

Thickness: .055" / 1.40 mm

Elongation: N/A Color: White

Features / Benefits:

Compensates for press abnormalities allowing for consistent, even pressure during lamination. Reduces labor / improves yields by replacing multiple layers of kraft paper. Allows for controlled heat rise for consistent temperature throughout the book.

Related Airtech Products:

DAHLAR release films

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Si-Pad Press Pad

Description:		
	Si-Pad is a fiberglass reinforc	ed, cured silicone rubber press pad.
Suggested Applications:		
enggeeten rippmennener	Use Si-Pad in the lamination	oress as a pressure equalizer / heat lagging
		urer of rigid, rigid-flex and flexible printed
	circuit boards.	
Technical Data:		
	Maximum Use Temperature:	
	Thickness: Elongation:	.060" / 1.6 mm N/A
	Color:	Red
Features / Benefits:		
		ct allowing for use through many repetitive gradation of its mechanical properties.
	pross cyclos with millinar do	gradulton of its incontinual properties.
Related Airtech Products:		as films
	Dahlar high temperature relea	se iims
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Si-Pad QL

Description: Si-Pad QL is a fiberglass reinforced, cured, silicone rubber press pad that is designed primarily for use in "Quick Lam" flex circuit lamination applications. Suggested Applications: Si-Pad QL is engineered to meet the demands of fast cycles with high reliability through many cycles with high reliability through many cycles without degradation in performance. Our special "post cure" manufacturing process insures maximum performance throughout the product life cycle. Technical Data: Maximum Use Temperature : 500°F / 260°C Thickness : .032" (nom) / .8 mm Color : Grey Features / Benefits: Si-Pad QL is engineered for durability and performance in quick lamination applications. It offers high cycle life and a smooth surface in high temp PCB / FPC applications. Related Airtech Products: Dahlar high temperature / conformable release films

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DAHLBAG 9740 "Turkey" Bags

DAHLBAG 9740 "T	urkey" Bags	
Description:	DAHLBAG 9740 is a custom I custom sizes to fit the custon	blended, nylon based vacuum bag in ners' needs.
Suggested Applications:	Used to facilitate high perforr	mance PCB vacuum lamination.
Technical Data:	Maximum Use Temperature: Thickness: Elongation: Color:	380°F / 192°C .003" / .075 mm N/A Green
Features / Benefits:		s for increased yield and performance in ne removal of air, moisture and volatiles.
Related Airtech Products	: Airtech sealant tapes, Airwea	ve breather materials
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DAHLBAG 9840 "7	urkey" Bags	
Description:		
	DAHLBAG 9840 is a custom be custom sizes to fit the custon	olended, nylon based vacuum bag in ners' needs.
Suggested Applications:		
33	Used to facilitate high perform	nance PCB vacuum lamination.
Technical Data:		
	Maximum Use Temperature: Thickness: Elongation: Color:	450°F / 232°C .003" / .075 mm N/A Blue
Features / Benefits:		
		ance are possible due to the even resin ed air when utilizing this product / process
Related Airtech Products:		
	Airtech sealant tapes, Airwea	ve breather materials
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Our Website

Airtech has specialized in release films since 1973. To learn more about improving your yields and reducing lamination costs, visit our website at **www.airtechpcb.com**.

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