

Foam Bonding Guide



ENGINEERED TAPES & LAMINATES

mactac[®] 
A LINTEC COMPANY



Mactac. Solutions that stick™.



Mactac® is a leading manufacturer of pressure-sensitive adhesive products. Mactac manufacturing facilities serve markets in the US, Mexico and Canada. Mactac's products are used in a wide range of industries including printing, graphic design, packaging, digital imaging, photographic, assembly engineering, communications and medical device manufacturing.

Performance Adhesives Group



Medical Products Include:

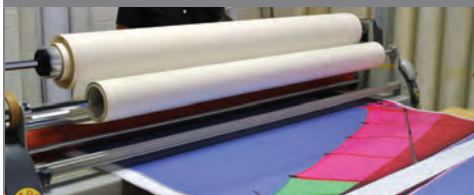
- Visoderm® Wound Care Films
- RESPONSE® Diagnostic



Roll Label Products Include:

- MACcopy®
- INDIE®
- Durable Films
- Mactac PUREtac™

Distributor Products Group



Graphic Products Include:

- IMAGin® Media
- PERMACOLOR® Overlaminates
- MACmark® Vinyl
- REBEL® Multi-print Media



Sheet Products Include:

- STARLINER® Labels
- METRO® Offset and Digital Sheets

Mactac® Industrial Tapes offer engineered pressure-sensitive solutions for bonding and mounting with the benefits of high-strength, immediate adhesion and superior aesthetics. Mactac is a member of the Pressure Sensitive Tape Council's Responsible Tape Manufacturing program and is ISO-9001: 2015 certified.

Mactac Industrial Tapes

- Double coated tapes
- Transfer adhesives
- Foam tapes
- GS Series - high strength transfer adhesive



Visit www.mactac.com/industrialtapes for performance guides and technical information.

Testing Methods

Mactac tape was applied to both the skin side and the cut side of the foam substrate using 50% Compression and a weighted 5# roller.

All tape was applied at room temperature, and peels were conducted manually at an approximate rate of 12"/minute

Peel testing was measured at intervals of 30 mins, 24 hours, 72 hours and 2 weeks at room temperature.

Accelerated aging - 1 week @ 140°F was performed to simulate long term performance for the PSA on a given foam substrate.

Adhesives

XT593 – High Performance Rubber with excellent combination of peel, tack and shear.

FBR899 – Versatile Rubber adhesive with exceptional tack and good peel and shear.

Arctic MX10 – Cold temperature adhesive, designed to be applied at temperatures as low as -10F.

HTA410 – Aggressive acrylic adhesive with high tack and peel.

LV820 – Low VOC Acrylic adhesive with good foam bonding characteristics.

LSE427 – Modified acrylic adhesive designed for low surface energy and textured surfaces.

HBA724 – High Performance Acrylic Adhesive with excellent holding power.

555 – A unique rubber adhesive with exceptional cohesive strength and high holding power.

LTX – Excellent general purpose rubber adhesive designed for foam bonding applications.

MP481 – Firm solvent acrylic, designed for high shear and higher heat applications.

LS55 – Solvent acrylic, designed for low surface energy applications.

Mactac® Adhesion Testing on K-Flex Foam Grades

	Formula	Dwell	AB-10		GV		41N		42N		HT		41E	
			Nitrile-PVC Blend		SBR-EVA Blend		NBR-PVC-CR Blend		NBR-PVC-CR Blend		EPDM		EPDM	
			Skin	Cut	Skin	Cut	Skin	Cut	Skin	Cut	Skin	Cut	Skin	Cut
Rubber Adhesives	XT593	30 min @ RT	++ (SL P)	+++	-	+++	+ (SL P)	+ (SL P)	++	+ (SL P)	++++	+ (SLP)	+++	+ (SLP)
	XT593	24 hour @ RT	+ (P)	+ (P)	++++	+++	+++	+ (SL P)	++	+ (SLP)	++++	+ (P)	++++	+ (P)
	XT593	72 hours @ RT	++++	+++	++++	+++	++++	+ (SL P)	+++	+ (SLP)	++++	+ (P)	++++	+ (P)
	XT593	2 Weeks @ RT	++++	++ (P)	++++	+++	++++	+ (SL P)	+++	+ (SLP)	++++	+ (P)	++++	+ (P)
	XT593	1 week @ 140°F	+++ (CF)	+ (CF)	++++	+++	+ (CF&P)	+ (CF)	++ (CF)	+ (SLP)	++++	+ (P)	+++ (CF)	- (P)
	FBR899	30 min @ RT	++++	+ (SL P)	++++	+++	++++	+ (SL P)	++	++	++++	+ (SL P)	+++	+ (SL P)
	FBR899	24 hour @ RT	++++	+ (P)	++++	+++	+++	+ (SL P)	+++ (CF)	+ (SL P)	++++	+ (SL P)	++++	+ (SL P)
	FBR899	72 hours @ RT	++++	+ (P)	++++	+++	+++ (CF)	+ (SL P)	+++ (CF)	+ (SL P)	++++	+ (P)	++++	+ (P)
	FBR899	2 Weeks @ RT	++++	+++	++++	+++	+++ (CF)	+ (SL P)	+++ (CF)	+ (SL P)	++++	+++	++++	+++
	FBR899	1 week @ 140°F	+++ (CF)	+ (CF)	++ (CF/P)	+ (CF/P)	++ (CF)	++ (CF)	++ (CF)	++ (CF)	++++	+ (P)	++ (CF)	++ (CF)
Acrylic Adhesives	HTA410 LCW	30 min @ RT	+ (SL P)	+++	+++	+++	+ (SL P)	+ (SL P)	++	+++	+	+ (SL P)	+	+ (SL P)
	HTA410 LCW	24 hour @ RT	+++	+++	+++	++++	+ (SL P)	+ (SL P)	+++	+++ (CF)	+++	+ (SL P)	+	+ (SL P)
	HTA410 LCW	72 hours @ RT	++++	+++	++++	+++	+ (P)	+ (P)	+++	+++ (CF)	+++	+ (P)	+	+ (SL P)
	HTA410 LCW	2 Weeks @ RT	++++	+++	++++	+++	+++	+ (CF&P)	++	+ (CF&P)	++++	+ (P)	++	+ (SL P)
	HTA410 LCW	1 week @ 140°F	++++	+ (SL P)	++++	+++	+ (CF)	-(CF)	- (CF)	- (CF)	++++	+ (P)	++ (CF)	+ (SL P)
	HTA410 HCW	30 min @ RT	++++	+++	++++	+++	+++	+++	++	+++	+ (SL P)	+ (SL P)	+	+ (SL P)
	HTA410 HCW	24 hour @ RT	++++	+++	++++	+++	++++	+++	++	+++	++++	+ (P)	++ (CF)	+ (SL P)
	HTA410 HCW	72 hours @ RT	++++	+++	++++	+++	++++	+++	+++	+++	++++	+++	++ (CF)	+ (SL P)
	HTA410 HCW	2 Weeks @ RT	++++	+++	++++	+++	++++	+++	+++	+++	++++	+++	++ (CF)	+ (P)
	HTA410 HCW	1 week @ 140°F	+++ (CF)	+++ (CF)	++++	+++	+ (CF)	+ (CF)	- (CF)	- (CF)	++++	+++	+ (CF)	+ (SL P)
	LV820	30 min @ RT	++++	+++	++++	+++	+++	+++	++	+++	+ (SL P)	+ (SL P)	+	+ (SL P)
	LV820	24 hour @ RT	++++	+++	++++	+++	++++	+++	++	+++	++++	+ (P)	++ (CF)	+ (SL P)
	LV820	72 hours @ RT	++++	+++	++++	+++	++++	+++	+++	+++	++++	+++	++ (CF)	+ (SL P)
	LV820	2 Weeks @ RT	++++	+++	++++	+++	++++	+++	+++	+++	++++	+++	++ (CF)	+ (P)
	LV820	1 week @ 140°F	+++ (CF)	+++ (CF)	++++	+++	+ (CF)	+ (CF)	- (CF)	- (CF)	++++	+++	+ (CF)	+ (SL P)
			Migration @140°F				Migration @140°F		Migration @140°F					

Key

++++
+++
++
+
-

Foam Destruction
Very Aggressive
Aggressive
Mild
Poor

SL P
P
CF
CF & P

Slight Picking 20%
Picking 20-50%
Cohesive Failure
Cohesive Failure & Picking

Mactac® Adhesion Testing on K-Flex Foam Grades Continued

40P		K43N		40E		G		41P		41PA										
Nitrile-PVC Blend		NBR-PVC-CR Blend		EPDM		Nitrile-PVC Blend		Nitrile-PVC Blend		Nitrile-PVC Blend										
Skin	Cut	Skin	Cut	Skin	Cut	Skin	Cut	Skin	Cut	Skin	Cut									
++++	+ (SL P)	-	+	++++	- (SL P)	++++	+ (SL P)	-	+ (P)	+++	+ (SL P)	30 min @ RT	XT593	Rubber Adhesives						
++++	+ (SL P)	+	+	++++	+ (SL P)	++++	+ (SL P)	++++	+ (P)	+	+ (P)	24 hour @ RT	XT593							
++++	+ (SL P)	+	(CF)	- (SL P)	++++	+ (SL P)	++++	+ (SL P)	++++	+ (P)	++	+ (P)	72 hours @ RT		XT593					
++++	+ (SL P)	+	(CF)	- (SL P)	++++	+	(P)	++++	+	(P)	++++	+	(P)		2 Weeks @ RT	XT593				
++++	+++	++ (CF)	- (CF)	++++	+	(P)	++++	+	(P)	+++	+	(P)	+++ (CF)		+++ (CF)	1 week @ 140°F	XT593			
++++	+ (SL P)	+	-	++++	+ (SL P)	++++	+ (SL P)	++++	+ (SL P)	++++	-	+ (SL P)	30 min @ RT		FBR899					
++++	+ (SL P)	++ (CF)	+	(SL P)	++++	+	(SL P)	++++	+	(P)	++++	+	(P)		+	(P)	24 hour @ RT	FBR899		
++++	+ (SL P)	++ (CF)	+	++++	+	(SL P)	++++	+	(P)	++++	+	(P)	+++		+	(P)	72 hours @ RT	FBR899		
++++	+++	++ (CF)	+	(CF/P)	++++	+	(SL P)	++++	++ (CF)	++++	+++	+	(P)		2 Weeks @ RT	FBR899				
++++	+++	++ (CF)	++ (CF)	++++	+	(CF)	+++	+	(CF)	+++ (CF)	++ (CF)	+	(CF)		+	(CF/P)	1 week @ 140°F	FBR899		
++++	+ (SL P)	+	-	+	(SL P)	+	(SL P)	++++	+	(SL P)	+++	+++	+	(SL P)	+	(SL P)	30 min @ RT	HTA410 LCW		
++++	+ (SL P)	+	(CF)	+	(CF)	+	(SL P)	+	(SL P)	++++	+	(SL P)	+++	+++	+	(SL P)	+	(SL P)	24 hour @ RT	HTA410 LCW
++++	+	(P)	+	(CF)	+	(CF)	+	(SL P)	+	(SL P)	++++	+	(P)	72 hours @ RT	HTA410 LCW					
++++	+	(P)	+	(CF)	+	(CF)	+	(P)	+	(SL P)	++++	+	(P)	2 Weeks @ RT	HTA410 LCW					
++++	++++	+	(CF)	- (CF)	++++	+	(SL P)	++++	+	(CF)	++++	+	(CF)	++++	+	(CF&P)	1 week @ 140°F	HTA410 LCW		
++++	+	(SL P)	++	+	+	(SL P)	+	(SL P)	+	(SL P)	+	(SL P)	+	(SL P)	+	+	30 min @ RT	HTA410 HCW		
++++	+	(P)	++	+	(CF)	+++	+	(SL P)	++++	+	(SL P)	+++	+	(P)	+++	+++	24 hour @ RT	HTA410 HCW		
++++	+++	++ (CF)	+	(CF)	+++	+	(P)	++++	+	(P)	++++	+++	++++	+++	+++	+++	72 hours @ RT	HTA410 HCW		
++++	+++	++ (CF)	+	(CF)	+++	+	(P)	++++	+++	++++	+++	+++	++++	+++	+++	+++	2 Weeks @ RT	HTA410 HCW		
++++	++++	- (CF)	- (CF)	++++	+	(P)	+	(CF&P)	- (CF)	++++	+	(CF)	+++ (CF)	+	(CF)	+	(CF)	1 week @ 140°F	HTA410 HCW	
++++	+	(SL P)	++	+	+	(SL P)	+	(SL P)	+	(SL P)	+	(SL P)	+	+	+	+++	30 min @ RT	LV820		
++++	+	(P)	++	+	(CF)	+++	+	(SL P)	++++	+	(SL P)	+++	+	(P)	+++	+++	24 hour @ RT	LV820		
++++	+++	++ (CF)	+	(CF)	+++	+	(P)	++++	+	(P)	++++	+++	++++	+++	+++	+++	72 hours @ RT	LV820		
++++	+++	++ (CF)	+	(CF)	+++	+	(P)	++++	+++	++++	+++	+++	++++	+++	+++	+++	2 Weeks @ RT	LV820		
++++	++++	- (CF)	- (CF)	++++	+	(P)	+	(CF&P)	- (CF)	++++	+	(CF)	+++ (CF)	+	(CF)	+	(CF)	1 week @ 140°F	LV820	
Migration @140°F				Migration @140°F				Migration @140°F				Migration @140°F								

Key

+++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking

Mactac® Adhesion Testing on Armacell Foam Grades

	Formula	Dwell	GIC	AFM Med.	ICF400	.5 ECF400	1.25 ECF400	1400	MLC2TAN	MLC2BLK
			Nitrile-PVC Blend	Nitrile-PVC Blend	Nitrile-PVC Blend	EPDM	EPDM	Neoprene	Nitrile-PVC Blend	Nitrile-PVC Blend
			Skin	Embossed	Skin	Skin	Skin	Skin	Skin	Skin
Rubber Adhesives	XT593	30 min @ RT	-	+ (P)	+ (P)	+ (P)	+ (P)	++	+	+
	XT593	24 hour @ RT	+ (P)	+ (P)	+ (P)	++++	++++	+++	+	+
	XT593	72 hours @ RT	+ (P)	+ (P)	+ (P)	++++	++++	+++	+	+
	XT593	2 Weeks @ RT	+ (P)	+ (P)	+++	++++	++++	+++	+	+
	XT593	1 week @ 140°F	+++	+ (CF)	++++	++++	++++	++ (CF)	+++	++++
	FBR899	30 min @ RT	NA	+	++++	++++	++++	+	++++	++++
	FBR899	24 hour @ RT	NA	+	++++	++++	++++	+++ (P,CF)	++++	++++
	FBR899	72 hours @ RT	NA	+	++++	++++	++++	+++ (P,CF)	++++	++++
	FBR899	2 Weeks @ RT	NA	+	++++	++++	++++	+++ (P,CF)	++ (P)	++ (P)
	FBR899	1 week @ 140°F	NA	+ (CF)	++++	++++	+++ (CF)	+ (AT)	++++	+ (CF)
	Arctic MX10	30 min @ RT	NA	+	++++	++++	++++	++	++++ (CF)	++++
	Arctic MX10	24 hour @ RT	NA	+	++++	++++	++++	++ (CF)	++++ (CF)	++++
	Arctic MX10	72 hours @ RT	NA	+	++++	++++	++++	++ (CF)	++++ (CF)	+++ (CF, P)
	Arctic MX10	2 Weeks @ RT	NA	+	++++	++++	++++	++ (CF)	++++ (CF)	++++
	Arctic MX10	1 week @ 140°F	NA	+ (AT)	++++	++++	++++	+ (CF)	++++ (CF)	++ (AT, CF)
	555	30 min @ RT	-	-	++++		++++	-	-	+
	555	24 hour @ RT	+ (SLP)	+	++++		++++	+	-	+
	555	72 hours @ RT	+ (SLP)	+	++++		++++	+	+	+ (P)
	555	2 Weeks @ RT	+ (SLP)	+	++++		++++	+	+	+
	555	1 week @ 140°F	++ (SLP)	+	++++		++++	+	+++ (P)	++++
	LTX	30 min @ RT	-	-	++++		++++	+	+	++
	LTX	24 hour @ RT	+ (SLP)	+	++++		++++	++	+	++ (P)
	LTX	72 hours @ RT	+ (SLP)	+	++++		++++	++	++ (P)	++ (P)
	LTX	2 Weeks @ RT	+ (SLP)	+	++++		++++	++	++ (P)	++ (P)
	LTX	1 week @ 140°F	++ (SLP)	+	++++		++++	++	++++	++++
			Migration @140°F				Migration @140°F			

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Armacell Foam Grades

TAN LCS	IV1	IR41	IV3	OER	EG1	FCO	SFO		
Nitrile-PVC Blend	NBR-PVC-CR Blend	NBR-PVC-CR Blend	NBR-PVC-CR Blend	Nitrile-PVC Blend	EPDM	Nitrile-PVC Blend	Nitrile-PVC Blend		
Skin	Skin	Skin	Skin	Skin	Skin	Skin	Skin	Dwell	Formula
-	-	++++	-	++++	++++	++++	++++	30 min @ RT	XT593
-	-	++++	-	++++	++++	++++	++++	24 hour @ RT	XT593
-	-	++++	-	++++	++++	++++	++++	72 hours @ RT	XT593
-	-	++++	-	++++	++++	++++	++++	2 Weeks @ RT	XT593
++ (CF)	++++	++++	+ (CF)	++++	++++	++++	++++	1 week @ 140°F	XT593
+	+	++	+	++++	+	++++	++++	30 min @ RT	FBR899
+	+	+++ (SP)	+	++++	++++	++++	++++	24 hour @ RT	FBR899
+	+	++ (CF)	+	++++	++++	++++	++++	72 hours @ RT	FBR899
+	+	++++	+	++++	++++	++++	++++	2 Weeks @ RT	FBR899
++ (CF, AT)	++++	++ (CF, AT)	+ (CF, AT)	++++	++++	++++	++++	1 week @ 140°F	FBR899
+	+	++	+	++++	++++	++++	++++	30 min @ RT	Arctic MX10
+	+	+ (CF)	+	++++	++++	++++	++++	24 hour @ RT	Arctic MX10
+	+	+ (CF)	+ (CF)	++++	++++	++++	++++	72 hours @ RT	Arctic MX10
+	+	++ (CF)	+	++++	++++	++++	++++	2 Weeks @ RT	Arctic MX10
+ (CF)	++++	++ (CF, AT)	+	++++	++++	++++	++++	1 week @ 140°F	Arctic MX10
-	-	-	-	+ (SLP)	++++	-	++++	30 min @ RT	555
-	-	+ (SLP)	-	++++	++++	++++	++++	24 hour @ RT	555
-	-	++ (SLP)	-	++++	++++	++++	++++	72 hours @ RT	555
-	-	++ (SLP)	-	++++	++++	++++	++++	2 Weeks @ RT	555
-	+	+++ (SLP)	+	++++	++++	++++	++++	1 week @ 140°F	555
	-	+	-	++++	++++	++++	++++	30 min @ RT	LTX
	-	++ (SLP)	-	++++	++++	++++	++++	24 hour @ RT	LTX
	-	++ (SLP)	-	++++	++++	++++	++++	72 hours @ RT	LTX
	-	++ (SLP)	-	++++	++++	++++	++++	2 Weeks @ RT	LTX
	+	++ (SLP)	+	++++	++++	++++	++++	1 week @ 140°F	LTX
Migration @140°F			Migration @140°F						

Rubber Adhesives

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Armacell Foam Grades

	Formula	Dwell	GIC	AFM Med.	ICF400	.5 ECF400	1.25 ECF400	1400	MLC2TAN	MLC2BLK
			Nitrile-PVC Blend	Nitrile-PVC Blend	Nitrile-PVC Blend	EPDM	EPDM	Neoprene	Nitrile-PVC Blend	Nitrile-PVC Blend
			Skin	Embossed	Skin	Skin	Skin	Skin	Skin	Skin
Acrylic Adhesives	HTA410 LCW	30 min @ RT	+	-	+ (P)	+	+	+	+	+
	HTA410 LCW	24 hour @ RT	+ (P)	+ (P)	++++	+	+	+ (P)	++	+++
	HTA410 LCW	72 hours @ RT	+++	+ (P)	++++	+	+	+ (P)	++++	++++
	HTA410 LCW	2 Weeks @ RT	+++	+ (P)	++++	+	+	+ (P)	++++	++++
	HTA410 LCW	1 week @ 140°F	++++	+ (CF)	++++	+	+ (SL P)	+ (CF)	++++	++++
	HTA410 HCW	30 min @ RT	+	+++	+ (P)	+	+	+ (P)	+	+++
	HTA410 HCW	24 hour @ RT	+++	+++	++++	+	+	+ (P)	++++	++++
	HTA410 HCW	72 hours @ RT	+++	++ (P)	++++	+	+	+++	++++	++++
	HTA410 HCW	2 Weeks @ RT	+++	++ (P)	++++	+	+	+++ (AT)	++++	++++
	HTA410 HCW	1 week @ 140°F	++++	++ (CF)	++++	+	+ (P)	+ (CF)	++++	++++
	LSE427	30 min @ RT	+ (SLP)	+ (Zip)	++++	+++	+++	+	+	+
	LSE427	24 hour @ RT	+ (SLP)	+ (Zip)	++++	++++	++++	+	++++	++++
	LSE427	72 hours @ RT	+	+ (Zip)	++++	++++	++++	+ (SL W24P)	++++	++++
	LSE427	2 Weeks @ RT	++++	+ (CF Zip)	++++	++++	++++	+ (SLP)	++++	++++
	LSE427	1 week @ 140°F	++ (CF & P)	+ (CF)	++++	++++	++++	+ (CF)	++++	+ (P)
	HBA724	30 min @ RT	NA	+	+ (SP)	+	+	+	+	+ (SP)
	HBA724	24 hour @ RT	NA	+	++++	++++	++++	+ (P)	++++	++++
	HBA724	72 hours @ RT	NA	+	++++	++++	++++	+ (P)	++++	++++
	HBA724	2 Weeks @ RT	NA	+	++++	++++	++++	+ (P)	++++	++++
	HBA724	1 week @ 140°F	NA	+	++++	++++	++++	+ (AT)	++++	++++
	LV820	30 min @ RT	+	+++	+ (P)	+	+	+ (P)	+	+++
	LV820	24 hour @ RT	+++	+++	++++	+	+	+ (P)	++++	++++
	LV820	72 hours @ RT	+++	++ (P)	++++	+	+	+++	++++	++++
	LV820	2 Weeks @ RT	+++	++ (P)	++++	+	+	+++ (AT)	++++	++++
	LV820	1 week @ 140°F	++++	++ (CF)	++++	+	+ (P)	+ (CF)	++++	++++
	MP481	30 min @ RT	-	-	+		-	-	-	+
	MP481	24 hour @ RT	++ (P)	+	++++		-	-	++++	++++
	MP481	72 hours @ RT	++++	++	++++		-	-	++++	++++
	MP481	2 Weeks @ RT	++++	++	++++		-	-	++++	++++
	MP481	1 week @ 140°F	++++	++	++++		-	+	++++	++++
	LS55	30 min @ RT	+ (SLP)	-	+		+	-	-	+
	LS55	24 hour @ RT	++ (P)	+	++++		+	-	++++	++++
	LS55	72 hours @ RT	++++	+	++++		+	-	++++	++++
	LS55	2 Weeks @ RT	++++	+	++++		+	-	++++	++++
	LS55	1 week @ 140°F	++++	+	++++		+	+	++++	++++
			Migration @140°F				Migration @140°F			

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Armacell Foam Grades

TAN LCS	IV1	IR41	IV3	OER	EG1	FCO	SFO		
Nitrile-PVC Blend	NBR-PVC-CR Blend	NBR-PVC-CR Blend	NBR-PVC-CR Blend	Nitrile-PVC Blend	EPDM	Nitrile-PVC Blend	Nitrile-PVC Blend		
Skin	Skin	Skin	Skin	Skin	Skin	Skin	Skin	Dwell	Formula
+	+ (P)	+ (P)	+ (CF, AT)	++++	++++	++++	++++	30 min @ RT	HTA410 LCW
+	+++	++++	++	++++	++++	++++	++++	24 hour @ RT	HTA410 LCW
+	++++	++++	++ (AT)	++++	++++	++++	++++	72 hours @ RT	HTA410 LCW
+ (CF)	++++	++++	++ (AT)	++++	++++	++++	++++	2 Weeks @ RT	HTA410 LCW
+ (CF)	++++	++++	++ (CF/AT)	++++	++++	++++	++++	1 week @ 140°F	HTA410 LCW
++	+ (P)	+++	++	++++	++++	++++	++++	30 min @ RT	HTA410 HCW
++	++++	++++	++	++++	++++	++++	++++	24 hour @ RT	HTA410 HCW
++	++++	++++	++ (CF)	++++	++++	++++	++++	72 hours @ RT	HTA410 HCW
++ (CF/AT)	++++	++++	++ (CF)	++++	++++	++++	++++	2 Weeks @ RT	HTA410 HCW
+ (CF)	++++	++++	++ (CF)	++++	++++	++++	++++	1 week @ 140°F	HTA410 HCW
+ (Zip)	+ (Zip)	++	1 (Zip)	++++	+	++++	++++	30 min @ RT	LSE427
+ (Zip)	+++	++++	++	++++	++++	++++	++++	24 hour @ RT	LSE427
++ (P)	++++	++++	++	++++	++++	++++	++++	72 hours @ RT	LSE427
++ (AF)	++++	++++	+++ (AT)	++++	++++	++++	++++	2 Weeks @ RT	LSE427
+ (CF)	++++	++++	+ (CF)	++++	++++	++++	++++	1 week @ 140°F	LSE427
+	+	+	+	++++	+	+	+ (SP)	30 min @ RT	HBA724
+	+ (P)	+	+	++++	+ (Migration)	++++	++++	24 hour @ RT	HBA724
+	+ (P)	+	+	++++	+ (Migration)	++++	++++	72 hours @ RT	HBA724
+	+ (P)	+	+	++++	++++	++++	++++	2 Weeks @ RT	HBA724
+	++++	+ (CF, AT)	+	++++	++++	++++	++++	1 week @ 140°F	HBA724
++	+ (P)	+++	++	++++	++++	++++	++++	30 min @ RT	LV820
++	++++	++++	++	++++	++++	++++	++++	24 hour @ RT	LV820
++	++++	++++	++ (CF)	++++	++++	++++	++++	72 hours @ RT	LV820
++ (CF/AT)	++++	++++	++ (CF)	++++	++++	++++	++++	2 Weeks @ RT	LV820
+ (CF)	++++	++++	++ (CF)	++++	++++	++++	++++	1 week @ 140°F	LV820
-	-	-	-	-	-	-	+	30 min @ RT	MP481
-	++	+	+	++++	+	++++	+	24 hour @ RT	MP481
+	++	+	+	++++	+	++++	++++	72 hours @ RT	MP481
+	++	+	+	++++	++ (SLP)	++++	++++	2 Weeks @ RT	MP481
+	++	++++	+	++++	++++	++++	++++	1 week @ 140°F	MP481
-	-	-	-	+	+	-	++++	30 min @ RT	LS55
-	++	++	+	++++	++++	++++	++++	24 hour @ RT	LS55
-	++	++	+	++++	++++	++++	++++	72 hours @ RT	LS55
-	++	++	+	++++	++++	++++	++++	2 Weeks @ RT	LS55
-	++	+++ (SLP)	+	++++	++++	++++	++++	1 week @ 140°F	LS55
Migration @140°F			Migration @140°F						

Acrylic Adhesives

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Monarch Foam Grades

	Formula	Dwell	3092	3944	2003	3043	4051	6231
			EPDM	EPDM	Neoprene	EPDM	ECH	Nitrile-PVC Blend
			Skin	Skin	Skin	Skin	Skin	Skin
Rubber Adhesives	XT593	30 min @ RT	+	+	+	+	+++	+
	XT593	24 hour @ RT	+ (SL P)	++	-	+ (SL P)	+++	++
	XT593	72 hours @ RT	+++	++	-	+	+++	++
	XT593	2 Weeks @ RT	+++	+++	-	+	+++	+++
	XT593	1 week @ 140°F	+ (SL P)	+++	++	+++ (CF)	+++	++
	FBR899	30 min @ RT	+++	+++	+	+++	++++	+
	FBR899	24 hour @ RT	++++	+++	+	+++	++++	+
	FBR899	72 hours @ RT	++	+++	++	+++	++++	++
	FBR899	2 Weeks @ RT	++ (P)	+++ (CF)	++	+++ (CF)	++++	++ (SP)
	FBR899	1 week @ 140°F	++ (P)	++ (CF, AT)	++ (CF)	+ (CF, AT)	++++ (CF)	+ (CF)
	Arctic MX10	30 min @ RT	+++	++ (CF)	+	++ (CF)	++++	+
	Arctic MX10	24 hour @ RT	++	+++ (CF)	+	++ (CF)	++++	+
	Arctic MX10	72 hours @ RT	++	++ (CF)	+	++ (CF)	++++	+
	Arctic MX10	2 Weeks @ RT	++ (P)	++ (CF)	++	+++ (CF)	++++	+
	Arctic MX10	1 week @ 140°F	++ (P)	++ (CF, AT)	+ (CF)	+++ (CF, AT)	++ (CF)	++ (CF)
	555	30 min @ RT	-	-	-		++ (SLP)	-
	555	24 hour @ RT	-	-	-		++ (SLP)	-
	555	72 hours @ RT	+	+	+		++ (P)	-
	555	2 Weeks @ RT	+	+	+		+++ (P)	-
	555	1 week @ 140°F	+	+	+		+++ (P)	+
	LTX	30 min @ RT	+ (P)	++	-		+++ (P)	-
	LTX	24 hour @ RT	+ (P)	++ (SLP)	-		+++ (P)	-
	LTX	72 hours @ RT	++ (P)	++ (SLP)	++		+++ (P)	+
	LTX	2 Weeks @ RT	++ (P)	++ (SLP)	++		+++ (P)	+
	LTX	1 week @ 140°F	++ (P)	+++	++		+++ (P)	+ (SLP)
			Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Monarch Foam Grades

2055	5031	6032	5013	8082	8001		
Neoprene	EPDM-CR-SBR Blend	Nitrile-PVC Blend	EPDM-CR-SBR Blend	EPDM	EPDM		
Skin	Skin	Skin	Skin	Skin	Skin	Dwell	Formula
+	+	+	+	+ (SL P)	+ (SL P)	30 min @ RT	XT593
+	-	+ (SL P)	+	+ (P)	+ (SL P)	24 hour @ RT	XT593
++	+ (SL P)	+ (SL P)	+	+ (P)	+ (SL P)	72 hours @ RT	XT593
++	+ (P)	+	+	+++	+++	2 Weeks @ RT	XT593
+++	+ (P)	+ (SL P)	+++	+++	+ (CF&P)	1 week @ 140°F	XT593
++	+	NA	+	NA	++	30 min @ RT	FBR899
++	+ (P)	NA	++ (P)	NA	++++	24 hour @ RT	FBR899
++	+ (P)	NA	++ (P)	NA	++++	72 hours @ RT	FBR899
+ (P)	+ (P)	NA	+ (P)	NA	++++	2 Weeks @ RT	FBR899
+ (CF)	+ (AT)	NA	+ (CF)	NA	++++	1 week @ 140°F	FBR899
++	++	NA	++	NA	++++	30 min @ RT	Arctic MX10
++	+ (P)	NA	++ (P)	NA	++++	24 hour @ RT	Arctic MX10
++	+ (P)	NA	++ (P)	NA	++++	72 hours @ RT	Arctic MX10
+++ (P)	+ (P)	NA	+ (P)	NA	++++	2 Weeks @ RT	Arctic MX10
++ (CF)	+ (CF)	NA	++ (CF, AT)	NA	++++	1 week @ 140°F	Arctic MX10
-	+		-		+ (SLP)	30 min @ RT	555
-	+ (SLP)		-		+++ (P)	24 hour @ RT	555
+	+ (SLP)		-		++++	72 hours @ RT	555
+	+ (SLP)		-		++++	2 Weeks @ RT	555
+	+ (SLP)		-		++++	1 week @ 140°F	555
++	++ (P)		++ (SLP)		++ (P)	30 min @ RT	LTX
++	++ (P)		++ (SLP)		++++	24 hour @ RT	LTX
++	++++		++ (SLP)		++++	72 hours @ RT	LTX
+++	++++		++ (SLP)		++++	2 Weeks @ RT	LTX
+++	++++		++		++++	1 week @ 140°F	LTX
Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F				

Rubber Adhesives

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Monarch Foam Grades

	Formula	Dwell	3092	3944	2003	3043	4051	6231
			EPDM	EPDM	Neoprene	EPDM	ECH	Nitrile-PVC Blend
			Skin	Skin	Skin	Skin	Skin	Skin
Acrylic Adhesives	HTA410 LCW	30 min @ RT	+ (SL P)	+	-	+ (SL P)	+++	-
	HTA410 LCW	24 hour @ RT	+ (SL P)	+ (SL P)	+	+ (SL P)	++++	+
	HTA410 LCW	72 hours @ RT	+ (P)	+ (SL P)	+	+ (SL P)	+++	+
	HTA410 LCW	2 Weeks @ RT	+ (P)	++	++	+++	+++	++
	HTA410 LCW	1 week @ 140°F	+ (SL P)	+++	- (CF)	+ (CF&P)	+ (CF)	- (CF)
	HTA410 HCW	30 min @ RT	+ (SL P)	+	+	+ (SL P)	++++	-
	HTA410 HCW	24 hour @ RT	+ (P)	+++	+	+++	++++	-
	HTA410 HCW	72 hours @ RT	+ (P)	+++	+++	+++	++++	-
	HTA410 HCW	2 Weeks @ RT	+ (P)	++	++	+ (AT)	++++	+
	HTA410 HCW	1 week @ 140°F	+ (SL P)	++ (CF)	++ (CF)	+ (CF)	++ (CF)	+ (CF)
	LSE427	30 min @ RT	+++	+	+	++	+++	+
	LSE427	24 hour @ RT	+++	+++	++	+++	++++	++ (P)
	LSE427	72 hours @ RT	+	++++	+++	+++	++++	++ (P)
	LSE427	2 Weeks @ RT	+ (P)	+++ (AT, P)	+++ (P)	+++ (P)	++++	++ (P)
	LSE427	1 week @ 140°F	++ (P)	+ (CF, AT)	+++ (CF)	+ (CF, AT)	++ (CF)	+ (CF)
	HBA724	30 min @ RT	+	+	+	+	++	-
	HBA724	24 hour @ RT	++	+++	++	++	++++	++
	HBA724	72 hours @ RT	+	++	+++	++	++++	++ (P)
	HBA724	2 Weeks @ RT	+ (P)	++ (P)	+++	+++ (P)	++++	++ (P)
	HBA724	1 week @ 140°F	++ (P)	+ (CF)	++ (CF)	+ (CF, AT)	++ (CF, P)	+ (CF)
	LV820	30 min @ RT	+ (SL P)	+	+	+ (SL P)	++++	-
	LV820	24 hour @ RT	+ (P)	+++	+	+++	++++	-
	LV820	72 hours @ RT	+ (P)	+++	+++	+++	++++	-
	LV820	2 Weeks @ RT	+ (P)	++	++	+ (AT)	++++	+
	LV820	1 week @ 140°F	+ (SL P)	++ (CF)	++ (CF)	+ (CF)	++ (CF)	+ (CF)
	MP481	30 min @ RT	+	-	-		++++	-
	MP481	24 hour @ RT	+ (P)	+	+		++++	+
	MP481	72 hours @ RT	+ (P)	+	+ (SLP)		++++	++ (SLP)
	MP481	2 Weeks @ RT	+ (P)	++ (SLP)	+ (SLP)		++++	++ (SLP)
	MP481	1 week @ 140°F	++ (P)	++ (SLP)	+		++++	++ (SLP)
	LS55	30 min @ RT	+ (P)	-	-		++++	+
	LS55	24 hour @ RT	+ (P)	+	+		++++	++ (SLP)
	LS55	72 hours @ RT	++ (P)	+	++ (SLP)		++++	+++ (P)
	LS55	2 Weeks @ RT	++ (P)	+	++ (SLP)		++++	+++ (P)
	LS55	1 week @ 140°F	++ (P)	+	++		++++	+
			Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F

Key

+++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking

Mactac® Adhesion Testing on Monarch Foam Grades

2055	5031	6032	5013	8082	8001		
Neoprene	EPDM-CR-SBR Blend	Nitrile-PVC Blend	EPDM-CR-SBR Blend	EPDM	EPDM		
Skin	Skin	Skin	Skin	Skin	Skin	Dwell	Formula
+ (SL P)	+ (SL P)	+ (SL P)	+	+ (SL P)	+ (SL P)	30 min @ RT	HTA410 LCW
+++	+ (SL P)	+ (SL P)	+ (SL P)	+ (P)	+ (SL P)	24 hour @ RT	HTA410 LCW
+++	+	+ (SL P)	+ (P)	+ (P)	+ (P)	72 hours @ RT	HTA410 LCW
+++	+ (P)	+ (P)	+++	+++	+++	2 Weeks @ RT	HTA410 LCW
+ (CF&AT)	+ (SL P)	+ (CF)	- (CF)	+ (P)	+++	1 week @ 140°F	HTA410 LCW
++	+ (SL P)	++	++	++	++	30 min @ RT	HTA410 HCW
+++	+++	+++	+++	+++	++ (SL P)	24 hour @ RT	HTA410 HCW
+++	+++	+++	+++	+++	++++	72 hours @ RT	HTA410 HCW
+++	+++	+++	+++	++++	++++	2 Weeks @ RT	HTA410 HCW
+ (CF)	+ (CF)	+ (CF)	+ (CF)	+ (P)	++++	1 week @ 140°F	HTA410 HCW
++	+	NA	+	NA	+	30 min @ RT	LSE427
+++	++ (P)	NA	++ (P)	NA	++++	24 hour @ RT	LSE427
+++	++ (P)	NA	++ (P)	NA	++++	72 hours @ RT	LSE427
+++ (P)	++ (P)	NA	+ (P)	NA	++++	2 Weeks @ RT	LSE427
+ (CF)	+ (CF)	NA	+ (CF)	NA	+++	1 week @ 140°F	LSE427
+	+	NA	+	NA	-	30 min @ RT	HBA724
+++	+ (P)	NA	++ (P)	NA	+++	24 hour @ RT	HBA724
+++	+ (P)	NA	++ (P)	NA	++++	72 hours @ RT	HBA724
+++ (P)	+ (P)	NA	+ (P)	NA	++++	2 Weeks @ RT	HBA724
+ (CF)	+ (CF)	NA	+ (CF)	NA	++++	1 week @ 140°F	HBA724
++	+ (SL P)	++	++	++	++	30 min @ RT	LV820
+++	+++	+++	+++	+++	++ (SL P)	24 hour @ RT	LV820
+++	+++	+++	+++	+++	++++	72 hours @ RT	LV820
+++	+++	+++	+++	++++	++++	2 Weeks @ RT	LV820
+ (CF)	+ (CF)	+ (CF)	+ (CF)	+ (P)	++++	1 week @ 140°F	LV820
+	+		-		-	30 min @ RT	MP481
++ (SLP)	++ (P)		++ (P)		+	24 hour @ RT	MP481
++ (SLP)	++++		++ (P)		++++	72 hours @ RT	MP481
++ (SLP)	++++		++ (P)		++++	2 Weeks @ RT	MP481
+++ (SLP)	++++		++ (P)		++++	1 week @ 140°F	MP481
+	+		+		-	30 min @ RT	LS55
++ (SLP)	++ (P)		++ (P)		++ (SLP)	24 hour @ RT	LS55
+++ (P)	++++		++++		++++	72 hours @ RT	LS55
+++ (P)	++++		++++		++++	2 Weeks @ RT	LS55
+++ (P)	++++		++++		++++	1 week @ 140°F	LS55
Migration @140°F	Migration @140°F	Migration @140°F	Migration @140°F				

Acrylic Adhesives

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Rogers Foam Grades

			Poron 4701-30	Poron 4701-40	Poron 4701-50	Poron 4701-60	Poron 4790-79	Poron 4790-92
			Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane
Formula	Dwell							
Rubber Adhesives	XT593	30 min @ RT	-	-	+	-	+	++++
	XT593	24 hour @ RT	+	+	+	+	+	++++
	XT593	72 hours @ RT	+	+	+	+	+	++++
	XT593	2 Weeks @ RT	+	+	+	+	+	++++
	XT593	1 week @ 140°F	++++	++++	++++	++	++++	++++
	FBR899	30 min @ RT	++++	++	+++	++	++	++++
	FBR899	24 hour @ RT	++++	++	++++	+++	++	++++
	FBR899	72 hours @ RT	++++	++++	++++	++	++++	++++
	FBR899	2 Weeks @ RT	++++	++++	++++	++	+++ (P)	++++
	FBR899	1 week @ 140°F	++++	++++	++++	+++	++++	++++
	Arctic MX10	30 min @ RT	++++	+++	+++	+++	++	++++
	Arctic MX10	24 hour @ RT	++++	++++	+++	+++	++	++++
	Arctic MX10	72 hours @ RT	++++	++++	+++	+++	++	++++
	Arctic MX10	2 Weeks @ RT	++++	++++	++++	++	+++	++++
	Arctic MX10	1 week @ 140°F	++++	++++	++++	+++	+++	++++
	555	30 min @ RT	-	-	-	-	-	++++
	555	24 hour @ RT	-	-	-	-	-	++++
	555	72 hours @ RT	-	-	-	-	-	++++
	555	2 Weeks @ RT	-	-	-	+	+	'++++
	555	1 week @ 140°F	++++	-	-	+	++++	++++
	LTX	30 min @ RT	-	-	-	-	-	++++
	LTX	24 hour @ RT	-	-	-	+	-	++++
	LTX	72 hours @ RT	-	-	-	+	+	++++
	LTX	2 Weeks @ RT	-	-	-	++	++	++++
	LTX	1 week @ 140°F	++++	++++	+	++	++++	++++

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Rogers Foam Grades Continued

Bisco BF-1000	Bisco BF-2000	Bisco HT-800	Bisco HT-820	Bisco HT-720		
Silicone	Silicone	Silicone	Silicone	Silicone	Dwell	Formula
-	-	-	-	-	30 min @ RT	XT593
-	-	-	-	-	24 hour @ RT	XT593
-	-	-	-	-	72 hours @ RT	XT593
-	-	-	-	-	2 Weeks @ RT	XT593
-	-	-	-	-	1 week @ 140°F	XT593
-	-	-	-	-	30 min @ RT	FBR899
-	-	-	-	-	24 hour @ RT	FBR899
-	-	-	-	-	72 hours @ RT	FBR899
-	-	-	-	-	2 Weeks @ RT	FBR899
+	-	-	-	-	1 week @ 140°F	FBR899
NA	NA	NA	NA	NA	30 min @ RT	Arctic MX10
NA	NA	NA	NA	NA	24 hour @ RT	Arctic MX10
NA	NA	NA	NA	NA	72 hours @ RT	Arctic MX10
NA	NA	NA	NA	NA	2 Weeks @ RT	Arctic MX10
NA	NA	NA	NA	NA	1 week @ 140°F	Arctic MX10
					30 min @ RT	555
					24 hour @ RT	555
					72 hours @ RT	555
					2 Weeks @ RT	555
					1 week @ 140°F	555
					30 min @ RT	LTX
					24 hour @ RT	LTX
					72 hours @ RT	LTX
					2 Weeks @ RT	LTX
					1 week @ 140°F	LTX

Rubber Adhesives

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Rogers Foam Grades

		Poron	Poron	Poron	Poron	Poron	Poron	
		4701-30	4701-40	4701-50	4701-60	4790-79	4790-92	
	Formula	Dwell	Polyurethane	Polyurethane	Polyurethane	Polyurethane	Polyurethane	
Acrylic Adhesives	HTA410 LCW	30 min @ RT	++++	+	++	+	+	++++
	HTA410 LCW	24 hour @ RT	++++	++	++	++	++	++++
	HTA410 LCW	72 hours @ RT	++++	+++	++	++	+++	++++
	HTA410 LCW	2 Weeks @ RT	++++	++++	++	+++	+++	++++
	HTA410 LCW	1 week @ 140°F	++++	++++	++++	+++	++++	++++
	HTA410 HCW	30 min @ RT	++++	++	++	++	+	++++
	HTA410 HCW	24 hour @ RT	++++	+++	++	++	+	++++
	HTA410 HCW	72 hours @ RT	++++	+++	++	+++	+	++++
	HTA410 HCW	2 Weeks @ RT	++++	++++	++	+++	+++	++++
	HTA410 HCW	1 week @ 140°F	++++	++++	++++	+++	++++	++++
	LSE427	30 min @ RT	++++	+++	+ (Zip)	+ (Zip)	++ (Zip)	++++
	LSE427	24 hour @ RT	++++	++++	+ (Zip)	++ (SL P)	++ (SL P)	++++
	LSE427	72 hours @ RT	++++	++++	++ (Zip)	++ (SL P)	++	++++
	LSE427	2 Weeks @ RT	++++	++++	++ (SL P)	++ (SL P)	++ (SL P)	++++
	LSE427	1 week @ 140°F	++++	++++	++++	+++	+++	++++
	HBA724	30 min @ RT	++++	++++	++	+++	+	++++
	HBA724	24 hour @ RT	++++	++++	++++	+++	++++	++++
	HBA724	72 hours @ RT	++++	++++	++++	++++	++++	++++
	HBA724	2 Weeks @ RT	++++	++++	++++	+++ (P)	++++	++++
	HBA724	1 week @ 140°F	++++	+++	++++	++++	++++	++++
	LV820	30 min @ RT	++++	++	++	++	+	++++
	LV820	24 hour @ RT	++++	+++	++	++	+	++++
	LV820	72 hours @ RT	++++	+++	++	+++	+	++++
	LV820	2 Weeks @ RT	++++	++++	++	+++	+++	++++
	LV820	1 week @ 140°F	++++	++++	++++	+++	++++	++++
	MP481	30 min @ RT	++++	++++	++	+++	+	++++
	MP481	24 hour @ RT	++++	++++	++++	++++	++++	++++
	MP481	72 hours @ RT	++++	++++	++++	++++	++++	++++
	MP481	2 Weeks @ RT	++++	++++	++++	++++	++++	++++
	MP481	1 week @ 140°F	++++	++++	++++	++++	++++	++++
	LS55	30 min @ RT	++++	++++	++	++++	++	++++
	LS55	24 hour @ RT	++++	++++	+++ (SLP)	++++	++	++++
	LS55	72 hours @ RT	++++	++++	+++ (SLP)	++++	++	++++
	LS55	2 Weeks @ RT	++++	++++	+++ (SLP)	++++	+++	++++
	LS55	1 week @ 140°F	++++	++++	++++	++++	++++	++++

Key

+++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking

Mactac® Adhesion Testing on Rogers Foam Grades Continued

Bisco BF-1000	Bisco BF-2000	Bisco HT-800	Bisco HT-820	Bisco HT-720		
Silicone	Silicone	Silicone	Silicone	Silicone	Dwell	Formula
+	-	+	+	-	30 min @ RT	HTA410 LCW
+	+	+	+	+	24 hour @ RT	HTA410 LCW
+	+	+	+	+	72 hours @ RT	HTA410 LCW
+	+	+	+	+	2 Weeks @ RT	HTA410 LCW
++	+	+	+	+	1 week @ 140°F	HTA410 LCW
+	+	+	+	+	30 min @ RT	HTA410 HCW
+	+	+	+	+	24 hour @ RT	HTA410 HCW
+	+	+	+	+	72 hours @ RT	HTA410 HCW
+	+	+	+	+	2 Weeks @ RT	HTA410 HCW
+++	+	+	+	+	1 week @ 140°F	HTA410 HCW
++++	+++	+ (Zip)	1 (Zip)	++ (Zip)	30 min @ RT	LSE427
++++	++++	+ (Zip)	++ (SL P)	++ (SL P)	24 hour @ RT	LSE427
++++	++++	++ (Zip)	++ (SL P)	++	72 hours @ RT	LSE427
++++	++++	++ (SL P)	++ (SL P)	++ (SL P)	2 Weeks @ RT	LSE427
++++	++++	++++	+++	+++	1 week @ 140°F	LSE427
NA	NA	NA	NA	NA	30 min @ RT	HBA724
NA	NA	NA	NA	NA	24 hour @ RT	HBA724
NA	NA	NA	NA	NA	72 hours @ RT	HBA724
NA	NA	NA	NA	NA	2 Weeks @ RT	HBA724
NA	NA	NA	NA	NA	1 week @ 140°F	HBA724
+	+	+	+	+	30 min @ RT	LV820
+	+	+	+	+	24 hour @ RT	LV820
+	+	+	+	+	72 hours @ RT	LV820
+	+	+	+	+	2 Weeks @ RT	LV820
+++	+	+	+	+	1 week @ 140°F	LV820
					30 min @ RT	MP481
					24 hour @ RT	MP481
					72 hours @ RT	MP481
					2 Weeks @ RT	MP481
					1 week @ 140°F	MP481
					30 min @ RT	LS55
					24 hour @ RT	LS55
					72 hours @ RT	LS55
					2 Weeks @ RT	LS55
					1 week @ 140°F	LS55

Acrylic Adhesives

Key

++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking

Mactac® Adhesion Testing on Palziv Foam Grades

	Formula	Dwell	F2.0 STD/FR-H2	F2.0 STD Grey	F2.0 STD Blk	F4.0 STD	F6.0 STD/B10	F2.0 UEV	F3.0 SEV	V2.0 STD Grey
			X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE
Rubber Adhesives	XT593	30 min @ RT	++	+++	+	+	+	++++	++	+
	XT593	24 hour @ RT	++	+++	++	++	++	++++	++	++
	XT593	72 hours @ RT	+++	+++	++	++	++	++++	++	++
	XT593	2 Weeks @ RT	+++	+++	++	++	++	++++	++	++
	XT593	1 week @ 140°F	+++	+++	+++	++	++	++++	++	+
	FBR899	30 min @ RT	++	++++	+	+	+	++++	++	++
	FBR899	24 hour @ RT	+++	++++	++	+	++	++++	++	++
	FBR899	72 hours @ RT	+++	++++	+++	+	++	++++	++	++
	FBR899	2 Weeks @ RT	+++	++++	++++	+	++	++++	+++	++
	FBR899	1 week @ 140°F	+++	++++	++++	++	+	++++	+++	+++
	Arctic MX10	30 min @ RT	NA	++++	+	NA	NA	NA	NA	++
	Arctic MX10	24 hour @ RT	NA	++++	++	NA	NA	NA	NA	++
	Arctic MX10	72 hours @ RT	NA	++++	++	NA	NA	NA	NA	++
	Arctic MX10	2 Weeks @ RT	NA	++++	++	NA	NA	NA	NA	++
	Arctic MX10	1 week @ 140°F	NA	++++	+++	NA	NA	NA	NA	++
Acrylic Adhesives	HTA410 LCW	30 min @ RT	+	+	+	-	+	+	+	+
	HTA410 LCW	24 hour @ RT	+	+	+	-	+	+++	+	++
	HTA410 LCW	72 hours @ RT	+	+	+	+	+	+++	+	++
	HTA410 LCW	2 Weeks @ RT	+	+	+	+	+	++++	+	++
	HTA410 LCW	1 week @ 140°F	+	+	+	-	+	++++	+	++
	HTA410 HCW	30 min @ RT	+	+	+	+	+	+++	+	++
	HTA410 HCW	24 hour @ RT	++	+++	+	+	+	++++	++	++
	HTA410 HCW	72 hours @ RT	++	+++	+	+	+	++++	++	++
	HTA410 HCW	2 Weeks @ RT	++	+++	++	+	+	++++	++	++
	HTA410 HCW	1 week @ 140°F	+++	++	++	+	+	++++	++	++
	LSE427	30 min @ RT	NA	++++	+	NA	NA	NA	NA	++
	LSE427	24 hour @ RT	NA	++++	+	NA	NA	NA	NA	++
	LSE427	72 hours @ RT	NA	++++	+	NA	NA	NA	NA	++
	LSE427	2 Weeks @ RT	NA	++++	+	NA	NA	NA	NA	++
	LSE427	1 week @ 140°F	NA	++++	+	NA	NA	NA	NA	++
	HBA724	30 min @ RT	NA	+	+	NA	NA	NA	NA	+
	HBA724	24 hour @ RT	NA	+	+	NA	NA	NA	NA	++
	HBA724	72 hours @ RT	NA	++++	+	NA	NA	NA	NA	++
	HBA724	2 Weeks @ RT	NA	++++	+	NA	NA	NA	NA	+++
	HBA724	1 week @ 140°F	NA	++++	+	NA	NA	NA	NA	++
	LV820	30 min @ RT	+	+	+	+	+	+++	+	+
	LV820	24 hour @ RT	++	+++	+	+	+	++++	++	++
	LV820	72 hours @ RT	++	+++	+	+	+	++++	++	++
	LV820	2 Weeks @ RT	++	+++	++	+	+	++++	++	++
	LV820	1 week @ 140°F	+++	++	++	+	+	++++	++	++

Key

+++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking

Mactac® Adhesion Testing on Palziv Foam Grades

F1.5 STD	F2.0 MDR	F2.0 STD	F4.0 STD	F3.0 SDF	F3.0 CDF	F3.0 STD	V3.0 STD Blk	V8.0 CWC		
X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	X-Linked PE	Dwell	Formula
++++	+	+	+	+	+	++	+	+	30 min @ RT	XT593
++++	+	++	++	++	++	++	+	+	24 hour @ RT	XT593
++++	+	++	++	++	++	++	+	+	72 hours @ RT	XT593
++++	++	++	+++	++	+++	+++	+	+	2 Weeks @ RT	XT593
++++	++	++	++	++	++	++	-	+	1 week @ 140°F	XT593
++++	+	++	+	++	++	++	++	++	30 min @ RT	FBR899
++++	++	++	++	++	++	++	+++	++	24 hour @ RT	FBR899
++++	++	++	++	++	++	++	+++	++	72 hours @ RT	FBR899
++++	++	++	+++	+++	+++	+++	+++	+	2 Weeks @ RT	FBR899
++++	+++	++	++	++	+++	+++	+++	+	1 week @ 140°F	FBR899
NA	NA	NA	NA	NA	NA	+	++	+	30 min @ RT	Arctic MX10
NA	NA	NA	NA	NA	NA	+	++	++	24 hour @ RT	Arctic MX10
NA	NA	NA	NA	NA	NA	+	++	++	72 hours @ RT	Arctic MX10
NA	NA	NA	NA	NA	NA	+	++	++	2 Weeks @ RT	Arctic MX10
NA	NA	NA	NA	NA	NA	+	+++	++	1 week @ 140°F	Arctic MX10
++	+	+	+	+	+	+	+	+	30 min @ RT	HTA410 LCW
++++	+	+	+	+	+	+	++	+	24 hour @ RT	HTA410 LCW
++++	+	+	+	+	+	+	+++	+	72 hours @ RT	HTA410 LCW
++++	+	+	+	+	+	+	+++	+	2 Weeks @ RT	HTA410 LCW
++++	+	+	+	+	+	+	++++	+	1 week @ 140°F	HTA410 LCW
++++	+	+	+	+	+	+	+	+	30 min @ RT	HTA410 HCW
++++	+	+	+	++	+	+	+++	++	24 hour @ RT	HTA410 HCW
++++	+	++	+	++	+	+	+++	++	72 hours @ RT	HTA410 HCW
++++	++	++	++	++	+++	+++	+++	++	2 Weeks @ RT	HTA410 HCW
++++	++	++	+	++	++	++	++++	+	1 week @ 140°F	HTA410 HCW
NA	NA	NA	NA	NA	NA	+	++	+	30 min @ RT	LSE427
NA	NA	NA	NA	NA	NA	+	+++	+++	24 hour @ RT	LSE427
NA	NA	NA	NA	NA	NA	+	+++	++	72 hours @ RT	LSE427
NA	NA	NA	NA	NA	NA	+	+++	+++	2 Weeks @ RT	LSE427
NA	NA	NA	NA	NA	NA	+	+++	++	1 week @ 140°F	LSE427
NA	NA	NA	NA	NA	NA	+	+	+	30 min @ RT	HBA724
NA	NA	NA	NA	NA	NA	+	++	++	24 hour @ RT	HBA724
NA	NA	NA	NA	NA	NA	+	++	++	72 hours @ RT	HBA724
NA	NA	NA	NA	NA	NA	+	+++	++	2 Weeks @ RT	HBA724
NA	NA	NA	NA	NA	NA	+	+++	++	1 week @ 140°F	HBA724
++++	+	+	+	+	+	+	+	+	30 min @ RT	LV820
++++	+	+	+	++	+	+	++	+	24 hour @ RT	LV820
++++	+	++	+	++	+	+	+++	+	72 hours @ RT	LV820
++++	++	++	++	++	+++	+++	+++	++	2 Weeks @ RT	LV820
++++	++	++	+	++	++	++	++++	+	1 week @ 140°F	LV820

Key

++++

Very Aggressive

+++

Aggressive

++

Mild

+

Poor

SL P

Slight Picking 20%

P

Picking 20-50%

CF

Cohesive Failure

CF & P

Cohesive Failure & Picking

Mactac® Adhesion Testing on Zotefoam Grades

			EV50	HD30	LD24	LD45	VA35	HD80	LD32CNBK	HD80WE		
			EVA	HDPE	LDPE	LDPE	EVA	EVA	EVA	EVA		
			Skin	Skin	Skin	Skin	Skin	Skin	Skin	Skin		
Rubber Adhesives	Formula	Dwell										
	XT593	30 min @ RT	-	+	+	-	+++	+	+	(P)	+	
	XT593	24 hour @ RT	+	+	-	-	+++	-	+	(P)	-	
	XT593	72 hours @ RT	+	+	-	-	+++	-	+	(P)	-	
	XT593	2 Weeks @ RT	+	+	-	-	+++	-	+	(P)	-	
	XT593	1 week @ 140°F	+++	+	(CF)	++	+	+++	-	+	(P)	-
	FBR899	30 min @ RT	+++	+	+++	+++	+++	+	+	(P)	++	
	FBR899	24 hour @ RT	++++	++	+++	+++	+++	+	+	(P)	+	
	FBR899	72 hours @ RT	++++	++	+++	+++	+++	++	+	(P)	+	
	FBR899	2 Weeks @ RT	++++	++	+++	+++ (P)	++++	+	+	(P)	+	
	FBR899	1 week @ 140°F	++++	++	++++	++++	++++	+++ (CF)	+++ (P)	+++	+++	
	Arctic MX10	30 min @ RT	+	+	++	++	++	+	+	(P)	++	
	Arctic MX10	24 hour @ RT	++	+	+++	+++	++	+	+	(P)	+	
	Arctic MX10	72 hours @ RT	++	+	+++	+++	++	+	+	(P)	+	
	Arctic MX10	2 Weeks @ RT	++	+	+++	+++	++	+	+	(P)	+	
	Arctic MX10	1 week @ 140°F	++++	++ (CF)	++++	+++	+++	++ (CF)	++ (CF)	+++	++ (CF)	
	555	30 min @ RT	++ (SLP)			+	++ (SLP)		+	(SLP)		
	555	24 hour @ RT	++ (SLP)			++ (SLP)	++ (SLP)		+	(SLP)		
	555	72 hours @ RT	++ (P)			++++	+++ (P)		+	(SLP)		
	555	2 Weeks @ RT	++ (P)			++++	+++ (P)		+	(SLP)		
	555	1 week @ 140°F	++ (P)			++++	+++ (P)		++ (SLP)			
	LTX	30 min @ RT	++++			+++ (SLP)	++++		++++			
	LTX	24 hour @ RT	++++			++++	++++		++++			
	LTX	72 hours @ RT	++++			++++	++++		++++			
	LTX	2 Weeks @ RT	++++			++++	++++		++++			
	LTX	1 week @ 140°F	++++			++++	++++		++++			
					Migration @140°F		Migration @140°F					

Key

++++	Foam Destruction	SL P	Slight Picking 20%
+++	Very Aggressive	P	Picking 20-50%
++	Aggressive	CF	Cohesive Failure
+	Mild	CF & P	Cohesive Failure & Picking
-	Poor		

Mactac® Adhesion Testing on Zotefoam Grades

			EV50	HD30	LD24	LD45	VA35	HD80	LD32CNBK	HD80WE
			EVA	HDPE	LDPE	LDPE	EVA	EVA	EVA	EVA
			Skin	Skin	Skin	Skin	Skin	Skin	Skin	Skin
			Formula	Dwell						
Acrylic Adhesives	HTA410 LCW	30 min @ RT	+ (SL P)	+	-	+	+++	-	- (SP)	-
	HTA410 LCW	24 hour @ RT	+ (SL P)	+	+	+ (SL P)	+++	-	- (P)	-
	HTA410 LCW	72 hours @ RT	+ (SL P)	+	+	+ (SL P)	+++	-	- (P)	-
	HTA410 LCW	2 Weeks @ RT	+ (SL P)	+	++	+ (SL P)	+++	-	+ (SP)	+
	HTA410 LCW	1 week @ 140°F	+++	+	- (CF)	+	+++	-	- (P)	-
	HTA410 HCW	30 min @ RT	+ (SL P)	+	+	+	++++	-	- (SL P)	+
	HTA410 HCW	24 hour @ RT	+ (SL P)	+	+	+	++++	+	- (P)	+
	HTA410 HCW	72 hours @ RT	++	+	+++	+ (SL P)	++++	+	- (P)	+
	HTA410 HCW	2 Weeks @ RT	++	+	++	+ (SL P)	+++	+	+ (P)	+
	HTA410 HCW	1 week @ 140°F	++++	+	++ (CF)	+	+++	-	+ (P)	-
	LSE427	30 min @ RT	+ (Zip)	+ (Zip)	+ (Zip)	+ (Zip)	++	+	+ (P)	+
	LSE427	24 hour @ RT	++	+ (Zip)	++ (Zip)	+ (Zip)	++	++	+ (P)	-
	LSE427	72 hours @ RT	++	+ (Zip)	++++	+ (Zip)	++	+	+ (P)	-
	LSE427	2 Weeks @ RT	++	+ (Zip)	++++	+ (Zip)	++	+	+ (P)	+
	LSE427	1 week @ 140°F	++	+ (Zip)	++++	+ (Zip)	++	+	+ (P)	-
	HBA724	30 min @ RT	++	-	++	+	+	-	- (SP)	-
	HBA724	24 hour @ RT	++	-	++	+++	++	-	- (P)	-
	HBA724	72 hours @ RT	++++	-	+++ (P)	+++	+++	-	- (P)	-
	HBA724	2 Weeks @ RT	++++	+	+++ (P)	++ (P)	+++	-	+ (P)	+
	HBA724	1 week @ 140°F	++++	-	+++	+++	+++	-	- (P)	-
	LV820	30 min @ RT	+ (SL P)	+	+	+	++++	++++	++++	++++
	LV820	24 hour @ RT	+ (SL P)	+	+	+	++++	++++	++++	++++
	LV820	72 hours @ RT	++	+	+++	+ (SL P)	++++	++++	++++	++++
	LV820	2 Weeks @ RT	++	+	++	+ (SL P)	+++	+++	+++	+++
	LV820	1 week @ 140°F	++++	+	++ (CF)	+	+++	+++	+++	+++
	MP481	30 min @ RT	-			-	-		-	
	MP481	24 hour @ RT	-			-	-		-	
	MP481	72 hours @ RT	+			-	-		-	
	MP481	2 Weeks @ RT	+			-	-		+	
	MP481	1 week @ 140°F	+			-	-		++	
	LS55	30 min @ RT	+			-	-		+ (SLP)	
	LS55	24 hour @ RT	+			+	-		+ (SLP)	
	LS55	72 hours @ RT	+			+	-		+ (SLP)	
	LS55	2 Weeks @ RT	+			+	-		+ (SLP)	
	LS55	1 week @ 140°F	+			+	-		+ (SLP)	
					Migration @140°F		Migration @140°F			

Key

+++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking

Mactac® Adhesion Testing on W.T Burnett Foam Grades

	Formula	Dwell	S82N	S82ND2	4.0N	6.0N	SEN1	LP1800	HB1650R	EMR1
			Ester PU	Ester PU	Ester PU	Ester PU	Ether	Ether PU	Ether PU	ETHER PU
			Skin	Skin	Skin	Skin	Skin	Skin	Skin	Skin
Rubber Adhesives	XT593	30 min @ RT	++	++	++	++++	-	-	-	-
	XT593	24 hour @ RT	+	++	+++	++++	-	-	-	-
	XT593	72 hours @ RT	-	+	+++	++++	-	-	-	-
	XT593	2 Weeks @ RT	-	-	+++	++++	-	-	-	-
	XT593	1 week @ 140°F	+++	+++	++++	++++	+ (SP)	-	-	+ (SP)
	FBR899	30 min @ RT	+++	+++	++++	++++	+++	+	++	++
	FBR899	24 hour @ RT	+++	+++	++++	++++	+ (P)	-	+	+
	FBR899	72 hours @ RT	+++	+++	++++	++++	+	-	+	+ (P)
	FBR899	2 Weeks @ RT	+++	+++	++++	++++	+	-	+	++
	FBR899	1 week @ 140°F	++++	++++	++++	++++	++++	+	++++	++++
	Arctic MX10	30 min @ RT	+	+	++++	++++	- (SP)	+	+	++
	Arctic MX10	24 hour @ RT	+ (P)	++	++	++++	- (SP)	-	-	+
	Arctic MX10	72 hours @ RT	-	-	++	++++	- (SP)	-	- (SP)	+
	Arctic MX10	2 Weeks @ RT	+	+	++	++++	-	-	-	-
	Arctic MX10	1 week @ 140°F	++	++ (CF)	+ (SL P)	++++	+ (SP)	-	-	+ (P)
Acrylic Adhesives	HTA410 LCW	30 min @ RT	-	-	-	++ (SP)	- (SP)	-	+	+
	HTA410 LCW	24 hour @ RT	+	+ (SP)	+ (SP)	+++	- (SP)	-	-	-
	HTA410 LCW	72 hours @ RT	-	+	+ (P)	++++	- (SP)	-	- (SP)	+
	HTA410 LCW	2 Weeks @ RT	-	+	+	++	+	-	+	+
	HTA410 LCW	1 week @ 140°F	+	+ (SP)	+ (SP)	+ (CF)	+ (SP)	-	-	-
	HTA410 HCW	30 min @ RT	+	++	++++	++++	++ (P)	++	+	+++
	HTA410 HCW	24 hour @ RT	++ (P)	++	+++	++++	++	+	++ (P)	++
	HTA410 HCW	72 hours @ RT	++	+ (P)	+++	++++	+++	+	++	++
	HTA410 HCW	2 Weeks @ RT	++	++	+++	++++	++	+	++	++
	HTA410 HCW	1 week @ 140°F	+++	+++	++++	++++	++ (P)	+ (SP)	+ (P)	++
	LSE427	30 min @ RT	-	+	++	++++	+ (P)	+	+	+
	LSE427	24 hour @ RT	+ (SP)	+ (SP)	+ (P)	+++	+ (P)	+	+	+
	LSE427	72 hours @ RT	+	+	++	++++	+ (P)	-	- (SP)	+ (P)
	LSE427	2 Weeks @ RT	+	+	++	++++	++	+	-	+ (P)
	LSE427	1 week @ 140°F	+	+ (SL P)	++++	++++	++ (P)	-	-	+ (P)
	HBA724	30 min @ RT	-	-	+	+ (P)	- (SL P)	-	-	-
	HBA724	24 hour @ RT	+	+ (SL P)	++	+ (P)	- (SL P)	-	-	-
	HBA724	72 hours @ RT	-	+	+ (P)	++++	+ (SL P)	-	- (SL P)	- (SL P)
	HBA724	2 Weeks @ RT	+	+	++	+++	+	-	+ (P)	+
	HBA724	1 week @ 140°F	+++	++ (P)	++ (P)	+++	++ (P)	-	+ (P)	-
	LV820	30 min @ RT	+	++	++++	++++	++ (P)	++	+	+++
	LV820	24 hour @ RT	++ (P)	++	+++	++++	++	+	++ (P)	++
	LV820	72 hours @ RT	++	+ (P)	+++	++++	+++	+	++	++
	LV820	2 Weeks @ RT	++	++	+++	++++	++	+	++	++
	LV820	1 week @ 140°F	+++	+++	++++	++++	++ (P)	+ (SP)	+ (P)	++
			Migration @140°F				Migration @140°F			

Key

+++++ Foam Destruction
 +++ Very Aggressive
 ++ Aggressive
 + Mild
 - Poor

SL P Slight Picking 20%
 P Picking 20-50%
 CF Cohesive Failure
 CF & P Cohesive Failure & Picking



Foam Bonding Guide

ENGINEERED TAPES & LAMINATES

