



Nissan M8506

Adhesive Transfer Tapes and Double Coated Tapes Automotive Spec Testing

Technical Bulletin

June, 2017

3M tested the following adhesives to the Automotive OEM Spec: Nissan M8506 Pressure Sensitive Adhesive Double Coated Tapes for Automobiles. The results of the testing are provided in the following information. Adhesives not listed on this document have not been tested to this spec.

3M™ Adhesive Transfer Tape 468MP
 3M™ Adhesive Transfer Tape 6035PC
 3M™ Scrim Reinforced Adhesive Transfer Tape 97053
 3M™ Double Coated Tape 9832HL

3M™ Adhesive Transfer Tape 9472LE
 3M™ Low VOC Double Coated Scrim Tape 98010LVC
 3M™ Double Coated Tape 99786
 3M™ Low VOC Double Coated Tissue Tape 99015LVC

Test	Test Condition / Environment	
180° Peel adhesion 300mm / 12" per minute	Storage	168 hours @ 40°C / 104°F
	Stability	
Dynamic Shear 50mm / 2" per minute	Re-adhesion	Apply adhesive for 30 seconds; remove adhesive manually; re-apply same adhesive; roll with 4.5lb roller; dwell 24 hours @ room temp
	Adhesive strength immediately after affixing	Dwell for 30 seconds @ 5°C / 41°F. Test at temperature Dwell for 30 seconds @ 23°C / 73°F. Test at temperature
Adhesive size (25mm / 1" square)	Room temperature	Dwell @ 23°C / 73°F for 24 hours.
	High temperature	24 hours @ room temperature and peel after 15 minutes @ 90°C / 194°F
	Heat aging	168 hours @ 90°C / 194°F
	Humidity aging	168 hours @ 50°C / 122°F and 95% RH

Adhesive	180° Peel Test	SS	PP	ABS
468MP	Storage	P	P	P
	Stability	P	P	P
	Re-Adhesion	P	F	P
	Immediate 5°C / 41°F	P	F	P
	Immediate 23°C / 73°F	N/A	N/A	N/A
	Room Temp	P	F	P
	High Temp	P	F	P
	Heat Aging	P	P	P
	Humidity Aging	P	F	P
Adhesive	180° Peel Test	SS	PP	ABS

Adhesive	180° Peel Test	SS	PP	ABS
97053	Storage	P	P	P
	Stability	P	P	P
	Re-Adhesion	P	P	P
	Immediate 5°C / 41°F	P	P	P
	Immediate 23°C / 73°F	N/A	N/A	N/A
	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	P	P
	Humidity Aging	P	P	P
Adhesive	180° Peel Test	SS	PP	ABS

P = Pass, F = Fail

Note: Data reported in this technical bulletin, for all test methods, is the average of three replicates using one typical lot of adhesive.

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9472LE	Storage Stability	P	P	P
	Re-Adhesion	P	P	P
	Immediate 5°C / 41°F	P	P	P
	Immediate 23°C / 73°F	N/A	N/A	N/A
	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	P	P
	Humidity Aging	P	P	P
	6035PC	Storage Stability	P	P
Re-Adhesion		P	P	P
Immediate 5°C / 41°F		P	P	P
Immediate 23°C / 73°F		N/A	N/A	N/A
Room Temp		P	P	P
High Temp		P	P	P
Heat Aging		P	P	P
Humidity Aging		P	P	P
98010LVC		Storage Stability	P	P
	Re-Adhesion	P	F	P
	Immediate 5°C / 41°F	P	P	P
	Immediate 23°C / 73°F	N/A	N/A	N/A
	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	F	P
	Humidity Aging	P	P	P

99786	Storage Stability	P	P	P
	Re-Adhesion	P	P	P
	Immediate 5°C / 41°F	P	P	P
	Immediate 23°C / 73°F	N/A	N/A	N/A
	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	F	F
	Humidity Aging	P	P	P
	9832HL	Storage Stability	P	P
Re-Adhesion		P	P	P
Immediate 5°C / 41°F		P	P	P
Immediate 23°C / 73°F		N/A	N/A	N/A
Room Temp		P	P	P
High Temp		P	P	P
Heat Aging		P	F	P
Humidity Aging		P	P	P
99015LVC		Storage Stability	P	P
	Re-Adhesion	P	P	P
	Immediate 5°C / 41°F	P	P	P
	Immediate 23°C / 73°F	N/A	N/A	N/A
	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	P	P
	Humidity Aging	P	P	P

P = Pass, F = Fail

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Adhesive	Dynamic Shear	SS	PP	ABS
468MP	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	F	F	P
	Humidity Aging	F	P	P
9472LE	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	F	P	P
	Humidity Aging	P	P	P
6035PC	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	P	P
	Humidity Aging	P	P	P
98010LVC	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	F	P
	Humidity Aging	P	P	P

Adhesive	Dynamic Shear	SS	PP	ABS
97053	Room Temp	F	F	F
	High Temp	P	P	P
	Heat Aging	P	P	P
	Humidity Aging	P	P	F
99786	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	F	P
	Humidity Aging	P	F	P
9832HL	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	F	P
	Humidity Aging	P	F	P
99015LVC	Room Temp	P	P	P
	High Temp	P	P	P
	Heat Aging	P	P	P
	Humidity Aging	P	F	P

P = Pass, F = Fail

Note: Data reported in this technical bulletin, for all test methods, is the average of three replicates using one typical lot of adhesive.

468MP

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	9.23	40.50	Clean Peel	1.12 lb/in 4.9 N/25mm	Pass
	PP		1.63	7.15	Clean Peel		Pass
	ABS		4.85	21.30	Clean Peel		Pass

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	6.34	27.80	Clean Peel	60% of Initial	Pass
	PP		0.46	2.02	Clean Peel		Fail
	ABS		4.63	20.30	Clean Peel		Pass

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180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	2.30	10.10	Clean Peel	.66 lb/in	Pass
	PP		0.17	0.75	Clean Peel		Fail
	ABS		2.53	11.10	Clean Peel	2.9 N/25mm	Pass

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	4.24	18.60	Clean Peel	Report Data	N/A
	PP		0.25	1.09	Clean Peel		N/A
	ABS		3.87	17.00	Clean Peel		N/A

180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	8.18	35.90	Clean Peel	1.12 lb/in	Pass
	PP		0.34	1.50	Clean Peel		Fail
	ABS		4.88	21.40	Clean Peel	4.9 N/25mm	Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	4.33	19.00	Clean Peel	.33 lb/in	Pass
	PP		0.01	0.06	Clean Peel		Fail
	ABS		3.30	14.50	Clean Peel	1.47 N/25mm	Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	11.79	51.70	Cohesive	90% of Initial	Pass
	PP		0.26	1.17	Clean Peel		Fail
	ABS		5.26	23.10	Clean Peel		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
468MP	SS	PET	5.33	23.40	Cohesive	60% of Initial	Pass
	PP		1.58	6.94	Clean Peel		Fail
	ABS		4.99	21.90	Clean Peel		Pass

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
468MP	SS	PET	138.51	955.00	Cohesive	14.21 lb/in	Pass
	PP		44.09	304.00	Clean Shear		Pass
	ABS		72.66	501.00	Clean Shear	98 kPa	Pass

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Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
468MP	SS	PET	47.28	326.00	Clean Shear	0.21 lb/in	Pass
	PP		5.97	41.20	Clean Shear		Pass
	ABS		34.37	237.00	Clean Shear	1.47 kPa	Pass

Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
468MP	SS	PET	55.26	381.00	Clean Shear	90% of initial	Fail
	PP		19.00	131.00	Clean Shear		Fail
	ABS		68.17	470.00	Clean Shear		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
468MP	SS	PET	69.04	476.00	Cohesive	60% of initial	Fail
	PP		29.88	206.00	Clean Shear		Pass
	ABS		82.67	570.00	Cohesive		Pass

9472LE

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	8.28	36.30	Clean Peel	1.12 lb/in	Pass
	PP		8.05	35.30	Clean Peel		Pass
	ABS		7.87	34.50	Clean Peel	4.9 N/25mm	Pass

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	7.96	34.90	Clean Peel	60% of Initial	Pass
	PP		5.04	22.10	Clean Peel		Pass
	ABS		7.04	30.90	Clean Peel		Pass

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	5.63	24.70	Clean Peel	.66 lb/in	Pass
	PP		6.86	30.10	Clean Peel		Pass
	ABS		6.68	29.30	Clean Peel	2.9 N/25mm	Pass

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180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	4.51	19.80	Clean Peel	Report Data	N/A
	PP		2.71	11.90	Clean Peel		N/A
	ABS		6.63	29.10	Clean Peel		N/A

180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	7.32	32.10	Clean Peel	1.12 lb/in	Pass
	PP		3.10	13.60	Clean Peel	4.9 N/25mm	Pass
	ABS		7.30	32.00	Clean Peel		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	4.70	20.60	Cohesive	.33 lb/in 1.47 N/25mm	Pass
	PP		0.97	4.25	Clean Peel		Pass
	ABS		1.09	4.77	Clean Peel		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	8.62	37.80	Clean Peel	90% of Initial	Pass
	PP		3.72	16.30	Clean Peel		Pass
	ABS		7.52	33.00	Clean Peel		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9472LE	SS	PET	8.30	36.40	Clean Peel	60% of Initial	Pass
	PP		7.02	30.80	Clean Peel		Pass
	ABS		5.36	23.50	Clean Peel		Pass

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9472LE	SS	PET	110.52	762.00	Clean Shear	14.21 lb/in	Pass
	PP		77.30	533.00	Clean Shear	98 kPa	Pass
	ABS		75.42	520.00	Clean Shear		Pass

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9472LE	SS	PET	3.62	255.00	Cohesive	0.21 lb/in 1.47 kPa	Pass
	PP		6.87	47.40	Clean Shear		Pass
	ABS		9.87	68.00	Clean Shear		Pass

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Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9472LE	SS	PET	59.46	410.00	Cohesive	90% of initial	Fail
	PP		72.95	503.00	Clean Shear		Pass
	ABS		74.11	511.00	Clean Shear		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9472LE	SS	PET	90.36	623.00	Cohesive	60% of initial	Pass
	PP		60.19	415.00	Clean Shear		Pass
	ABS		115.45	796.00	Cohesive		Pass

6035PC

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	10.65	46.70	Cohesive	1.12 lb/in 4.9 N/25mm	Pass
	PP		5.61	24.60	Clean Peel		Pass
	ABS		9.10	39.90	Clean Peel		Pass

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	11.06	48.50	Cohesive	60% of Initial	Pass
	PP		4.38	19.20	Clean Peel		Pass
	ABS		9.39	41.20	Clean Peel		Pass

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	4.24	18.60	Clean Peel	.66 lb/in 2.9 N/25mm	Pass
	PP		4.10	18.00	Clean Peel		Pass
	ABS		5.24	23.00	Clean Peel		Pass

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	6.61	29.00	Clean Peel	Report Data	N/A
	PP		2.23	9.79	Clean Peel		N/A
	ABS		6.34	27.80	Clean Peel		N/A

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180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	11.49	50.40	Cohesive	1.12 lb/in	Pass
	PP		3.00	13.00	Clean Peel	4.9 N/25mm	Pass
	ABS		9.19	40.30	Clean Peel		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	4.60	20.20	Cohesive	.33 lb/in	Pass
	PP		1.67	7.34	Clean Peel	1.47 N/25mm	Pass
	ABS		2.89	12.70	Cohesive		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	11.67	51.20	Cohesive	90% of Initial	Pass
	PP		1.35	5.94	Clean Peel		Fail
	ABS		9.83	43.10	Clean Peel		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
6035PC	SS	PET	11.35	49.80	Cohesive	60% of Initial	Pass
	PP		4.19	18.40	Clean Peel		Pass
	ABS		10.49	46.00	Cohesive		Pass

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
6035PC	SS	PET	54.82	378.00	Clean Shear	14.21 lb/in	Pass
	PP		50.04	345.00	Clean Shear	98 kPa	Pass
	ABS		48.15	332.00	Clean Shear		Pass

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
6035PC	SS	PET	7.85	54.10	Cohesive	0.21 lb/in	Pass
	PP		11.53	79.50	Clean Shear	1.47 kPa	Pass
	ABS		8.86	61.10	Clean Shear		Pass

Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
6035PC	SS	PET	63.82	440.00	Cohesive	90% of initial	Pass
	PP		46.41	320.00	Clean Shear		Pass
	ABS		70.92	489.00	Clean Shear		Pass

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Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
6035PC	SS	PET	45.25	312.00	Cohesive	60% of initial	Pass
	PP		43.80	302.00	Clean Shear		Pass
	ABS		38.87	268.00	Cohesive		Pass

97053

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	4.15	18.20	Cohesive	1.12 lb/in 4.9 N/25mm	Pass
	PP		4.17	18.30	Cohesive		Pass
	ABS		4.06	17.80	Cohesive		Pass

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	4.19	18.40	Cohesive	60% of Initial	Pass
	PP		4.08	17.90	Cohesive		Pass
	ABS		4.60	20.20	Cohesive		Pass

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	4.24	18.60	Cohesive	.66 lb/in 2.9 N/25mm	Pass
	PP		3.40	14.90	Cohesive		Pass
	ABS		3.19	14.00	Cohesive		Pass

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	4.90	21.50	Cohesive	Report Data	N/A
	PP		2.74	12.00	Clean Peel		N/A
	ABS		4.95	21.70	Cohesive		N/A

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180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	3.60	15.80	Cohesive	1.12 lb/in	Pass
	PP		4.22	18.50	Cohesive	4.9 N/25mm	Pass
	ABS		3.42	15.00	Cohesive		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	0.83	3.66	Cohesive	.33 lb/in	Pass
	PP		0.52	2.27	Cohesive	1.47 N/25mm	Pass
	ABS		0.47	2.07	Cohesive		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	6.61	29.00	Cohesive	90% of Initial	Pass
	PP		4.63	20.30	Cohesive		Pass
	ABS		7.14	31.30	Cohesive		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
97053	SS	PET	6.61	29.00	Cohesive	60% of Initial	Pass
	PP		4.76	20.90	Cohesive		Pass
	ABS		3.28	14.40	Cohesive		Pass

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
97053	SS	PET	4.47	30.80	Cohesive	14.21 lb/in	Fail
	PP		5.64	38.90	Cohesive	98 kPa	Fail
	ABS		6.09	42.00	Clean Shear		Fail

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
97053	SS	PET	1.10	7.62	Cohesive	0.21 lb/in	Pass
	PP		0.90	6.19	Cohesive	1.47 kPa	Pass
	ABS		1.12	7.70	Clean Shear		Pass

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Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
97053	SS	PET	33.21	229.00	Cohesive	90% of initial	Pass
	PP		23.21	160.00	Cohesive		Pass
	ABS		27.85	192.00	Cohesive		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
97053	SS	PET	3.38	23.30	Cohesive	60% of initial	Pass
	PP		3.97	27.40	Cohesive		Pass
	ABS		3.54	24.40	Cohesive		Fail

99786

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	8.91	39.10	Clean Peel	1.12 lb/in 4.9 N/25mm	Pass
	PP		3.19	14.00	Clean Peel		Pass
	ABS		5.11	22.40	Clean Peel		Pass

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	7.39	32.40	Clean Peel	60% of Initial	Pass
	PP		2.14	9.38	Clean Peel		Pass
	ABS		5.36	23.50	Clean Peel		Pass

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	4.51	19.80	Clean Peel	.66 lb/in 2.9 N/25mm	Pass
	PP		2.32	10.20	Clean Peel		Pass
	ABS		4.40	19.30	Clean Peel		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	3.81	16.70	Clean Peel	Report Data	N/A
	PP		1.24	5.43	Clean Peel		N/A
	ABS		4.13	18.10	Clean Peel		N/A

180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	9.83	43.10	Cohesive	1.12 lb/in	Pass
	PP		1.85	8.10	Clean Peel	4.9 N/25mm	Pass
	ABS		4.54	19.90	Clean Peel		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	6.84	30.00	Cohesive	.33 lb/in	Pass
	PP		0.69	3.01	Clean Peel	1.47 N/25mm	Pass
	ABS		3.24	14.20	Cohesive		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	9.12	40.00	Cohesive	90% of Initial	Pass
	PP		1.15	5.04	Clean Peel		Fail
	ABS		4.35	19.10	Clean Peel		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99786	SS	PET	8.62	37.80	Cohesive	60% of Initial	Pass
	PP		3.21	14.10	Clean Peel		Pass
	ABS		6.70	29.40	Clean Peel		Pass

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99786	SS	PET	66.14	456.00	Cohesive	14.21 lb/in	Pass
	PP		46.41	320.00	Clean Shear	98 kPa	Pass
	ABS		49.60	342.00	Clean Shear		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99786	SS	PET	13.49	93.00	Cohesive	0.21 lb/in	Pass
	PP		8.80	60.70	Clean Shear		Pass
	ABS		15.23	105.00	Clean Shear	1.47 kPa	Pass

Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99786	SS	PET	66.43	458.00	Cohesive	90% of initial	Pass
	PP		34.52	238.00	Clean Shear		Fail
	ABS		70.40	513.00	Clean Shear		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99786	SS	PET	60.91	420.00	Cohesive	60% of initial	Pass
	PP		27.12	187.00	Clean Shear		Fail
	ABS		56.27	388.00	Cohesive		Pass

9832HL

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	5.22	22.90	Clean Peel	1.12 lb/in	Pass
	PP		2.10	9.20	Clean Peel		Pass
	ABS		5.11	22.40	Clean Peel	4.9 N/25mm	Pass

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	5.74	25.20	Cohesive	60% of Initial	Pass
	PP		2.37	10.50	Clean Peel		Pass
	ABS		6.02	26.40	Clean Peel		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	3.56	15.60	Clean Peel	.66 lb/in	Pass
	PP		2.87	12.60	Clean Peel	2.9 N/25mm	Pass
	ABS		4.13	18.10	Clean Peel		Pass

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	3.37	14.80	Clean Peel	Report Data	N/A
	PP		1.26	5.54	Clean Peel		N/A
	ABS		4.63	20.30	Clean Peel		N/A

180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	5.17	22.70	Clean Peel	1.12 lb/in	Pass
	PP		1.50	6.60	Clean Peel	4.9 N/25mm	Pass
	ABS		5.20	22.80	Clean Peel		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	5.59	24.50	Cohesive	.33 lb/in	Pass
	PP		0.59	2.61	Clean Peel	1.47 N/25mm	Pass
	ABS		2.39	10.50	Cohesive		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	6.93	30.40	Cohesive	90% of Initial	Pass
	PP		0.62	2.71	Clean Peel		Fail
	ABS		5.22	22.90	Clean Peel		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
9832HL	SS	PET	5.59	24.50	Clean Peel	60% of Initial	Pass
	PP		3.17	13.90	Clean Peel		Pass
	ABS		5.36	23.50	Clean Peel		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9832HL	SS	PET	57.87	399.00	Clean Shear	14.21 lb/in	Pass
	PP		64.54	445.00	Clean Shear		Pass
	ABS		82.96	572.00	Clean Shear	98 kPa	Pass

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9832HL	SS	PET	17.84	123.00	Clean Shear	0.21 lb/in	Pass
	PP		1.55	10.70	Clean Shear		Pass
	ABS		14.79	102.00	Clean Shear	1.47 kPa	Pass

Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9832HL	SS	PET	81.95	565.00	Cohesive	90% of initial	Pass
	PP		54.10	373.00	Clean Shear		Fail
	ABS		84.56	583.00	Cohesive		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
9832HL	SS	PET	80.49	555.00	Cohesive	60% of initial	Pass
	PP		24.66	170.00	Clean Shear		Fail
	ABS		56.42	389.00	Cohesive		Pass

98010LVC

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	6.27	27.50	Cohesive	1.12 lb/in	Pass
	PP		2.18	9.58	Clean Peel		Pass
	ABS		6.16	27.00	Cohesive	4.9 N/25mm	Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	6.27	27.50	Cohesive	60% of Initial	Pass
	PP		1.00	4.41	Clean Peel		Fail
	ABS		6.22	27.30	Cohesive		Pass

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	1.48	6.50	Clean Peel	.66 lb/in 2.9 N/25mm	Pass
	PP		1.89	8.28	Clean Peel		Pass
	ABS		3.40	14.90	Clean Peel		Pass

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	3.65	16.00	Clean Peel	Report Data	N/A
	PP		0.51	2.25	Clean Peel		N/A
	ABS		6.13	26.90	Cohesive		N/A

180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	7.20	31.60	Cohesive	1.12 lb/in 4.9 N/25mm	Pass
	PP		2.19	9.60	Clean Peel		Pass
	ABS		6.79	29.80	Cohesive		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	3.30	11.80	Cohesive	.33 lb/in 1.47 N/25mm	Pass
	PP		0.26	1.15	Clean Peel		Fail
	ABS		1.11	4.86	Cohesive		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	6.41	28.10	Cohesive	90% of Initial	Fail
	PP		1.73	7.61	Clean Peel		Fail
	ABS		7.16	31.40	Cohesive		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
98010LVC	SS	PET	6.13	26.90	Cohesive	60% of Initial	Pass
	PP		5.95	26.10	Cohesive		Pass
	ABS		5.33	23.40	Cohesive		Pass

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
98010LVC	SS	PET	18.27	126.00	Cohesive	14.21 lb/in	Pass
	PP		21.17	146.00	Clean Shear	98 kPa	Pass
	ABS		15.37	106.00	Clean Shear		Pass

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
98010LVC	SS	PET	6.16	42.50	Cohesive	0.21 lb/in	Pass
	PP		2.07	14.30	Clean Shear	1.47 kPa	Pass
	ABS		4.32	29.80	Clean Shear		Pass

Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
98010LVC	SS	PET	23.93	165.00	Cohesive	90% of initial	Pass
	PP		18.42	127.00	Clean Shear		Fail
	ABS		25.67	177.00	Cohesive		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
98010LVC	SS	PET	19.00	131.00	Cohesive	60% of initial	Pass
	PP		18.13	125.00	Clean Shear		Pass
	ABS		14.17	97.70	Cohesive		Pass

99015LVC

180° Peel Adhesion – Storage Stability							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	7.25	31.80	Cohesive	1.12 lb/in	Pass
	PP		2.51	11.00	Clean Peel	4.9 N/25mm	Pass
	ABS		7.11	31.20	Cohesive		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

180° Peel Adhesion – Re-Adhesion							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	7.14	31.30	Cohesive	60% of Initial	Pass
	PP		4.26	18.70	Clean Peel		Pass
	ABS		6.98	30.60	Cohesive		Pass

180° Peel Adhesion – 5°C / 41°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	2.83	12.40	Clean Peel	.66 lb/in 2.9 N/25mm	Pass
	PP		3.24	14.20	Clean Peel		Pass
	ABS		4.81	21.10	Clean Peel		Pass

180° Peel Adhesion – 23°C / 73°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	7.57	33.20	Cohesive	Report Data	N/A
	PP		2.23	9.78	Clean Peel		N/A
	ABS		7.39	32.40	Cohesive		N/A

180° Peel Adhesion – Room Temperature							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	7.66	33.60	Cohesive	1.12 lb/in 4.9 N/25mm	Pass
	PP		2.01	8.80	Clean Peel		Pass
	ABS		7.48	32.80	Cohesive		Pass

180° Peel Adhesion – High Temperature 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	3.62	15.90	Cohesive	.33 lb/in 1.47 N/25mm	Pass
	PP		0.07	0.32	Clean Peel		Fail
	ABS		1.00	4.38	Clean Peel		Pass

180° Peel Adhesion – Heat Aging 90°C / 194°F							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	7.71	33.80	Cohesive	90% of Initial	Pass
	PP		1.20	5.28	Clean Peel		Pass
	ABS		8.05	35.30	Cohesive		Pass

180° Peel Adhesion – Humidity							
	Substrate	Backing	AVG Peel lb/in	AVG Peel N/25mm	Observation	Requirement	Outcome
99015LVC	SS	PET	6.63	29.10	Cohesive	60% of Initial	Pass
	PP		6.66	29.20	Cohesive		Pass
	ABS		6.52	28.60	Cohesive		Pass

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Adhesive Transfer Tapes and Double Coated Tapes – Automotive Spec Testing

Dynamic Shear – Room Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99015LVC	SS	PET	16.68	115.00	Clean Shear	14.21 lb/in	Pass
	PP		23.35	161.00	Clean Shear	98 kPa	Pass
	ABS		15.08	104.00	Clean Shear		Pass

Dynamic Shear – High Temp							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99015LVC	SS	PET	8.41	58.00	Cohesive	0.21 lb/in	Pass
	PP		5.25	36.20	Clean Shear	1.47 kPa	Pass
	ABS		10.72	73.90	Clean Shear		Pass

Dynamic Shear – Heat Age							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99015LVC	SS	PET	63.53	438.00	Cohesive	90% of initial	Pass
	PP		51.78	357.00	Clean Shear		Pass
	ABS		55.11	380.00	Cohesive		Pass

Dynamic Shear – Humidity							
	Substrate	Backing	AVG Shear lb/in	AVG Shear kPa	Observation	Requirement	Outcome
99015LVC	SS	PET	15.23	105.00	Cohesive	60% of initial	Pass
	PP		7.47	51.50	Clean Shear		Fail
	ABS		29.01	200.00	Cohesive		Pass

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