GMW 14892

Adhesion Requirements for Bonded Interior Parts

Automotive Interior Spec Testing

Technical Bulletin June 2021

3M tested the following adhesives to the Automotive OEM Spec: GMW 14892 Adhesion Requirements for Bonded Interior Parts. The results of the testing are provided in the following information. Adhesives not listed on this document have not been tested to this spec.

Automotive specification testing was performed on lab substrates and not on actual automotive production parts. Additional testing by the converter, tier or supplier is needed to show that parts and adhesives meet such specification. Please carefully read the automotive specification for further information.

Revision	Date	Comments
Original release	May 2021	Testing and bulletin complete

3M™ Adhesive Transfer Tape 9472LE
3M™ Double Coated Tape 93015LE
3M™ Adhesive Transfer Tape 9775WL
3M™ Double Coated Tape 9832 / 9832HL
3M™ Adhesive Transfer Tape 950/9472
3M™ Double Coated Tape 9832/HL
3M™ Adhesive Transfer Tape 6035PC/PL
3M™ Adhesive Transfer Tape 9627
3M™ Low VOC Tissue Tape DCX1018

Test	Test Condition / Environment	
180° Peel Adhesion 300mm / 12 inch per min	As Received 3.2.3.2	72 hours @ Room Temp
	Humidity 3.2.3.2.1	144 hours GMW14729 Option A: Water Fog
	Heat Age 3.2.3.2.2	24 hours @ 105°C / 221°F
	Environmental Cycle 3.2.3.2.3	GMW14124 Cycle M (2 cycles)
Shear Testing	Dynamic Lap Shear 3.2.4.1.1	2” per minute
	Static Shear : Dead Load 3.2.4.1.2	200g

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

				9472LE	93015LE	6035PC/PL	9775WL	9627	9832 / 9832HL	950/9472	DCX1018
PP Peels	As Received			M	M	M	D	M	D	M	M
	Humidity Aged			M	M	M	M	M	D	M	M
	Heat Aged			D	D	D	D	D	D	D	D
	Cycle			M	M	D	D	M	D	D	M
PP Shears	Dynamic	As Received		M	M	D	D	M	M	M	M
		Cycle		D	M	M	D	D	D	D	M
	Static			D	D	D	D	D	D	D	M
ABS Peels	As Received			M	M	M	M	M	M	M	M
	Humidity Aged			M	M	M	M	M	M	M	M
	Heat Aged			D	D	M	M	D	D	M	D
	Cycle			M	M	M	M	M	M	M	M
ABS Shears	Dynamic	As Received		M	M	D	M	D	M	M	M
		Cycle		M	M	M	D	M	M	D	D
	Static			D	M	D	M	M	M	D	M

M = Meets requirement
D = Does not meet requirement

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

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

9472LE

3.2.3.2 As received – 72 hour dwell @ Room Temp						
9472LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1510.56	138.08	Clean peel from PP	
	ABS		1156.47	105.71	Clean peel from ABS	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
9472LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1416.91	129.52	Slight cohesive	
	ABS		1177.44	107.63	Cohesive	

3.2.3.2.2 Heat Aging – 24 hours @ 105°C / 221°F						
9472LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	31.51	2.88	Clean peel from PP	
	ABS		260.81	23.84	Clean peel from ABS	

3.2.3.2.3 Environmental Cycle – GMW14124 Cycle M (2 cycles)						
9472LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	906.12	82.83	Clean peel from PP	
	ABS		1143.85	104.56	Cohesive	

3.2.4.1.1 Dynamic Shear – As Received				
9472LE	Substrate	Size		Requirement 250 kPa
	PP to PP	1" x 1"		340
	ABS to ABS			270

3.2.4.1.1 Dynamic Shear – Cycle				
9472LE	Substrate	Size		Requirement 250 kPa
	PP to PP	1" x 1"		200
	ABS to ABS			290

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.4.1.2 Static Shear 200g				
9472LE	Substrate	Size		Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Fail

93015LE

3.2.3.2 As Received - 72 hour dwell @ Room Temp						
93015LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1101.62	100.70	2 bond	
	ABS		1119.13	102.30	2 bond	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
93015LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1060.30	96.92	2 bond	
	ABS		1155.23	105.60	Cohesive	

3.2.3.2.2 Heat Aging – 24 hours @ 105°C / 221°F						
93015LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	56.01	5.12	Clean peel from PP	
	ABS		201.30	18.40	Clean peel from ABS	

3.2.3.2.3 Environmental - GMW14124 Cycle M (2 cycles)						
93015LE	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	657.20	60.07	Clean peel from PP	
	ABS		994.85	90.94	Cohesive	

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.4.1.1 Dynamic Shear – As Received				
93015LE	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		540
	ABS to ABS			590

3.2.4.1.1 Dynamic Shear – Cycle				
93015LE	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		340
	ABS to ABS			500

3.2.4.1.2 Static Shear – 200 grams				
93015LE	Substrate	Size		Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Pass

6035PC/PL

3.1.5.1 As received – 72 hour dwell @ Room Temp						
6035PC/PL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	680.69	62.22	Clean peel from PP	
	ABS		1094.88	100.08	Clean peel from ABS	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
6035PC/PL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	786.18	71.86	Clean peel from PP	
	ABS		1231.88	112.60	Cohesive	

3.2.3.2.2 Heat Aging – 24 hours @ 105°C / 221°F						
6035PC/PL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	106.77	9.76	Clean peel from PP	
	ABS		1708.39	156.16	Clean peel from ABS	

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.3.2.3 Environmental - GMW14124 Cycle M (2 cycles)						
6035PC/PL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	478.92	43.78	Clean peel from PP	
	ABS		1282.17	117.20	Cohesive	

3.2.4.1.1 Dynamic Lap Shear – As Received				
6035PC/PL	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		140
	ABS to ABS			140

3.2.4.1.1 Dynamic Lap Shear – Cycle				
6035PC/PL	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		260
	ABS to ABS			270

3.2.4.1.2 Static Shear 200g				
6035PC/PL	Substrate	Size		Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Fail

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

9775WL

3.2.3.2 As Received - 72 hour dwell @ Room Temp						
	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
9775WL	PP	2 mil PET	466.12	42.61	Clean peel from PP	
	ABS		942.15	86.12	Clean peel from ABS	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
9775WL	PP	2 mil PET	564.98	51.64	Clean peel from PP	
	ABS		924.69	84.52	Cohesive	

3.2.3.2.2 Heat Aging – 24 hours @ 105°C / 221°F						
	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
9775WL	PP	2 mil PET	84.02	7.68	Clean peel from PP	
	ABS		575.88	52.64	Cohesive	

3.2.3.2.3 Environmental - GMW14124 Cycle M (2 cycles)						
	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
9775WL	PP	2 mil PET	423.09	38.67	Clean peel from PP	
	ABS		915.57	83.69	Cohesive	

3.2.4.1.1 Dynamic Shear – As Received				
	Substrate	Size		Requirement 250kPa
9775WL	PP to PP	1" x 1"		160
	ABS to ABS			400

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.4.1.1 Dynamic Shear – Cycle				
9775WL	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		210
	ABS to ABS			070

3.2.4.1.2 Static Shear 200g				
9775WL	Substrate	Size	Observation	Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Pass

9627

3.2.3.2 As Received - 72 hour dwell @ Room Temp						
9627	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1544.65	141.19	Slight cohesive	
	ABS		1488.28	136.04	Clean peel from ABS	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
9627	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1465.38	133.95	Slight cohesive	
	ABS		1187.94	108.59	Cohesive	

3.2.3.2.2 Heat Aging – 24 hours @ 105°C / 221°F						
9627	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	77.02	7.04	Clean peel from PP	
	ABS		136.53	12.48	Slight cohesive	

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.3.2.3 Environmental - GMW14124 Cycle M (2 cycles)						
9627	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1304.67	119.26	Cohesive	
	ABS		1011.44	92.45	Cohesive	

3.2.4.1.1 Dynamic Shear – As Received				
9627	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		360
	ABS to ABS			250

3.2.4.1.1 Dynamic Shear – Cycle				
9627	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		360
	ABS to ABS			760

3.2.4.1.2 Static Shear – 200 grams				
9627	Substrate	Size		Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Pass

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

9832/9832HL

3.2.3.2 As Received - 72 hour dwell @ Room Temp						
9832 / HL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	362.59	33.14	Clean peel from PP	
	ABS		643.27	58.80	Clean peel from ABS	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
9832 / HL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	294.50	26.92	Clean peel from PP	
	ABS		570.23	52.12	Cohesive	

3.2.3.2.2 Heat Aging – 24 hours @ 105°C / 221°F						
9832 / HL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	187.29	17.12	Clean peel from PP	
	ABS		516.37	47.20	Cohesive	

3.2.3.2.3 Environmental - GMW14124 Cycle M (2 cycles)						
9832 / HL	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	284.00	25.96	Clean peel from PP	
	ABS		795.08	72.68	Cohesive	

3.2.4.1.1 Dynamic Shear – As Received				
9832 / HL	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		390
	ABS to ABS			440

3.2.4.1.1 Dynamic Shear – Cycle				
9832 / HL	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		100
	ABS to ABS			360

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.4.1.2 Static Shear – 200 grams				
9832 / HL	Substrate	Size		Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Pass

950 / 9472

3.2.3.2 As Received - 24 hour dwell @ Room Temp						
950 / 9472	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1435.44	131.21	Cohesive	
	ABS		1346.06	123.04	Cohesive	

3.2.3.2.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
950 / 9472	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1025.70	93.76	Cohesive	
	ABS		748.11	68.38	Cohesive	

3.1.5.1.2 Heat Aging – 24 hours @ 105°C / 221°F						
950 / 9472	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	38.51	3.52	Clean peel from PP	
	ABS		406.09	37.12	Cohesive	

3.1.5.1.3 Environmental - GMW14124 Cycle M (2 cycles)						
950 / 9472	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	436.54	39.90	Clean peel from PP	
	ABS		1023.80	93.58	Cohesive	

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.2.4.1.1 Dynamic Shear – As Received				
950 / 9472	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		540
	ABS to ABS			460

3.2.4.1.1 Dynamic Shear – Cycle				
950 / 9472	Substrate	Size		Requirement 250kPa
	PP to PP	1" x 1"		210
	ABS to ABS			130

3.2.4.1.2 Static Shear – 200 grams				
950 / 9472	Substrate	Size		Requirement 24 hours
	PP	1" x 1"		Fail
	ABS			Pass

DCX1018

.2.3.2 As Received - 72 hour dwell @ Room Temp						
DCX1018	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	766.93	70.10	Clean peel from PP	
	ABS		1129.26	103.22	Clean peel from ABS	

3.1.5.1.1 Humidity – GMW14729 Option A: Water Fog 144 hours						
DCX1018	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	1075.25	98.29	Clean peel from PP	
	ABS		965.13	88.22	Cohesive	

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

3.1.5.1.2 Heat Aging – 24 hours @ 105°C / 221°F						
DCX1018	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	364.08	33.28	Clean peel from PP	
	ABS		295.82	27.04	Cohesive	

3.1.5.1.3 Environmental - GMW14124 Cycle M (2 cycles)						
DCX1018	Substrate	Backing	AVG Peel N/m	AVG Peel ozf/in	Observation	Requirement 525 N/m / 47.93 ozf/in or substrate failure
	PP	2 mil PET	992.07	90.68	Clean peel from PP	
	ABS		1098.52	100.41	Cohesive	

3.2.4.1.1 Dynamic Shear – As Received				
DCX1018	Substrate	Size		Requirement 250kPa
	PP to PP	1” x 1”		530
	ABS to ABS			620

3.2.4.1.1 Dynamic Shear – Cycle				
DCX1018	Substrate	Size		Requirement 250kPa
	PP to PP	1” x 1”		530
	ABS to ABS			160

3.2.4.1.2 Static Shear				
DCX1018	Substrate	Size		Requirement 24 hours
	PP	1” x 1”		Pass
	ABS			Pass

GMW 14892: Adhesion Requirements for Bonded Interior Parts, Automotive Spec

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