



# WSS-M99P48-A3

(WSS-M99P48-B3 is latest revision 06.2020)

## Pressure Sensitive Adhesive Tape

### (Interior, Exterior and Underhood Applications)

Automotive Interior Spec Testing

Technical Bulletin

May 2021

3M tested the following adhesive tapes to the Automotive OEM Spec: WSS-M99P48-A3. 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	November 2016	Testing and bulletin completed
Add lab substrate language and revision table	April 2020	

3M™ Adhesive Transfer Tape 468MP (5 mil)  
 3M™ Adhesive Transfer Tape 6035PC (5 mil)  
 3M™ Scrim Reinforced Transfer Tape 97053 (2.5 mil)  
 3M™ Low VOC Scrim Reinforced Transfer Tape 98010LVC (3.9 mil)

3M™ Adhesive Transfer Tape 9472LE (5 mil)  
 3M™ Double Coated Tape 9832 HL (5 mil)  
 3M™ Double Coated Tape 99786 (5.5 mil)  
 3M™ Low VOC Double Coated Tissue Tape 99015LVC (5.9 mil)

Test	Test Condition / Environment	
180° Peel Adhesion 300mm / 12 inch per min	Initial	1 hour @ room temp 23°C / 73°F
	Heat Aged	168 hours @ 100°C / 212°F
	Environmental Cycle	10 cycles 4 hours @ 100°C / 212°F 4 hours @ 38°C / 100°F 16 hours @ -40°

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

Adhesive	Test	SS	PP	ABS
468MP	As received	P	F	P
	Heat	P	P	P
	Cycle	P	P	P
9472LE	As received	P	P	P
	Heat	P	P	P
	Cycle	P	P	P
6035PC	As received	P	P	P
	Heat	P	P	P
	Cycle	P	P	P
98010 LVC	As received	P	P	P
	Heat	P	F	P
	Cycle	P	P	P

Adhesive	Test	SS	PP	ABS
97053	As received	P	P	P
	Heat	P	P	P
	Cycle	P	P	P
9832HL	As received	P	P	P
	Heat	P	P	P
	Cycle	P	P	P
99786	As received	P	P	P
	Heat	P	P	P
	Cycle	P	P	P
99015 LVC	As received	P	P	P
	Heat	P	F	P
	Cycle	P	P	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.

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

## 468MP

1

Initial – 1 hour @ 23°C / 73°F						
468MP	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	1.04	95.02	Clean Peel	Pass
	PP		.34	31.06	Clean Peel	Fail
	ABS		.84	76.74	Clean Peel	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
468MP	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement Max 25% loss from initial
	SS	PET	2.01	183.64	Cohesive	Pass
	PP		.31	28.32	Clean Peel	Pass
	ABS		.99	90.45	Clean Peel	Pass

Environmental Cycle – 10 cycles						
468MP	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	2.06	188.21	Cohesive	Pass
	PP		.36	32.89	Clean Peel	Pass
	ABS		.72	65.78	Clean Peel	Pass

# WSS-M99P48-A3:

## Pressure Sensitive Adhesive Tape

### 9472LE

Initial – 1 hour @ 23°C / 73°F						
9472LE	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	.91	83.14	Clean Peel	Pass
	PP		1.29	117.86	Clean Peel	Pass
	ABS		1.32	120.60	Clean Peel	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
9472LE	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.55	141.61	Clean Peel	Pass
	PP		1.01	92.28	Clean Peel	Pass
	ABS		1.43	130.65	60% Clean Peel /40% cohesive	Pass

Environmental Cycle – 10 cycles						
9472LE	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.50	137.05	Cohesive	Pass
	PP		1.10	100.50	Clean Peel	Pass
	ABS		1.41	128.82	Cohesive	Pass

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

**97053**

Initial – 1 hour @ 23°C / 73°F						
97053	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	.72	65.78	Clean Peel	Pass
	PP		.78	71.26	Clean Peel	Pass
	ABS		.80	73.09	Clean Peel	Peel

Heat Aged – 168 hours @ 100°C / 212°F						
97053	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.38	126.08	Cohesive	Pass
	PP		1.15	105.07	Cohesive	Pass
	ABS		1.34	122.43	Cohesive	Pass

Environmental Cycle – 10 cycles						
97053	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.26	115.12	Cohesive	Pass
	PP		1.04	95.02	Cohesive	Pass
	ABS		1.06	96.84	Cohesive	Pass

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

## 6035PC

Initial – 1 hour @ 23°C / 73°F						
6035PC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	1.94	177.25	Cohesive	Pass
	PP		1.25	114.20	Clean Peel	Pass
	ABS		1.69	154.40	Clean Peel	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
6035PC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	2.19	200.09	Cohesive	Pass
	PP		1.00	91.36	Clean Peel	Pass
	ABS		1.73	158.06	80% Clean Peel / 20% Cohesive	Pass

Environmental Cycle – 10 cycles						
6035PC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	2.10	191.86	Cohesive	Pass
	PP		1.09	99.59	Clean Peel	Pass
	ABS		1.52	138.87	Cohesive	Pass

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

**99786**

Initial – 1 hour @ 23°C / 73°F						
99786	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	1.13	103.24	Cohesive	Pass
	PP		.53	48.42	Clean Peel	Pass
	ABS		.92	84.05	Clean Peel	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
99786	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.79	163.54	Cohesive	Pass
	PP		.54	49.34	Clean Peel	Pass
	ABS		.79	72.18	Clean Peel	Pass

Environmental Cycle – 10 cycles						
99786	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.76	160.80	Cohesive	Pass
	PP		.57	52.08	Clean Peel	Pass
	ABS		1.19	108.72	Clean Peel	Pass

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

## 9832HL

Initial – 1 hour @ 23°C / 73°F						
9832HL	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	.85	77.66	Cohesive	Pass
	PP		.64	58.47	Clean Peel	Pass
	ABS		.83	75.83	Clean Peel	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
9832HL	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	.26	23.75	Cohesive	Pass
	PP		.55	50.25	Clean Peel	Pass
	ABS		.85	77.66	Clean Peel	Pass

Environmental Cycle – 10 cycles						
9832HL	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	1.16	105.98	Cohesive	Pass
	PP		.58	52.99	Clean Peel	Pass
	ABS		.95	86.79	Clean Peel	Pass



# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

## 98010LVC

Initial – 1 hour @ 23°C / 73°F						
98010LVC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	1.11	101.41	Cohesive	Pass
	PP		1.07	97.76	Cohesive	Pass
	ABS		1.08	98.67	Cohesive	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
98010LVC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.09	99.59	Cohesive	Pass
	PP		.55	50.25	Clean Peel	Fail
	ABS		1.23	112.38	Cohesive	Pass

Environmental Cycle – 10 cycles						
98010LVC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.04	95.02	Cohesive	Pass
	PP		1.10	100.50	Cohesive	Pass
	ABS		.82	74.92	Cohesive	Pass

# WSS-M99P48-A3: Pressure Sensitive Adhesive Tape

## 99015LVC

Initial – 1 hour @ 23°C / 73°F						
99015LVC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement 0.48 N/mm or 43.85 oz/in or cohesive failure
	SS	PET	1.08	98.67	Cohesive	Pass
	PP		.99	90.45	Clean Peel	Pass
	ABS		1.15	105.07	Clean Peel	Pass

Heat Aged – 168 hours @ 100°C / 212°F						
99015LVC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.45	132.48	Cohesive	Pass
	PP		.69	63.04	Clean Peel	Fail
	ABS		1.30	118.77	Cohesive	Pass

Environmental Cycle – 10 cycles						
99015LVC	Substrate	Backing	AVG Peel N/mm	AVG Peel oz/in	Observation	Requirement max 25% loss from initial
	SS	PET	1.23	112.38	Cohesive	Pass
	PP		1.36	124.25	Cohesive	Pass
	ABS		1.15	105.07	Cohesive	Pass

# WSS-M99P48-A3: Foam Performance, Pressure Sensitive Adhesive Tape

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## Technical Information

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