



Ford ESB-M3G76-B2

Tape, Polyester – Two Sided Pressure Sensitive Automotive Spec Testing

Technical Bulletin

August, 2016

3M tested the following adhesive tapes to the Automotive OEM Spec: Ford ESB-M3G76-B2 Tape, Polyester – Two Sided Pressure Sensitive. 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™ Reinforced Adhesive Transfer Tape L1+RT (3.2 mil)
- 3M™ Double Coated Polyester Tape L1+DCP (3.5 mil)
- 3M™ Double Coated Polyester Tape L2+DCP (4.8 mil)
- 3M™ Adhesive Transfer Tape L2+T5 (5.0 mil)
- 3M™ Adhesive Transfer Tape L3+T5 (5.0 mil)

Test	Test Condition / Environment
180° Peel Adhesion on ABS 300mm / 12 inch per min	3.6.1 20 minute dwell @ Room Temp
	3.6.2 72 hour dwell @ Room Temp
	3.6.3 Cycle Exposure (5 times) 4 hours @ 70°C / 158°F 4 hours @ 38°C / 100°F and 100% RH 16 hours @ -29°C / -20°F 4 hours @ 38°C / 100°F and 100% RH 4 hours @ 70°C / 158°F 16 hours @ -29°C / -20°F

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

Adhesive		PU Ester	PU Ether	XLPE Foam	Microcellular Urethane Foam	EPDM Foam	Nitrile Foam	Neoprene Foam	EPDM Rubber	Neoprene Rubber	Santoprene™ Rubber	Butyl Rubber
L1 + RT	20 min	P	P	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	72 hour	F	F	P	F	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cycle	P	P	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L1 + DCP	20 min	P	P	P	P	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	72 hour	P	F	P	F	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cycle	P	P	P	F	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L2 + DCP	20 min	P	P	P	P	P	P	P	N/A	N/A	N/A	N/A
	72 hour	F	P	P	P	P	F	P	N/A	N/A	N/A	N/A
	Cycle	P	P	P	P	P	F	F	N/A	N/A	N/A	N/A
L2 + T5	20 min	P	P	P	P	P	P	P	N/A	N/A	N/A	N/A
	72 hour	P	P	P	P	P	P	P	N/A	N/A	N/A	N/A
	Cycle	P	P	P	P	P	P	P	N/A	N/A	N/A	N/A
L3 + T5	20 min	P	P	P	P	P	P	P	P	P	F	F
	72 hour	P	P	P	F	P	P	P	F	P	F	P
	Cycle	P	P	P	P	P	P	P	F	P	P	P

P = Pass, F = Fail, N/A = Not Tested

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

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

L1 + RT Adhesive

3.6.1 20 min dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 219 N/m / 20.02 oz/in or foam tear
L1+RT Adhesive	PU Ester Foam	ABS	456	41.68	Clean Peel	Pass
	PU Ether Foam		525	47.98	Clean Peel	Pass
	XLPE Foam		320	29.25	Foam Tear	Pass
	Microcellular Urethane Foam		394	36.01	Clean Peel	Pass

3.6.2 72 hour dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 219 N/m / 20.02 oz/in or foam tear
L1+RT Adhesive	PU Ester Foam	ABS	381	34.82	Clean Peel	Fail
	PU Ether Foam		511	46.70	Clean Peel	Fail
	XLPE Foam		219	20.02	Foam Tear	Pass
	Microcellular Urethane Foam		478	4369	Cohesive	Fail

3.6.3 Cycle Exposure						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 438 N/m / 40.03 oz/in or foam tear
L1+RT Adhesive	PU Ester Foam	ABS	709	64.80	Clean Peel	Pass
	PU Ether Foam		586	53.56	Clean Peel	Pass
	XLPE Foam		259	23.67	Foam Tear	Pass
	Microcellular Urethane Foam		449	41.04	Cohesive	Pass

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

L1 + DCP Adhesive

3.6.1 20 min dwell @ Room Temp						
	Substrate	Substrate	Avg Peel N/m	AVG Peel oz/in	Observation	Requirement 219 N/m / 20.02 oz/in or foam tear
L1+DCP Adhesive	PU Ester Foam	ABS	431	39.39	Clean Peel	Pass
	PU Ether Foam		499	45.61	Clean Peel	Pass
	XLPE Foam		187	17.09	Foam Tear	Pass
	Microcellular Urethane Foam		242	22.12	Clean Peel	Pass

3.6.2 72 hour dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 657 N/m / 60.05 oz/in or foam tear
L1+DCP Adhesive	PU Ester Foam	ABS	780	71.29	Clean Peel	Pass
	PU Ether Foam		632	57.76	Clean Peel	Fail
	XLPE Foam		238	21.75	Foam Tear	Pass
	Microcellular Urethane Foam		530	48.44	Clean Peel	Fail

3.6.3 Cycle Exposure						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 438 N/m / 40.03oz/in or foam tear
L1+DCP Adhesive	PU Ester Foam	ABS	460	42.04	Clean Peel	Pass
	PU Ether Foam		477	43.60	Clean Peel	Pass
	XLPE Foam		226	20.66	Foam Tear	Pass
	Microcellular Urethane Foam		420	38.39	Cohesive	Fail

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

L2 + DCP Adhesive

3.6.1 20 min dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 219 N/m / 20.02 oz/in or foam tear
L2+DCP Adhesive	PU Ester Foam	ABS	666	60.87	Clean Peel	Pass
	PU Ether Foam		602	55.02	Clean Peel	Pass
	XLPE Foam		232	21.20	Foam Tear	Pass
	Microcellular Urethane Foam		362	33.09	Clean Peel	Pass
	EPDM Foam		204	18.64	Foam Tear	Pass
	Nitrile Foam		408	37.29	Clean Peel	Pass
	Neoprene Foam		506	46.25	Clean Peel	Pass

3.6.2 72 hour dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 657 N/m / 60.05 oz/in or foam tear
L2+DCP Adhesive	PU Ester Foam	ABS	584	53.38	Clean Peel	Fail
	PU Ether Foam		660	60.32	Foam Tear	Pass
	XLPE Foam		241	22.03	Foam Tear	Pass
	Microcellular Urethane Foam		596	54.47	Foam Tear	Pass
	EPDM Foam		219	20.02	Foam Tear	Pass
	Nitrile Foam		586	53.56	Cohesive	Fail
	Neoprene Foam		950	86.83	Clean Peel	Pass

3.6.3 Cycle Exposure						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 438 N/m / 40.03 oz/in or foam tear
L2+DCP Adhesive	PU Ester Foam	ABS	771	70.47	Clean Peel	Pass
	PU Ether Foam		645	58.95	Clean Peel	Pass
	XLPE Foam		204	18.64	Foam Tear	Pass
	Microcellular Urethane Foam		667	60.96	Foam Tear	Pass
	EPDM Foam		211	19.28	Foam Tear	Pass
	Nitrile Foam		319	29.16	Clean Peel	Fail
	Neoprene Foam		321	29.34	Cohesive	Fail

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

L2 + T5 Adhesive

3.6.1 20 min dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel oz/in	Observation	Requirement 219 N/m / 20.02 oz/in or foam tear
L2+T5 Adhesive	PU Ester Foam	ABS	982	89.75	Foam Tear	Pass
	PU Ether Foam		588	53.74	Foam Tear	Pass
	XLPE Foam		226	20.66	Foam Tear	Pass
	Microcellular Urethane Foam		446	40.76	Clean Peel	Pass
	EPDM Foam		214	19.56	Clean Peel	Pass
	Nitrile Foam		510	46.61	Clean Peel	Pass
	Neoprene Foam		485	44.33	Clean Peel	Pass

3.6.2 72 hour dwell @ Room Temp						
	Substrate	Substrate	AVG Peel N/m	AVG Peel Oz/in	Observation	Requirement 657 N/m / 60.05 oz/in or foam tear
L2+T5 Adhesive	PU Ester Foam	ABS	937	85.64	Foam Tear	Pass
	PU Ether Foam		628	57.40	Foam Tear	Pass
	XLPE Foam		202	18.46	Foam Tear	Pass
	Microcellular Urethane Foam		666	60.87	Clean Peel	Pass
	EPDM Foam		211	19.28	Foam Tear	Pass
	Nitrile Foam		941	86.01	Clean Peel	Pass
	Neoprene Foam		1170	106.94	Foam Tear	Pass

3.6.3 Cycle Exposure						
	Substrate	Substrate	AVG Peel N/m	AVG Peel Oz/in	Observation	Requirement 438 N/m / 40.03 oz/in or foam tear
L2+T5 Adhesive	PU Ester Foam	ABS	914	83.54	Foam Tear	Pass
	PU Ether Foam		617	56.39	Foam Tear	Pass
	XLPE Foam		198	18.10	Foam Tear	Pass
	Microcellular Urethane Foam		735	67.18	Foam Tear	Pass
	EPDM Foam		205	18.74	Foam Tear	Pass
	Nitrile Foam		573	52.37	Clean Peel	Pass
	Neoprene Foam		469	42.87	Clean Peel	Pass

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

L3 + T5 Adhesive

3.6.1 20 min dwell @ Room Temp						
L3+T5 Adhesive	Substrate	Substrate	AVG Peel N/m	AVG Peel Oz/in	Observation	Requirement 219 N/m / 20.02 oz/in or foam tear
	PU Ester Foam	ABS	698	63.80	Clean Peel	Pass
	PU Ether Foam		552	50.45	Clean Peel	Pass
	XLPE Foam		189	17.27	Foam Tear	Pass
	Microcellular Urethane Foam		454	41.49	Clean Peel	Pass
	EPDM Foam		221	20.20	Foam Tear	Pass
	Nitrile Foam		525	47.98	Clean Peel	Pass
	Neoprene Foam		514	46.98	Clean Peel	Pass
	EPDM Rubber		268	24.49	Clean Peel	Pass
	Neoprene Rubber		1020	93.23	Clean Peel	Pass
	Santoprene™ Rubber		101	9.23	Clean Peel	Fail
	Butyl Rubber		206	18.83	Clean Peel	Fail

3.6.2 72 hour dwell @ Room Temp						
L3+T5 Adhesive	Substrate	Substrate	AVG Peel N/m	AVG Peel Oz/in	Observation	Requirement 657 N/m / 60.05 oz/in or foam tear
	PU Ester Foam	ABS	1030	94.14	Foam Tear	Pass
	PU Ether Foam		593	54.20	Foam Tear	Pass
	XLPE Foam		211	19.28	Foam Tear	Pass
	Microcellular Urethane Foam		605	55.30	Clean Peel	Fail
	EPDM Foam		200	18.28	Foam Tear	Pass
	Nitrile Foam		867	79.24	Clean Peel	Pass
	Neoprene Foam		1250	114.25	Foam Tear	Pass
	EPDM Rubber		276	55.23	Clean Peel	Fail
	Neoprene Rubber		1120	102.37	Clean Peel	Pass
	Santoprene™ Rubber		623	56.94	Clean Peel	Fail
	Butyl Rubber		749	68.46	Clean Peel	Pass

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

L3 + T5 Adhesive (cont.)

3.6.3 Cycle Exposure						
	Substrate	Substrate	AVG Peel N/m	AVG Peel Oz/in	Observation	Requirement 438 N/m / 40.03 oz/in or foam tear
L3+T5 Adhesive	PU Ester Foam	ABS	999	91.31	Foam Tear	Pass
	PU Ether Foam		589	53.83	Foam Tear	Pass
	XLPE Foam		227	20.75	Foam Tear	Pass
	Microcellular Urethane Foam		690	63.07	Foam Tear	Pass
	EPDM Foam		190	17.37	Foam Tear	Pass
	Nitrile Foam		742	67.82	Clean Peel	Pass
	Neoprene Foam		1060	96.88	Foam Tear	Pass
	EPDM Rubber		177	16.18	Clean Peel	Fail
	Neoprene Rubber		967	88.38	Clean Peel	Pass
	Santoprene™ Rubber		553	50.54	Clean Peel	Pass
	Butyl Rubber		453	41.40	Clean Peel	Pass

Ford ESB-M3G76-B2: Tape, Polyester – Two Sided Pressure Sensitive, Automotive Spec Testing

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE.

If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability

Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



This Industrial Adhesives and Tapes Division product was manufactured under a 3M quality system registered to ISO 9001: 2000 standards.



Industrial Adhesives and Tapes Division
Converter Markets
3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
800-362-7427 • 651-778-4244 (Fax)
www.3M.com/converter

3M is a trademark of 3M Company.
Santoprene is a trademark owned
by Exxon Mobil Corporation.
© 3M 2016
E70-0713-4628-5 (08/16)