

ASTM D-7038 (L-33-1) MOISTURE CORROSION TEST
SURVEILANCE PANEL MEETING

For LRI #164

February 8, 2012

PRI Headquarters

Warrendale, Pennsylvania

AGENDA

- I. Call to Order
- II. Approval of minutes Feb 10, 2010
- III. Business
 - a. Review of Committee Membership
 - b. Review of workshop data Scott Parke
 - c. Form changes for L-33 start stop times Scott
 - d. Next generation L-33 Hardware
- IV. New Business?
- V. Summary of Action Items
- VI. Summary of Motions and Votes
- VII. Adjourn Motion

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Meeting Minutes

I. Call to Order

II. Business

a. Review of Committee Membership

See attached Member list red indicating members removed and green members added

b. Review of workshop data Scott Parke

Discussed the necessity of review and comments were made about new raters impacting results as well as how consistent the regular high volume raters are performing. No further discussion was necessary.

c. Form changes for L-33 start stop times Scott

The committee discussed the form change as attached L331_sdp2.pdf. The group reviewed the inclusion of the actual time and discussed its merit but was still not convinced this is enough information for all. The group then discussed adding the date as well as the times so all start and stop date and times will be best. Jeff Clark (TMC) offered the ability to revise the form and added timing of the form change will be based on the TMC completing the form change and beta testing at the labs to complete the process. No implementation date will be necessary based on Jeff's input and TMC process.

Motion: Add date to the report form for start stop time of each phase of operation to the test report forms.

Motion: Tom Bryson

2nd: Brian Koehler

Vote: Unanimous

d. Next generation L-33 Hardware

The hardware that was purchased in 2001 is finally getting in short supply in some labs. The industry is redistributing but it is time to review the current parts and determine if the Dana model 30 will still be available or if an alternative axle is required. The committee discussed the current axle as well as the possibility of changing to the Dana model 44 would be a workable replacement or if an alternative manufactured would work in the test. We also discussed the possibility of changing to a glassware test. The glassware test is not currently feasible based on OEM input as the multiple

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metals, surface textures and galvanic reactions that incorporate real world performance. The chair agrees to request quotes and availability of the Dana model 30 and 44 as well as inquiring if other manufacturers have similar products that will offer equal performance in the rust test.

III. New Business? None

IV. Summary of Action Items

The chair will inquire about next hardware batch for the L-33-1

V. Summary of Motions and Votes

Add date to the report form for start stop time of each phase of operation to the test report forms.

VI. Adjourn Motion

Motion: Tom Bryson

2nd: Thomas Gottwald

Vote: Unanimous

ASTM D 7038 L-33-1 SURVEILLANCE PANEL PARTICIPANTS LIST

February 8, 2012

Initials	Name	Voting V/NV	Company Name Company Address	Phone / Fax / E-Mail
Attending	Athey, Alison	NV	Mack Volvo 13302 Pensylvania Ave. Hagerstown, MD 21740	Phone: 301-573-5684 Fax: E-mail:allison.athey@volvo.com
Attending	Bell, Don	NV	Afton Chemical Corp 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-6332 Fax: 804-788-6243 E-mail:don.bell@aftonchemical.com
Attending	Bryson, Tom	V	Mack Trucks 13302 Pennsylvania Avenue Hagerstown, Maryland 21740	Phone: 301-790-5454 Fax: 301-790-6744 E-mail: tomas.bryson@volvo.com
Attending	Boschert, Tom	NV	Afton Chemical Corp 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-5202 Fax: E-mail:ton.boshert@aftonchemical.com
Attending	Clark, Jeff	NV	TMC 6555 Penn Avenue Pittsburgh, PA 15206	Phone: 412-365-1032 Fax: E-mail: jac@astmtmc.cmu.edu
	Comfort, Allen	V	US Army TACOM Mail Stop 110 6501 E. 11 Mile Road Wren, MI 48397-5000 AMSTA-TR-D / 210	Phone: 586-282-4225 Fax: 586-282-4244 E-mail: allen.s.comfort@us.army.mil
Attending	Dwornick, Bridget (Brosnan)		US Army TACOM Mail Stop 110 6501 E. 11 Mile Road Warren, MI 48397-5000	Phone: 586-282-4221 Fax: 586-574-4244 E-mail:bridget.dwornick@tacom.army.mil

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February 8, 2012

RDTA-DP/210				
Initials	Name	Voting V/NV	Company Name Company Address	Phone / Fax / E-Mail
	Dharte, John	NV	AAM 2965 Technology Drive Rochester Hill, Michigan 48309	Phone: 248-299-6478 Fax: 248-299-6581 E-mail: Dhartej@aam.com
	Eliot, Steve	NV	ExxonMobil Lubricant & Specialties	Phone: 703-669-9916 Fax: 703-669-9917 E-mail: stephen.w.eliot@exxonmobil.com
Attending	Gottwald, Thomas	V	Afton Chemical Corp 500 Spring Street Richmond, Virginia 23219	Phone: 804-788-5230 Fax: E-mail:thomas.gottwald@aftonchemical.com
Attending	Greene, Galen	NV	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2394 Fax: E-mail:galen.greene@lubrizol.com
Attending	Gropp, Jerry	NV	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-1223 Fax: 440-347-1555 E-mail: jlg@lubrizol.com
Attending	Hamilton, Larry	V	The Lubrizol Corporation 29400 Lakeland Boulevard Wickliffe, Ohio 44092	Phone: 440-347-2326 Fax: E-mail: larry.hanilton@lubrizol.com
Attending	Higuchi, Sam	NV	Afton Chemical Corp 500 Spring Street	Phone: 804-788-5375 Fax: 804-788-

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February 8, 2012

			Richmond, Virginia 23218	E-mail:samuel.higuchi@aftonchemical.com
Initials	Name	Voting V/NV	Company Name Company Address	Phone / Fax / E-Mail
Attending	Kanga, Percy	NV	ExxonMobil Research Engineering Co. 600 Billingsport Road Paulsboro, NJ 08066	Phone: 856-224-2094 Fax: 856-224-3613 E-mail: percy.r.kanga@exxonmobil.com
Attending	Kearney, Bill	NV	Afton Chemical Corp	Phone:248-302-8531 Fax: E-mail:
Attending	Koehler, Brian	V	Southwest Research Institute P.O. Drawer 28510 San Antonio, Texas 78228	Phone: 210-522-3588 Fax: 210-684-7523 E-mail: bkoehler@swri.edu
	Marougy, Thelma	V	Eaton Corporation 26201 Northwestern Highway Southfield, MI 48037	Phone: 248-354-6985 Fax: 248-354-2739 E-mail: Thelmaemarougy@eaton.com
	McGlone, Bruce	V	Arvin Meritor 2135 West Maple Troy, Michigan 48084	Phone: 248-435-9929 Fax: 248-435-1411 E-mail: Bruce.Mcglone@ArvinMeritor.com
Attending	Parke, Scott	V	TMC 6555 Penn Avenue Pittsburgh, PA 15206	Phone: 412-365-1036 Fax: E-mail: sdp@astmtmc.cmu.edu
			Intertek Automotive Research	Mobil: 412-855-6854 Phone: 210-706-1570

ASTM D 7038 L-33-1 SURVEILLANCE PANEL PARTICIPANTS LIST
February 8, 2012

Attending	Smith, Dale (Chairman)	V	5404 Bandera Road San Antonio, TX 78238	Fax: 210-684-6074 E-mail: dale.smith@intertek.com
Initials	Name	Voting V/NV	Company Name Company Address	Phone / Fax / E-Mail
	Ved, Chintan	V	Ford Transmission and Driveline 35500 Plymoth Rd L , MI, 48150	Phone: 313-805-9495 Fax: 734-523-3960 E-mail: cved@ford.com
	Zakarian, Jack	V	Chevron	Phone: Fax: E-mail: jaza@chevron.com
Attending	Zreik, Khaled	V	General Motors	Phone: 248-977-9214 Fax: E-mail: khaled.zreik@gm.com
				Phone: Fax: E-mail:
				Phone: Fax: E-mail:
				Phone: Fax: E-mail:

ASTM D 7038 L-33-1 SURVEILLANCE PANEL PARTICIPANTS LIST
February 8, 2012

				E-mail:
				Phone: Fax: E-mail:

Accepted Version

Test Method D7038

L-33-1

Form 2

Last Reference Information & Operational Validity Summary

Lab: <i>LAB</i>	Motoring Stand : <i>MSTAND</i>
Storage Box : <i>SBOXNUM</i>	Storage Box Run : <i>SBOXRUN</i>
Oil Code : <i>OILCODE</i>	

Last Reference Oil Calibrating Stand Information - Fill Out For Non-reference Oil Tests Only

Motoring Stand: <i>LRMSTAND</i>	Storage Box : <i>LRSBOXNUM</i>	Storage Box Run: <i>LRSBOXRUN</i>
Date Completed: <i>LRDTCOMP</i>	TMC Oil Code: <i>LRIND</i>	
Gear Version: <i>LRGEARVER</i>	Pinion Batch: <i>LRPINBAT</i>	Ring Batch: <i>LRRNGBAT</i>

Operator's Initials: *OINIT*

Turning Torques

Pinion, lbf-in.	Break: <i>TTPINBRK</i>	Turn: <i>TTPINTRN</i>
Full Assembly, lbf-in.	Break : <i>TTASSBRK</i>	Turn: <i>TTASSTRN</i>

Warm-Up

Date/Time	Start: <i>WUDATEST</i> <i>WUTIMEST</i>	Finish: <i>WUDATEFN</i> <i>WUTIMEFN</i>
Oil Temperature °F	Start : <i>WUTEMPST</i>	Finish: <i>WUTEMPFN</i>

Motoring Phase

Date/Time	Start: <i>MPDATEST</i> <i>MPTIMEST</i>	Finish: <i>MPDATEFN</i> <i>MPTIMEFN</i>	
Pinion Speed, r/min	Average: <i>MPPSAVG</i>	Maximum: <i>MPPSMAX</i>	Minimum: <i>MPPSMIN</i>
Oil Temperature, °F	Average: <i>MPOTEMPA</i>	Maximum: <i>MPOTEMPX</i>	Minimum: <i>MPOTEMPI</i>

Storage Phase

Date/Time	Start: <i>SPDATEST</i> <i>SPTIMEST</i>	Finish: <i>SPDATEFN</i> <i>SPTIMEFN</i>	
Oil Temperature, °F	Average: <i>SPOTEMPA</i>	Maximum: <i>SPOTEMPX</i>	Minimum: <i>SPOTEMPI</i>

Percent Deviation

Controlled Parameter	Motoring Phase			Storage Phase		
	Allowable % Out	This Test % Out	Actual Time Out min:s	Allowable % Out	This Test % Out	Actual Time Out min:s
Oil Temperature	5	TEMPBPOT	ATOBTEMP	4	TEMPOUT	ATOTEMP

Rejected

Test Method D7038

L-33-1

Form 2

Last Reference Information & Operational Validity Summary

Lab: <i>LAB</i>	Motoring Stand : <i>MSTAND</i>
Storage Box : <i>SBOXNUM</i>	Storage Box Run : <i>SBOXRUN</i>
Oil Code : <i>OILCODE</i>	

Last Reference Oil Calibrating Stand Information - Fill Out For Non-reference Oil Tests Only

Motoring Stand: <i>LRMSTAND</i>	Storage Box : <i>LRSBOXNUM</i>	Storage Box Run: <i>LRSBOXRUN</i>
Date Completed: <i>LRDTCOMP</i>	TMC Oil Code: <i>LRIND</i>	
Gear Version: <i>LRGEARVER</i>	Pinion Batch: <i>LRPINBAT</i>	Ring Batch: <i>LRRNGBAT</i>

Operator's Initials: *OINIT*

Turning Torques

Pinion, lbf-in.	Break: <i>TTPINBRK</i>	Turn: <i>TTPINTRN</i>
Full Assembly, lbf-in.	Break : <i>TTASSBRK</i>	Turn: <i>TTASSTRN</i>

Warm-Up

Elapsed Time	<i>WUELAPSE</i>	
Oil Temperature °F	Start : <i>WUTEMPST</i>	Finish: <i>WUTEMPFN</i>

Motoring Phase

Elapsed Time	<i>MPELAPSE</i>		
Pinion Speed, r/min	Average: <i>MPPSAVG</i>	Maximum: <i>MPPSMAX</i>	Minimum: <i>MPPSMIN</i>
Oil Temperature, °F	Average: <i>MPOTEMPA</i>	Maximum: <i>MPOTEMPX</i>	Minimum: <i>MPOTEMPI</i>

Storage Phase

Elapsed Time	<i>SPELAPSE</i>		
Oil Temperature, °F	Average: <i>SPOTEMPA</i>	Maximum: <i>SPOTEMPX</i>	Minimum: <i>SPOTEMPI</i>

Percent Deviation

Controlled Parameter	Motoring Phase			Storage Phase		
	Allowable % Out	This Test % Out	Actual Time Out min:s	Allowable % Out	This Test % Out	Actual Time Out min:s
Oil Temperature	5	TEMPBPOT	ATOBTEMP	4	TEMPOUT	ATOTEMP

ASTM Gear Calibration Workshop
Intertek AR, San Antonio, January 17-19, 2012

L-33 GEARS

		7	10	16	22	27	34	36	37	38	MAX	MIN	AVG	Std Dev	CMIR	Results	Oil
1C	1		10		10		9	10	9	9	10	9	9.50	0.55	82075	9	155
1C	2		8		8		8	8	8	8	8	8	8.00	0.00		8	
1C	3		8		8		8	8	8	9	9	8	8.17	0.41		8	
1C	4		9		9		8	10	9	9	10	8	9.00	0.63		10	
1C	5		10		10		9	10	9	10	10	9	9.67	0.52		10	
1C	6		10		10		10	10	9	9	10	9	9.67	0.52		10	
1C	7		10		10		10	10	9	10	10	9	9.83	0.41		10	
1C	8		10		10		9	10	9	9	10	9	9.50	0.55		10	
1C	9		10		10		9	10	9	10	10	9	9.67	0.52		10	
1C	10		10		10		9	10	9	9	10	9	9.50	0.55		9	
	Total Rust		9.26		9.26		8.67	9.43	8.71	9.01	9.43	8.67	9.06	0.31		9.25	9.58 0.25
2C	1		10		10		8	10	8	9	10	8	9.17	0.98	75800	9	123-2
2C	2		9		8		9	10	8	9	10	8	8.83	0.75		9	
2C	3		8		8		8	9	8	8	9	8	8.17	0.41		8	
2C	4		9		9		10	9	9	9	10	9	9.17	0.41		9	
2C	5		9		9		10	10	9	9	10	9	9.33	0.52		9	
2C	6		10		10		10	10	9	10	10	9	9.83	0.41		10	
2C	7		8		8		10	9	8	9	10	8	8.67	0.82		8	
2C	8		8		8		9	9	8	9	9	8	8.50	0.55		8	
2C	9		8		8		10	9	8	10	10	8	8.83	0.98		8	
2C	10		8		8		8	9	8	9	9	8	8.33	0.52		8	
	Total Rust		8.77		8.58		9.17	9.44	8.33	9.06	9.44	8.33	8.89	0.41		8.69	8.74 0.26

ASTM Gear Calibration Workshop
Intertek AR, San Antonio, January 17-19, 2012

L-33 GEARS

		7	10	16	22	27	34	36	37	38	MAX	MIN	AVG	Std Dev	CMIR	Results	Oil
3	1		9		10		9	9	8	9	10	8	9.00	0.63	82191	9	155
3	2		10		10		9	9	8	9	10	8	9.17	0.75		9	
3	3		10		10		10	9	8	8	10	8	9.17	0.98		8	
3	4		8		8		9	8	8	9	9	8	8.33	0.52		9	
3	5		10		10		10	10	9	9	10	9	9.67	0.52		9	
3	6		10		10		9	9	8	9	10	8	9.17	0.75		9	
3	7		10		10		10	8	9	9	10	8	9.33	0.82		9	
3	8		9		10		9	8	9	9	10	8	9.00	0.63		9	
3	9		10		10		9	10	8	9	10	8	9.33	0.82		9	
3	10		10		10		8	10	8	9	10	8	9.17	0.98		9	
	Total Rust		9.49		9.66		9.13	8.94	8.21	8.91	9.66	8.21	9.06	0.51		8.91	9.58 0.25
4	1		9		9		9	9	8	9	9	8	8.83	0.41	74950	9	123-2
4	2		8		8		8	8	5	8	8	5	7.50	1.22		8	
4	3		8		8		8	8	8	8	8	8	8.00	0.00		8	
4	4		8		8		10	8	8	9	10	8	8.50	0.84		8	
4	5		10		10		10	9	9	10	10	9	9.67	0.52		9	
4	6		9		9		9	9	8	9	9	8	8.83	0.41		9	
4	7		9		10		9	8	8	9	10	8	8.83	0.75		9	
4	8		8		8		8	8	8	8	8	8	8.00	0.00		8	
4	9		8		8		10	8	8	9	10	8	8.50	0.84		8	
4	10		8		8		8	8	8	9	9	8	8.17	0.41		8	
	Total Rust		8.38		8.43		8.86	8.25	7.50	8.71	8.86	7.50	8.35	0.47		8.30	8.74 0.26
5	1		8		8		8	8	8	8	8	8	8.00	0.00	82072	8	123-2
5	2		8		8		8	8	8	8	8	8	8.00	0.00		8	
5	3		9		9		9	9	8	8	9	8	8.67	0.52		8	
5	4		8		8		9	8	8	9	9	8	8.33	0.52		9	
5	5		10		10		10	9	10	9	10	9	9.67	0.52		10	
5	6		8		10		8	8	8	8	10	8	8.33	0.82		9	
5	7		10		10		9	9	9	9	10	9	9.33	0.52		9	
5	8		10		10		8	9	8	9	10	8	9.00	0.89		8	
5	9		8		10		10	9	9	9	10	8	9.17	0.75		9	
5	10		8		8		9	8	8	9	9	8	8.33	0.52		9	
	Total Rust		8.52		8.82		8.71	8.38	8.28	8.55	8.82	8.28	8.54	0.20		8.62	8.74 0.26