

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

August 7, 2019  
PRI Headquarters  
Warrendale, PA

## Agenda

I. Call to Order

II. Approval of Minutes

February 13, 2019 Automation Alley

Motion:

Second:

Vote:

III. Business

a. Membership review Voting Members

<b>Name</b>	<b>Company</b>
Banas, Rob	ExxonMobil
Beck, Dylan	TMC
Comfort, Allen	US Army TACOM
Donovan, Eric	Afton Chem
Drlja, Kristijan	Lubrizol
Muransky, Troy	AAM
Goyal, Arjun	BASF
Smith, Dale	Intertek
Stevens, Mary	SWRI
Ved, Chintan	Ford Motors
Zreik, Khaled	General Motors

b. New Hardware Update Test discussion on two axles per lab.

i. Oils to use...

ii. Pinion flange difference

IV. Additional Discussion / Business?

a. Rating review 7 possibility (Dylan)

V. Summary of Action Items

VI. Adjourn

Thank you,  
Dale B. Smith  
ASTM D-7038 Chairman

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August 7, 2019  
PRI Headquarters  
Warrendale, PA

## Minutes

### I. Call to Order

### II. Approval of Minutes

February 13, 2019 Automation Alley

Motion: Troy Muranski

Second: Wes Venhoff

Vote: Unanimous

### III. Business

#### a. Membership review Voting Members

<b>Name</b>	<b>Company</b>
Banas, Rob	ExxonMobil
Beck, Dylan	TMC
Cabaj, Michael	Linamar
Comfort, Allen	US Army CCDC-GVSC
Drlja, Kristijan	Lubrizol
Muransky, Troy	AAM
Goyal, Arjun	BASF
Robinowitz, Danial	Meritor
Sangpeal, Matt	Afton
Smith, Dale	Intertek
Stevens, Mary	SWRI
Ved, Chintan	Ford Motors
Zreik, Khaled	General Motors
Zyski, Amy	Dana

Replace Eric Donavan with Matt Sangpeal Afton Chemical

Add Amy Zysky Dana

Michael Cabaj Linamar

Daniel Rabinowitz Meritor

Motion: Wes Venhoff

Second: Troy Muranski

Vote: Unanimous

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- b. New Hardware Update Test discussion on two axles per lab.
  - i. Each Lab is to sponsor 2 tests each reference oil TMC 155-X Pass and TMC 123-X Fail on the new T1XX hardware.

Motion: Wes Venhoff  
Second: Mary Stevens  
Vote: Unanimous

IV. Pinion flange and vent difference: The chair is to review the axle all differences and coordinate with the labs to confirm that all labs are moving in the same direction.

V. Additional Discussion / Business?

- a. Rating review 7 rating (Dylan) see attached data presentation. After the presentation the chair explained that this is being pursued to possibility to allow more 8 ratings during LRI presentations with the 7 being the failing side of the current 8 ratings.
- b. After the presentation and subsequent discussion, the group agreed that the 7 rating addition is a separate issue a new possibility of only correcting the two areas of severity be used. Troy Muransky suggested that if area 2 and 3 are where the additional 8 ratings are being seen these could have a local rating correction of +1 and eliminate the 0.06 correction.
- c. The committee asked the TMC to review the K2XX data base and report if the local area 2 and 3 correction would be feasible.

VI. Summary of Action Items

- a. Chair to review the T1XX axle and coordinate findings with labs before running T1XX axle tests.
- b. TMC review K2XX data and report if the correction of area 2 and 3 only will take the L-33 back to historical levels of severity.

VII. Adjourn

Motion: Wes Venhoff  
Second: Mary Stevens  
Vote: Unanimous

Thank you,  
Dale B. Smith  
ASTM D-7038 Chairman



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# ***Test Monitoring Center***

<http://astmtmc.cmu.edu>

## **LRI 194 Surveillance Panel Meetings**

August 7, 2019

# L-331 SP Meeting



Rating Investigation from July 2019  
Workshop

*Test Monitoring Center*

<http://astmtmc.cmu.edu>



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# L-331 Rating Investigation – 2018 July Workshop Results

Set #	AREA	10	22	30	36	43		MIN	MAX	AVG	Std Dev	Original Results	Oil
2C	1	10	10	10	10	10	10	10	10	10.00	0.00	10	123-2
2C	2	7	7	7	7	7	7	7	7	7.00	0.00	8	
2C	3	7	7	7	7	7	7	7	7	7.00	0.00	8	
2C	4	8	8	8	8	8	8	8	8	8.00	0.00	8	
2C	5	8	8	8	8	8	8	8	8	8.00	0.00	8	
2C	6	8	8	8	8	8	8	8	8	8.00	0.00	8	
2C	7	8	8	8	8	8	8	8	8	8.00	0.00	8	
2C	8	8	8	8	8	8	8	8	8	8.00	0.00	8	
2C	9	8	8	8	8	8	8	8	8	8.00	0.00	8	
2C	10	8	8	8	8	8	8	8	8	8.00	0.00	8	
	<b>Total Rust</b>	7.9	7.9	7.9	7.9	7.9	7.9	7.89	7.89	7.89	0.00	8.2	
3	1	10	10	10	10	10	9	10	10	10.00	0.00	10	123-2
3	2	7	7	7	7	7	7	7	7	7.00	0.00	8	
3	3	7	7	7	7	7	7	7	7	7.00	0.00	8	
3	4	9	8	8	9	8	9	8	9	8.40	0.55	8	
3	5	9	9	9	9	9	9	9	9	9.00	0.00	8	
3	6	8	8	8	8	8	8	8	8	8.00	0.00	8	
3	7	10	9	10	10	10	10	9	10	9.80	0.45	10	
3	8	10	10	10	10	10	10	10	10	10.00	0.00	10	
3	9	8	8	8	8	8	8	8	8	8.00	0.00	8	
3	10	9	9	9	8	8	9	8	9	8.60	0.55	9	
	<b>Total Rust</b>	8.5	8.3	8.3	8.4	8.2	8.4	8.23	8.50	8.35	0.10	8.5	

7 rating only used for areas 2 and 3

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# L-331 Rating Investigation – 2019 January Workshop

Set #	AREA	10	22	30	36	37	38	42			MIN	MAX	AVG	Std Dev	Original Results	Oil
1C	1	8	8	8	8	8	8	8			8	8	8.00	0.00	8	123-2
1C	2	7	7	7	7	7	7	5			5	7	6.71	0.76	8	
1C	3	7	7	7	7	8	7	7			7	8	7.14	0.38	8	
1C	4	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
1C	5	8	9	9	8	8	8	9			8	9	8.43	0.53	8	
1C	6	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
1C	7	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
1C	8	8	10	9	10	8	8	8			8	10	8.71	0.95	8	
1C	9	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
1C	10	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
	<b>Total Rust</b>	7.7	8.0	7.9	7.9	7.8	7.7	7.4			7.41	7.96	7.76	0.18	8.0	
2C	1	9	10	9	9	9	9	9			9	10	9.14	0.38	10	123-2
2C	2	7	7	7	7	8	7	8			7	8	7.29	0.49	9	
2C	3	7	7	7	7	7	7	7			7	7	7.00	0.00	8	
2C	4	8	8	7	8	8	8	8			7	8	7.86	0.38	8	
2C	5	8	8	9	9	8	8	8			8	9	8.29	0.49	8	
2C	6	8	8	10	9	8	8	8			8	10	8.43	0.79	8	
2C	7	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
2C	8	9	8	9	8	9	9	9			8	9	8.71	0.49	10	
2C	9	8	8	8	8	8	8	8			8	8	8.00	0.00	10	
2C	10	9	8	9	9	9	9	9			8	9	8.86	0.38	8	
	<b>Total Rust</b>	8.0	7.9	8.0	8.1	8.2	8.0	8.2			7.89	8.17	8.04	0.10	8.7	

7 rating used mostly for areas 2 and 3, but also used for area 4

# L-331 Rating Investigation – 2019 January Workshop

Set #	AREA	10	22	30	36	37	38	42			MIN	MAX	AVG	Std Dev	Original Results	Oil
4	1	8	8	8	8	8	8	7			7	8	7.86	0.38		
4	2	8	8	8	8	8	8	7			7	8	7.86	0.38		
4	3	9	9	9	9	9	9	9			9	9	9.00	0.00		
4	4	8	8	7	8	8	8	7			7	8	7.71	0.49		
4	5	9	8	8	9	9	9	9			8	9	8.71	0.49		
4	6	9	9	9	9	9	9	9			9	9	9.00	0.00		
4	7	9	9	9	8	9	9	9			8	9	8.86	0.38		
4	8	10	10	9	9	10	10	10			9	10	9.71	0.49		
4	9	10	10	9	8	9	9	10			8	10	9.29	0.76		
4	10	10	10	10	10	10	10	10			10	10	10.00	0.00		
	Total Rust	8.80	8.7	8.4	8.5	8.7	8.7	8.4			8.35	8.80	8.61	0.18		
5	1	9	9	9	9	9	9	9			9	9	9.00	0.00	8	123-2
5	2	8	8	8	8	7	8	8			7	8	7.86	0.38	8	
5	3	7	8	8	7	7	8	8			7	8	7.57	0.53	8	
5	4	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
5	5	8	8	8	9	9	8	9			8	9	8.43	0.53	8	
5	6	8	8	8	8	8	8	8			8	8	8.00	0.00	8	
5	7	9	10	9	9	10	9	10			9	10	9.43	0.53	9	
5	8	9	10	8	8	10	9	9			8	10	9.00	0.82	8	
5	9	9	8	8	8	8	9	8			8	9	8.29	0.49	8	
5	10	9	8	8	9	9	9	8			8	9	8.57	0.53	8	
	Total Rust	8.29	8.4	8.1	8.2	8.2	8.4	8.4			8.14	8.39	8.28	0.09	8.1	

7 rating used mostly for areas 2 and 3, but also used for area 4

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# L-331 Rating Investigation – 2019 July Workshop

Set #	AREA	10	43	44	MIN	MAX	AVG	Std Dev	Results	Oil
1C	1	9	8	10	8	10	9.00	1.00	9	123-2
1C	2	7	7	7	7	7	7.00	0.00	8	
1C	3	8	7	7	7	8	7.33	0.58	8	
1C	4	8	8	8	8	8	8.00	0.00	8	
1C	5	8	8	8	8	8	8.00	0.00	8	
1C	6	8	8	8	8	8	8.00	0.00	8	
1C	7	8	9	8	8	9	8.33	0.58	8	
1C	8	9	9	9	9	9	9.00	0.00	9	
1C	9	8	8	8	8	8	8.00	0.00	8	
1C	10	8	8	9	8	9	8.33	0.58	8	
	<b>Total Rust</b>	8.0	7.8	8.1	7.85	8.06	7.96	0.11	8.2	
2C	1	10	10	10	10	10	10.00	0.00	10	155-1
2C	2	7	7	7	7	7	7.00	0.00	8	
2C	3	7	7	7	7	7	7.00	0.00	8	
2C	4	10	10	10	10	10	10.00	0.00	8	
2C	5	10	10	10	10	10	10.00	0.00	10	
2C	6	10	10	10	10	10	10.00	0.00	10	
2C	7	10	10	10	10	10	10.00	0.00	10	
2C	8	10	10	10	10	10	10.00	0.00	10	
2C	9	10	10	10	10	10	10.00	0.00	10	
2C	10	10	10	10	10	10	10.00	0.00	10	
	<b>Total Rust</b>	9.1	9.1	9.1	9.14	9.14	9.14	0.00	9.1	

7 rating only used for areas 2 and 3

# L-331 Rating Investigation – 2019 July Workshop

Set #	AREA	10	43	44	MIN	MAX	AVG	Std Dev	Results	Oil
3	1	9	10	9	9	10	9.50	0.58	10	123-2
3	2	8	8	7	7	9	8.00	0.82	9	
3	3	7	7	7	7	7	7.00	0.00	8	
3	4	10	8	8	8	10	8.75	0.96	8	
3	5	10	9	8	8	10	9.00	0.82	8	
3	6	9	8	8	8	9	8.50	0.58	8	
3	7	8	9	8	8	10	8.75	0.96	10	
3	8	9	9	9	9	10	9.25	0.50	10	
3	9	8	8	8	7	8	7.75	0.50	8	
3	10	9	9	9	9	10	9.25	0.50	9	
	<b>Total Rust</b>	8.7	8.4	8.0	7.98	8.99	8.52	0.44	8.7	
4	1	9	9	9	9	9	9.00	0.00	8	123-2
4	2	8	8	8	8	8	8.00	0.00	8	
4	3	8	7	8	7	8	7.67	0.58	8	
4	4	10	8	8	8	10	8.67	1.15	8	
4	5	9	8	9	8	9	8.67	0.58	8	
4	6	8	8	8	8	8	8.00	0.00	8	
4	7	10	10	9	9	10	9.67	0.58	9	
4	8	9	10	8	8	10	9.00	1.00	8	
4	9	8	8	8	8	8	8.00	0.00	8	
4	10	9	9	9	9	9	9.00	0.00	8	
	<b>Total Rust</b>	8.78	8.4	8.3	8.31	8.78	8.48	0.26	8.1	

7 rating only used for areas 2 and 3

# L-331 Rating Investigation – Comparing Hardware

Oil	Hardware	N Size	Rating Area 2				Rating Area 3				Rating Area 4			
			# of 5's	# of 8's	# of 9's	# of 10's	# of 5's	# of 8's	# of 9's	# of 10's	# of 5's	# of 8's	# of 9's	# of 10's
123-2	Dana V1L637	89	4	71	12	2	4	56	22	7	0	36	33	20
			4%	80%	13%	2%	4%	63%	25%	8%	0%	40%	37%	22%
	AAM K2XX	20	2	16	2	0	1	17	2	0	0	20	0	0
			10%	80%	10%	0%	5%	85%	10%	0%	0%	100%	0%	0%
155-1	Dana V1L637	29	0	14	7	8	0	13	10	6	0	6	14	9
			0%	48%	24%	28%	0%	45%	34%	21%	0%	21%	48%	31%
	AAM K2XX	25	0	16	6	3	0	16	5	4	0	21	4	0
			0%	64%	24%	12%	0%	64%	20%	16%	0%	84%	16%	0%

More likely to rate an 8 on the AAM hardware than the Dana hardware on all three rating areas

Does using a correction factor in these areas make sense?

ASTM D 7038 L-33-1 SURVEILLANCE PANEL PARTICIPANTS LIST  
August 7, 2019

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ASTM D 7038 L-33-1 SURVEILLANCE PANEL PARTICIPANTS LIST  
August 7, 2019

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