

April 20, 2016

## ▪ TEST REPORT ▪

**PN 128187**

**PO IMP0000006/2015-16**

**ARDL Engineering**

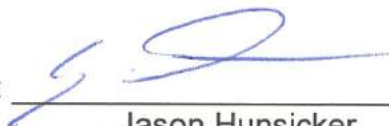
*Brabolyzer Testing*

Prepared For:

Yogesh Zod

Shore Rubber Auto Exports Pvt. Ltd.  
Gauri Warehouse Gate No. 148  
At Post Kurili, Tal Khed  
Dist Pune Pin. 410 501 IND

Prepared By:



Jason Hunsicker

*Staff Technician/ARDL Engineering*

Approved By:



John Meser

*Manager/ARDL Engineering*



A Testing Lab

\*Certificate Numbers 255.01 & 255.02

An A2LA ISO 17025 Accredited Testing Laboratory — Certificate Numbers 255.01 & 255.02  
ISO 9001:2008 Registered

**ISO 9001:2008**

Registered

Letters and reports are for the exclusive use of the clients to whom they are addressed and shall not be reproduced, except in full, without the written permission of Akron Rubber Development Laboratory, Inc. (ARDL). The information contained herein applies to the specific material, products or processes tested or evaluated. No warranty of any kind is herein construed or implied. The liability of ARDL, Inc. shall be limited to the amount of consideration paid for services. ARDL, Inc. is ISO 17025 accredited by A2LA for the test methods listed on the attached scope.

[www.ardl.com](http://www.ardl.com)

2887 Gilchrist Rd. | Akron, Ohio 44305 | [answers@ardl.com](mailto:answers@ardl.com)  
Toll Free (800) 830-ARDL | Worldwide (330) 794-6600 | Fax (330) 794-6610

April 20, 2016

Yogesh Zod  
Shore Auto Rubber Exports Pvt. Ltd.

Page 2 of 8  
PN 128187

**SUBJECT:** Electrochemical resistance testing on three hose types.

**RECEIVED:** 6-1.25" I.D. Hose samples identified as #78165A 1-3, #79165A 1-3.

**ELECTROCHEMICAL RESISTANCE TEST**

**Test Method:** SAE J1684 Method 1.

**Sample Preparation:** Attach one end-plug flush to one end of test hose with appropriate clamp. Attach glass insert between the two test hoses with appropriate clamps. Fill hose assembly 80% by volume with a solution of 50:50 distilled water/coolant. Attach second end-plug to test specimen with appropriate clamp. Mark specimen with pertinent identification and positive or negative polarity.

**Test Procedure:** Place hose assemblies in air-circulating oven which has been configured to electrically isolate the assemblies. Attach leads to assemblies at the end-plugs. Apply 12 VDC, and measure voltage from plug to plug and at source. Heat oven to 100°C. Visually check fluid level through glass insulator each day, replenishing fluid, if level drops below 50%. After 168 hours, detach leads and remove assemblies from oven and allow cooling to room temperature. Remove end-plugs and drain fluid from hose. Rinse the hose interior thoroughly. Cut the negative end of the hose approximately 1.75 inches from hose end. Examine the cross section of the cut end under magnification of 10X to 20X. Make note of striations.

**Results:**

<u>Specimen #</u>	<u>Pass/Fail</u>
78165A-1	Pass – No striations observed
78165A-2	Pass – No striations observed
78165A-3	Pass – No striations observed
79165A-1	Pass – No striations observed
79165A-2	Pass – No striations observed
79165A-3	Pass – No striations observed

**PHOTOMICROGRAPHS BY LIGHT OPTICAL MICROSCOPE (LOM); ARDL PROCEDURE**

**Sample Preparation**

The hose samples were cut with a knife after Brabolyzer testing.

**Analysis**

Photomicrographs were taken of the samples with an Olympus Zoom stereomicroscope model SZ 60, interfaced with a PaxCam ARC digital camera and a Hewlett Packard 300-400 printer at a magnification of 20X. See Figures A - F for photomicrographs of representative area of the hose section.

**Discussion**

None of the samples had any observable striations and did not appear to retain any fluid.

*\*ARDL is accredited by A2LA for the test methods listed on the attached scope\**

**www.ardl.com**

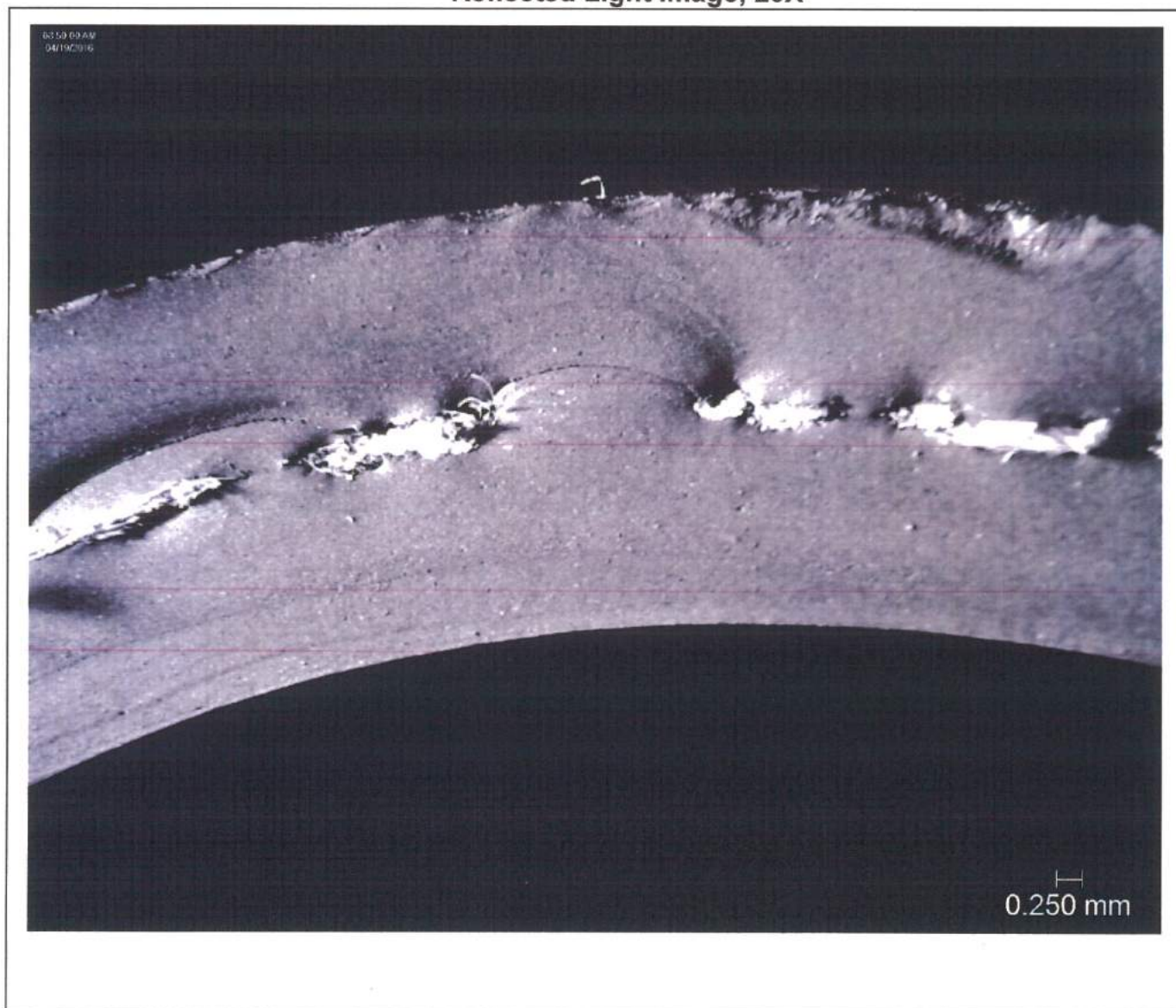
2887 Gilchrist Rd. | Akron, Ohio 44305 | [answers@ardl.com](mailto:answers@ardl.com)  
Toll Free (800) 830-ARDL | Worldwide (330) 794-6600 | Fax (330) 794-6610

April 20, 2016

Yogesh Zod  
Shore Auto Rubber Exports Pvt. Ltd.

Page 3 of 8  
PN 128187

**Figure A – Shore Rubber P/N 128187 Hose –78165A-1 After Brabolyzer Testing  
Reflected Light Image, 20X**



*\*ARDL is accredited by A2LA for the test methods listed on the attached scope\**



April 20, 2016

Yogesh Zod  
Shore Auto Rubber Exports Pvt. Ltd.

Page 4 of 8  
PN 128187

**Figure B – Shore Rubber P/N 128187 Hose –78165A-2 After Brabolyzer Testing  
Reflected Light Image, 20X**



*\*ARDL is accredited by A2LA for the test methods listed on the attached scope\**

April 20, 2016

Yogesh Zod  
Shore Auto Rubber Exports Pvt. Ltd.

Page 5 of 8  
PN 128187

**Figure C – Shore Rubber P/N 128187 Hose –78165A-3 After Brabolyzer Testing  
Reflected Light Image, 20X**



*\*ARDL is accredited by A2LA for the test methods listed on the attached scope\**



April 20, 2016

Yogesh Zod  
Shore Auto Rubber Exports Pvt. Ltd.

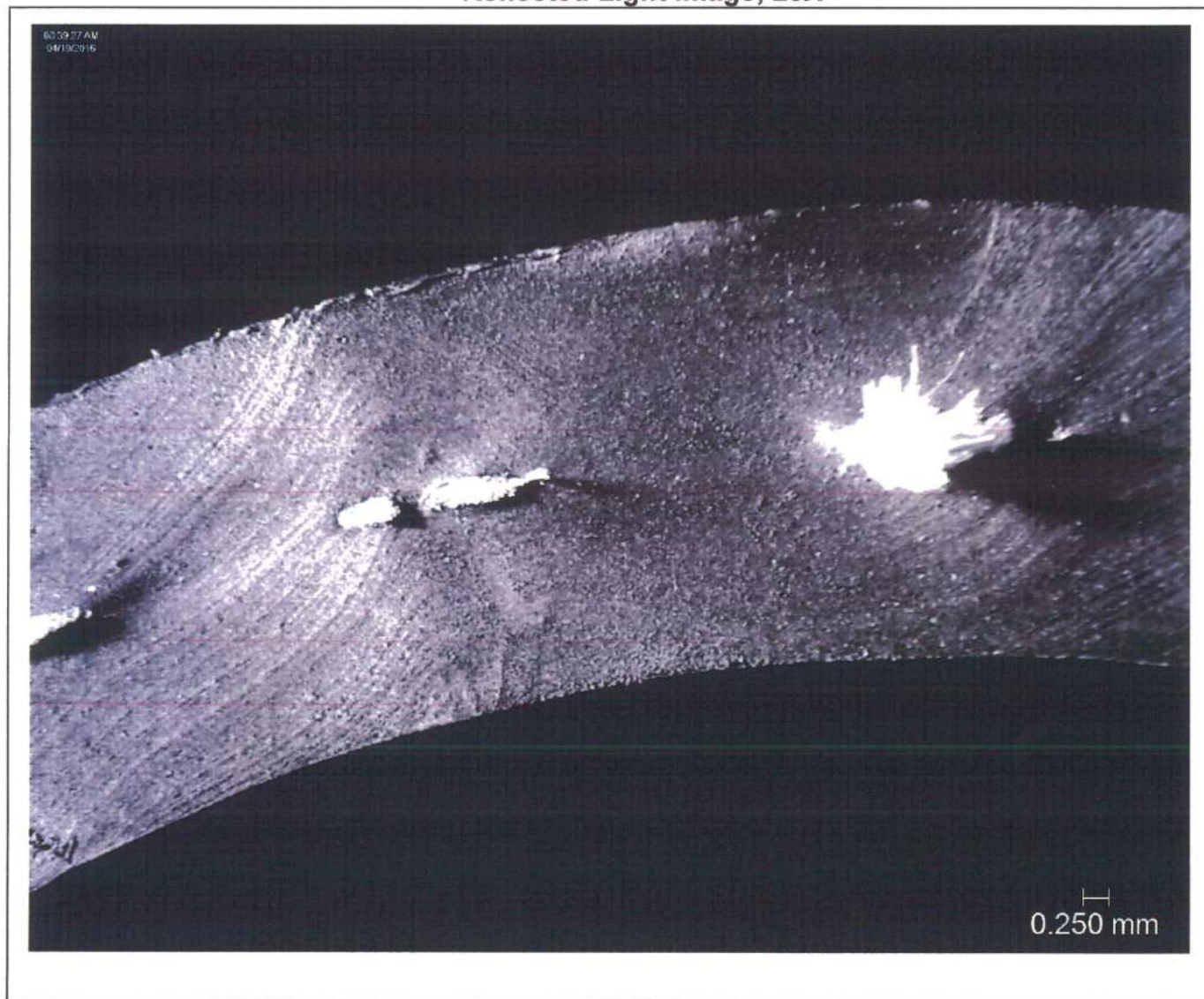
Page 6 of 8  
PN 128187

**Figure D – Shore Rubber P/N 128187 Hose –79165A-1 After Brabolyzer Testing  
Reflected Light Image, 20X**



*\*ARDL is accredited by A2LA for the test methods listed on the attached scope\**

**Figure E – Shore Rubber P/N 128187 Hose –79165A-2 After Brabolyzer Testing  
Reflected Light Image, 20X**





**Figure F – Shore Rubber P/N 128187 Hose –79165A-3 After Brabolyzer Testing  
Reflected Light Image, 20X**



Prepared By: \_\_\_\_\_

*Jason Hunsicker*  
Staff Technician/ARDL Engineering

Approved By: \_\_\_\_\_

*John V. Meser*  
John Meser  
Manager/ARDL Engineering