

**"Progress Through Innovation, Technology
and Customer Satisfaction"**



August 26, 2002

AKRON RUBBER DEVELOPMENT LABORATORY, INC.
2887 Gilchrist Road • Akron, Ohio 44305
1-800-830-ARDL • (330) 794-6600 • FAX (330) 794-6610
Website: www.ardl.com • E-mail: info@ardl.com

TREMCO PART # 569
70 DURO EPDM

- TEST REPORT -

PN# 49424B

Prepared for:

Mr. John Wegman
Tremco, Inc.
1451 Jacobson Avenue
Ashland, Ohio 44805

Prepared by:

Judy Kiefl

Approved by:

Jim Drummond



AN A2LA ACCREDITED LABORATORY
MEMBER OF ACIL: THE ASSOCIATION OF INDEPENDENT SCIENTIFIC,
ENGINEERING AND TESTING FIRMS

ISO 9001 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. 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 Akron Rubber Development Laboratory, Inc. shall be limited to the amount of consideration paid for services. A2LA certificate numbers are 255.01 & 255.02.



Page 1 of 2- PN# 49424B

August 26, 2002

Mr. John Wegman
Tremco, Inc.
1451 Jacobson Avenue
Ashland, Ohio 44805

AKRON RUBBER DEVELOPMENT LABORATORY, INC.
2887 Gilchrist Road • Akron, Ohio 44305
1-800-830-ARDL • (330) 794-6600 • FAX (330) 794-6610
Website: www.ardl.com • E-mail: info@ardl.com

SUBJECT: Physical testing on material submitted by the above company.

RECEIVED: Five (5) slabs and six (6) compression buttons identified as WJT 7522.

ORIGINAL PHYSICAL PROPERTIES, ASTM D 412-98a, D 2240-02

Die C dumbbells tested at 20 in/min.

	<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
Shore A Durometer, points	70	70 ± 5	Pass
Tensile Strength, psi	2040	1800 min.	Pass
Ultimate Elongation, %	530	200 min.	Pass

HEAT-AGED PROPERTIES, ASTM D 573-99

Specimens aged 70 hrs. @ 100°C in a forced air oven.

	<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
Durometer, point change	+4	+10 max.	Pass
Tensile Strength, % change	-4.2	-15 max.	Pass
Elongation, % change	-31.5	-40 max.	Pass

COMPRESSION SET, ASTM D 395-98, METHOD B

Specimens aged 22 hrs. @ 100°C, 25% deflection, ½ hr. recovery.

	<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
Compression Set, %	17.0	30 max.	Pass

August 26, 2002

Mr. John Wegman
Tremco, Inc.

OZONE RESISTANCE, ASTM D 1149-99

Test specimens per ASTM D 518-99, Method A

Specimens exposed 100 hrs. @ 100 pphm @ 40°C, 20% elongation.

Observations made at 7x magnification.

<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
No cracks	No cracks	Pass

LOW TEMPERATURE BRITTLINESS, ASTM D 2137-94(00), METHOD A

Five modified T-50 specimens conditioned 3 min. @ -40°C in methanol, then tested per Para. 9.3.2.

<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
No cracks	No specimen shall crack	Pass

TEAR RESISTANCE, ASTM D 624-00, DIE C

Specimens tested at 20 in/min.

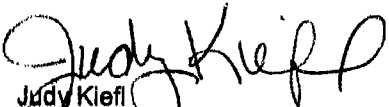
	<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
Tear Strength, ppi	200	150 min.	Pass

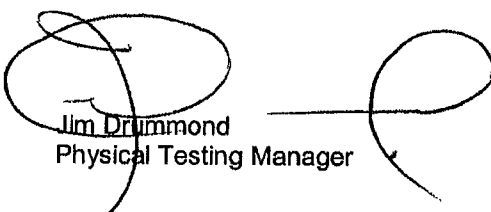
STAINING OF SURFACE, ASTM D 925-88(00), METHOD B

Procedure: ½" x 1" specimens exposed 48 hrs. ten inches below a 275 W, type RS UV bulb

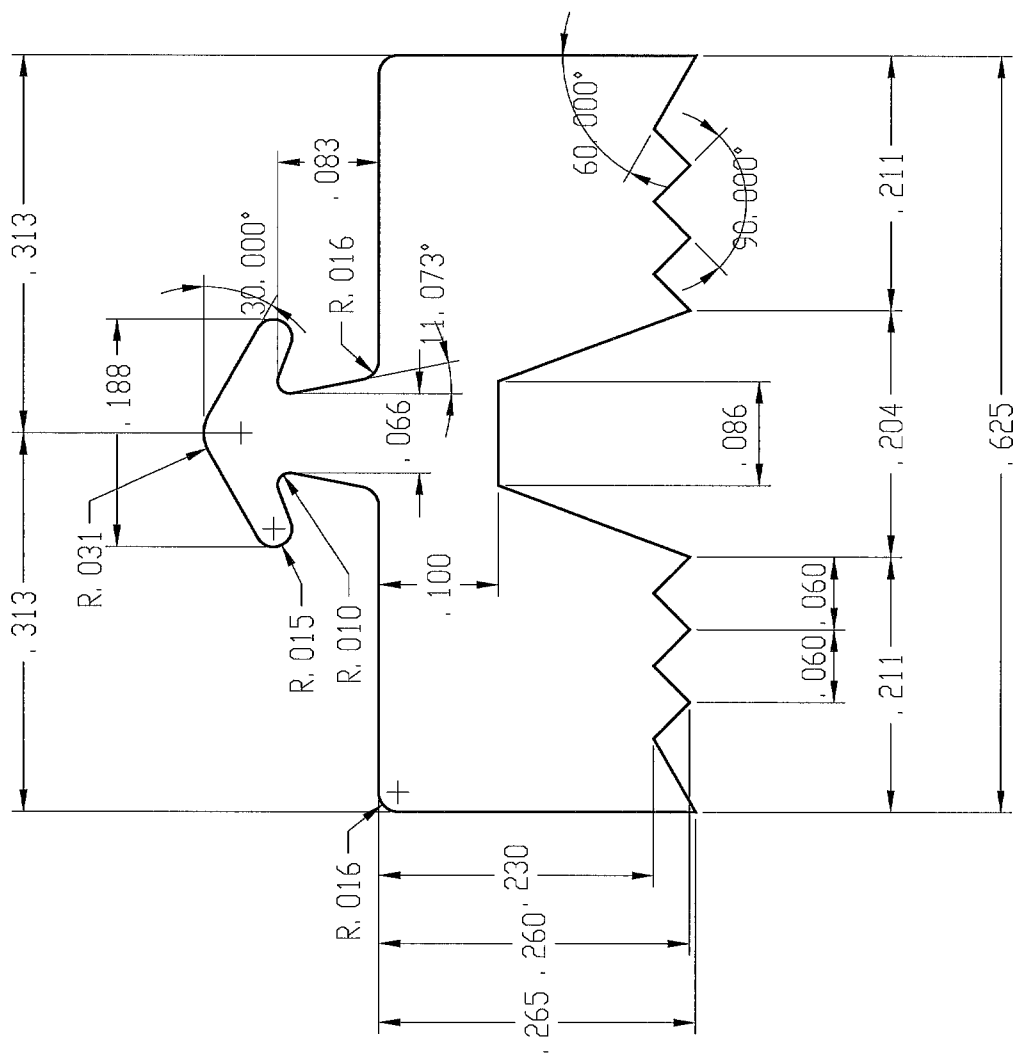
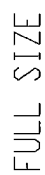
Test Surface: White Automotive Grade Enamel

<u>RESULTS</u>	<u>REQUIREMENTS</u>	<u>PASS/FAIL</u>
No migration stain	No migration stain	Pass


Judy Kiefl
Project Technician
AKRON RUBBER DEVELOPMENT LABORATORY, INC.

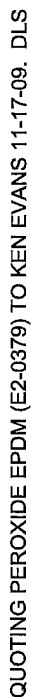
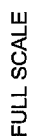

Jim Drummond
Physical Testing Manager

PN# 49424B
JK/JD/sc

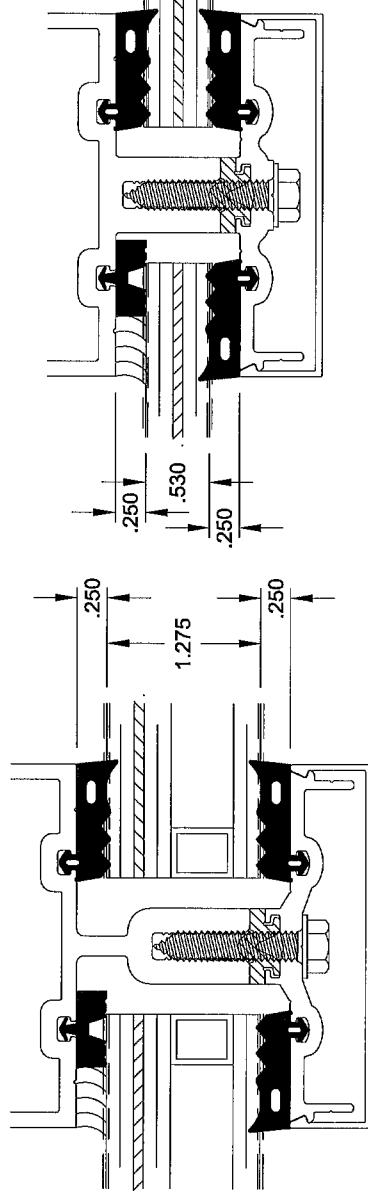


THE DESIGN OF THE GASKET SHOWN HEREIN IS THE PRODUCT OF TREMCO, INC. NO REPRODUCTION OR USE OF THIS DESIGN IS AUTHORIZED WITHOUT THE CONSENT OF TREMCO.

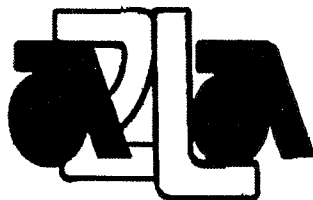
[illegible]



EXTRUSION OUT LENGTH TOLERANCE		No.	Date	Description	
0	- 1.59" ±.060"				By
1.5"	- 3.99" ±.080"				
2.5"	- 5.99" ±.100"				
4.0"	- 6.29" ±.130"				
6.3"	- 9.99" ±.180"				
10.0"	- 15.99" ±.200"				
16.0"	- 24.99" ±.250"				
25.0"	- 39.99" ±.400"				
40.0"	- 62.99" ±.500"				
63.0"	- 99.99" ±.630"				
100.0"	- 159.99" ±.800"				
150.0" +	±.50%				



The design of the gasket shown herein is the product of Tremco Incorporated. No reproduction or use of this design is authorized without the consent of Tremco Incorporated.



THE AMERICAN
ASSOCIATION
FOR LABORATORY
ACCREDITATION

ACCREDITED LABORATORY

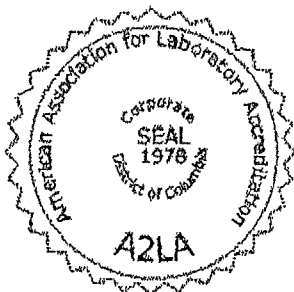
A2LA has accredited

EXCEL POLYMERS, LLC
Burton, OH

for technical competence in the field of
Mechanical Testing

The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO/IEC 17025 - 1999 "General Requirements for the Competence of Testing and Calibration Laboratories" and any additional program requirements in the identified field of testing.

Presented this 27th day of July 2005.



Peter M. Meyer

President
For the Accreditation Council
Certificate Number 0121.01
Valid to June 30, 2007
Revised May 9, 2007

For tests or types of tests to which this accreditation applies,
please refer to the laboratory's Mechanical Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025-1999

EXCEL POLYMERS, LLC
BURTON DEVELOPMENT LABORATORY
14330 Kinsman Road
Burton, OH 44021-0366
Lynn McIntyre Phone: 440 834 5539

MECHANICAL

Valid To: June 30, 2007

Certificate Number: 0121.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following automotive tests on rubber:

✓ ASTM D297	Specific Gravity (Section 16.3)
ASTM D395	Rubber Property - Compression Set (Part B)
✓ ASTM D412	Rubber Properties in Tension (Strength, Modulus & Elongation)
✓ ASTM D471	Rubber Property - Effect of Liquids
ASTM D518	Rubber Deterioration - Surface Cracking
ASTM D573	Rubber Deterioration in an Air Oven
ASTM D575	Rubber Properties in Compression
ASTM D624	Rubber Property - Tear Resistance
ASTM D865	Rubber Deterioration by Heating in Air (Test Tube Enclosure)
ASTM D925	Rubber Property - Staining of Surfaces (Methods A & B)
ASTM D1149	Rubber Deterioration - Surface Ozone Cracking (Flat Specimens)
ASTM D1171	Rubber Deterioration - Surface Ozone Cracking (Triangular)
ASTM D1229	Rubber Property - Compression Set at Low Temperatures
✓ ASTM D1646	Viscosity & Vulcanization Characteristics (Mooney Viscometer)
✓ ASTM D2084	Rubber Property - Vulcanization (Oscillating Disk Cure Meter)
ASTM D2137	Rubber Property - Brittleness Point
ASTM D2240	Rubber Property - Durometer Hardness (Shore A)
ASTM D2632	Rubber Property - Resilience (Vertical Rebound)
✓ ASTM D5289	Rubber Property - Vulcanization (Moving Die Cure Meter)

Burton Development Laboratory

Test Method 01001 Procedures for Mixing Compounds and Preparing Vulcanized Sheets