

To: → Dick Znidarsic

The Goodyear Tire & Rubber Company

Akron, Ohio 44316-0001

March 15th, 1988

Mr. John Little
Chardon Rubber Company
373 Washington Street
Chardon, Ohio 44024

Dear John;

Results of the Ross Flex testing you requested are as follows:

	COMPOUND V-6013 <i>P83</i>	COMPOUND 13312 <i>EPDM</i>
Number of Flexes to Failure		
SAMPLE #1	899,476	275,000
SAMPLE #2	576,000	360,000
AVERAGE	737,738	317,500

We hope these results are helpful to you in your evaluation.

Sincerely,

Michael Stockdale

Michael Stockdale
Customer Technical Service
Goodyear Chemical Division

CC: K Kline

*cc Jeff Keener
Tom Hoffman*

Jeff Williams: what's our next step?

*John
2/17*

CHARDO 01810



373 Washington Street
Chardon, Ohio 44024
(216) 285-2161

February 19, 1988

Mr. Mike Stockdale
Customer Technical Service
Goodyear Chemical Division
The Goodyear Tire and Rubber Company
1485 East Archwood Avenue
Akron, OH 44316-0001

Re: Flex Testing of Chardon
Rubber Compounds V-6013+13312

Dear Mike:

Please find enclosed samples of Chardon compound numbers
V-6013+13312, 1/4" thick slabs.

Number V-6013 is a vinyl compound containing 33.00
parts Chemigum P-83 (our code 156) added.

Number 13312 is an EPDM compound for comparison.

These slabs are for flex testing as discussed.

Respectfully,

Jon Little

pg
encl.

cc: John Cross
Jeff Williams
Dick Znidarsic

*SAMPLES
+ Letter sent
N.S.
2-22-88*

CHARDO 01811

FEBRUARY 19, 1988

MR. MIKE STOCKDALE
CUSTOMER TECHNICAL SERVICE
GOODYEAR CHEMICAL DIVISION
THE GOODYEAR TIRE AND RUBBER COMPANY
1485 EAST ARCHWOOD AVENUE
AKRON, OHIO 44316-0001

RE; FLEX TESTING OF CHARDON RUBBER COMPOUNDS
V-6013 + 13312.

DEAR MIKE;

PLEASE FIND ENCLOSED SAMPLES OF CHARDON COMPOUND
NUMBERS V-6013 + 13312. 1/4" THICK SLABS

NUMBER V-6013 IS A VINYL COMPOUND CONTAINING
33.00 PARTS CHEMIGUM P-83 (OUR CODE 156) ADDED.

NUMBER 13312 IS AN EPDM COMPOUND
FOR COMPARISON

THESE SLABS ARE FOR FLEX TESTING AS DISCUSSED

RESPECTFULLY

CC; JOHN CROSS, DICK ZINIDARSIC,
JEFF WILLIAMS, LAB FILE

JON LITTLE
CHARDON RUBBER

CHARDO 01812

HARDNESS 70

STOCK NO. 06014

P-83 DELCO DIAPHRAM

COMPOUNDED BY

07/28/88

APPROVED BY

CODE	MATERIALS	100 RHC	VOL.	100%	200 RESIN BATCH
001	VINYL RESIN	97.00	69.78	45.22	194.00 C
156	CHEMIGUM NBR-P83	33.00	33.33	15.38	66.00 A
105	VCP4797 90VCP 01 BLACK	1.00	.77	.46	2.00 A
053	STEARIC ACID DP	.50	.63	.23	1.00 A
90633	WINGSTAY 29	1.00	.92	.46	2.00 A
012	PLASTHALL P-7046	75.00	67.57	34.96	150.00 A
017	PARALEX G-62	5.00	5.05	2.33	10.00 A
146	SYNPRON 241	2.00	1.92	.93	4.00 A

TOTAL	214.50	179.97	99.99	429.00
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.97	-	PHYSICAL PROPERTIES
USE	-	SPEC. MIN. MAX.
REPLACES	-	SPECIFIC GR. 1.192
REASON	-	HARDNESS
COLOR	-	TENSILE
REQUIRMENTS TO MEET	-	ELONGATION
	-	MODULUS @
	-	MOONEY @
	-	SCORCH
	-	CURE

LAB	-
COST	-
MIXING	-

STOCK CONTROL TEST

CHARDO 01772

DELCO DIAPHRAGM

	V-6013		Santoprene 101-64		Chardon 13312
	Thermo Plastic Nitrile		TPR		EPDM
	<u>Req.</u>	<u>Obtained</u>	<u>Obtained</u>		<u>Obtained</u>
Tensile	2000	2172	775		2320
Elongation	250	333	332		575
Durometer	60.70	68	64		63
<u>Air Age 70 hrs</u> (257°F/125°C)					
Tensile	-20%	-8.3%	No change		-12%
Elongation	-40%	+5.7%	-11.4%		-39%
Durometer	+10 pts	+2	+2		+7 pts
<u>Comp. Set 70 hrs</u> (212°F/100°C)					
	35%	33%	30%		25%
<u>Ozone</u>	PASS	PASS	PASS		PASS

	<u>Compound V-6013</u>	<u>Compound 13312</u>
<u>Ross Flex</u>		
Sample #1	899,476	275,000
Sample #2	576,000	360,000
Average	737,738	317,500

CHARDON RUBBER COMPANY

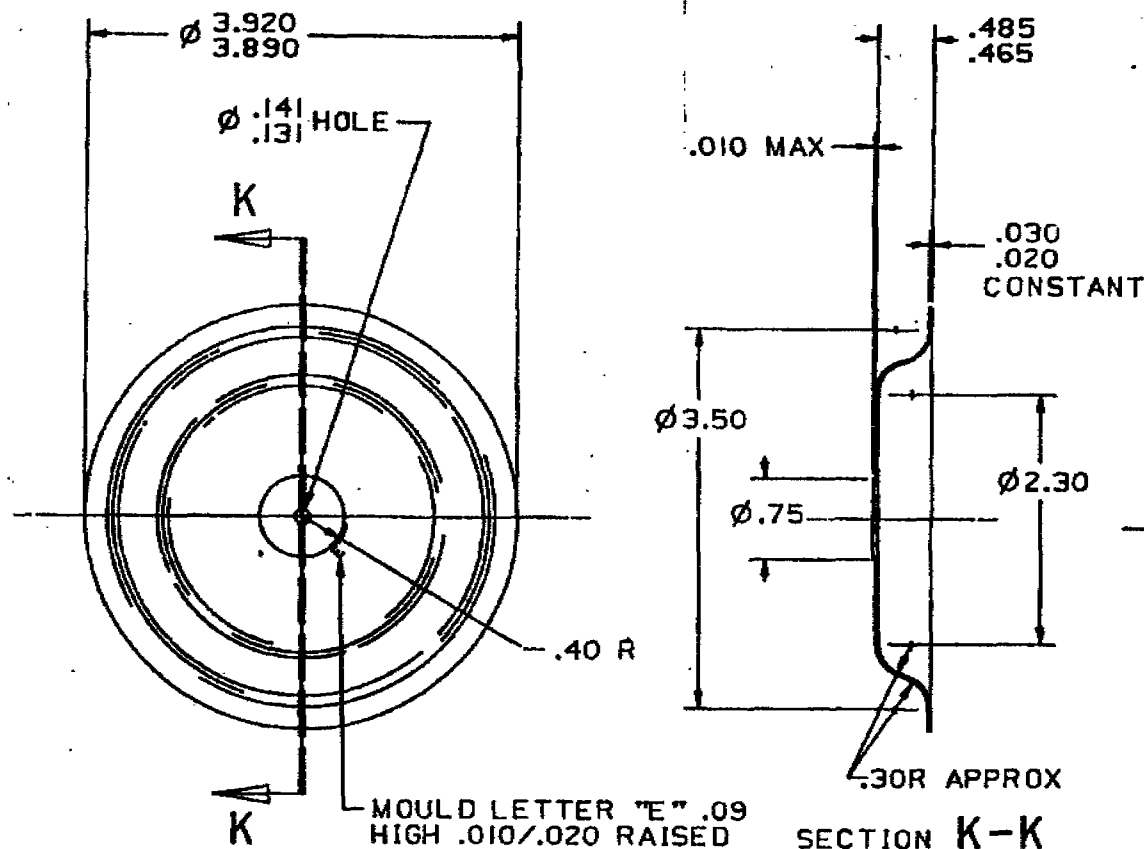
Richard F. Znidarsic
Chief Chemist

7/29/88

CHARDO 01813

Spec. 930-62

ATI S. WILLIAMS



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THICKNESS MEASUREMENTS TO BE MADE
ACCORDING TO ASTM D-3767-83

.010 RAISED PORTION PERMISSIBLE

FLASH AROUND HOLE MUST BE HELD TO A ABSOLUTE MINIMUM

ZI (DUROMETER) RANGE 60-70

SECTION K-K

PART 3.		SHEET NO.	
1943270			
250557	SALES RELEASE DATE		
200057	ENGR RELEASE NOTICE	50366	RR IN
DATE	SYM REVISION RECORD	AUTH	DR CK
07/10/84	9 REDRAWN-REVISED THICKNESS MEASURING NOTE ADDED	842073	JWC JWC
205884	10 ASTM D-3767-83 WAS ASTM 412-62T	842577	JWC JWC
B-8	B-9		
CA-11	W-11	1173	75
METRIC		DIM. TOL	THIRD ANGLE PROJECTION
DIMENSIONS ARE IN MILLIMETERS U08		±.01	
FOR DEFINITION OF GEOMETRIC SYMBOLS AND DIMENSIONS SEE QM DRAFTING STANDARDS			
ORIGINAL REF DESCRIPTION (MAY NOT BE UP TO DATE)			
1936925			
45.00 CADDS 4			
APPLIED SPECIFICATIONS			
MATERIAL BASIC SPEC SAE 2CA620A25B44C12F17Z1 RUBBER (EPDM) PURCHASING SPEC N13R30J6			
DWG DATE 12SE57		DR R.P. REDDY 24MY83	
SCALE FULL		CK N MCMILLAN 16AP83	
FIRST USED		APPR DR CALA 21JN83	
116110 VAC ACT		APPR	
NAME			
DIAPHRAGM			
SHEET NO.		CAT. NO.	
PART NO.		ORIGINAL DWG SIZE	

CHARDO 01814

GENERAL MOTORS CORPORATION DELCO REMY DIVISION ANDERSON, INDIANA

