



# Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #535 (D) - April 2014

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[Introduction to the Containerboard Program](#)

[Explanation of Tables and Definitions of Terms](#)

Analysis	Sample Lot	Analysis Name
<a href="#"><u>201</u></a>	<a href="#"><u>BOX8</u></a>	<a href="#"><u>Box Compression Strength, Corrugated Boxes</u></a>
<a href="#"><u>202</u></a>	<a href="#"><u>ECT7</u></a>	<a href="#"><u>Edgewise Compressive Strength, Wax (T811), Corrugated board</u></a>
<a href="#"><u>203</u></a>	<a href="#"><u>ECT7</u></a>	<a href="#"><u>Edgewise Compressive Strength by Clamp (T839), Corrugated board</u></a>
<a href="#"><u>205</u></a>	<a href="#"><u>42B3</u></a>	<a href="#"><u>Mullen Burst of Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>207</u></a>	<a href="#"><u>36Z2</u></a>	<a href="#"><u>Mullen Burst of Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>215</u></a>	<a href="#"><u>42B3</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</u></a>
<a href="#"><u>217</u></a>	<a href="#"><u>36Z2</u></a>	<a href="#"><u>Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard</u></a>
<a href="#"><u>223</u></a>	<a href="#"><u>42B3</u></a>	<a href="#"><u>STFI of Linerboard, 42 lb Linerboard</u></a>
<a href="#"><u>225</u></a>	<a href="#"><u>36Z2</u></a>	<a href="#"><u>STFI of Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>228</u></a>	<a href="#"><u>69C</u></a>	<a href="#"><u>Roughness - Stylus Method, 69 lb Linerboard</u></a>
<a href="#"><u>231</u></a>	<a href="#"><u>36Z</u></a>	<a href="#"><u>Internal Bond Strength, Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>234</u></a>	<a href="#"><u>36Z</u></a>	<a href="#"><u>Coefficient of Static Friction - Inclined Plane, 36 lb Linerboard</u></a>
<a href="#"><u>237</u></a>	<a href="#"><u>36Z</u></a>	<a href="#"><u>Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard</u></a>
<a href="#"><u>240</u></a>	<a href="#"><u>CM73</u></a>	<a href="#"><u>Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>250</u></a>	<a href="#"><u>CM73</u></a>	<a href="#"><u>Fluted Crush of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>255</u></a>	<a href="#"><u>CM73</u></a>	<a href="#"><u>Ring Crush of Medium, 26 lb Corrugating Medium</u></a>
<a href="#"><u>261</u></a>	<a href="#"><u>CM73</u></a>	<a href="#"><u>STFI of Medium, 26 lb Corrugating Medium</u></a>

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## ABOUT CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

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**Collaborative Testing Services, Inc.**  
**CONTAINERBOARD INTERLABORATORY TESTING PROGRAM**

**INTRODUCTION**

The Interlaboratory Testing Program for Containerboard is operated and maintained by Collaborative Testing Services, Inc. (CTS), with technical guidance provided by the Containerboard Group of the American Forest & Paper Association. The tests are conducted on a monthly basis.

For these tests samples of linerboard and corrugating medium, that each have been separately randomized from narrow rolls, are distributed for testing weekly. One weight of medium (26 lb.) is used for Concora Flat Crush Strength, Corrugated Fluted Crush Strength, Ring Crush Strength, and STFI Compression. Two weights of linerboard are tested each month for Mullen Burst, Ring Crush, and STFI Compression: 42 lb. - every month; 36 lb. and 69 lb. - alternate months. The participants return their test results for analysis and receive a monthly report.

Please refer to the section, "EXPLANATION OF TABLES", for definitions of terms and guidelines to interpreting the results.

**USE OF AVERAGE MEAN AS A COLLABORATIVE REFERENCE VALUE**

The samples of linerboard and corrugating medium, which have been randomized and placed in sealed packages for distribution in this program, may be used as collaborative reference materials. The values most representative of each material are the Cumulative Grand Means in the latest reports, given at the bottom right of each table. Comparisons can only be made within one lot of material; therefore check your measurements against the Cumulative Grand Means with the same lot code as on the packages being tested.

<b>Material</b>	<b>Lot Code</b>	<b>Dates in Use</b>
36# Linerboard	36Z1 36Z2	June 2010 - December 2011 February 2012 -
42# Linerboard	42B2 42B3	June 2012 - April 2013 June 2013 -
69# Linerboard	69A2 69C1	January 2013 - September 2013 November 2013 -
Corrugating Medium	CM73	December 2012 -

## EXPLANATION OF TABLES

Each analysis is divided into three time spans. On the left side of the table are the individual laboratory results for each week of the month; in the center are each lab's statistical data for the month; and on the right are each lab's cumulative data for up to 16 weeks. At the bottom of the table are the consensus statistics for all the participants for each of the three time spans.

### Definitions of Terms Used

#### Weekly Results

##### **Laboratory Data**

WebCode - A six character laboratory identifier used to maintain information on a confidential basis. The WebCode is unique for each analysis and will change for each report. Your WebCode can be found in your Individual Report (Current Month Performance Report) and your datasheet.

Weekly Means - The average of the test results obtained by the participant for each week that data were reported.

##### **Consensus Data**

Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.

Avg SDr - For each week, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SDr is an indication of the variation of measurements within an average laboratory.

SD btwn Labs - For each week, the standard deviation of the laboratory Means about the Wk Mean, excluding those laboratories flagged with an 'X'. The SD LABS is an indication of the precision of measurement between the laboratories.

Labs Incl - The number of laboratory Means included in the Wk Mean for that week.

Labs Excl - The number of laboratory Means reported but excluded from the Wk Mean for that week because of outlying results ('X' following Mean).

Labs not rcvd - The number of laboratories failing to report for that week.

#### Monthly Results

##### **Laboratory Data**

Mean - For each laboratory, the average of all the weekly Means reported for this month.

CPV - **Comparative Performance Value**, an indication of how well a laboratory's Mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean). The closer a laboratory's CPV is to zero, the more consistent its results are with the other participants' data.

SDr - For each laboratory, the average of the weekly within-lab standard deviations (SDr's) for all reported Weekly Means this month.

SD Wks - The standard deviation among the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

##### **Consensus Data**

Month Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for this month.

Avg SDr - For the current month, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'.

SD btwn Labs - For the current month, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.

SD Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks') for all the participants.

Labs Incl - The number of laboratory Means included in the Month Mean.

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## Cumulative Results

### Laboratory Data

- Mean - For each lab, the average of all the monthly Means reported for the weeks shown.
- CPV - **Comparative Performance Value**, an indication of how well a laboratory's cumulative mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean).
- SDr - For each laboratory, the average of the weekly within-lab standard deviations (SDr's) for the weeks shown.
- SD Wks- The standard deviation among the laboratory's weekly Means for the weeks shown, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.
- Wks - The number of weeks included in the cumulative period.

### Consensus Data

- Grand Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for the number of weeks included in the cumulative period.
- Avg SDr - For the cumulative period, the average of the within-laboratory standard deviations (SDr's) for all the participants, excluding those laboratories flagged with an 'X'.
- SD btwn Labs - For the cumulative period, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD Wks - For the cumulative period, the average of the laboratory between week standard deviations for all the participants.
- Labs Incl - The number of laboratory Means included in the Grand Mean.

Any laboratory that receives a 'flag' following a mean or standard deviation should refer to the chart below for an explanation of the data flag symbol:

#### Flag

#### Explanation

- Data Flags " X " and " \* "** indicate a laboratory's performance on an average value differed from the consensus.
- Data Flags " H " and " L "** indicate a laboratory's performance on a standard deviation differed from the consensus.

Flags assigned to Weekly Means, Monthly Mean and Cumulative Mean:

- X** Excluded from the weekly means, monthly means and/or the cumulative mean. Immediate review of data and/or testing procedure is required.
- \*** Included in the weekly means, monthly means and/or the cumulative mean; however, lab should review testing procedure and monitor future results.

Flags assigned to Weekly Means:

- H** Indicates high within-laboratory standard deviation. The laboratory SDr for each week is not shown, but laboratory average SDr and consensus average SDr values are shown.
- L** Indicates low within-laboratory standard deviation. The laboratory SDr for each week is not shown, but laboratory monthly average SDr and consensus average SDr values are shown.

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

- H** Indicates high variability between weekly means (high week-to-week variation).
- L** Indicates low variability between weekly means (low week-to-week variation).



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
4LQPCV	828.7	0.41	87.0	794.7	-0.28	73.6	4	LS
4ZPUH8	758.0	-1.28	50.4	770.6	-0.86	33.4	4	TB
7KNYZX	877.9	1.59	24.8	846.1	0.95	22.1	3	LL
8NZ7WV	817.0	0.13	18.9	829.3	0.55	32.0	3	LH
8PX88U	743.0	-1.63	30.4	717.0	-2.14*	47.1	4	LG
8XTEJ8	794.7	-0.40	51.1	785.4	-0.50	59.3	4	LG
97LZBR	738.0	-1.75	26.7	797.7	-0.21	55.6	4	LG
BJ2R36	805.1	-0.15	94.8	798.7	-0.19	63.5	3	EX
C2CZFB	830.3	0.45	19.7	832.2	0.61	29.3	4	LN
DU9D42	894.2	1.97	21.9	906.7	2.39*	60.9	4	LH
EHBXUQ	831.9	0.49	37.5	817.4	0.26	28.1	4	TE
JY824H	823.1	0.28	28.5	861.8	1.32	22.4	4	LM
L7DM3W	791.6	-0.47	67.0	808.9	0.06	45.1	4	LG
LWQHXX	788.4	-0.55	34.9	799.4	-0.17	29.8	4	ER
MNUZ37	861.7	1.20	22.9	808.8	0.06	27.8	4	LM
PXPZLN	822.0	0.25	68.7	774.4	-0.77	46.9	4	LL
Q69XYW	786.0	-0.61	39.7	775.0	-0.75	71.9	2	LL
TW73Z3	873.0	1.47	50.5	873.6	1.60	36.8	4	TS
U6BLG4	788.3	-0.55	71.1	790.5	-0.38	52.3	4	ER
XKHKDZ	804.2	-0.17	22.0	765.2	-0.99	59.4	4	ER
Y38HTW	784.0	-0.66	35.7	782.5	-0.57	45.1	4	ES

### Consensus (All Labs) Results

Month Mean	811.49	Grand Mean	806.46
Avg SDr	48.45	Avg SDr	47.54
SD btwn Labs	41.90	SD btwn Labs	41.90
Labs Incd	21	Labs Incd	21

### Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	801.06	17.54	10.42	6
Clip sealing	814.33	48.39	2.84	12
Tape sealing	820.96	58.27	9.48	3

Containerboard Interlaboratory Testing Program  
Analysis 201  
**Top to Bottom Box Compression Strength, Corrugated Boxes - BOX8**  
TAPPI Official Test Method T804



**Instrument Code List as Reported by the Labs**

(ER) - Emerson 6200 Series

(EX) - Emerson Apparatus (Model not specified)

(LH) - L.A.B. Compression Tester Model #10610

(LM) - Lansmont 122-15k

(LS) - Lansmont Squeezer

(TE) - Testometric M500 - 25 KN

(ES) - Emerson 8510

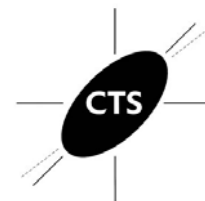
(LG) - TLS / L.A.B. Validator Series

(LL) - Lansmont 76-5K

(LN) - Lansmont 152-50k

(TB) - TMI Monitor/Compression Tester, Model 17-70

(TS) - Tinus Olsen Model CTM



WebCode	Monthly Results			Cumulative Results				Inst
	Mean	CPV	SDr	Mean	CPV	SDr	Months	
4LQPCV	38.1	-0.18	1.3	39.2	0.13	1.5	4	LD
6XY6F7	40.5	0.68	1.0	39.1	0.05	1.4	4	TB
8NZ7WV	35.6	-1.12	0.9	35.9	-1.38	0.8	3	TC
8WYTQG	39.7	0.41	0.7	38.8	-0.07	0.6	3	WK
97LZBR	44.3	2.13 *	1.9	43.2	1.97	1.9	4	LC
C2CZFB	38.8	0.05	1.7	40.8	0.85	1.5	4	EN
WAG2W6	36.2	-0.92	1.8	37.1	-0.86	2.6	4	TD
YMHMRM	36.5	-0.78	2.2	39.3	0.16	2.1	4	XX
ZWG8GD	37.9	-0.27	1.0	37.1	-0.85	1.5	4	LC

#### Consensus (All Labs) Results

<b>Month Mean</b>	38.62	<b>Grand Mean</b>	38.94
<b>Avg SDr</b>	1.49	<b>Avg SDr</b>	1.65
<b>SD btwn Labs</b>	2.68	<b>SD btwn Labs</b>	2.19
<b>Labs Incd</b>	9	<b>Labs Incd</b>	9

#### Instrument Code List as Reported by the Labs

(EN) - Emerson 2200

(LD) - L&amp;W Crush Tester 248

(TC) - TMI Monitor/Compression Tester, Model 17-37

(WK) - Zwick Z005 Crush Tester

(LC) - L&amp;W Crush Tester 48

(TB) - TMI Monitor/Compression Tester, Model 17-70

(TD) - TMI Digital Crush Tester, Model 17-09

(XX) - Instrument make/model not specified by lab

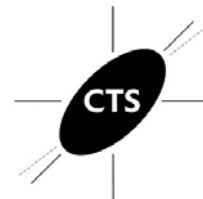
Containerboard Interlaboratory Testing Program  
Analysis 203  
**Edgewise Compressive Strength by T839**, Corrugated board - ECT7  
TAPPI T839



WebCode	Monthly Results			Cumulative Results				Inst
	Mean	CPV	SDr	Mean	CPV	SDr	Months	
4LQPCV	43.0	0.99	1.4	43.1	0.84	1.5	4	LD
4ZPUH8	40.6	-0.68	0.4	43.0	0.81	0.7	4	LC
6XY6F7	40.0	-1.11	2.0	40.1	-1.56	1.6	4	TG
7KNYZX	40.3	-0.86	1.1	41.6	-0.30	1.0	3	BU
7XC9XJ	43.6	1.33	1.0	43.7	1.34	1.1	4	LC
8NZ7WV	40.0	-1.11	1.0	40.4	-1.31	1.1	3	TC
8PX88U	37.8	-2.58 *	3.0	39.6	-1.96	1.9	4	TB
8XTEJ8	42.2	0.41	2.1	41.0	-0.84	2.4	4	EM
96JJNT	43.2	1.09	0.9	43.4	1.12	0.9	4	TG
97LZBR	39.5	-1.42	2.8	41.8	-0.20	2.2	4	LC
AFJA6U	41.5	-0.08	1.6	42.2	0.19	1.7	4	LC
BJ2R36	41.3	-0.19	1.4	41.5	-0.39	1.3	4	TL
C2CZFB	42.0	0.28	1.7	42.9	0.69	1.7	4	EN
DU9D42	42.2	0.41	1.3	42.5	0.37	1.6	4	EM
EX6PBL	41.0	-0.42	2.5	40.0	-1.61	2.6	4	LD
HGQ7GC	43.3	1.13	1.1	42.5	0.37	1.7	4	LD
JU68YL	39.8	-1.22	0.9	40.5	-1.27	1.7	4	TK
JY824H	42.3	0.46	1.1	41.8	-0.19	1.2	4	TC
KAF6NJ	41.6	0.01	1.4	41.9	-0.09	1.1	4	TB
LWQHXX	39.7	-1.31	0.7	39.8	-1.81	1.1	3	EM
MNUZ37	42.6	0.66	1.0	42.5	0.37	1.3	4	EM
PXPZLN	39.7	-1.30	2.7	42.0	0.02	2.2	4	LC
TW73Z3	46.8	3.51 X	1.5	46.0	3.20 X	1.3	4	CT
U6BLG4	43.4	1.23	0.8	42.5	0.37	1.4	4	EN
WKWTMZ	42.5	0.64	1.3	42.0	-0.04	1.4	4	EX
XCNEKY	43.2	1.06	1.3	43.7	1.35	1.7	4	LD
XHRFKT	42.9	0.86	3.0	42.8	0.61	2.2	4	XX
XKHKDZ	42.0	0.28	1.5	44.3	1.87	1.3	4	LD
XNVM2G	41.3	-0.20	1.0	41.7	-0.29	1.2	4	TM
Y38HTW	42.7	0.75	0.9	43.2	0.94	1.9	4	LD
ZWG8GD	42.9	0.91	1.3	42.7	0.58	1.5	4	LC



Containerboard Interlaboratory Testing Program  
 Analysis 203  
**Edgewise Compressive Strength by T839**, Corrugated board - ECT7  
 TAPPI T839



**Consensus (All Labs) Results**

<b>Month Mean</b>	41.59	<b>Grand Mean</b>	42.01
<b>Avg SDr</b>	1.64	<b>Avg SDr</b>	1.60
<b>SD btwn Labs</b>	1.47	<b>SD btwn Labs</b>	1.23
<b>Labs Incd</b>	30	<b>Labs Incd</b>	30

**Instrument Code List as Reported by the Labs**

(BU) - Buchel Digital Crush Tester	(CT) - Con-Ten
(EM) - Emerson 1200 Series	(EN) - Emerson 2200
(EX) - Emerson (model not specified)	(LC) - L&W Crush Tester 48
(LD) - L&W Crush Tester 248	(TB) - TMI Monitor/Compression Tester, Model 17-70
(TC) - TMI Monitor/Compression Tester, Model 17-37	(TG) - TMI Digital Crush Tester, 17-76
(TK) - TLS Compression Tester, Model 5184	(TL) - Tech-Lab Systems Compression
(TM) - TMI/Hinde & Dausch	(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
 Analysis 205  
**Bursting Strength (Mullen), 42 lb Linerboard - 42B3**  
 TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
24ZT4P	No Data	111.5	115.2*	114.2	113.6	2.22*	10.5	1.9	110.4	1.65	10.9	3.2	13	TB
2UPNU7	102.0	103.8	98.2	98.6	100.6	-1.04	8.1	2.7	102.2	-0.69	8.1	3.4	8	LA
4E9E6L	101.6	103.4	105.0	103.9	103.5	-0.33	6.2	1.4	104.0	-0.17	7.4	3.5	16	LC
4LQPCV	103.1	103.5	106.0	98.5	102.8	-0.50	10.0	3.1	107.4	0.81	10.2	4.2	16	AH
7G9AWN	108.6	107.7	110.5L	108.5	108.8	1.01	4.8	1.2	109.1	1.28	4.9	1.1	16	XX
7L6XDV	106.8	110.0	111.4	108.6	109.2	1.10	10.4	2.0	104.7	0.04	8.8	3.9	16	LC
8NZ7WV	107.0	105.3	103.3H	105.8	105.3	0.13	12.5	1.6	107.0	0.67	12.2	3.6	12	AA
8PUHMC	104.9	108.1	110.7	116.6*	110.1	1.32	8.7	5.0	115.1	2.98X	10.9	8.1H	16	AA
8PX88U	97.3	98.1	104.3	97.3	99.2	-1.38	10.7	3.4	99.9	-1.32	9.8	2.8	16	LA
97LZBR	106.8	104.7	109.9	No Data	107.1	0.58	11.1	2.6	109.1	1.28	11.5	3.8	15	LZ
AEB9AM	113.4*	112.2	106.0	108.5L	110.0	1.31	8.7	3.4	110.9	1.80	8.5	4.7	16	TB
DMCUPD	112.2	94.2*	113.9	113.6	108.5	0.93	8.7	9.6H	110.1	1.56	10.7	5.0	16	LA
EHBXUQ	No Data	No Data	103.5L	101.5L	102.5	-0.57	3.9	1.4	100.8	-1.09	3.7	1.3	8	AH
EX6PBL	106.6	106.6	105.3	106.5	106.3	0.37	9.2	0.6	106.5	0.55	9.4	2.3	16	AA
G3BXW8	97.3	102.5	99.3	97.6	99.2	-1.41	8.2	2.4	99.4	-1.49	9.2	1.6	16	LA
GCYNLL	112.9	116.0*	116.6*	110.1	113.9	2.28*	8.8	3.0	112.7	2.30*	11.1	2.6	16	LA
GTNURT	103.9	102.2	102.4	No Data	102.8	-0.49	13.2	0.9	105.3	0.21	11.1	2.6	14	LC
HGQ7GC	107.3	106.5	104.2	108.0	106.5	0.42	7.0	1.6	106.8	0.63	8.1	1.5	16	TB
HLJEGC	105.3	106.9H	108.1	102.4	105.7	0.22	11.7	2.5	104.1	-0.13	11.5	3.3	15	AH
J9CQ49	109.3	120.7XH	105.6	103.4	109.7	1.24	12.8	7.7H	107.0	0.68	11.3	4.9	16	LC
L7DM3W	103.0	104.6	104.5	105.6	104.4	-0.09	8.9	1.1	104.5	-0.04	9.2	1.0	16	AH
L8BMBA	103.3	104.0	103.8	105.7	104.2	-0.15	10.6	1.0	103.0	-0.45	9.7	3.3	14	LA
LAEM6E	105.8	104.4	108.5	103.7	105.6	0.20	10.8	2.1	110.0	1.53	12.6	5.6	16	LC
LLN3AY	104.3	107.3	107.2	107.4	106.6	0.44	10.7	1.5	106.3	0.47	10.7	2.7	16	LC
LPQ7YZ	101.2	103.5	103.7	102.8	102.8	-0.50	8.3	1.1	103.5	-0.31	10.7	1.9	15	LA
MNUZ37	107.4	104.7	105.0	109.6L	106.7	0.47	5.4	2.3	103.8	-0.21	7.0	2.7	16	AH
MW6AJ8	101.0	102.1	100.7	104.5	102.1	-0.67	9.8	1.7	101.7	-0.81	10.2	2.5	16	LC
N7BD8H	104.7	102.6	104.6	103.4	103.8	-0.24	6.6	1.0	104.0	-0.17	6.8	1.2	16	AH
NGAA7D	112.6L	113.8*	114.4	115.2	114.0	2.31*	6.1	1.1	105.6	0.29	6.2	6.3H	12	RE
NXWPBV	102.6	101.6	100.4	102.8	101.9	-0.73	8.5	1.1	102.7	-0.53	11.3	3.4	16	LC
PB24A8	102.3L	103.9L	101.2L	101.1L	102.1	-0.67	3.3	1.3	100.3	-1.22	3.5	2.1	8	XX
PWW8Q6	107.5	108.6	107.5	106.2	107.5	0.67	12.4	1.0	106.5	0.55	10.3	2.4	16	LJ
Q4UYWD	102.5	106.0	108.2	108.3	106.3	0.37	10.1	2.8	106.9	0.66	10.7	3.1	16	LZ
Q7MRRW	103.1	102.8L	102.9L	102.9L	102.9	-0.47	3.2	0.1L	105.2	0.16	7.4	2.4	12	LA
QAK96Q	103.0	102.2	105.6	101.4	103.1	-0.43	11.1	1.8	107.1	0.72	10.6	4.0	16	AH



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
QTFWG8	108.0	105.6	106.0	105.3	106.2	0.36	8.1	1.2	105.3	0.19	6.2	1.1	16	AH
QUQWE3	99.5	101.9	107.4	103.7	103.1	-0.42	10.2	3.4	102.6	-0.57	11.1	2.9	16	AX
RN2NMG	99.5	109.4	104.9	103.4	104.3	-0.12	8.3	4.1	101.4	-0.92	7.8	11.0 H	8	LA
TW73Z3	110.9	104.0	106.2	106.0	106.8	0.50	12.7	2.9	105.6	0.29	14.2	4.3	16	XX
UY9BND	97.8	100.8	100.2 H	99.7	99.6	-1.29	10.9	1.3	101.3	-0.93	10.0	2.3	8	XX
V6UHT4	108.1	102.0	105.5	105.1	105.2	0.10	8.3	2.5	105.5	0.25	10.5	2.5	16	LA
VHDCVG	97.9	105.7	100.2	103.2	101.7	-0.77	9.3	3.4	100.4	-1.20	9.7	3.3	16	XX
W98QP2	101.4	96.0	104.5	104.1	101.5	-0.82	8.6	3.9	103.5	-0.32	9.7	3.9	16	LJ
X3VERR	107.6	No Data	104.2	103.6	105.1	0.09	11.0	2.1	103.9	-0.20	10.0	2.5	15	LA
XHRFKT	96.4	94.9*	98.2	92.5*	95.5	-2.33*	10.2	2.4	95.4	-2.61*	10.2	2.3	16	LA
XKHKDZ	99.3	98.8	100.0	100.1	99.6	-1.31	9.6	0.6	103.8	-0.22	9.9	5.3	16	AH
XRFEAC	94.6*	101.0	94.8*	99.7	97.5	-1.81	10.8	3.3	99.6	-1.42	9.6	4.0	16	LC
Y38HTW	104.7	105.4	96.8	102.4	102.3	-0.61	10.1	3.9	103.1	-0.43	10.3	2.9	16	LA
YBPJKT	102.8	105.6	94.8*L	97.3 H	100.1	-1.16	9.7	5.0	100.1	-1.27	10.1	3.6	15	TB
YGUPU4	99.4	104.6	108.9	111.5	106.1	0.32	10.7	5.3	99.9	-1.33	10.5	6.5 H	14	TB
YLR6LZ	105.9 H	106.6	110.6	118.1*H	110.3	1.38	13.1	5.6	109.7	1.45	11.6	3.3	16	LC
ZB3KU9	104.5	102.7	105.5	105.6	104.6	-0.05	7.1	1.3	104.5	-0.02	6.8	1.7	16	TB

### Consensus (All Labs) Results

<b>Wk Mean</b>	104.17	104.49	105.11	104.91	<b>Month Mean</b>	104.78	<b>Grand Mean</b>	104.59
<b>Avg SDr</b>	9.40	9.47	9.76	9.14	<b>Avg SDr</b>	9.53	<b>Avg SDr</b>	9.72
<b>SD btwn Labs</b>	4.45	4.28	4.82	5.17	<b>SD btwn Labs</b>	4.00	<b>SD btwn Labs</b>	3.52
<b>Labs Includ</b>	50	49	52	50	<b>SD btwn Wks</b>	3.08	<b>SD btwn Wks</b>	3.69
<b>Labs Exclud</b>	0	1	0	0	<b>Labs Includ</b>	52	<b>Labs Includ</b>	51
<b>Labs not rcvd</b>	2	2	0	2				

### Instrument Code List as Reported by the Labs

(AA) - Perkins Model A

(AX) - Perkins Mullen Tester (model not specified)

(LC) - L &amp; W Autoline

(LZ) - L &amp; W (model not specified)

(TB) - TMI Monitor/Burst 1000

(AH) - Perkins Model AH

(LA) - L &amp; W Bursting Strength Tester

(LJ) - L &amp; W Bursting Strength Tester J-Type

(RE) - Regmed/Mullen Tester

(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
Analysis 207

Bursting Strength (Mullen), 36 lb Linerboard - 36Z2

TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
24ZT4P	No Data	87.2*	82.8	85.8	85.3	1.93	6.0	2.2	84.0	2.17*	5.8	1.8	11	TB
2UPNU7	82.4	78.3	77.0	78.0	78.9	0.00	5.7	2.4	80.1	0.44	6.2	2.2	8	LA
4E9E6L	77.0	75.7	74.8	75.2	75.7	-0.97	4.8	0.9	75.3	-1.68	4.8	1.3	12	LC
4LQPCV	73.7	74.9	77.3	71.9	74.4	-1.35	6.0	2.3	79.3	0.11	6.1	4.9 H	12	AH
7G9AWN	84.1	84.8	82.7	83.4	83.8	1.47	4.8	0.9	83.7	2.05*	4.1	1.3	12	XX
7L6XDV	86.7*	81.0	86.4*	82.9	84.3	1.62	4.8	2.8	81.7	1.17	4.3	3.4	12	LC
8NZ7WV	80.5	77.3	76.5	78.5	78.2	-0.21	4.9	1.7	78.5	-0.26	5.9	1.2	12	AA
8PUHMC	83.0	76.8	77.0	81.8	79.7	0.23	4.6	3.2	84.2	2.29*	6.1	5.1 H	12	AA
8PX88U	77.4	78.6	76.1	78.4	77.6	-0.40	4.2	1.1	76.5	-1.15	5.1	1.6	12	LA
97LZBR	85.2	80.5	80.9	No Data	82.2	0.99	4.9	2.6	83.0	1.76	5.8	2.1	11	LZ
AEB9AM	89.0 X	92.1 X	89.3 X	89.4*	89.9	3.34 X	6.1	1.4	88.2	4.06 X	5.8	2.6	12	TB
DMCUPD	71.5*	71.6	65.9 X	86.2	73.8	-1.54	5.3	8.7 H	80.3	0.54	6.0	6.9 H	12	LA
EHBXUQ	No Data	No Data	80.7	79.9	80.3	0.43	3.7	0.6	79.9	0.37	4.2	0.6	4	AH
EX6PBL	83.5	82.1	80.3	84.3	82.6	1.11	5.7	1.8	81.8	1.20	5.8	2.3	12	AA
G3BXW8	76.2	73.5	75.5	74.9	75.0	-1.18	4.9	1.2	75.2	-1.72	6.0	1.3	12	LA
GCYNLL	84.7 L	84.5	83.6	84.8	84.4	1.67	4.2	0.5 L	81.9	1.25	4.9	2.3	12	LA
GTNURT	80.6	78.1	78.5	No Data	79.1	0.05	4.4	1.3	78.4	-0.28	5.0	1.9	11	LC
HGQ7GC	80.0	78.1	80.2	80.4 L	79.7	0.24	3.4	1.1	80.2	0.50	4.2	1.3	12	TB
HLJEGC	77.1 H	76.4	79.3	79.0	78.0	-0.29	6.7	1.4	77.7	-0.59	6.5	1.5	12	AH
J9CQ49	82.8 H	91.8 XH	82.3	75.6	83.1	1.28	9.0	6.6 H	79.1	0.03	7.0	5.1 H	11	LC
L7DM3W	80.7	78.4	79.9	77.4	79.1	0.06	5.7	1.5	79.6	0.22	5.5	2.2	12	AH
L8BMBA	75.4	77.8	76.3	77.5	76.8	-0.65	6.4	1.1	77.4	-0.72	4.9	1.2	12	LA
LAEM6E	78.7	77.1	79.9	77.2	78.2	-0.21	4.6	1.4	80.5	0.66	6.9	2.4	12	LC
LLN3AY	77.6	80.1	78.7	77.4	78.5	-0.14	5.6	1.2	78.4	-0.28	4.9	1.2	8	LC
LPQ7YZ	75.9	77.0	75.5	76.0	76.1	-0.85	4.0	0.6	77.1	-0.85	5.0	1.6	12	LA
MNUZ37	79.0 L	78.8	79.8 L	79.0	79.1	0.07	2.3	0.4 L	77.7	-0.62	3.8	1.8	12	AH
MW6AJ8	76.4	73.6	76.3	76.6	75.7	-0.96	5.2	1.5	76.6	-1.11	6.4	4.8 H	12	LC
N7BD8H	81.0	81.1	80.2	80.6	80.7	0.55	4.1	0.4 L	79.8	0.33	3.6	1.0	12	AH
NGAA7D	79.0 L	80.0	78.6	81.4	79.8	0.26	3.9	1.2	80.5	0.64	4.2	1.2	12	RE
NXWPBV	77.7	75.2	78.5	78.2	77.4	-0.46	6.7	1.5	77.2	-0.82	6.8	2.1	12	LC
PB24A8	78.6 L	77.7 L	78.3 L	78.0 L	78.1	-0.23	1.7	0.4 L	78.2	-0.40	2.0	0.3 L	8	XX
PWW8Q6	75.7	77.0	75.4	75.6	75.9	-0.90	4.5	0.7	76.7	-1.04	4.8	1.5	12	LJ
Q4UYWD	76.5	79.5	81.2	80.9	79.5	0.19	5.1	2.1	79.2	0.07	5.7	1.9	12	LZ
Q7MRRW	77.8	78.4	77.6 L	77.8	77.9	-0.29	2.9	0.3 L	78.3	-0.34	4.6	1.8	12	LA
QAK96Q	77.4	76.8	78.0	76.2	77.1	-0.54	4.6	0.8	78.2	-0.40	6.1	2.1	12	AH

Containerboard Interlaboratory Testing Program  
Analysis 207

**Bursting Strength (Mullen), 36 lb Linerboard - 36Z2**  
TAPPI Official Test Method T807



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
QTFWG8	77.1	76.8	77.1	77.3	77.1	-0.55	3.6	0.2 L	76.2	-1.28	3.1	0.9	12	AH
QUQWE3	78.0	77.0	78.8	78.8	78.1	-0.23	4.8	0.9	76.7	-1.06	4.6	1.7	12	AX
RN2NMG	78.6	107.2 XH	79.9	82.8	87.1	2.49*	8.9	13.5 H	87.1	3.56 X	8.9	13.5 H	4	LA
TW73Z3	74.2 H	70.1*	70.7*	66.7 XH	70.4	-2.57*	8.3	3.1	70.4	-3.85 X	8.0	2.2	12	XX
UY9BND	79.2	79.5	76.6	76.9	78.1	-0.25	5.9	1.5	78.1	-0.45	5.9	1.5	4	XX
V6UHT4	78.4	77.5	84.6	78.7	79.8	0.27	6.0	3.2	79.3	0.08	5.3	2.3	12	LA
VHDCVG	79.7	77.0	78.5	79.7	78.7	-0.05	5.2	1.3	77.9	-0.51	4.9	2.4	12	XX
W98QP2	76.4	78.6	80.5	82.4	79.5	0.17	5.3	2.6	80.0	0.41	5.3	2.4	12	LJ
X3VERR	79.8	No Data	80.2	81.2	80.4	0.45	4.9	0.7	79.1	0.00	5.0	1.8	9	LA
XHRFKT	71.8*	69.8*	71.7*	70.2*	70.9	-2.44*	4.4	1.0	71.4	-3.38 X	4.6	1.5	12	LA
XKHKDZ	82.5	78.1	75.0	79.5	78.8	-0.04	5.6	3.1	78.8	-0.10	5.3	2.9	12	AH
XRFEAC	80.2 L	75.8	76.5	73.4	76.5	-0.73	4.3	2.8	75.9	-1.38	4.5	2.8	12	LC
Y38HTW	75.8	79.3	78.9	78.6	78.2	-0.23	5.6	1.6	78.9	-0.08	5.3	1.8	12	LA
YBPJKT	79.3 H	78.2	77.3	78.4	78.3	-0.18	6.4	0.8	77.8	-0.57	5.6	1.6	12	TB
YGUPU4	74.3	77.0	85.1 H	87.3	80.9	0.61	6.3	6.3 H	77.1	-0.87	6.1	5.6 H	9	TB
YLR6LZ	82.4	84.3	84.8	86.8	84.6	1.73	4.6	1.8	83.7	2.07*	4.9	1.3	12	LC
ZB3KU9	80.1	81.6	79.4	81.8	80.7	0.55	4.8	1.2	79.6	0.22	5.0	1.5	12	TB

**Consensus (All Labs) Results**

<b>Wk Mean</b>	78.81	78.05	78.83	79.47	<b>Month Mean</b>	78.90	<b>Grand Mean</b>	79.06
<b>Avg SDr</b>	5.39	5.00	5.09	4.85	<b>Avg SDr</b>	5.28	<b>Avg SDr</b>	5.29
<b>SD btwn Labs</b>	3.33	3.41	3.18	3.94	<b>SD btwn Labs</b>	3.30	<b>SD btwn Labs</b>	2.25
<b>Labs Includ</b>	49	47	50	49	<b>SD btwn Wks</b>	3.05	<b>SD btwn Wks</b>	2.59
<b>Labs Exclud</b>	1	3	2	1	<b>Labs Includ</b>	51	<b>Labs Includ</b>	48
<b>Labs not rcvd</b>	2	2	0	2				

**Instrument Code List as Reported by the Labs**

(AA) - Perkins Model A

(AX) - Perkins Mullen Tester (model not specified)

(LC) - L & W Autoline

(LZ) - L & W (model not specified)

(TB) - TMI Monitor/Burst 1000

(AH) - Perkins Model AH

(LA) - L & W Bursting Strength Tester

(LJ) - L & W Bursting Strength Tester J-Type

(RE) - Regmed/Mullen Tester

(XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
24ZT4P	No Data	100.0	95.0	99.1	98.0	-0.85	4.1	2.7	97.6	-0.86	4.0	2.9	13	LC
4E9E6L	97.9	101.5	98.2	99.6	99.3	-0.56	4.1	1.6	96.5	-1.10	3.4	4.4	16	LC
4LQPCV	103.4	105.0	103.1	105.3	104.2	0.53	3.6	1.1	101.9	0.08	3.1	2.1	16	LC
7G9AWN	106.8	97.7	100.9	116.3*	105.4	0.82	4.0	8.2 H	104.0	0.53	3.8	4.9	16	XX
8AMQWL	105.9	106.3	105.0	108.3	106.4	1.03	3.3	1.4	104.3	0.59	3.3	2.4	16	LD
8PUHMC	102.7	103.7	119.9 X	113.9*	110.1	1.86	4.1	8.3 H	112.1	2.27*	5.7	6.1	16	LD
8XTEJ8	100.5	99.8	99.7	97.0	99.2	-0.58	3.1	1.5	99.6	-0.43	3.5	2.0	16	EM
96JJNT	93.4	91.1*	92.0*	93.0	92.4	-2.12*	4.9	1.0	95.3	-1.35	3.5	2.5	16	TH
97LZBR	106.6	104.4	100.9	No Data	103.9	0.49	2.7	2.9	103.1	0.34	2.9	2.7	15	LC
AEB9AM	105.3	105.4	105.0	104.0	104.9	0.70	3.7	0.6	105.4	0.83	4.3	1.1	16	LX
DMCUPD	106.1	105.3	101.4	100.4	103.3	0.34	3.9	2.8	102.9	0.29	3.9	2.4	16	LZ
DU9D42	104.4	105.5	102.2	103.4	103.9	0.47	3.7	1.4	103.7	0.47	3.8	3.6	16	EM
DXBCHZ	97.0	100.7	101.1	99.5	99.6	-0.50	3.1	1.8	98.4	-0.68	3.3	1.4	16	XX
EHBXUQ	100.6	99.3	99.8	101.3	100.3	-0.35	3.1	0.9	101.0	-0.13	2.9	1.0	16	LD
EX6PBL	97.2	100.2 L	100.6	86.3*	96.1	-1.29	3.9	6.7 H	97.6	-0.86	3.4	3.7	16	LD
G3BXW8	101.3	101.4 L	98.7	100.8	100.5	-0.29	3.8	1.3	100.4	-0.25	3.4	1.5	15	LC
GCYNLL	111.4 L	111.4* L	111.6* L	112.0 L	111.6	2.21*	1.6	0.3 L	110.3	1.89	4.5	1.8	16	LD
HGQ7GC	102.7	102.5 L	100.6 L	100.8	101.6	-0.03	2.6	1.1	102.1	0.11	2.5	1.8	16	LD
J9CQ49	109.1	108.1	105.5	104.8	106.9	1.14	4.8	2.1	107.7	1.34	4.0	2.0	16	LC
K8TYE4	101.1	101.0	101.2	102.2	101.4	-0.09	4.5	0.6	94.4	-1.54	4.0	5.7	12	TH
L8BMBA	98.2	95.2	99.7	95.0	97.0	-1.07	4.4	2.3	103.5	0.43	4.9	9.5 H	14	LC
LAEM6E	102.7	105.9	104.7	105.0	104.6	0.62	4.2	1.4	105.3	0.82	4.6	3.9	16	TC
LLN3AY	107.6	103.5	105.5	101.3	104.5	0.60	3.5	2.7	104.6	0.67	3.0	3.4	16	LD
LPQ7YZ	103.3	108.2	106.7	106.1	106.1	0.96	3.7	2.1	107.2	1.22	3.9	3.5	16	LD
LWQHXX	92.6*	94.1	93.3	92.8	93.2	-1.93	3.2	0.7	93.6	-1.72	2.9	1.0	16	EX
MLAYDL	100.0	No Data	No Data	No Data	100.0	-0.39	5.0	0.0 L	93.0	-1.86	3.6	7.5 H	6	EX
MNUZ37	102.3 L	101.6 L	102.3 L	101.5 L	101.9	0.03	1.8	0.4 L	99.3	-0.49	2.1	2.9	16	EM
MW6AJ8	109.7	96.8 H	110.6*	110.6	106.9	1.15	5.3	6.7 H	108.9	1.60	5.0	3.9	16	LC
NGAA7D	106.3	104.9	106.5	105.9	105.9	0.92	3.6	0.7	104.9	0.73	3.8	2.2	12	LZ
NXWPBV	107.2	106.3	102.1 H	104.8 H	105.1	0.75	6.8	2.2	105.0	0.75	7.3	3.7	16	LA
PB24A8	104.2	103.1	103.1	104.7	103.8	0.44	4.1	0.8	102.1	0.13	3.6	2.1	8	XX
PWW8Q6	92.1*	92.8	92.6	93.6	92.8	-2.03*	4.7	0.6	96.0	-1.20	4.2	3.9	16	LC
QAK96Q	109.5	107.5	106.9	104.3 H	107.0	1.18	6.3	2.1	106.5	1.08	5.4	3.0	16	LC
QTFWG8	102.2	101.4	99.2	98.8	100.4	-0.31	4.4	1.6	100.7	-0.19	4.4	2.1	16	LC
QUQWE3	102.4	92.3	102.4	102.6	99.9	-0.42	3.2	5.1	102.3	0.17	3.3	3.2	16	LX



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
RN2NMG	108.0	101.7 <b>H</b>	No Data	No Data	104.9	0.69	14.9	4.5	94.9	-1.44	12.4	8.8 <b>H</b>	6	LC
RNDP3N	102.4	102.3	101.6	101.7	102.0	0.05	3.2	0.4 <b>L</b>	101.5	-0.01	3.3	2.7	16	LC
TCCLCY	No Data	98.2	102.9	101.1	100.7	-0.24	4.3	2.4	101.8	0.06	4.0	6.3	15	LC
TQJAQN	103.3	102.2	100.8	101.1	101.8	0.01	4.2	1.1	102.0	0.09	3.7	2.5	16	EM
U6BLG4	97.9	98.8	97.3	100.7	98.7	-0.70	3.3	1.5	97.7	-0.83	3.2	1.4	16	EN
V6UHT4	96.9	99.1	95.8	95.1	96.7	-1.14	3.4	1.7	95.4	-1.32	3.2	1.9	16	LC
VHDCVG	110.6	106.5	108.1	108.3	108.4	1.49	4.3	1.7	111.7	2.20*	4.2	2.9	16	LZ
VLZW37	101.1	No Data	101.0	100.1	100.7	-0.24	4.4	0.6	99.7	-0.40	3.9	1.2	15	LD
VQCTT2	76.4 <b>X</b>	75.4 <b>X</b>	77.0 <b>X</b>	63.8 <b>X</b>	73.1	-6.45 <b>X</b>	3.6	6.3 <b>H</b>	78.9	-4.90 <b>X</b>	8.2	7.7 <b>H</b>	16	MB
W98QP2	101.9	97.6	102.1	104.9	101.6	-0.03	4.7	3.0	100.2	-0.29	4.3	2.3	16	LD
WAG2W6	95.6	94.8	93.9	94.2	94.6	-1.62	3.0	0.7	97.2	-0.94	2.7	3.0	16	TD
WC79JM	103.4	99.1	104.0	103.4	102.5	0.15	3.7	2.2	103.8	0.49	3.8	4.4	16	MB
X3VERR	96.8	No Data	98.3	102.8	99.3	-0.57	3.9	3.1	98.8	-0.60	3.8	1.7	14	LD
XHRFKT	93.1	91.9*	94.3	90.0* <b>H</b>	92.3	-2.13*	5.0	1.8	92.4	-1.97	4.2	3.4	16	LC
XKHKDZ	101.1	98.1 <b>L</b>	101.9 <b>L</b>	99.3	100.1	-0.38	2.3	1.7	102.5	0.21	3.2	2.1	16	LD
XRFEAC	103.3	101.2	102.6	109.9	104.3	0.56	4.3	3.9	105.6	0.89	3.9	3.7	16	LD
YBPJKT	99.0 <b>H</b>	105.0	101.0	99.7	101.2	-0.14	4.8	2.7	102.8	0.26	4.0	2.4	15	LZ
YGUPU4	107.3	108.8	111.8*	108.2	109.0	1.62	3.7	1.9	103.7	0.46	4.8	12.0 <b>H</b>	13	LC
ZB3KU9	98.1	98.1	99.7	97.2	98.2	-0.80	3.4	1.1	99.1	-0.54	3.1	2.1	16	TH

**Consensus (All Labs) Results**

<b>Wk Mean</b>	102.22	101.34	101.50	101.85	<b>Month Mean</b>	101.79	<b>Grand Mean</b>	101.55
<b>Avg SDr</b>	3.97	4.82	3.77	4.33	<b>Avg SDr</b>	4.47	<b>Avg SDr</b>	4.23
<b>SD btwn Labs</b>	4.77	4.70	4.49	5.86	<b>SD btwn Labs</b>	4.44	<b>SD btwn Labs</b>	4.62
<b>Labs Includ</b>	51	50	50	50	<b>SD btwn Wks</b>	2.86	<b>SD btwn Wks</b>	3.97
<b>Labs Exclud</b>	1	1	2	1	<b>Labs Includ</b>	53	<b>Labs Includ</b>	53
<b>Labs not rcvd</b>	2	3	2	3				

**Instrument Code List as Reported by the Labs**

- (EM) - Emerson 1200
- (EN) - Emerson 2200
- (EX) - Emerson (model not specified)
- (LA) - L&W Autoline
- (LC) - L & W Crush Tester 48
- (LD) - L&W Crush Tester 248
- (LX) - L & W 506
- (LZ) - L & W Crush Tester (model not specified)
- (MB) - Messmer Buchel K440
- (TC) - TMI Monitor/Compression Tester, Model 17-37
- (TD) - TMI Digital Crush Tester, Model 17-09
- (TH) - TMI Compression Tester, Model 17-76
- (XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
24ZT4P	No Data	75.5	75.8	76.9	76.1	-1.30	4.4	0.7	76.5	-1.09	3.7	2.3	11	LC
4E9E6L	73.8	75.9	78.8	75.3	76.0	-1.33	3.2	2.1	74.2	-1.73	2.9	2.2	12	LC
4LQPCV	80.2	80.2	80.9	78.1	79.8	-0.19	2.9	1.2	80.4	0.00	2.7	1.1	12	LC
7G9AWN	84.5	73.3	81.2	85.6	81.2	0.19	3.0	5.6	80.4	0.01	3.1	4.2	12	XX
8AMQWL	81.7	84.9	82.0	82.4	82.7	0.66	2.8	1.5	82.5	0.59	2.9	1.4	12	LD
8PUHMC	82.5	79.7	90.4 XH	85.5	84.5	1.17	3.8	4.6	88.0	2.14*	4.1	5.2 H	12	LC
8XTEJ8	79.3	79.2	80.3	78.9	79.4	-0.32	2.8	0.6	79.3	-0.30	2.9	1.3	12	EM
96JNT	74.8 L	75.8	75.0*	74.8	75.1	-1.59	1.7	0.5 L	75.0	-1.52	2.6	0.5 L	12	TH
97LZBR	81.6	82.0	81.5	No Data	81.7	0.35	2.2	0.2 L	82.0	0.45	2.2	2.8	11	LC
AEB9AM	84.1	84.1	82.9	85.3	84.1	1.05	3.7	1.0	84.3	1.10	3.3	1.6	12	LX
DMCUPD	83.1	84.2	79.7	79.0	81.5	0.29	2.9	2.5	81.7	0.38	3.0	1.8	12	LZ
DU9D42	82.4	82.4	81.4	81.3	81.9	0.40	2.8	0.6	82.1	0.47	2.6	1.2	12	EM
DXBCHZ	76.9	76.8	78.8	79.1	77.9	-0.76	2.7	1.2	78.2	-0.62	2.7	1.1	12	XX
EHBXUQ	79.7	78.8 L	80.0	79.7 L	79.5	-0.28	2.3	0.5 L	79.4	-0.27	2.6	0.6	12	LD
EX6PBL	78.3	77.4 L	76.9	62.9 XH	73.9	-1.94	5.7	7.3 H	75.7	-1.31	4.0	4.5	12	LD
G3BXW8	80.5	80.3	80.7	80.9	80.6	0.03	3.4	0.3 L	79.0	-0.40	2.7	2.5	12	LC
GCYNLL	82.2	83.9	82.6	82.2 L	82.7	0.65	2.0	0.8	85.5	1.43	2.6	2.8	12	LD
HGQ7GC	83.9	81.9	82.8	81.8	82.6	0.62	2.6	1.0	82.4	0.57	2.4	0.9	12	LD
J9CQ49	86.0	85.3	83.8	85.0	85.0	1.32	3.5	0.9	83.5	0.87	3.4	3.0	11	LC
K8TYE4	78.8	77.9	83.9	83.2	80.9	0.13	2.9	3.0	76.0	-1.23	3.4	6.0 H	8	TH
L8BMBA	83.1	81.1	83.9	79.6	81.9	0.42	4.2	1.9	80.7	0.09	3.6	1.7	12	LC
LAEM6E	82.0	82.8	81.3	81.9	82.0	0.44	4.5	0.6	82.8	0.68	4.2	1.3	12	TC
LLN3AY	75.0	85.0	77.3	80.7	79.5	-0.30	2.8	4.3	81.2	0.24	3.0	3.9	8	LD
LPQ7YZ	83.1 H	82.7	83.1	82.4	82.8	0.68	4.7	0.3 L	84.1	1.03	3.7	1.6	12	LD
LWQHXX	74.2	75.1	74.0*	76.0	74.8	-1.67	2.9	0.9	75.4	-1.40	2.8	1.2	12	EX
MLAYDL	83.5	No Data	No Data	No Data	83.5	0.87	2.6	0.0 L	75.3	-1.43	2.9	7.2 H	3	EX
MNUZ37	80.8	79.8 L	80.2 L	81.4	80.5	0.00	1.7	0.7	78.6	-0.51	1.7	2.3	12	EM
MW6AJ8	86.3 H	87.4	90.0 X	89.1*	88.2	2.26*	3.8	1.7	87.3	1.94	4.8	5.7 H	12	LC
NGAA7D	82.0	80.9	80.0	80.0	80.7	0.06	2.6	0.9	82.9	0.69	3.0	1.9	12	LZ
NXWPBV	80.5	88.7*	89.3 XH	91.1 XH	87.4	2.01*	5.1	4.7	87.5	2.00	6.0	2.9	12	LA
PB24A8	84.3	86.2	85.5	82.9	84.7	1.23	2.9	1.5	84.7	1.20	3.1	1.2	8	XX
PWW8Q6	80.5	76.6 L	77.2	77.6	78.0	-0.75	2.3	1.7	79.5	-0.26	2.7	2.5	12	LC
QAK96Q	81.3	80.6	82.3	85.3	82.4	0.55	2.5	2.1	82.8	0.68	3.4	2.8	12	LC
QTFWG8	79.4	79.8	78.0	80.6	79.5	-0.31	3.2	1.1	78.5	-0.53	3.7	1.2	12	LC
QUQWE3	79.2	69.2 X	82.5	82.4	78.3	-0.63	2.7	6.3 H	81.5	0.32	2.7	4.1	12	LX



Containerboard Interlaboratory Testing Program  
Analysis 217

Ring Crush, 36 lb Linerboard - 36Z2  
TAPPI Official Test Method T822



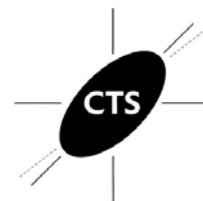
WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
RN2NMG	81.1	78.5 <sup>H</sup>	59.3 <sup>XH</sup>	59.8 <sup>XH</sup>	69.7	-3.17 <sup>X</sup>	10.4	11.7 <sup>H</sup>	69.7	-3.01 <sup>X</sup>	10.4	11.7 <sup>H</sup>	4	LC
RNDP3N	76.2 <sup>L</sup>	78.8	78.5	78.3	77.9	-0.75	2.6	1.2	78.6	-0.50	2.7	2.9	12	LC
TCCLCY	No Data	79.3	81.8	78.5	79.9	-0.18	2.9	1.7	78.1	-0.64	3.7	4.3	8	LC
TQJAQN	81.2	80.6	81.5	79.3	80.6	0.04	3.2	1.0	80.0	-0.12	2.8	1.5	12	EM
U6BLG4	80.4 <sup>L</sup>	80.1	77.0	78.3	78.9	-0.46	2.4	1.6	78.8	-0.46	2.1	1.1	12	EN
V6UHT4	74.8	79.9 <sup>L</sup>	78.6	78.4	77.9	-0.75	2.8	2.2	75.9	-1.26	2.8	2.8	12	LC
VHDCVG	81.8	85.2	83.0	85.3	83.8	0.97	3.2	1.7	84.8	1.22	3.4	1.5	12	LZ
VLZW37	78.0	No Data	76.5	76.8	77.1	-0.99	2.8	0.8	77.5	-0.81	3.3	1.9	9	LD
VQCTT2	58.9 <sup>X</sup>	58.5 <sup>X</sup>	53.8 <sup>X</sup>	54.9 <sup>X</sup>	56.5	-7.03 <sup>X</sup>	2.9	2.6	61.9	-5.19 <sup>X</sup>	6.3	6.0 <sup>H</sup>	8	MB
W98QP2	78.9	77.8	80.2	81.5	79.6	-0.27	3.4	1.6	78.0	-0.66	3.3	2.1	11	LD
WAG2W6	73.5	73.9	77.9	74.6	75.0	-1.61	3.1	2.0	74.0	-1.80	2.5	1.5	12	TD
WC79JM	80.1	76.0	82.9	80.0	79.7	-0.22	2.9	2.9	81.9	0.41	3.3	2.8	12	MB
X3VERR	76.0	No Data	79.2	79.7	78.3	-0.65	3.2	2.0	78.2	-0.61	3.2	1.9	9	LD
XHRFKT	74.0	76.1	78.7	71.8 <sup>*H</sup>	75.2	-1.57	4.0	2.9	74.4	-1.68	3.7	3.3	12	LC
XKHKDZ	80.3	78.2	78.4 <sup>L</sup>	78.3	78.8	-0.50	1.9	1.0	80.8	0.11	2.1	2.0	12	LD
XRFEAC	104.4 <sup>XH</sup>	80.8	82.8	84.1	88.0	2.21 <sup>*</sup>	5.1	11.0 <sup>H</sup>	85.1	1.31	4.0	6.4 <sup>H</sup>	12	LD
YBPJKT	70.6 <sup>*H</sup>	81.4	82.4 <sup>H</sup>	78.3	78.2	-0.68	5.1	5.3	81.7	0.38	4.3	4.9	12	LZ
YGUPU4	87.4 <sup>*</sup>	88.5 <sup>*L</sup>	85.7	85.7	86.8	1.85	2.1	1.4	83.6	0.89	4.2	8.0 <sup>H</sup>	9	LC
ZB3KU9	77.9	79.4	79.7	79.4	79.1	-0.42	3.2	0.8	80.3	-0.03	2.9	1.5	12	TH

Consensus (All Labs) Results

<b>Wk Mean</b>	80.03	80.42	80.40	80.47	<b>Month Mean</b>	80.50	<b>Grand Mean</b>	80.40
<b>Avg SDr</b>	3.25	3.73	3.01	3.03	<b>Avg SDr</b>	3.27	<b>Avg SDr</b>	3.27
<b>SD btwn Labs</b>	3.66	3.71	2.69	3.45	<b>SD btwn Labs</b>	3.41	<b>SD btwn Labs</b>	3.56
<b>Labs Includ</b>	50	49	48	48	<b>SD btwn Wks</b>	2.92	<b>SD btwn Wks</b>	3.17
<b>Labs Exclud</b>	2	2	5	4	<b>Labs Includ</b>	52	<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	2	3	1	2				

Instrument Code List as Reported by the Labs

- (EM) - Emerson 1200
- (EN) - Emerson 2200
- (EX) - Emerson (model not specified)
- (LA) - L&W Autoline
- (LC) - L & W Crush Tester 48
- (LD) - L&W Crush Tester 248
- (LX) - L & W 506
- (LZ) - L & W Crush Tester (model not specified)
- (MB) - Messmer Buchel K440
- (TC) - TMI Monitor/Compression Tester, Model 17-37
- (TD) - TMI Digital Crush Tester, Model 17-09
- (TH) - TMI Compression Tester, Model 17-76
- (XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
24ZT4P	No Data	25.1	24.8	25.2	25.0	-0.16	1.8	0.2 L	24.8	0.00	1.9	0.6	13	LW
2DL8QT	23.3 L	24.0 L	23.9 L	23.5 L	23.7	-0.97	0.6	0.4	23.5	-0.97	0.6	1.2	14	LZ
2UPNU7	28.2 L	28.9* L	27.6 L	29.9 XL	28.6	2.02*	0.0	1.0	22.1	-2.00	0.0	7.1 H	8	LU
4E9E6L	24.5 L	24.5 L	25.0 L	24.5 L	24.6	-0.41	0.5	0.3 L	24.8	0.00	0.4	0.6	16	LA
4LQPCV	25.2	25.2	25.3	24.6	25.1	-0.13	1.7	0.3	25.0	0.16	1.8	0.4	16	LU
7L6XDV	24.6 L	25.0 L	23.6 L	24.1 L	24.3	-0.58	0.5	0.6	24.6	-0.16	0.4	0.7	16	LA
8PX88U	22.0	23.4	22.9	22.0*	22.6	-1.65	1.9	0.7	22.6	-1.61	1.8	0.6	15	LU
97LZBR	24.7	24.5	24.8	No Data	24.7	-0.37	1.9	0.2 L	24.8	-0.03	1.9	0.3 L	15	LW
9BDC63	26.1 L	25.8 L	25.7 L	24.7 L	25.6	0.16	0.0	0.6	25.1	0.22	0.0	0.9	16	LU
DMCUPD	25.7	25.6	25.7	24.4	25.3	0.02	2.1	0.6	25.4	0.45	1.8	0.5	16	LW
DXBCHZ	25.2	24.5	24.4	24.6	24.7	-0.38	2.1	0.3	24.3	-0.34	2.1	0.6	16	XX
EHBXUQ	24.2	24.2	25.2	25.0	24.6	-0.39	1.8	0.5	24.6	-0.16	1.8	0.4	16	LY
EX6PBL	23.8	23.5	23.5	23.2	23.5	-1.08	1.8	0.3 L	23.9	-0.65	1.9	0.5	16	LW
G3BXW8	24.3	24.1	25.1	25.7	24.8	-0.30	1.3	0.7	24.3	-0.39	1.7	0.7	16	LW
GTNURT	26.4	26.5	27.6	No Data	26.8	0.92	2.2	0.7	26.0	0.91	2.3	1.4	14	LA
HGQ7GC	24.1	24.9	24.2	23.6	24.2	-0.66	1.4	0.5	24.0	-0.55	1.4	0.5	16	BK
HLJEGC	27.6	27.4	27.3	27.2	27.4	1.25	2.2	0.2 L	27.1	1.72	2.1	1.0	15	LU
J9CQ49	26.1 L	27.0 L	25.0 L	25.8 L	26.0	0.41	0.0	0.8	25.7	0.65	0.0	1.0	16	LA
K8TYE4	22.9	22.8	21.5*	22.1	22.3	-1.79	2.2	0.7	25.3	0.36	2.1	2.5	12	XX
L7DM3W	24.3	24.3	24.2	24.1	24.2	-0.64	2.2	0.1 L	24.1	-0.51	2.2	0.3	16	LW
L8BMBA	26.8	32.0 XL	26.2	26.5 L	27.9	1.58	0.8	2.8	25.6	0.62	0.8	2.4	14	LZ
LAEM6E	28.4 L	28.7* L	26.5 L	24.6 L	27.1	1.06	0.5	1.9	25.8	0.71	0.6	1.8	16	LA
LLN3AY	25.2 L	25.3 L	24.7 L	24.2 L	24.9	-0.26	0.6	0.5	25.3	0.39	0.5	1.0	16	LA
MLAYDL	28.3 L	No Data	No Data	No Data	28.3	1.84	0.0	0.0 L	31.4	4.87 X	0.0	9.3 H	6	LZ
MW6AJ8	25.7 L	25.1 L	27.6 L	26.1 L	26.1	0.51	0.5	1.1	26.9	1.58	0.6	0.9	16	LA
N7BD8H	24.0	24.6	24.4	24.5	24.4	-0.55	1.1	0.3 L	24.5	-0.21	1.2	0.2 L	16	TT
NXWPBV	24.1 L	24.9 L	25.3 L	25.4 L	24.9	-0.23	0.6	0.6	25.6	0.59	0.5	0.8	16	LA
Q4UYWD	27.2	26.3	26.6	24.4	26.1	0.51	2.3	1.2	26.2	1.00	2.3	0.8	16	LZ
Q7MRRW	27.8	27.1	27.2	27.4	27.4	1.27	2.5	0.3	26.5	1.26	2.4	1.1	12	LW
QAK96Q	26.7	25.4	26.2	27.6	26.5	0.71	1.0	0.9	26.1	0.97	1.1	0.7	16	LY
QTFWG8	25.3	25.1	25.0	24.9	25.1	-0.13	1.3	0.2 L	25.0	0.13	1.2	0.2 L	16	LW
QUQWE3	22.8	22.3	22.8	21.9*	22.4	-1.72	1.8	0.4	22.3	-1.84	1.9	0.6	8	XX
RN2NMG	26.1 L	26.6 L	27.1 L	27.8* L	26.9	0.98	0.1	0.7	21.4	-2.48*	0.1	5.9 H	8	LU
RNDP3N	23.1	22.6	22.2	22.1	22.5	-1.70	1.6	0.4	23.0	-1.31	1.9	0.7	16	LU
U6BLG4	22.7	23.6	22.6	24.0	23.2	-1.24	2.1	0.7	23.2	-1.18	1.9	0.6	16	LU



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
UY9BND	26.9 L	26.2 L	26.0 L	25.8 L	26.2	0.57	0.0	0.5	20.4	-3.22 X	0.0	6.3 H	8	XX
V6UHT4	23.9	22.4	24.8	25.6	24.2	-0.67	2.1	1.4	23.2	-1.15	2.0	1.0	16	XX
VQCTT2	26.0 L	26.7 L	25.6 L	26.4 L	26.2	0.53	0.6	0.5	26.8	1.49	0.6	0.7	16	BK
W98QP2	25.8	25.8	25.4	25.8	25.7	0.25	2.0	0.2 L	25.4	0.42	2.3	0.5	16	LU
WC79JM	25.6 L	24.1 L	24.3 L	25.2 L	24.8	-0.28	0.1	0.7	26.1	0.93	0.1	1.1	16	LA
X24Z7H	25.5 L	25.5 L	24.4 L	25.4 L	25.2	-0.06	0.1	0.5	24.9	0.06	1.7	0.6	16	LY
XHRFKT	23.1	23.8	21.9 *	25.1	23.5	-1.10	1.8	1.4	22.9	-1.41	1.9	1.0	16	LY
XKHKDZ	24.2	25.0	25.1	25.1	24.9	-0.25	2.0	0.4	25.0	0.18	2.0	0.3	16	LU
XRFEAC	24.3	26.3	24.6	25.7	25.2	-0.05	2.4	1.0	24.8	-0.02	2.2	0.7	16	LZ
YBPJKT	25.6	24.6	43.9 X	24.3	29.6	2.61 *	2.0	9.5 H	25.9	0.83	2.0	5.0 H	15	LZ
YLR6LZ	27.9	27.3	26.4	27.2	27.2	1.15	2.2	0.6	27.2	1.73	2.4	0.7	16	LA
ZB3KU9	24.3	24.5	24.2	24.2	24.3	-0.60	1.4	0.2 L	24.3	-0.39	1.4	0.2 L	16	TT

**Consensus (All Labs) Results**

<b>Wk Mean</b>	25.22	25.13	24.98	24.92	<b>Month Mean</b>	25.29	<b>Grand Mean</b>	24.79
<b>Avg SDr</b>	1.57	1.60	1.54	1.63	<b>Avg SDr</b>	1.59	<b>Avg SDr</b>	1.64
<b>SD btwn Labs</b>	1.63	1.51	1.52	1.45	<b>SD btwn Labs</b>	1.66	<b>SD btwn Labs</b>	1.36
<b>Labs Includ</b>	46	45	45	43	<b>SD btwn Wks</b>	1.62	<b>SD btwn Wks</b>	1.81
<b>Labs Exclud</b>	0	1	1	1	<b>Labs Includ</b>	47	<b>Labs Includ</b>	45
<b>Labs not rcvd</b>	1	1	1	3				

**Instrument Code List as Reported by the Labs**

(BK) - Buchel Strip Compression Tester BK-155

(LU) - L & W 52 without moisture correction(was 53)

(LY) - L & W 152 without moisture correction

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(LA) - L & W Autoline

(LW) - L & W 53 with moisture correction (was 53M)

(LZ) - L & W (model not specified)

(XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
24ZT4P	No Data	21.2	21.9	21.3	21.5	0.36	1.3	0.4	21.7	0.76	1.2	0.4	11	LW
2DL8QT	21.2	21.8	21.0	21.9	21.5	0.34	0.8	0.4	20.7	-0.40	0.7	1.4	12	LZ
2UPNU7	19.4 L	20.7 L	20.5 L	19.5 L	20.0	-0.93	0.0	0.6	20.8	-0.24	0.8	1.0	8	LU
4E9E6L	20.9 L	19.9 L	19.2 L	19.7 L	19.9	-1.01	0.2	0.7	21.0	-0.04	0.2	1.1	12	LA
4LQPCV	21.5	21.2	21.7	21.2	21.4	0.29	1.2	0.2	21.5	0.53	1.3	0.3	12	BK
7L6XDV	21.1 L	20.7 L	21.1 L	20.9 L	20.9	-0.12	0.2	0.2	21.0	-0.03	0.2	0.3	12	LA
8PX88U	19.4	19.7	18.9	19.0	19.2	-1.62	1.0	0.4	19.3	-1.99	1.2	0.4	12	LU
97LZBR	21.2	21.1	21.5	No Data	21.2	0.14	1.3	0.2	21.2	0.16	1.2	0.5	11	LW
9BDC63	21.5 L	21.0 L	20.9 L	20.7 L	21.0	-0.05	0.0	0.3	20.8	-0.33	0.0	0.3	12	LU
DMCUPD	21.5	21.5	21.2	20.7	21.2	0.13	1.5	0.4	21.7	0.66	1.4	0.6	12	LW
DXBCHZ	20.4	20.9	21.2	20.7	20.8	-0.24	1.3	0.3	21.0	-0.10	1.2	0.3	12	XX
EHBXUQ	20.8	20.6	20.9	20.9	20.8	-0.24	1.2	0.2 L	20.7	-0.38	1.2	0.3	12	LY
EX6PBL	20.1	19.5	20.3	20.2	20.0	-0.93	1.2	0.3	20.4	-0.72	1.2	0.4	12	LW
G3BXW8	21.0	21.5	20.6	21.1	21.0	-0.04	1.0	0.4	20.8	-0.27	1.1	0.4	12	LW
GTNURT	22.8	21.6	22.4	No Data	22.3	1.04	1.8	0.6	22.5	1.54	1.6	1.2	11	LA
HGQ7GC	20.6	20.9	20.8	20.6 L	20.7	-0.32	0.6	0.2 L	20.7	-0.40	0.8	0.2	12	BK
HLJEGC	23.6 *	22.5	23.0	21.6	22.7	1.40	1.1	0.8	22.6	1.66	1.2	0.5	12	LU
J9CQ49	20.3 L	22.0 L	20.2 L	21.8 L	21.1	0.00	0.0	0.9	21.1	0.05	0.0	0.8	8	LA
K8TYE4	18.9	19.3	18.4 *	18.7	18.8	-1.99	1.3	0.4	20.7	-0.40	1.4	2.0 H	8	XX
L7DM3W	20.8	20.6	20.3	20.8	20.6	-0.39	1.2	0.2	20.8	-0.33	1.3	0.2	12	LW
L8BMBA	20.2	19.0	20.4	19.5	19.8	-1.16	0.7	0.6	20.1	-1.01	0.6	1.0	12	LZ
LAEM6E	23.4 *L	23.2 *L	22.6 L	22.4 L	22.9	1.61	0.3	0.5	22.4	1.45	0.3	1.6	12	LA
LLN3AY	20.7 L	21.4 L	21.4 L	21.8 L	21.3	0.22	0.3	0.4	21.2	0.18	0.3	0.9	8	LA
MLAYDL	17.2 XL	No Data	No Data	No Data	17.2	-3.40 X	0.0	0.0 L	18.2	-3.11 X	0.0	1.4	2	LZ
MW6AJ8	23.1 L	22.5 L	23.1 L	22.5 L	22.8	1.53	0.4	0.4	22.6	1.72	0.3	0.4	12	LA
N7BD8H	20.7	21.2	21.0	20.9	20.9	-0.12	0.9	0.2	21.1	0.04	0.9	0.2	12	TT
NXWPBV	21.3 L	22.1 L	21.8 L	21.0 L	21.5	0.40	0.3	0.5	22.0	1.06	0.3	0.7	12	LA
Q4UYWD	22.4	21.8	24.7 X	22.5	22.8	1.56	1.9	1.3	21.8	0.83	1.7	1.2	12	LZ
Q7MRRW	22.5	22.3	22.7	22.8	22.6	1.32	1.1	0.2	22.5	1.57	1.3	0.4	10	LW
QAK96Q	22.0	21.3	21.7	22.4	21.8	0.67	0.6	0.5	21.5	0.54	0.6	0.5	12	LY
QTFWG8	21.2	21.6	21.2	21.5	21.4	0.29	1.1	0.2	21.2	0.19	1.0	0.2	12	LW
QUQWE3	20.0	19.8	20.2	19.2	19.8	-1.13	1.1	0.4	19.8	-1.39	1.1	0.4	4	XX
RN2NMG	19.7 L	20.5 L	19.6 L	10.2 XL	17.5	-3.16 X	0.0	4.9 H	19.3	-1.98	0.8	3.7 H	8	LU
RNDP3N	19.6	19.8	19.6	19.5	19.6	-1.28	1.2	0.1 L	19.9	-1.23	1.2	0.5	12	LU
U6BLG4	19.0	19.5	18.4 *	19.3	19.0	-1.80	1.3	0.5	19.2	-2.05 *	1.3	0.7	12	LU



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
UY9BND	20.2 L	19.4 L	19.1 L	18.9 L	19.4	-1.50	0.0	0.6	20.3	-0.82	0.9	1.1	8	XX
V6UHT4	20.8	20.9	20.8	20.9	20.9	-0.20	1.0	0.1 L	20.0	-1.14	1.1	0.7	12	XX
VQCTT2	22.3 L	21.8 L	21.8 L	21.7 L	21.9	0.73	0.3	0.3	22.1	1.10	0.3	0.6	8	BK
W98QP2	21.1	21.7	21.9	21.9	21.7	0.51	1.4	0.4	21.4	0.36	1.3	0.5	12	LU
WC79JM	20.6 L	20.4 L	20.7 L	21.8 L	20.9	-0.18	0.1	0.6	21.2	0.13	0.1	0.5	12	LA
X24Z7H	21.4 L	21.1 L	21.1 L	21.1 L	21.2	0.08	0.0	0.1 L	21.1	0.01	0.7	0.2 L	8	LY
XHRFKT	19.8	19.0 *	19.9	18.7	19.3	-1.54	1.0	0.6	19.2	-2.00	1.2	1.8 H	12	LY
XKHKDZ	21.7	21.7	21.5	21.2	21.5	0.38	1.2	0.2	21.4	0.41	1.3	0.3	12	LU
XRFEAC	21.0	21.9	22.1	22.6	21.9	0.72	1.2	0.7	21.1	0.07	1.5	0.7	12	LZ
YBPJKT	21.5	21.5	31.8 X	20.7	23.9	2.47 *	1.4	5.3 H	22.2	1.22	1.3	3.1 H	12	LZ
YLR6LZ	22.8	22.2	22.1	22.0	22.3	1.04	1.1	0.3	22.2	1.30	1.2	0.4	12	LA
ZB3KU9	20.3	20.6	20.7	20.7	20.6	-0.45	1.0	0.2	20.8	-0.29	1.0	0.3	12	TT

**Consensus (All Labs) Results**

<b>Wk Mean</b>	21.02	21.00	20.93	20.90	<b>Month Mean</b>	21.07	<b>Grand Mean</b>	21.06
<b>Avg SDr</b>	0.97	1.01	0.98	0.96	<b>Avg SDr</b>	1.02	<b>Avg SDr</b>	1.04
<b>SD btwn Labs</b>	1.12	1.00	1.14	1.14	<b>SD btwn Labs</b>	1.13	<b>SD btwn Labs</b>	0.90
<b>Labs Includ</b>	45	46	44	43	<b>SD btwn Wks</b>	0.92	<b>SD btwn Wks</b>	1.04
<b>Labs Exclud</b>	1	0	2	1	<b>Labs Includ</b>	45	<b>Labs Includ</b>	46
<b>Labs not rcvd</b>	1	1	1	3				

**Instrument Code List as Reported by the Labs**

(BK) - Buchel Strip Compression Tester BK-155

(LU) - L & W 52 without moisture correction (was 53)

(LY) - L & W 152 (was 52M)

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(LA) - L & W Autoline

(LW) - L & W 53 with moisture correction (was 53M)

(LZ) - L & W (model not specified)

(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
Analysis 228

Roughness - Stylus Method, 69 lb Linerboard - 69C  
TAPPI Provisional Test Method T575



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2UPNU7	0.4	-2.59 X	0.1	0.4	-6.27 X	0.1	1	EV
4E9E6L	160.2	0.77	18.3	150.0	0.57	17.9	4	EV
7L6XDV	114.8	-0.18	5.3	117.2	-0.93	7.5	4	EV
8PX88U	150.9	0.58	11.2	143.3	0.26	9.5	4	EV
DMCUPD	156.1	0.69	9.3	143.8	0.28	12.8	4	EV
G3BXW8	135.2	0.25	10.0	137.8	0.01	13.5	4	XX
GCYNLL	128.2	0.10	6.9	152.9	0.70	54.1	4	EV
GTNURT	119.3	-0.09	16.1	115.6	-1.01	12.6	4	LA
J9CQ49	123.7	0.01	10.7	127.2	-0.48	16.7	4	LA
L7DM3W	96.6	-0.57	7.2	98.3	-1.80	10.0	4	EV
L8BMBA	131.1	0.16	14.8	186.8	2.24*	17.1	4	EV
MW6AJ8	138.7	0.32	11.2	148.2	0.48	16.1	4	LA
NXWPBV	101.2	-0.47	12.4	133.2	-0.20	18.4	4	LA
Q4UYWD	230.7	2.26*	117.7	180.1	1.94	80.4	4	EV
QAK96Q	97.0	-0.56	5.8	98.4	-1.79	7.7	4	EV
RAWMM	137.8	0.30	10.4	131.6	-0.28	10.8	4	EV
RN2NMG	0.4	-2.59 X	0.1	0.4	-6.27 X	0.1	2	EV
TYCAWM	143.7	0.43	47.4	143.7	0.28	47.4	1	XX
U6BLG4	149.7	0.55	14.0	148.6	0.50	15.0	4	EV
VQCTT2	108.4	-0.32	18.2	123.9	-0.63	23.5	4	EV
WC79JM	137.3	0.29	17.7	123.0	-0.67	11.4	4	LA
XKHKDZ	139.0	0.33	16.6	139.3	0.08	12.0	4	EV
XRFEAC	139.6	0.34	3.2	147.5	0.45	16.0	4	LA

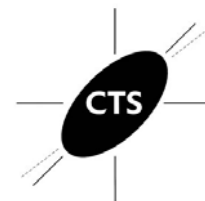
Consensus (All Labs) Results			
Month Mean	123.49	Grand Mean	137.64
Avg SDr	28.76	Avg SDr	27.04
SD btwn Labs	47.51	SD btwn Labs	21.90
Labs Incd	23	Labs Incd	21

Instrument Code List as Reported by the Labs

(EV) - Emveco Microgag Model 210-R

(LA) - L & W Autoline

(XX) - Instrument make/model not specified by lab



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2UPNU7	140.6	-1.09	24.0	143.5	-0.84	17.7	2	TM
4E9E6L	207.0	1.92	19.2	185.5	1.18	27.2	4	HY
4LQPCV	167.7	0.14	4.6	172.0	0.53	6.4	4	HY
EX6PBL	173.4	0.40	5.9	173.9	0.62	4.9	4	TM
G3BXW8	186.8	1.00	10.8	189.0	1.35	7.9	3	HY
GCYNLL	158.8	-0.26	3.0	143.0	-0.87	6.4	4	HY
L8BMBA	207.0	1.92	18.6	203.8	2.07*	18.4	4	SC
LAEM6E	161.2	-0.16	3.1	157.8	-0.15	3.9	4	SC
LLN3AY	28.1	-6.17 X	0.1	29.3	-6.35 X	0.2	2	XX
LPQ7YZ	164.4	-0.01	4.7	164.7	0.18	6.6	4	SC
NXWPBV	172.2	0.34	12.5	159.0	-0.10	7.4	4	TM
Q4UYWD	143.4	-0.96	5.5	143.8	-0.83	15.0	4	TM
QUQWE3	155.2	-0.43	20.4	138.0	-1.11	12.5	4	SC
RN2NMG	127.8	-1.67	29.3	133.0	-1.35	21.5	2	TM
RNDP3N	187.4	1.03	10.3	175.2	0.69	8.3	4	XX
W98QP2	135.0	-1.34	15.0	130.1	-1.49	16.9	4	HZ
WBXV2L	156.0	-0.39	7.7	154.7	-0.30	4.9	4	TM
X3VERR	164.7	0.00	7.3	177.4	0.80	6.3	4	SC
XKHKDZ	154.8	-0.44	2.4	152.8	-0.39	4.2	4	TM

Consensus (All Labs) Results			
Month Mean	164.63	Grand Mean	160.93
Avg SDr	13.77	Avg SDr	12.80
SD btwn Labs	22.11	SD btwn Labs	20.72
Labs Incd	18	Labs Incd	18

**Instrument Code List as Reported by the Labs**

(HY) - Huygen Digitized Scott Internal Bond Tester

(HZ) - Huygen Internal Bond Tester with AccuPress

(SC) - Scott Internal Bond Tester (Manual)

(TM) - TMI Monitor/Internal Bond Tester

(XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
 Analysis 234  
**COF Inclined Plane (Slide Angle), 36 lb Linerboard - 36Z**  
 TAPPI Official Test Method T815



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
24ZT4P	26.8	-0.26	1.3	26.9	-0.29	3.0	4	ZZ
2UPNU7	30.4	1.92	3.2	29.2	1.02	2.9	2	ZZ
4E9E6L	27.2	0.01	3.9	27.6	0.16	2.8	4	ZZ
4LQPCV	21.0	-3.76 X	1.0	23.8	-2.01*	1.2	4	ZZ
8PX88U	27.8	0.35	0.8	26.6	-0.42	1.7	4	ZZ
EX6PBL	26.4	-0.50	2.7	25.2	-1.22	3.1	4	ZZ
G3BXW8	26.4	-0.50	2.1	26.3	-0.62	1.8	4	ZZ
L7DM3W	28.2	0.59	0.8	28.2	0.44	1.3	4	ZZ
L8BMBA	25.6	-0.98	2.8	26.7	-0.37	1.9	4	ZZ
LAEM6E	29.4	1.31	1.1	30.2	1.55	1.1	4	ZZ
LLN3AY	28.2	0.59	1.5	29.2	1.02	2.4	4	ZZ
NXWPBV	26.0	-0.74	1.2	29.5	1.16	3.1	4	ZZ
Q4UYWD	25.2	-1.22	2.8	25.3	-1.15	2.4	4	ZZ
RN2NMG	28.2	0.59	2.5	28.1	0.38	2.9	2	ZZ
U6BLG4	26.3	-0.57	1.5	24.8	-1.45	1.3	4	ZZ
UY9BND	28.8	0.95	1.3	29.3	1.08	1.8	2	ZZ
XKHKDZ	27.6	0.23	1.1	29.0	0.91	2.0	4	ZZ
XTNMFC	28.1	0.53	2.3	27.5	0.06	2.7	4	ZZ
YGUPU4	23.4	-2.31 *	2.5	26.9	-0.26	2.2	4	ZZ

Consensus (All Labs) Results			
<b>Month Mean</b>	27.22	<b>Grand Mean</b>	27.36
<b>Avg SDr</b>	2.15	<b>Avg SDr</b>	2.29
<b>SD btwn Labs</b>	1.66	<b>SD btwn Labs</b>	1.80
<b>Labs Incd</b>	18	<b>Labs Incd</b>	19

**Instrument Code List as Reported by the Labs**

(ZZ) - Instruments No Longer Tracked





WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
24ZT4P	50.4	-0.50	0.8	45.5	-2.46*	1.5	4	LP
2UPNU7	3.2	-19.62 X	0.1	3.2	-20.44X	0.1	2	XX
4E9E6L	56.0	1.74	2.2	55.6	1.86	2.2	4	LA
4LQPCV	51.2	-0.18	2.4	52.0	0.34	2.6	4	HG
7G9AWN	50.5	-0.46	2.0	50.5	-0.32	2.5	4	GG
8PX88U	51.5	-0.06	2.2	51.0	-0.10	1.9	4	LP
EHBXUQ	49.8	-0.75	1.0	49.7	-0.65	1.3	4	LP
EX6PBL	50.3	-0.55	2.5	51.3	0.01	2.8	4	HG
G3BXW8	53.1	0.57	2.3	52.6	0.58	1.9	4	XX
J9CQ49	54.5	1.14	3.2	53.3	0.86	6.7	4	TL
L8BMBA	52.2	0.23	2.1	52.2	0.41	2.9	4	HG
LLN3AY	54.8	1.28	1.4	53.9	1.13	1.7	4	XX
MW6AJ8	51.2	-0.20	1.5	50.3	-0.39	1.4	4	LA
NXWPBV	53.9	0.91	2.2	50.1	-0.49	2.0	4	LA
Q4UYWD	48.4	-1.31	3.2	51.3	0.00	3.3	4	XX
RN2NMG	3.3	-19.57 X	0.1	3.3	-20.41 X	0.1	2	LA
UY9BND	2.7	-19.82 X	0.1	27.2	-10.22 X	1.8	2	XX
VQCTT2	50.3	-0.54	2.5	52.0	0.32	3.5	4	XX
X3VERR	51.6	-0.02	1.6	51.4	0.08	1.8	4	LP
XTNMFC	45.9	-2.31 *	1.8	46.9	-1.84	2.4	4	GA
YQ28PG	54.2	1.02	2.5	52.8	0.66	1.9	4	XX

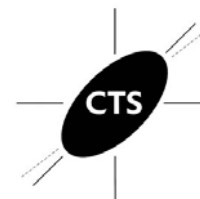
Consensus (All Labs) Results			
Month Mean	51.64	Grand Mean	51.25
Avg SDr	2.17	Avg SDr	2.74
SD btwn Labs	2.47	SD btwn Labs	2.35
Labs Incd	18	Labs Incd	18

**Instrument Code List as Reported by the Labs**

- (GA) - Gurley Precision #4340 Automatic Densometer
- (GG) - Gurley Precision #4320 Densometer
- (HG) - Technidyne - Hagerty Model #1 and Profile System
- (LA) - L & W Autoline
- (LP) - L & W Air Permeance Tester SE 166
- (TL) - Teledyne Gurley Densometer #4110, Oil Flotation
- (XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
24ZT4P	No Data	63.4	66.2	63.2	64.3	1.16	2.9	1.7	63.7	0.96	3.0	1.6	13	LC
34BEPW	57.5	59.2	61.9	65.3	61.0	-0.39	3.0	3.4 H	61.0	-0.44	3.0	2.7	14	LC
3CN7HF	61.2	63.2	61.0	62.7	62.0	0.10	2.2	1.1	62.0	0.08	2.2	0.8	16	LD
4878JR	62.6	62.8	65.2	64.9	63.9	0.96	2.5	1.4	63.0	0.62	2.8	1.0	16	LZ
4LQPCV	61.2	60.9	61.1	58.7	60.5	-0.63	3.7	1.2	61.0	-0.47	3.4	1.3	16	LC
7A8A2R	62.9	62.2	62.7	62.0	62.5	0.30	2.2	0.4	62.6	0.38	2.3	0.4	16	XX
8AMQWL	63.3	64.9	62.1	64.6	63.7	0.91	2.9	1.3	62.2	0.17	2.7	1.4	16	LD
8PX88U	62.2	63.0	60.5	62.2	62.0	0.09	2.8	1.1	61.9	0.03	2.9	1.3	16	LZ
97LZBR	65.6	65.1	66.7*	No Data	65.8	1.87	2.5	0.8	65.0	1.69	2.7	1.3	15	LC
A2HT2D	60.2	59.9	62.1	62.1	61.1	-0.35	2.6	1.2	61.5	-0.17	2.4	1.3	16	EM
ABTX8C	62.5	61.4	59.8	62.8	61.6	-0.09	2.7	1.4	63.5	0.89	3.0	3.5 H	16	XX
AEB9AM	57.8	57.4	56.2*L	57.9	57.3	-2.12*	1.8	0.8	61.0	-0.47	2.6	2.7	16	LD
EHBXUQ	60.9 L	60.1 L	60.8 L	60.6 L	60.6	-0.57	1.2	0.3	60.9	-0.50	1.6	0.5	16	LD
JCB7AB	62.6	62.3	61.9	62.9	62.4	0.29	1.8	0.4	63.0	0.62	1.7	0.7	16	LC
K2PM8P	64.6	64.6	64.0	63.3	64.1	1.09	2.5	0.6	64.5	1.40	2.8	1.3	12	TM
K8TYE4	57.5	57.2	54.5 X	58.0	56.8	-2.38*	2.2	1.6	58.5	-1.78	2.8	2.0	12	TH
L7DM3W	60.3	59.2 L	59.1 L	59.8	59.6	-1.04	1.5	0.6	59.5	-1.27	1.6	0.6	16	TH
LPQ7YZ	65.1 H	62.0	64.6	64.5 H	64.1	1.06	4.4	1.4	64.5	1.39	4.4	1.7	16	LD
MLAYDL	63.5	No Data	No Data	No Data	63.5	0.81	2.5	0.0 L	60.2	-0.89	2.8	3.1	6	LZ
MNUZ37	65.1	67.0	64.9	66.3*	65.8	1.89	2.4	1.0	64.9	1.61	2.4	1.0	16	EM
N7BD8H	58.4	58.1	59.6	59.8	59.0	-1.33	3.4	0.9	60.5	-0.73	4.4	1.9	16	TG
PB24A8	64.8	64.6	65.0	65.4	64.9	1.47	2.0	0.3	65.3	1.83	2.4	0.7	8	XX
PWW8Q6	61.4	62.3	61.6	60.7	61.5	-0.15	2.8	0.7	61.6	-0.15	3.3	1.3	16	LC
Q7MRRW	61.4	61.1 L	61.0 L	60.7 L	61.0	-0.37	1.1	0.3	60.2	-0.87	1.3	1.3	12	LC
QTFWG8	61.1	61.2	61.9	60.6 L	61.2	-0.29	1.6	0.5	61.5	-0.22	2.1	1.0	16	LC
QUQWE3	59.9	58.0	60.2	60.2	59.6	-1.04	3.4	1.1	59.4	-1.33	3.0	1.0	16	LX
R8CDZE	63.1 H	62.0 H	64.7 H	63.4	63.3	0.70	4.7	1.1	64.8	1.54	7.4	3.0	12	LC
RN2NMG	64.1 H	67.5*H	65.8	61.9 H	64.8	1.42	5.1	2.4	58.8	-1.61	4.9	6.7 H	8	LC
RNDP3N	60.2	56.2	62.2	58.9	59.4	-1.14	3.8	2.5	63.5	0.87	3.5	4.8 H	16	LC
TYCAWM	49.7 X	54.8*	48.9 X	51.5 X	51.2	-5.00 X	3.9	2.6	51.2	-5.66 X	3.9	2.6	4	XX
UJGHY6	62.0	62.3	62.7	61.9	62.2	0.20	2.1	0.4	62.5	0.31	2.1	0.4 L	16	LD
V6UHT4	62.0	63.3	62.7	62.6	62.7	0.40	3.4	0.5	63.1	0.67	2.9	1.4	16	LC
VQCTT2	60.7	57.5	57.3	58.2	58.4	-1.59	3.1	1.6	57.9	-2.12*	3.4	1.3	16	MB
VTD3GN	60.7 L	63.3	60.4	61.4	61.5	-0.16	2.0	1.3	60.8	-0.58	2.6	1.2	16	LD
WAG2W6	62.9	62.0	62.6 L	62.6 L	62.5	0.33	1.5	0.4	62.2	0.19	1.6	0.7	16	TD



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
WC79JM	56.9*	59.1	57.4H	61.9	58.8	-1.40	3.4	2.3	58.5	-1.80	3.1	2.5	16	MB
XKHKDZ	62.5	62.0	61.0	61.0	61.6	-0.09	3.3	0.8	61.6	-0.16	2.9	0.9	16	LD
XRFEAC	60.5	62.7	61.0	59.8	61.0	-0.38	3.1	1.2	60.4	-0.79	3.1	1.6	16	LD
YBPJKT	65.1	61.7	58.2	61.5	61.6	-0.08	2.9	2.8H	62.2	0.19	3.6	2.7	15	LZ
YLR6LZ	64.8	63.5	61.5	66.9*	64.2	1.11	3.2	2.3	63.3	0.76	2.8	1.5	16	XX
YQ28PG	61.1	62.6	60.7	61.4	61.4	-0.17	2.5	0.8	61.6	-0.14	2.7	1.0	16	LD
ZB3KU9	61.6	60.1	61.8	61.2	61.1	-0.31	2.9	0.8	61.4	-0.22	2.7	0.7	16	TH
ZUTZUV	59.7	61.7L	62.5	62.4	61.6	-0.11	2.8	1.3	62.9	0.53	3.0	1.5	16	LC

**Consensus (All Labs) Results**

<b>Wk Mean</b>	61.74	61.50	61.82	61.91	<b>Month Mean</b>	61.81	<b>Grand Mean</b>	61.87
<b>Avg SDr</b>	2.89	2.89	2.86	2.92	<b>Avg SDr</b>	2.87	<b>Avg SDr</b>	3.07
<b>SD btwn Labs</b>	2.25	2.74	2.41	2.20	<b>SD btwn Labs</b>	2.12	<b>SD btwn Labs</b>	1.88
<b>Labs Includ</b>	41	42	40	40	<b>SD btwn Wks</b>	1.37	<b>SD btwn Wks</b>	2.04
<b>Labs Exclud</b>	1	0	2	1	<b>Labs Includ</b>	42	<b>Labs Includ</b>	42
<b>Labs not rcvd</b>	1	1	1	2				

**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200 Series

(LD) - L&W Crush Tester 248

(LZ) - L & W Crush Tester (model not specified)

(TD) - TMI Digital Crush Tester, Model 17-09

(TH) - TMI Compression Tester, Model 17-76

(XX) - Instrument make/model not specified by lab

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

(TG) - TMI Compression Tester, Model 17-10

(TM) - TMI/Hinde & Dauch



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
24ZT4P	No Data	72.3	73.6	74.9	73.6	-0.15	3.7	1.3	72.9	-0.54	3.0	0.9	13	XX
34BEPW	70.6 H	76.5	72.4	77.1	74.2	0.06	3.4	3.2	74.3	0.30	3.5	2.5	16	LZ
3CN7HF	73.1	73.4	73.2	72.8	73.1	-0.34	2.1	0.2 L	73.3	-0.29	2.2	0.6	16	LD
4LQPCV	71.7	71.8	72.3	73.7	72.4	-0.62	2.2	0.9	72.8	-0.58	2.6	1.5	16	XX
97LZBR	75.8	76.7	76.7	No Data	76.4	0.91	2.3	0.6	74.9	0.67	2.4	1.7	15	LC
ABTX8C	76.4	77.3	77.6	77.5	77.2	1.21	2.1	0.5	72.6	-0.72	3.4	4.9 H	16	TU
QTFWG8	71.4	71.5	73.1 L	73.0 L	72.3	-0.66	1.5	0.9	71.5	-1.34	1.7	3.2	16	LC
WAG2W6	73.3	73.8	73.3	71.9	73.1	-0.35	2.0	0.8	72.7	-0.66	1.9	0.6	16	TD
YBPJKT	81.0	79.5	80.1	72.8 H	78.4	1.65	4.0	3.8	76.7	1.67	4.0	4.0	15	LZ
ZUTZUV	67.8	71.7 H	64.8 *H	73.8	69.5	-1.70	4.0	4.0	76.4	1.49	2.9	4.7 H	16	LC

Consensus (All Labs) Results									
Wk Mean	73.45	74.44	73.71	74.18	Month Mean	74.00		Grand Mean	73.80
Avg SDr	2.81	2.86	2.83	2.92	Avg SDr	2.86		Avg SDr	2.84
SD btwn Labs	3.85	2.84	4.07	1.95	SD btwn Labs	2.63		SD btwn Labs	1.72
Labs Includ	9	10	10	9	SD btwn Wks	2.12		SD btwn Wks	2.92
Labs Exclud	0	0	0	0	Labs Includ	10		Labs Includ	10
Labs not rcvd	1	0	0	1					

**Instrument Code List as Reported by the Labs**

(LC) - L & W Crush Tester 48

(LD) - L&W Crush Tester 248

(LZ) - L & W Crush Tester (model not specified)

(TD) - TMI Digital Crush Tester, Model 17-09

(TU) - TMI Universal Crush Tester (TMI K440)

(XX) - Instrument make/model not specified by lab



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
24ZT4P	No Data	40.3	44.9	41.8	42.3	-0.62	2.2	2.3	42.0	-0.59	2.2	1.7	13	LC
4LQPCV	44.1	43.5	43.5	45.3	44.1	0.09	3.0	0.9	43.7	0.07	3.1	1.1	16	LC
8WYTQG	43.6	43.3 L	43.5	43.7 L	43.5	-0.15	1.2	0.2 L	42.0	-0.59	1.5	2.2	12	WK
96JJNT	40.4	41.4	40.6	40.4	40.7	-1.26	1.9	0.5	41.0	-0.98	1.8	0.6	16	TH
A2HT2D	41.1	41.1	40.1	41.5	40.9	-1.16	2.0	0.6	41.1	-0.96	2.1	0.9	16	LC
AEB9AM	47.6	46.7	48.3	47.6	47.6	1.44	3.8	0.7	46.9	1.39	3.4	0.9	16	LZ
JCB7AB	48.5	48.4	48.2 L	47.9 L	48.2	1.71	1.3	0.3 L	48.6	2.08*	1.6	0.9	16	LC
K2PM8P	47.3	48.6 H	49.9	50.1	49.0	2.00*	3.4	1.3	48.0	1.82	2.7	1.5	12	LZ
MLAYDL	44.6	No Data	No Data	No Data	44.6	0.28	3.3	0.0 L	40.4	-1.23	3.0	3.6	6	EM
PB24A8	45.9	43.8	45.6	47.7	45.8	0.74	3.0	1.6	45.9	0.99	2.7	1.2	8	XX
PWW8Q6	41.1	40.5	40.4	41.2	40.8	-1.22	2.6	0.4	42.7	-0.32	2.9	1.5	16	LC
TYCAWM	53.2 X	35.6*H	39.6 H	39.2 H	41.9	-0.78	4.6	7.8 H	41.9	-0.63	4.6	7.8 H	4	XX
VTD3GN	44.4	43.7	44.0	45.4	44.4	0.19	1.9	0.8	43.4	-0.04	2.2	1.7	16	LD
W98QP2	41.1	41.1	42.3	42.7	41.8	-0.82	2.6	0.8	41.3	-0.87	2.4	0.8	16	LD
XRFEAC	43.7	41.6	42.2	46.8	43.6	-0.13	2.5	2.3	43.9	0.19	2.6	1.7	16	LD
YQ28PG	42.0	44.0	43.0	42.3	42.8	-0.42	3.4	0.9	42.9	-0.24	3.7	1.0	16	LD
Z4ZJJ	40.9	46.1	44.9	44.9	44.2	0.11	2.9	2.3	43.3	-0.07	3.0	3.2	8	LZ

**Consensus (All Labs) Results**

<b>Wk Mean</b>	43.75	43.11	43.79	44.28	<b>Month Mean</b>	43.89	<b>Grand Mean</b>	43.48
<b>Avg SDr</b>	2.53	2.86	2.96	2.75	<b>Avg SDr</b>	2.82	<b>Avg SDr</b>	2.78
<b>SD btwn Labs</b>	2.66	3.33	3.07	3.16	<b>SD btwn Labs</b>	2.54	<b>SD btwn Labs</b>	2.49
<b>Labs Includ</b>	15	16	16	16	<b>SD btwn Wks</b>	2.30	<b>SD btwn Wks</b>	2.53
<b>Labs Exclud</b>	1	0	0	0	<b>Labs Includ</b>	17	<b>Labs Includ</b>	17
<b>Labs not rcvd</b>	1	1	1	1				

**Instrument Code List as Reported by the Labs**

(EM) - Emerson 1200 Series

(LD) - L&W Crush Tester 248

(TH) - TMI Compression Tester, Model 17-76

(XX) - Instrument make/model not specified by lab

(LC) - L & W Crush Tester 48

(LZ) - L & W Crush Tester (model not specified)

(WK) - Zwick Z005 Crush Tester



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
3CN7HF	14.6	15.1 L	14.4	14.7 L	14.7	-0.06	0.7	0.3	14.6	-0.38	0.8	0.4	16	LA
4878JR	15.3	15.5	14.7	14.8	15.1	0.39	1.3	0.4	15.2	0.59	1.2	0.3	16	LW
4LQPCV	15.1	15.4	15.4	15.2	15.3	0.65	1.2	0.1	15.1	0.42	1.2	0.2	16	LU
7A8A2R	15.0	14.8	14.6	14.5	14.7	-0.05	1.0	0.2	14.8	-0.16	1.2	0.2	16	XX
8PX88U	13.9	13.6	13.3	13.5	13.6	-1.43	1.1	0.2	13.7	-1.82	1.1	0.3	15	LU
A2HT2D	13.9	13.6	14.5	13.9	14.0	-0.96	1.1	0.4	14.2	-1.07	1.1	0.5	16	LB
JCB7AB	15.7	16.1	14.2	14.6	15.2	0.53	0.8	0.9	15.6	1.21	0.8	0.7	16	XX
K2PM8P	15.4	14.4	15.2	14.6	14.9	0.19	1.2	0.5	15.5	0.98	1.2	0.7	12	LA
K8TYE4	12.7*	13.3	12.9	13.0	13.0	-2.17*	1.1	0.3	14.1	-1.16	1.1	1.4 H	12	XX
L7DM3W	15.1	14.5	14.6	15.0	14.8	0.06	1.4	0.3	14.8	-0.14	1.3	0.2	16	LW
Q7MRRW	15.9	15.9	15.7	16.4	16.0	1.49	0.9	0.3	15.8	1.45	1.3	0.3	12	LW
TYCAWM	14.4 L	14.8 L	15.2 L	15.3 L	14.9	0.21	0.0	0.4	14.9	0.08	0.0	0.4	4	XX
UJGHY6	14.8	15.0	14.6	14.5	14.7	-0.03	1.2	0.2	14.8	-0.17	1.2	0.2	16	XX
VQCTT2	15.2 L	15.6 L	16.4 L	15.6 L	15.7	1.19	0.2	0.5	15.8	1.51	0.3	0.5	16	BK
XHRFKT	13.8	13.5	13.5	12.9	13.4	-1.63	1.3	0.4	13.8	-1.73	1.4	0.6	16	LB
XRFEAC	15.2	16.1	16.1	15.5	15.7	1.21	1.0	0.5	15.1	0.44	1.2	0.6	16	LZ
Z42ZJJ	14.1	15.2	16.9*	15.2	15.3	0.74	1.2	1.2 H	15.1	0.45	1.2	0.8	8	LA
ZB3KU9	14.6	14.5	14.1	14.7	14.5	-0.34	0.7	0.3	14.6	-0.49	0.9	0.3	16	TT

**Consensus (All Labs) Results**

<b>Wk Mean</b>	14.69	14.83	14.79	14.66	<b>Month Mean</b>	14.74	<b>Grand Mean</b>	14.86
<b>Avg SDr</b>	1.01	1.08	0.97	1.04	<b>Avg SDr</b>	1.03	<b>Avg SDr</b>	1.09
<b>SD btwn Labs</b>	0.81	0.90	1.05	0.89	<b>SD btwn Labs</b>	0.82	<b>SD btwn Labs</b>	0.63
<b>Labs Includ</b>	18	18	18	18	<b>SD btwn Wks</b>	0.47	<b>SD btwn Wks</b>	0.56
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	18	<b>Labs Includ</b>	18
<b>Labs not rcvd</b>	0	0	0	0				

**Instrument Code List as Reported by the Labs**

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

(LB) - L & W Model 152

(LU) - L & W 52 without moisture correction (was 53)

(LW) - L & W 53 with moisture correction (was 53M)

(LZ) - L & W (model not specified)

(TT) - TMI Short Span Compression, 17-34 (MB K455)

(XX) - Instrument make/model not specified by lab