

# Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #543 (N) - December 2014

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[Introduction to the Containerboard Program](#)

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

Analysis	Sample Lot	Analysis Name
<a href="#">201</a>	<a href="#">BOX8</a>	<a href="#">Box Compression Strength, Corrugated Boxes</a>
<a href="#">202</a>	<a href="#">ECT8</a>	<a href="#">Edgewise Compressive Strength, Wax (T811), Corrugated board</a>
<a href="#">203</a>	<a href="#">ECT8</a>	<a href="#">Edgewise Compressive Strength by Clamp (T839), Corrugated board</a>
<a href="#">205</a>	<a href="#">42B4</a>	<a href="#">Mullen Burst of Linerboard, 42 lb Linerboard</a>
<a href="#">207</a>	<a href="#">36Z3</a>	<a href="#">Mullen Burst of Linerboard, 36 lb Linerboard</a>
<a href="#">215</a>	<a href="#">42B4</a>	<a href="#">Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</a>
<a href="#">217</a>	<a href="#">36Z3</a>	<a href="#">Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard</a>
<a href="#">223</a>	<a href="#">42B4</a>	<a href="#">STFI of Linerboard, 42 lb Linerboard</a>
<a href="#">225</a>	<a href="#">36Z3</a>	<a href="#">STFI of Linerboard, 36 lb Linerboard</a>
<a href="#">228</a>	<a href="#">69C</a>	<a href="#">Roughness - Stylus Method, 69 lb Linerboard</a>
<a href="#">231</a>	<a href="#">36Z</a>	<a href="#">Internal Bond Strength, Linerboard, 36 lb Linerboard</a>
<a href="#">234</a>	<a href="#">36Z</a>	<a href="#">Coefficient of Static Friction - Inclined Plane, 36 lb Linerboard</a>
<a href="#">237</a>	<a href="#">36Z</a>	<a href="#">Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard</a>
<a href="#">240</a>	<a href="#">CM73</a>	<a href="#">Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</a>
<a href="#">250</a>	<a href="#">CM73</a>	<a href="#">Fluted Crush of Medium, 26 lb Corrugating Medium</a>
<a href="#">255</a>	<a href="#">CM73</a>	<a href="#">Ring Crush of Medium, 26 lb Corrugating Medium</a>
<a href="#">261</a>	<a href="#">CM73</a>	<a href="#">STFI of Medium, 26 lb Corrugating Medium</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	June 2010 - December 2011
	36Z2	February 2012 - Current
42# Linerboard	42B2	June 2012 - April 2013
	42B3	May 2013 - Current
69# Linerboard	69A2	January 2013 - September 2013
	69C1	November 2013 - Current
26# Corrugating Medium	CM73	December 2012 - Current

## 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 cycle 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 Incd - The number of laboratory Means included in the Wk Mean for that week.
- Labs Excl'd - 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 CPV - For each laboratory, the average of all the weekly Means reported for this month.  
- **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 Wk - 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 btwn Group - For the current month, the standard deviation of the laboratory Means within the group about the Month Mean, excluding those laboratories flagged with an 'X'.
- SD btwn Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks') for all the participants.
- Labs Incd - The number of laboratory Means included in the Month Mean.

## Cumulative Results

### Laboratory Data

Mean	- For each lab, the average of all the monthly Means reported for the weeks shown.
CPV	- <b>Comparative Performance Value</b> , 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 Wk	- 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.
Inst	- The two letter instrument code. Codes are summarized at the bottom of the last analysis page.

### 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 btwn Wks	- For the cumulative period, the average of the laboratory between week standard deviations for all the participants.
Labs Includ	- 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:**

<u>Flag</u>	<u>Explanation</u>
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**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 recommended.
- \*** 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).

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
4UVKLU	759.5	-1.46	91.2	790.3	-0.31	74.4	4	EX
6HAZF3	790.6	-0.45	52.0	761.9	-1.25	49.4	2	TO
74R9QV	800.5	-0.13	6.9	795.0	-0.16	9.3	2	TE
8JGVEZ	827.0	0.73	67.8	801.3	0.05	65.5	4	ER
B278EW	791.6	-0.42	74.6	814.2	0.47	47.1	4	ER
CAXXLN	824.9	0.66	18.9	837.1	1.22	23.1	4	LM
EEJL7K	814.4	0.32	34.0	817.4	0.57	24.1	4	TB
EYDBPT	824.2	0.64	58.4	788.1	-0.39	45.0	4	LG
GBDZ8D	818.2	0.44	43.3	797.6	-0.07	39.6	4	ER
J92Z8N	744.4	-1.95	48.9	766.0	-1.11	61.9	4	LG
MYXYCE	813.5	0.29	16.3	790.9	-0.30	27.8	4	LL
N3U67B	915.4	3.59 X	51.7	825.1	0.83	44.8	4	LH
TBD2YD	832.6	0.91	49.9	833.0	1.08	43.1	4	ER
U3C7DK	830.6	0.84	34.7	821.2	0.70	34.4	4	ER
XDZCYE	955.0	4.87 X	41.5	865.8	2.16 *	33.1	4	LH
XMRQ2Y	849.9	1.47	53.6	756.8	-1.41	45.0	4	LG
XNLBR6	802.5	-0.07	66.4	785.8	-0.46	66.9	4	LS
ZNWR4A	749.0	-1.80	56.9	751.0	-1.61	49.7	4	ES

Consensus (All Labs) Results			
<b>Month Mean</b>	804.59	<b>Grand Mean</b>	799.91
<b>Avg SDr</b>	52.98	<b>Avg SDr</b>	46.54
<b>SD btwn Labs</b>	30.88	<b>SD btwn Labs</b>	30.50
<b>Labs Incd</b>	16	<b>Labs Incd</b>	18

**Consensus By Method**

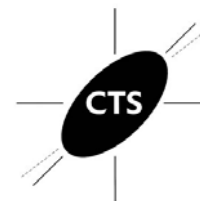
Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	828.68	79.96	24.09	5
Clip sealing	816.86	43.54	12.27	11
Tape sealing	807.46	9.81	2.88	2

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                         | (ES) - Emerson 8510                  |
| (EX) - Emerson Apparatus (Model not specified)     | (LG) - TLS / L.A.B. Validator Series |
| (LH) - L.A.B. Compression Tester Model #10610      | (LL) - Lansmont 76-5K                |
| (LM) - Lansmont 122-15k                            | (LS) - Lansmont Squeezer             |
| (TB) - TMI Monitor/Compression Tester, Model 17-70 | (TE) - Testometric M500 - 25 KN      |
| (TO) - Tinius Olsen Model not specified            |                                      |



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
4ALM3X	61.3	1.26	1.9	61.3	1.26	1.9	1	TB
EYDBPT	59.9	0.72	3.8	59.9	0.72	3.8	1	LC
LGMPX9	58.6	0.23	6.3	58.6	0.23	6.3	1	XX
LVK26R	58.4	0.14	1.3	58.4	0.14	1.3	1	TB
TBD2YD	58.9	0.35	2.2	58.9	0.35	2.2	1	EN
XDZCYE	53.7	-1.65	1.7	53.7	-1.65	1.7	1	TC
XNLBR6	54.4	-1.37	1.9	54.4	-1.37	1.9	1	LC
YGJLN7	58.8	0.32	1.2	58.8	0.32	1.2	1	WK

Consensus (All Labs) Results			
Month Mean	57.99	Grand Mean	57.99
Avg SDr	3.01	Avg SDr	3.01
SD btwn Labs	2.63	SD btwn Labs	2.63
Labs Incd	8	Labs Incd	8

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

(EN) - Emerson 2200

(LC) - L&W Crush Tester 48

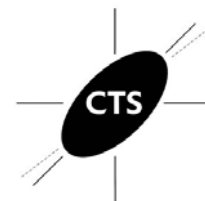
(TB) - TMI Monitor/Compression Tester, Model 17-70

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

(WK) - Zwick Z005 Crush Tester

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

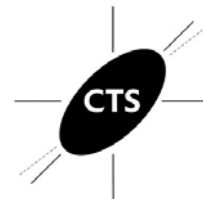
Containerboard Interlaboratory Testing Program  
Analysis 203  
**Edgewise Compressive Strength by T839, Corrugated board - ECT8**  
TAPPI T839



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2JGL28	55.6	-1.08	1.6	55.6	-1.08	1.6	1	TK
4ALM3X	61.3	0.64	1.9	61.3	0.64	1.9	1	TB
4F8DPT	61.5	0.71	3.1	61.5	0.71	3.1	1	TM
4UVKLU	54.9	-1.28	2.5	54.9	-1.28	2.5	1	TL
6HAZF3	60.4	0.36	2.6	60.4	0.36	2.6	1	TB
8JGVEZ	59.0	-0.06	1.3	59.0	-0.06	1.3	1	LD
A9TFN3	58.7	-0.14	2.3	58.7	-0.14	2.3	1	LC
B278EW	60.5	0.39	3.7	60.5	0.39	3.7	1	EN
BRZAQT	55.0	-1.25	4.2	55.0	-1.25	4.2	1	LD
C4ADFN	61.2	0.62	2.5	61.2	0.62	2.5	1	LD
C96YGX	51.0	-2.45 *	1.6	51.0	-2.45 *	1.6	1	LC
CAXXLN	57.2	-0.59	1.5	57.2	-0.59	1.5	1	EM
CLR7EY	54.4	-1.45	2.4	54.4	-1.45	2.4	1	LC
EEJL7K	60.4	0.37	1.1	60.4	0.37	1.1	1	LC
EYDBPT	63.0	1.16	3.2	63.0	1.16	3.2	1	LC
FFEHDU	64.7	1.67	2.6	64.7	1.67	2.6	1	TM
G33G9M	63.4	1.27	2.7	63.4	1.27	2.7	1	CT
GBDZ8D	70.4	3.39 X	1.8	70.4	3.39 X	1.8	1	TD
J9YDNP	57.2	-0.59	2.0	57.2	-0.59	2.0	1	LD
LVK26R	59.4	0.08	2.7	59.4	0.08	2.7	1	TG
MYXYCE	66.0	2.04 *	1.9	66.0	2.04 *	1.9	1	BU
N3U67B	62.7	1.05	2.8	62.7	1.05	2.8	1	EM
N8AFJE	58.3	-0.25	2.2	58.3	-0.25	2.2	1	EX
RVKPBJ	59.8	0.19	2.3	59.8	0.19	2.3	1	LC
TBD2YD	58.8	-0.12	1.3	58.8	-0.12	1.3	1	EN
U3C7DK	54.3	-1.48	1.8	54.3	-1.48	1.8	1	EM
WJCVK2	58.1	-0.33	1.6	58.1	-0.33	1.6	1	LC
WXTQZX	62.7	1.06	2.3	62.7	1.06	2.3	1	LD
XDZCYE	60.8	0.49	0.8	60.8	0.49	0.8	1	TC
XMRQ2Y	62.4	0.98	1.6	62.4	0.98	1.6	1	EM
XNLBR6	56.9	-0.70	2.4	56.9	-0.70	2.4	1	LC
Y3HPPD	57.0	-0.66	2.0	57.0	-0.66	2.0	1	TG
YHE8FC	57.0	-0.65	1.6	57.0	-0.65	1.6	1	LC
YNFJDU	61.5	0.69	1.7	61.5	0.69	1.7	1	LC
YX6AVF	130.5	21.49 X	6.7	130.5	21.49 X	6.7	1	LC
ZNWR4A	56.9	-0.70	2.2	56.9	-0.70	2.2	1	LD



Containerboard Interlaboratory Testing Program  
 Analysis 203  
**Edgewise Compressive Strength by T839**, Corrugated board - ECT8  
 TAPPI T839



**Consensus (All Labs) Results**

<b>Month Mean</b>	59.17	<b>Grand Mean</b>	59.17
<b>Avg SDr</b>	2.30	<b>Avg SDr</b>	2.30
<b>SD btwn Labs</b>	3.32	<b>SD btwn Labs</b>	3.32
<b>Labs Incd</b>	34	<b>Labs Incd</b>	34

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

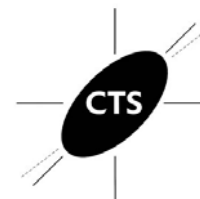
(BU) - Buchel Digital Crush Tester	(CT) - Con-Ten
(EM) - Emerson 1200 Series	(EN) - Emerson 2200
(EX) - Emerson (model not specified)	(LC) - L&W Crush Tester 48
(LD) - L&W Crush Tester 248	(TB) - TMI Monitor/Compression Tester, Model 17-70
(TC) - TMI Monitor/Compression Tester, Model 17-37	(TD) - TMI Digital Crush Tester, Model 17-09
(TG) - TMI Digital Crush Tester, 17-76	(TK) - TLS Compression Tester, Model 5184
(TL) - Tech-Lab Systems Compression	(TM) - TMI/Hinde & Dausch

Containerboard Interlaboratory Testing Program  
Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42B4  
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
37QA34	108.0	110.0 L	109.2 L	106.3	108.4	0.82	4.8	1.6	108.8	1.08	5.0	1.7	16	XX
42DT96	113.7	109.3	109.6	106.3	109.7	1.10	8.9	3.1	107.3	0.68	9.3	3.2	16	LC
43T2LZ	110.8	110.6	111.3	104.2	109.2	0.99	12.3	3.4	109.9	1.36	10.5	2.0	16	LA
6HAZF3	No Data	96.9	98.3	100.6	98.6	-1.21	9.1	1.9	98.2	-1.61	9.8	2.1	14	LA
727J94	104.4	104.5	105.0	102.0	103.9	-0.10	7.5	1.3	104.3	-0.07	7.9	2.0	16	LC
74R9QV	102.2L	100.9 L	No Data	No Data	101.6	-0.60	2.0	0.9	103.4	-0.30	2.0	2.2	4	AH
8JGVEZ	94.3	88.0 X	93.5 *	90.5 X	91.6	-2.66 *	12.7	2.9	97.7	-1.73	10.3	4.4	16	AH
9LJXXA	106.4	101.3	103.5	98.4	102.4	-0.42	10.0	3.4	102.0	-0.64	9.7	6.3 H	15	TB
9XX86Z	99.7	103.9	101.9	99.7	101.3	-0.65	10.1	2.0	100.9	-0.93	9.6	2.6	16	LC
9ZJWMR	97.6	106.1	97.4	104.0	101.3	-0.65	10.3	4.4	103.2	-0.36	8.7	3.4	16	TP
A9TFN3	98.7	95.7	94.8 *	97.9	96.8	-1.59	10.8	1.8	97.7	-1.72	9.9	1.8	16	LA
B29VXV	98.9	102.9	95.8	100.7	99.6	-1.01	8.3	3.0	100.7	-0.98	9.0	2.7	16	LC
B4RWWN	90.0 *	96.7	86.4 X	98.6	92.9	-2.39 *	8.3	5.7	96.9	-1.93	8.0	4.5	16	XX
BRZAQT	98.2	100.4	102.0	99.9	100.1	-0.89	10.4	1.6	100.2	-1.11	9.2	3.5	16	AA
C4ADFN	100.2	101.3	101.3	100.6	100.9	-0.74	6.1	0.6 L	102.0	-0.66	7.2	2.5	16	LA
CAXXLN	97.8	97.4	102.6	97.3	98.8	-1.17	6.0	2.5	100.5	-1.03	7.1	2.3	16	AH
CZVHZQ	101.7	100.2	111.1	109.8	105.7	0.26	7.5	5.6	105.2	0.18	7.9	3.4	15	LZ
DHMZCY	102.4	98.1	108.8	104.4	103.4	-0.21	10.2	4.4	102.6	-0.49	9.3	3.9	16	LC
DJHL44	113.6	107.5 L	117.9 *	114.2 *	113.3	1.84	7.2	4.3	114.2	2.44 *	7.9	2.8	12	LA
EYDBPT	113.1	107.4	107.6	108.5	109.2	0.98	11.6	2.7	108.1	0.89	10.6	2.6	16	LZ
FEZ94T	104.8	99.5	105.2	103.1	103.1	-0.26	11.8	2.6	102.9	-0.42	11.3	2.8	16	LA
FK6RMR	104.9	100.6	103.5	104.4	103.3	-0.22	12.1	1.9	105.4	0.21	10.6	3.0	16	LA
FLCERJ	103.1	103.8	105.0	105.5	104.4	-0.02	5.5	1.1	104.8	0.07	6.3	1.2	16	AH
G33G9M	102.2	102.5	113.3	99.9	104.5	0.01	14.3	6.0	106.7	0.55	15.3	4.8	16	XX
G97KVZ	107.9	103.5 H	108.9	105.1 H	106.3	0.40	19.8	2.5	106.9	0.60	13.7	2.5	16	LZ
GTH8PL	98.3	96.1	100.9	98.2	98.3	-1.26	8.6	2.0	98.9	-1.44	9.1	1.5	16	LA
J6X9RW	104.2H	111.4	107.9	106.0	107.4	0.61	11.7	3.1	107.8	0.82	8.1	2.4	16	LA
J92Z8N	103.4	99.8	105.9	106.9	104.0	-0.09	8.3	3.2	104.5	-0.01	9.4	2.7	16	AH
JBK27G	90.4 *	105.7	101.0	103.8	100.2	-0.87	10.7	6.8	99.8	-1.19	10.0	5.0	12	LC
K6JVEK	106.8	108.6	108.0 L	107.7 L	107.8	0.70	4.4	0.8	108.9	1.10	4.4	2.8	16	LA
PTKZTK	105.8L	101.6 L	105.2	103.2	104.0	-0.09	4.5	1.9	103.0	-0.40	4.1	1.4	16	LJ
Q77W8M	102.6	106.3	107.0	109.0	106.2	0.37	10.2	2.7	106.6	0.52	10.7	1.9	8	LA
QQFFVC	107.1	104.3	102.8	101.7	104.0	-0.09	11.5	2.4	103.7	-0.21	11.7	2.3	16	AX
QUCB9J	105.7	99.4	108.1	103.5	104.2	-0.05	10.0	3.7	104.1	-0.12	11.0	3.0	15	AH
QXUFZM	99.7	102.1	105.5	132.3 XH	109.9	1.14	45.5	15.1H	104.5	-0.01	24.5	7.8 H	16	LC



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
UFYEBL	102.5	105.8	104.9	106.4	104.9	0.10	9.7	1.7	105.9	0.35	9.8	2.0	8	LC
VKCEAX	113.2	114.7 *	114.8 L	115.7 *	114.6	2.11 *	7.6	1.0	113.4	2.24 *	10.7	6.3 H	16	AH
VKV9YE	110.2	107.9	124.0 X	107.5	112.4	1.65	8.1	7.8 H	110.2	1.42	7.9	4.7	16	TB
W9FGA6	102.0	No Data	103.3	103.9	103.1	-0.28	8.5	1.0	103.3	-0.32	9.8	2.5	15	LA
WEHWBD	110.6	112.3	111.2	113.4	111.9	1.54	11.6	1.2	110.1	1.40	10.1	2.4	16	TB
WH7668	101.4	105.8	102.5	104.1	103.4	-0.20	12.0	1.9	102.1	-0.62	10.9	2.2	16	TB
XANA3B	107.6	105.3 L	107.3	105.6	106.5	0.42	6.4	1.1	107.4	0.71	7.0	1.9	16	LB
XDZCYE	104.3	107.5	109.3	104.5	106.4	0.40	11.1	2.4	104.9	0.08	10.1	3.5	16	AA
XFTULA	99.6	101.7	105.4	103.9	102.7	-0.36	9.6	2.6	102.3	-0.57	11.3	2.5	16	LA
XMWZ2C	100.8	103.6	98.8	101.6	101.2	-0.67	10.0	2.0	103.5	-0.28	9.5	2.5	16	AH
XNLBR6	115.0*H	110.2	113.4	113.3	113.0	1.77	13.5	2.0	109.9	1.36	11.1	3.0	16	AH
YD46J8	110.2	107.2	108.0	106.1	107.9	0.72	9.1	1.7	109.4	1.23	9.1	3.1	16	LC
YWAN6A	107.7	110.0	105.0	107.9	107.7	0.67	10.6	2.1	105.7	0.28	11.0	4.1	16	LJ
YX6AVF	101.3	107.7	101.9	107.9	104.7	0.06	12.5	3.6	102.7	-0.48	11.4	3.7	8	LA
ZNWR4A	104.2	108.7	106.8	113.3	108.3	0.79	10.2	3.8	107.5	0.74	10.0	2.9	16	LA
ZNYFM9	100.4	102.6	103.6	97.4	101.0	-0.71	7.5	2.8	101.7	-0.73	8.8	3.0	12	LC

## Consensus (All Labs) Results

<b>Wk Mean</b>	103.79	104.23	105.34	104.66	<b>Month Mean</b>	104.42	<b>Grand Mean</b>	104.55
<b>Avg SDr</b>	9.86	10.59	10.18	9.18	<b>Avg SDr</b>	11.72	<b>Avg SDr</b>	10.04
<b>SD btwn Labs</b>	5.60	4.60	5.09	4.56	<b>SD btwn Labs</b>	4.82	<b>SD btwn Labs</b>	3.95
<b>Labs Includ</b>	50	49	48	48	<b>SD btwn Wks</b>	3.77	<b>SD btwn Wks</b>	3.31
<b>Labs Exclud</b>	0	1	2	2	<b>Labs Includ</b>	51	<b>Labs Includ</b>	51
<b>Labs not rcvd</b>	1	1	1	1				

## Instrument Code List as Reported by the Labs

(AA) - Perkins Model A

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

(LB) - L &amp; W Burst-O-Matic

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

(TB) - TMI Monitor/Burst 1000

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

(AH) - Perkins Model AH

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

(LC) - L &amp; W Autoline

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

(TP) - Technidyne PROFILE/Plus

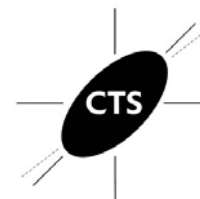
Containerboard Interlaboratory Testing Program  
Analysis 207

Bursting Strength (Mullen), 36 lb Linerboard - 36Z3

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
37QA34	78.4	80.6	82.5	81.0	80.6	0.61	3.7	1.7	80.6	0.61	3.7	1.7	4	XX
42DT96	87.0 *	83.2 L	85.3	85.9	85.4	2.01 *	4.5	1.6	85.4	2.01 *	4.5	1.6	4	LC
43T2LZ	78.3	82.9	81.2	81.9	81.1	0.75	4.2	2.0	81.1	0.75	4.2	2.0	4	LA
6HAZF3	No Data	74.9	74.4	71.9	73.7	-1.43	6.1	1.6	73.7	-1.43	6.1	1.6	3	LA
727J94	81.1	77.1	77.2	78.6	78.5	-0.03	3.8	1.8	78.5	-0.03	3.8	1.8	4	LC
74R9QV	83.2	84.3	83.9	81.0	83.1	1.34	5.2	1.5	83.1	1.34	5.2	1.5	4	AH
8JGVEZ	65.9 X	69.1 *	68.3 *H	66.3 *	67.4	-3.31 X	7.2	1.5	67.4	-3.31 X	7.2	1.5	4	AH
9LJXXA	80.2	76.6	72.4	75.6	76.2	-0.71	4.9	3.2	76.2	-0.71	4.9	3.2 H	4	TB
9XX86Z	78.5	75.2	78.2	76.3	77.0	-0.45	4.6	1.6	77.0	-0.45	4.6	1.6	4	LC
9ZJWMR	73.5	78.3	75.8	74.4	75.5	-0.91	4.6	2.1	75.5	-0.91	4.6	2.1	4	TP
A9TFN3	71.7 *	72.7	75.7	75.6	73.9	-1.38	5.7	2.0	73.9	-1.38	5.7	2.0	4	LA
B29VXV	76.7	74.2	76.1	73.4	75.1	-1.03	5.2	1.6	75.1	-1.03	5.2	1.6	4	LC
B4RWWN	76.2	77.0	74.7	71.1	74.8	-1.13	5.4	2.6	74.8	-1.13	5.4	2.6	4	XX
BRZAQT	76.8	73.8 L	77.1	75.2	75.7	-0.84	4.2	1.5	75.7	-0.84	4.2	1.5	4	AA
C4ADFN	75.6	74.4	75.1	74.5	74.9	-1.09	3.5	0.5	74.9	-1.09	3.5	0.5	4	LA
CAXXLN	73.6	78.6	75.7 L	75.1	75.8	-0.84	3.5	2.1	75.8	-0.84	3.5	2.1	4	AH
CZVHZQ	80.7	80.3	77.9	78.6	79.4	0.24	4.6	1.3	79.4	0.24	4.6	1.3	4	LZ
DHMZCY	75.0	78.8	79.3	80.8	78.5	-0.03	5.6	2.5	78.5	-0.03	5.6	2.5	4	LC
DJHL44	83.6	87.6 *	84.1	83.3	84.7	1.80	5.0	2.0	84.7	1.80	5.0	2.0	4	LA
EYDBPT	79.8	83.3	84.3	80.5 L	82.0	1.02	5.9	2.2	82.0	1.02	5.9	2.2	4	LZ
FEZ94T	78.5	81.0	79.3	79.4	79.6	0.29	5.5	1.0	79.6	0.29	5.5	1.0	4	LA
FK6RMR	80.5	78.2	77.6	85.9	80.6	0.59	6.0	3.8 H	80.6	0.59	6.0	3.8 H	4	LA
FLCERJ	81.0	80.3	80.7	79.4	80.4	0.53	4.4	0.7	80.4	0.53	4.4	0.7	4	AH
G33G9M	75.6	68.8 *H	69.9 *	68.3 *	70.7	-2.35 *	7.3	3.4	70.7	-2.35 *	7.3	3.4 H	4	XX
G97KVZ	78.4	81.3	77.5	81.3	79.6	0.31	5.2	2.0	79.6	0.31	5.2	2.0	4	LZ
GTH8PL	72.9	73.2	72.7	72.2	72.7	-1.73	5.2	0.4	72.7	-1.73	5.2	0.4	4	LA
J6X9RW	83.5	82.1	80.3	81.9	81.9	1.00	5.7	1.3	81.9	1.00	5.7	1.3	4	LA
J92Z8N	76.1	79.7	77.8	81.2	78.7	0.04	5.8	2.2	78.7	0.04	5.8	2.2	4	AH
JBK27G	74.1	76.9	79.7	75.9	76.6	-0.57	5.0	2.3	76.6	-0.57	5.0	2.3	4	LC
K6JVEK	81.0	80.2 L	80.3	80.9	80.6	0.60	2.6	0.4	80.6	0.60	2.6	0.4	4	LA
PTKZTK	81.9	81.6 L	81.4	81.7	81.7	0.91	2.5	0.2 L	81.7	0.91	2.5	0.2 L	4	LJ
Q77W8M	79.0	78.5	80.2	79.4	79.3	0.20	5.5	0.7	79.3	0.20	5.5	0.7	4	LA
QQFFVC	76.4	73.7	78.2	77.1	76.4	-0.66	4.4	1.9	76.4	-0.66	4.4	1.9	4	AX
QUCB9J	76.6	79.1	74.4	75.6	76.4	-0.64	5.5	2.0	76.4	-0.64	5.5	2.0	4	AH
QXUFZM	77.5	79.4	78.5	77.6	78.3	-0.10	5.4	0.9	78.3	-0.10	5.4	0.9	4	LC



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
UFYEBL	81.0	75.5	78.1	78.2	78.2	-0.12	6.6	2.2	78.2	-0.12	6.6	2.2	4	XX
VKCEAX	87.3*	86.6	85.0	85.8	86.2	2.25*	5.4	1.0	86.2	2.25*	5.4	1.0	4	AH
VKV9YE	89.5X	87.8*	88.5*	88.9*	88.7	3.00X	4.4	0.7	88.7	3.00X	4.4	0.7	4	TB
W9FGA6	77.3	No Data	79.8	76.6	77.9	-0.20	6.2	1.7	77.9	-0.20	6.2	1.7	3	LA
WEHWBD	83.1	85.8	83.1	85.6	84.4	1.72	5.9	1.5	84.4	1.72	5.9	1.5	4	TB
WH7668	81.0	76.4	74.9	73.7	76.5	-0.61	5.4	3.2	76.5	-0.61	5.4	3.2	H 4	TB
XANA3B	76.3L	76.3	77.0L	77.2	76.7	-0.56	2.9	0.5	76.7	-0.56	2.9	0.5	4	LB
XDZCYE	81.0	81.0	80.0	79.5	80.4	0.53	5.4	0.8	80.4	0.53	5.4	0.8	4	AA
XFTULA	76.4	80.3	78.8	77.6	78.3	-0.09	4.5	1.7	78.3	-0.09	4.5	1.7	4	LA
XMWZ2C	77.1	76.7	72.2	73.0	74.8	-1.13	6.1	2.5	74.8	-1.13	6.1	2.5	4	AH
XNLBR6	83.2	81.9H	79.8	79.2	81.0	0.73	6.9	1.9	81.0	0.73	6.9	1.9	4	AH
YD46J8	85.7	82.8	84.9	82.1	83.9	1.57	5.5	1.7	83.9	1.57	5.5	1.7	4	LC
YWAN6A	79.3	79.3	81.3	78.2	79.5	0.28	5.4	1.3	79.5	0.28	5.4	1.3	4	LJ
YX6AVF	79.4	77.4	77.9	76.9	77.9	-0.20	6.2	1.1	77.9	-0.20	6.2	1.1	4	LA
ZNWR4A	78.4	78.2	77.4	80.7	78.7	0.03	6.3	1.4	78.7	0.03	6.3	1.4	4	LA
ZNYFM9	77.4	78.1	76.2	75.5	76.8	-0.53	6.3	1.1	76.8	-0.53	6.3	1.1	4	LC

### Consensus (All Labs) Results

<b>Wk Mean</b>	78.89	78.82	78.48	78.19	<b>Month Mean</b>	78.58	<b>Grand Mean</b>	78.58
<b>Avg SDr</b>	5.03	5.27	5.41	5.23	<b>Avg SDr</b>	5.23	<b>Avg SDr</b>	5.23
<b>SD btwn Labs</b>	3.55	4.18	4.03	4.52	<b>SD btwn Labs</b>	3.37	<b>SD btwn Labs</b>	3.37
<b>Labs Includ</b>	48	50	51	51	<b>SD btwn Wks</b>	1.85	<b>SD btwn Wks</b>	1.85
<b>Labs Exclud</b>	2	0	0	0	<b>Labs Includ</b>	49	<b>Labs Includ</b>	49
<b>Labs not rcvd</b>	1	1	0	0				

### Instrument Code List as Reported by the Labs

(AA) - Perkins Model A

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

(LB) - L &amp; W Burst-O-Matic

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

(TB) - TMI Monitor/Burst 1000

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

(AH) - Perkins Model AH

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

(LC) - L &amp; W Autoline

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

(TP) - Technidyne PROFILE/Plus



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
2CYDFW	103.4	101.5	98.5	101.6	101.3	0.10	3.6	2.0	102.8	0.55	3.7	1.7	16	LC
2JGL28	82.8 X	83.4 XL	83.4 X	84.5 X	83.5	-3.87 X	3.9	0.7 L	86.1	-3.97 X	4.3	5.3	16	MB
37QA34	97.6	95.2	105.8	104.8	100.9	0.01	4.3	5.2	100.7	-0.01	4.5	3.8	16	XX
3FVLWC	98.4	98.6	No Data	No Data	98.5	-0.52	3.6	0.2 L	100.9	0.03	3.9	2.4	8	EX
42DT96	102.1	102.8	101.2	99.2	101.3	0.11	4.5	1.6	104.3	0.98	3.9	3.6	16	TC
43T2LZ	98.9	103.4	101.9	102.1	101.6	0.17	3.6	1.9	99.3	-0.38	3.9	2.8	16	LZ
4YZG7U	104.0	106.1	104.5	103.3	104.5	0.82	4.7	1.2	102.7	0.53	4.5	2.8	16	EM
6KM96Q	101.1	101.6	99.4	99.6	100.4	-0.09	5.1	1.1	100.4	-0.08	5.1	1.1	4	TH
727J94	104.4	105.2	107.6	105.8	105.8	1.11	4.6	1.4	105.2	1.22	8.5	2.7	16	LC
74R9QV	102.2	100.1	101.2	101.8 L	101.3	0.11	2.5	0.9	101.1	0.09	2.4	0.8	8	LD
7LPMQM	102.5	108.1	80.0 XH	99.5	97.5	-0.73	8.9	12.2H	103.3	0.69	6.4	7.1 H	16	XX
8JGVEZ	99.1	102.6	99.9	99.0	100.2	-0.15	3.9	1.7	100.5	-0.05	3.4	1.7	16	LD
9LJXXA	103.6	97.6	105.6	107.7	103.6	0.63	3.0	4.4	103.9	0.87	4.4	8.8 H	15	LC
9XX86Z	101.6	98.3	98.9	98.5	99.3	-0.34	5.1	1.5	101.3	0.16	5.6	5.8	16	LC
9ZJWMR	103.6	99.9	101.6	102.5	101.9	0.24	3.8	1.6	100.5	-0.07	3.5	2.4	16	TH
A9TFN3	94.7	93.8	98.1	96.4	95.8	-1.14	4.3	1.9	97.0	-1.01	4.2	2.2	16	LC
B278EW	101.9	99.1	99.9	97.6	99.6	-0.26	3.5	1.8	97.7	-0.82	3.5	2.2	16	EN
B29VXV	102.3	103.9	102.9	104.8	103.4	0.59	3.6	1.1	105.1	1.19	4.0	3.3	16	LD
B4RWWN	103.3H	108.3	113.2 *	107.1	108.0	1.61	6.2	4.1	108.4	2.10 *	5.3	3.1	16	LZ
BDK6JZ	99.6	104.1	100.3	98.2	100.5	-0.07	3.4	2.5	103.8	0.83	3.6	2.9	16	LD
BRZAQT	100.6	97.4	99.6	98.8	99.1	-0.38	3.4	1.3	98.0	-0.74	3.5	2.5	15	LD
C4ADFN	96.6	99.2	97.7	99.3	98.2	-0.59	2.6	1.3	99.3	-0.40	3.0	1.8	16	LD
CAXXLN	99.4	100.2	99.5	108.9	102.0	0.26	3.0	4.6	99.8	-0.25	2.6	2.7	16	EM
CZVHZQ	99.8	97.0	100.7	101.7	99.8	-0.23	4.8	2.0	96.0	-1.29	3.8	5.5	16	LC
DJHL44	109.2	106.8	108.9	106.4	107.8	1.57	4.2	1.4	108.1	2.00 *	4.7	1.8	12	LD
EYDBPT	101.8	105.9	107.6	106.6 L	105.5	1.05	3.1	2.5	104.1	0.92	3.1	2.4	16	LC
FCBTPQ	106.9	102.0	98.5 L	95.3	100.7	-0.03	4.3	5.0	100.9	0.05	4.6	3.2	15	MB
FEZ94T	94.2	93.8 H	94.2 H	97.4	94.9	-1.33	6.7	1.7	98.5	-0.62	5.3	3.8	16	LC
GTH8PL	99.7	97.9	101.7	97.5	99.2	-0.36	3.9	1.9	99.1	-0.43	3.5	1.7	16	LC
HM2ERR	99.0	100.0	98.4	96.2	98.4	-0.54	3.7	1.6	98.0	-0.75	3.6	2.3	12	XX
J6X9RW	101.7	101.6 L	101.3 L	101.1 L	101.4	0.13	2.1	0.3 L	101.1	0.10	2.2	0.5 L	16	LZ
JBK27G	97.8	99.8	97.5	99.0	98.5	-0.51	4.8	1.1	98.7	-0.54	4.6	2.4	12	LD
K6JVEK	100.1	100.0 L	99.3 L	97.4 L	99.2	-0.36	1.6	1.2	101.9	0.31	2.0	7.0 H	16	LD
LLF3LH	99.2 L	100.2 L	99.4 L	99.7 L	99.6	-0.26	1.5	0.4 L	100.0	-0.19	2.0	1.2	16	LD
N3U67B	104.6	107.7	104.4	101.5	104.5	0.83	3.4	2.5	104.5	1.04	4.2	7.1 H	16	EM



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
PTKZTK	102.7	102.5	102.9	103.1	102.8	0.45	2.9	0.2 L	102.1	0.39	4.0	1.1	16	LD
QQFFVC	105.9	103.8	106.7	103.8	105.1	0.95	4.2	1.5	100.5	-0.05	5.4	6.7	16	LX
R37WXH	96.2 H	101.1	97.0 H	97.4 H	97.9	-0.65	8.9	2.2	99.0	-0.46	8.1	2.1	16	MB
RUQ6JD	105.7	99.7 H	97.3	104.2	101.7	0.20	5.6	3.9	99.8	-0.26	5.1	5.3	11	LC
U3C7DK	92.8 *	91.8	91.2 *	91.8	91.9	-2.00	3.3	0.6 L	92.0	-2.36 *	3.9	1.4	16	EX
VKCEAX	107.9	109.1	106.9	108.3	108.1	1.62	4.4	0.9	106.5	1.55	4.7	2.8	16	LZ
VKV9YE	111.3*	109.8	102.7	116.9 X	110.2	2.10 *	4.9	5.9	113.4	3.43 X	4.8	4.6	16	LX
W9FGA6	77.6 XH	No Data	104.1	100.4	94.0	-1.52	7.3	14.4H	100.6	-0.04	6.4	13.1 H	15	LC
WEHWBD	100.3H	95.1	94.9	97.3	96.9	-0.88	4.9	2.5	98.2	-0.67	4.9	3.0	16	LC
WH7668	102.1	81.2 X	108.6	78.7 X	92.7	-1.83	3.6	14.9H	92.2	-2.32 *	4.0	10.4 H	15	LZ
XANA3B	99.6	103.9	99.8	98.2	100.4	-0.10	5.2	2.4	101.0	0.07	4.7	2.0	16	LC
XFTULA	110.1	113.2 *	113.7 *	111.7 *	112.2	2.55 *	4.0	1.6	105.2	1.22	4.0	4.6	16	LD
XMRQ2Y	106.9	106.8	104.9	102.9	105.4	1.02	4.6	1.9	98.4	-0.64	4.1	5.7	16	EM
XMWZ2C	105.7	107.7	106.5	108.5	107.1	1.41	3.3	1.2	108.3	2.06 *	3.8	1.9	16	LC
XNLBR6	101.1	98.4	100.4	99.9	100.0	-0.19	4.4	1.1	99.8	-0.24	4.0	1.9	16	LC
Y3HPPD	92.0 *	92.3	91.5 *	92.5	92.0	-1.97	3.2	0.4 L	93.6	-1.94	3.4	1.4	16	TH
YWAN6A	95.3	93.9	93.1	88.8 *	92.8	-1.80	3.1	2.8	93.2	-2.03 *	3.7	3.2	16	LC
YX6AVF	No Data	96.5 H	96.4 H	95.9	96.3	-1.02	7.0	0.3 L	99.6	-0.30	6.3	3.3	7	LC
ZNYFM9	111.0*H	103.0 H	97.5 H	95.5	101.7	0.21	9.7	7.0	100.8	0.02	8.7	4.5	13	LA

**Consensus (All Labs) Results**

<b>Wk Mean</b>	101.59	101.33	101.28	100.73	<b>Month Mean</b>	100.81	<b>Grand Mean</b>	100.73
<b>Avg SDr</b>	4.27	4.53	4.39	4.62	<b>Avg SDr</b>	4.64	<b>Avg SDr</b>	4.58
<b>SD btwn Labs</b>	4.38	4.81	4.87	4.69	<b>SD btwn Labs</b>	4.46	<b>SD btwn Labs</b>	3.68
<b>Labs Includ</b>	51	51	51	50	<b>SD btwn Wks</b>	4.11	<b>SD btwn Wks</b>	4.27
<b>Labs Exclud</b>	2	2	2	3	<b>Labs Includ</b>	53	<b>Labs Includ</b>	52
<b>Labs not rcvd</b>	1	1	1	1				

**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
- (TH) - TMI Compression Tester, Model 17-76
- (XX) - Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program  
Analysis 217

Ring Crush, 36 lb Linerboard - 36Z3  
TAPPI Official Test Method T822



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
2CYDFW	82.6	75.6	76.2	76.0	77.6	-0.73	3.0	3.3	77.6	-0.73	3.0	3.3	4	LC
2JGL28	64.7 X	68.9 X	65.5 X	64.2 X	65.8	-3.94 X	3.6	2.1	65.8	-3.94 X	3.6	2.1	4	MB
37QA34	72.3 *	73.0	83.9	77.4	76.7	-0.99	2.9	5.3	76.7	-0.99	2.9	5.3 H	4	XX
3FVLWC	81.9	81.4	No Data	No Data	81.6	0.37	3.0	0.3 L	81.6	0.37	3.0	0.3 L	2	EX
42DT96	79.4	79.1	No Data	No Data	79.2	-0.29	2.5	0.2 L	79.2	-0.29	2.5	0.2 L	2	TC
43T2LZ	82.9	81.1	83.5	81.2	82.2	0.52	3.4	1.2	82.2	0.52	3.4	1.2	4	LZ
4YZG7U	78.5	79.7	82.3	80.2	80.2	-0.03	3.2	1.6	80.2	-0.03	3.2	1.6	4	EM
6KM96Q	78.0	77.8	77.8	78.9	78.1	-0.59	4.2	0.5 L	78.1	-0.59	4.2	0.5 L	4	TH
727J94	83.5	82.2	84.1	85.0	83.7	0.93	3.2	1.2	83.7	0.93	3.2	1.2	4	LC
74R9QV	81.5	82.1	80.8	80.9	81.3	0.29	3.5	0.6	81.3	0.29	3.5	0.6	4	LD
7LPMQM	80.0	83.5	79.7	60.4 XH	75.9	-1.20	6.1	10.5H	75.9	-1.20	6.1	10.5 H	4	XX
8JGVEZ	81.4	80.9	81.8	79.8	81.0	0.19	2.3	0.9	81.0	0.19	2.3	0.9	4	LD
9LJXXA	84.6	80.5	86.6	86.0	84.4	1.13	2.4	2.8	84.4	1.13	2.4	2.8	4	LC
9XX86Z	79.5	79.3	81.4	80.1	80.1	-0.06	3.9	0.9	80.1	-0.06	3.9	0.9	4	LC
9ZJWMR	79.9	79.4	83.2	82.2	81.1	0.23	2.9	1.8	81.1	0.23	2.9	1.8	4	TH
A9TFN3	78.5	78.3	78.8	78.6	78.6	-0.47	3.3	0.2 L	78.6	-0.47	3.3	0.2 L	4	LC
B278EW	81.5	83.0	79.5 L	78.6	80.6	0.10	2.4	2.0	80.6	0.10	2.4	2.0	4	EN
B29VXV	81.0	83.9	84.2	84.6	83.4	0.86	2.7	1.7	83.4	0.86	2.7	1.7	4	LD
B4RWWN	85.5	86.0	88.0 H	87.7	86.8	1.78	4.4	1.2	86.8	1.78	4.4	1.2	4	LZ
BDK6JZ	80.8	78.8	82.7	82.2	81.1	0.23	3.3	1.7	81.1	0.23	3.3	1.7	4	LD
BRZAQT	77.6	79.1	77.6	76.8 L	77.8	-0.69	2.0	0.9	77.8	-0.69	2.0	0.9	4	LD
C4ADFN	78.4	80.1	78.2	79.4	79.0	-0.34	2.5	0.9	79.0	-0.34	2.5	0.9	4	LD
CAXXLN	78.7	77.3	80.0	84.1	80.0	-0.07	2.1	2.9	80.0	-0.07	2.1	2.9	4	EM
CZVHZQ	79.6	78.8	76.5	79.8	78.7	-0.44	4.0	1.5	78.7	-0.44	4.0	1.5	4	LC
DJHL44	82.4	83.4	82.1	86.5	83.6	0.91	3.2	2.0	83.6	0.91	3.2	2.0	4	LD
EYDBPT	85.6	86.7	85.0	84.9	85.5	1.44	2.3	0.8	85.5	1.44	2.3	0.8	4	LC
FCBTPQ	84.3	77.8	77.5	77.6	79.3	-0.27	2.6	3.3	79.3	-0.27	2.6	3.3	4	MB
FEZ94T	71.3 *H	71.1 *H	72.5 *H	74.0 H	72.2	-2.20 *	5.7	1.3	72.2	-2.20 *	5.7	1.3	4	LC
GTH8PL	79.6	79.7	81.3	79.8	80.1	-0.05	2.0	0.8	80.1	-0.05	2.0	0.8	4	LC
HM2ERR	78.4	80.6	77.5	78.4	78.7	-0.43	2.4	1.3	78.7	-0.43	2.4	1.3	4	XX
J6X9RW	78.5	78.2	78.8	78.8	78.6	-0.46	1.9	0.3 L	78.6	-0.46	1.9	0.3 L	4	LZ
JBK27G	79.8	82.8	82.1	77.2	80.5	0.05	3.7	2.5	80.5	0.05	3.7	2.5	4	LD
K6JVEK	77.7 L	78.6 L	78.3	76.6 L	77.8	-0.68	1.4	0.9	77.8	-0.68	1.4	0.9	4	LD
LLF3LH	78.1 L	77.7	78.4 L	77.5 L	77.9	-0.64	1.5	0.4 L	77.9	-0.64	1.5	0.4 L	4	LD
N3U67B	81.9	74.7	82.4	84.1	80.8	0.13	3.0	4.2	80.8	0.13	3.0	4.2	4	EM



Containerboard Interlaboratory Testing Program  
Analysis 217

Ring Crush, 36 lb Linerboard - 36Z3  
TAPPI Official Test Method T822



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
PTKZTK	83.1	83.6	84.0	83.2	83.5	0.87	3.5	0.4 L	83.5	0.87	3.5	0.4 L	4	LD
QQFFVC	82.4	79.7 H	90.6 *	82.3 H	83.7	0.94	4.8	4.7	83.7	0.94	4.8	4.7	4	LX
R37WXH	88.5	88.0	87.4	89.6 *	88.4	2.21 *	4.0	0.9	88.4	2.21 *	4.0	0.9	4	MB
RUQ6JD	80.6	79.2	75.1 H	78.8	78.4	-0.51	4.2	2.4	78.4	-0.51	4.2	2.4	4	LC
U3C7DK	74.5	73.5	75.4	75.2	74.6	-1.54	3.6	0.9	74.6	-1.54	3.6	0.9	4	EX
VKCEAX	85.5	86.4	86.4	85.1	85.9	1.52	3.3	0.6	85.9	1.52	3.3	0.6	4	LZ
VKV9YE	91.0 *	87.1 H	81.9	85.9	86.5	1.69	5.0	3.7	86.5	1.69	5.0	3.7	4	LX
W9FGA6	73.0 H	No Data	80.6	75.9	76.5	-1.03	5.0	3.8	76.5	-1.03	5.0	3.8	3	LC
WEHWBD	79.7	76.4	73.6	No Data	76.5	-1.02	3.6	3.1	76.5	-1.02	3.6	3.1	3	LC
WH7668	79.6	64.8 X	79.8 H	59.6 X	71.0	-2.54 *	3.7	10.3 H	71.0	-2.54 *	3.7	10.3 H	4	LZ
XANA3B	80.3	82.2	81.4	74.0	79.5	-0.22	3.9	3.7	79.5	-0.22	3.9	3.7	4	LC
XFTULA	85.2	87.6	85.7	86.7	86.3	1.64	3.2	1.1	86.3	1.64	3.2	1.1	4	LD
XMRQ2Y	83.5	81.4	79.2	81.9	81.5	0.33	2.8	1.8	81.5	0.33	2.8	1.8	4	EM
XMWZ2C	84.3	81.1	85.2	82.5	83.2	0.81	2.6	1.8	83.2	0.81	2.6	1.8	4	LC
XNLBR6	82.0	82.5	82.1	82.1	82.2	0.51	3.1	0.2 L	82.2	0.51	3.1	0.2 L	4	LC
Y3HPPD	74.8	75.5	76.1	76.3	75.7	-1.26	2.1	0.6	75.7	-1.26	2.1	0.6	4	TH
YWAN6A	76.9	77.3	76.0	74.5	76.2	-1.12	2.6	1.3	76.2	-1.12	2.6	1.3	4	LC
YX6AVF	80.2	76.5	75.1 H	74.9 H	76.7	-0.98	5.4	2.5	76.7	-0.98	5.4	2.5	4	LC
ZNYFM9	89.3 *	87.2 H	83.2	78.9 H	84.6	1.19	5.6	4.6	84.6	1.19	5.6	4.6	4	LA

Consensus (All Labs) Results									
<b>Wk Mean</b>	80.74	80.33	80.81	80.47	<b>Month Mean</b>	80.28		<b>Grand Mean</b>	80.28
<b>Avg SDr</b>	3.14	3.56	3.36	3.56	<b>Avg SDr</b>	3.47		<b>Avg SDr</b>	3.47
<b>SD btwn Labs</b>	3.90	3.86	3.93	3.94	<b>SD btwn Labs</b>	3.67		<b>SD btwn Labs</b>	3.67
<b>Labs Includ</b>	53	51	51	48	<b>SD btwn Wks</b>	2.96		<b>SD btwn Wks</b>	2.96
<b>Labs Exclud</b>	1	2	1	3	<b>Labs Includ</b>	53		<b>Labs Includ</b>	53
<b>Labs not rcvd</b>	0	1	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
- (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
2CYDFW	25.9	21.2 *L	24.2	22.8	23.5	-1.32	1.5	2.0 H	24.3	-0.57	1.6	1.1	16	LU
3FVLWC	26.5 L	27.3 L	No Data	No Data	26.9	1.36	0.0	0.5	25.4	0.32	0.0	1.2	8	LZ
42DT96	25.7 L	24.7 L	25.9 L	27.2 L	25.9	0.54	0.4	1.0	26.1	0.94	0.7	1.0	16	LA
43T2LZ	24.6	24.0	24.9	23.8	24.3	-0.65	1.8	0.5	23.9	-0.87	2.1	0.6	16	LW
6HAZF3	23.7	22.7	24.6	23.3	23.6	-1.26	2.0	0.8	23.2	-1.48	2.0	0.7	16	LU
727J94	26.6 L	26.6 L	25.4 L	26.0 L	26.1	0.74	0.0	0.6	26.2	1.03	0.0	1.0	16	LA
74R9QV	24.8	24.8	24.8	24.0	24.6	-0.42	1.9	0.4	24.5	-0.38	1.9	0.4	8	LY
7LPMQM	26.2 L	28.0 L	27.3 L	27.6 L	27.3	1.63	0.1	0.8	30.1	4.30 X	0.1	7.0 H	16	XX
8JGVEZ	25.4	25.2	24.7	25.3	25.1	-0.03	1.9	0.3	24.8	-0.16	1.9	0.5	16	LU
9XX86Z	26.0 L	25.5 L	25.3 L	24.8 L	25.4	0.17	0.5	0.5	25.1	0.11	1.0	0.7	16	LA
9ZJWMR	24.8	24.3	24.5	24.5	24.5	-0.52	1.0	0.2	24.4	-0.45	1.1	0.3	16	TT
A9TFN3	23.3	23.5	23.4	23.2	23.3	-1.45	2.7	0.1 L	23.9	-0.85	2.1	0.9	16	LY
B278EW	24.5	25.2	24.0	24.1	24.4	-0.58	2.0	0.5	23.5	-1.19	2.0	0.8	16	LU
B29VXV	24.7	27.1	23.8	24.5	25.0	-0.12	2.6	1.4	25.4	0.34	2.0	1.2	16	LA
BRZAQT	22.8	23.1	22.9	23.5	23.1	-1.66	2.3	0.3	22.9	-1.71	2.0	0.5	16	LW
C4ADFN	23.6	24.5 L	23.9	24.2	24.1	-0.87	1.5	0.4	24.0	-0.83	1.6	0.6	16	BK
CZVHZQ	26.3	27.4	22.3	26.5	25.6	0.34	2.1	2.3 H	24.0	-0.81	2.3	2.1 H	16	LW
DHMZCY	23.4 L	24.2 L	24.6 L	24.0 L	24.0	-0.89	0.4	0.5	24.1	-0.68	0.4	0.6	16	LA
EYDBPT	24.6	25.2	24.8	25.0	24.9	-0.23	1.7	0.3	24.8	-0.14	1.9	0.5	16	LW
FCBTPQ	25.1 L	24.6 L	25.1 L	25.1 L	25.0	-0.15	0.1	0.3	24.9	-0.05	0.1	0.5	15	LA
FEZ94T	23.1	22.7	23.7	23.5	23.3	-1.51	1.7	0.4	23.4	-1.27	2.0	0.9	16	LA
FK6RMR	27.3	28.0	28.2 *	26.2	27.4	1.74	2.3	0.9	26.5	1.28	2.4	1.1	16	LW
FLCERJ	25.1	25.1	25.0 L	24.8	25.0	-0.15	0.9	0.2	24.6	-0.27	1.0	0.4	16	TT
FTH2UK	24.2 L	No Data	24.1	24.6	24.3	-0.69	1.0	0.3	23.5	-1.23	0.9	1.3	15	LW
G97KVZ	24.9	26.0	26.3	24.0	25.3	0.09	2.3	1.1	25.9	0.75	2.5	1.2	16	LZ
GNZ84E	25.4	25.2	25.6	25.4	25.4	0.18	1.9	0.1 L	25.0	0.06	2.1	0.6	16	LY
GTH8PL	24.6	25.6	24.7	24.6	24.9	-0.23	1.8	0.5	24.8	-0.14	1.8	0.4	16	LW
HM2ERR	24.5	24.3	23.8	25.0	24.4	-0.60	2.1	0.5	23.8	-0.97	2.0	0.7	12	XX
J92Z8N	25.3	24.8	25.7	24.9	25.2	-0.02	2.0	0.4	24.5	-0.38	2.0	0.8	16	LW
JBK27G	25.6	26.7	25.5	23.9	25.4	0.20	2.5	1.2	25.1	0.07	2.2	1.0	12	LZ
Q77W8M	27.5	26.9	27.7	27.1	27.3	1.64	1.2	0.3	27.3	1.91	1.4	0.3	8	LU
QQFFVC	22.4	22.6	22.2 *	22.2	22.3	-2.23 *	1.8	0.2	23.0	-1.61	1.9	0.8	16	XX
QUCB9J	27.9	28.4	24.3	28.5 *	27.3	1.65	2.3	2.0 H	27.2	1.88	2.3	1.8 H	15	LU
QXUFZM	28.6 *	25.6	27.4	27.6	27.3	1.64	2.7	1.3	26.9	1.57	2.2	1.0	16	LA
R37WXH	24.5 L	27.1 L	26.1 L	26.2	25.9	0.60	0.8	1.1	26.3	1.11	0.6	1.0	16	BK



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
UFYEBL	26.4 L	26.2	26.4	26.1 L	26.3	0.86	1.4	0.1 L	26.2	1.04	1.4	0.4	8	XX
W9FGA6	26.0 L	No Data	23.8	24.6 L	24.8	-0.29	1.8	1.1	24.9	-0.07	1.3	0.8	15	LW
WEHWBD	25.2	26.0	25.2	24.0	25.1	-0.05	1.9	0.8	25.6	0.50	2.2	0.7	16	LW
WH7668	24.0	25.2	26.2	24.0	24.9	-0.25	1.7	1.1	24.1	-0.72	1.8	0.8	16	LZ
XANA3B	25.0	25.0	25.0	25.6	25.1	-0.03	1.2	0.3	25.1	0.11	1.3	0.3	16	LW
XMWZ2C	24.1	25.1	23.9	25.7	24.7	-0.39	0.9	0.9	25.1	0.07	0.9	0.8	16	LY
XNLBR6	24.5	25.5	25.1	25.2	25.1	-0.09	2.0	0.4	24.8	-0.14	2.0	0.5	16	LU
YD46J8	27.8	27.8	28.2 *	28.8 *	28.1	2.31 *	2.4	0.5	28.0	2.54 *	2.2	0.5	16	LA
YX6AVF	28.8 *L	25.6	27.1	25.2 L	26.7	1.16	1.1	1.6	26.7	1.41	1.4	1.1	8	LU
ZNYFM9	25.2 L	25.4 L	24.4 L	24.8 L	24.9	-0.20	0.6	0.5	24.9	-0.07	0.5	0.6	13	LA

Consensus (All Labs) Results									
<b>Wk Mean</b>	25.24	25.34	25.04	25.03	<b>Month Mean</b>	25.18	<b>Grand Mean</b>	24.97	
<b>Avg SDr</b>	1.76	1.79	1.77	1.69	<b>Avg SDr</b>	1.75	<b>Avg SDr</b>	1.75	
<b>SD btwn Labs</b>	1.47	1.60	1.42	1.45	<b>SD btwn Labs</b>	1.28	<b>SD btwn Labs</b>	1.20	
<b>Labs Includ</b>	45	43	44	44	<b>SD btwn Wks</b>	0.87	<b>SD btwn Wks</b>	0.88	
<b>Labs Exclud</b>	0	0	0	0	<b>Labs Includ</b>	45	<b>Labs Includ</b>	44	
<b>Labs not rcvd</b>	0	2	1	1					

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

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

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

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

(LY) - L & W 152 without moisture correction

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

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

(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
2CYDFW	22.8	24.7 *	20.7	19.5	21.9	0.80	1.4	2.3 H	21.9	0.80	1.4	2.3 H	4	LU
3FVLWC	20.2 L	20.0 L	No Data	No Data	20.1	-1.38	0.0	0.1	20.1	-1.38	0.0	0.1	2	LZ
42DT96	22.8 L	22.4 L	22.0 L	21.1 L	22.1	0.97	0.2	0.7	22.1	0.97	0.2	0.7	4	LA
43T2LZ	20.9	20.7	21.1	19.8	20.6	-0.73	1.2	0.6	20.6	-0.73	1.2	0.6	4	LW
6HAZF3	20.4	19.7	20.3	20.6	20.3	-1.13	1.4	0.4	20.3	-1.13	1.4	0.4	4	LU
727J94	21.1 L	21.1 L	22.1 L	21.4 L	21.4	0.22	0.0	0.5	21.4	0.22	0.0	0.5	4	LA
74R9QV	20.9	21.3	20.8	21.3	21.1	-0.20	1.4	0.3	21.1	-0.20	1.4	0.3	4	LY
7LPMQM	21.6 L	22.6 L	22.2 L	22.8 L	22.3	1.23	0.0	0.5	22.3	1.23	0.0	0.5	4	XX
8JGVEZ	21.4	21.7	21.3	21.4	21.4	0.24	1.1	0.2	21.4	0.24	1.1	0.2	4	LU
9XX86Z	22.9 L	21.5 L	No Data	20.8 L	21.7	0.56	0.3	1.1	21.7	0.56	0.3	1.1 H	3	LA
9ZJWMR	20.7	20.7	21.0	20.4	20.7	-0.59	0.9	0.2	20.7	-0.59	0.9	0.2	4	TT
A9TFN3	20.1	20.4	19.5	19.3	19.8	-1.64	1.3	0.5	19.8	-1.64	1.3	0.5	4	LY
B278EW	20.5	21.3	20.6	21.3	20.9	-0.35	1.2	0.4	20.9	-0.35	1.2	0.4	4	LU
B29VXV	20.9	21.8	20.8	18.8 *	20.6	-0.76	1.3	1.3	20.6	-0.76	1.3	1.3 H	4	LA
BRZAQT	19.5	19.5	19.2 *	19.4	19.4	-2.17 *	1.3	0.1	19.4	-2.17 *	1.3	0.1	4	LW
C4ADFN	20.8	20.8	20.9	20.3	20.7	-0.62	0.9	0.3	20.7	-0.62	0.9	0.3	4	BK
CZVHZQ	22.8	26.4 X	25.0 X	22.8	24.3	3.54 X	1.4	1.8 H	24.3	3.54 X	1.4	1.8 H	4	LW
DHMZCY	20.1 L	20.0 L	21.1 L	20.6 L	20.4	-0.94	0.2	0.5	20.4	-0.94	0.2	0.5	4	LA
EYDBPT	22.3	22.1	22.0	21.9	22.1	0.96	1.2	0.2	22.1	0.96	1.2	0.2	4	LW
FCBTPQ	21.1 L	20.6 L	21.1 L	20.6 L	20.8	-0.46	0.0	0.3	20.8	-0.46	0.0	0.3	4	LA
FEZ94T	20.8	20.5	19.8	20.6	20.4	-0.95	1.4	0.4	20.4	-0.95	1.4	0.4	4	LA
FK6RMR	23.0	22.5	22.6	22.8	22.7	1.71	1.7	0.2	22.7	1.71	1.7	0.2	4	LW
FLCERJ	21.2	20.9	21.1	21.6 L	21.2	-0.06	0.8	0.3	21.2	-0.06	0.8	0.3	4	TT
FTH2UK	20.8	No Data	20.9	21.0	20.9	-0.42	1.0	0.1	20.9	-0.42	1.0	0.1	3	LW
G97KVZ	21.1	21.6	21.4	21.4	21.4	0.14	1.6	0.2	21.4	0.14	1.6	0.2	4	LZ
GNZ84E	21.0	21.9	21.4	21.1	21.3	0.12	1.2	0.4	21.3	0.12	1.2	0.4	4	LY
GTH8PL	21.1	21.3	20.5	20.9	21.0	-0.33	1.4	0.3	21.0	-0.33	1.4	0.3	4	LW
HM2ERR	21.5	20.9	21.0	20.8	21.1	-0.21	1.2	0.3	21.1	-0.21	1.2	0.3	4	XX
J92Z8N	21.1	21.6	21.8	21.7	21.5	0.35	1.4	0.3	21.5	0.35	1.4	0.3	4	LW
JBK27G	21.8	23.1	22.6	21.8	22.3	1.28	1.2	0.6	22.3	1.28	1.2	0.6	4	LZ
Q77W8M	No Data	21.7 L	21.3 L	21.2	21.4	0.18	0.5	0.3	21.4	0.18	0.5	0.3	3	LU
QQFFVC	19.2 *	18.6 *	19.8	19.6	19.3	-2.26 *	1.2	0.5	19.3	-2.26 *	1.2	0.5	4	XX
QUCB9J	21.9	21.8	22.3	22.4	22.1	0.98	1.2	0.3	22.1	0.98	1.2	0.3	4	LU
QXUFZM	23.3	22.8	23.1	23.3 *	23.1	2.21 *	1.5	0.3	23.1	2.21 *	1.5	0.3	4	LA
R37WXH	21.2 L	24.3 *L	21.4 L	23.2 *L	22.5	1.50	0.3	1.5 H	22.5	1.50	0.3	1.5 H	4	BK



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
UFYEBL	22.2 L	21.5	22.2	21.0 L	21.7	0.56	0.7	0.6	21.7	0.56	0.7	0.6	4	XX
W9FGA6	19.7	No Data	20.7	20.6	20.3	-1.08	1.0	0.5	20.3	-1.08	1.0	0.5	3	LW
WEHWBD	21.6	22.9	23.3 *	21.9	22.4	1.37	1.4	0.8	22.4	1.37	1.4	0.8	4	LW
WH7668	20.5	22.2	21.6	20.5	21.2	-0.04	1.2	0.8	21.2	-0.04	1.2	0.8	4	LZ
XANA3B	21.9	21.9	21.9	21.8	21.9	0.73	1.3	0.0 L	21.9	0.73	1.3	0.0 L	4	LW
XMWZ2C	20.7	21.1	20.5	20.8	20.8	-0.54	0.6	0.2	20.8	-0.54	0.6	0.2	4	LY
XNLBR6	21.3	21.0	20.8	21.2	21.1	-0.21	1.1	0.2	21.1	-0.21	1.1	0.2	4	LU
YD46J8	23.5 *	23.9	23.0	24.9 X	23.8	3.02 X	1.3	0.8	23.8	3.02 X	1.3	0.8	4	LA
YX6AVF	22.5	21.6 L	21.8	21.0	21.7	0.57	1.0	0.6	21.7	0.57	1.0	0.6	4	LU
ZNYFM9	22.6 L	21.6 L	20.8 L	21.4 L	21.6	0.39	0.3	0.8	21.6	0.39	0.3	0.8	4	LA

Consensus (All Labs) Results											
<b>Wk Mean</b>	21.35	21.52	21.29	21.10	<b>Month Mean</b>	21.24				<b>Grand Mean</b>	21.24
<b>Avg SDr</b>	1.12	1.17	1.13	1.06	<b>Avg SDr</b>	1.10				<b>Avg SDr</b>	1.10
<b>SD btwn Labs</b>	1.03	1.22	0.93	1.02	<b>SD btwn Labs</b>	0.86				<b>SD btwn Labs</b>	0.86
<b>Labs Includ</b>	44	42	42	43	<b>SD btwn Wks</b>	0.64				<b>SD btwn Wks</b>	0.64
<b>Labs Exclud</b>	0	1	1	1	<b>Labs Includ</b>	43				<b>Labs Includ</b>	43
<b>Labs not rcvd</b>	1	2	2	1							

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

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

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

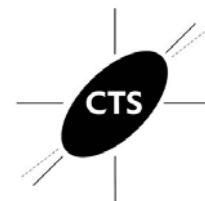
(LW) - L & W 53 with moisture correction (was 53M)

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

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

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

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
43T2LZ	146.5	-0.09	14.9	168.6	0.53	61.5	4	EV
6HAZF3	147.8	-0.05	12.7	146.8	-0.07	12.9	4	EV
727J94	125.7	-0.62	13.8	128.7	-0.56	11.7	4	LA
7LPMQM	154.8	0.13	27.3	152.9	0.10	22.8	4	EV
8JGVEZ	145.4	-0.11	13.1	139.6	-0.27	12.6	4	EV
9XX86Z	169.0	0.49	28.2	155.9	0.18	23.4	4	LA
B278EW	153.4	0.09	19.8	148.7	-0.02	15.1	4	EV
CZVHZQ	127.9	-0.56	13.7	138.1	-0.31	13.2	4	EV
DHMZCY	119.4	-0.78	13.5	117.6	-0.87	10.2	4	EV
DJHL44	127.2	-0.58	12.8	123.9	-0.69	12.0	3	EV
FCBTPQ	147.6	-0.06	17.8	145.9	-0.09	19.6	4	LA
G97KVZ	129.8	-0.52	16.7	169.0	0.54	62.9	4	LA
GTH8PL	147.1	-0.07	7.6	144.5	-0.13	10.5	3	EV
J92Z8N	139.0	-0.28	22.6	124.3	-0.68	16.1	4	EV
JBK27G	126.9	-0.59	10.5	132.8	-0.45	24.5	3	LA
Q77W8M	250.1	2.58 *	117.3	216.9	1.84	100.6	2	EV
QXUFZM	114.6	-0.91	15.1	112.9	-1.00	12.0	4	LA
R37WXH	144.1	-0.15	18.9	141.0	-0.23	20.6	4	EV
W9FGA6	139.3	-0.27	5.9	131.7	-0.48	12.2	4	EV
X37PED	121.2	-0.74	13.0	119.9	-0.80	10.0	4	EV
XMWZ2C	101.0	-1.26	7.3	99.1	-1.37	8.6	4	EV
YX6AVF	247.3	2.51 *	127.6	238.8	2.44 *	118.1	2	EV
ZNYFM9	220.6	1.82	56.6	237.5	2.41 *	48.5	3	LA

Consensus (All Labs) Results			
Month Mean	149.82	Grand Mean	149.33
Avg SDr	40.94	Avg SDr	40.95
SD btwn Labs	38.82	SD btwn Labs	36.62
Labs Incd	23	Labs Incd	23

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

(EV) - Emveco Microgag Model 210-R

(LA) - L & W Autoline

Containerboard Interlaboratory Testing Program  
Analysis 231

Internal Bond, 36 lb Linerboard - 36Z  
TAPPI Provisional Test Method T569



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2CYDFW	171.8	0.12	11.1	170.7	0.29	11.1	4	XX
42DT96	162.0	-0.40	6.6	161.2	-0.26	7.2	4	SC
8JGVEZ	160.6	-0.47	6.5	153.8	-0.69	6.0	4	TM
B29VXV	74.7	-5.04	X 1.1	64.2	-5.89	X 1.3	4	LZ
BRZAQT	170.8	0.07	9.5	171.0	0.31	7.5	4	TM
DJHL44	182.4	0.69	2.4	179.3	0.79	8.3	3	HY
G97KVZ	162.0	-0.40	16.0	148.8	-0.98	16.5	4	TM
GTH8PL	201.2	1.69	10.5	202.8	2.16	* 9.6	4	HY
K6JVEK	187.1	0.94	4.0	176.4	0.63	5.3	4	SC
PMHTEG	164.5	-0.27	3.9	159.3	-0.37	5.7	4	TM
Q77W8M	140.0	-1.57	14.0	139.5	-1.52	13.4	2	TM
QQFFVC	212.0	2.26	* 10.3	154.6	-0.64	13.5	4	SC
W9FGA6	170.0	0.03	17.3	197.0	1.82	13.4	4	SC
XFTULA	161.4	-0.43	6.6	162.8	-0.16	6.2	4	SC
XNLBR6	168.0	-0.08	4.2	169.9	0.25	5.6	4	HY
YX6AVF	149.6	-1.06	5.8	148.4	-1.00	6.6	2	TM
ZNYFM9	148.2	-1.13	9.1	154.9	-0.62	6.6	3	TM

Consensus (All Labs) Results			
Month Mean	169.48	Grand Mean	165.64
Avg SDr	9.62	Avg SDr	9.55
SD btwn Labs	18.80	SD btwn Labs	17.22
Labs Incd	16	Labs Incd	16

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

(HY) - Huygen Digitized Scott Internal Bond Tester  
(SC) - Scott Internal Bond Tester (Manual)  
(XX) - Instrument make/model not specified by lab

(LZ) - L & W (model not specified)  
(TM) - TMI Monitor/Internal Bond Tester

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



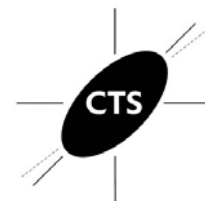
WebCode	Monthly Results			Cumulative Results			
	Mean	CPV	SDr	Mean	CPV	SDr	Months
42DT96	29.6	0.59	0.9	29.7	1.11	0.9	4
6HAZF3	33.4	2.05 *	1.5	34.2	3.53 X	3.0	4
8JGVEZ	27.6	-0.18	2.7	29.5	0.97	1.9	4
9LJXXA	23.6	-1.72	2.4	27.3	-0.21	2.8	4
B278EW	26.0	-0.79	1.5	25.1	-1.38	1.3	4
B29VXV	31.2	1.20	1.3	27.7	0.03	1.4	4
BRZAQT	30.3	0.84	2.7	26.4	-0.66	3.4	4
CZVHZQ	23.0	-1.95	1.0	24.9	-1.50	1.1	4
G97KVZ	28.0	-0.03	1.6	26.8	-0.48	2.7	4
GTH8PL	25.8	-0.87	1.3	25.8	-1.02	1.5	4
J92Z8N	29.6	0.59	1.5	28.8	0.61	1.5	4
Q77W8M	30.4	0.89	1.1	30.2	1.38	1.2	2
UFYEBL	29.0	0.36	2.0	27.5	-0.08	1.9	2
W9FGA6	27.6	-0.18	2.9	26.4	-0.67	2.3	4
WEHWBD	30.4	0.89	2.7	31.5	2.05 *	3.2	4
XC7LRE	26.5	-0.60	2.2	27.8	0.08	2.6	4
XNLBR6	26.4	-0.64	1.1	25.6	-1.13	1.2	4
YX6AVF	28.2	0.05	1.6	27.8	0.06	1.5	2
ZNYFM9	26.8	-0.49	1.6	29.2	0.84	3.3	3

Consensus (All Labs) Results			
<b>Month Mean</b>	28.07	<b>Grand Mean</b>	27.64
<b>Avg SDr</b>	1.88	<b>Avg SDr</b>	2.14
<b>SD btwn Labs</b>	2.60	<b>SD btwn Labs</b>	1.86
<b>Labs Incd</b>	19	<b>Labs Incd</b>	18

**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
37QA34	49.5	0.01	2.5	50.8	0.03	3.0	4	GG
6HAZF3	49.4	-0.02	2.5	51.1	0.17	1.8	4	LP
727J94	51.5	0.58	3.8	52.6	1.09	2.6	4	TL
74R9QV	49.2	-0.08	1.0	49.8	-0.58	1.7	2	LP
7LPMQM	47.3	-0.64	1.0	47.4	-2.02 *	1.3	4	LW
9XX86Z	49.1	-0.11	1.7	50.3	-0.26	1.4	4	LA
B29VXV	55.4	1.73	1.9	29.1	-12.96 X	1.7	4	LA
BRZAQT	50.9	0.41	1.5	51.4	0.35	2.5	4	HG
G97KVZ	44.7	-1.38	4.6	47.7	-1.87	3.5	4	XX
GTH8PL	53.8	1.24	1.5	53.2	1.44	2.0	4	XX
J6X9RW	51.9	0.70	1.9	52.9	1.25	2.0	4	XX
K6JVEK	50.7	0.35	0.7	51.0	0.11	1.6	4	LP
P2GNVH	48.0	-0.43	1.9	48.6	-1.32	1.6	3	LA
Q77W8M	42.4	-2.05 *	2.9	43.1	-4.58 X	2.5	2	XX
R37WXH	53.2	1.09	1.4	53.3	1.48	1.6	4	XX
U7ZE9F	51.9	0.69	1.7	51.6	0.49	2.1	4	XX
UFYEBL	40.7	-2.54 *	2.0	40.3	-6.27 X	1.6	2	XX
W9FGA6	51.8	0.67	1.8	51.0	0.15	2.7	4	HG
WEHWBD	49.2	-0.08	2.5	49.9	-0.54	1.8	4	LP
XC7LRE	46.4	-0.88	2.3	44.7	-3.66 X	2.4	4	GA
XNLBR6	49.9	0.13	2.4	50.2	-0.33	2.6	4	TP
YX6AVF	51.3	0.53	1.5	51.8	0.59	1.8	2	LA
ZNYFM9	49.8	0.08	1.3	50.4	-0.23	1.5	3	LA

Consensus (All Labs) Results			
Month Mean	49.47	Grand Mean	50.78
Avg SDr	2.20	Avg SDr	2.13
SD btwn Labs	3.46	SD btwn Labs	1.67
Labs Incd	23	Labs Incd	19

Containerboard Interlaboratory Testing Program  
Analysis 237

**Air Resistance**, 36 lb Linerboard - 36Z  
TAPPI Official Test Method T460



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

(GA) - Gurley Precision #4340 Automatic Densometer

(HG) - Technidyne - Hagerty Model #1 and Profile System

(LP) - L & W Air Permeance Tester SE 166

(TL) - Teledyne Gurley Densometer #4110, Oil Flotation

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

(GG) - Gurley Precision #4320 Densometer

(LA) - L & W Autoline

(LW) - L & W Gurley Densometer, Oil Flotation

(TP) - Technidyne Profile/ plus Roughness & Porosity



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	
2CYDFW	59.3	57.0 *	57.6 *	64.2	59.5	-1.34	2.8	3.3	60.7	-0.92	3.0	2.4	16	LC
2JGL28	58.6	62.7	62.6	63.2	61.8	-0.13	3.6	2.1	63.4	0.62	3.1	3.2 H	16	MB
3FVLWC	62.3	59.5	No Data	No Data	60.9	-0.60	1.8	2.0	60.9	-0.78	2.8	1.3	7	LZ
6HAZF3	61.1	64.3	60.8	58.9	61.3	-0.39	3.3	2.2	61.3	-0.56	3.0	1.3	16	LZ
6KM96Q	60.4	59.8	58.5	60.8	59.9	-1.15	2.6	1.0	60.2	-1.20	2.8	1.0	16	TD
74R9QV	60.9	60.3	60.5 L	61.0 L	60.6	-0.73	1.7	0.3	60.5	-1.02	1.7	0.4	8	LD
7LPMQM	55.0 XH	52.0 XH	47.9 XH	48.6 XH	50.9	-6.07 X	10.8	3.3	53.8	-4.78 X	9.3	5.1 H	16	XX
8JGVEZ	60.4	62.7	63.6	62.4	62.3	0.16	2.6	1.4	61.5	-0.48	2.7	1.2	16	LD
8VXHMZ	62.6	63.3	63.0	62.5	62.9	0.47	2.8	0.4	62.7	0.18	2.4	0.4	16	LD
9ZJWMR	61.5	62.2	63.0	61.4	62.0	0.02	3.5	0.7	61.6	-0.40	3.1	1.0	16	TH
B6MHNU	62.7	63.3	63.2	63.0	63.1	0.59	2.4	0.3 L	63.1	0.43	3.1	0.6	15	LZ
BDK6JZ	62.4	62.9	61.8	61.9	62.3	0.15	3.2	0.5	61.5	-0.47	2.8	1.6	16	LD
CAXXLN	66.5 *	64.6	64.2	66.8	65.5	1.93	3.1	1.3	64.5	1.24	2.9	1.0	16	EM
EJT63R	63.1	60.9	61.3	55.3 *	60.2	-1.00	3.0	3.4 H	61.2	-0.64	3.4	3.3 H	16	XX
EQGD2Q	62.0	62.4	62.8	63.1	62.6	0.32	2.0	0.5	62.4	0.03	2.5	0.5	16	LC
EYDBPT	62.6	64.2	63.9	65.8 L	64.1	1.16	1.7	1.3	64.5	1.22	3.7	2.6	16	LC
FCBTPQ	62.3	57.7	52.6 X	57.0	57.4	-2.50 *	3.3	4.0 H	53.9	-4.72 X	2.7	7.1 H	15	MB
FEZ94T	59.2	60.3	60.9	59.1	59.9	-1.15	2.6	0.9	59.2	-1.73	2.7	1.5	16	LC
FGHJRW	65.5	66.9 *	67.3 *	62.3	65.5	1.91	3.6	2.3	65.5	1.77	3.6	2.3	4	LD
FK6RMR	62.9	63.0	65.3	61.9	63.3	0.70	3.5	1.5	65.5	1.77	2.8	2.2	16	LC
FLCERJ	60.7	58.5	59.7	60.6	59.9	-1.16	3.3	1.0	60.1	-1.25	3.8	0.9	16	TG
GFC8ZM	62.9	60.9	63.4	59.5	61.7	-0.17	3.3	1.8	62.8	0.27	3.1	1.9	12	LC
GTH8PL	63.7	63.2	64.2	59.8	62.7	0.41	4.0	2.0	63.3	0.53	3.8	1.4	16	LC
HLPPHM	62.0	61.1 L	62.7 L	62.4 L	62.1	0.03	1.4	0.7	61.6	-0.39	1.6	0.8	16	LC
J92Z8N	59.7 L	59.2 L	59.5 L	59.7	59.5	-1.35	1.3	0.2 L	59.9	-1.34	1.9	0.9	16	TH
JBK27G	63.8	60.2	58.1	58.4	60.1	-1.02	3.0	2.6	60.3	-1.15	3.3	1.8	12	LD
P2GNVH	66.2 *	66.7 *	63.3	64.9 H	65.3	1.78	4.5	1.5	64.8	1.37	3.8	1.9	12	LC
PTKZTK	63.4	63.9	63.4	63.5	63.6	0.86	2.5	0.3 L	63.0	0.39	2.9	0.6	16	LD
QQFFVC	63.0	61.7	60.7	61.7	61.8	-0.11	3.0	0.9	60.8	-0.86	3.0	1.2	16	LX
R37WXH	60.9	62.5	62.0	62.4	61.9	-0.04	4.2	0.7	59.4	-1.64	4.1	2.5	16	MB
U7ZE9F	62.2	59.6	60.5	60.8	60.8	-0.66	2.5	1.1	61.3	-0.57	2.9	1.1	16	LD
UC76BL	61.9	60.7	63.0	61.2	61.7	-0.16	2.1	1.0	61.9	-0.22	2.4	0.9	16	EM
VKV9YE	62.4	60.3	61.1	61.9	61.4	-0.30	2.5	0.9	62.8	0.24	3.5	2.7	16	LD
WEHWBD	62.6	No Data	No Data	63.2	62.9	0.50	2.6	0.4	64.0	0.92	2.9	1.4	14	LC
WH7668	68.3 X	72.1 X	64.9	66.3	67.9	3.22 X	4.0	3.1	66.1	2.12 *	3.7	4.6 H	16	LZ



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
WK8GC8	62.0	60.7	62.4	59.6	61.2	-0.44	2.4	1.2	62.0	-0.18	2.8	1.9	16	LC
WXTQZX	61.7	61.0 L	61.0	60.9	61.2	-0.45	2.0	0.4	62.2	-0.06	3.1	1.3	16	LD
X2RHQA	60.7	63.3	63.6	63.2	62.7	0.39	2.8	1.4	62.4	0.06	2.8	1.0	16	LD
XANA3B	62.2	61.8	61.7	62.5	62.0	0.03	2.2	0.4	61.6	-0.42	2.2	0.9	16	LD
XFTULA	57.0 *	58.5 H	59.4	62.8	59.4	-1.40	4.6	2.5	62.5	0.07	4.5	3.0 H	16	LD
XNLBR6	63.0	62.5	60.9	61.5	62.0	-0.01	3.0	1.0	61.5	-0.49	3.2	1.4	16	LC
YD46J8	62.3 L	No Data	No Data	No Data	62.3	0.19	0.9	0.0 L	62.1	-0.14	1.3	0.7	13	XX
YHUI49	62.5	62.1	62.5	62.2	62.3	0.18	1.7	0.2 L	62.8	0.26	2.1	0.6	8	LD
YJAR7G	63.1 H	61.4 H	59.2 H	65.0 H	62.1	0.08	11.3	2.5	63.0	0.36	6.4	1.9	16	LC
YRHGL2	67.2 *	64.2	68.4 *	66.8	66.7	2.55 *	3.2	1.8	65.9	2.02 *	3.6	1.3	16	TM
YWANA6A	63.6	61.6	65.1	58.3	62.1	0.08	3.4	2.9	60.7	-0.91	3.2	2.0	16	LC
YX6AVF	63.4	67.2 *	65.2	65.0	65.2	1.76	3.8	1.6	65.8	1.97	3.9	1.4	8	LC

Consensus (All Labs) Results											
<b>Wk Mean</b>	62.22	61.88	62.29	61.92	<b>Month Mean</b>	61.99				<b>Grand Mean</b>	62.33
<b>Avg SDr</b>	3.17	3.23	3.75	3.48	<b>Avg SDr</b>	3.34				<b>Avg SDr</b>	3.17
<b>SD btwn Labs</b>	1.94	2.29	2.32	2.48	<b>SD btwn Labs</b>	1.83				<b>SD btwn Labs</b>	1.78
<b>Labs Includ</b>	45	43	42	44	<b>SD btwn Wks</b>	1.66				<b>SD btwn Wks</b>	1.78
<b>Labs Exclud</b>	2	2	2	1	<b>Labs Includ</b>	45				<b>Labs Includ</b>	45
<b>Labs not rcvd</b>	0	2	3	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					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
2JGL28	59.2 X	62.6 *	67.8	64.7	63.6	-3.76 X	3.4	3.6	66.3	-2.15 *	3.4	2.8	16	MB
EJT63R	75.7	69.8	68.4 H	62.7 *H	69.2	-1.82	4.8	5.3 H	69.8	-1.15	5.5	5.2 H	16	TU
EYDBPT	76.0	75.5	75.2	73.2	75.0	0.21	2.4	1.2	76.2	0.72	2.6	3.3	16	LC
FGHJRW	76.8	77.8	78.6	75.1	77.1	0.94	2.5	1.5	77.1	0.97	2.5	1.5	4	LD
GFC8ZM	73.6	69.1	73.9	75.8	73.1	-0.44	3.7	2.8	72.9	-0.26	3.5	2.1	12	LZ
J6X9RW	74.2	74.6	74.8	73.9	74.4	0.00	2.4	0.4 L	73.3	-0.12	2.1	1.0	16	XX
WEHWBD	75.2	No Data	No Data	77.4	76.3	0.67	3.1	1.6	74.1	0.11	2.6	1.8	14	XX
WH7668	69.6 H	69.1	73.2	74.3	71.6	-0.98	2.9	2.6	74.0	0.07	3.3	4.0 H	16	LZ
WK8GC8	77.9	79.0	80.0	77.3	78.5	1.45	2.2	1.2	78.0	1.23	2.7	1.3	16	LC
XANA3B	71.6	73.7	72.4	72.1	72.4	-0.67	2.1	0.9	72.1	-0.48	1.8	0.7	16	LD
XNLBR6	79.8	76.5	78.4	75.9	77.7	1.15	3.5	1.8	78.2	1.31	2.8	1.0	16	LC
YHUU49	73.1	72.8 L	73.0	72.7	72.9	-0.51	1.8	0.2 L	72.9	-0.23	2.1	0.3 L	8	LD

Consensus (All Labs) Results											
<b>Wk Mean</b>	74.84	72.78	74.16	72.93	<b>Month Mean</b>	74.37				<b>Grand Mean</b>	73.73
<b>Avg SDr</b>	2.60	3.51	2.88	2.87	<b>Avg SDr</b>	2.96				<b>Avg SDr</b>	3.04
<b>SD btwn Labs</b>	2.88	4.78	3.89	4.65	<b>SD btwn Labs</b>	2.87				<b>SD btwn Labs</b>	3.45
<b>Labs Includ</b>	11	11	11	12	<b>SD btwn Wks</b>	2.23				<b>SD btwn Wks</b>	2.51
<b>Labs Exclud</b>	1	0	0	0	<b>Labs Includ</b>	11				<b>Labs Includ</b>	12
<b>Labs not rcvd</b>	0	1	1	0							

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

(LC) - L & W Crush Tester 48

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

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

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

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

Containerboard Interlaboratory Testing Program  
Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM73  
TAPPI Official Test Method T822



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
2JGL28	37.6	37.3	37.9	39.2	38.0	-1.94	3.2	0.8	34.7	-3.87 X	3.1	2.2	16	MB
3FVLWC	44.3	43.2	No Data	No Data	43.8	0.03	3.5	0.8	43.3	-0.27	3.2	1.1	7	EM
7LPMQM	44.0	44.5	44.3	34.8 XH	41.9	-0.60	3.5	4.7 H	44.5	0.21	3.2	3.6 H	16	XX
9G93VK	48.8	41.6	40.3	41.8	43.1	-0.18	2.4	3.9	41.9	-0.86	3.4	3.6 H	16	LZ
FGHJRW	44.8	46.7	44.9	46.5	45.7	0.71	2.5	1.0	45.7	0.72	2.5	1.0	4	LD
HLPPHM	46.7	46.6 L	45.8 L	46.5	46.4	0.94	1.1	0.4	47.2	1.32	1.1	0.6	16	LC
JBK27G	40.9	42.7	43.6	40.4	41.9	-0.60	2.8	1.5	41.8	-0.92	2.7	1.3	12	LD
P2GNVH	48.1	48.2	49.4	49.0	48.7	1.72	2.4	0.7	47.8	1.57	2.7	1.4	12	LD
PTKZTK	45.6	44.8	45.0	43.6	44.8	0.38	2.6	0.8	44.4	0.17	2.4	1.0	16	LD
U7ZE9F	39.6 H	41.1	40.1	46.4 H	41.8	-0.64	4.3	3.1	41.7	-0.96	3.7	1.9	16	LD
UC76BL	40.7	42.5	39.5	43.0	41.4	-0.77	1.7	1.6	41.0	-1.23	2.0	1.3	16	LC
VKV9YE	48.5 H	47.2	48.5 H	48.2	48.1	1.52	4.3	0.6	47.3	1.38	3.7	1.4	16	LZ
WEHWBD	45.5	38.0	37.3	43.1	41.0	-0.91	2.4	4.0	41.4	-1.08	2.3	2.9 H	16	LC
WXTQZX	49.4	48.6	49.3	48.4	48.9	1.80	1.9	0.5	48.3	1.80	2.0	0.9	16	LD
X2RHQA	43.6	45.2	45.7	45.4	45.0	0.45	2.0	0.9	45.2	0.50	2.1	0.9	16	LD
XNLBR6	43.7	45.0	44.8	42.7	44.1	0.14	3.1	1.1	44.0	0.02	3.2	1.1	16	LC
Y3HPPD	42.5	43.4	42.5	42.6	42.8	-0.31	2.9	0.4	41.9	-0.86	2.4	1.7	16	TH
YGJLN7	45.0 L	44.8 L	43.6	44.8	44.6	0.31	1.3	0.7	43.8	-0.10	1.3	0.7	16	WK
YRHGL2	39.3	40.2	40.6	45.3	41.3	-0.80	2.7	2.7	43.7	-0.11	3.0	2.7	16	LD
YWAN6A	40.2 L	39.5	39.7	40.8	40.0	-1.24	1.9	0.6	40.8	-1.32	2.3	1.3	16	LC

Consensus (All Labs) Results											
<b>Wk Mean</b>	43.94	43.55	43.30	44.32	<b>Month Mean</b>	43.66				<b>Grand Mean</b>	43.99
<b>Avg SDr</b>	2.92	2.69	2.46	2.60	<b>Avg SDr</b>	2.75				<b>Avg SDr</b>	2.68
<b>SD btwn Labs</b>	3.41	3.23	3.67	2.87	<b>SD btwn Labs</b>	2.92				<b>SD btwn Labs</b>	2.40
<b>Labs Includ</b>	20	20	19	18	<b>SD btwn Wks</b>	2.03				<b>SD btwn Wks</b>	1.84
<b>Labs Exclud</b>	0	0	0	1	<b>Labs Includ</b>	20				<b>Labs Includ</b>	19
<b>Labs not rcvd</b>	0	0	1	1							

Instrument Code List as Reported by the Labs

- (EM) - Emerson 1200 Series
- (LD) - L&W Crush Tester 248
- (MB) - Messmer Buchel K440
- (WK) - Zwick Z005 Crush Tester

- (LC) - L & W Crush Tester 48
- (LZ) - L & W Crush Tester (model not specified)
- (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
6HAZF3	14.2	14.0	14.6	14.4	14.3	-1.04	1.2	0.2	14.0	-1.69	1.1	0.5	16	LU
7LPMQM	15.3 L	14.8 L	15.6 L	15.1 L	15.2	0.49	0.0	0.3	19.0	7.54 X	0.1	9.1 H	16	XX
8VXHMZ	14.6	14.9	15.0	15.0	14.9	-0.04	1.1	0.2	14.7	-0.36	1.1	0.2	16	LB
9G93VK	16.1	13.8	13.8	14.1	14.4	-0.77	1.4	1.1 H	15.1	0.40	1.3	0.9 H	16	LA
9ZJWMR	14.5	14.2	14.7	14.5	14.5	-0.72	0.9	0.2	14.8	-0.16	0.9	0.9 H	16	TT
A9TFN3	14.4	14.6	14.7	14.1	14.4	-0.80	1.1	0.2	14.2	-1.39	1.1	0.6	16	LB
B6MHNU	15.2	15.5	16.3	16.2	15.8	1.47	1.1	0.5	15.3	0.66	1.2	0.5	15	LW
EQGD2Q	14.9	14.6	14.5	15.1	14.8	-0.22	1.1	0.3	14.7	-0.44	1.1	0.2	16	LB
FCBTPQ	14.3 L	14.3 L	13.7 L	13.7 L	14.0	-1.54	0.0	0.3	14.1	-1.48	0.0	0.4	15	XX
FGHJRW	14.2	14.9	14.5	14.3	14.5	-0.71	1.6	0.3	14.5	-0.78	1.6	0.3	4	LA
FK6RMR	15.3	16.0	16.0	15.7	15.8	1.47	1.3	0.3	15.2	0.61	1.3	0.7	16	LW
HLPPHM	15.2	15.1	15.8	15.4	15.4	0.81	0.9	0.3	15.0	0.12	0.8	0.3	16	XX
J92Z8N	14.6	15.2	15.0	15.2	15.0	0.13	1.3	0.3	15.0	0.24	1.2	0.2	16	LW
JBK27G	16.0	16.0	16.4	15.3	15.9	1.74	1.4	0.5	15.6	1.27	1.2	0.5	12	LZ
R37WXH	17.2 XL	17.5 XL	17.5 *L	16.4 *L	17.1	3.78 X	0.2	0.5	15.8	1.59	0.2	1.1 H	16	BK
UC76BL	14.6	13.8	13.8	14.7	14.2	-1.11	1.1	0.5	15.0	0.14	1.3	0.5	16	LB
WXTQZX	15.5	14.8	14.8	15.4	15.1	0.38	1.3	0.4	14.7	-0.32	1.2	0.4	16	LA
XNLBR6	14.8	14.8	14.9	15.0	14.9	-0.04	1.2	0.1 L	15.0	0.17	1.1	0.3	16	LU
YHUJ49	14.1	14.7	14.4 L	14.3	14.4	-0.87	0.7	0.2	14.5	-0.66	0.9	0.4	8	LA
YRHGL2	15.5	16.2	15.3	15.8	15.7	1.36	1.3	0.4	16.0	2.06 *	1.3	0.5	16	LA

Consensus (All Labs) Results												
<b>Wk Mean</b>	14.91	14.85	15.07	14.98	<b>Month Mean</b>	14.90				<b>Grand Mean</b>	14.90	
<b>Avg SDr</b>	1.14	1.01	1.16	1.13	<b>Avg SDr</b>	1.13				<b>Avg SDr</b>	1.12	
<b>SD btwn Labs</b>	0.61	0.70	0.96	0.72	<b>SD btwn Labs</b>	0.59				<b>SD btwn Labs</b>	0.54	
<b>Labs Includ</b>	19	19	20	20	<b>SD btwn Wks</b>	0.41				<b>SD btwn Wks</b>	0.55	
<b>Labs Exclud</b>	1	1	0	0	<b>Labs Includ</b>	19				<b>Labs Includ</b>	19	
<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