

Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #507 (N)- December 2011

[Introduction to the Containerboard Program](#)

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

[Instrument Manufacturer Contacts](#)

Analysis	Sample Lot	Analysis Name
<u>201</u>	<u>BOX5</u>	<u>Box Compression Strength, Corrugated Boxes</u>
<u>202</u>	<u>ECT5</u>	<u>Edgewise Compressive Strength, Wax (T811), Corrugated board</u>
<u>203</u>	<u>ECT5</u>	<u>Edgewise Compressive Strength by Clamp (T839), Corrugated board</u>
<u>205</u>	<u>42X3</u>	<u>Mullen Burst of Linerboard, 42 lb Linerboard</u>
<u>207</u>	<u>36Z2</u>	<u>Mullen Burst of Linerboard, 36 lb Linerboard</u>
<u>215</u>	<u>42X3</u>	<u>Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</u>
<u>217</u>	<u>36Z2</u>	<u>Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard</u>
<u>223</u>	<u>42X3</u>	<u>STFI of Linerboard, 42 lb Linerboard</u>
<u>225</u>	<u>36Z2</u>	<u>STFI of Linerboard, 36 lb Linerboard</u>
<u>228</u>	<u>69Y</u>	<u>Roughness - Stylus Method, 69 lb Linerboard</u>
<u>231</u>	<u>42X</u>	<u>Internal Bond Strength, Linerboard, 42 lb Linerboard</u>
<u>234</u>	<u>42X</u>	<u>Coefficient of Static Friction - Inclined Plane, 42 lb Linerboard</u>
<u>237</u>	<u>36Z</u>	<u>Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard</u>
<u>240</u>	<u>CM72</u>	<u>Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</u>
<u>250</u>	<u>CM72</u>	<u>Fluted Crush of Medium, 26 lb Corrugating Medium</u>
<u>255</u>	<u>CM72</u>	<u>Ring Crush of Medium, 26 lb Corrugating Medium</u>
<u>261</u>	<u>CM72</u>	<u>STFI of Medium, 26 lb Corrugating Medium</u>

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 50 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.

Material	Lot Code	Dates in Use
36# Linerboard	36Z1	June 2010 -
42# Linerboard	42X3 42B1	August 2010 - December 2011 January 2012 -
69# Linerboard	69Y3 69A1	August 2010 - December 2011 January 2012 -
Corrugating Medium	CM71 CM72	October 2009 - February 2010 March 2010 -

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.

continued on next page

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).

INSTRUMENT MANUFACTURER CONTACTS

If your data results have been flagged with an "X" and you believe that the problem may be with your instrument (and not your testing procedures), then CTS urges you to contact the appropriate instrument manufacturer. Where possible, CTS has asked the manufacturer to supply a contact person who is familiar with the Containerboard Collaborative Reference Program, and who can thus work with you on evaluating your results to better determine the cause of the problem. Additional contact names will be added as they become available.

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Containerboard Interlaboratory Testing Program
Analysis 201

Top to Bottom Box Compression Strength, Corrugated Boxes - BOX5
TAPPI Official Test Method T804

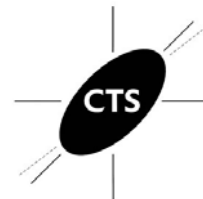


WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3CMD2	626.2	-1.10	34.3	700.6	0.38	39.6	4	TR
3CY67H	577.2	-2.02 *	32.7	618.8	-1.21	52.7	4	LS
6UVE3J	661.6	-0.44	56.0	655.3	-0.50	38.7	4	LG
72MC3R	724.9	0.75	45.6	713.7	0.64	47.5	4	LM
7F7PPY	670.0	-0.28	30.6	672.0	-0.18	55.2	4	LG
7RXN8P	741.6	1.07	49.2	743.3	1.22	30.1	4	TC
8X8WG7	730.3	0.85	14.6	722.8	0.82	29.7	4	XX
BFX9H3	711.7	0.50	8.0	717.0	0.70	27.7	4	LO
CEVX2Q	722.0	0.70	13.2	690.0	0.18	35.6	3	LL
CFPLHZ	648.2	-0.69	31.3	661.1	-0.39	58.8	4	LM
DNZAP8	732.0	0.89	104.6	703.7	0.44	74.3	4	TE
FXYKFU	700.4	0.29	73.2	635.5	-0.89	63.1	4	ES
JAJ9UC	756.0	1.34	27.0	747.3	1.30	45.4	4	LH
KYUYK9	616.4	-1.29	40.2	629.2	-1.01	51.5	4	LL
MPLY9D	649.9	-0.66	33.1	664.7	-0.32	34.1	4	ER
MWYWU	646.4	-0.72	16.0	643.6	-0.73	19.5	4	LG
NAZ488	670.5	-0.27	61.5	575.6	-2.06*	40.0	4	LG
PBAKV6	628.7	-1.05	13.2	636.8	-0.86	13.3	3	XX
PC49CE	589.6	-1.79	37.5	584.4	-1.89	35.7	4	LO
PEBGNK	681.6	-0.06	24.9	651.2	-0.58	52.1	4	ER
PP7YUD	637.2	-0.89	41.3	694.7	0.27	46.0	4	TS
TJ9G7C	657.5	-0.51	61.6	644.8	-0.71	51.3	4	RP
UY2729	760.3	1.42	15.8	773.3	1.80	27.4	4	LN
UY7M2R	763.4	1.48	11.9	767.3	1.69	15.7	4	XX
V96ZBQ	687.6	0.05	42.7	667.2	-0.27	37.0	4	LH
W94KJC	714.5	0.56	55.1	724.3	0.85	45.3	3	ER
X2F2XN	768.8	1.58	48.9	735.6	1.07	43.9	4	TB
Z6PYFU	700.6	0.30	76.2	693.4	0.24	75.9	3	MC

Consensus (All Labs) Results

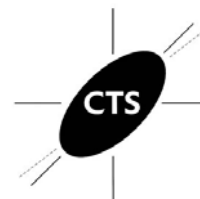
Month Mean	684.82	Grand Mean	680.96
Avg SDr	45.18	Avg SDr	45.04
SD btwn Labs	53.24	SD btwn Labs	51.18
Labs Incd	28	Labs Incd	28

Containerboard Interlaboratory Testing Program
Analysis 201
Top to Bottom Box Compression Strength, Corrugated Boxes - BOX5
TAPPI Official Test Method T804



Instrument Code List as Reported by the Labs

- | | |
|--|--|
| (ER) - Emerson 6200 Series | (ES) - Emerson 8510 |
| (LG) - TLS / L.A.B. Validator Series | (LH) - L.A.B. Compression Tester Model #10610 |
| (LL) - Lansmont 76-5K | (LM) - Lansmont 122-15k |
| (LN) - Lansmont 152-50k | (LO) - Lansmont 152-30k |
| (LS) - Lansmont Squeezer | (MC) - MTI Lab Model 10240 |
| (RP) - Regmed P4000M | (TB) - TMI Monitor/Compression Tester, Model 17-70 |
| (TC) - TMI Monitor/Compression Tester, Model 17-37 | (TE) - Testometric M500 - 25 KN |
| (TR) - Toyo Seiki Model RCT-5TU | (TS) - Tinius Olsen Model CTM |
| (XX) - Instrument make/model not specified by lab | |



WebCode	Monthly Results			Cumulative Results				Inst
	Mean	CPV	SDr	Mean	CPV	SDr	Months	
2ZBLB2	55.2	-1.38	2.0	54.7	-1.63	2.4	2	WK
7F7PPY	64.3	1.81	2.5	63.1	1.18	3.0	4	LC
AMWFFQ	58.7	-0.16	0.4	59.7	0.03	1.3	2	TC
JAJ9UC	59.4	0.10	2.6	62.8	1.07	2.2	4	TC
PC49CE	60.2	0.36	3.4	60.0	0.12	4.1	4	LC
UY2729	59.4	0.07	3.5	60.0	0.11	2.9	4	EN
Z6PYFU	56.9	-0.80	2.5	57.0	-0.88	3.3	4	TD

Consensus (All Labs) Results			
Month Mean	59.15	Grand Mean	59.63
Avg SDr	2.60	Avg SDr	2.85
SD btwn Labs	2.84	SD btwn Labs	2.99
Labs Incd	7	Labs Incd	7

Instrument Code List as Reported by the Labs

(EN) - Emerson 2200

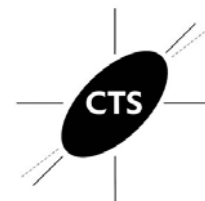
(LC) - L&W Crush Tester 48

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

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

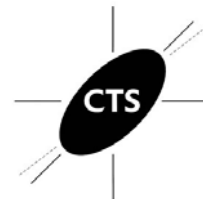
(WK) - Zwick Z005 Crush Tester

Containerboard Interlaboratory Testing Program
Analysis 203
Edgewise Compressive Strength by T839, Corrugated board - ECT5
TAPPI T839



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2CM4TW	53.1	-2.85 X	1.0	52.4	-3.84 X	2.4	4	XX
3ULG2X	60.4	-0.45	1.8	63.1	0.41	1.9	3	LC
49DKYT	62.8	0.37	5.4	63.5	0.59	3.7	4	LC
6UVE3J	61.1	-0.19	2.0	60.1	-0.78	2.8	4	EM
72MC3R	61.5	-0.06	1.6	59.4	-1.05	2.1	4	TC
7F7PPY	63.3	0.52	1.7	66.3	1.67	2.1	4	LC
7LUJHQ	61.7	-0.02	2.4	62.2	0.04	2.1	4	LC
7RXN8P	65.1	1.11	2.6	64.2	0.86	2.5	4	LC
7ZFM9V	63.4	0.57	2.0	62.3	0.10	2.0	4	TA
ABGQGL	60.2	-0.52	1.7	60.8	-0.48	1.8	4	TD
AMWFFQ	60.1	-0.52	0.9	61.0	-0.41	1.2	2	TC
BFX9H3	58.9	-0.92	3.0	57.5	-1.82	2.5	4	EN
CEVX2Q	65.1	1.12	2.6	66.5	1.75	2.3	3	LC
CFPLHZ	64.4	0.89	2.3	62.6	0.23	2.6	4	EM
E89PRK	60.7	-0.33	1.5	60.0	-0.80	1.7	4	TC
FXYKFU	56.5	-1.72	1.0	60.0	-0.82	1.6	4	LD
GQANK4	60.4	-0.43	2.1	55.8	-2.48*	2.7	4	TB
JAJ9UC	63.0	0.43	1.8	63.8	0.70	1.5	4	TC
KYUYK9	63.9	0.72	1.9	66.3	1.69	1.5	4	BU
MPLY9D	56.5	-1.72	1.2	58.6	-1.35	1.7	4	EM
MWYWU	54.7	-2.31 *	3.7	52.8	-3.69 X	2.6	4	TB
P3Z7VN	64.3	0.85	1.5	61.6	-0.16	1.6	3	LD
PBAKV6	59.8	-0.64	1.1	59.5	-1.01	1.0	3	XX
PC49CE	64.5	0.91	3.1	64.4	0.92	3.4	4	LC
PEBGNK	59.6	-0.70	2.2	62.9	0.34	2.5	4	LD
PP7YUD	68.1	2.09 *	3.3	64.3	0.89	3.8	4	CT
R2X2BC	61.6	-0.04	4.5	62.3	0.09	4.6	4	LD
TJ9G7C	63.0	0.41	3.0	61.9	-0.05	2.2	4	EM
TKA4TG	59.1	-0.86	1.9	62.3	0.09	2.2	4	LD
UY2729	65.4	1.23	1.6	65.3	1.29	2.0	4	EN
UY7M2R	57.4	-1.43	1.4	60.4	-0.66	1.3	4	XX
V96ZBQ	67.3	1.85	2.0	63.2	0.45	5.1	4	EM
VFQQ6Y	62.5	0.26	3.2	63.8	0.68	2.5	4	TM
W94KJC	62.1	0.11	2.6	62.5	0.17	2.5	4	EN
X2F2XN	71.5	3.22 X	1.2	63.6	0.62	1.2	4	LC
X82WXR	60.0	-0.57	1.3	59.4	-1.07	2.3	4	TL

Containerboard Interlaboratory Testing Program
 Analysis 203
Edgewise Compressive Strength by T839, Corrugated board - ECT5
 TAPPI T839



Consensus (All Labs) Results

Month Mean	61.71	Grand Mean	62.05
Avg SDr	2.43	Avg SDr	2.51
SD btwn Labs	3.03	SD btwn Labs	2.52
Labs Incd	34	Labs Incd	33

Instrument Code List as Reported by the Labs

(BU) - Buchel Digital Crush Tester	(CT) - Con-Ten
(EM) - Emerson 1200 Series	(EN) - Emerson 2200
(LC) - L&W Crush Tester 48	(LD) - L&W Crush Tester 248
(TA) - Thwing-Albert Model QCII-XDS	(TB) - TMI Monitor/Compression Tester, Model 17-70
(TC) - TMI Monitor/Compression Tester, Model 17-37	(TD) - TMI Digital Crush Tester, Model 17-09
(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 - 42X3
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
27EP3K	94.2*	102.2	98.5	106.2	100.3	-1.23	7.6	5.1	100.8	-1.29	9.4	4.0	12	LC
2CM4TW	101.3	101.5	104.2	99.3	101.6	-0.94	10.6	2.0	99.8	-1.54	10.9	2.7	16	LA
3ULG2X	103.0	106.8	105.7	111.6	106.8	0.19	10.7	3.6	108.0	0.56	11.4	4.4	12	LA
4JY2BZ	106.9L	104.9L	107.8	104.0	105.9	0.00	5.9	1.8	106.8	0.25	8.7	1.8	16	LA
76P663	104.2	103.4	87.5XH	92.5*	96.9	-1.97	14.3	8.2H	96.7	-2.33*	11.7	5.5	12	LP
7D6LZX	105.7	106.4	109.0	103.6	106.2	0.06	11.0	2.2	109.2	0.87	10.4	4.5	16	LC
7F7PPY	105.7	108.1	110.6	112.0	109.1	0.70	10.4	2.8	106.9	0.29	10.4	5.1	16	LZ
7RZ946	109.5	110.8	112.4	113.3	111.5	1.22	12.1	1.7	109.1	0.85	11.7	5.2	16	TB
8U9F7X	108.8	113.2	113.5	111.9	111.9	1.30	8.4	2.2	108.3	0.63	11.0	3.6	16	TB
8X6BKQ	104.0	104.1	110.4	106.5	106.3	0.08	13.1	3.0	106.8	0.26	12.5	4.0	16	LJ
8X8WG7	115.9	116.3*	114.1	111.1	114.4	1.86	10.4	2.4	112.6	1.75	12.8	4.7	16	AX
9X22DQ	107.4	114.4	101.9	100.6	106.1	0.04	10.5	6.3	108.7	0.74	10.7	4.3	16	LZ
AEKCEJ	108.2	104.6	101.8	104.4	104.8	-0.25	8.1	2.6	106.5	0.19	10.1	4.4	12	AH
AFGVEZ	102.9	110.4	110.0	106.2	107.4	0.32	13.7	3.5	108.6	0.72	11.8	3.9	16	AH
AXGKV3	No Data	112.9	114.6	111.0	112.8	1.52	7.7	1.8	110.6	1.23	9.8	4.8	14	LA
CDNJUK	93.1*	94.0*	99.1	97.0	95.8	-2.21*	9.9	2.8	95.5	-2.63*	14.0	5.6	16	LA
CFPLHZ	108.4	105.5	98.2	98.6	102.7	-0.71	8.2	5.1	104.6	-0.31	8.7	5.0	16	AH
CFPMJL	101.7	104.6	104.8	105.6L	104.2	-0.38	7.3	1.7	104.6	-0.31	6.8	1.4	16	LC
EFFLCG	99.8	104.2	100.3	No Data	101.4	-0.98	10.7	2.4	103.2	-0.66	11.4	3.4	12	LA
EKCZDL	115.6	106.3	113.0	114.7	112.4	1.42	12.0	4.2	113.2	1.88	12.0	4.6	16	LA
FUHDTF	104.7	102.3	102.0	93.5*	100.6	-1.15	12.2	4.9	102.2	-0.92	11.2	4.1	16	LC
FXYKFU	105.2	104.4	112.4	103.6	106.4	0.11	10.4	4.1	107.3	0.38	11.1	4.8	16	LA
GHZ6LD	101.8	95.7	99.9	97.0	98.6	-1.59	10.7	2.8	101.0	-1.23	9.6	3.2	12	LJ
JAJ9UC	108.5	108.3	98.0	104.5	104.8	-0.24	9.0	4.9	105.6	-0.06	10.7	4.8	16	AA
JJ6MGE	108.8L	107.8L	107.1L	108.1L	108.0	0.45	3.2	0.7	107.6	0.45	4.1	1.0	16	AX
JLWLVD	99.6	90.2X	103.1	101.0	98.5	-1.63	11.2	5.7	102.8	-0.76	11.5	4.5	16	LA
JZ89Z2	102.3	106.3L	104.9	105.8L	104.8	-0.23	5.0	1.8	105.9	0.02	5.9	1.9	16	TB
L2X4JE	106.0	107.4	109.9	106.0	107.3	0.31	10.2	1.8	104.6	-0.30	11.2	3.4	16	LC
LUTC7B	102.1	102.1	103.5	105.7	103.3	-0.56	9.3	1.7	104.2	-0.41	11.0	3.5	16	LJ
LUV8PG	109.4	110.6L	109.6	112.5L	110.5	1.01	5.2	1.4	109.2	0.86	4.9	1.5	16	XX
M9CDKG	99.2	100.4	99.2	108.4	101.8	-0.90	9.4	4.5	102.3	-0.91	10.6	3.9	16	AH
M9XNJP	108.0	98.9	105.0	111.8	105.9	0.00	10.4	5.4	105.9	0.03	10.4	5.4	4	LZ
MBYYAX	107.3	104.1L	102.5L	104.9	104.7	-0.26	5.1	2.0	106.2	0.10	5.9	2.2	16	AH
MVQXGG	104.4	102.1	107.6	110.5	106.2	0.06	10.2	3.7	105.9	0.02	11.6	4.0	16	LA
MWYWU	107.3	101.6	101.9	104.3	103.8	-0.46	9.9	2.6	101.9	-0.99	10.2	3.6	16	TC

Containerboard Interlaboratory Testing Program
Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42X3
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	
NAZ488	105.7	104.2	103.4	107.3 L	105.2	-0.16	8.5	1.7	106.0	0.04	9.0	2.0	16	AH
NCAZTB	114.9	112.9	109.0	108.1	111.2	1.17	12.2	3.2	108.3	0.64	10.5	3.8	13	TB
P3Z7VN	106.6	108.6	109.2	104.0 L	107.1	0.25	5.4	2.3	106.4	0.15	5.8	1.5	15	TB
PC49CE	107.8	100.7	111.2	109.5	107.3	0.31	9.8	4.6	104.7	-0.28	11.2	4.7	16	AH
PEBGNK	96.3	101.0	100.4	93.7*	97.9	-1.76	10.1	3.5	99.4	-1.65	10.1	2.6	16	AH
PP7YUD	113.6	108.6	100.9	113.7 H	109.2	0.72	10.8	6.0	107.0	0.31	14.4	6.0	16	XX
QGRAV6	100.1	111.9	105.2	103.1	105.1	-0.18	9.5	5.0	106.8	0.25	11.0	3.9	16	LC
R2X2BC	104.8	115.7	113.1	No Data	111.2	1.16	9.3	5.7	112.9	1.81	8.4	3.9	14	AA
U4DBEU	111.7	103.7	104.4	102.8	105.6	-0.06	11.6	4.1	104.0	-0.45	11.3	4.0	16	LC
U4HLF7	106.3	101.1	105.9	111.2	106.1	0.05	11.1	4.2	105.8	-0.01	11.6	3.7	12	XX
UQUMN4	113.8	113.1 H	115.6	117.5	115.0	2.00	14.6	1.9	111.7	1.51	12.1	3.9	16	TB
VJ8Z96	102.9	102.7	102.5	102.4	102.6	-0.72	8.8	0.2 L	102.5	-0.86	8.4	1.6	12	RE
W8QTF	117.2*	108.1	112.6	116.6	113.6	1.69	8.4	4.2	109.3	0.89	9.4	4.1	16	LA
W93KLX	108.7	110.3	109.5	109.2	109.4	0.77	9.6	0.7	110.0	1.06	9.5	3.3	16	LZ
X82WW7	No Data	No Data	105.5	104.8	105.1	-0.16	7.8	0.5 L	105.2	-0.15	8.5	0.4 L	3	TB
X9VKE3	103.8	101.6	115.2	106.1	106.7	0.17	10.4	6.0	107.0	0.31	9.8	4.0	16	AH
Z8CFVU	113.2	112.5	109.3 L	110.6	111.4	1.21	5.7	1.8	110.0	1.07	5.8	1.8	12	RE
ZW2Y8X	98.2	96.7	101.6	100.4	99.2	-1.46	7.7	2.2	97.8	-2.06*	8.2	2.5	15	LC

Consensus (All Labs) Results

Wk Mean	105.81	105.88	106.36	106.05	Month Mean	105.89	Grand Mean	105.81
Avg SDr	9.90	9.09	10.30	9.77	Avg SDr	9.83	Avg SDr	10.26
SD btwn Labs	5.35	5.14	5.06	5.77	SD btwn Labs	4.57	SD btwn Labs	3.91
Labs Includ	51	51	52	51	SD btwn Wks	3.65	SD btwn Wks	3.86
Labs Exclud	0	1	1	0	Labs Includ	53	Labs Includ	53
Labs not rcvd	2	1	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
- (LP) - L & W Bursting Strength Tester P-Type
- (RE) - Regmed/Mullen Tester
- (TC) - TMI Monitor/Burst (Model 13-71)
- (AH) - Perkins Model AH
- (LA) - L & W Bursting Strength Tester
- (LJ) - L & W Bursting Strength Tester J-Type
- (LZ) - L & W (model not specified)
- (TB) - TMI Monitor/Burst 1000
- (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					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
27EP3K	72.7	75.8	72.7	74.5	73.9	-1.28	4.5	1.5	73.9	-1.28	4.5	1.5	4	LC
2CM4TW	71.8	74.4	73.7	72.0	72.9	-1.55	5.1	1.3	72.9	-1.55	5.1	1.3	4	LA
3ULG2X	79.7	82.1	80.8	79.1	80.4	0.50	6.0	1.4	80.4	0.50	6.0	1.4	4	LA
4JY2BZ	81.3	81.2	80.2	79.7	80.6	0.55	3.8	0.8	80.6	0.55	3.8	0.8	4	LA
76P663	71.3	72.3	73.3	70.4*	71.8	-1.86	4.5	1.3	71.8	-1.86	4.5	1.3	4	LP
7D6LZX	83.3	81.8	83.1	81.2	82.3	1.03	4.8	1.0	82.3	1.03	4.8	1.0	4	LC
7F7PPY	80.6	75.8	85.1	80.8	80.6	0.54	5.2	3.8 H	80.6	0.54	5.2	3.8 H	4	LZ
7RZ946	82.4	82.1	81.7	84.7	82.7	1.13	6.0	1.4	82.7	1.13	6.0	1.4	4	TB
8U9F7X	86.0	83.6	82.4	81.1	83.3	1.29	5.7	2.1	83.3	1.29	5.7	2.1	4	TB
8X6BKQ	75.7 H	75.8	76.4	75.2	75.8	-0.77	6.7	0.5	75.8	-0.77	6.7	0.5	4	LJ
8X8WG7	84.5	87.1*	84.0	86.9*	85.6	1.93	5.5	1.6	85.6	1.93	5.5	1.6	4	AX
9X22DQ	77.9	81.2	79.4	78.8	79.3	0.20	5.4	1.4	79.3	0.20	5.4	1.4	4	LZ
AEKCEJ	78.6	77.8	79.2	79.6	78.8	0.06	5.2	0.8	78.8	0.06	5.2	0.8	4	AH
AFGVEZ	83.6	86.3	84.1	82.2	84.1	1.50	5.2	1.7	84.1	1.50	5.2	1.7	4	AH
AXGKV3	No Data	77.1	77.5	80.5	78.4	-0.06	5.0	1.8	78.4	-0.06	5.0	1.8	3	LA
CDNJUK	72.8	73.9	71.7	72.5	72.7	-1.62	5.5	0.9	72.7	-1.62	5.5	0.9	4	LA
CFPLHZ	75.5	76.2	75.2 L	78.7	76.4	-0.60	3.7	1.6	76.4	-0.60	3.7	1.6	4	AH
CFPMJL	74.9	74.5	72.5	78.6	75.1	-0.96	4.6	2.5	75.1	-0.96	4.6	2.5 H	4	LC
DNZAP8	No Data	82.4	82.8	82.6 L	82.6	1.10	3.3	0.2 L	82.6	1.10	3.3	0.2 L	3	AH
EFFLCG	75.2	75.5	76.2	No Data	75.6	-0.81	5.6	0.5	75.6	-0.81	5.6	0.5	3	LA
EKCZDL	80.8	80.4	85.4	83.7	82.6	1.09	5.7	2.4	82.6	1.09	5.7	2.4	4	LA
FUHDTF	74.5	74.8	75.7	76.6	75.4	-0.87	4.6	0.9	75.4	-0.87	4.6	0.9	4	LC
FXYKFU	80.9	80.1	81.5	83.5	81.5	0.80	5.3	1.5	81.5	0.80	5.3	1.5	4	LA
GHZ6LD	75.6	76.1	76.0	76.1	76.0	-0.72	5.6	0.2 L	76.0	-0.72	5.6	0.2 L	4	LJ
JAJ9UC	79.8	79.3	79.8	78.8	79.4	0.21	6.6	0.5	79.4	0.21	6.6	0.5	4	AA
JJ6MGE	79.0	79.2	79.3	79.3	79.2	0.17	4.0	0.1 L	79.2	0.17	4.0	0.1 L	4	AX
JLWLVD	77.0	78.0	78.5	81.0	78.6	0.00	4.9	1.7	78.6	0.00	4.9	1.7	4	LA
JZ89Z2	79.8	78.7	79.9	79.8	79.6	0.26	3.2	0.6	79.6	0.26	3.2	0.6	4	TB
L2X4JE	76.4	78.1	75.7	78.6	77.2	-0.38	4.2	1.4	77.2	-0.38	4.2	1.4	4	LC
LUTC7B	75.1	79.3	77.2	75.5	76.8	-0.50	4.7	1.9	76.8	-0.50	4.7	1.9	4	LJ
LUV8PG	82.0	84.4	81.8	80.4	82.2	0.98	4.2	1.7	82.2	0.98	4.2	1.7	4	XX
M9CDKG	69.8*	69.9*	70.0*	71.0*	70.2	-2.31*	5.0	0.6	70.2	-2.31*	5.0	0.6	4	AH
M9XNJP	78.0	76.5	77.7	77.1	77.3	-0.35	5.5	0.6	77.3	-0.35	5.5	0.6	4	LZ
MBYYAX	78.6	81.9	79.6	78.5	79.6	0.29	3.7	1.6	79.6	0.29	3.7	1.6	4	AH
MVQXGG	78.5	73.8	79.1	77.4	77.2	-0.38	4.0	2.4	77.2	-0.38	4.0	2.4	4	LA



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
MWYWU	76.0	76.8	72.5	77.5	75.7	-0.79	4.6	2.2	75.7	-0.79	4.6	2.2	4	TC
NAZ488	80.3	78.8	83.5	80.6	80.8	0.61	5.4	2.0	80.8	0.61	5.4	2.0	4	AH
NCAZTB	86.5*	85.0 ^H	87.0*	84.3	85.7	1.95	6.9	1.3	85.7	1.95	6.9	1.3	4	TB
P3Z7VN	78.1	77.0	78.9	77.5	77.9	-0.20	4.6	0.8	77.9	-0.20	4.6	0.8	4	TB
PC49CE	76.7	80.0	76.8	82.8	79.1	0.13	5.6	2.9	79.1	0.13	5.6	2.9 ^H	4	AH
PEBGNK	76.6	76.6	76.3	76.0	76.4	-0.61	5.0	0.3	76.4	-0.61	5.0	0.3	4	AH
PP7YUD	73.8	73.3	72.7	72.3	73.0	-1.53	6.1	0.7	73.0	-1.53	6.1	0.7	4	XX
QGRAV6	76.7	80.2	77.2	78.7	78.2	-0.11	5.2	1.6	78.2	-0.11	5.2	1.6	4	LC
R2X2BC	85.7	85.4	85.7	No Data	85.6	1.92	5.2	0.2 ^L	85.6	1.92	5.2	0.2 ^L	3	AA
U4DBEU	77.3	81.2	72.8	78.2	77.4	-0.33	6.2	3.5 ^H	77.4	-0.33	6.2	3.5 ^H	4	LC
U4HLF7	76.8	79.7	77.3	78.2	78.0	-0.17	5.5	1.3	78.0	-0.17	5.5	1.3	4	LA
UQUMN4	83.6	84.1	83.6	82.8	83.5	1.36	5.4	0.5	83.5	1.36	5.4	0.5	4	TB
VJ8Z96	73.5	74.7	75.6	74.1	74.5	-1.13	4.4	0.9	74.5	-1.13	4.4	0.9	4	RE
W8QTF	79.3	82.5	78.7	79.8 ^H	80.1	0.41	6.3	1.7	80.1	0.41	6.3	1.7	4	LA
X82WW7	No Data	No Data	77.9	77.1	77.5	-0.30	5.2	0.6	77.5	-0.30	5.2	0.6	2	TB
X9VKE3	79.0	78.3	80.2	77.8	78.8	0.06	4.7	1.0	78.8	0.06	4.7	1.0	4	AH
Z8CFVU	81.2 ^L	80.9 ^L	80.9 ^L	80.5 ^L	80.9	0.63	1.6	0.3	80.9	0.63	1.6	0.3	4	RE
ZRMNUU	82.1	81.5	81.6	82.6	82.0	0.92	5.3	0.5	82.0	0.92	5.3	0.5	4	LA
ZW2Y8X	72.7	73.9	71.3	75.9	73.5	-1.41	4.2	2.0	73.5	-1.41	4.2	2.0	4	LC

Consensus (All Labs) Results

Wk Mean	78.23	78.82	78.51	78.71	Month Mean	78.59	Grand Mean	78.59
Avg SDr	5.33	4.96	5.07	4.98	Avg SDr	5.08	Avg SDr	5.08
SD btwn Labs	3.96	3.84	4.13	3.57	SD btwn Labs	3.64	SD btwn Labs	3.64
Labs Includ	51	53	54	52	SD btwn Wks	1.53	SD btwn Wks	1.53
Labs Exclud	0	0	0	0	Labs Includ	54	Labs Includ	54
Labs not rcvd	3	1	0	2				

Instrument Code List as Reported by the Labs

- (AA) - Perkins Model A
- (AH) - Perkins Model AH
- (AX) - Perkins Mullen Tester (model not specified)
- (LA) - L & W Bursting Strength Tester
- (LC) - L & W Autoline
- (LJ) - L & W Bursting Strength Tester J-Type
- (LP) - L & W Bursting Strength Tester P-Type
- (LZ) - L & W (model not specified)
- (RE) - Regmed/Mullen Tester
- (TB) - TMI Monitor/Burst 1000
- (TC) - TMI Monitor/Burst (Model 13-71)
- (XX) - Instrument make/model not specified by lab



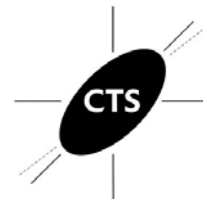
WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
27EP3K	101.1*	91.0	100.4	97.6	97.5	1.62	4.1	4.6	96.7	1.55	4.5	3.9	12	LD
2CM4TW	84.3	87.3	85.0	89.6	86.6	-1.42	3.9	2.4	84.8	-2.23*	4.6	3.1	16	LX
3ULG2X	93.3	91.5	95.2	92.3	93.1	0.39	5.0	1.6	91.6	-0.06	4.7	2.3	12	LC
4JY2BZ	89.3	91.2	91.1	90.5	90.5	-0.32	3.5	0.9	91.0	-0.24	3.8	1.4	16	LC
4LLJRZ	89.4	92.7	89.7	89.2	90.3	-0.39	4.1	1.6	91.4	-0.14	4.9	2.0	16	XX
6UVE3J	92.9	91.3	90.2	90.6	91.2	-0.12	4.6	1.2	89.8	-0.65	3.8	1.3	16	EM
76P663	95.6	67.5X	87.6H	92.1	85.7	-1.66	5.6	12.6H	87.0	-1.52	5.0	8.7H	12	LC
7F7PPY	97.9	95.2	93.4	95.2	95.4	1.04	3.0	1.9	94.4	0.82	3.7	2.0	16	LC
7RZ946	98.5	94.0	95.7	96.3	96.1	1.23	4.3	1.9	94.7	0.92	4.7	4.0	16	LZ
8U9F7X	95.1	92.0	94.7H	91.0	93.2	0.42	4.8	2.0	95.8	1.28	4.9	3.1	16	LX
8X6BKQ	88.3	91.1	85.4	89.8	88.6	-0.85	3.4	2.4	89.3	-0.81	4.2	2.0	16	LC
8X8WG7	94.0	100.5*	101.5*	90.8	96.7	1.39	4.7	5.2	95.5	1.20	5.0	3.4	16	LX
ABGQGL	92.0	89.6	90.2	88.3L	90.0	-0.46	2.9	1.5	91.5	-0.09	3.7	2.1	16	TD
AEKCEJ	88.5	90.4	88.0	93.7	90.1	-0.43	4.6	2.6	90.4	-0.45	4.8	3.5	12	LC
AFGVEZ	92.9	91.7	92.1	95.1	93.0	0.35	4.2	1.5	92.8	0.32	4.2	1.6	16	LC
AXGKV3	No Data	87.5	89.0	88.1	88.2	-0.97	2.2	0.7	88.0	-1.22	3.8	1.5	14	LD
BFX9H3	95.1	96.8	94.0	99.2	96.3	1.27	5.0	2.2	96.1	1.38	4.5	1.6	16	LZ
CDNJUK	91.3	91.9	94.4	95.7	93.3	0.45	4.3	2.1	92.0	0.05	4.4	3.0	16	LC
CFPLHZ	89.5	94.5	92.3	90.4	91.7	0.00	4.6	2.2	90.8	-0.31	4.5	2.8	16	EM
CFPMJL	90.5	89.9	93.2	92.7L	91.6	-0.03	4.2	1.6	91.4	-0.13	2.9	1.3	16	LC
CHV772	95.6	95.5	94.6	93.7	94.9	0.88	4.2	0.9	94.0	0.70	4.6	2.8	16	LC
DLDNZQ	90.9	90.6	92.6	92.8	91.7	0.01	4.0	1.1	92.9	0.36	4.7	2.9	10	MB
DNZAP8	No Data	94.6	94.1	94.7	94.5	0.78	4.0	0.3L	94.4	0.84	4.0	1.9	15	LD
E89PRK	83.1*	83.8*	82.7*L	84.9	83.6	-2.23*	3.3	1.0	86.3	-1.77	3.4	3.3	16	LD
EKCZDL	87.3	90.3	89.9	89.8	89.3	-0.66	4.7	1.4	91.8	-0.01	5.0	2.6	16	LD
FCZENH	93.6L	94.1	93.2	90.7	92.9	0.33	2.4	1.5	92.8	0.33	2.7	1.4	16	LD
FUHDTF	92.8H	91.4H	85.7	83.4*H	88.3	-0.93	9.0	4.5	89.6	-0.70	8.5	5.2H	16	LA
FXYKFU	86.7	84.3	84.6	85.8	85.4	-1.75	4.5	1.1	88.6	-1.03	4.4	3.1	12	LD
HALTQR	No Data	91.8	92.9L	91.6	92.1	0.12	2.2	0.7	93.0	0.38	3.8	1.7	14	LC
HXNWL6	93.1	92.2	93.8	95.5	93.7	0.55	4.8	1.4	89.6	-0.69	4.9	3.7	16	LZ
JJ6MGE	90.8L	90.9L	90.9L	90.8L	90.9	-0.22	0.5	0.0L	90.8	-0.30	0.8	0.3L	16	LZ
JLWLVD	99.4H	99.0	99.6	100.2*	99.6	2.18*	5.1	0.5	98.1	2.01*	4.7	2.0	16	LD
JZ89Z2	90.2	92.2	89.4	91.2	90.8	-0.25	4.6	1.2	92.4	0.20	4.4	2.1	16	TH
LQT4ZF	67.8X	71.4X	75.2X	74.9X	72.3	-5.37X	4.5	3.5	76.8	-4.80X	4.2	8.1H	16	LC
LUTC7B	No Data	87.0	91.6	89.8	89.5	-0.62	4.4	2.3	92.0	0.06	4.7	2.3	15	LD



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
LUV8PG	98.4	87.9	94.5	94.3	93.8	0.58	4.6	4.3	94.0	0.71	5.0	3.3	16	XX
M9CDKG	90.0	89.3	91.9	91.2	90.6	-0.30	3.5	1.2	92.6	0.24	3.4	1.8	16	LC
M9V3NA	90.0	91.9	90.8	92.0	91.2	-0.14	2.8	0.9	82.6	-2.94X	5.5	7.3H	16	TD
M9XNJP	88.9	84.5	84.8	86.3	86.1	-1.55	5.1	2.0	88.1	-1.19	5.0	2.5	13	LC
MPLY9D	87.9	87.2	89.7	88.0	88.2	-0.97	3.2	1.0	86.8	-1.60	3.4	2.5	16	EM
MVQXGG	92.7	96.1	89.9	90.3	92.3	0.16	4.5	2.8	92.6	0.25	5.1	2.3	16	LC
MWYWU	83.8*L	83.8*	81.8*	No Data	83.1	-2.37*	3.6	1.2	86.2	-1.78	4.1	2.2	15	LZ
N97FPB	90.9	No Data	No Data	No Data	90.9	-0.22	6.5	0.0 L	92.5	0.22	5.7	4.5	8	MZ
NCAZTB	92.6	98.9	98.3	101.5*	97.8	1.70	5.3	3.7	97.9	1.94	5.0	3.8	13	LC
P3Z7VN	90.5	90.6	91.9	90.3	90.8	-0.25	3.6	0.7	91.5	-0.11	3.5	1.0	15	LD
PC49CE	91.4	92.5	92.5	95.0	92.8	0.32	4.5	1.5	94.2	0.76	4.5	2.5	16	LC
PEBGNK	89.7	91.9	92.9	90.1	91.2	-0.15	4.2	1.5	89.4	-0.78	4.0	1.9	12	LD
R2X2BC	93.1	91.9	94.6	No Data	93.2	0.42	2.9	1.4	91.7	-0.02	4.1	1.6	14	LD
TKA4TG	92.2	94.1	96.4	90.5	93.3	0.45	3.9	2.5	93.6	0.58	4.3	2.0	12	LD
UQUMN4	93.2	93.5	85.7	89.8H	90.5	-0.32	5.7	3.6	89.7	-0.67	4.9	3.6	16	LC
UY2729	92.9	94.0	94.8	90.0	92.9	0.34	5.1	2.1	92.9	0.36	4.4	1.8	16	EN
UY7M2R	98.2	100.0*	97.5L	96.1	97.9	1.73	2.3	1.6	95.2	1.07	2.4	2.2	16	XX
V96ZBQ	92.3	90.6	93.1	97.6	93.4	0.48	3.5	3.0	91.8	0.00	4.1	2.4	16	EM
VJ8Z96	87.3	84.5	83.6	83.0*	84.6	-1.96	3.3	1.9	84.8	-2.24*	3.9	1.4	12	TD
W2GE36	93.1	92.5	89.2H	95.4	92.5	0.24	5.5	2.5	94.1	0.72	4.8	2.7	13	MB
W94KJC	94.3	85.8	89.5	91.2	90.2	-0.42	4.9	3.6	89.7	-0.66	4.6	2.2	16	EN
X82WW7	88.5	91.3	88.4	88.2	89.1	-0.71	4.2	1.5	89.4	-0.78	4.8	1.2	14	TX
X9VKE3	96.8	97.3	97.6	99.9	97.9	1.72	4.2	1.4	98.9	2.28*	4.7	3.1	16	TC
Z6PYFU	89.5L	90.0L	89.2L	88.8L	89.4	-0.64	1.3	0.5	89.5	-0.73	2.2	0.9	16	TD
Z8CFVU	92.7	92.4	92.8	93.3	92.8	0.31	4.3	0.4 L	90.6	-0.37	3.5	2.0	12	LZ
ZRMNUU	91.4	91.7	93.3	93.3	92.4	0.21	3.9	1.0	94.5	0.86	4.8	2.8	16	LC
ZW2Y8X	99.2	94.2	98.8	97.9	97.5	1.62	4.6	2.3	94.5	0.88	4.9	4.0	15	LC

Consensus (All Labs) Results

Wk Mean	92.01	91.62	91.70	92.01	Month Mean	91.68	Grand Mean	91.80
Avg SDr	4.06	4.30	4.52	4.23	Avg SDr	4.30	Avg SDr	4.42
SD btwn Labs	3.86	3.81	4.37	3.97	SD btwn Labs	3.61	SD btwn Labs	3.13
Labs Includ	57	59	60	58	SD btwn Wks	2.67	SD btwn Wks	2.82
Labs Exclud	1	2	1	1	Labs Includ	61	Labs Includ	60
Labs not rcvd	4	1	1	3				



Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(LA) - L&W Autoline

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(TX) - TMI Digital Crush Tester (model not specified)

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(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 - 36Z2
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
27EP3K	85.4	80.7	84.6	85.1	84.0	1.16	3.0	2.2	84.0	1.16	3.0	2.2	4	LD
2CM4TW	76.2 H	70.2 *H	74.1	73.6	73.5	-1.80	5.0	2.5	73.5	-1.80	5.0	2.5	4	LX
2QKZ8N	78.5	79.7	85.1	84.7	82.0	0.60	2.5	3.4	82.0	0.60	2.5	3.4 H	4	LC
3ULG2X	77.5	78.4	79.1	77.6	78.2	-0.49	2.5	0.8	78.2	-0.49	2.5	0.8	4	LC
4JY2BZ	78.1	78.3	79.6	79.4	78.9	-0.29	2.7	0.8	78.9	-0.29	2.7	0.8	4	LC
4LLJRZ	76.5	77.7	76.6	79.0	77.5	-0.68	3.1	1.2	77.5	-0.68	3.1	1.2	4	XX
6UVE3J	79.9	78.3	77.9	78.9	78.7	-0.32	3.3	0.9	78.7	-0.32	3.3	0.9	4	EM
76P663	79.3	61.8 X	76.8	78.5	74.1	-1.63	3.9	8.3 H	74.1	-1.63	3.9	8.3 H	4	LC
7F7PPY	82.4 L	82.4	83.3	82.2	82.6	0.77	2.2	0.5	82.6	0.77	2.2	0.5	4	LC
7RZ946	84.8	81.6	88.0 *	79.2 H	83.4	1.00	5.0	3.8	83.4	1.00	5.0	3.8 H	4	LZ
8U9F7X	79.8	83.7	83.9	81.9	82.3	0.70	3.6	1.9	82.3	0.70	3.6	1.9	4	LX
8X6BKQ	80.8	80.1	80.7	82.8	81.1	0.35	2.1	1.2	81.1	0.35	2.1	1.2	4	LC
8X8WG7	83.9	87.2	87.9 *	81.6	85.2	1.50	2.7	2.9	85.2	1.50	2.7	2.9	4	LX
ABGQGL	81.0	79.9	80.1	77.2	79.6	-0.09	2.3	1.6	79.6	-0.09	2.3	1.6	4	TD
AEKCEJ	81.6	79.6	78.0	77.7	79.2	-0.19	3.4	1.8	79.2	-0.19	3.4	1.8	4	LC
AFGVEZ	80.3	79.9	80.9	77.9	79.7	-0.04	2.6	1.3	79.7	-0.04	2.6	1.3	4	LC
AXGKV3	No Data	78.1	78.7	78.7	78.5	-0.39	2.7	0.3 L	78.5	-0.39	2.7	0.3 L	3	LD
BFX9H3	84.9	83.0	85.4	84.0	84.3	1.26	2.1	1.1	84.3	1.26	2.1	1.1	4	LZ
CDNJUK	79.1 L	79.2	80.4	79.9	79.6	-0.06	2.6	0.6	79.6	-0.06	2.6	0.6	4	LC
CFPLHZ	76.0	76.9	78.4	76.7	77.0	-0.81	2.9	1.0	77.0	-0.81	2.9	1.0	4	EM
CFPMJL	80.1	80.9	80.3	79.8 L	80.3	0.12	3.0	0.5	80.3	0.12	3.0	0.5	4	LC
CHV772	78.8	78.7	78.0	77.1	78.2	-0.49	2.7	0.8	78.2	-0.49	2.7	0.8	4	LC
DLDNZQ	80.4	79.2	79.4	79.5	79.6	-0.07	3.0	0.5	79.6	-0.07	3.0	0.5	4	MB
DNZAP8	No Data	81.3	81.8	81.4	81.5	0.46	2.4	0.3 L	81.5	0.46	2.4	0.3 L	3	LD
E89PRK	71.4 *	71.4 *L	72.7	75.7	72.8	-2.00	2.6	2.0	72.8	-2.00	2.6	2.0	4	LD
EKCZDL	77.8	80.2	81.6	79.2	79.7	-0.04	3.5	1.6	79.7	-0.04	3.5	1.6	4	LD
FCZENH	79.5	78.7	81.2	79.2	79.6	-0.07	2.1	1.1	79.6	-0.07	2.1	1.1	4	LD
FUHDTF	85.7 H	80.5 H	77.6 H	76.5 H	80.1	0.06	6.1	4.1	80.1	0.06	6.1	4.1 H	4	LA
FXYKFU	73.4	72.6	70.7 *	73.3	72.5	-2.09 *	2.5	1.3	72.5	-2.09 *	2.5	1.3	4	LD
HALTQR	No Data	80.8	81.7	81.2	81.2	0.39	2.4	0.5	81.2	0.39	2.4	0.5	3	LC
HXNWL6	85.7	82.0	84.1 H	84.4	84.0	1.18	4.2	1.6	84.0	1.18	4.2	1.6	4	LZ
JJ6MGE	78.2 L	78.2 L	78.2 L	78.0 L	78.1	-0.49	0.5	0.1 L	78.1	-0.49	0.5	0.1 L	4	LZ
JLWLVD	83.2	87.8 *	84.9	86.3	85.6	1.61	3.2	2.0	85.6	1.61	3.2	2.0	4	LD
JZ89Z2	81.0	81.9	80.5	81.0	81.1	0.35	3.5	0.6	81.1	0.35	3.5	0.6	4	TH
LQT4ZF	63.1 X	59.9 X	68.4 X	66.6 X	64.5	-4.35 X	3.7	3.8	64.5	-4.35 X	3.7	3.8 H	4	LC

Containerboard Interlaboratory Testing Program
Analysis 217

Ring Crush, 36 lb Linerboard - 36Z2
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
LUTC7B	No Data	78.9	76.2	77.9	77.7	-0.63	2.6	1.3	77.7	-0.63	2.6	1.3	3	LD
LUV8PG	84.5	76.2	82.8	85.2	82.2	0.65	3.2	4.1	82.2	0.65	3.2	4.1 H	4	XX
M9CDKG	74.8	76.5	77.6	78.4	76.8	-0.87	2.8	1.6	76.8	-0.87	2.8	1.6	4	LC
M9V3NA	81.3	80.6	78.1	79.6	79.9	0.02	3.1	1.4	79.9	0.02	3.1	1.4	4	TD
M9XNJP	82.3	77.0	78.4	81.8	79.9	0.01	3.4	2.6	79.9	0.01	3.4	2.6	4	LC
MPLY9D	75.9	74.1	76.6	74.6	75.3	-1.30	2.7	1.1	75.3	-1.30	2.7	1.1	4	EM
MVQXGG	78.2	78.7	75.7	75.3	77.0	-0.82	3.8	1.7	77.0	-0.82	3.8	1.7	4	LC
MWYWU	77.7	73.9	70.9*	No Data	74.2	-1.61	3.1	3.4	74.2	-1.61	3.1	3.4 H	3	LZ
N97FPB	85.1	No Data	No Data	No Data	85.1	1.49	3.2	0.0 L	85.1	1.49	3.2	0.0 L	1	MZ
NCAZTB	83.2	88.4*	87.4	89.8*	87.2	2.08*	3.1	2.8	87.2	2.08*	3.1	2.8	4	LC
P3Z7VN	78.3	79.4 L	78.7	78.3	78.7	-0.34	2.6	0.5	78.7	-0.34	2.6	0.5	4	LD
PC49CE	79.7	79.5	81.3	78.9	79.9	0.00	2.8	1.0	79.9	0.00	2.8	1.0	4	LC
PEBGNK	77.9	75.8	77.1	77.5	77.1	-0.79	2.3	0.9	77.1	-0.79	2.3	0.9	4	LD
R2X2BC	80.0	80.8	80.7 L	No Data	80.5	0.17	2.2	0.5	80.5	0.17	2.2	0.5	3	LD
TKA4TG	79.7	77.5 L	80.8	80.0	79.5	-0.10	1.6	1.4	79.5	-0.10	1.6	1.4	4	LD
UQUMN4	84.8	79.8	79.8	79.0	80.8	0.27	3.2	2.6	80.8	0.27	3.2	2.6	4	LC
UY2729	82.2	81.0	82.0	82.3	81.9	0.56	2.7	0.6	81.9	0.56	2.7	0.6	4	EN
UY7M2R	82.5 L	82.8	83.0	82.5	82.7	0.80	1.6	0.3 L	82.7	0.80	1.6	0.3 L	4	XX
V96ZBQ	85.1	84.9	81.3	80.0	82.8	0.84	2.2	2.6	82.8	0.84	2.2	2.6	4	EM
VJ8Z96	71.0*	71.6*	71.3*	71.5*	71.3	-2.42*	2.3	0.2 L	71.3	-2.42*	2.3	0.2 L	4	TD
W2GE36	81.6	83.7	81.8	85.3	83.1	0.91	3.5	1.8	83.1	0.91	3.5	1.8	4	MB
W94KJC	76.3	80.2	78.3	74.9	77.4	-0.69	3.2	2.3	77.4	-0.69	3.2	2.3	4	EN
X82WW7	76.2 H	79.4	75.3	75.2	76.5	-0.94	3.9	1.9	76.5	-0.94	3.9	1.9	4	TX
X9VKE3	84.8	86.0	86.1	88.9*	86.5	1.87	3.7	1.7	86.5	1.87	3.7	1.7	4	TC
Z6PYFU	74.7	73.9	74.7	75.5	74.7	-1.46	2.6	0.6	74.7	-1.46	2.6	0.6	4	TD
Z8CFVU	84.7	84.2	84.1	84.1	84.3	1.24	3.0	0.3 L	84.3	1.24	3.0	0.3 L	4	LZ
ZRMNUU	81.0	81.8	81.1	81.4	81.3	0.41	3.8	0.4 L	81.3	0.41	3.8	0.4 L	4	LC
ZW2Y8X	86.2	83.5	82.6	83.5	84.0	1.16	3.0	1.6	84.0	1.16	3.0	1.6	4	LC

Consensus (All Labs) Results											
Wk Mean	80.18	79.65	79.93	79.84	Month Mean	79.87				Grand Mean	79.87
Avg SDr	3.11	3.04	3.02	3.14	Avg SDr	3.07				Avg SDr	3.07
SD btwn Labs	3.67	3.77	3.93	3.73	SD btwn Labs	3.53				SD btwn Labs	3.53
Labs Inclid	58	60	61	59	SD btwn Wks	2.05				SD btwn Wks	2.05
Labs Exclid	1	2	1	1	Labs Inclid	62				Labs Inclid	62
Labs not rcvd	4	1	1	3							



Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(LA) - L&W Autoline

(LD) - L&W Crush Tester 248

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

(MZ) - Messmer Buchel (model not specified)

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

(TX) - TMI Digital Crush Tester (model not specified)

(EN) - Emerson 2200

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

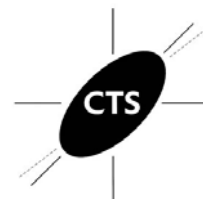
(TC) - TMI Monitor/Compression Tester, Model 17-37

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

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



WebCode	Weekly Means				Monthly Results				Cumulative Results					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
27EP3K	24.4	24.8	24.1	22.9	24.1	0.18	2.1	0.8	23.8	-0.06	2.2	0.7	12	LZ
2CM4TW	22.9	23.0	22.5	23.2	22.9	-1.06	2.4	0.3	22.6	-1.34	2.0	0.6	16	LU
3ULG2X	22.6	23.2	23.3	23.0	23.0	-0.94	1.9	0.3	23.1	-0.79	2.0	0.4	12	LU
4LLJRZ	22.9	22.5	22.4	23.8	22.9	-1.09	2.0	0.7	22.3	-1.63	2.1	0.6	16	XX
76P663	25.1	24.4	23.8	24.9	24.5	0.70	2.2	0.6	24.8	0.98	2.4	1.5	12	LU
7D6LZX	25.1	25.7	25.0	24.4	25.1	1.27	2.2	0.5	25.6	1.74	2.1	1.1	16	LA
7F7PPY	24.3	24.1	25.1	23.9	24.3	0.50	2.1	0.5	24.5	0.66	2.1	1.0	16	LW
7RZ946	24.0	24.0	25.5	23.0	24.1	0.27	2.1	1.0	24.0	0.09	2.1	0.8	16	LZ
9X22DQ	24.1	24.1	23.2	24.4	24.0	0.09	2.4	0.5	24.0	0.12	2.4	1.2	16	LZ
AEKCEJ	25.8*	25.0	25.8	25.2	25.4	1.69	2.1	0.4	24.9	1.02	2.1	1.0	12	LW
AFGVEZ	24.3	25.3	24.6	24.3	24.6	0.77	2.2	0.5	24.7	0.79	2.2	0.9	16	LU
CDNJUK	23.4	23.3	22.7	23.7	23.3	-0.67	2.2	0.4	23.4	-0.49	2.0	0.8	16	LW
CFPMJL	23.4L	24.8L	24.8L	23.9L	24.2	0.37	0.5	0.7	23.5	-0.44	0.9	1.0	16	LA
DNZAP8	No Data	23.5	23.8	23.6	23.6	-0.30	2.0	0.1L	23.7	-0.21	1.9	0.1L	15	LU
EFFLCG	22.8	21.7*	22.7	No Data	22.4	-1.60	1.8	0.6	23.0	-0.97	1.9	1.1	12	LW
FUHDTF	25.1L	24.1L	20.9*L	22.1L	23.1	-0.90	0.5	1.9H	22.6	-1.32	0.5	1.4	16	LA
JZ89Z2	23.3	24.4	23.0L	23.7	23.6	-0.34	1.2	0.6	24.3	0.44	1.6	0.8	16	TT
L2X4JE	24.8	24.9	24.0	24.7	24.6	0.74	1.8	0.4	25.3	1.47	2.3	0.9	16	LA
LUTC7B	24.8	25.8	25.3	26.1*	25.5	1.75	2.2	0.6	25.2	1.33	2.2	0.8	16	LU
M9CDKG	23.9	25.0	25.0	25.0	24.7	0.90	1.6	0.5	25.0	1.15	1.6	0.5	16	LW
M9XNJP	25.6	24.8	27.6*	25.0	25.8	2.02*	2.7	1.3	25.2	1.32	2.3	1.2	13	LW
MVQXGG	22.8L	23.2L	22.6L	23.8L	23.1	-0.85	0.6	0.5	23.3	-0.67	0.6	1.0	16	XX
MWYWU	22.9	22.9	12.8X	22.5	20.3	-3.94X	2.1	5.0H	21.8	-2.19*	2.0	2.4H	16	LU
NAZ488	23.5	22.7	23.7	22.8	23.2	-0.79	2.3	0.5	23.5	-0.46	2.3	0.7	16	LW
P3Z7VN	22.3	24.3	22.6	23.3L	23.1	-0.83	1.5	0.9	23.7	-0.24	1.6	0.8	15	BK
PC49CE	25.1	24.2	25.4	25.3	25.0	1.18	2.2	0.5	25.1	1.24	2.1	0.5	16	LU
PEBGNK	23.8	23.9	23.2	23.8	23.6	-0.27	2.0	0.3	23.6	-0.28	2.1	0.5	16	LU
QGRAV6	23.3L	25.2L	25.4L	23.7L	24.4	0.52	0.5	1.0	24.2	0.35	0.5	0.8	16	XX
R2X2BC	22.4	23.7	22.7	No Data	22.9	-1.05	1.9	0.7	22.9	-1.00	2.1	0.6	14	LW
U4HLF7	22.4	24.7	23.9	24.8	24.0	0.08	2.2	1.1	24.2	0.30	2.3	0.9	12	LU
UQUMN4	22.4	24.8	25.7	24.5	24.3	0.48	1.9	1.4	25.0	1.11	2.5	1.2	16	LW
VQPJC6	22.5	22.0	22.5	21.7*	22.2	-1.85	1.9	0.4	22.8	-1.12	2.1	0.9	12	XX
W2GE36	25.1L	24.2L	24.8L	23.0L	24.3	0.42	0.1	0.9	24.0	0.10	0.1	1.0	13	LA
W8QTTF	24.0	23.6	24.0	23.5	23.8	-0.13	2.4	0.2	23.2	-0.71	2.1	0.8	16	LW
W94KJC	23.1	23.2	24.6	22.9	23.4	-0.49	2.4	0.8	22.4	-1.52	2.1	0.8	16	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
ZPBVUZ	23.1 L	26.1 L	26.0 L	24.2 L	24.8	1.03	0.5	1.5	24.3	0.43	0.5	1.4	16	LA
ZRMNUU	22.7	22.5	21.8 L	22.0	22.2	-1.80	1.3	0.4	24.7	0.80	2.0	1.7 H	16	XX

Consensus (All Labs) Results									
Wk Mean	23.72	24.04	23.99	23.79	Month Mean	23.89	Grand Mean	23.90	
Avg SDr	1.94	1.87	1.95	1.87	Avg SDr	1.90	Avg SDr	1.94	
SD btwn Labs	1.03	1.07	1.41	1.01	SD btwn Labs	0.92	SD btwn Labs	0.96	
Labs Includ	36	37	36	35	SD btwn Wks	0.78	SD btwn Wks	1.01	
Labs Exclud	0	0	1	0	Labs Includ	36	Labs Includ	37	
Labs not rcvd	1	0	0	2					

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)

(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					Inst
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	
27EP3K	21.5	21.0	21.3	20.9	21.2	0.40	1.0	0.3	21.2	0.40	1.0	0.3	4	LZ
2CM4TW	19.7 L	19.5	19.7	18.0 X	19.2	-1.85	1.2	0.8	19.2	-1.85	1.2	0.8	4	LU
2QKZ8N	20.0	20.0	20.5	20.9	20.4	-0.56	1.5	0.4	20.4	-0.56	1.5	0.4	4	LU
3ULG2X	20.9	21.3	20.5	20.6	20.8	-0.01	1.3	0.4	20.8	-0.01	1.3	0.4	4	LU
4LLJRZ	19.8	20.0	20.4	19.3	19.9	-1.09	1.2	0.4	19.9	-1.09	1.2	0.4	4	XX
76P663	22.8 *	22.1	22.6	22.5	22.5	1.91	1.2	0.3	22.5	1.91	1.2	0.3	4	LU
7D6LZX	22.8	22.9	22.3	22.2	22.5	1.96	1.1	0.3	22.5	1.96	1.1	0.3	4	LA
7F7PPY	21.2	21.0	20.6	21.7	21.1	0.34	1.1	0.5	21.1	0.34	1.1	0.5	4	LW
7RZ946	21.2	21.0	21.6	21.0	21.2	0.41	1.1	0.3	21.2	0.41	1.1	0.3	4	LZ
9X22DQ	20.5	21.4	20.8	21.6	21.1	0.26	1.7	0.5	21.1	0.26	1.7	0.5	4	LZ
AEKCEJ	22.4	22.4	21.9	21.8	22.1	1.48	1.4	0.3	22.1	1.48	1.4	0.3	4	LW
AFGVEZ	22.0	21.8	21.2	21.5	21.6	0.90	1.3	0.3	21.6	0.90	1.3	0.3	4	LU
CDNJUK	20.1	20.3	20.5	20.1	20.2	-0.69	1.1	0.2	20.2	-0.69	1.1	0.2	4	LW
CFPMJL	19.9 L	20.1 L	21.0 L	20.9 L	20.5	-0.43	0.2	0.6	20.5	-0.43	0.2	0.6	4	LA
DNZAP8	No Data	20.3	20.4	20.3	20.3	-0.57	1.2	0.0 L	20.3	-0.57	1.2	0.0 L	3	LU
EFFLCG	20.7	19.7	20.3	No Data	20.2	-0.72	1.3	0.5	20.2	-0.72	1.3	0.5	3	LW
FUHDTF	22.1 L	20.6 L	20.3 L	19.4 L	20.6	-0.27	0.3	1.1 H	20.6	-0.27	0.3	1.1 H	4	LA
JZ89Z2	18.8 *	19.8	20.2	19.8	19.6	-1.40	0.8	0.6	19.6	-1.40	0.8	0.6	4	TT
L2X4JE	22.2	21.9	21.8	21.6	21.9	1.21	1.3	0.2	21.9	1.21	1.3	0.2	4	LA
LUTC7B	21.1	21.7	22.0	21.7	21.6	0.90	1.4	0.4	21.6	0.90	1.4	0.4	4	LU
M9CDKG	20.4	20.6	21.7	21.2	21.0	0.18	1.7	0.6	21.0	0.18	1.7	0.6	4	LW
M9XNJP	22.4	23.2 *	23.7 *	21.7	22.7	2.19 *	1.2	0.9	22.7	2.19 *	1.2	0.9 H	4	LW
MVQXGG	20.4	19.9 L	21.0	20.7	20.5	-0.38	0.6	0.5	20.5	-0.38	0.6	0.5	4	XX
MWYWU	19.9	20.0	19.7	19.9	19.9	-1.12	1.1	0.1	19.9	-1.12	1.1	0.1	4	LU
NAZ488	20.7	20.5	20.5	20.4	20.5	-0.39	1.1	0.1	20.5	-0.39	1.1	0.1	4	LW
P3Z7VN	20.7 L	20.8	20.5	20.8	20.7	-0.13	0.8	0.1	20.7	-0.13	0.8	0.1	4	BK
PC49CE	20.9	21.7	21.5	21.5	21.4	0.64	1.2	0.4	21.4	0.64	1.2	0.4	4	BK
PEBGNK	21.3	21.0	21.3	20.8	21.1	0.29	1.1	0.3	21.1	0.29	1.1	0.3	4	LU
QGRAV6	21.0 L	21.1 L	21.3 L	21.7 L	21.3	0.51	0.3	0.3	21.3	0.51	0.3	0.3	4	XX
R2X2BC	19.7	20.3	19.8	No Data	19.9	-1.04	1.1	0.3	19.9	-1.04	1.1	0.3	3	LW
U4HLF7	21.2	21.1	20.5	21.0	21.0	0.14	1.3	0.3	21.0	0.14	1.3	0.3	4	LU
UQUMN4	20.7	21.5	22.3	21.9	21.6	0.87	1.3	0.7	21.6	0.87	1.3	0.7	4	LW
VQPJC6	19.5	20.0	19.2	19.0 *	19.4	-1.62	1.3	0.4	19.4	-1.62	1.3	0.4	4	XX
W2GE36	20.7 L	20.6 L	21.5 L	21.1 L	21.0	0.15	0.1	0.4	21.0	0.15	0.1	0.4	4	LA
W8QTTF	20.0	20.7	20.0	19.9	20.2	-0.79	1.2	0.4	20.2	-0.79	1.2	0.4	4	LW



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
W94KJC	19.8	19.3	19.6	19.9	19.7	-1.37	1.2	0.3	19.7	-1.37	1.2	0.3	4	LU
ZPBVUZ	20.3 L	18.6 *L	22.0 L	21.5 L	20.6	-0.31	0.2	1.5 H	20.6	-0.31	0.2	1.5 H	4	LA
ZRMNUU	25.1 X	23.6 *	23.0	24.1 X	24.0	3.59 X	2.0	0.9	24.0	3.59 X	2.0	0.9 H	4	XX

Consensus (All Labs) Results														
Wk Mean	20.81	20.87	21.02	20.91	Month Mean	20.84			Grand Mean	20.84				
Avg SDr	1.11	1.18	1.14	1.18	Avg SDr	1.14			Avg SDr	1.14				
SD btwn Labs	0.98	1.07	1.00	0.87	SD btwn Labs	0.87			SD btwn Labs	0.87				
Labs Includ	36	38	38	34	SD btwn Wks	0.51			SD btwn Wks	0.51				
Labs Exclud	1	0	0	2	Labs Includ	37			Labs Includ	37				
Labs not rcvd	1	0	0	2										

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

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

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

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

(LA) - L & W Autoline

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

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

Containerboard Interlaboratory Testing Program
Analysis 228

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
27EP3K	122.1	-0.38	13.3	114.6	-0.31	12.3	3	LA
3ULG2X	116.8	-0.49	8.5	112.8	-0.38	8.1	3	EV
76P663	244.9	2.12 *	14.3	244.9	4.70 X	14.3	1	XX
9X22DQ	232.8	1.88	36.0	224.7	3.92 X	26.6	4	EV
AEKCEJ	111.6	-0.59	14.4	103.1	-0.76	11.4	3	EV
CDNJUK	124.6	-0.33	8.2	130.1	0.28	10.3	4	XX
CFPMJL	135.4	-0.11	25.1	142.9	0.77	17.0	4	EV
EKCZDL	112.6	-0.57	5.6	112.1	-0.41	5.8	4	EV
FUHDTF	184.6	0.90	22.6	183.6	2.34 *	24.8	4	LA
M9XNJP	125.0	-0.32	15.3	106.0	-0.64	10.9	3	EV
MVQXGG	114.7	-0.53	12.0	118.0	-0.18	10.4	4	XX
MWYWU	135.3	-0.11	9.0	130.0	0.28	12.7	4	EV
NAZ488	82.4	-1.19	8.5	85.5	-1.43	7.5	4	LA
PEBGNK	132.2	-0.17	25.9	127.7	0.19	16.8	3	EV
QGRAV6	105.1	-0.73	6.7	106.7	-0.62	9.0	4	EV
U4HLF7	107.0	-0.69	9.1	112.5	-0.39	11.8	3	EV
W2GE36	146.7	0.12	16.1	118.5	-0.16	23.4	4	LA
W8QTF	96.5	-0.90	7.9	101.8	-0.81	8.8	4	EV
ZW2Y8X	242.6	2.08 *	11.1	180.9	2.24 *	11.2	2	EV

Consensus (All Labs) Results			
Month Mean	140.68	Grand Mean	122.73
Avg SDr	16.17	Avg SDr	13.48
SD btwn Labs	49.06	SD btwn Labs	25.98
Labs Incd	19	Labs Incd	17

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

Containerboard Interlaboratory Testing Program
Analysis 231

Internal Bond, 42 lb Linerboard - 42X
TAPPI Provisional Test Method T569



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3ULG2X	90.4	-1.51	5.7	89.9	-1.57	7.2	3	TM
8X8WG7	97.9	-0.82	5.2	96.4	-0.95	4.3	4	SC
9X22DQ	100.2	-0.61	3.2	97.5	-0.84	3.1	4	TM
CDNJUK	132.0	2.31 *	6.7	126.7	1.98	10.5	4	HY
CFPMJL	111.6	0.44	12.9	115.6	0.90	7.0	4	HY
EKCZDL	106.0	-0.08	4.7	106.3	0.01	4.0	4	HY
FFVWL	105.9	-0.09	3.4	106.0	-0.02	5.3	4	HZ
FUHDTF	104.4	-0.22	4.5	102.3	-0.38	5.0	4	TM
JLWLVD	106.8	-0.01	10.0	103.8	-0.23	7.3	4	SC
KTPZC4	92.2	-1.35	3.6	94.3	-1.15	4.3	4	TM
LUTC7B	117.0	0.93	9.3	111.4	0.50	8.6	4	HZ
MVQXGG	118.6	1.08	8.3	120.9	1.42	6.6	4	SC
PC49CE	107.0	0.01	1.5	109.2	0.29	2.4	4	HY
PEBGNK	114.2	0.67	10.5	107.3	0.10	6.1	4	TM
R2X2BC	115.8	0.82	1.8	114.5	0.80	4.5	4	TM
U4HLF7	91.2	-1.44	4.8	90.6	-1.51	5.4	3	TM
X9VKE3	105.4	-0.13	6.7	112.9	0.65	4.8	4	SC

Consensus (All Labs) Results			
Month Mean	106.86	Grand Mean	106.19
Avg SDr	6.80	Avg SDr	6.01
SD btwn Labs	10.88	SD btwn Labs	10.35
Labs Incd	17	Labs Incd	17

Instrument Code List as Reported by the Labs

(HY) - Huygen Digitized Scott Internal Bond Tester
(SC) - Scott Internal Bond Tester (Manual)

(HZ) - Huygen Internal Bond Tester with AccuPress
(TM) - TMI Monitor/Internal Bond Tester

Containerboard Interlaboratory Testing Program
 Analysis 234
COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42X
 TAPPI Official Test Method T815



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
38BFRZ	27.4	-0.20	3.7	27.2	-0.47	2.7	4	ZZ
3ULG2X	32.8	1.68	2.3	30.7	1.16	3.2	3	ZZ
9X22DQ	32.4	1.54	1.7	32.0	1.73	2.0	4	ZZ
CDNJUK	43.2	5.30 X	2.4	44.0	7.31 X	2.0	4	ZZ
CFPMJL	27.3	-0.25	2.6	27.7	-0.24	1.8	4	ZZ
FCZENH	24.2	-1.32	1.5	27.8	-0.20	2.1	4	ZZ
FUHDTF	29.6	0.56	3.6	28.5	0.13	4.9	4	ZZ
M9XNJP	25.0	-1.04	2.2	25.3	-1.38	2.8	3	ZZ
MVQXGG	26.8	-0.41	2.5	29.0	0.36	2.9	4	ZZ
MWYWU	26.6	-0.48	0.5	28.4	0.08	1.3	4	ZZ
NAZ488	29.8	0.63	1.3	30.5	1.06	2.2	4	ZZ
NCAZTB	25.0	-1.04	1.0	27.9	-0.18	3.0	4	ZZ
PC49CE	28.7	0.25	1.7	28.7	0.21	1.2	4	ZZ
PEBGNK	26.0	-0.69	4.4	26.0	-1.04	4.4	1	ZZ
R2X2BC	25.0	-1.03	5.0	24.0	-1.98	3.9	4	ZZ
U4HLF7	31.2	1.12	2.3	29.3	0.48	3.4	3	ZZ
UQUMN4	23.2	-1.67	1.5	24.3	-1.83	4.7	4	ZZ
VQPJC6	30.8	0.98	1.8	29.5	0.58	2.7	3	ZZ
W94KJC	30.8	0.98	1.6	29.7	0.69	2.0	4	ZZ
X9VKE3	29.1	0.39	2.4	30.0	0.84	1.7	4	ZZ

Consensus (All Labs) Results			
Month Mean	27.98	Grand Mean	28.23
Avg SDr	2.55	Avg SDr	2.97
SD btwn Labs	2.87	SD btwn Labs	2.15
Labs Incd	19	Labs Incd	19

Instrument Code List as Reported by the Labs

(ZZ) - Instruments No Longer Tracked

Containerboard Interlaboratory Testing Program
Analysis 237

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
38BFRZ	53.7	1.04	2.0	56.7	1.51	3.5	4	GA
3ULG2X	42.9	-1.31	1.5	42.1	-1.66	1.7	3	LA
76P663	51.1	0.48	2.3	50.0	0.05	2.3	3	HG
9X22DQ	42.4	-1.43	2.0	48.6	-0.25	3.5	4	XX
CDNJUK	51.4	0.53	2.0	51.4	0.35	1.9	4	XX
CFPMJL	54.6	1.25	1.6	55.7	1.29	1.5	4	LA
FUHDTF	47.6	-0.29	1.1	48.0	-0.38	1.5	4	LA
JJ6MGE	50.2	0.28	1.0	51.3	0.32	1.4	4	XX
KFXLW9	50.4	0.32	3.5	50.9	0.24	3.5	4	XX
LUV8PG	48.0	-0.20	2.0	48.1	-0.36	2.1	4	GG
MVQXGG	51.9	0.65	2.2	51.9	0.47	2.7	4	HG
MWYWU	50.7	0.39	1.5	52.1	0.52	1.4	4	LP
PC49CE	52.2	0.72	1.2	52.8	0.66	1.9	4	HG
R2X2BC	53.0	0.90	2.3	53.3	0.76	2.2	4	HG
U4HLF7	43.5	-1.19	2.0	43.2	-1.43	2.4	3	XX
UQUMN4	49.5	0.13	3.0	50.7	0.20	2.4	4	LP
VQPJC6	37.3	-2.53 X	2.1	38.5	-2.46*	2.2	3	XX
ZW2Y8X	50.0	0.24	2.1	50.5	0.16	1.8	2	TL

Consensus (All Labs) Results			
Month Mean	48.92	Grand Mean	49.77
Avg SDr	2.04	Avg SDr	2.33
SD btwn Labs	4.59	SD btwn Labs	4.60
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					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
27EP3K	61.7	61.2	61.1	57.5	60.4	-0.94	3.3	1.9	60.5	-0.86	3.9	5.3 H	12	LD
2QKZ8N	79.0 X	63.3	83.2 XH	67.6	73.3	5.09 X	3.7	9.4 H	68.5	2.23*	4.1	5.6 H	15	LC
3ULG2X	61.2	64.6	65.2	65.2	64.1	0.79	3.9	1.9	64.0	0.49	3.6	2.0	12	LC
4JY2BZ	61.9	61.6	61.6	61.3 L	61.6	-0.35	2.5	0.2 L	62.4	-0.14	2.5	0.8	16	TM
76P663	67.0	58.5	61.9	64.7 H	63.0	0.30	4.0	3.7 H	63.9	0.47	3.6	3.2	12	LC
7D6LZX	61.3	62.7	61.1 L	62.0 L	61.8	-0.28	1.8	0.7	61.6	-0.43	2.2	1.2	16	XX
7F7PPY	66.5	68.2*	64.7	64.7	66.0	1.71	2.2	1.7	66.0	1.26	2.4	1.5	16	LC
7RZ946	64.9	65.4	65.1	65.3	65.2	1.31	2.5	0.2 L	65.1	0.92	3.2	1.6	16	LZ
8LF9NR	67.3	65.3	63.7 H	65.4 H	65.4	1.42	6.2	1.5	65.5	1.07	5.3	1.4	12	LC
8U9F7X	69.0*	68.0*	71.5 X	70.6*	69.8	3.45 X	3.6	1.6	68.7	2.30*	3.1	1.7	16	LD
8X6BKQ	60.6	59.1	61.2	62.6	60.9	-0.69	2.6	1.4	62.3	-0.18	3.1	2.2	16	LC
8X8WG7	60.6	59.0	59.5	59.7	59.7	-1.25	2.4	0.7	60.5	-0.86	2.8	1.1	16	LX
AA8JDT	63.3	63.2	63.9	63.3 L	63.4	0.50	1.9	0.3	63.7	0.37	1.9	1.2	16	LC
ABJCC2	62.2	62.3	63.3	62.0	62.5	0.04	3.4	0.6	62.9	0.07	3.2	0.6	16	XX
AMX7RZ	64.2	64.3	65.6	62.6	64.2	0.83	2.8	1.2	62.6	-0.05	2.6	1.9	16	LC
AMX7UL	61.4	61.3	61.8	63.5	62.0	-0.17	2.6	1.0	61.9	-0.33	2.6	0.7	15	LD
BFX9H3	64.7	65.1	65.1	65.3	65.0	1.25	2.9	0.3	65.5	1.07	3.3	1.6	16	LZ
CFPLHZ	62.5	62.8	64.5	64.6	63.6	0.56	3.1	1.1	64.1	0.53	3.0	1.1	16	EM
DLDNZQ	69.0*	69.0*	66.2	66.0	67.6	2.42*	3.1	1.7	68.3	2.16*	3.4	1.4	10	MB
DNZAP8	No Data	59.9 L	60.4 L	60.4 L	60.2	-0.99	1.2	0.3	60.4	-0.90	1.6	0.5	15	LD
E89PRK	60.3	61.9 L	60.9	61.7	61.2	-0.54	2.7	0.7	61.4	-0.52	2.5	1.1	16	LD
EFFLCG	60.0 L	59.2 L	60.8	No Data	60.0	-1.10	1.3	0.8	60.0	-1.07	1.5	1.0	12	LC
FCZENH	61.1	60.4	60.0	59.3 L	60.2	-1.02	1.9	0.7	60.3	-0.92	2.2	1.6	16	LD
FFVWL	61.5	61.5	60.4 L	63.2	61.6	-0.33	1.9	1.2	66.0	1.26	2.8	4.6 H	16	RS
G9D44H	59.7	57.6	57.2*	60.2	58.7	-1.71	2.8	1.5	58.4	-1.67	2.8	1.4	16	TB
GBGYML	64.5	61.6	No Data	No Data	63.1	0.33	3.6	2.1	64.1	0.51	3.9	2.0	13	LZ
GJUT3N	60.9	61.8	61.3 H	62.2	61.6	-0.37	3.7	0.6	62.4	-0.11	3.1	2.1	13	LC
GTFAEV	59.2	57.7	60.1	60.7	59.4	-1.38	2.5	1.3	59.3	-1.32	2.6	1.1	16	TH
GTHLEK	65.7	63.0	63.1	67.3	64.8	1.12	3.3	2.1	62.6	-0.04	2.8	2.3	16	XX
JLWLVD	64.9	63.7	65.2	65.9	64.9	1.19	3.3	0.9	66.6	1.48	3.5	2.2	16	LD
JZ89Z2	58.8 H	64.3 H	58.7	57.6	59.9	-1.17	4.7	3.0 H	60.1	-1.00	3.7	1.7	16	TH
KFXLW9	64.3	63.2	61.1	65.1	63.4	0.50	2.6	1.8	64.1	0.53	2.6	1.5	16	LD
LKCJ2A	62.0	62.6	61.5	63.3 L	62.3	-0.01	2.1	0.8	62.4	-0.12	2.5	0.7	16	EM
LUTC7B	No Data	No Data	61.3	60.0	60.6	-0.80	3.0	0.9	61.7	-0.40	2.9	1.3	14	LC
M9CDKG	60.7	59.8	61.2	59.9	60.4	-0.92	2.4	0.7	60.5	-0.88	2.4	0.8	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
M9V3NA	64.9	63.3	67.0*	62.6	64.4	0.97	3.0	1.9	65.3	1.00	3.8	6.0 H	16	MB
MWYWU	63.2	58.8	58.7	60.4	60.3	-0.97	2.5	2.1	60.3	-0.94	3.0	1.3	16	LZ
N97FPB	62.4	No Data	No Data	No Data	62.4	0.03	3.3	0.0 L	61.4	-0.50	2.6	0.5	8	LZ
NAZ488	60.3	61.4	60.7	60.6	60.7	-0.77	2.1	0.5	60.4	-0.89	2.1	0.6	16	TH
PC49CE	64.8	65.6	63.0	63.0	64.1	0.81	3.3	1.3	63.6	0.35	3.4	1.4	16	LC
PEBGNK	50.7 XH	57.4 H	54.2 XH	54.6*H	54.2	-3.79 X	6.5	2.7	56.2	-2.54*	5.2	2.2	16	LD
Q3XKZ9	56.0*	56.8	59.6	58.3	57.7	-2.19*	3.6	1.6	59.7	-1.19	3.6	2.0	16	LD
UJ9QMZ	62.9	61.9	62.8	63.6	62.8	0.19	2.8	0.7	62.2	-0.19	3.2	1.1	16	LD
UPTVA9	64.8	63.0	63.6	64.1 H	63.9	0.70	3.6	0.8	61.9	-0.31	2.8	1.6	16	LC
UQUMN4	68.0	63.8	65.0	67.1	66.0	1.68	3.4	1.9	65.6	1.11	3.4	1.6	16	LC
VJ8Z96	63.0	63.8	62.3	62.7	63.0	0.28	2.8	0.6	63.0	0.12	2.7	1.2	12	TD
W2GE36	59.0	61.4 H	63.4	62.2	61.5	-0.40	4.1	1.9	62.2	-0.19	4.1	2.1	13	MB
Z6PYFU	63.0	63.5	62.3	62.1	62.7	0.17	2.2	0.6	62.1	-0.24	2.3	1.1	16	TD
Z6TJBB	62.8	62.7	63.2	62.0	62.7	0.15	3.0	0.5	62.9	0.07	2.6	0.6	16	LD
ZRMNUU	60.3	60.7	60.5	60.2	60.4	-0.90	3.3	0.2 L	61.2	-0.61	2.7	1.0	16	LC

Consensus (All Labs) Results

Wk Mean	62.79	62.22	62.23	62.64	Month Mean	62.36	Grand Mean	62.72
Avg SDr	3.10	3.00	2.97	3.26	Avg SDr	3.05	Avg SDr	3.11
SD btwn Labs	2.81	2.75	2.20	2.98	SD btwn Labs	2.15	SD btwn Labs	2.59
Labs Includ	46	48	45	47	SD btwn Wks	1.39	SD btwn Wks	2.10
Labs Exclud	2	0	3	0	Labs Includ	47	Labs Includ	50
Labs not rcvd	2	2	2	3				

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)

(RS) - Regmed Digital Crush Tester CT-2000

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

(TM) - TMI/Hinde & Dauch

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

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

(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
76P663	72.7	62.2*	70.6	71.5	69.2	-0.88	3.2	4.8 H	69.6	-0.79	3.6	3.8 H	12	LC
7F7PPY	76.0	76.4	74.3	72.5	74.8	0.55	2.2	1.8	74.9	0.60	2.2	1.4	16	LC
7RZ946	75.8	75.1	74.2	75.2	75.1	0.62	3.1	0.6	74.3	0.45	2.8	2.0	16	LZ
AMX7RZ	73.2	77.0	73.9	74.3	74.6	0.49	2.3	1.7	74.6	0.53	2.9	1.8	16	LZ
AMX7UL	72.5	72.5	72.4	71.7	72.3	-0.09	2.3	0.4	71.8	-0.21	2.4	0.7	15	LD
BFX9H3	77.3	77.9	77.6	77.4	77.6	1.26	2.5	0.3	77.1	1.18	2.5	0.8	16	LD
E89PRK	69.9	70.3	67.9	69.8	69.5	-0.82	1.7	1.1	69.6	-0.78	2.2	1.3	16	LD
G9D44H	64.1*H	65.5H	63.5*	61.4XH	63.6	-2.33*	5.2	1.7	63.7	-2.35*	5.1	1.2	16	TB
GJUT3N	75.0	75.0	75.0	78.5	75.9	0.82	2.5	1.8	76.5	1.04	2.7	3.8 H	14	LC
GTHLEK	78.6	80.4	76.8	75.2	77.7	1.31	2.5	2.2	77.6	1.32	3.1	4.6 H	16	TU
JJ6MGE	69.6L	69.3L	69.5L	69.6L	69.5	-0.81	1.0	0.1 L	70.1	-0.67	1.0	0.7	16	XX
M9CDKG	71.9	70.7	71.2	72.1	71.5	-0.31	2.2	0.6	71.0	-0.42	2.0	1.1	16	LC
M9V3NA	70.5	71.4	70.8	70.4	70.8	-0.48	2.2	0.5	68.3	-1.13	2.7	2.4	16	MB
Q3XKZ9	69.7	70.3H	73.4H	70.9	71.1	-0.41	4.0	1.6	72.0	-0.15	3.8	2.0	16	XX
UPTVA9	80.0	79.0	77.9	79.2	79.0	1.63	1.7	0.9	78.4	1.53	2.2	1.3	16	LC
UQUMN4	70.2	70.3	69.9	72.0	70.6	-0.53	2.6	0.9	71.2	-0.37	2.3	1.3	16	XX
UY7M2R	73.9L	76.3	75.7L	76.5L	75.6	0.75	1.1	1.2	75.3	0.71	1.5	1.1	16	XX
Z6PYFU	70.5	70.1	69.2	69.2	69.7	-0.75	2.4	0.7	70.7	-0.49	2.2	1.1	16	TD

Consensus (All Labs) Results

Wk Mean	72.84	72.76	72.43	73.29	Month Mean	72.67	Grand Mean	72.59
Avg SDr	3.09	2.61	2.52	2.20	Avg SDr	2.66	Avg SDr	2.77
SD btwn Labs	3.87	4.75	3.73	3.20	SD btwn Labs	3.89	SD btwn Labs	3.79
Labs Includ	18	18	18	17	SD btwn Wks	1.64	SD btwn Wks	2.13
Labs Exclud	0	0	0	1	Labs Includ	18	Labs Includ	18
Labs not rcvd	0	0	0	0				

Instrument Code List as Reported by the Labs

(LC) - L & W Crush Tester 48

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

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

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

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

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

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

Containerboard Interlaboratory Testing Program
Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM72
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	
27EP3K	43.5	43.4	44.7	44.5	44.0	0.38	2.1	0.7	44.6	0.61	2.3	1.0	12	LD
2ZBLB2	39.1	39.1	38.9*	40.4	39.3	-2.10*	1.5	0.7	39.9	-1.60	1.4	0.9	8	WK
8U9F7X	49.2*	47.3	46.8	48.8 X	48.0	2.49*	2.1	1.2	47.9	2.17*	2.2	0.7	16	LZ
8X6BKQ	45.1 L	46.1	44.4	46.3	45.5	1.15	1.9	0.9	44.6	0.62	2.8	1.1	16	LC
AA8JDT	44.4 L	42.5	44.3	43.7	43.7	0.22	1.6	0.8	44.1	0.39	1.7	1.4	16	LC
ABGQGL	41.4	41.6	40.8	41.8	41.4	-1.01	1.9	0.4	42.6	-0.35	1.9	1.0	16	TD
DNZAP8	No Data	43.6	44.3	44.6	44.2	0.45	1.6	0.5	44.3	0.47	1.9	0.4	15	LD
G9D44H	36.6*	33.8 XH	35.2 XH	34.5 XH	35.0	-4.38 X	4.1	1.2	35.4	-3.74 X	4.2	1.5	16	TB
GHZ6LD	44.6	44.6	44.4	44.1	44.4	0.58	1.9	0.2	44.6	0.63	2.1	0.8	12	LC
KFXLW9	42.1 H	40.8	41.5	42.8 H	41.8	-0.80	4.1	0.9	42.9	-0.22	3.7	1.1	16	LD
LKCJ2A	41.8	42.7	41.9	42.2	42.1	-0.63	2.8	0.4	42.2	-0.51	2.5	0.9	16	LC
LUTC7B	No Data	No Data	43.8	43.4	43.6	0.14	2.3	0.3	43.8	0.23	2.4	0.6	14	LD
M9V3NA	43.7	44.0	42.7	42.0	43.1	-0.11	2.0	0.9	38.3	-2.36*	2.5	4.7 H	16	MB
N97FPB	42.1	No Data	No Data	No Data	42.1	-0.63	3.5	0.0 L	42.6	-0.34	3.5	1.4	8	MZ
PC49CE	44.1	44.9	43.0	44.6	44.1	0.44	3.0	0.8	44.6	0.63	2.9	0.9	16	LC
UI9QMZ	43.9	42.8	44.6	44.4	43.9	0.32	2.3	0.8	44.1	0.37	2.2	0.7	16	LD
UQUMN4	43.3	40.0	43.3	40.9	41.9	-0.76	2.0	1.7 H	41.8	-0.69	2.2	2.2	16	LC
UY2729	43.1	42.7	43.5	43.0	43.1	-0.13	2.3	0.3	43.2	-0.04	2.1	0.8	16	EN

Consensus (All Labs) Results

Wk Mean	43.00	43.06	43.31	43.58	Month Mean	43.31	Grand Mean	43.31
Avg SDr	2.55	2.31	2.27	2.30	Avg SDr	2.39	Avg SDr	2.44
SD btwn Labs	2.74	2.19	1.86	2.08	SD btwn Labs	1.89	SD btwn Labs	2.11
Labs Includ	16	15	16	16	SD btwn Wks	0.80	SD btwn Wks	1.55
Labs Exclud	0	1	1	2	Labs Includ	17	Labs Includ	17
Labs not rcvd	2	2	1	1				

Instrument Code List as Reported by the Labs

- (EN) - Emerson 2200 Series
- (LD) - L&W Crush Tester 248
- (MB) - Messmer Buchel K440
- (TB) - TMI Monitor/Compression Tester, 17-70
- (WK) - Zwick Z005 Crush Tester
- (LC) - L & W Crush Tester 48
- (LZ) - L & W Crush Tester (model not specified)
- (MZ) - Messmer Buchel (model not specified)
- (TD) - TMI Digital Crush Tester, Model 17-09



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
27EP3K	14.6	14.7	14.3	14.5	14.5	-0.49	1.1	0.2	14.9	0.19	1.2	0.4	12	LZ
2CM4TW	20.5 X	13.7	14.6	13.4	15.5	1.27	0.8	3.3 H	14.1	-1.07	1.1	1.8 H	16	XX
AA8JDT	15.4	15.7 L	14.2 L	14.3	14.9	0.21	0.8	0.8	14.5	-0.41	0.7	0.7	16	XX
ABJCC2	14.6	14.9	14.4	15.1	14.7	-0.13	1.3	0.3	14.6	-0.25	1.1	0.3	16	XX
AMX7UL	No Data	15.5	15.3	16.1	15.6	1.46	1.3	0.4	15.5	1.28	1.1	0.6	14	LA
DNZAP8	No Data	14.4	14.6	14.5	14.5	-0.54	0.9	0.1 L	14.5	-0.45	0.9	0.1 L	15	LU
EFFLCG	14.7	13.9	15.4	No Data	14.7	-0.22	1.1	0.7	14.3	-0.65	1.1	0.7	12	LW
EKCZDL	15.2	15.2	15.6	16.2	15.5	1.26	1.4	0.5	16.2	2.42*	1.3	2.5 H	16	LZ
GBGYML	15.3	15.7	No Data	No Data	15.5	1.20	0.9	0.2	15.4	1.02	1.2	0.4	13	LW
GTFAEV	14.5	14.0	13.3*	14.1	14.0	-1.45	1.0	0.5	14.5	-0.34	1.0	0.5	16	LZ
JZ89Z2	13.7*	14.4	14.1	14.2	14.1	-1.22	0.8	0.3	14.5	-0.36	1.0	0.5	16	TT
MWYWU	14.3	13.3	14.3	13.8	13.9	-1.52	1.1	0.5	13.8	-1.53	1.1	0.3	16	LU
NAZ488	15.0	14.4	14.7	14.6	14.7	-0.25	1.0	0.2	14.6	-0.26	1.3	0.4	16	LW
PC49CE	15.2	15.3	15.1	15.3	15.2	0.71	1.1	0.1 L	15.2	0.80	1.2	0.2	16	LU
Z6TJBB	14.7	14.6	14.9	14.4	14.6	-0.29	0.9	0.2	14.5	-0.39	1.2	0.3	16	XX

Consensus (All Labs) Results									
Wk Mean	14.78	14.64	14.61	14.63	Month Mean	14.80		Grand Mean	14.74
Avg SDr	1.06	0.97	1.03	1.15	Avg SDr	1.05		Avg SDr	1.09
SD btwn Labs	0.48	0.73	0.59	0.82	SD btwn Labs	0.57		SD btwn Labs	0.61
Labs Includ	12	15	14	13	SD btwn Wks	0.95		SD btwn Wks	0.90
Labs Exclud	1	0	0	0	Labs Includ	15		Labs Includ	15
Labs not rcvd	2	0	1	2					

Instrument Code List as Reported by the Labs

(LA) - L & W Autoline

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

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

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

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

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