



Collaborative Testing Services, Inc. Containerboard Interlaboratory Testing Program

Participant Summary Report #542 (M) - November 2014

[Introduction to the Containerboard Program](#)

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

Analysis	Sample Lot	Analysis Name
<u>201</u>	<u>BOX8</u>	<u>Box Compression Strength, Corrugated Boxes</u>
<u>202</u>	<u>ECT7</u>	<u>Edgewise Compressive Strength, Wax (T811), Corrugated board</u>
<u>203</u>	<u>ECT7</u>	<u>Edgewise Compressive Strength by Clamp (T839), Corrugated board</u>
<u>205</u>	<u>42B4</u>	<u>Mullen Burst of Linerboard, 42 lb Linerboard</u>
<u>206</u>	<u>69C1</u>	<u>Mullen Burst of Linerboard, 69 lb Linerboard</u>
<u>215</u>	<u>42B4</u>	<u>Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard</u>
<u>216</u>	<u>69C1</u>	<u>Ring Crush of Linerboard, Rigid Platen Type, 69 lb Linerboard</u>
<u>223</u>	<u>42B4</u>	<u>STFI of Linerboard, 42 lb Linerboard</u>
<u>224</u>	<u>69C1</u>	<u>STFI of Linerboard, 69 lb Linerboard</u>
<u>228</u>	<u>69C</u>	<u>Roughness - Stylus Method, 69 lb Linerboard</u>
<u>231</u>	<u>36Z</u>	<u>Internal Bond Strength, Linerboard, 36 lb Linerboard</u>
<u>234</u>	<u>36Z</u>	<u>Coefficient of Static Friction - Inclined Plane, 36 lb Linerboard</u>
<u>237</u>	<u>36Z</u>	<u>Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard</u>
<u>240</u>	<u>CM73</u>	<u>Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium</u>
<u>250</u>	<u>CM73</u>	<u>Fluted Crush of Medium, 26 lb Corrugating Medium</u>
<u>255</u>	<u>CM73</u>	<u>Ring Crush of Medium, 26 lb Corrugating Medium</u>
<u>261</u>	<u>CM73</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 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.

Material	Lot Code	Dates in Use
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	- 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 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
3UANHG	844.9	0.73	47.0	834.9	1.52	39.1	4	LN
4HN4BP	819.1	0.05	43.7	821.3	1.05	40.5	4	ER
6B6XG4	851.4	0.90	27.5	782.3	-0.32	49.5	4	ER
6GDLRK	782.0	-0.93	41.7	789.0	-0.08	68.2	4	LS
7QUPCN	793.2	-0.64	47.9	793.2	0.06	47.9	1	LM
7V93EW	783.1	-0.90	43.8	821.3	1.04	38.4	4	ER
AREFAY	807.0	-0.27	49.4	781.2	-0.35	38.3	4	LG
CCEHZY	850.0	0.86	36.9	843.4	1.82	23.4	4	LM
E24U3H	817.8	0.01	45.2	772.8	-0.65	65.8	4	LG
FZPTUP	775.6	-1.10	34.0	766.5	-0.87	42.1	4	ES
JMAYWT	804.4	-0.34	22.6	794.0	0.09	21.5	4	TB
L2JLUF	866.0	1.29	49.9	781.6	-0.34	59.3	4	ER
L892MU	861.2	1.16	17.2	773.8	-0.61	38.6	4	LL
MJKQZP	752.8	-1.71	55.5	731.1	-2.10 *	42.2	4	LG
QUMF4V	760.2	-1.51	45.2	769.1	-0.77	47.9	3	TO
TPR9YR	819.2	0.05	28.1	776.1	-0.53	69.7	4	EX
U9ZPKG	878.6	1.62	47.3	759.4	-1.11	43.3	4	LH
WKHGXF	789.4	-0.74	11.2	808.0	0.58	15.9	2	TE
WM8MFR	819.0	0.04	34.2	836.0	1.56	29.7	3	LH
YCXXT8	871.8	1.44	66.8	791.6	0.01	54.6	4	LL

Consensus (All Labs) Results			
Month Mean	817.33	Grand Mean	791.32
Avg SDr	41.86	Avg SDr	46.12
SD btwn Labs	37.86	SD btwn Labs	28.66
Labs Incd	20	Labs Incd	20

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	804.41	41.37	12.92	6
Clip sealing	827.19	37.62	9.86	12
Tape sealing	796.90	10.60	20.43	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

(EX) - Emerson Apparatus (Model not specified)

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

(LM) - Lansmont 122-15k

(LS) - Lansmont Squeezer

(TE) - Testometric M500 - 25 KN

(ES) - Emerson 8510

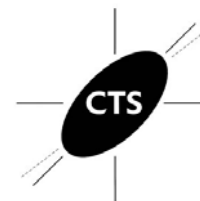
(LG) - TLS / L.A.B. Validator Series

(LL) - Lansmont 76-5K

(LN) - Lansmont 152-50k

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

(TO) - Tinius Olsen Model not specified



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3UANHG	41.5	0.16	1.5	41.4	0.59	1.5	4	EN
6GDLRK	39.7	-0.91	1.0	39.7	-0.30	1.8	4	LC
7QUPCN	43.9	1.54	1.4	43.9	1.84	1.4	1	TC
AREFAY	43.0	1.06	2.0	42.4	1.09	2.7	4	LC
NH3YMY	41.2	-0.06	2.0	41.3	0.52	1.6	2	TB
QQBBUF	43.4	1.30	1.7	38.1	-1.11	2.0	4	XX
T6HBEV	40.0	-0.71	2.6	38.9	-0.67	2.9	3	TD
WM8MFR	40.6	-0.41	1.7	37.9	-1.20	1.3	3	TC
XX4WYU	40.3	-0.58	1.0	40.3	0.03	1.6	4	TB
Z9UNYG	38.9	-1.39	0.5	38.7	-0.79	1.1	3	WK

Consensus (All Labs) Results

Month Mean	41.25	Grand Mean	40.25
Avg SDr	1.64	Avg SDr	1.87
SD btwn Labs	1.69	SD btwn Labs	1.96
Labs Incd	10	Labs Incd	10

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

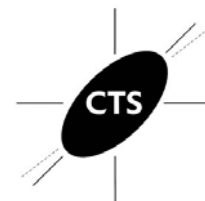
(TC) - TMI Monitor/Compression Tester, Model 17-37

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

(WK) - Zwick Z005 Crush Tester

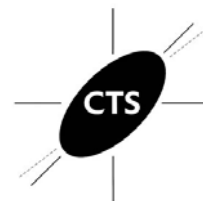
(XX) - Instrument make/model not specified by lab

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
39QJXD	43.4	0.33	1.0	41.4	-0.60	1.0	4	LC
3UANHG	44.2	0.83	1.4	44.0	1.11	1.8	4	EN
4HN4BP	40.6	-1.34	1.3	41.0	-0.87	1.2	4	EM
6B6XG4	45.1	1.34	1.5	44.6	1.57	1.2	4	TD
6GDLRK	41.9	-0.57	1.4	42.1	-0.11	1.7	4	LC
7V93EW	43.9	0.62	1.1	43.2	0.62	1.7	4	EN
8R7LGT	41.7	-0.70	0.9	41.8	-0.37	1.1	3	TM
9V2U6Z	42.8	-0.04	2.4	42.0	-0.24	1.8	3	LD
AREFAY	42.3	-0.34	2.5	42.3	-0.01	2.2	4	LC
AULX9U	44.8	1.18	1.1	43.4	0.71	1.2	3	LD
CABKUD	18.8	-14.55 X	1.6	31.7	-7.15 X	1.1	4	LC
CCEHZY	42.9	0.04	1.2	42.1	-0.17	1.3	4	EM
CDPEAA	44.8	1.20	1.4	43.3	0.67	1.6	4	LC
FZPTUP	46.5	2.21 *	1.6	44.7	1.57	1.4	4	LD
JMAYWT	43.6	0.47	0.8	43.6	0.89	0.6	3	LC
K4TCL6	42.8	-0.04	2.1	41.6	-0.48	2.0	4	LD
KK24PV	42.8	-0.03	1.2	39.0	-2.23 *	1.6	4	TB
KTW9EQ	42.5	-0.22	1.8	42.7	0.27	1.6	4	LD
L2JLUF	45.7	1.72	1.3	44.9	1.76	1.2	4	LD
L892MU	41.9	-0.57	1.1	42.2	-0.10	1.4	4	BU
LHRDZR	43.2	0.19	1.5	42.6	0.23	1.4	4	LC
MJKQZP	39.9	-1.81	1.4	39.1	-2.14 *	2.1	4	EM
PG4D9X	38.6	-2.58 *	1.7	40.5	-1.21	1.4	4	TK
PK7CJQ	42.8	-0.03	0.9	42.2	-0.08	1.3	4	CT
RCNK9J	45.3	1.48	1.9	43.1	0.54	1.8	3	TX
RM722P	41.0	-1.12	1.7	41.3	-0.67	1.4	4	EX
RYYKfV	42.1	-0.44	1.9	43.2	0.57	2.3	3	LC
TPR9YR	41.1	-1.05	1.3	40.6	-1.18	1.2	4	TL
U9ZPKG	42.4	-0.28	2.0	40.2	-1.45	2.6	4	EM
UEMHUV	42.6	-0.14	0.8	44.2	1.24	1.2	4	LC
ULYYZA	42.6	-0.15	1.4	43.1	0.55	2.0	4	XX
URNB2X	81.8	23.57 X	5.3	81.1	26.04 X	5.0	2	LC
URP9CU	42.2	-0.37	1.2	43.5	0.79	1.3	4	TG
WM8MFR	43.2	0.22	0.6	41.0	-0.88	1.0	3	TC
XX4WYU	42.8	-0.01	1.5	41.9	-0.31	1.3	4	TG

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



Consensus (All Labs) Results

Month Mean	42.85	Grand Mean	42.31
Avg SDr	1.48	Avg SDr	1.57
SD btwn Labs	1.65	SD btwn Labs	1.49
Labs Incd	33	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
(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
(TX) - TMI (model not specified)	(XX) - Instrument make/model not specified by lab

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
2EZKGV	106.6	108.3	109.8	98.4	105.8	0.40	6.4	5.1	97.3	-1.90	7.2	6.5	H 15	LC
2HKA29	104.1	105.0	105.9	102.4	104.4	0.08	10.5	1.5	100.9	-0.92	9.7	7.6	H 16	LA
2N4YZ9	103.6	104.2	105.2	No Data	104.3	0.08	8.1	0.8	105.0	0.23	9.0	2.4	15	LZ
4BBXW8	101.0	98.5	101.2	100.4	100.3	-0.85	11.0	1.2	101.4	-0.78	10.4	2.0	16	TB
64MRFQ	98.4	92.8 *	88.2 X	No Data	93.1	-2.48 *	9.0	5.1	100.6	-0.99	9.9	8.0	H 15	TB
6GDLRK	110.1	104.9	105.3	107.2	106.9	0.65	10.3	2.4	107.5	0.91	10.4	3.5	16	AH
6UZTPK	99.9	99.6	97.3	98.4	98.8	-1.18	11.2	1.2	101.6	-0.72	8.6	4.7	16	LC
6XHJQ3	128.5X	120.8 X	117.5 *	120.7 X	121.9	4.07 X	10.7	4.7	113.0	2.45 *	11.0	6.3	H 16	AH
77TC26	105.8H	100.7	101.5	100.4	102.1	-0.43	13.3	2.5	103.4	-0.22	11.6	2.3	16	AX
7HH96N	107.6	111.9	111.5	105.1	109.0	1.14	9.4	3.3	108.1	1.08	6.4	2.4	16	LA
9URREV	106.4	103.8	102.5	99.4	103.0	-0.22	12.2	2.9	103.8	-0.11	11.2	2.6	15	AH
9ZT2LN	99.5	97.9	97.5	99.3	98.5	-1.25	6.9	1.0	99.2	-1.39	9.7	1.3	16	LA
ABTUUE	107.9	106.6	103.7	111.3	107.4	0.77	11.7	3.2	105.1	0.26	11.2	4.2	16	LJ
AEPFJW	104.2	107.3	102.3	106.7	105.1	0.26	7.4	2.3	104.8	0.18	8.4	2.7	16	LC
AREFAY	110.8	107.6	109.6	105.1	108.3	0.97	11.6	2.5	107.3	0.86	10.6	2.5	15	LZ
B2XEFU	108.7	112.3	108.6	106.8	109.1	1.16	8.6	2.3	109.9	1.59	9.5	2.4	15	TB
BJKP84	102.6	105.1	105.2	107.8	105.2	0.27	6.6	2.1	104.9	0.20	6.4	1.2	16	AH
BKQAU4	103.4	99.2	98.5	108.4	102.4	-0.37	9.7	4.6	104.0	-0.05	7.5	2.6	16	TB
CCEHZY	100.8	98.8	101.5	101.9 L	100.7	-0.74	5.9	1.4	100.8	-0.93	7.3	2.2	16	AH
DGPQ4P	110.5	111.2	108.8	109.4	110.0	1.36	8.6	1.1	110.3	1.70	10.4	2.2	16	LA
DJRNG3	109.8	104.2	104.2	105.2	105.9	0.42	9.0	2.7	102.4	-0.51	7.7	3.4	12	RE
DLVJXK	104.3	97.1	98.6	100.9	100.2	-0.86	9.6	3.1	101.1	-0.85	10.2	2.7	16	LC
E24U3H	106.1	107.2	101.6	106.7	105.4	0.32	8.8	2.6	104.8	0.18	9.8	2.4	16	AH
FKYMNG	108.4	105.6	103.8	104.1	105.5	0.34	8.8	2.1	105.4	0.34	10.0	3.7	16	LA
FZPTUP	107.1	106.6	111.2	107.9	108.2	0.96	10.2	2.1	107.3	0.87	10.1	2.7	16	LA
H446MB	107.7	108.5	111.8	106.1	108.5	1.03	10.4	2.4	106.8	0.73	10.8	2.4	16	LZ
HQGWQB	107.4	106.3	106.6	107.7	107.0	0.69	11.2	0.7	106.8	0.73	10.4	3.4	8	LA
K3J88G	109.3L	107.7 L	107.7	107.3 L	108.0	0.91	3.7	0.9	108.5	1.20	4.4	3.4	16	LA
K4TCL6	95.0	99.8	97.1	99.1	97.8	-1.42	8.0	2.2	101.0	-0.89	9.0	3.8	16	AA
K8D4W8	108.3L	106.2	108.6	104.7	107.0	0.67	9.9	1.8	107.6	0.95	10.8	2.1	8	LC
KN3A62	103.9L	103.0 L	104.6 L	104.5	104.0	0.00	3.9	0.8	102.7	-0.40	4.1	1.6	16	LJ
KTW9EQ	98.4	104.3	104.7	100.8	102.1	-0.44	7.3	3.0	106.5	0.63	8.5	8.2	H 16	TB
L2JLUF	98.3	99.3	95.3	96.9	97.5	-1.49	9.3	1.7	99.9	-1.19	9.7	2.7	16	AH
LB8KKL	104.4L	106.3 L	107.7	107.8	106.6	0.58	6.9	1.6	107.6	0.93	7.2	2.1	16	LB
MVWYYB	96.8	102.4	106.2	99.3	101.2	-0.64	8.6	4.1	102.5	-0.47	9.8	2.8	12	LC

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
NH3YMY	95.4	No Data	98.5	97.7	97.2	-1.55	10.0	1.6	98.4	-1.61	10.4	2.3	15	LA
PAL6MM	94.0	96.2	108.0	96.1	98.5	-1.24	10.1	6.4 H	99.9	-1.19	9.3	4.0	12	LC
PE2FX6	108.6	109.3	110.3	100.0	107.0	0.69	9.2	4.8	105.5	0.35	9.4	3.1	16	LC
PK7CJQ	104.8	110.9	108.9	111.9 H	109.1	1.17	14.3	3.1	106.6	0.68	15.3	4.2	16	XX
R9KUZH	105.3	108.8	105.2	111.0	107.6	0.81	7.0	2.8	110.0	1.61	8.3	3.6	16	TB
ULYYZA	94.9	96.7	96.1	99.7	96.8	-1.63	10.7	2.0	97.5	-1.86	9.4	1.8	16	LA
URNB2X	97.8	100.2	104.8	99.7	100.6	-0.77	10.2	2.9	102.1	-0.57	10.9	3.8	8	LA
V2UHEC	112.0	114.0	109.1	113.6	112.2	1.86	9.2	2.2	108.8	1.27	9.8	3.7	16	LC
VTC82C	98.1	102.6	102.0	108.4	102.8	-0.28	11.6	4.3	103.8	-0.10	10.5	3.3	16	LA
VTYDPH	94.5	99.8	92.4 *	102.6	97.3	-1.52	6.2	4.7	97.9	-1.73	7.5	3.4	16	XX
VXAQ6V	98.2	100.6	103.0	105.8	101.9	-0.48	9.5	3.3	103.3	-0.26	10.3	2.6	16	LC
W3XTNL	111.2 L	107.4	108.2	108.3	108.8	1.09	5.3	1.7	108.6	1.21	5.0	2.0	14	XX
WKHGXF	No Data	No Data	104.6 L	105.8 L	105.2	0.27	1.9	0.8	103.6	-0.16	1.7	1.9	4	AH
WM8MFR	99.8	108.8	105.8	107.0	105.3	0.30	9.1	3.9	104.4	0.06	9.7	3.8	12	AA
WR2MR3	101.6	103.0	103.0	100.6	102.1	-0.44	9.0	1.2	103.9	-0.09	9.9	3.3	16	AH
Y7R9BY	103.7	100.1	100.3	106.5	102.7	-0.30	10.7	3.1	102.8	-0.39	11.3	2.6	16	LA
ZDA2Z4	101.5	95.4	100.5	102.5	99.9	-0.92	9.1	3.1	101.0	-0.90	9.7	3.4	16	LC
ZP2KGU	113.1	115.4 *	112.1	115.5 *	114.0	2.28 *	7.7	1.7	115.4	3.09 X	6.9	1.9	12	LA

Consensus (All Labs) Results

Wk Mean	103.76	104.18	104.53	104.40	Month Mean	104.00	Grand Mean	104.19
Avg SDr	9.13	9.12	9.53	9.49	Avg SDr	9.24	Avg SDr	9.44
SD btwn Labs	5.15	5.11	4.99	4.58	SD btwn Labs	4.39	SD btwn Labs	3.61
Labs Includ	51	50	52	50	SD btwn Wks	2.84	SD btwn Wks	3.61
Labs Exclud	1	1	1	1	Labs Includ	52	Labs Includ	52
Labs not rcvd	1	2	0	2				

Instrument Code List as Reported by the Labs

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

Containerboard Interlaboratory Testing Program
Analysis 206

Bursting Strength (Mullen), 69 lb Linerboard - 69C1
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
2EZKGV	166.0	157.0	153.4	166.3	160.7	0.43	12.3	6.5	158.2	-0.04	11.2	6.2	11	LC
2HKA29	151.1	157.4	159.6	157.9	156.5	-0.25	13.6	3.7	156.1	-0.47	12.9	3.0	12	LA
2N4YZ9	155.6	156.7	155.3	157.5	156.3	-0.29	10.8	1.0	157.4	-0.20	11.0	1.7	12	LZ
4BBXW8	158.6	159.7	153.3	151.1	155.7	-0.39	12.0	4.1	153.2	-1.07	11.4	4.0	12	TB
64MRFQ	146.3	133.9 X	130.7 X	No Data	137.0	-3.44 X	10.5	8.2 H	143.9	-2.97 X	11.9	10.5 H	11	TB
6GDLRK	175.9XH	164.6	158.3	160.8	164.9	1.12	13.1	7.8	160.7	0.46	12.9	6.5	12	AH
6UZTPK	159.4	160.9	162.3	168.6	162.8	0.78	11.3	4.0	159.6	0.25	9.9	5.3	12	LC
6XHJQ3	177.8X	176.5 *	169.7 *	166.1	172.5	2.37 *	9.6	5.6	168.8	2.11 *	9.6	4.8	12	AH
77TC26	157.0	160.4	164.1 H	165.4	161.7	0.61	15.2	3.8	161.0	0.53	12.3	4.7	12	AX
7HH96N	168.5*	164.0	181.9 XH	178.1 X	173.1	2.47 *	12.5	8.3 H	170.3	2.42 *	10.8	7.2 H	12	LA
9URREV	154.5	164.9	155.8	165.0	160.1	0.33	11.7	5.7	159.0	0.11	11.0	4.0	12	AH
9ZT2LN	150.6	148.6	148.5	150.8	149.6	-1.38	10.6	1.3	153.0	-1.11	13.5	4.6	12	LA
ABTUUE	154.5	165.5	151.2	159.2	157.6	-0.07	13.0	6.2	156.6	-0.38	13.6	5.8	12	LJ
AEPFJW	148.4L	153.6	154.4	147.0	150.8	-1.17	8.6	3.7	155.1	-0.68	8.9	4.0	12	LC
AREFAY	162.4	165.4	165.9	160.5	163.5	0.90	11.9	2.6	160.3	0.39	12.7	4.0	11	LZ
B2XEFU	155.5	161.1	165.2	163.9	161.4	0.55	13.0	4.3	166.4	1.63	12.6	5.4	12	TB
BJKP84	160.7	151.7	155.5	154.2	155.5	-0.41	8.3	3.8	156.8	-0.33	8.2	2.9	12	AH
BKQAU4	154.1	146.4	151.9 L	151.1	150.9	-1.17	8.4	3.2	157.2	-0.25	8.3	5.5	12	TB
CCEHZY	157.1	161.6	159.8	158.5	159.2	0.19	10.9	1.9	158.1	-0.06	10.5	3.3	12	AH
DGPQ4P	172.4*	174.1 *	168.2	166.2	170.2	2.00	6.9	3.7	166.6	1.67	9.8	4.6	12	LA
DJRNG3	159.0	159.2	162.8	160.2	160.3	0.37	7.6	1.7	164.8	1.31	8.4	4.2	10	RE
DLVJXK	151.1	151.6	156.6	149.9	152.3	-0.94	11.6	3.0	154.4	-0.81	12.1	3.0	12	LC
E24U3H	157.7	163.8	159.3	165.4	161.6	0.57	11.2	3.6	163.2	0.97	12.6	3.9	12	AH
FKYMNG	153.0	156.9	151.1	160.7	155.4	-0.42	9.3	4.3	154.7	-0.76	11.9	4.2	12	LA
FZPTUP	164.7	164.6	155.6	163.4	162.1	0.66	12.2	4.4	160.6	0.45	12.4	3.2	12	LA
H446MB	157.7	160.0	164.4	155.3	159.3	0.21	12.0	3.8	158.7	0.05	12.8	4.2	12	LZ
HQGWQB	157.7	159.1	162.1	157.0	159.0	0.16	11.6	2.2	159.0	0.12	11.6	2.2	4	LA
K3J88G	161.0L	160.7 L	160.1 L	163.3	161.3	0.53	4.0	1.4	160.4	0.40	7.5	3.4	12	LA
K4TCL6	149.2	149.4	152.8	154.2	151.4	-1.08	9.9	2.5	157.2	-0.25	9.9	5.8	11	AA
K8D4W8	147.5	151.9	152.1	157.2	152.2	-0.96	10.8	4.0	152.2	-1.28	10.8	4.0	4	XX
KN3A62	160.7	160.3	162.3	163.7	161.7	0.61	6.3	1.6	159.1	0.15	5.7	2.4	12	LJ
KTW9EQ	154.9	153.0	151.9	150.8	152.6	-0.88	7.6	1.7	160.0	0.33	8.4	11.7 H	12	TB
L2JLUF	150.7	149.6	149.4	153.3	150.8	-1.19	9.9	1.8	153.7	-0.96	10.0	3.6	12	AH
LB8KKL	162.0L	156.8	155.3	157.4	157.9	-0.02	8.1	2.9	159.0	0.12	8.3	4.0	12	LB
MVWYYB	152.7	164.7	156.3 H	162.6	159.1	0.17	15.9	5.6	158.0	-0.09	14.0	5.2	12	LC

Containerboard Interlaboratory Testing Program
 Analysis 206
Bursting Strength (Mullen), 69 lb Linerboard - 69C1
 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
NH3YMY	152.7	No Data	151.2	151.8	151.9	-1.00	9.4	0.7 L	155.1	-0.68	10.4	3.9	11	LA
PAL6MM	147.1	159.0	153.5	163.4	155.8	-0.37	12.1	7.1	155.8	-0.53	11.9	4.8	8	LC
PE2FX6	152.0	151.9	157.9	150.0	152.9	-0.84	11.2	3.4	155.6	-0.57	11.0	3.1	12	LC
PK7CJQ	163.1	166.2	167.1	155.7	163.0	0.82	14.8	5.2	162.2	0.78	14.8	3.4	12	XX
R9KUZH	174.7X	168.8	166.5	168.2	169.5	1.88	12.0	3.6	170.5	2.48*	11.4	2.5	12	TB
ULYYZA	144.6	147.3	148.5	147.0	146.9	-1.83	11.0	1.6	147.1	-2.30*	10.7	2.5	12	LA
URNB2X	154.0	152.8	155.1	156.8	154.7	-0.55	8.8	1.7	154.7	-0.77	8.8	1.7	4	LA
V2UHEC	161.7	159.5	159.0	167.7	161.9	0.64	12.1	4.0	164.3	1.19	12.4	3.7	12	LC
VTC82C	158.4	161.2	153.2	159.3	158.0	0.00	12.6	3.4	159.3	0.18	11.8	3.4	12	LA
VTYDPH	146.9	144.8	146.6 L	145.9 L	146.1	-1.96	8.7	0.9	149.2	-1.89	11.9	3.4	12	XX
VXAQ6V	155.0	164.6	153.2	160.1	158.2	0.03	13.5	5.2	156.1	-0.46	13.0	4.1	12	LC
W3XTNL	157.8	155.4	155.0	155.4	155.9	-0.35	6.3	1.3	155.9	-0.50	5.6	1.5	11	XX
WKHGXF	No Data	No Data	156.8 L	161.3 L	159.1	0.17	2.3	3.2	158.3	-0.02	2.5	2.1	4	AH
WM8MFR	154.5	150.0	160.3	153.8	154.6	-0.56	11.8	4.2	155.2	-0.65	12.0	3.4	12	AA
WR2MR3	155.8	155.8	151.8	150.6	153.5	-0.74	11.3	2.7	152.9	-1.13	11.3	3.0	12	AH
Y7R9BY	160.8	155.8	155.6	151.6	155.9	-0.34	11.5	3.8	154.9	-0.71	11.6	2.7	12	LA
ZDA2Z4	149.1H	148.5	152.9	153.2	151.0	-1.16	12.5	2.5	155.3	-0.65	12.2	4.8	12	LC
ZP2KGU	164.2	172.0	172.0*	167.4	168.9	1.78	9.1	3.8	165.7	1.50	8.2	6.7	12	LA

Consensus (All Labs) Results

Wk Mean	156.12	158.51	157.26	158.11	Month Mean	158.03	Grand Mean	158.42
Avg SDr	11.42	11.42	10.84	9.77	Avg SDr	10.94	Avg SDr	10.99
SD btwn Labs	6.03	7.15	5.93	6.23	SD btwn Labs	6.12	SD btwn Labs	4.90
Labs Includ	49	50	51	51	SD btwn Wks	3.94	SD btwn Wks	4.43
Labs Exclud	3	1	2	1	Labs Includ	52	Labs Includ	52
Labs not rcvd	1	2	0	1				

Instrument Code List as Reported by the Labs

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

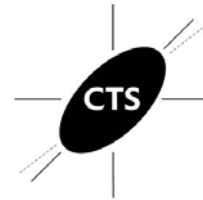


WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
2EZKGV	96.9	99.0	97.8	97.9	97.9	-0.74	4.6	0.9	96.5	-0.87	4.1	4.2	15	LC
2HKA29	74.2 XH	101.1	100.7	100.5	94.1	-1.62	7.2	13.3H	102.1	0.47	5.7	11.2 H	16	LC
2N4YZ9	99.2	101.9	97.8	97.4	99.1	-0.47	4.0	2.1	95.0	-1.24	3.7	5.0	16	LC
4BBXW8	80.7 X	90.0 *	79.5 X	80.2 X	82.6	-4.30 X	4.4	5.0	93.9	-1.50	4.2	8.6 H	15	LZ
4E9CMH	102.0	100.9	99.4	96.5	99.7	-0.32	5.2	2.4	101.1	0.23	4.7	2.5	15	MB
4HN4BP	90.2 *	91.5 *	92.2	92.0	91.5	-2.23 *	5.1	0.9	92.3	-1.89	3.9	1.5	16	EX
64MRFQ	105.1	74.5 XH	110.2	No Data	96.6	-1.04	6.9	19.3H	100.4	0.06	6.2	12.1 H	15	LC
6GDLRK	98.9	101.0	100.3	102.7 L	100.7	-0.08	3.4	1.6	99.8	-0.07	4.0	1.9	16	LC
6XHJQ3	110.3*	105.7	108.5	109.4	108.5	1.72	4.4	2.0	105.4	1.26	5.6	3.0	16	LD
77TC26	100.5H	104.1	93.6	90.7 *H	97.2	-0.90	7.0	6.2	99.1	-0.25	5.9	6.2	16	LX
7HH96N	100.8	100.8	100.9	101.0	100.9	-0.05	2.7	0.1 L	101.1	0.22	2.1	0.5 L	16	LZ
7V93EW	99.4	96.2	97.6	99.1	98.1	-0.70	3.3	1.5	97.4	-0.65	3.3	2.2	16	EN
8FEXQZ	101.5	106.9	106.2	109.0	105.9	1.12	4.8	3.2	104.4	1.02	5.4	3.7	16	XX
9ZT2LN	98.1	98.9 L	98.3	95.8	97.8	-0.77	3.6	1.4	99.5	-0.14	3.7	1.8	14	LC
A63HTQ	101.0	99.8	99.8	99.8	100.1	-0.22	3.0	0.6 L	96.9	-0.78	3.4	2.8	12	XX
ABTUUE	99.1	97.2	94.8	95.2	96.6	-1.04	3.5	2.0	93.2	-1.67	4.1	3.1	16	LC
AEPFJW	106.4	107.9	108.1	106.1	107.1	1.41	5.1	1.0	104.8	1.12	8.5	2.7	16	LC
AREFAY	105.8	104.1	106.5	105.4	105.4	1.01	2.8	1.0	102.9	0.67	3.0	2.7	15	LC
B2XEFU	98.6	99.9	98.8	96.9	98.6	-0.59	5.2	1.2	98.4	-0.42	4.7	3.1	15	LC
BKQAU4	106.4	103.3	98.6	99.3	101.9	0.19	3.9	3.6	100.0	-0.03	3.4	2.2	16	TH
BP7K88	No Data	104.6	108.5	99.3	104.1	0.71	4.8	4.6	98.9	-0.30	4.6	4.9	11	LC
CCEHZY	96.1	99.5	99.3 L	101.5	99.1	-0.46	2.5	2.3	99.2	-0.22	2.4	1.5	16	EM
DGPQ4P	98.2	96.1	95.0	95.8	96.3	-1.12	4.6	1.4	99.5	-0.16	3.9	3.2	16	LZ
DJRNG3	100.8	102.6	101.6	102.4	101.8	0.18	3.3	0.8	101.6	0.35	3.3	1.4	12	LZ
DLVJXK	106.2	109.4	105.4	110.1	107.8	1.56	4.7	2.3	104.4	1.03	4.3	4.3	16	LD
DWFTKT	107.2	101.2	108.6	104.5	105.4	1.00	3.8	3.3	105.2	1.23	3.5	1.9	16	LD
K3J88G	97.9 L	99.6	99.7 L	127.4 XL	106.2	1.18	2.1	14.2H	101.9	0.42	2.4	7.0	16	LD
K3XQUY	105.3	102.6	102.8	104.8	103.9	0.65	3.8	1.4	102.7	0.61	3.6	1.7	16	LC
K4TCL6	98.0 L	101.1	95.5	101.1	98.9	-0.50	3.6	2.7	97.8	-0.55	3.4	2.3	15	LD
KN3A62	102.7	103.3	102.7	103.4	103.0	0.45	3.0	0.4 L	102.0	0.44	3.9	1.1	16	LD
KTW9EQ	98.8	99.4	97.9	101.3 L	99.3	-0.40	2.9	1.4	100.3	0.04	3.0	2.1	16	LD
L2JLUF	100.9L	99.1	101.9	98.9	100.2	-0.20	3.7	1.5	99.9	-0.06	3.3	2.2	16	LD
LB8KKL	102.0	103.6	103.1	99.2	101.9	0.20	5.0	2.0	101.1	0.22	4.4	2.1	16	LC
MJKQZP	98.3	95.7	93.9	105.0	98.2	-0.66	4.3	4.9	95.4	-1.14	3.7	4.0	16	EM
MVWYYB	103.5H	96.9 H	105.0	100.1 H	101.4	0.08	8.1	3.6	93.9	-1.49	8.2	21.2 H	13	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
NE4NPD	100.8L	98.4 L	100.1 L	100.1 L	99.8	-0.29	1.7	1.0	100.2	0.03	2.1	1.2	16	LD
NLGU3V	101.4	101.7	101.5	100.1	101.2	0.02	3.7	0.7 L	102.1	0.48	4.3	2.8	16	EM
PAL6MM	101.5	99.4	102.8	98.3	100.5	-0.13	3.9	2.0	100.2	0.02	4.2	3.5	12	LD
PE2FX6	103.6	104.9	101.8	100.1	102.6	0.35	3.7	2.1	105.2	1.21	3.8	3.3	16	TC
PG4D9X	81.3X	79.2 X	79.5 X	77.6 X	79.4	-5.04 X	3.8	1.5	89.9	-2.45 *	4.1	7.4	16	MB
PLJQAK	97.7 H	102.0 H	99.5 H	101.9	100.2	-0.19	8.9	2.1	95.4	-1.14	7.7	10.5 H	14	MB
R9KUZH	115.3X	108.9	118.8 X	113.8 *	114.2	3.05 X	5.5	4.1	112.8	3.06 X	4.4	6.3	16	LX
T6HBEV	94.8L	95.2 L	93.1 L	92.8 L	94.0	-1.65	1.5	1.2	93.3	-1.65	2.5	1.1	12	TD
U9ZPKG	108.3	111.0 *	110.1	110.3	109.9	2.06 *	4.6	1.2	105.6	1.31	4.0	7.2	16	EM
ULYYZA	94.1	100.3	97.7	97.9	97.5	-0.83	4.0	2.6	96.7	-0.82	4.4	2.7	16	LC
URNB2X	103.0	102.6	100.1	103.0 H	102.2	0.26	5.7	1.4	100.5	0.08	5.7	2.1	8	LC
URP9CU	94.2	92.7	93.4	93.1	93.3	-1.80	3.5	0.6 L	94.6	-1.34	3.3	1.3	16	TH
VTC82C	93.3	99.5	97.8	95.7	96.6	-1.05	6.5	2.7	101.0	0.21	4.4	4.1	16	LC
VTYDPH	110.0	110.4	108.1	106.0	108.6	1.76	4.9	2.1	107.8	1.85	4.9	2.9	16	LZ
W3XTNL	98.3	105.4	95.0	101.3	100.0	-0.25	4.1	4.4	101.2	0.26	4.6	3.8	14	XX
WJ9EAW	99.8	99.2	No Data	No Data	99.5	-0.36	4.2	0.4 L	100.3	0.04	4.3	3.1	8	EX
WKHGXF	100.9	101.3	99.8 L	101.3 L	100.8	-0.06	2.4	0.7 L	101.2	0.26	2.4	0.8 L	8	LD
WR2MR3	108.6	106.6	111.2 *	111.7 *	109.5	1.96	3.4	2.4	108.9	2.10 *	4.2	2.1	16	LC
Y7R9BY	105.7	105.2	103.8	105.8	105.1	0.94	4.8	0.9	102.0	0.45	4.0	2.6	16	LD
ZDA2Z4	101.2H	107.9	97.3	100.4	101.7	0.14	4.9	4.5	104.2	0.99	5.7	6.9	16	LC
ZP2KGU	109.2	109.4	109.9	106.1	108.7	1.76	5.2	1.7	108.9	2.12 *	4.4	2.2	11	LD

Consensus (All Labs) Results														
Wk Mean	101.22	101.61	101.04	101.21	Month Mean	101.08			Grand Mean	100.12				
Avg SDr	4.38	4.35	4.52	4.50	Avg SDr	4.54			Avg SDr	4.44				
SD btwn Labs	4.48	4.60	5.03	5.08	SD btwn Labs	4.30			SD btwn Labs	4.15				
Labs Includ	51	54	52	51	SD btwn Wks	4.40			SD btwn Wks	5.21				
Labs Exclud	4	2	3	3	Labs Includ	53			Labs Includ	55				
Labs not rcvd	1	0	1	2										



Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(EX) - Emerson (model not specified)

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

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

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

(EN) - Emerson 2200

(LA) - L&W Autoline

(LD) - L&W Crush Tester 248

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

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

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

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 69 lb Linerboard - 69C1

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
2EZKGV	135.4	133.6 L	135.0	133.5 L	134.4	0.21	3.2	1.0 L	127.2	-0.71	3.0	6.1	11	LC
2HKA29	142.6	138.6	128.8	138.4	137.1	0.64	4.3	5.9	139.3	0.90	4.6	11.4 H	12	LC
2N4YZ9	121.4 H	118.6 H	130.9	126.6	124.4	-1.36	19.0	5.5	123.8	-1.16	11.4	7.1	12	LC
4BBXW8	135.1	133.5	108.8 X	129.3	126.7	-1.00	4.6	12.2 H	131.8	-0.09	4.1	7.8	12	LZ
4E9CMH	129.0	127.7	129.4 H	128.9	128.7	-0.67	7.8	0.7 L	131.2	-0.18	5.9	4.6	9	MB
4HN4BP	128.3	125.9	126.8	124.4	126.4	-1.04	3.0	1.6	126.7	-0.78	3.3	1.4	12	EX
64MRFQ	140.2	92.4 XH	138.6	No Data	123.7	-1.46	9.6	27.2 H	129.5	-0.41	8.9	20.2 H	11	LC
6GDLRK	135.0	133.0	134.7	136.3	134.7	0.27	3.4	1.4	133.2	0.09	3.6	1.7	12	LC
6XHJQ3	129.8	129.5	129.0	128.0	129.1	-0.62	5.3	0.8 L	136.0	0.46	5.1	6.5	12	LD
77TC26	133.6	137.8 L	127.0	115.7 *H	128.5	-0.71	6.4	9.6	129.8	-0.37	5.7	7.4	12	LX
7HH96N	133.5	132.9	133.4 L	133.7 L	133.4	0.06	1.9	0.4 L	133.5	0.12	2.2	0.5 L	12	LZ
7V93EW	133.3	115.9 *L	128.9 L	130.7	127.2	-0.91	2.8	7.7	126.5	-0.80	3.3	5.1	12	EN
9ZT2LN	130.7	130.1	132.5	130.3	130.9	-0.33	3.6	1.1	131.2	-0.19	3.7	2.7	11	LC
A63HTQ	130.2	129.7	131.1	129.9	130.2	-0.44	3.3	0.6 L	128.6	-0.52	4.0	2.1	8	XX
ABTUUE	134.8	126.0	135.7	125.6	130.5	-0.39	3.0	5.5	128.6	-0.52	3.3	3.5	12	LC
AEPFJW	145.1	140.0	148.9 *	140.7	143.7	1.67	4.0	4.2	143.2	1.42	4.1	2.8	12	LC
AREFAY	129.7 L	127.8 L	131.5	132.8	130.4	-0.40	2.5	2.2	128.4	-0.56	2.7	2.6	11	LC
B2XEFU	139.3	133.4	136.6	138.8	137.0	0.63	4.7	2.7	136.2	0.49	4.6	5.0	12	LC
BKQAU4	139.7	135.7	133.5	132.2	135.3	0.35	3.1	3.2	133.4	0.11	3.0	2.3	12	TH
BP7K88	No Data	114.5 *	128.3	125.3	122.7	-1.62	4.0	7.2	119.4	-1.75	4.0	6.2	7	LC
CCEHZY	120.9	121.1 L	120.9 *	121.3 L	121.1	-1.87	2.3	0.2 L	122.2	-1.38	2.5	1.7	12	EM
DGPQ4P	127.3	134.0	132.8	130.7	131.2	-0.29	3.6	2.9	130.3	-0.30	4.3	3.8	12	LZ
DJRNG3	129.3	127.6 L	128.3	128.0	128.3	-0.74	2.8	0.7 L	132.6	0.01	3.5	3.7	12	LZ
DLVJXK	146.5	144.7	136.9	145.3	143.3	1.62	3.4	4.4	138.2	0.76	3.8	6.3	12	LD
DWFTKT	129.0	128.0 L	129.1	130.4	129.1	-0.61	3.3	1.0 L	128.8	-0.50	3.4	1.2	12	LD
K3J88G	129.5	129.1 L	128.8	127.2 L	128.6	-0.69	1.7	1.0 L	129.4	-0.42	2.6	2.1	12	LD
K3XQUY	137.6	139.6	142.4	134.2	138.5	0.85	3.8	3.5	134.7	0.28	3.5	3.8	12	LC
K4TCL6	120.2 *	122.4	122.4 L	122.4	121.8	-1.75	2.7	1.1	118.9	-1.82	2.5	3.0	11	LD
KN3A62	137.9	138.7 L	137.9	137.9	138.1	0.79	2.8	0.4 L	136.8	0.57	2.8	1.7	12	LD
KTW9EQ	138.9	135.2 L	136.2	138.3	137.2	0.65	2.7	1.7	137.7	0.69	3.0	1.2	12	LD
L2JLUF	133.5	136.0 L	133.2	132.9	133.9	0.13	3.7	1.4	133.6	0.13	3.8	1.8	12	LD
LB8KKL	141.7	140.0	136.3	144.4 L	140.6	1.18	3.4	3.4	138.7	0.82	3.2	3.8	12	LC
MJKQZP	130.4	123.6	127.6	137.4	129.7	-0.52	4.5	5.8	126.1	-0.86	6.9	4.8	12	EM
MVWYYB	138.1 H	135.2	133.5	131.8 H	134.6	0.25	6.9	2.7	126.5	-0.80	6.1	6.6	12	LA
NE4NPD	129.1	130.4 L	129.3 L	100.3 X	122.3	-1.68	2.0	14.7 H	127.4	-0.68	2.6	9.0	12	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
NLGU3V	136.5	135.5	138.1	136.6	136.7	0.58	3.6	1.1	138.7	0.82	3.7	2.7	12	EM
PAL6MM	125.2	129.3 L	131.7	133.4	129.9	-0.49	4.0	3.5	129.3	-0.43	3.5	3.5	8	LD
PE2FX6	131.8	131.8	136.0	138.3	134.5	0.23	3.9	3.2	137.4	0.65	3.8	4.5	12	TC
PG4D9X	110.2X	111.4 *	113.0 X	116.2 *	112.7	-3.19 X	4.2	2.6	117.9	-1.95	6.4	5.9	8	MB
PLJQAK	140.0	132.2	137.9	137.6	136.9	0.61	3.8	3.3	117.9	-1.95	5.6	25.6 H	12	MB
R9KUZH	156.3X	158.0 X	156.1 X	156.6 X	156.7	3.72 X	3.5	0.9 L	152.7	2.68 *	3.2	3.8	12	LX
T6HBEV	145.9	145.7 L	144.4 L	145.3 L	145.3	1.93	1.8	0.7 L	146.6	1.87	2.3	1.3	12	TD
U9ZPKG	144.6	142.6	140.9 H	138.0 H	141.5	1.33	7.0	2.8	133.3	0.09	5.6	7.9	12	EM
ULYYZA	130.3	130.0 L	132.0	128.9	130.3	-0.43	4.3	1.3	130.5	-0.28	3.8	2.0	12	LC
URNB2X	137.8	141.4	144.3	145.0	142.1	1.43	4.2	3.3	142.1	1.27	4.2	3.3	4	LC
URP9CU	134.6	133.9 L	135.1 L	135.9	134.9	0.29	2.1	0.8 L	131.9	-0.08	2.6	2.4	12	TH
VTC82C	124.7	125.8	123.5	123.7	124.4	-1.35	3.9	1.1	123.3	-1.23	4.0	4.4	12	LC
VTYDPH	149.0*	145.0	139.3	138.2	142.9	1.54	4.1	5.1	142.1	1.27	3.9	3.8	12	LZ
W3XTNL	131.6	138.4 L	129.7	140.8	135.1	0.33	2.9	5.3	134.9	0.32	3.5	3.5	11	XX
WJ9EAW	142.8	146.1	No Data	No Data	144.4	1.79	4.4	2.3	146.4	1.85	4.4	2.7	4	EX
WKHGXF	130.6L	132.0 L	134.5	134.4	132.9	-0.03	2.5	1.9	132.4	-0.02	2.8	1.8	8	LD
WR2MR3	133.2	137.2	138.6	134.4	135.8	0.44	4.7	2.5	132.2	-0.04	4.6	4.5	12	LC
Y7R9BY	128.2	129.1	128.6	128.4	128.6	-0.70	3.0	0.4 L	131.1	-0.20	3.2	5.7	12	LD
ZDA2Z4	141.5	138.0	132.8	141.9	138.6	0.87	4.2	4.2	146.5	1.86	5.2	7.1	12	LC
ZP2KGU	144.8	145.8	142.0	135.3	142.0	1.40	3.1	4.7	143.5	1.45	3.7	3.6	12	LD

Consensus (All Labs) Results									
Wk Mean	134.42	132.47	133.44	132.85	Month Mean	133.02	Grand Mean	132.54	
Avg SDr	3.80	6.26	4.09	4.10	Avg SDr	4.81	Avg SDr	4.40	
SD btwn Labs	6.84	7.92	5.73	6.91	SD btwn Labs	6.38	SD btwn Labs	7.52	
Labs Includ	52	53	51	51	SD btwn Wks	5.69	SD btwn Wks	6.35	
Labs Exclud	2	2	3	2	Labs Includ	53	Labs Includ	55	
Labs not rcvd	1	0	1	2					



Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(EX) - Emerson (model not specified)

(LC) - L & W Crush Tester 48

(LX) - L & W 506

(MB) - Messmer Buchel K440

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

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

(EN) - Emerson 2200

(LA) - L&W Autoline

(LD) - L&W Crush Tester 248

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

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

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

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42B4

TAPPI Provisional Test Method T826



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
2EZKGV	25.7 L	23.7	25.8 L	23.8 L	24.8	-0.15	0.6	1.2	23.7	-0.96	0.5	1.0	15	LA
2HKA29	24.3 L	24.3 L	24.3	24.1	24.2	-0.61	1.7	0.1 L	24.5	-0.25	1.1	1.1	16	LW
2N4YZ9	24.7	23.4	25.9	25.5	24.9	-0.06	3.1	1.1	23.9	-0.78	2.3	1.8 H	16	LW
4BBXW8	24.2	23.4	24.0	23.9	23.9	-0.91	1.6	0.4	24.0	-0.69	1.8	0.6	16	LZ
4E9CMH	25.1 L	24.3 L	24.6 L	25.1 L	24.8	-0.14	0.1	0.4	25.1	0.21	0.1	0.8	15	LA
6GDLRK	24.9	24.8	24.7	24.8	24.8	-0.11	1.9	0.1 L	24.8	-0.06	1.9	0.4	16	LU
6UZTPK	25.0 L	23.3 L	24.2 L	24.4 L	24.2	-0.62	0.5	0.7	24.2	-0.50	0.4	0.6	16	LA
77TC26	22.8	22.7	24.8	23.4	23.4	-1.31	2.0	1.0	23.5	-1.17	1.9	0.8	16	XX
7V93EW	24.1	23.3	23.4	23.9	23.7	-1.08	1.7	0.4	23.0	-1.55	1.9	0.7	16	LU
8FEXQZ	27.2 L	26.6 L	26.8 L	47.1 XL	31.9	6.00 X	0.2	10.2H	30.1	4.51 X	0.1	7.0 H	16	XX
9URREV	29.4 *	27.2	29.4 X	29.8 X	28.9	3.45 X	2.6	1.2	27.0	1.85	2.4	1.6 H	15	LU
9ZT2LN	24.3	24.7	24.2	24.9	24.5	-0.34	1.8	0.3	24.7	-0.10	1.7	0.4	16	LW
A63HTQ	23.2	23.5	23.6	24.1	23.6	-1.15	1.8	0.4	23.4	-1.18	1.9	0.5	12	XX
AEPFJW	25.8 L	28.4 *L	26.4 L	25.4 L	26.5	1.34	0.0	1.3	26.1	1.05	0.0	1.1	16	LA
AREFAY	24.7	24.0	24.4	25.0	24.5	-0.35	2.1	0.4	24.7	-0.12	2.0	0.5	15	LW
B2XEFU	26.2	26.0	25.2	24.8	25.5	0.51	2.1	0.6	25.6	0.65	2.2	0.7	15	LW
BJKP84	25.0	25.0	25.0	24.9	25.0	0.05	1.1	0.1 L	24.5	-0.27	1.1	0.4	16	TT
BKQAU4	24.8	24.7	24.5	23.8	24.5	-0.40	1.1	0.4	24.5	-0.32	1.1	0.3	16	TT
DGPQ4P	24.1	25.0	23.9	23.6	24.2	-0.66	2.3	0.6	23.9	-0.76	2.2	0.7	16	LW
DLVJXK	26.7	27.1	24.2	25.2	25.8	0.74	2.1	1.3	25.4	0.45	1.6	1.0	16	LA
E24U3H	24.8	24.5	23.8	24.2	24.4	-0.50	2.0	0.4	24.2	-0.54	2.0	0.8	16	LW
FKYMNG	26.6	25.9	28.6 X	26.4	26.9	1.67	2.4	1.2	26.2	1.13	2.5	1.0	16	LW
H446MB	28.2	26.0	26.0	26.3	26.6	1.48	2.3	1.1	26.1	1.09	2.5	1.1	16	LZ
HCDQDQ	25.7	24.7	25.2	25.5	25.3	0.30	2.0	0.5	24.9	0.03	2.0	0.7	16	LY
HQGWQB	27.3	26.7 L	27.4 *	27.5 *	27.2	1.98	1.6	0.4	27.0	1.85	1.6	0.5	8	LU
K3XQUY	24.5	25.5	25.3	24.1	24.9	-0.06	1.4	0.6	24.4	-0.34	1.7	0.5	16	LU
K4TCL6	22.7	22.8	23.6	23.8	23.2	-1.48	2.0	0.6	23.0	-1.56	1.9	0.6	16	LW
K8D4W8	26.4	26.4	25.3	26.5	26.2	1.05	1.4	0.5	25.7	0.70	1.6	0.9	8	XX
KTW9EQ	23.4	24.0	24.4	23.5	23.8	-0.98	1.9	0.5	23.8	-0.89	1.6	0.7	16	BK
L2JLUF	24.6	24.9	24.2	23.6	24.3	-0.52	1.7	0.6	24.7	-0.13	1.9	0.5	16	LU
LB8KKL	25.4	24.8	25.1	25.2	25.1	0.16	1.3	0.3	25.0	0.17	1.3	0.2	16	LW
LWB4VM	25.0 L	22.4 L	24.6	25.9	24.5	-0.40	1.2	1.5	23.2	-1.41	0.8	1.2	16	LW
MVWYYB	25.1 L	25.5 L	25.8 L	24.0 L	25.1	0.13	0.5	0.8	24.7	-0.09	0.5	0.7	13	LA
NH3YMY	21.6 *	23.9	24.0	23.4	23.2	-1.49	2.0	1.1	22.9	-1.67	2.0	0.7	16	LU
PAL6MM	24.1	25.9	24.3	25.0	24.8	-0.10	2.1	0.8	24.8	-0.04	2.1	0.8	12	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
PE2FX6	26.6	26.2	25.7	26.8	26.3	1.20	1.2	0.5	26.5	1.45	0.7	1.2	16	LA
PLJQAK	24.8 L	26.0 L	25.2 L	25.5 L	25.4	0.38	0.4	0.5	26.5	1.44	0.6	0.9	16	BK
ULYYZA	24.7	23.9	23.8	24.4	24.2	-0.62	1.9	0.4	24.1	-0.64	1.8	1.1	16	LY
URNB2X	26.2	26.3	27.3 *	26.8	26.6	1.47	1.6	0.5	26.0	1.01	1.5	0.8	8	LU
V2UHEC	28.5 *	28.7 *	27.3 *	27.3 *	28.0	2.62 *	2.4	0.7	27.9	2.65 *	2.2	0.5	16	LA
VTC82C	22.0	23.4	21.9 *	22.6	22.5	-2.11 *	2.3	0.7	23.6	-1.01	2.1	1.0	16	LA
VXAQ6V	27.0	26.2	26.8	25.5	26.4	1.23	2.0	0.7	26.3	1.27	2.0	1.3	16	LA
WJ9EAW	23.6 L	25.6 L	No Data	No Data	24.6	-0.26	0.0	1.4	24.7	-0.11	0.0	0.9	8	LZ
WKHGXF	24.1	24.1	25.0	24.3	24.4	-0.48	1.9	0.4	24.4	-0.38	1.9	0.3	8	LY
WR2MR3	25.3 L	26.0	25.9	24.9	25.5	0.51	1.0	0.5	25.4	0.48	1.0	0.8	16	LY
ZDA2Z4	23.9 L	24.9 L	25.7 L	25.6 L	25.0	0.10	0.6	0.8	24.9	0.04	1.0	0.7	16	LA

Consensus (All Labs) Results										
Wk Mean	25.09	25.01	24.96	24.87	Month Mean	24.93		Grand Mean	24.83	
Avg SDr	1.74	1.79	1.73	1.72	Avg SDr	1.75		Avg SDr	1.71	
SD btwn Labs	1.60	1.45	1.17	1.14	SD btwn Labs	1.16		SD btwn Labs	1.18	
Labs Includ	46	46	43	43	SD btwn Wks	0.75		SD btwn Wks	0.85	
Labs Exclud	0	0	2	2	Labs Includ	44		Labs Includ	45	
Labs not rcvd	0	0	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
2EZKGV	30.1 L	29.5 L	30.7 L	30.0 L	30.1	-1.70	0.4	0.5	29.9	-1.50	0.7	1.2	12	LA
2HKA29	35.1	34.3	34.6	34.5	34.6	1.10	2.3	0.4	35.3	1.51	2.3	1.1	12	LW
2N4YZ9	25.7 X	31.6	35.9	34.9	32.0	-0.51	1.8	4.6 H	30.7	-1.03	2.0	3.6 H	12	LW
4BBXW8	31.2	30.3	31.2	31.0	30.9	-1.18	1.7	0.4	30.7	-1.06	1.6	0.4	12	LZ
4E9CMH	34.8 L	35.5 L	34.3 L	32.5 L	34.3	0.88	0.1	1.3	34.6	1.11	0.1	0.9	9	LA
6GDLRK	30.9	31.5	31.0	31.6	31.3	-0.98	1.7	0.3	31.4	-0.67	1.5	0.4	12	LU
6UZTPK	31.1 L	30.6 L	31.7 L	30.2 L	30.9	-1.20	0.4	0.6	31.1	-0.85	0.5	1.0	12	LA
77TC26	31.3	28.3 *	29.3 *	28.0 *	29.2	-2.22 *	1.6	1.5	28.6	-2.20 *	1.5	1.2	12	XX
7V93EW	31.5	30.5	31.6	31.4	31.3	-0.98	1.6	0.5	31.9	-0.36	2.3	0.8	12	LU
8FEXQZ	34.2 L	34.0 L	35.9 L	62.1 XL	41.6	5.35 X	0.3	13.8 H	39.4	3.76 X	0.2	10.2 H	12	XX
9URREV	34.8	32.9	34.5	33.2	33.9	0.62	1.5	0.9	34.1	0.82	1.6	1.1	12	LU
9ZT2LN	31.3	31.6	31.7	30.9	31.4	-0.91	1.3	0.4	31.5	-0.63	1.4	0.5	11	LW
A63HTQ	32.3	31.5	32.8	32.1	32.2	-0.42	1.5	0.5	31.6	-0.55	2.0	0.7	8	XX
AEPFJW	35.0 L	34.4 L	34.7 L	35.0 L	34.7	1.16	0.0	0.3	34.6	1.14	0.0	0.8	12	LA
AREFAY	31.8	32.4	32.0	30.8	31.7	-0.69	1.6	0.7	31.6	-0.57	1.5	0.5	11	LW
B2XEFU	34.0	33.2	31.7	33.1	33.0	0.10	1.8	1.0	32.7	0.05	1.8	0.7	12	LW
BJKP84	34.1	33.8	33.1	33.6	33.6	0.48	1.4	0.4	32.6	-0.01	1.4	1.0	12	TT
BKQAU4	34.0	33.6	32.7	31.9	33.0	0.12	1.6	1.0	32.3	-0.17	1.5	1.0	12	TT
DGPQ4P	32.5	32.9	33.0	32.1	32.6	-0.14	1.8	0.4	32.3	-0.17	1.8	1.0	12	LW
DLVJXK	34.6	35.0	32.6	34.6	34.2	0.83	1.9	1.1	32.8	0.12	1.1	1.6	12	LA
E24U3H	32.1	33.6	33.8	31.2	32.7	-0.12	2.2	1.2	31.8	-0.45	1.8	1.0	12	LW
FKYMNG	33.4	33.7	35.5	33.8	34.1	0.76	2.1	0.9	33.4	0.42	1.9	0.7	12	LW
H446MB	35.7	34.9	34.8	33.0	34.6	1.08	2.0	1.1	34.5	1.08	1.9	1.2	12	LZ
HCDQDQ	32.4	32.4	32.0	32.3	32.3	-0.35	1.5	0.2	32.1	-0.29	1.5	0.3	12	LY
HQGWQB	35.4 L	34.2	36.2	35.9	35.4	1.57	1.0	0.9	35.4	1.56	1.0	0.9	4	LU
K3XQUY	30.6	31.8	33.2	29.3 L	31.2	-0.99	1.4	1.7	30.4	-1.24	1.3	1.2	12	LU
K4TCL6	31.1	31.9	31.5	31.3	31.5	-0.85	1.8	0.3	31.0	-0.91	1.7	0.7	11	LW
K8D4W8	34.7	34.4	34.2	34.2	34.4	0.93	1.1	0.2	34.4	0.98	1.1	0.2	4	LU
KTW9EQ	31.7	30.8	31.1	31.3	31.3	-0.98	1.3	0.4	31.3	-0.70	1.2	0.4	12	BK
L2JLUF	31.6	32.2	32.3	31.0	31.8	-0.66	1.8	0.6	31.5	-0.64	1.8	0.6	12	LU
LB8KKL	33.1	32.1	33.2	33.1	32.9	0.02	1.8	0.5	33.1	0.28	1.6	0.8	12	LW
LWB4VM	32.4	33.2	33.7	32.5	33.0	0.07	2.0	0.6	32.1	-0.29	1.6	0.8	12	LW
MVWYYB	34.5 L	32.3 L	32.4 L	32.3 L	32.9	0.01	0.4	1.1	31.2	-0.76	0.5	1.6	12	LA
NH3YMY	28.9 *	32.0	30.4	30.1	30.3	-1.54	1.6	1.3	30.0	-1.43	1.7	1.0	12	LU
PAL6MM	31.7	35.0	33.9	31.8	33.1	0.15	1.7	1.6	32.2	-0.20	1.6	1.5	8	LZ



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	
PE2FX6	35.7 L	34.3 L	34.4 L	35.0 L	34.9	1.23	0.0	0.6	34.6	1.12	0.5	1.2	12	LA
PLJQAK	34.0 L	34.6 L	34.3	34.5 L	34.3	0.92	0.6	0.3	34.2	0.90	0.6	1.0	12	BK
ULYYZA	33.3	31.6	32.1	31.6	32.1	-0.43	1.4	0.8	31.9	-0.37	1.6	1.0	12	LY
URNB2X	34.7	33.7 L	32.2	33.8	33.6	0.47	1.4	1.0	33.6	0.56	1.4	1.0	4	LU
V2UHEC	36.9 *	37.0 *	37.8 *	36.8 *	37.1	2.62 *	2.0	0.4	37.0	2.46 *	1.9	0.4	12	LA
VTC82C	32.0	30.6	32.1	31.4	31.5	-0.81	1.7	0.7	31.2	-0.78	1.5	1.3	12	LA
VXAQ6V	34.9	33.1	34.4	32.8	33.8	0.59	1.6	1.0	34.9	1.28	1.6	1.1	12	LA
WJ9EAW	33.8 L	34.3 L	No Data	No Data	34.1	0.74	0.0	0.3	34.2	0.87	0.0	1.0	4	LZ
WKHGXF	31.9	31.4	31.7	31.9	31.7	-0.71	1.6	0.2	31.8	-0.47	1.5	0.2	8	LY
WR2MR3	35.8	35.8	34.9	35.1	35.4	1.55	1.5	0.4	36.1	1.97	1.4	1.1	12	LY
ZDA2Z4	33.2 L	34.2 L	33.6 L	33.1 L	33.5	0.41	0.6	0.5	32.7	0.08	0.6	0.9	12	LA

Consensus (All Labs) Results

Wk Mean	33.11	32.88	33.12	32.51	Month Mean	32.85	Grand Mean	32.60
Avg SDr	1.49	1.64	1.54	1.50	Avg SDr	1.57	Avg SDr	1.51
SD btwn Labs	1.81	1.77	1.74	1.83	SD btwn Labs	1.63	SD btwn Labs	1.80
Labs Includ	45	46	45	44	SD btwn Wks	1.05	SD btwn Wks	1.08
Labs Exclud	1	0	0	1	Labs Includ	45	Labs Includ	45
Labs not rcvd	0	0	1	1				

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

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

(LY) - L & W 152 with moisture correction

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

(LA) - L & W Autoline

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

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

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

Containerboard Interlaboratory Testing Program
Analysis 228

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



WebCode	Monthly Results			Cumulative Results				
	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2EZKGV	161.2	1.34	24.5	154.6	0.19	21.6	3	LA
2HKA29	132.6	-0.25	9.5	133.0	-0.45	13.8	4	EV
2N4YZ9	141.3	0.23	15.0	138.8	-0.28	12.7	4	EV
4E9CMH	143.0	0.33	20.3	146.6	-0.05	20.4	4	LA
6UZTPK	115.9	-1.18	8.4	117.1	-0.92	8.2	4	EV
7V93EW	152.8	0.88	14.0	147.0	-0.03	12.4	4	EV
8FEXQZ	144.7	0.43	24.4	160.7	0.37	19.5	4	EV
9ZT2LN	146.6	0.53	10.3	141.6	-0.20	10.9	3	EV
AEPFJW	129.3	-0.43	10.9	129.2	-0.56	11.7	4	LA
DGPQ4P	142.4	0.30	18.5	166.8	0.55	61.6	4	EV
E24U3H	125.1	-0.67	11.9	115.5	-0.97	12.3	4	EV
H446MB	135.4	-0.09	16.4	218.8	2.10 *	127.5	4	LA
HQGWQB	183.7	2.60 X	80.6	199.3	1.52	86.6	2	EV
L2JLUF	141.9	0.27	10.5	139.0	-0.27	12.1	4	EV
MVWYYB	236.0	5.52 X	44.8	200.2	1.54	36.8	3	LA
NH3YMY	146.8	0.54	15.0	145.3	-0.09	13.0	4	EV
PAL6MM	133.0	-0.23	13.9	132.8	-0.46	24.6	3	LA
PLJQAK	135.4	-0.09	6.3	138.9	-0.28	19.8	4	EV
URNB2X	230.2	5.19 X	107.7	230.2	2.44 *	107.7	1	EV
VXAQ6V	115.8	-1.19	13.3	114.0	-1.01	11.1	4	LA
WR2MR3	103.6	-1.87	10.6	96.8	-1.53	8.5	4	EV
YU3CA2	113.5	-1.31	6.6	119.4	-0.85	8.8	3	EV
ZDA2Z4	153.0	0.89	21.7	148.8	0.02	21.4	4	LA
ZP2KGU	118.8	-1.02	13.2	121.8	-0.78	10.0	3	EV

Consensus (All Labs) Results			
Month Mean	137.08	Grand Mean	148.17
Avg SDr	22.58	Avg SDr	43.25
SD btwn Labs	17.93	SD btwn Labs	33.67
Labs Incd	22	Labs Incd	24

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
2EZKGV	168.0	0.27	20.5	174.4	0.44	18.5	3	HY
2HKA29	171.0	0.45	11.4	210.5	2.32 *	10.4	4	SC
62FAJF	155.9	-0.47	9.9	157.7	-0.44	5.5	4	TM
6GDLRK	172.9	0.57	6.2	171.2	0.27	5.9	4	HY
77TC26	128.9	-2.11 *	4.4	138.4	-1.44	15.3	4	SC
9ZT2LN	200.6	2.25 *	10.5	203.0	1.92	8.9	4	HY
DLVJXK	75.1	-5.39 X	1.5	55.4	-5.76 X	1.2	4	LZ
H446MB	169.2	0.34	17.5	146.2	-1.03	17.2	4	TM
HQGWQB	139.0	-1.50	12.8	143.8	-1.16	10.1	2	TM
K3J88G	175.0	0.69	4.9	174.0	0.42	7.1	4	SC
K3XQUY	167.6	0.24	9.0	174.3	0.43	10.1	4	XX
K4TCL6	169.8	0.38	5.9	171.8	0.30	6.1	4	TM
L2JLUF	146.8	-1.02	6.4	150.6	-0.81	5.8	4	TM
MVWYYB	164.8	0.07	4.6	160.5	-0.29	8.5	3	TM
PE2FX6	165.8	0.13	8.4	160.9	-0.26	7.4	3	SC
URNB2X	147.2	-1.00	7.3	150.2	-0.82	7.1	2	TM
Y7R9BY	163.0	-0.04	6.0	164.1	-0.10	5.6	4	HY
ZP2KGU	175.6	0.73	14.2	170.9	0.25	8.5	3	HY

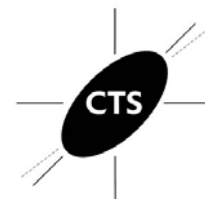
Consensus (All Labs) Results			
Month Mean	163.59	Grand Mean	166.02
Avg SDr	10.43	Avg SDr	10.10
SD btwn Labs	16.43	SD btwn Labs	19.20
Labs Incd	17	Labs Incd	17

Instrument Code List as Reported by the Labs

(HY) - Huygen Digitized Scott Internal Bond Tester
(SC) - Scott Internal Bond Tester (Manual)
(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
2EZKGV	28.4	0.23	2.4	28.5	0.39	2.5	3
2HKA29	26.8	-0.36	1.6	26.0	-0.82	2.0	3
2N4YZ9	25.4	-0.89	1.1	25.4	-1.10	1.2	4
64MRFQ	29.2	0.55	1.9	27.0	-0.34	2.7	4
6GDLRK	24.4	-1.27	1.5	25.9	-0.86	1.2	4
7V93EW	24.1	-1.38	0.8	24.9	-1.36	1.1	4
9ZT2LN	26.4	-0.51	0.9	25.5	-1.08	1.5	4
B2XEFU	31.4	1.39	1.3	31.6	1.84	3.4	4
DLVJXK	23.6	-1.57	1.5	26.7	-0.48	1.5	4
E24U3H	29.0	0.48	0.7	28.8	0.52	1.4	4
H446MB	24.6	-1.19	1.1	26.3	-0.70	2.7	4
HQGWQB	30.0	0.86	1.2	29.6	0.91	1.4	2
K4TCL6	27.7	-0.02	3.5	25.6	-0.99	3.6	4
K8D4W8	26.0	-0.66	1.9	26.0	-0.82	1.5	2
L2JLUF	31.2	1.31	1.0	29.8	0.98	1.6	4
MVWYYB	28.6	0.33	1.1	29.5	0.88	3.4	3
NH3YMY	33.4	2.15 *	2.5	31.7	1.89	3.1	4
PE2FX6	28.6	0.33	0.9	29.6	0.91	1.1	4
URNB2X	27.3	-0.17	1.4	28.3	0.29	2.0	2
WQRFRU	28.8	0.40	2.9	27.6	-0.05	3.1	4

Consensus (All Labs) Results			
Month Mean	27.74	Grand Mean	27.70
Avg SDr	1.73	Avg SDr	2.25
SD btwn Labs	2.64	SD btwn Labs	2.09
Labs Incd	20	Labs Incd	20

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
2EZKGV	51.4	0.25	2.2	53.5	1.49	1.8	3	LA
2HKA29	50.0	-0.25	2.3	50.8	-0.32	3.0	3	HG
6GDLRK	51.4	0.25	2.6	50.4	-0.59	2.5	4	TP
7HH96N	52.4	0.60	2.5	53.0	1.18	2.2	4	XX
8FEXQZ	47.5	-1.12	1.1	47.9	-2.26 *	1.4	4	LW
9ZT2LN	52.6	0.66	2.1	52.9	1.09	2.0	4	XX
AEPFJW	53.8	1.08	2.2	53.1	1.24	3.2	4	TL
B2XEFU	49.9	-0.28	1.3	50.5	-0.49	1.4	4	LP
BCGM4N	51.2	0.17	2.3	51.5	0.18	2.0	4	XX
DLVJXK	55.6	1.74	2.8	28.4	-15.19 X	1.8	4	LA
H446MB	49.7	-0.35	3.1	49.4	-1.24	3.6	4	XX
HQGWQB	43.8	-2.41 *	2.0	43.7	-5.00 X	1.9	2	XX
K3J88G	50.1	-0.23	0.7	50.9	-0.20	1.6	4	LP
K4TCL6	54.4	1.31	2.3	51.7	0.32	2.9	4	HG
K8D4W8	39.9	-3.80 X	1.1	39.8	-7.63 X	1.5	2	XX
MVWYYB	50.2	-0.17	1.8	51.0	-0.16	1.9	3	LA
N8MAL9	50.1	-0.21	1.7	48.9	-1.59	1.4	2	LA
NH3YMY	51.1	0.13	1.4	51.4	0.07	1.5	4	LP
PLJQAK	53.7	1.06	1.0	53.3	1.34	1.7	3	XX
URNB2X	52.2	0.54	2.0	52.3	0.69	1.9	2	LA
W3XTNL	51.7	0.35	2.8	51.3	0.00	3.0	4	GG
WKHGXF	50.4	-0.10	2.1	50.6	-0.43	1.7	2	LP
WQRFU	43.9	-2.38 *	2.6	44.7	-4.34 X	2.4	4	GA
ZDA2Z4	48.9	-0.65	1.3	50.8	-0.33	1.5	4	LA

Consensus (All Labs) Results			
Month Mean	50.70	Grand Mean	51.25
Avg SDr	2.10	Avg SDr	2.20
SD btwn Labs	2.84	SD btwn Labs	1.50
Labs Incd	23	Labs Incd	20

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

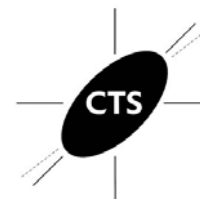
(LA) - L & W Autoline

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

(TP) - Technidyne Profile/ plus Roughness & Porosity



WebCode	Weekly Means				Monthly Results				Cumulative Results					
	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wk	Mean	CPV	SDr	SD Wk	Wks	Inst
4BBXW8	66.9	58.2	66.6 L	68.8 *	65.1	1.36	3.2	4.7 H	66.4	2.23 *	3.8	4.6 H	16	LZ
4E9CMH	57.2	56.9 *	56.0 *	40.0 X	52.5	-4.51 X	2.0	8.4 H	53.9	-4.63 X	2.5	6.9 H	15	MB
6GDLRK	60.3	62.0	59.4	59.4	60.3	-0.89	3.3	1.2	61.3	-0.57	3.3	1.5	16	LC
77TC26	60.2	60.9	60.8	60.5	60.6	-0.75	2.8	0.3	60.6	-0.97	2.8	1.1	16	LX
8FEXQZ	53.4 XH	55.4 XH	47.2 XH	64.8	55.2	-3.27 X	10.2	7.3 H	55.8	-3.60 X	7.8	5.1 H	16	XX
9QRGJV	61.7	61.4	63.0	62.4	62.1	-0.04	2.8	0.7	62.3	0.00	2.6	0.5	16	LC
9V2U6Z	65.1	63.5	62.4	63.0 L	63.5	0.60	2.6	1.1	62.8	0.24	3.4	1.2	16	LD
9ZT2LN	62.5	62.7	63.4	62.3	62.7	0.24	3.2	0.5	63.4	0.62	3.7	1.3	12	LC
ABTUUE	60.7	61.6	61.3	60.8	61.1	-0.52	2.6	0.4	60.6	-0.94	3.1	1.7	16	LC
AREFAY	65.5	63.2	61.7	63.5	63.5	0.59	2.0	1.5	64.9	1.40	3.9	2.7	15	LC
B2XEFU	64.7	65.1	62.2	65.5	64.4	1.01	3.2	1.5	64.4	1.16	2.9	1.5	15	LC
B622X6	62.3	63.1	62.9	64.5	63.2	0.47	3.3	0.9	63.1	0.44	3.2	0.8	15	LZ
BCGM4N	60.2	62.4	61.0	61.5	61.3	-0.43	2.8	0.9	61.4	-0.49	2.9	1.0	16	LD
BJKP84	60.6	61.1	60.4	60.0	60.5	-0.77	3.1	0.4	60.2	-1.18	4.0	1.0	16	TG
BKQAU4	61.2	62.9	60.1	61.6	61.4	-0.35	2.4	1.2	61.6	-0.39	2.9	1.1	16	TH
CCEHZY	65.0	63.8	64.9	64.6	64.6	1.12	3.3	0.5	63.9	0.85	2.8	0.9	16	EM
DWFTKT	62.9	60.8	60.7	61.5	61.5	-0.34	2.8	1.0	61.2	-0.60	2.7	1.7	16	LD
E24U3H	59.6 L	59.2	59.2 L	60.0 L	59.5	-1.25	1.3	0.4	60.0	-1.29	2.0	0.8	16	TH
FEPNU3	59.3	63.6	64.1	56.1 *	60.8	-0.67	3.4	3.8 H	61.3	-0.58	3.3	3.2 H	16	XX
FKYMNG	69.6 *	63.1	64.5	63.3	65.1	1.35	2.9	3.0	65.8	1.92	2.8	1.9	16	LC
HZJF3Y	64.0	63.3	62.6	59.0	62.2	0.01	3.0	2.2	62.1	-0.13	2.9	2.0	16	LC
K3XQUY	63.8	63.7	59.9	58.8	61.6	-0.30	3.1	2.6	61.2	-0.63	3.0	2.1	16	LC
KDZRRD	62.6	63.8	61.2	61.2	62.2	0.00	3.1	1.2	62.3	0.00	2.8	0.8	16	LD
KN3A62	63.8	62.5	62.2	62.8	62.8	0.29	3.2	0.7	63.0	0.37	2.9	0.6	16	LD
L2JLUF	60.6	61.4	59.3	59.8	60.3	-0.90	3.0	0.9	61.5	-0.45	2.7	1.1	16	LD
LB8KKL	60.8	61.9	60.4	60.7	60.9	-0.59	2.1	0.6	61.4	-0.49	2.2	0.8	16	LD
MTPXFP	67.0 H	66.6	68.1 *	66.2	67.0	2.22 *	4.7	0.8	65.7	1.86	3.4	1.3	16	TM
N8MAL9	68.2	65.8	66.5	65.0	66.4	1.94	3.4	1.4	64.5	1.21	3.4	2.2	8	LD
NH3YMY	63.3	60.4	61.4	59.7	61.2	-0.46	2.6	1.5	61.4	-0.53	2.9	0.9	16	LZ
PAL6MM	58.3	63.0	60.1	61.3	60.7	-0.71	4.0	2.0	60.1	-1.23	3.2	1.4	12	LD
PG4D9X	63.0	62.4	61.6	60.2	61.8	-0.19	2.9	1.2	64.8	1.34	2.6	3.2 H	16	MB
PLJQAK	55.7 *	58.1	56.8 H	58.0 H	57.2	-2.35 *	4.5	1.1	60.0	-1.26	4.4	3.4 H	16	MB
QQPW4H	61.6	60.2	58.6	59.6	60.0	-1.01	2.8	1.3	60.5	-1.03	2.8	1.2	16	TD
R9KUZH	67.7 H	60.8	61.0	60.6	62.5	0.14	3.9	3.4 H	62.8	0.28	3.5	2.7	16	LD
RF6RTC	62.3	63.3	62.9	61.9	62.6	0.19	2.3	0.6	62.6	0.14	2.4	0.4	16	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
T6HBEV	61.7 L	63.8	64.8 L	64.6 L	63.7	0.71	1.2	1.4	63.5	0.63	1.3	1.0	12	TD
TJ2VX4	60.7	61.2	60.9	61.6	61.1	-0.51	2.5	0.4	61.9	-0.25	2.6	0.9	16	EM
UPLB3L	60.9	60.9	61.2	62.7	61.4	-0.36	1.6	0.9	61.6	-0.41	1.7	0.7	16	LC
URNB2X	67.1	67.5 *	65.5	65.8 H	66.5	1.99	4.0	1.0	66.1	2.10 *	3.7	1.0	8	LC
V2UHEC	63.2 L	62.4 L	62.4 L	62.3 L	62.6	0.16	0.9	0.4	62.1	-0.13	1.4	0.8	16	XX
V37CWX	64.1	65.9	63.9	65.0	64.7	1.17	3.2	0.9	63.0	0.38	3.7	1.7	16	LC
VTC82C	59.4	58.2	56.7 L	57.8	58.0	-1.94	2.7	1.1	59.3	-1.65	2.7	1.5	16	LC
WJ9EAW	60.7 L	No Data	No Data	No Data	60.7	-0.71	1.0	0.0 L	60.3	-1.12	3.0	1.6	7	LZ
WKHGXF	60.9 L	60.5	59.9 L	60.3	60.4	-0.84	1.7	0.4	60.6	-0.95	1.7	0.4	8	LD
Y7R9BY	64.8	64.0	67.1	64.4 H	65.1	1.34	3.7	1.4	62.5	0.11	4.1	2.7	16	LD

Consensus (All Labs) Results

Wk Mean	62.54	62.25	61.85	61.94	Month Mean	62.20	Grand Mean	62.33
Avg SDr	3.25	2.81	2.86	2.92	Avg SDr	2.96	Avg SDr	3.04
SD btwn Labs	2.95	2.25	2.71	2.59	SD btwn Labs	2.15	SD btwn Labs	1.81
Labs Includ	44	43	43	43	SD btwn Wks	1.60	SD btwn Wks	1.75
Labs Exclud	1	1	1	1	Labs Includ	43	Labs Includ	43
Labs not rcvd	0	1	1	1				

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

Containerboard Interlaboratory Testing Program
Analysis 250

Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM73

TAPPI Official Method T824



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
4BBXW8	67.5	72.1	74.6	72.3 H	71.6	-0.58	3.9	3.0	74.9	0.31	3.3	3.6	16	LZ
6GDLRK	79.2	78.2	77.9	77.9	78.3	1.68	2.1	0.6	78.1	1.38	2.5	0.9	16	LC
7HH96N	72.5	74.6	72.3	72.7	73.0	-0.11	2.7	1.1	72.8	-0.36	1.9	0.9	16	XX
AREFAY	75.9	75.3	72.5	73.9	74.4	0.35	2.5	1.5	76.5	0.84	2.6	3.3	15	LC
B2XEFU	72.1	71.5	76.4	74.1	73.5	0.06	2.4	2.2	73.8	-0.04	2.7	1.4	15	XX
FEPNU3	74.9	70.5 H	76.5	64.9 *H	71.7	-0.55	5.3	5.2 H	70.7	-1.08	5.4	5.2 H	16	TU
HZJF3Y	79.7	78.5	76.9	76.7	77.9	1.55	3.4	1.4	78.2	1.41	2.8	1.4	16	LC
LB8KKL	71.9	71.9	72.6 L	71.8 L	72.0	-0.44	1.7	0.4	72.1	-0.60	1.6	0.7	16	LD
PG4D9X	68.9	69.2	67.5 *	68.5	68.5	-1.64	2.8	0.7	69.1	-1.61	3.0	3.6	16	MB
T6HBEV	71.7 L	72.0 L	72.4	73.4 L	72.4	-0.33	1.1	0.7	73.1	-0.26	1.5	1.1	12	TD

Consensus (All Labs) Results									
Wk Mean	73.41	73.38	73.96	72.61	Month Mean	73.34	Grand Mean	73.92	
Avg SDr	2.35	3.57	2.40	3.48	Avg SDr	3.01	Avg SDr	2.93	
SD btwn Labs	4.00	3.15	3.13	3.76	SD btwn Labs	2.96	SD btwn Labs	3.03	
Labs Incd	10	10	10	10	SD btwn Wks	2.18	SD btwn Wks	2.67	
Labs Exclcd	0	0	0	0	Labs Incd	10	Labs Incd	10	
Labs not rcvd	0	0	0	0					

Instrument Code List as Reported by the Labs

(LC) - L & W Crush Tester 48

(LD) - L&W Crush Tester 248

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

(MB) - Messmer Buchel K440

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

(TU) - TMI Universal Crush Tester (TMI 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
6GDLRK	44.9	42.0	45.1	43.7	43.9	0.10	3.3	1.4	43.9	0.02	3.1	1.2	16	LC
8FEXQZ	42.9	46.4	37.5 H	46.7	43.4	-0.09	3.6	4.3 H	45.5	0.71	2.9	2.9 H	16	XX
9V2U6Z	49.2	47.1	47.3 L	48.0	47.9	1.56	2.1	0.9	47.9	1.69	2.0	0.9	16	LD
ABTUUE	41.9	42.5	41.4	39.8 L	41.4	-0.83	2.2	1.1	41.0	-1.18	2.6	1.5	16	LC
B2XEFU	41.7	43.8	45.0 L	42.2	43.2	-0.17	2.2	1.5	41.7	-0.88	2.5	2.4	15	LC
BCGM4N	40.6	39.9	41.4	39.4	40.3	-1.22	3.6	0.8	41.7	-0.88	3.4	1.4	16	LD
HUUXPM	40.4	39.5	42.0	40.4 H	40.6	-1.12	4.0	1.0	42.1	-0.73	3.8	3.3 H	16	LZ
KDZRRD	44.8	47.0	44.6	45.3	45.4	0.65	2.0	1.1	45.2	0.59	2.0	0.9	16	LD
KN3A62	45.0	45.4	44.3	45.5	45.1	0.52	2.5	0.5	44.2	0.15	2.3	1.0	16	LD
MTPXFP	42.1	44.7	44.8	44.5	44.0	0.14	3.7	1.3	44.6	0.33	3.1	2.2	16	LD
N8MAL9	48.7	48.2	48.8	47.8	48.4	1.73	2.5	0.5	47.3	1.45	2.9	1.4	8	LD
PAL6MM	40.9	41.7	41.9	40.1	41.1	-0.92	2.6	0.8	42.0	-0.75	2.6	1.4	12	LD
PG4D9X	35.4 *H	32.2 XH	33.4 *	31.8 X	33.2	-3.82 X	3.5	1.6	35.7	-3.35 X	3.2	4.0 H	16	MB
R9KUZH	45.3	47.8	47.8	48.4	47.3	1.35	3.6	1.4	46.7	1.18	3.5	1.5	16	LZ
TJ2VX4	42.8	41.1	40.7	41.0	41.4	-0.83	2.2	0.9	41.0	-1.16	2.2	1.0	16	LC
UPLB3L	47.4 L	47.4 L	47.5 L	46.2	47.1	1.28	1.2	0.6	47.5	1.56	1.2	0.5	16	LC
URP9CU	39.6	40.1	40.3	40.4	40.1	-1.30	2.3	0.3	41.0	-1.19	2.3	2.0	16	TH
WJ9EAW	41.3	No Data	No Data	No Data	41.3	-0.84	2.1	0.0 L	42.8	-0.43	2.8	1.2	7	EM
Z9UNYG	43.7 L	44.1	43.0	43.8	43.7	0.01	1.5	0.5	42.6	-0.49	1.3	1.6	16	WK

Consensus (All Labs) Results

Wk Mean	43.08	44.04	43.16	43.72	Month Mean	43.65	Grand Mean	43.81
Avg SDr	2.71	2.57	3.11	2.76	Avg SDr	2.75	Avg SDr	2.68
SD btwn Labs	3.32	2.99	3.87	3.14	SD btwn Labs	2.73	SD btwn Labs	2.40
Labs Includ	19	17	18	17	SD btwn Wks	1.42	SD btwn Wks	1.73
Labs Exclud	0	1	0	1	Labs Includ	18	Labs Includ	18
Labs not rcvd	0	1	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
4E9CMH	14.3 L	13.4 *L	13.7 *L	14.3 L	13.9	-1.62	0.0	0.5	14.3	-1.13	0.0	0.5	15	XX
6GDLRK	15.4	15.1	15.0	14.8	15.1	0.09	1.0	0.3	15.1	0.33	1.1	0.3	16	LU
8FEXQZ	15.4 L	15.6 L	15.6 L	26.3 XL	18.2	4.76 X	0.0	5.4 H	19.0	7.99 X	0.1	9.1 H	16	XX
9QRGJV	14.8	14.6	15.0	14.5	14.7	-0.45	1.0	0.2	14.6	-0.48	1.1	0.2	16	LB
9V2U6Z	14.7	15.3	14.5	14.7	14.8	-0.33	1.2	0.4	14.5	-0.81	1.2	0.4	16	LA
B622X6	14.7	15.0	15.0	15.8	15.1	0.17	1.2	0.5	15.0	0.22	1.3	0.5	15	LW
BKQAU4	15.1	15.2	15.5	14.9	15.1	0.20	0.8	0.2	14.8	-0.21	0.9	0.9 H	16	TT
E24U3H	14.8	14.8	14.9	14.7	14.8	-0.28	1.2	0.1 L	15.0	0.19	1.2	0.2	16	LW
FKYMNG	15.3	15.6	16.2	16.0	15.8	1.09	1.3	0.4	15.0	0.19	1.3	0.6	16	LW
HUUXPM	16.5 *	15.9	15.9	16.1	16.1	1.59	1.3	0.3	15.3	0.84	1.3	0.6	16	LB
MTPXFP	15.8	16.7 *	16.4	16.6	16.4	2.03 *	1.6	0.4	16.0	2.07 *	1.3	0.6	16	LA
NH3YMY	13.4 *	14.5	14.2	13.9	14.0	-1.51	1.2	0.4	13.9	-1.88	1.1	0.4	16	LU
PAL6MM	14.6	15.8	15.7	15.9	15.5	0.73	1.1	0.6	15.4	1.07	1.2	0.4	12	LZ
PLJQAK	14.8 L	15.3 L	14.6 L	15.9 L	15.1	0.18	0.2	0.6	15.4	1.00	0.2	0.7	16	BK
RF6RTC	14.7	14.5	14.8	14.4	14.6	-0.57	1.2	0.2	14.7	-0.40	1.1	0.2	16	LB
TJ2VX4	15.3	14.8	14.8	15.3	15.1	0.07	1.4	0.3	15.2	0.66	1.3	0.3	16	LB
ULYYZA	14.4	13.7	14.8	13.4	14.1	-1.37	1.2	0.6	14.1	-1.50	1.2	0.7	16	LB
UPLB3L	15.0	15.1	14.9	14.9	15.0	-0.02	0.7	0.1	14.8	-0.15	0.7	0.3	16	XX

Consensus (All Labs) Results

Wk Mean	14.94	15.05	15.08	15.05	Month Mean	15.01	Grand Mean	14.89
Avg SDr	1.04	1.05	1.12	1.09	Avg SDr	1.10	Avg SDr	1.09
SD btwn Labs	0.66	0.79	0.69	0.87	SD btwn Labs	0.68	SD btwn Labs	0.51
Labs Includ	18	18	18	17	SD btwn Wks	0.39	SD btwn Wks	0.50
Labs Exclud	0	0	0	1	Labs Includ	17	Labs Includ	17
Labs not rcvd	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