Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #552 (K) - September 2015

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample Lot	Analysis Name
201	BOX9	Box Compression Strength, Corrugated Boxes
202	ECT8	Edgewise Compressive Strength, Wax (T811), Corrugated board
203	ECT8	Edgewise Compressive Strength by Clamp (T839), Corrugated board
205	42D1	Mullen Burst of Linerboard, 42 lb Linerboard
206	69C2	Mullen Burst of Linerboard, 69 lb Linerboard
215	42D1	Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard
216	69C2	Ring Crush of Linerboard, Rigid Platen Type, 69 lb Linerboard
223	42D1	STFI of Linerboard, 42 lb Linerboard
224	69C2	STFI of Linerboard, 69 lb Linerboard
228	69C	Roughness - Stylus Method, 69 lb Linerboard
231	36Z	Internal Bond Strength, Linerboard, 36 lb Linerboard
234	36Z	Coefficient of Static Friction - Inclined Plane, 36 lb Linerboard
237	36Z	Air Resistance - Gurley Method, Linerboard, 36 lb Linerboard
240	CM73	Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium
250	CM73	Fluted Crush of Medium, 26 lb Corrugating Medium
255	CM73	Ring Crush of Medium, 26 lb Corrugating Medium
261	CM73	STFI of Medium, 26 lb Corrugating Medium

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

Labs Excld - 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 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

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.

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 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 variabilty between weekly means (high week-to-week variation).
L	Indicates low variabilty between weekly means (low week-to-week variation).

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Containerboard Interlaboratory Testing Program

Analysis 201

Top to Bottom Box Compression Strength, Corrugated Boxes - BOX9

TAPPI Official Test Method T804

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2MVEU9	842.4	0.05	65.7	856.5	0.41	64.7	4	EX
6XLAHE	826.1	-0.12	42.0	817.7	-0.06	49.9	4	LM
7FVTNG	765.1	-0.76	83.8	750.4	-0.86	62.3	3	LL
82ATC9	918.5	0.85	32.5	926.5	1.25	33.5	2	ER
8A8KK2	739.4	-1.03	34.6	721.9	-1.21	27.6	3	LH
9R7XU3	877.2	0.41	43.0	916.0	1.13	33.7	4	TB
D8YAEZ	835.4	-0.02	89.5	820.7	-0.02	62.1	4	LG
D9URF2	831.2	-0.07	45.9	775.7	-0.56	34.9	4	LM
DK4G8B	909.6	0.75	62.2	842.3	0.24	62.9	4	ES
DPY9F9	646.4	-2.00 *	24.2	707.7	-1.38	40.3	3	LL
EY83BZ	889.0	0.54	38.0	848.5	0.31	49.2	4	LH
HGC4A4	759.6	-0.82	107.8	740.7	-0.98	71.2	4	LG
HNTG93	975.0	1.44	8.4	926.2	1.25	27.8	4	TE
JUC3XZ	941.6	1.09	13.5	922.4	1.20	34.1	4	ER
NLMZJK	908.5	0.74	43.0	827.2	0.06	37.9	4	LG
NXDWJX	763.6	-0.78	51.9	809.8	-0.15	74.9	4	ER
U93E2M	974.6	1.43	77.3	951.6	1.55	63.0	4	EX
VR97GU	808.4	-0.31	33.6	778.7	-0.52	36.6	4	ER
YMZCQE	903.6	0.69	54.9	852.2	0.36	61.6	4	ER
YTLACF	627.0	-2.21 *	52.1	627.0	-2.35 *	52.1	1	LS
ZKTGJF	850.0	0.13	60.9	848.7	0.32	69.0	4	LS

Consensus (All Labs) Results

Month Mean	837.73	Grand Mean	822.30
Avg SDr	56.13	Avg SDr	52.22
SD btwn Labs	95.48	SD btwn Labs	83.20
Labs Incld	21	Labs Incld	21

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	851.78	66.09	14.05	4
Clip sealing	814.98	98.78	22.75	13
Tape sealing	897.62	100.47	59.89	4

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Containerboard Interlaboratory Testing Program

Analysis 201

Top to Bottom Box Compression Strength, Corrugated Boxes - BOX9

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

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

(ES) - Emerson 8510

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

(LL) - Lansmont 76-5K

(LS) - Lansmont Squeezer

(TE) - Testometric M500 - 25 KN

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Containerboard Interlaboratory Testing Program

Analysis 202

Edgewise Compressive Strength, by T811, Corrugated board - ECT8

TAPPI T811

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
333VEF	57.6	0.13	1.2	58.3	0.55	1.5	3	TB
7L2LHC	53.2	-0.98	2.5	52.7	-1.78	2.7	4	XX
AVKRAZ	64.5	1.87	2.5	56.7	-0.12	2.2	4	LC
D8YAEZ	58.7	0.39	4.0	59.1	0.86	3.3	4	WK
EY83BZ	51.5	-1.41	1.8	58.0	0.40	2.0	4	TC
R6PU4M	58.5	0.35	1.3	58.5	0.62	0.9	4	WK
YMZCQE	59.1	0.51	1.1	58.7	0.70	2.3	4	EN
YTLACF	53.1	-0.99	1.3	53.1	-1.61	1.3	1	EM
ZKTGJF	57.6	0.13	3.2	57.9	0.37	2.3	4	LC

Consensus (All Labs) Results

Month Mean	57.09	Grand Mean	57.01
Avg SDr	2.31	Avg SDr	2.17
SD btwn Labs	3.98	SD btwn Labs	2.40
Labs Incld	9	Labs Incld	9

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200 Series

(LC) - L&W Crush Tester 48

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

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

(EN) - Emerson 2200

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

(WK) - Zwick Z005 Crush Tester

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Containerboard Interlaboratory Testing Program

Analysis 203

Edgewise Compressive Strength by T839, Corrugated board - ECT8

TAPPI T839

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2MVEU9	62.0	0.98	1.1	58.6	-0.28	1.6	4	TL
333VEF	56.9	-1.14	1.3	57.8	-0.66	1.3	3	TG
3TCEJK	61.3	0.65	0.8	61.4	0.95	1.2	4	LC
6VGLYH	58.1	-0.66	2.2	57.1	-0.99	1.9	4	TB
6XLAHE	57.5	-0.91	1.6	56.3	-1.33	1.9	4	TC
7FVTNG	56.9	-1.17	1.1	57.4	-0.83	1.1	3	BU
82ATC9	58.6	-0.45	1.7	58.4	-0.39	2.2	4	TB
8A8KK2	60.5	0.32	2.8	57.2	-0.93	3.4	3	EM
9R7XU3	61.1	0.59	1.5	61.9	1.15	1.1	4	LC
AVKRAZ	63.8	1.71	1.4	62.2	1.31	1.7	4	LC
CZ44V7	62.6	1.20	2.9	63.6	1.92	2.3	4	LD
D8YAEZ	63.4	1.54	2.5	62.5	1.43	4.4	4	WK
D9URF2	60.4	0.28	1.6	57.7	-0.68	1.7	4	EM
DK4G8B	62.7	1.25	1.8	60.4	0.52	1.8	4	LD
DPY9F9	58.2	-0.61	1.6	57.7	-0.71	2.4	3	LC
DTYKC9	57.5	-0.91	2.3	59.0	-0.12	2.3	4	TM
ECTFMB	61.9	0.91	3.3	59.9	0.27	3.2	4	LD
EG4T49	57.0	-1.12	2.2	55.4	-1.71	2.8	4	LC
EY83BZ	62.8	1.28	1.5	61.8	1.11	1.2	4	TC
GEAJAX	55.3	-1.85	2.1	57.0	-1.01	2.0	4	TD
J9C2LW	58.0	-0.69	2.6	58.1	-0.52	2.0	4	EX
JUC3XZ	56.0	-1.55	1.5	57.5	-0.77	1.7	4	EM
K2TXEU	60.8	0.45	2.3	59.6	0.14	1.9	4	LC
LKKGQT	60.6	0.38	3.8	61.2	0.85	2.8	4	LD
MZ77FU	55.0	-1.94	3.0	58.7	-0.24	2.4	3	LD
NLMZJK	58.2	-0.62	3.1	53.9	-2.37 *	4.5	4	EM
NXDWJX	60.8	0.45	2.0	59.0	-0.12	2.8	4	EN
R4TEQQ	57.7	-0.85	2.6	59.7	0.19	3.7	3	LC
RHDUUP	59.9	0.09	0.9	58.8	-0.20	1.6	4	TG
U93E2M	61.2	0.61	2.0	61.6	1.03	2.3	4	CT
V9C3EJ	60.7	0.41	2.3	63.4	1.84	2.1	4	TK
VR97GU	61.1	0.57	4.4	60.0	0.32	2.6	4	LD
YMZCQE	59.6	-0.02	1.4	60.4	0.48	2.3	4	EN
YTLACF	58.4	-0.53	2.1	58.4	-0.38	2.1	1	EM
ZKTGJF	62.9	1.35	1.6	61.0	0.75	2.3	4	LC

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Containerboard Interlaboratory Testing Program

Analysis 203

Edgewise Compressive Strength by T839, Corrugated board - ECT8

TAPPI T839

Consensus (All Labs) Results

Month Mean	59.69	Grand Mean	59.27
Avg SDr	2.23	Avg SDr	2.38
SD btwn Labs	2.40	SD btwn Labs	2.25
Labs Incld	35	Labs Incld	35

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

(WK) - Zwick Z005 Crush Tester

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Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42D1

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
2HZKVL	108.1 L	108.4	108.5	106.3	107.8	-0.34	9.4	1.0	107.5	-0.52	8.2	1.3	16	LA
3EEH38	102.1	102.6	101.6	104.0	102.6	-1.59	12.6	1.0	102.6	-2.16 *	12.6	1.0	4	XX
6HNELD	117.1	109.8	110.7	114.5	113.0	0.89	12.2	3.4	111.4	0.75	12.1	2.6	12	LC
6ZUDEB	86.2 XL	113.5	113.3	108.5	105.4	-0.92	12.8	13.0 H	108.7	-0.13	12.0	7.5 H	16	LA
7YTY89	107.3	108.9	112.2	106.2	108.6	-0.15	11.9	2.6	110.0	0.30	10.3	5.1	16	LZ
82ATC9	108.8	111.7	108.3	105.4	108.6	-0.17	11.9	2.6	107.2	-0.65	10.5	2.9	16	LA
9G2ZU7	106.3	109.5	112.6	114.8	110.8	0.36	9.1	3.7	109.2	0.03	9.2	3.5	16	TB
A3VGLD	113.8	112.8	107.5	118.8 *	113.2	0.94	10.5	4.6	111.4	0.75	10.1	6.4	16	LC
APUHZ3	88.5 X	107.8	100.7 *	109.4	101.6	-1.82	8.7	9.5 H	107.2	-0.64	8.4	8.4 H	16	AX
BTACDE	101.2 L	99.5 *	113.7	105.7	105.0	-1.01	10.4	6.4	105.1	-1.33	11.1	5.2	16	LC
D77AAA	99.4	101.4	106.4	107.8	103.8	-1.31	7.3	4.0	113.9	1.56	7.4	9.4 H	16	RE
D8YAEZ	112.4	115.0	110.0	114.0	112.8	0.85	12.1	2.2	113.0	1.28	12.1	2.6	16	LZ
D9URF2	108.6	106.5	107.1	107.4	107.4	-0.44	10.8	0.9	108.6	-0.18	9.4	2.0	16	AH
DK4G8B	109.1	105.0	105.2	109.2	107.1	-0.51	10.7	2.3	110.3	0.39	10.9	3.6	16	LA
DK9Y7A	115.5	117.7	111.7	115.4	115.1	1.37	9.0	2.5	114.1	1.65	10.6	2.8	16	LA
EF8DUX	112.0 L	109.5	112.7 L	109.6 L	111.0	0.40	4.6	1.6	110.2	0.37	4.7	1.5	11	XX
EG4T49	102.0	102.4	102.8	104.4	102.9	-1.51	12.6	1.0	103.0	-2.01 *	11.3	2.0	16	LA
EK34Z9	106.8	110.8	111.9	108.0	109.4	0.02	12.1	2.4	113.3	1.37	12.0	11.6 H	16	TB
EKLN82	108.6	108.6	108.7	108.8 L	108.7	-0.14	5.7	0.1 L	108.4	-0.24	5.6	0.6 L	16	LJ
EPYLM2	110.8	110.9	112.9	109.7	111.1	0.43	11.1	1.3	110.4	0.42	10.0	2.1	16	LB
EY83BZ	113.0	116.3	109.8	117.3	114.1	1.14	13.7	3.4	112.9	1.26	13.1	2.9	16	AA
GZTNU2	112.6	No Data	No Data	No Data	112.6	0.78	8.6	0.0 L	102.4	-2.23 *	10.6	6.7	13	LA
HGC4A4	110.4	102.7	109.1	No Data	107.4	-0.44	9.7	4.1	109.8	0.22	9.9	4.0	12	AH
HXGBP6	105.7	109.0	112.0	103.8	107.6	-0.39	10.9	3.6	106.8	-0.77	11.4	2.9	15	TB
HZ98DY	120.1 *H	118.9 H	118.8 *H	113.7	117.9	2.04 *	20.2	2.8	112.6	1.14	15.1	5.5	16	LC
JGQMU2	105.1	106.4	111.5	106.2	107.3	-0.47	11.0	2.8	107.5	-0.52	10.9	2.8	16	LC
JQCR3Z	114.5	113.9	111.5	110.9	112.7	0.81	12.5	1.8	112.3	1.05	12.2	4.2	16	LZ
LKKGQT	101.6	104.2	105.7	101.6 *	103.3	-1.43	7.8	2.0	103.6	-1.83	8.7	2.5	16	LA
M8ADVW	108.1	109.9	110.8	108.4 H	109.3	0.01	11.4	1.3	110.5	0.45	10.7	2.3	16	LA
MZ77FU	114.9	112.5	111.5	113.6	113.1	0.91	9.4	1.5	110.4	0.41	9.8	3.3	12	AA
NKABHU	112.0	110.4	111.8	112.3	111.6	0.56	12.1	0.8	109.1	-0.02	13.0	4.2	12	LA
P8J29T	110.9	113.0	109.7	117.6	112.8	0.84	10.5	3.5	111.3	0.72	10.1	3.5	16	LC
P8JRNN	113.0	110.1	114.7	108.5	111.6	0.55	10.3	2.8	111.4	0.77	10.3	1.9	16	LC
PDPU3P	112.3	110.2	101.0 *	113.3	109.2	-0.02	14.0	5.6	110.0	0.30	11.7	3.6	16	LJ
QTGPDU	115.6	116.7	113.6	111.6	114.4	1.21	12.0	2.3	112.6	1.16	11.4	3.0	16	LA

Report #552

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42D1

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
R4TEQQ	114.2	112.0	104.5	109.2	110.0	0.17	10.5	4.2	110.5	0.45	10.6	4.4	12	LA
RGHBTN	108.5	105.4	103.6	107.1	106.1	-0.75	7.7	2.1	107.7	-0.48	10.6	1.9	16	LJ
RR2TKV	113.4	107.8	108.8	108.2	109.6	0.07	11.6	2.6	108.5	-0.20	11.3	3.7	16	AH
U93E2M	114.8	115.6 H	114.2	113.7	114.6	1.26	16.0	0.8	112.5	1.10	15.9	3.4	16	XX
VR97GU	113.0	110.5	112.5	112.0	112.0	0.65	12.6	1.1	110.8	0.57	11.8	2.9	16	AH
VXVAAH	108.2	109.0	110.3	108.4	109.0	-0.07	11.3	0.9	109.3	0.05	10.4	2.0	16	LA
W2R88M	116.4 L	116.5 L	115.0 L	115.3 L	115.8	1.55	3.4	0.8	123.6	4.76 X	5.9	5.1	16	AH
XET9BG	112.2	115.2	109.4	113.4	112.6	0.78	10.0	2.4	111.0	0.63	11.8	3.1	16	AX
XFJGAJ	105.4	106.9	108.7	115.1	109.0	-0.06	11.2	4.3	108.2	-0.30	11.4	2.6	16	LC
XLW3JQ	112.8	107.8	110.6	138.5 XH	117.4	1.94	47.7	14.2 H	110.6	0.48	25.0	8.0 H	16	LC
Y3994L	105.2	106.5	110.9	110.4	108.3	-0.24	9.4	2.8	108.2	-0.30	9.1	2.3	16	AH
Y79JYL	107.6	112.8	109.3	108.8	109.6	0.08	12.2	2.2	111.2	0.67	13.1	3.5	16	TP
YF3KHK	110.2 L	114.1	110.3 L	108.4	110.8	0.35	5.3	2.4	109.0	-0.05	6.5	3.4	16	LA
YLQ8CP	103.1	101.9	108.9	106.0	105.0	-1.02	11.9	3.1	104.9	-1.39	10.7	2.7	16	AH
YRWZ8L	101.6	105.7	100.6 *	103.1	102.7	-1.55	11.0	2.2	103.3	-1.90	14.1	3.4	16	LA
YTLACF	96.1 *	98.7 *	102.2	95.4 X	98.1	-2.65 *	10.0	3.1	98.1	-3.64 X	10.0	3.1	4	RE
ZKTGJF	104.7	101.7 L	105.8	105.3	104.4	-1.16	8.6	1.8	104.9	-1.38	9.5	2.8	16	AH
ZW8DNJ	104.3	105.7	105.5	109.0	106.1	-0.75	10.5	2.0	106.0	-1.03	11.1	3.0	16	LC

Consensus (All Labs) Results

Wk Mean	109.23	109.23	109.25	109.79	Month Mean	109.27	Grand Mean	109.12
Avg SDr	10.60	10.99	11.27	11.28	Avg SDr	12.68	Avg SDr	11.35
SD btwn Labs	5.11	4.85	4.06	4.07	SD btwn Labs	4.21	SD btwn Labs	3.03
Labs Incld	51	52	52	49	SD btwn Wks	4.02	SD btwn Wks	4.28
Labs Excld	2	0	0	2	Labs Incld	53	Labs Incld	51
Labs not rcvd	0	1	1	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

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

(LC) - L & W Autoline

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

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

(RE) - Regmed/Mullen Tester

(TB) - TMI Monitor/Burst 1000

(TP) - Technidyne PROFILE/Plus

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 69 lb Linerboard - 69C2

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
2HZKVL	157.4 L	154.0	160.7	161.7	158.4	0.73	10.1	3.5	158.9	0.80	8.3	3.3	12	LA
3EEH38	153.4	145.9	149.6	150.1	149.8	-0.92	11.6	3.1	149.8	-0.98	11.6	3.1	4	XX
6HNELD	155.7	151.7	150.5	161.4	154.8	0.05	10.3	4.9	155.3	0.09	10.7	4.7	12	XX
6ZUDEB	126.1 XL	160.5	167.5 *	160.8	153.7	-0.17	10.6	18.7 H	154.7	-0.01	13.9	10.2 H	12	LA
7YTY89	155.0	156.9	159.7	159.6	157.8	0.61	7.9	2.2	153.3	-0.30	8.4	5.2	8	LZ
82ATC9	155.0	159.0	156.0	149.6	154.9	0.06	11.4	3.9	154.5	-0.06	11.8	3.6	12	LA
9G2ZU7	162.9	163.7	167.3 *	162.3	164.0	1.80	10.0	2.3	164.7	1.93	10.8	3.6	12	TB
A3VGLD	154.5	147.4	154.0	149.1	151.2	-0.64	10.2	3.6	149.4	-1.04	10.5	4.0	12	LC
APUHZ3	153.1	150.5	148.4	153.7	151.4	-0.61	10.1	2.4	147.5	-1.43	9.1	4.6	12	AX
BTACDE	129.4 XH	147.3	136.5 X	151.8	141.2	-2.54 *	14.8	10.2 H	145.6	-1.79	12.3	7.4	12	LC
D77AAA	160.6	152.6	145.2	155.0	153.4	-0.24	11.2	6.4	154.8	0.00	10.3	4.2	12	RE
D8YAEZ	168.5 *	159.9	158.2	168.8 *	163.8	1.76	13.3	5.6	161.0	1.22	11.9	4.4	12	LZ
D9URF2	157.3	158.3	156.7	151.6	156.0	0.26	9.7	3.0	156.0	0.24	11.4	3.0	12	AH
DK4G8B	152.2	150.3	159.7	157.5	154.9	0.06	12.5	4.4	157.9	0.61	12.9	4.5	12	LA
DK9Y7A	161.2	165.8	169.3 *	165.3	165.4	2.06 *	12.0	3.3	166.1	2.22 *	9.7	2.6	12	LA
EF8DUX	151.6 L	152.2	154.4	155.0 L	153.3	-0.25	5.3	1.7	153.2	-0.30	5.8	1.4	7	XX
EG4T49	143.1 *	147.7	147.9	151.3	147.5	-1.35	9.7	3.4	148.3	-1.27	10.5	3.6	12	LA
EK34Z9	153.5	157.5	159.2	158.2	157.1	0.48	12.9	2.5	160.5	1.11	13.1	6.8	12	TB
EKLN82	155.7	155.6	155.5	155.5	155.6	0.19	8.5	0.1 L	155.8	0.20	8.6	0.6 L	12	LJ
EPYLM2	163.8	160.3	161.1	161.0	161.6	1.33	8.6	1.5	159.0	0.82	8.4	4.6	12	LB
EY83BZ	163.5	157.5	156.0	156.0	158.3	0.70	12.2	3.6	154.4	-0.08	12.7	4.5	12	AA
GZTNU2	145.4	No Data	No Data	No Data	145.4	-1.75	12.8	0.0 L	143.2	-2.26 *	10.7	5.1	7	LA
HGC4A4	147.4	149.7	148.8	No Data	148.6	-1.14	10.9	1.2	148.6	-1.21	9.9	1.3	7	AH
HXGBP6	152.5	147.5	153.3	155.0	152.1	-0.48	13.6	3.2	153.6	-0.23	11.9	3.2	11	TB
HZ98DY	164.9	173.4 XH	180.6 XH	164.1	170.8	3.08 X	25.4	7.8	157.5	0.52	17.0	11.4 H	12	LC
JGQMU2	159.1	161.4	155.0	153.0	157.1	0.48	13.0	3.8	156.6	0.35	12.1	4.1	12	LA
JQCR3Z	151.6	161.1	158.9	157.2	157.2	0.49	11.3	4.1	157.3	0.50	11.2	3.0	12	LZ
LKKGQT	154.3	148.6	148.3	154.0 L	151.3	-0.63	8.5	3.3	150.6	-0.82	9.4	3.6	12	LA
M8ADVW	160.5	155.2	151.4	152.7	155.0	0.07	12.2	4.0	157.5	0.54	12.1	3.9	12	LA
MZ77FU	157.7	156.1	156.8	153.8	156.1	0.29	12.4	1.7	158.7	0.76	12.3	4.2	12	AA
NKABHU	154.3	148.6	153.0	162.2	154.5	-0.01	9.5	5.7	154.0	-0.15	11.0	5.3	12	LA
P8J29T	155.9	148.0	145.6	146.6	149.0	-1.06	11.6	4.7	152.8	-0.39	10.0	4.6	12	LC
P8JRNN	162.7	154.5	154.1	151.4	155.7	0.21	10.6	4.9	154.2	-0.12	10.3	4.6	12	LC
PDPU3P	152.1	156.1	160.7	157.0	156.5	0.36	10.0	3.5	158.2	0.66	11.0	3.7	12	LJ
QTGPDU	152.9	154.1	154.9	156.5	154.6	0.01	12.0	1.5	154.4	-0.07	11.6	3.1	12	LA

Report #552

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 69 lb Linerboard - 69C2

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
R4TEQQ	156.1	158.1	155.1	154.7	156.0	0.27	9.4	1.5	157.5	0.53	10.5	4.0	12	LA
RR2TKV	156.8	153.8	151.4	153.0	153.8	-0.16	10.3	2.3	149.6	-1.01	10.9	5.2	12	AH
U93E2M	174.0 X	161.7	163.5	157.7	164.2	1.84	11.6	7.0	161.9	1.38	13.4	6.2	12	XX
VR97GU	159.5	160.0	160.0	160.0	159.9	1.01	11.5	0.3 L	160.7	1.15	11.7	3.8	12	AH
VXVAAH	159.4	151.6	151.5	153.8	154.1	-0.10	13.0	3.7	157.1	0.45	12.1	3.5	12	LA
W2R88M	165.2 L	166.2 *L	163.8 L	160.8	164.0	1.79	5.2	2.3	158.2	0.66	5.7	4.9	12	AH
XET9BG	160.9	156.7	155.5	151.0	156.0	0.27	14.4	4.1	158.5	0.72	12.5	3.3	12	AX
XFJGAJ	144.2	145.7	153.3 H	150.4	148.4	-1.18	13.1	4.2	149.3	-1.08	11.7	3.8	12	LC
XLW3JQ	149.2	157.5	152.1	147.9	151.7	-0.55	9.3	4.3	151.4	-0.66	9.0	4.2	12	LC
Y3994L	154.5	154.5	152.0	153.6	153.7	-0.18	9.4	1.2	154.9	0.02	10.0	2.4	12	AH
Y79JYL	151.6	154.8	154.6	152.0	153.3	-0.26	10.2	1.7	153.3	-0.29	8.2	3.3	12	TP
YF3KHK	160.1	161.5	163.8	160.6	161.5	1.32	7.6	1.7	165.9	2.18 *	9.4	5.2	12	LA
YLQ8CP	157.3	149.4	146.8	154.6	152.0	-0.49	10.6	4.8	152.8	-0.39	11.6	4.3	12	AH
YRWZ8L	144.1	152.9	156.4	156.1	152.4	-0.42	11.8	5.7	153.5	-0.24	11.9	3.6	12	LA
YTLACF	145.6	142.6	144.4	138.9 X	142.9	-2.23 *	10.1	2.9	142.9	-2.33 *	10.1	2.9	4	RE
ZKTGJF	142.2 *	139.9 *	148.7	156.8	146.9	-1.47	10.2	7.6	148.5	-1.23	10.4	5.4	12	AH
ZW8DNJ	159.0	150.7	156.9	159.2	156.5	0.35	10.5	4.0	155.1	0.07	10.4	3.5	12	LC

Consensus (All Labs) Results

Wk Mean	155.41	154.26	155.26	155.94	Month Mean	154.59	Grand Mean	154.78
Avg SDr	10.47	10.76	10.85	11.52	Avg SDr	10.95	Avg SDr	10.98
SD btwn Labs	6.11	5.89	5.89	4.77	SD btwn Labs	5.25	SD btwn Labs	5.12
Labs Incld	49	50	49	49	SD btwn Wks	4.75	SD btwn Wks	4.60
Labs Excld	3	1	2	1	Labs Incld	51	Labs Incld	52
Labs not rcvd	0	1	1	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

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

(LC) - L & W Autoline

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

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

(RE) - Regmed/Mullen Tester

(TB) - TMI Monitor/Burst 1000

(TP) - Technidyne PROFILE/Plus

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42D1

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
2HZKVL	85.9	82.3	85.7	82.9	84.2	-0.56	3.4	1.9	83.2	-0.74	3.2	1.3	16	LD
3EEH38	87.9	92.3	89.4	88.9	89.6	0.60	4.5	1.9	89.6	0.81	4.5	1.9	4	LC
6ZUDEB	111.4 X H	No Data	85.9	85.1	94.1	1.57	7.8	15.0 H	85.3	-0.24	6.0	12.9 H	15	LC
7YTY89	77.3	79.1	78.1	82.6	79.3	-1.62	4.4	2.3	81.7	-1.11	4.6	2.7	16	LC
8A8KK2	86.0	87.4	86.2	85.9	86.4	-0.09	3.8	0.7	81.0	-1.28	3.7	5.6	12	EM
9CQWWC	77.2	75.0 *H	81.7	82.0	79.0	-1.68	6.1	3.5	81.8	-1.08	4.6	2.5	16	LD
9G2ZU7	93.3	92.5	91.3	87.7	91.2	0.93	3.9	2.5	91.6	1.28	4.3	2.0	16	LX
A3VGLD	88.3	88.2	87.4	88.0	88.0	0.25	3.9	0.4 L	87.2	0.23	3.9	2.0	16	LC
APUHZ3	89.1	86.5	88.2	90.6	88.6	0.38	5.4	1.7	91.6	1.28	5.5	4.4	16	LZ
BTACDE	94.4	92.0	90.0	92.8	92.3	1.18	5.1	1.8	86.0	-0.07	5.3	6.9	16	LC
D77AAA	88.7	85.8	83.0	82.1	84.9	-0.42	3.0	3.0	83.6	-0.65	3.4	3.2	16	LZ
D8YAEZ	88.3	85.8	84.9	93.9	88.2	0.30	3.9	4.1	86.6	0.09	3.1	3.1	16	LC
D9URF2	87.6	88.2	88.7	86.4	87.7	0.20	3.2	1.0	82.6	-0.88	3.2	4.0	16	EM
DK9Y7A	85.0	92.1	85.2 L	87.6	87.5	0.14	4.4	3.3	86.2	-0.01	4.3	2.3	16	LZ
EF8DUX	87.0	88.1	85.6	86.8	86.9	0.01	4.4	1.0	89.6	0.80	4.6	2.6	11	XX
EG4T49	84.7	85.3	83.5	85.8	84.8	-0.42	3.5	1.0	86.4	0.03	4.0	3.4	16	LC
EK34Z9	85.4	80.8	85.9	83.1	83.8	-0.65	4.1	2.3	83.8	-0.60	4.3	2.9	16	LC
EKLN82	86.5	86.2	86.3	86.5	86.4	-0.10	2.5	0.1 L	87.0	0.17	3.6	0.5 L	16	LD
ELDQV3	84.5	85.1	86.2	83.8	84.9	-0.41	5.3	1.0	84.3	-0.47	4.5	3.3	16	TH
EPYLM2	92.7	90.4	89.5	89.5	90.5	0.79	4.2	1.5	90.0	0.90	4.5	2.7	16	LC
GEAJAX	91.0 L	92.7 L	98.3 *	96.4 *	94.6	1.67	2.0	3.3	92.5	1.50	2.0	2.0	16	TD
GZTNU2	96.7	No Data	No Data	No Data	96.7	2.13 *	4.2	0.0 L	87.2	0.23	5.2	9.2 H	13	LC
HNTG93	85.5	85.7	83.9	88.4	85.9	-0.21	3.7	1.9	86.5	0.05	3.6	1.6	16	LD
HXGBP6	85.2	70.4 X	68.2 X	84.8	77.1	-2.08 *	4.1	9.1 H	81.0	-1.27	4.1	7.1	14	LZ
J36BHQ	82.4	83.5	89.8	No Data	85.2	-0.34	5.3	4.0	89.1	0.68	5.3	3.4	13	MB
JGQMU2	21.7 X L	82.7 H	78.4 H	84.3 H	66.8	-4.31 X	7.9	30.2 H	71.2	-3.63 X	8.4	25.3 H	16	LA
JUC3XZ	82.1	82.0	79.8	80.7	81.1	-1.22	2.6	1.1	82.0	-1.03	2.8	2.5	16	EX
K7K6W3	83.5	82.8	83.6	82.6	83.1	-0.79	3.4	0.5 L	84.0	-0.55	3.7	0.9	16	LD
L7Y2NT	86.0 H	89.6 H	86.4 H	88.7 H	87.7	0.18	8.6	1.8	76.9	-2.26 *	6.6	14.9 H	15	MB
LKKGQT	87.3 H	89.9	90.2	89.3	89.2	0.50	4.2	1.3	88.1	0.44	3.3	1.4	16	LD
M8ADVW	90.1	90.7	89.1	91.9	90.5	0.78	3.6	1.2	90.2	0.95	3.7	1.3	16	LD
MZ77FU	81.7	82.4	84.9	85.5	83.6	-0.69	2.8	1.8	83.4	-0.69	3.1	1.6	12	LD
NLMZJK	76.4	77.7 *	77.6	83.0	78.7	-1.75	3.1	2.9	76.7	-2.32 *	3.3	2.5	16	EM
NXDWJX	80.1	83.7	85.0	83.0	82.9	-0.83	3.9	2.1	84.8	-0.34	3.5	2.5	16	EN
P8J29T	100.2 *	94.3	97.7 *	102.5 X	98.7	2.54 *	4.1	3.5	94.3	1.95	4.1	3.6	16	TC

Report #552

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42D1

TAPPI Official Test Method T822

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SDr	SD Wks	Cumulative Results Mean	CPV	SDr	SD Wks	Wks	Inst
PDPU3P	80.5	79.5	79.7	77.4 *	79.3	-1.62	3.2	1.3	80.9	-1.30	3.1	2.0	16	LC
R4TEQQ	93.8	91.5	91.3	96.1 *	93.2	1.37	5.3	2.3	91.2	1.20	5.2	4.0	12	LC
RHDUUP	86.7	86.6	87.8	88.9	87.5	0.15	3.2	1.1	92.1	1.40	3.3	3.2	16	TH
RR2TKV	89.4	88.9	85.8	82.9 H	86.7	-0.02	5.3	3.0	82.4	-0.92	5.7	7.3	16	LC
V6ULJT	86.9	87.5	90.1	87.5	88.0	0.25	3.8	1.4	88.1	0.45	3.8	1.8	16	LD
V9C3EJ	72.8 *	66.5 X	69.5 X	66.4 XH	68.8	-3.88 X	5.4	3.0	73.2	-3.15 X	4.7	4.7	16	MB
VR97GU	83.6	88.2 L	88.0	85.3	86.3	-0.12	3.3	2.2	84.2	-0.49	3.9	2.4	16	LD
VXVAAH	82.6	81.0	83.0	80.7	81.8	-1.07	2.9	1.1	85.9	-0.08	3.5	3.1	16	LC
W2R88M	113.8 X	114.5 X	115.1 X	114.6 X	114.5	5.94 X	3.4	0.6 L	94.4	1.96	3.6	12.1 H	16	LD
XET9BG	79.2 H	83.3	78.4 H	85.9 H	81.7	-1.10	7.1	3.5	81.6	-1.12	6.4	4.3	16	LC
XLW3JQ	92.5	90.8	93.6	92.8	92.4	1.21	3.8	1.2	92.2	1.43	4.0	1.3	16	LC
Y79JYL	86.2 L	84.5	88.4	85.7	86.2	-0.14	3.5	1.6	86.9	0.15	3.8	1.6	16	TH
YF3KHK	87.1	88.5	87.1	87.5 L	87.6	0.16	2.1	0.7	87.3	0.25	2.2	0.7 L	16	LZ
YRWZ8L	83.4	85.9	86.5	82.9	84.7	-0.46	4.0	1.8	84.9	-0.33	3.7	1.2	16	LC
YTLACF	90.3	90.4	92.3	92.8	91.5	1.00	3.6	1.3	91.5	1.26	3.6	1.3	4	LC
ZKTGJF	87.1 L	87.8	86.9	87.2	87.2	0.09	3.5	0.4 L	87.0	0.17	4.2	1.8	16	LC
ZW8DNJ	87.9	87.1	86.0	87.0	87.0	0.03	3.7	0.8	86.9	0.16	3.7	1.3	16	LD

Consensus (All Labs) Results

Wk Mean	86.28	86.42	86.50	86.61	Month Mean	86.82	Grand Mean	86.26
Avg SDr	4.31	4.31	4.31	4.22	Avg SDr	4.30	Avg SDr	4.18
SD btwn Labs	5.23	4.33	4.48	4.09	SD btwn Labs	4.65	SD btwn Labs	4.14
Labs Incld	49	47	48	47	SD btwn Wks	3.25	SD btwn Wks	4.63
Labs Excld	3	3	3	3	Labs Incld	49	Labs Incld	50
Labs not rcvd	0	2	1	2				

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(EN) - Emerson 2200

(EX) - Emerson (model not specified)

(LA) - L&W Autoline

(LC) - L & W Crush Tester 48

(LD) - L&W Crush Tester 248

(LX) - L & W 506

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

(MB) - Messmer Buchel K440

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

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

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

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 69 lb Linerboard - 69C2

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
2HZKVL	125.9	126.2	124.4	124.7	125.3	-0.73	2.9	0.9	125.1	-0.72	3.0	0.9 L	12	LD
3EEH38	134.8	135.7	137.3	136.1	136.0	0.49	4.6	1.0	136.0	0.68	4.6	1.0	4	LC
6ZUDEB	154.7 *H	130.9	128.1	138.8	138.1	0.74	6.5	11.9 H	127.9	-0.36	7.4	14.0 H	12	LC
7YTY89	120.6	120.8	124.9	126.4	123.2	-0.98	5.7	2.9	122.8	-1.01	5.1	2.2	8	LC
8A8KK2	131.6	132.0	133.4	132.7	132.4	0.08	3.6	0.8 L	132.2	0.20	3.6	4.3	12	EM
9CQWWC	119.2	120.2	118.9	122.4	120.2	-1.32	4.3	1.6	121.5	-1.18	4.0	1.7	12	LD
9G2ZU7	149.6	151.3 *	154.5 *	151.7 *	151.8	2.30 *	4.1	2.0	151.0	2.63 *	4.0	2.3	12	LX
A3VGLD	128.7	126.8	125.4	125.1	126.5	-0.59	3.9	1.6	131.8	0.15	3.9	4.3	12	LC
APUHZ3	140.1	146.3 H	123.2 H	142.4	138.0	0.72	8.0	10.2 H	136.0	0.70	5.9	6.9	12	LZ
BTACDE	143.2	137.8	150.5 *	150.1 *H	145.4	1.57	10.3	6.1	140.5	1.26	7.3	10.2 H	12	LC
D77AAA	128.6	128.8	123.0	127.1	126.9	-0.55	3.3	2.7	125.7	-0.64	3.3	4.9	12	LZ
D8YAEZ	134.8	134.5	133.5	138.3	135.2	0.41	3.7	2.1	130.3	-0.05	3.3	5.3	12	LC
D9URF2	128.4	129.7 L	128.9 L	129.1	129.0	-0.31	2.2	0.6 L	121.3	-1.21	3.2	6.2	12	EM
DK9Y7A	122.8	124.7	125.9	126.2	124.9	-0.78	3.3	1.5	128.3	-0.30	4.2	4.4	12	LZ
EF8DUX	133.7	129.8	123.1	126.9	128.4	-0.38	3.4	4.5	132.6	0.25	3.6	6.8	7	XX
EG4T49	134.0	134.7	137.0	133.2	134.7	0.35	3.9	1.6	130.9	0.03	4.7	5.9	12	LC
EK34Z9	136.2	134.8	138.7	129.3	134.8	0.35	5.1	4.0	132.3	0.21	5.5	6.0	12	LC
EKLN82	133.4	133.6	133.3	133.4	133.4	0.20	2.3	0.1 L	133.7	0.39	2.7	0.3 L	12	LD
ELDQV3	128.4	138.6	138.6	139.5	136.3	0.52	4.5	5.2	136.5	0.76	3.9	3.6	8	TH
EPYLM2	145.4	139.5	140.8	144.5 L	142.6	1.25	4.5	2.8	141.4	1.39	4.4	3.1	12	LC
GEAJAX	143.7	147.0	145.5	144.3	145.1	1.54	2.9	1.4	145.9	1.97	2.6	2.5	12	TD
GZTNU2	146.0	No Data	No Data	No Data	146.0	1.64	6.6	0.0 L	141.8	1.44	7.3	4.3	7	LC
HNTG93	125.7	124.1	126.0	128.0 L	125.9	-0.66	2.9	1.6	125.7	-0.64	3.9	1.3	12	LD
HXGBP6	128.1	106.7 *	135.8	131.7	125.6	-0.70	4.4	12.9 H	124.7	-0.78	4.6	16.1 H	11	LZ
J36BHQ	147.4	137.0	135.6	No Data	140.0	0.95	5.6	6.5	141.0	1.34	5.0	4.5	8	MB
JGQMU2	125.3	118.6	118.1	119.8	120.4	-1.29	5.8	3.3	124.9	-0.75	6.6	5.4	12	LA
JUC3XZ	128.1	126.3	125.9	126.2	126.6	-0.58	3.0	1.0	121.3	-1.21	3.5	4.4	12	EX
K7K6W3	128.7	126.6	123.9	125.0	126.1	-0.65	3.0	2.1	125.6	-0.65	3.1	1.2	12	LD
L7Y2NT	141.0	140.9	141.1	141.7	141.2	1.09	4.7	0.4 L	134.2	0.46	5.5	12.0 H	11	MB
LKKGQT	130.0	130.2 L	129.8	130.6	130.2	-0.18	2.5	0.3 L	127.9	-0.36	2.9	2.2	12	LD
M8ADVW	131.8	129.3	127.6	130.4	129.8	-0.22	4.0	1.8	130.3	-0.05	4.0	1.2	12	LD
MZ77FU	121.5	121.8	118.2	121.1	120.7	-1.27	3.1	1.6	118.5	-1.57	3.1	2.6	12	LD
NLMZJK	115.6	113.1	125.6	121.6	119.0	-1.46	4.2	5.7	120.1	-1.37	5.3	3.8	12	EM
NXDWJX	121.8	127.8 L	127.8	129.2	126.6	-0.58	2.9	3.3	128.3	-0.30	3.5	2.7	12	EN
P8J29T	142.2	139.6	142.6	141.9	141.6	1.14	4.8	1.3	137.2	0.84	4.2	4.0	12	TC

Report #552

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 69 lb Linerboard - 69C2

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
PDPU3P	121.9	123.4	126.0	119.9	122.8	-1.02	5.2	2.6	120.8	-1.28	4.1	3.5	12	LC
R4TEQQ	135.9	132.6	132.3	135.0	134.0	0.26	4.3	1.8	132.5	0.24	5.5	2.8	11	LC
RGHBTN	135.8	135.7	134.8	136.4	135.7	0.46	4.2	0.7 L	133.5	0.37	4.4	4.4	12	LD
RHDUUP	132.4	133.4	130.7 L	133.5	132.5	0.09	3.1	1.3	132.2	0.20	3.2	1.0	12	TH
RR2TKV	125.8	123.9	124.7	102.7 XH	119.2	-1.43	8.5	11.1 H	119.6	-1.42	6.4	6.7	12	LC
V6ULJT	128.3	126.2	124.7	127.9	126.8	-0.57	4.8	1.7	127.4	-0.43	4.5	2.7	12	LD
V9C3EJ	112.7 *	114.6	111.6 *	115.3	113.6	-2.08 *	5.2	1.7	114.5	-2.09 *	5.6	2.3	8	MB
VR97GU	131.6	131.7	133.5	135.0	133.0	0.15	3.8	1.6	126.6	-0.52	3.7	8.6	12	LD
VXVAAH	119.1 L	119.3	119.6	119.9 L	119.5	-1.40	2.6	0.4 L	129.1	-0.20	3.4	7.2	12	LC
W2R88M	145.8	144.6	144.3	146.1	145.2	1.55	3.6	0.8	136.4	0.74	3.4	7.1	12	LD
XET9BG	111.2*H	116.9 H	134.7	124.9 H	121.9	-1.12	12.0	10.2 H	123.1	-0.97	10.5	6.7	12	LC
XLW3JQ	148.0	136.0	143.5	145.6	143.3	1.33	4.0	5.2	141.4	1.39	3.8	5.6	12	LC
Y79JYL	137.9	136.5	134.1	134.9	135.9	0.48	3.5	1.7	134.0	0.43	3.2	2.5	12	TH
YF3KHK	133.1 L	133.8 L	133.2 L	132.7 L	133.2	0.17	1.3	0.5 L	133.3	0.34	1.7	1.2	12	LZ
YRWZ8L	128.0	125.5	126.5	127.4	126.8	-0.56	4.0	1.1	127.6	-0.39	4.0	3.6	12	LC
YTLACF	142.8	148.9	151.7 *	150.2 *	148.4	1.91	4.2	3.9	148.4	2.29 *	4.2	3.9	4	LC
ZKTGJF	128.6	126.4	125.2	128.2	127.1	-0.53	3.3	1.6	128.2	-0.32	3.5	3.6	12	LC
ZW8DNJ	132.7	133.0	133.6	133.0 L	133.1	0.16	3.2	0.4 L	131.5	0.10	3.6	4.5	12	LD

Consensus (All Labs) Results

Wk Mean	132.12	130.53	131.37	132.30	Month Mean	131.69	Grand Mean	130.66
Avg SDr	4.81	4.54	3.98	5.09	Avg SDr	4.75	Avg SDr	4.62
SD btwn Labs	9.66	9.18	9.05	8.73	SD btwn Labs	8.72	SD btwn Labs	7.75
Labs Incld	53	52	52	50	SD btwn Wks	4.32	SD btwn Wks	5.53
Labs Excld	0	0	0	1	Labs Incld	53	Labs Incld	53
Labs not rcvd	0	1	1	2				

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200

(EN) - Emerson 2200

(EX) - Emerson (model not specified)

(LA) - L&W Autoline

(LC) - L & W Crush Tester 48

(LD) - L&W Crush Tester 248

(LX) - L & W 506

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

(MB) - Messmer Buchel K440

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

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

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

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D1

TAPPI Provisional Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
3EEH38	21.0	21.8	21.0	21.8	21.4	-0.63	1.7	0.4	21.4	-0.69	1.7	0.4	4	LU
4HETY8	21.2 L	22.0 L	22.4 L	23.1 L	22.2	0.01	0.0	0.8	22.2	0.07	0.0	0.5	16	TT
6HNELD	24.2	22.6	23.9	23.1	23.4	1.03	1.8	0.7	22.6	0.46	1.6	1.1	12	XX
6QJBTA	20.7 L	19.5 L	18.4 *L	20.7 L	19.8	-1.87	0.5	1.1	19.9	-2.04 *	0.4	1.2	15	LW
6ZUDEB	20.6 L	18.7 *L	19.3 L	32.6 X	22.8	0.49	1.0	6.6 H	21.7	-0.38	0.7	4.0 H	11	LW
7YTY89	20.7	21.7	22.0	22.8	21.8	-0.30	1.8	0.9	22.2	0.08	2.0	0.8	16	LW
82ATC9	21.1	21.1	21.2	21.7	21.3	-0.73	1.7	0.3	21.4	-0.62	1.7	0.5	16	LY
9CQWWC	21.7	21.2	21.2	20.9	21.3	-0.73	2.1	0.3	21.1	-0.95	1.9	0.5	16	LY
9TDCZ9	22.2 L	21.8 L	21.4 L	21.3 L	21.6	-0.42	0.0	0.4	21.9	-0.22	0.0	0.5	16	LU
A3VGLD	22.4 L	21.8 L	22.4 L	21.4 L	22.0	-0.14	0.4	0.5	21.9	-0.18	0.4	0.9	16	LA
BTACDE	21.5 L	22.1 L	22.6 L	22.5 L	22.2	-0.01	0.4	0.5	22.4	0.23	0.9	0.5	16	LA
D8YAEZ	21.2	21.1	21.1	20.5	21.0	-0.95	1.6	0.4	21.5	-0.56	1.7	0.6	16	LW
DK9Y7A	21.2	21.8	21.3	21.4	21.4	-0.61	1.6	0.2	21.3	-0.77	1.8	0.3	16	LW
EG4T49	22.4	23.2	22.9	22.8	22.8	0.53	2.0	0.3	22.2	0.09	2.2	1.2	16	LY
EK34Z9	23.0	22.1	23.3	22.3	22.7	0.40	1.6	0.6	22.9	0.72	1.9	0.7	16	LW
EPYLM2	23.2	23.1	23.0	23.1	23.1	0.76	1.6	0.1 L	23.1	0.96	1.7	0.3	16	LU
HGC4A4	21.3	24.3	24.6	No Data	23.4	1.00	1.3	1.8	23.2	1.03	2.4	0.9	12	LU
HNTG93	21.9	21.3	21.1	21.9	21.5	-0.49	1.9	0.4	21.6	-0.51	1.8	0.5	16	LY
HXGBP6	20.2	21.9	21.7	21.6	21.4	-0.64	1.6	0.8	21.3	-0.79	1.8	0.7	15	LZ
HZ98DY	21.3 L	20.3 L	20.0 L	20.5 L	20.5	-1.33	0.3	0.5	20.7	-1.28	0.3	0.5	16	LA
J36BHQ	20.6 L	21.1 L	20.0 L	21.1 L	20.7	-1.18	0.1	0.5	21.2	-0.90	0.1	0.8	14	LA
JGQMU2	21.0 L	20.7 L	20.5 L	20.7 L	20.7	-1.15	0.3	0.2 L	20.8	-1.19	0.4	1.0	16	LA
JQCR3Z	22.7	23.5	23.2	23.2	23.2	0.81	2.4	0.3	23.5	1.27	2.2	1.0	16	LZ
L7Y2NT	24.7 *L	22.7 L	24.3 L	22.3 L	23.5	1.08	0.5	1.2	23.4	1.20	0.5	1.2	15	BK
LKKGQT	21.6	22.5	21.4	22.4	22.0	-0.16	1.4	0.6	21.9	-0.24	1.6	0.6	16	BK
M8ADVW	21.7	23.6	22.3	21.9	22.4	0.17	2.1	0.9	22.9	0.70	2.1	0.6	16	XX
MZ77FU	20.6	20.6	21.0	21.1	20.8	-1.08	1.7	0.3	20.5	-1.47	1.8	0.4	12	LW
NKABHU	23.1	23.9	22.1	23.6	23.2	0.81	1.3	0.8	23.0	0.85	1.2	0.8	12	LU
NXDWJX	20.0	21.1	20.4	20.3	20.5	-1.38	1.8	0.5	21.0	-1.07	1.8	0.5	16	LY
P8J29T	23.8 L	22.1 L	22.7 L	22.6 L	22.8	0.54	0.5	0.7	23.0	0.79	0.4	0.7	16	LA
P8JRNN	25.0 *	25.3 *	24.9 *	26.0 X	25.3	2.53 *	2.4	0.5	24.6	2.35 *	2.3	0.7	16	LA
QTGPDU	22.6	26.3 *	24.7 *	24.8 *	24.6	1.96	2.3	1.5	23.9	1.69	2.2	1.0	16	LW
R4TEQQ	24.0	22.8	23.5	22.7	23.3	0.89	1.5	0.6	22.4	0.30	1.4	0.8	12	LU
RGHBTN	21.8 L	22.1 L	21.3 L	23.1 L	22.1	-0.07	0.2	0.8	22.1	-0.03	0.1	0.9	16	LU
RR2TKV	22.7	23.9	21.4	23.4	22.8	0.52	0.9	1.1	23.1	0.92	1.0	0.8	16	LY

Report #552

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D1

TAPPI Provisional Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
RUMWTT	21.2	21.0	20.4	21.0	20.9	-1.02	1.6	0.3	21.0	-1.07	1.7	0.5	16	LW
V2W2DN	21.9	23.2	22.0	22.0	22.3	0.08	1.8	0.6	21.8	-0.25	1.9	0.6	16	LY
V6ULJT	23.0	22.8	26.6 X	22.6	23.8	1.29	2.2	1.9	21.4	-0.64	2.0	2.3 H	16	LY
VR97GU	20.8	21.7	20.7	21.3	21.1	-0.84	2.0	0.4	21.0	-1.02	2.0	0.7	16	LU
VXVAAH	21.1	20.2	21.1	20.6	20.8	-1.14	2.0	0.4	21.3	-0.73	2.0	0.6	16	LA
XET9BG	17.6 X	19.9	20.7	19.7 *	19.5	-2.16 *	1.9	1.3	19.9	-2.06 *	1.7	0.7	16	XX
XFJGAJ	25.3 *	25.5 *	22.1	24.8 *	24.4	1.82	2.5	1.6	24.4	2.12 *	2.3	1.1	16	LA
XLW3JQ	23.3 L	24.5 L	23.3 L	22.3 L	23.3	0.95	0.0	0.9	23.5	1.33	0.0	1.4	16	LA
Y3994L	22.4	22.5	22.5	22.6	22.5	0.26	1.0	0.1 L	22.6	0.47	1.0	0.3	16	TT
Y79JYL	22.0	21.7	21.8	22.1	21.9	-0.20	0.8	0.2 L	22.2	0.06	1.1	0.3	16	TT
YLQ8CP	23.6	23.4	22.2	26.0 X	23.8	1.34	2.2	1.6	23.3	1.12	2.0	1.1	16	LU
YRWZ8L	21.7	21.7	20.3	21.8	21.4	-0.65	1.7	0.7	21.7	-0.42	1.7	0.6	16	LW
YTLACF	23.0	23.6	22.4	24.0	23.3	0.88	1.8	0.7	23.3	1.07	1.8	0.7	4	LZ
ZKTGJF	21.7	21.3	21.8	22.1	21.7	-0.35	1.7	0.3	21.8	-0.29	1.8	0.4	16	LU
ZW8DNJ	22.1	21.6	23.1	22.3	22.3	0.08	1.6	0.6	22.6	0.46	1.7	0.7	16	LA

Consensus (All Labs) Results

Wk Mean	22.08	22.20	21.89	22.08	Month Mean	22.16	Grand Mean	22.11
Avg SDr	1.58	1.58	1.57	1.51	Avg SDr	1.58	Avg SDr	1.60
SD btwn Labs	1.27	1.51	1.39	1.13	SD btwn Labs	1.24	SD btwn Labs	1.07
Labs Incld	49	50	49	46	SD btwn Wks	1.23	SD btwn Wks	0.99
Labs Excld	1	0	1	3	Labs Incld	50	Labs Incld	50
Labs not rcvd	0	0	0	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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 69 lb Linerboard - 69C2

TAPPI Provisional Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
3EEH38	30.1	30.9	31.6	30.6	30.8	-0.86	1.7	0.6	30.8	-0.93	1.7	0.6	4	LU
4HETY8	32.7 L	35.7 L	34.9 L	35.5 L	34.7	0.78	0.0	1.4	34.3	0.61	0.0	1.4	12	TT
6HNELD	34.2	36.7	37.1	34.0	35.5	1.13	1.1	1.6	34.8	0.79	1.7	1.1	12	LU
6QJBTA	30.3	31.3	28.3	32.5	30.6	-0.95	2.0	1.8	31.5	-0.65	2.0	1.8	11	LW
6ZUDEB	31.2	30.7	30.1	20.8 XL	28.2	-1.96	1.7	4.9 H	31.8	-0.50	1.7	5.7 H	12	LW
7YTY89	32.3	33.4	34.6	34.2	33.6	0.33	1.8	1.0	33.1	0.05	1.8	1.1	8	LW
82ATC9	32.0	31.1	31.2	31.4	31.4	-0.60	1.7	0.4	31.1	-0.79	1.6	0.7	12	LY
9CQWWC	30.7	30.5	31.2	30.4	30.7	-0.91	1.6	0.3	30.9	-0.87	1.6	0.5	12	LY
9TDCZ9	31.9 L	32.2 L	31.9 L	32.4 L	32.1	-0.31	0.0	0.2	32.7	-0.09	0.0	0.9	12	LU
A3VGLD	31.5 L	31.9 L	32.2	32.7 L	32.1	-0.32	0.5	0.5	31.4	-0.69	0.5	1.1	12	LA
BTACDE	33.4 L	34.1 L	32.8 L	33.4 L	33.4	0.25	0.6	0.5	33.2	0.12	0.6	0.9	12	LA
D8YAEZ	30.9	31.3	30.9	30.8	31.0	-0.79	1.5	0.2	31.3	-0.72	1.5	0.6	12	LW
DK9Y7A	30.5	33.0	32.6	32.2	32.1	-0.32	1.6	1.1	32.1	-0.36	1.7	0.7	12	LW
EG4T49	34.6	34.5	35.5	33.7	34.6	0.74	1.9	0.7	34.3	0.57	1.8	1.6	12	LY
EK34Z9	32.5	33.3	33.5	32.2	32.9	0.01	1.7	0.6	32.8	-0.08	1.8	1.0	12	LW
EPYLM2	34.6	34.9	34.3	35.3	34.8	0.83	1.8	0.4	34.7	0.74	1.7	0.7	12	LU
HGC4A4	33.5	35.3	35.7	L NO DATA	34.8	0.84	1.7	1.2	34.9	0.87	1.7	1.2	8	LU
HNTG93	31.9	31.4	31.2	31.7	31.5	-0.55	1.7	0.3	31.4	-0.66	1.7	0.3	12	LY
HXGBP6	31.1	31.2	32.1	29.9	31.1	-0.75	1.4	0.9	30.9	-0.87	1.6	0.6	11	LZ
HZ98DY	30.7 L	29.8 L	29.9 L	28.4 L	29.7	-1.33	0.4	0.9	30.0	-1.29	0.4	0.6	12	LA
J36BHQ	33.1 L	34.8 L	34.8 L	34.8 L	34.4	0.66	0.1	0.9	33.8	0.38	0.1	1.0	9	LA
JGQMU2	31.0 L	29.2 L	30.5 L	30.6 L	30.3	-1.07	0.5	0.8	31.1	-0.80	0.5	1.2	11	LA
JQCR3Z	35.4	35.4	35.4	34.3	35.1	0.96	2.3	0.5	35.5	1.10	3.3	1.0	12	LZ
L7Y2NT	36.2 L	36.1 L	36.7 L	37.4	36.6	1.58	0.7	0.6	37.1	1.83	0.8	1.4	11	BK
LKKGQT	32.2	30.6	31.8	31.2	31.5	-0.58	1.2	0.7	31.5	-0.63	1.3	0.8	12	BK
M8ADVW	32.9	33.4	33.2	32.8	33.1	0.10	1.9	0.3	33.4	0.19	1.8	0.8	12	XX
MZ77FU	31.3	30.5	33.9	31.8	31.9	-0.41	1.8	1.5	30.6	-1.00	1.9	1.5	12	LW
NKABHU	32.8	34.5	34.4	33.6	33.8	0.41	2.3	0.8	35.6	1.17	1.9	1.7	12	LU
NXDWJX	29.8	30.5	29.3	29.4	29.8	-1.30	1.7	0.6	30.1	-1.23	1.5	0.9	12	LY
P8J29T	34.0 L	33.9	34.7	33.5 L	34.0	0.50	1.0	0.5	34.1	0.52	0.9	1.0	12	LA
P8JRNN	38.9 X	38.6 *	38.2 *	38.0 *	38.4	2.36 *	2.2	0.4	38.2	2.28 *	1.9	0.6	12	LA
QTGPDU	35.8	36.4	35.6	36.0	35.9	1.31	2.0	0.3	35.8	1.23	2.1	0.6	12	LW
R4TEQQ	34.7	36.4	36.3	35.8	35.8	1.24	1.4	0.8	34.7	0.77	1.7	1.0	12	LU
RR2TKV	35.1	36.4	35.2	36.8	35.9	1.29	1.2	0.9	36.3	1.45	1.3	1.1	12	LY
RUMWTT	31.3	31.8	30.9	31.5	31.4	-0.62	1.2	0.4	31.3	-0.73	1.3	0.6	12	LW

Report #552

Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 69 lb Linerboard - 69C2

TAPPI Provisional Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
V2W2DN	30.6	30.4	31.5	30.9	30.9	-0.84	1.4	0.5	31.3	-0.73	1.6	0.5	12	LY
V6ULJT	33.7	33.6	34.5	34.6	34.1	0.54	1.7	0.5	32.2	-0.31	1.7	1.5	12	LY
VR97GU	29.7	31.4	30.7	31.1	30.7	-0.89	2.0	0.7	30.9	-0.89	1.9	0.8	12	LU
VXVAAH	30.4	30.9	30.2	31.2	30.7	-0.92	1.4	0.5	30.9	-0.91	1.5	0.7	12	LA
XET9BG	27.0 *	27.5 *	26.8 *	28.4	27.4	-2.29 *	1.5	0.7	27.2	-2.49 *	1.6	1.0	12	XX
XFJGAJ	36.4	37.3	34.2	35.4	35.8	1.25	2.1	1.3	37.4	1.95	2.1	1.6	12	LA
XLW3JQ	35.1 L	34.9 L	34.5 L	36.0 L	35.1	0.96	0.0	0.7	35.8	1.23	0.0	0.9	12	LA
Y3994L	32.9	33.3	33.3	33.0	33.1	0.12	1.0	0.2	33.1	0.07	1.1	0.4	12	TT
Y79JYL	33.1	33.2	33.0	32.8	33.0	0.08	1.0	0.2 L	33.1	0.06	1.1	0.3	12	TT
YLQ8CP	36.4	34.2	35.6	35.3	35.4	1.07	1.5	0.9	35.3	1.01	1.8	1.0	12	LU
YRWZ8L	31.0	31.7	31.2	31.4	31.3	-0.65	1.4	0.3	31.2	-0.75	1.4	0.4	12	LW
YTLACF	35.8	36.8	35.6	36.9	36.3	1.45	1.8	0.7	36.3	1.45	1.8	0.7	4	LZ
ZKTGJF	31.2	30.7	30.5	30.8	30.8	-0.85	1.5	0.3	31.0	-0.84	1.6	0.5	12	LU
ZW8DNJ	31.0	31.8	30.8	31.0	31.2	-0.71	1.7	0.4	31.5	-0.63	1.6	1.1	12	LA

Consensus (All Labs) Results

Wk Mean	32.51	33.04	32.95	32.93	Month Mean	32.84	Grand Mean	32.94
Avg SDr	1.55	1.56	1.46	1.53	Avg SDr	1.53	Avg SDr	1.58
SD btwn Labs	2.09	2.46	2.44	2.37	SD btwn Labs	2.36	SD btwn Labs	2.30
Labs Incld	48	49	49	47	SD btwn Wks	1.04	SD btwn Wks	1.27
Labs Excld	1	0	0	1	Labs Incld	49	Labs Incld	49
Labs not rcvd	0	0	0	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 with 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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 228

Roughness - Stylus Method, 69 lb Linerboard - 69C

TAPPI Provisional Test Method T575

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
6ZUDEB	132.7	-0.30	7.1	144.2	0.70	10.8	4	EV
7YTY89	126.9	-0.67	14.9	137.1	0.11	12.6	4	EV
82ATC9	155.8	1.17	13.6	146.9	0.92	12.1	4	EV
A3VGLD	164.0	1.70	22.1	151.2	1.27	22.9	4	LA
BTACDE	146.6	0.59	22.4	194.6	4.85 X	29.8	4	LA
DK9Y7A	156.2	1.20	11.1	139.9	0.34	11.8	4	EV
HZ98DY	137.7	0.02	11.4	123.0	-1.05	9.8	4	EV
J36BHQ	131.5	-0.37	16.0	137.0	0.10	18.2	4	LA
JGQMU2	128.8	-0.54	11.3	140.3	0.37	14.1	3	LA
JQCR3Z	122.5	-0.94	11.3	122.7	-1.08	12.2	4	LA
L7Y2NT	139.0	0.11	4.0	137.1	0.11	12.4	3	EV
NKABHU	126.5	-0.69	11.1	129.0	-0.56	12.2	3	EV
NXDWJX	160.5	1.47	15.0	155.1	1.60	11.7	3	EV
RR2TKV	104.7	-2.08 *	8.8	109.8	-2.14 *	7.8	4	EV
VR97GU	146.7	0.60	8.0	141.5	0.47	12.3	4	EV
XFJGAJ	118.4	-1.21	12.8	120.2	-1.29	13.3	4	LA
XLW3JQ	130.7	-0.42	15.2	127.3	-0.70	12.2	4	LA
YRWZ8L	143.1	0.37	14.2	145.7	0.82	12.1	4	EV

Consensus (All Labs) Results

Month Mean	137.34	Grand Mean	135.77
Avg SDr	13.59	Avg SDr	13.25
SD btwn Labs	15.71	SD btwn Labs	12.12
Labs Incld	18	Labs Incld	17

Instrument Code List as Reported by the Labs

(EV) - Emveco Microgage Model 210-R

(LA) - L & W Autoline

Report #552

Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 36 lb Linerboard - 36Z

TAPPI Provisional Test Method T569

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
2HZKVL	179.2	0.74	8.2	182.2	0.52	8.3	4	SC
6ZUDEB	245.0	3.79 X	8.7	235.3	2.43 *	11.5	4	SC
A3VGLD	174.8	0.54	9.9	175.7	0.28	14.4	4	HY
JGQMU2	167.6	0.21	3.8	175.7	0.28	11.7	4	TM
JQCR3Z	143.4	-0.91	14.1	147.7	-0.73	11.1	4	TM
MZ77FU	169.6	0.30	7.2	174.1	0.22	5.9	3	TM
NKABHU	132.6	-1.41	10.9	127.5	-1.46	9.8	3	TM
P8J29T	131.8	-1.45	6.4	135.1	-1.18	14.0	4	SC
R4TEQQ	150.4	-0.59	12.7	148.9	-0.69	10.4	3	TM
RGHBTN	176.8	0.63	14.9	172.4	0.16	13.7	3	HZ
VR97GU	147.6	-0.72	6.0	150.2	-0.64	4.9	4	TM
VXD33E	162.0	-0.06	4.9	162.3	-0.20	3.7	4	TM
VXVAAH	192.8	1.37	3.8	186.8	0.68	10.1	4	HY
XET9BG	139.6	-1.09	25.9	135.4	-1.17	21.3	4	SC
YRWZ8L	202.8	1.84	12.8	204.1	1.31	15.5	4	HY
ZKTGJF	176.2	0.61	4.1	173.3	0.19	4.9	4	HY
ZW8DNJ	60.2	-4.77 X	2.4	65.8	-3.69 X	2.1	4	LZ

Consensus (All Labs) Results

Month Mean	163.15	Grand Mean	167.89
Avg SDr	11.24	Avg SDr	11.60
SD btwn Labs	21.60	SD btwn Labs	27.69
Labs Incld	15	Labs Incld	16

Instrument Code List as Reported by the Labs

(HY) - Huygen Digitized Scott Internal Bond Tester

(HZ) - Huygen Internal Bond Tester with AccuPress

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

(SC) - Scott Internal Bond Tester (Manual)

(TM) - TMI Monitor/Internal Bond Tester

Report #552

Containerboard Interlaboratory Testing Program

Analysis 234

COF Inclined Plane (Slide Angle), 36 lb Linerboard - 36Z

TAPPI Official Test Method T815

	Monthly Results			Cumulative Results			
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months
6HNELD	28.8	0.42	1.5	27.7	0.12	1.7	3
6ZUDEB	27.8	0.00	1.6	25.1	-1.14	1.3	4
7YTY89	26.2	-0.69	1.9	25.9	-0.73	1.5	4
82ATC9	31.2	1.44	4.0	29.4	0.93	2.7	3
9J96LA	29.4	0.68	2.9	28.7	0.59	2.8	3
A3VGLD	30.1	0.98	4.2	28.9	0.70	2.4	4
EK34Z9	26.0	-0.77	3.4	28.3	0.40	3.3	4
GZTNU2	28.2	0.17	1.5	28.7	0.59	1.9	4
HGC4A4	29.2	0.59	2.6	29.0	0.71	2.4	4
JGQMU2	30.2	1.02	2.8	29.8	1.09	2.8	4
JQCR3Z	26.4	-0.60	2.3	25.6	-0.87	2.6	4
MZ77FU	28.2	0.18	1.9	29.8	1.11	8.7	3
NKABHU	29.4	0.68	1.0	27.1	-0.18	1.1	3
NXDWJX	23.7	-1.77	0.5	23.7	-1.76	1.1	4
P8J29T	29.4	0.68	1.3	29.6	1.00	1.3	4
R4TEQQ	29.4	0.68	1.5	26.7	-0.37	1.3	3
VR97GU	30.2	1.02	1.9	29.1	0.76	2.2	4
YRWZ8L	26.6	-0.52	1.1	27.2	-0.12	2.2	4
YTLACF	22.4	-2.31 *	1.9	22.4	-2.39 *	1.9	1
ZKTGJF	24.4	-1.45	1.5	25.1	-1.11	1.5	4
ZW8DNJ	26.8	-0.43	0.8	28.9	0.66	1.2	4

Consensus (All Labs) Results

Month Mean	27.81	Grand Mean	27.45
Avg SDr	2.23	Avg SDr	2.76
SD btwn Labs	2.35	SD btwn Labs	2.11
Labs Incld	21	Labs Incld	21

Instrument Code List as Reported by the Labs

(ZZ) - Instruments No Longer Tracked

Report #552

Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 36 lb Linerboard - 36Z

TAPPI Official Test Method T460

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
26CL4J	47.2	-0.89	1.7	47.8	-2.55 X	1.4	4	LA
2HZKVL	51.4	0.33	1.0	50.8	-0.43	1.3	4	LP
4LAK6H	51.4	0.33	1.8	52.4	0.71	2.1	4	XX
6HNELD	42.0	-2.37 *	3.3	42.0	-6.63 X	2.4	3	XX
6ZUDEB	51.9	0.48	2.0	52.0	0.39	2.2	4	HG
82ATC9	52.2	0.58	1.9	51.8	0.25	1.8	4	LP
9J96LA	53.2	0.87	3.3	52.2	0.54	2.8	3	GA
A3VGLD	50.4	0.05	2.3	51.0	-0.32	1.9	4	LA
BTACDE	50.2	-0.02	1.4	50.8	-0.45	2.1	4	LA
EF8DUX	49.1	-0.33	1.8	50.5	-0.65	2.8	3	GG
HNTG93	50.3	0.02	1.3	50.1	-0.94	1.3	4	LP
JGQMU2	50.7	0.14	5.1	50.4	-0.69	3.5	4	LP
JQCR3Z	41.4	-2.56 *	4.3	45.2	-4.39 X	3.3	4	XX
L7Y2NT	54.8	1.33	0.4	54.5	2.14 *	1.5	3	XX
MZ77FU	51.0	0.22	1.6	51.4	-0.03	2.0	3	HG
NKABHU	45.1	-1.48	2.5	44.3	-4.99 X	2.0	3	XX
R4TEQQ	52.2	0.57	2.0	50.0	-0.99	1.9	3	LA
XLW3JQ	53.3	0.89	2.7	52.6	0.81	2.3	4	TL
YF3KHK	50.4	0.05	1.3	51.3	-0.10	1.9	4	XX
YRWZ8L	53.3	0.89	2.4	52.5	0.74	1.9	4	LP
ZKTGJF	51.2	0.28	2.0	52.0	0.44	2.3	4	TP
ZW8DNJ	52.3	0.61	1.5	53.0	1.13	2.0	4	LA

Consensus (All Labs) Results

Month Mean	50.23	Grand Mean	51.42
Avg SDr	2.41	Avg SDr	2.12
SD btwn Labs	3.45	SD btwn Labs	1.43
Labs Incld	22	Labs Incld	19

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

(TP) - Technidyne Profile/ plus Roughness & Porosity

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 240

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM73

TAPPI Official Test Method T809

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26CL4J	64.5	64.0	61.5	63.5	63.4	0.84	2.8	1.3	62.9	0.68	3.0	1.6	16	LC
2QACZB	61.7	61.1	62.1	61.9	61.7	0.10	1.8	0.4	61.7	-0.05	1.8	0.4	16	LC
3EEH38	68.5 *	70.2 X	70.7 X	65.8	68.8	3.27 X	2.8	2.2	68.8	4.19 X	2.8	2.2	4	LC
4KWARC	61.6	60.5	62.0 L	61.3	61.3	-0.07	2.5	0.7	60.9	-0.54	2.3	2.1	16	LZ
4LAK6H	62.4	61.1	63.4	60.8	61.9	0.21	2.7	1.2	61.5	-0.18	2.6	1.0	16	LD
82ATC9	59.9	60.1	60.8	61.8	60.6	-0.37	3.7	0.8	61.1	-0.40	3.2	1.5	16	LZ
89TYAE	62.2	62.6	62.8	62.2	62.4	0.43	1.8	0.3	62.8	0.57	1.9	0.4	15	LD
9G2ZU7	61.7	62.0	62.3	59.5	61.4	-0.04	2.9	1.3	61.6	-0.14	2.8	1.3	16	LD
BACC29	65.0	67.1 *	66.1	66.6	66.2	2.11 *	3.4	0.9	65.6	2.28 *	5.0	3.3 H	16	LC
CZ44V7	61.3	61.7	62.9	62.1	62.0	0.22	2.5	0.7	62.3	0.29	2.6	0.8	16	LD
D8YAEZ	63.6	64.6	64.8	63.1	64.0	1.13	2.3	0.8	66.0	2.50 *	2.6	3.1	16	LC
D9URF2	63.7	64.7	64.1	67.9 *	65.1	1.61	2.8	1.9	64.0	1.33	2.8	1.8	16	EM
EK34Z9	63.6	62.2	63.5	63.6	63.2	0.78	2.5	0.7	62.5	0.43	2.9	1.8	16	LC
EKLN82	62.2 H	62.3	62.2	62.2	62.2	0.35	4.2	0.1 L	62.4	0.37	3.2	0.4	16	LD
ELDQV3	59.3	58.4	60.5	60.5	59.7	-0.80	2.8	1.0	61.0	-0.50	2.3	1.3	16	TD
EPYLM2	60.6	62.4	61.5	63.4	62.0	0.22	2.0	1.2	62.0	0.12	2.0	0.8	16	LD
GEAJAX	63.2 L	62.0 L	63.8	63.4 L	63.1	0.72	1.4	0.8	63.3	0.91	1.4	1.4	16	TD
HGC4A4	58.3	60.0	59.4	64.2	60.5	-0.44	2.7	2.6	61.4	-0.25	2.9	1.8	15	LZ
HP2PF2	62.7	63.7	63.0	65.8	63.8	1.03	2.8	1.4	64.1	1.38	2.9	1.0	16	LD
HXGBP6	56.3	59.8	57.3	57.5	57.7	-1.67	2.5	1.5	61.1	-0.40	2.6	3.9 H	15	LZ
J36BHQ	55.8	60.3	57.7	No Data	57.9	-1.57	2.3	2.3	59.3	-1.46	2.7	3.6 H	12	MB
JMBQXW	56.9	56.1 *	56.4 *	58.7	57.0	-1.98	3.4	1.2	57.4	-2.60 *	3.3	2.1	16	TG
L7Y2NT	65.1	65.7	64.9	66.2	65.5	1.77	3.7	0.6	64.3	1.47	3.8	3.0	16	MB
M8ADVW	59.5	58.6	59.0	59.0	59.0	-1.09	3.0	0.4	60.9	-0.56	3.2	1.9	16	LD
NEMLVY	57.2	63.9 H	64.5	64.3	62.5	0.45	3.6	3.5 H	61.9	0.06	2.9	3.1	16	LC
NFG8PP	65.6	64.4	63.7	64.2	64.5	1.33	3.2	0.8	63.9	1.24	3.5	2.5	16	XX
P8JRNN	57.4	57.2	57.8	57.8	57.6	-1.74	3.7	0.3	58.5	-1.99	3.3	1.5	16	LD
PDPU3P	58.4	57.1	58.1	52.2 X	56.5	-2.22 *	2.4	2.9	60.8	-0.59	2.3	3.3 H	16	LC
Q3HC6R	58.2	61.5	60.4	60.1	60.1	-0.63	3.6	1.4	61.1	-0.39	3.5	1.7	8	LZ
QTGPDU	63.5	60.0	61.5	63.9 H	62.2	0.33	4.2	1.8	61.9	0.05	3.7	2.1	16	LC
R4TEQQ	59.3	62.6	62.5	65.4	62.5	0.43	3.8	2.5	60.8	-0.59	3.9	2.5	12	LC
RGHBTN	71.1 X	68.8 X	72.8 X	71.4 X	71.0	4.24 X	4.4	1.7	69.1	4.34 X	3.9	2.4	16	LC
T9MVGP	12.7 XL	No Data	No Data	No Data	12.7	-21.68 X	0.8	0.0 L	23.7	-22.65X	4.1	11.8 H	9	TX
U7AHCT	62.3	61.8	61.5	61.9	61.9	0.18	2.7	0.3	62.0	0.12	2.8	0.4	16	LD
UFZ4HQ	59.8	60.2	60.7	60.9	60.4	-0.49	2.3	0.5	60.7	-0.65	2.4	1.2	16	EM

Report #552

Containerboard Interlaboratory Testing Program

Analysis 240

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM73

TAPPI Official Test Method T809

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SDr	SD Wks	Cumulative Results Mean	CPV	SDr	SD Wks	Wks	Inst
V4X3HR	63.0 L	62.3	61.8	62.0	62.3	0.36	2.5	0.5	62.0	0.14	2.5	0.4	16	LC
V6ULJT	61.2	60.8	60.5	65.6	62.0	0.25	2.9	2.4	62.0	0.12	3.1	1.7	16	LD
V9C3EJ	56.1	60.9 H	63.6	58.2	59.7	-0.79	5.0	3.3 H	63.5	1.04	4.6	3.5 H	16	MB
VR97GU	58.6	56.5 *	56.8 *	58.3	57.6	-1.74	3.8	1.1	58.7	-1.84	2.8	1.1	16	LD
VXVAAH	60.7	58.7	60.2	59.5	59.8	-0.75	3.0	0.9	59.9	-1.14	2.5	1.9	16	LC
XET9BG	57.6	61.0	58.8	58.7 L	59.0	-1.09	2.9	1.4	60.2	-0.96	3.1	1.8	16	LC
XVKT6H	62.9	62.5	64.0	61.2	62.6	0.52	3.2	1.2	62.5	0.45	3.2	1.2	16	LC
Y3994L	61.4 H	62.5	64.2 H	62.3	62.6	0.49	5.5	1.2	61.1	-0.39	4.8	1.3	16	TG
Y79JYL	62.9	62.7	63.6	62.8	63.0	0.68	3.5	0.4	62.5	0.40	2.9	1.0	16	TH
YRWZ8L	61.4	64.6	62.7 H	61.5	62.5	0.47	4.2	1.5	61.9	0.04	4.1	1.2	12	LD
YTLACF	59.9	61.5	61.2	62.1	61.2	-0.14	2.7	1.0	61.2	-0.38	2.7	1.0	4	LC
ZKTGJF	61.6	61.3	62.7	62.1	61.9	0.20	3.5	0.7	61.2	-0.38	3.3	1.2	16	LC
ZW8DNJ	65.1	64.6	59.7	60.0	62.3	0.38	2.9	2.9	62.4	0.37	2.9	2.9	16	LD

Consensus (All Labs) Results

Wk Mean	61.17	61.55	61.60	62.13	Month Mean	61.47	Grand Mean	61.79
Avg SDr	3.38	3.04	3.19	3.09	Avg SDr	3.17	Avg SDr	3.09
SD btwn Labs	2.83	2.40	2.35	2.55	SD btwn Labs	2.25	SD btwn Labs	1.68
Labs Incld	46	45	45	44	SD btwn Wks	1.50	SD btwn Wks	1.98
Labs Excld	2	2	2	2	Labs Incld	45	Labs Incld	45
Labs not rcvd	0	1	1	2				

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200 Series

(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

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

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

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

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 250

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

TAPPI Official Method T824

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SDr	SD Wks	Cumulative Results Mean	CPV	SDr	SD Wks	Wks	Inst
89TYAE	72.6	72.8	73.0	73.2	72.9	-0.56	1.5	0.3 L	73.0	-0.42	1.8	0.4 L	15	LD
D8YAEZ	72.6	75.9	75.0	74.9	74.6	0.07	2.8	1.4	73.4	-0.26	2.7	3.3	16	LC
EK34Z9	78.4	78.5	75.5	76.4	77.2	1.03	1.9	1.5	75.4	0.52	2.4	2.4	16	XX
EPYLM2	69.8	71.8	71.7	73.0	71.6	-1.03	1.7	1.3	71.6	-1.00	1.7	0.9	16	LD
GEAJAX	71.9 L	74.7	72.2	73.5 L	73.1	-0.49	1.6	1.3	74.1	0.01	1.6	1.8	16	TD
HXGBP6	76.4	69.9 H	78.1	76.1 H	75.1	0.26	4.2	3.6	74.4	0.12	3.9	4.0	15	LZ
NEMLVY	72.8	70.5	72.6	77.1	73.3	-0.42	2.3	2.8	72.2	-0.75	2.8	3.8	16	LZ
NFG8PP	61.1 *H	72.9	70.6 H	70.2	68.7	-2.09 *	4.2	5.2 H	69.2	-1.95	4.8	4.6 H	16	TU
V9C3EJ	65.0	62.8 X	62.0 X	64.0 X	63.4	-4.02 X	2.4	1.3	64.5	-3.85 X	2.9	1.8	16	MB
XVKT6H	75.5	75.3	79.9	77.6	77.1	0.98	2.7	2.2	77.1	1.21	2.2	1.9	16	LC
YF3KHK	75.0	74.0	74.6	73.6	74.3	-0.04	1.5	0.6	74.1	0.02	1.4	0.5 L	16	XX
ZKTGJF	78.4	78.8	76.4	79.4	78.2	1.41	2.4	1.3	78.5	1.76	2.5	1.5	16	LC
ZW8DNJ	76.4	76.5	78.3 H	76.1	76.8	0.88	2.9	1.0	75.9	0.73	2.4	1.9	16	LD

Consensus (All Labs) Results

Wk Mean	72.76	74.29	74.82	75.08	Month Mean	74.40	Grand Mean	74.07
Avg SDr	2.35	3.11	2.77	2.39	Avg SDr	2.65	Avg SDr	2.69
SD btwn Labs	5.08	2.89	2.92	2.50	SD btwn Labs	2.73	SD btwn Labs	2.49
Labs Incld	13	12	12	12	SD btwn Wks	2.30	SD btwn Wks	2.61
Labs Excld	0	1	1	1	Labs Incld	12	Labs Incld	12
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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM73

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26CL4J	46.9	48.3	46.7	47.4	47.3	1.26	2.5	0.7	46.9	1.09	2.5	0.9	16	LD
2QACZB	45.2 L	45.4 L	45.8 L	45.5	45.4	0.70	1.2	0.3 L	45.7	0.75	1.3	0.4	16	LC
4LAK6H	42.3	41.9	43.0	43.9	42.8	-0.09	3.5	0.9	42.0	-0.25	3.7	1.0	16	LD
9G2ZU7	44.7	43.9	45.0	44.3	44.5	0.41	2.2	0.5	44.8	0.52	2.8	1.6	16	LZ
CGNUU7	43.6	40.3	41.4	40.7	41.5	-0.48	2.0	1.4	41.5	-0.38	2.4	1.6	16	LZ
CZ44V7	48.0 L	48.1	47.1	46.7 L	47.5	1.30	1.8	0.7	47.8	1.33	1.9	0.6	16	LD
EK34Z9	44.1	40.7	44.7	42.9	43.1	-0.01	2.9	1.8	40.8	-0.59	2.7	2.3	16	LC
EKLN82	43.3	43.7	43.6	43.2	43.4	0.09	2.5	0.2 L	43.9	0.26	2.3	0.9	16	LD
HP2PF2	46.8	45.4	44.8	46.0	45.7	0.79	2.1	0.8	46.1	0.86	2.2	0.7	16	LD
JMBQXW	35.2 *	37.3	40.5	40.9	38.5	-1.39	2.6	2.7	37.7	-1.44	2.6	1.9	16	TH
PDPU3P	40.5	40.8	41.0	40.1	40.6	-0.75	2.8	0.4	40.7	-0.61	2.1	0.9	16	LC
R6PU4M	44.5 L	44.7 L	43.9 L	44.5	44.4	0.39	1.0	0.3	45.1	0.60	1.0	0.9	16	WK
RGHBTN	44.9	46.4	45.2	44.6	45.3	0.64	2.4	0.8	46.7	1.04	2.9	4.3 H	16	LD
RHDUUP	42.5	44.4	42.7	43.8	43.3	0.06	2.3	0.9	43.2	0.08	2.2	0.6	16	TH
T9MVGP	39.4	40.1	36.6 *H	28.7 XH	36.2	-2.07 *	4.2	5.2 H	34.1	-2.42 *	4.6	4.1 H	12	EM
UFZ4HQ	45.5	41.0	44.6	40.4	42.9	-0.08	2.7	2.6	41.3	-0.44	2.1	1.7	16	LC
V9C3EJ	34.3 *	34.1 *	36.4 *	35.2 X	35.0	-2.43 *	2.8	1.1	36.4	-1.79	2.5	1.6	16	MB
YTLACF	43.9	43.9	46.2	46.6	45.1	0.61	2.4	1.5	45.1	0.61	2.4	1.5	4	LC
ZKTGJF	45.7	43.6	45.7	46.3	45.3	0.67	2.8	1.2	44.6	0.47	2.9	0.9	16	LC
ZW8DNJ	44.1	44.6	44.8	44.1	44.4	0.38	3.0	0.4	44.1	0.33	2.8	1.1	16	LD

Consensus (All Labs) Results

Wk Mean	43.26	42.93	43.48	43.99	Month Mean	43.11	Grand Mean	42.92
Avg SDr	2.65	2.58	2.39	2.47	Avg SDr	2.56	Avg SDr	2.61
SD btwn Labs	3.56	3.48	2.98	2.28	SD btwn Labs	3.34	SD btwn Labs	3.66
Labs Incld	20	20	20	18	SD btwn Wks	1.67	SD btwn Wks	1.80
Labs Excld	0	0	0	2	Labs Incld	20	Labs Incld	20
Labs not rcvd	0	0	0	0				

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

Report #552

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM73

TAPPI Provisional Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26CL4J	16.4	15.9	15.6	16.9 *	16.2	1.80	0.8	0.6	16.0	1.77	0.4	0.4	16	LA
2QACZB	15.2	15.1	15.2	15.2	15.2	0.21	0.8	0.0 L	15.4	0.72	0.7	0.3	16	XX
4KWARC	14.9	15.1	14.7	14.7	14.8	-0.33	1.3	0.2	14.8	-0.25	1.2	0.3	16	LW
82ATC9	14.4	14.5	14.5	14.0	14.4	-1.05	1.1	0.3	14.6	-0.66	1.1	0.3	16	LB
89TYAE	14.7 L	14.4	14.4	14.8 L	14.6	-0.73	0.6	0.2	14.3	-1.20	0.7	0.5	15	LA
CGNUU7	13.4 *	14.6	14.2	14.3	14.1	-1.42	1.1	0.5	14.2	-1.36	1.1	0.5	16	LA
CZ44V7	15.8	15.6	15.4	15.7	15.6	0.87	1.2	0.2	15.4	0.81	1.0	0.2	16	LA
EG4T49	15.4	15.5 L	14.8	14.6	15.0	0.01	0.8	0.5	15.0	0.07	1.3	0.7 H	16	LB
HGC4A4	13.8	13.3 *L	13.8	13.9	13.7	-2.04 *	1.6	0.3	13.7	-2.20 *	1.2	0.5	15	LU
J36BHQ	14.3 L	14.3 L	13.7 L	14.3 L	14.1	-1.40	0.0	0.3	14.0	-1.68	0.0	0.4	14	LA
L7Y2NT	14.8 L	16.4 L	16.3 L	16.4 L	16.0	1.43	0.1	0.8 H	15.4	0.82	0.2	0.7 H	15	BK
Q3HC6R	14.8	14.6	15.0	15.1	14.9	-0.23	1.1	0.2	14.9	-0.10	1.1	0.7 H	8	LA
QTGPDU	16.0	15.7	15.7	16.3	15.9	1.37	1.2	0.3	15.7	1.25	1.2	0.4	16	LW
T9MVGP	15.4 L	15.4 L	16.0 L	14.8 L	15.4	0.61	0.0	0.5	15.0	0.02	0.0	0.5	12	TS
U7AHCT	14.9	15.0	14.9	15.1	15.0	-0.08	1.1	0.1	15.0	0.15	1.2	0.2	16	LB
UFZ4HQ	14.7	14.8	14.5	14.8	14.7	-0.57	1.3	0.2	14.8	-0.21	1.2	0.2	16	LB
V4X3HR	15.1	15.1	14.9	14.9	15.0	-0.08	1.1	0.1	14.9	-0.01	1.2	0.1	16	LB
Y79JYL	15.0	15.3	14.9	14.9	15.0	-0.02	0.6	0.2	15.0	0.00	0.8	0.2	16	TT
YTLACF	16.1	15.6	15.4	15.6	15.7	0.98	1.0	0.3	15.7	1.25	1.0	0.3	4	LZ
ZKTGJF	15.3	14.3	15.9	14.7	15.0	0.01	1.1	0.7	15.2	0.39	1.1	0.4	16	LU
ZW8DNJ	15.8	15.5	14.9	15.7	15.5	0.65	1.1	0.4	15.2	0.43	1.1	0.4	16	LA

Consensus (All Labs) Results

Wk Mean	15.05	15.04	14.99	15.08	Month Mean	15.04	Grand Mean	14.95
Avg SDr	0.96	0.98	1.00	1.02	Avg SDr	1.00	Avg SDr	0.98
SD btwn Labs	0.74	0.68	0.69	0.78	SD btwn Labs	0.65	SD btwn Labs	0.58
Labs Incld	21	21	21	21	SD btwn Wks	0.37	SD btwn Wks	0.43
Labs Excld	0	0	0	0	Labs Incld	21	Labs Incld	21
Labs not rcvd	0	0	0	0				

Report #552

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM73

TAPPI Provisional Test Method T826

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

(LB) - L & W Model 152

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

(TS) - TMI Monitor/STFI Compression Tester, 17-33

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

(LA) - L & W Autoline

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

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

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