Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #549 (F) - June 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
207	36Z3	Mullen Burst of Linerboard, 36 lb Linerboard
215	42D1	Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard
217	36Z3	Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard
223	42D1	STFI of Linerboard, 42 lb Linerboard
225	36Z3	STFI of Linerboard, 36 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
3BT3HJ	821.0	-0.17	79.5	843.4	-0.03	64.1	4	ER
3YX2W3	891.7	0.78	21.3	895.8	0.93	29.7	4	TE
6BHBFD	701.2	-1.80	62.7	732.0	-2.07 *	45.4	3	LG
C7NMZ8	747.6	-1.17	36.2	778.3	-1.22	43.5	4	LM
CCQV7Z	786.5	-0.64	39.3	825.7	-0.35	51.4	4	LM
DEVJLP	832.9	-0.01	45.2	865.4	0.37	40.5	4	LG
FGBVDQ	896.0	0.84	25.8	918.8	1.35	48.2	4	LH
GDT2QQ	731.4	-1.39	54.2	804.4	-0.74	38.3	4	LL
JZWT39	827.8	-0.08	30.9	818.2	-0.49	39.9	4	LG
K2KQMJ	858.1	0.33	28.3	875.2	0.55	31.3	3	LS
K4DCPM	856.4	0.31	76.2	852.8	0.14	75.7	4	LS
MZHPMB	945.0	1.51	54.9	919.6	1.36	51.2	4	EX
PBZQHB	827.4	-0.09	48.0	849.9	0.09	69.8	4	ER
QXJN8W	783.4	-0.68	34.2	781.9	-1.16	56.2	4	ES
RX2YKV	777.4	-0.76	19.6	810.1	-0.64	57.9	4	ER
TNLHK9	778.9	-0.74	36.8	807.2	-0.69	34.4	4	ET
X939TF	930.1	1.30	31.6	898.0	0.97	39.5	4	ER
Z3P8M3	974.2	1.90	12.7	941.5	1.76	26.8	4	TB
ZKKZ9Z	875.5	0.56	80.7	837.9	-0.13	68.9	4	EX

Consensus (All Labs) Results

Month Mean	833.81	Grand Mean	845.04
Avg SDr	47.39	Avg SDr	50.03
SD btwn Labs	73.84	SD btwn Labs	54.64
Labs Incld	19	Labs Incld	19

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	821.49	73.09	12.32	5
Clip sealing	811.28	59.17	22.53	11
Tape sealing	936.96	41.85	103.15	3

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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

(ES) - Emerson 8510

(ET) - Emerson 7200

(EX) - Emerson Apparatus (Model not specified)

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

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

(LL) - Lansmont 76-5K

(LM) - Lansmont 122-15k

(LS) - Lansmont Squeezer

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

(TE) - Testometric M500 - 25 KN

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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
CLEPHW	57.4	0.23	3.2	57.4	0.29	3.2	1	TM
FGBVDQ	60.9	1.42	1.9	55.2	-0.74	1.8	4	TC
JZWT39	61.0	1.45	4.4	60.4	1.66	4.2	4	LC
K2KQMJ	52.9	-1.31	3.1	53.2	-1.64	2.6	3	EM
K4DCPM	57.7	0.33	1.6	57.8	0.47	2.0	4	LC
L24KAF	56.3	-0.17	0.4	57.6	0.40	0.9	3	WK
MKAG7G	54.4	-0.82	3.0	54.4	-1.10	3.0	1	LC
PBZQHB	56.7	0.00	2.8	58.0	0.57	2.2	4	EN
RQZRXF	53.4	-1.14	1.8	56.9	0.08	2.3	4	XX

Consensus (All Labs) Results

Month Mean	56.73	Grand Mean	56.76
Avg SDr	2.70	Avg SDr	2.63
SD btwn Labs	2.91	SD btwn Labs	2.19
Labs Incld	9	Labs Incld	9

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200 Series

(LC) - L&W Crush Tester 48

(TM) - TMI/Hinde & Dausch

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

(EN) - Emerson 2200

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

(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
2YHHC6	55.3	-1.41	1.9	58.1	-0.74	2.0	3	TB
3BT3HJ	58.2	-0.43	3.0	58.2	-0.72	3.8	4	EN
3KUQAF	63.0	1.20	1.5	61.1	0.53	2.8	4	LD
4P47GJ	57.0	-0.83	4.3	59.3	-0.24	2.9	4	LD
826XDZ	57.8	-0.58	1.6	58.3	-0.68	1.7	3	EX
AH7MJV	58.5	-0.34	1.3	60.3	0.20	1.8	4	LC
C7NMZ8	55.8	-1.25	1.2	56.7	-1.35	1.3	4	EM
CCQV7Z	54.5	-1.69	1.3	58.7	-0.50	1.7	4	TC
CLEPHW	58.8	-0.24	2.1	59.7	-0.05	1.7	4	TM
DEVJLP	55.6	-1.31	3.6	56.3	-1.50	3.7	4	EM
DF39FL	65.4	2.03 *	2.0	63.3	1.44	2.1	4	LD
E7Y9NZ	55.9	-1.20	3.5	59.4	-0.19	2.5	4	LC
EVCBEL	69.6	3.44 X	2.8	64.3	1.89	2.2	4	TX
FGBVDQ	62.5	1.03	1.1	60.9	0.42	0.9	4	TC
GDT2QQ	59.0	-0.15	0.9	59.7	-0.08	1.1	4	BU
H8HJQN	64.4	1.67	2.2	62.9	1.30	2.8	2	TK
JZWT39	62.4	1.00	2.9	64.0	1.75	2.6	4	LC
K2KQMJ	57.8	-0.56	3.3	56.4	-1.49	2.2	3	EM
K4DCPM	59.4	-0.02	1.7	59.2	-0.27	2.2	4	LC
LCYVHM	59.0	-0.16	2.4	59.2	-0.30	3.4	4	TD
MKAG7G	61.7	0.76	1.7	61.7	0.78	1.7	1	LC
MZHPMB	65.7	2.11 *	2.7	60.9	0.46	2.4	4	CT
NQ68HG	62.1	0.90	0.8	64.2	1.85	1.3	4	LC
PBZQHB	59.2	-0.09	2.6	60.3	0.20	1.9	4	EN
QQ96CD	58.9	-0.20	2.8	59.7	-0.06	2.4	4	TB
QXJN8W	58.2	-0.44	2.1	57.8	-0.88	4.0	4	LD
RX2YKV	58.1	-0.47	0.9	59.0	-0.35	2.1	4	LD
TNLHK9	61.0	0.52	1.3	63.9	1.71	1.4	2	TD
X89M3A	58.7	-0.24	2.1	58.5	-0.57	1.7	4	TG
X939TF	56.4	-1.04	1.3	55.7	-1.76	1.9	4	EM
XVRZTA	60.9	0.51	1.6	58.0	-0.78	2.8	4	LD
Z3P8M3	62.8	1.12	0.9	61.2	0.55	1.1	4	LC
ZKKZ9Z	58.8	-0.21	1.3	58.5	-0.59	1.8	4	TL

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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	59.45	Grand Mean	59.87
Avg SDr	2.19	Avg SDr	2.31
SD btwn Labs	2.94	SD btwn Labs	2.36
Labs Incld	32	Labs Incld	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)

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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
2A68H7	106.0	106.3	114.9	109.8	109.3	0.17	9.6	4.1	112.6	1.04	11.8	4.1	12	LJ
3GFVTJ	115.6	116.0	115.8	117.3	116.2	2.03 *	9.8	0.8	112.1	0.88	9.1	4.6	8	LZ
3KUQAF	102.2	105.1	103.1	104.0	103.6	-1.33	7.7	1.2	103.9	-1.41	7.4	2.6	12	LA
43QHL2	115.1	111.3	109.4	111.7	111.9	0.87	11.7	2.4	110.7	0.49	11.5	3.3	12	TP
49HKXE	114.1	111.2	111.6	109.8	111.7	0.81	10.3	1.8	112.8	1.10	11.0	2.0	11	LA
63AJDA	106.7 L	105.9	111.6	112.4	109.2	0.15	8.1	3.3	107.8	-0.32	9.1	2.6	11	LC
6BHBFD	108.4	112.1	108.5	118.0	111.8	0.84	10.0	4.5	111.1	0.61	9.8	3.4	7	AH
7TGNQZ	106.2	105.8	106.0	107.5	106.4	-0.60	8.9	0.8	106.6	-0.66	8.9	2.2	12	LJ
7UQXGC	106.5	109.3	101.6	107.1	106.1	-0.66	11.6	3.2	108.6	-0.09	11.3	3.9	12	AH
9QNEU4	109.2 L	108.7 L	110.9	114.1	110.7	0.56	8.0	2.4	109.1	0.05	6.2	2.1	12	LA
AEN3Y2	109.0	109.2	104.6	108.8	107.9	-0.19	11.0	2.2	107.6	-0.38	11.0	2.7	9	LC
BD9ADX	123.3 X	124.7 X	124.1 XL	123.9 *L	124.0	4.11 X	5.0	0.6 L	123.7	4.14 X	6.4	2.5	12	AH
C4YDRR	108.3	113.3	113.5	114.6	112.4	1.02	10.6	2.8	111.3	0.68	10.3	3.3	12	LC
C7NMZ8	106.4	108.6	105.0	108.1	107.0	-0.42	8.1	1.6	104.7	-1.18	7.9	2.3	12	AH
CEF6EF	120.4 X	100.0 *	108.7	108.8	109.5	0.23	10.7	8.4 H	106.8	-0.59	10.0	5.3	12	LA
DC8AA4	107.8	102.0	101.3	100.2	102.8	-1.54	12.9	3.4	103.8	-1.45	11.8	3.5	12	LC
DPW9Z7	113.7	109.9	110.8	114.3	112.2	0.95	14.4	2.1	111.4	0.69	13.2	3.4	12	AX
E7Y9NZ	104.7	106.5	103.3	101.9	104.1	-1.20	10.9	2.0	104.0	-1.38	11.0	3.6	12	LA
EKVML9	106.1	108.9	103.7	107.0	106.4	-0.58	10.1	2.2	108.5	-0.11	10.8	2.6	10	AH
FGBVDQ	108.0	117.5 *	114.0	112.8	113.1	1.19	12.3	3.9	112.4	0.98	12.5	3.0	12	AA
GANL4K	87.7 XL	107.2	112.3	107.5	103.7	-1.32	9.1	10.9 H	104.1	-1.34	9.1	6.4 H	12	AX
GD8G37	103.7	105.2	102.5	92.7 X	101.0	-2.03 *	11.8	5.7	102.7	-1.74	10.8	4.3	12	LC
GGBEDY	105.4	93.4 XH	102.7	102.5	101.0	-2.03 *	18.8	5.2	104.6	-1.21	14.6	4.1	12	LA
GL3J74	113.2	108.6	118.1 *	114.0	113.5	1.30	9.3	3.9	115.9	1.97	10.3	4.0	12	LA
H98PAZ	104.0	106.5	104.4	109.3	106.1	-0.68	10.2	2.4	106.3	-0.73	10.8	2.3	12	LC
JFLVLW	111.9	109.4	107.9	109.8	109.7	0.30	11.1	1.6	111.3	0.66	11.5	3.8	12	LA
JGLXB2	108.0	104.5	104.8	100.3	104.4	-1.12	11.7	3.2	105.4	-1.00	11.3	2.5	12	TB
JZWT39	110.9	111.4	116.3	116.7	113.8	1.39	13.3	3.1	113.8	1.36	12.5	2.0	12	LZ
K4DCPM	105.9	104.4	103.0	107.0	105.1	-0.94	10.2	1.7	104.5	-1.25	9.3	1.9	12	AH
KFJPG9	110.8	106.0	112.7	109.2	109.7	0.28	9.3	2.9	110.5	0.44	10.3	2.6	12	LA
KHV6B9	107.2	114.9	109.2	106.7 L	109.5	0.25	6.7	3.8	107.0	-0.54	8.2	3.6	12	LB
LQHHPY	105.7	106.6	108.8	107.7 L	107.2	-0.37	9.7	1.3	106.3	-0.75	10.0	1.4	12	LA
LQZQET	101.4	101.0	106.0	98.3 *	101.7	-1.85	11.0	3.2	106.9	-0.58	9.1	9.3 H	12	LC
LZLXDH	108.7	107.7	107.9	108.3	108.1	-0.12	6.1	0.5 L	106.0	-0.83	6.1	2.6	12	LJ
MZHPMB	110.3	107.7 H	110.9 H	110.8	109.9	0.35	16.5	1.5	109.6	0.18	15.8	2.5	12	XX

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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
Q94V7L	110.7	110.9	122.9 X	110.8	113.8	1.40	12.5	6.0	112.2	0.92	10.6	4.4	12	LZ
QQ96CD	108.0	110.2	106.1	107.6	108.0	-0.17	11.2	1.7	107.8	-0.31	11.8	3.9	12	LA
QXJN8W	112.2	111.6	106.0	116.3	111.5	0.78	11.8	4.2	110.2	0.37	12.2	3.4	12	LA
RX2YKV	111.8	105.5	116.9	110.5	111.2	0.69	9.9	4.7	110.7	0.48	10.4	3.3	12	AH
T4ZQKC	102.7	109.5	103.6	105.2	105.3	-0.89	9.4	3.0	105.9	-0.86	10.0	3.6	12	LC
TTJ4BC	111.4	111.8	108.4	106.8	109.6	0.27	8.3	2.4	107.6	-0.37	7.9	2.6	12	AH
VP934A	122.6 X	127.0 X	125.8 X	122.1 *	124.4	4.21 X	8.3	2.4	116.9	2.24 *	8.2	9.5 H	12	RE
WD33DC	114.8 H	113.3	109.5	111.6	112.3	0.99	15.4	2.3	109.7	0.22	12.1	3.8	12	LC
X3A7PF	114.4	111.7	113.3	108.2	111.9	0.88	12.6	2.7	114.6	1.59	12.5	3.4	12	TB
XJKUZV	108.9	110.2	112.8	113.5	111.4	0.74	11.7	2.2	113.5	1.29	9.3	2.6	12	LC
XVRZTA	113.7	109.4	107.3	110.7	110.3	0.45	9.3	2.7	113.0	1.15	8.9	3.8	12	AA
ZJBUUC	105.8	102.2	106.1	102.7	104.2	-1.18	11.4	2.0	105.3	-1.03	11.4	2.7	10	LA
ZPYFXR	112.5	113.0	105.0	108.7	109.8	0.32	9.5	3.7	111.4	0.70	8.6	3.4	12	TB

Consensus (All Labs) Results

Wk Mean	108.82	108.62	108.47	109.67	Month Mean	108.60	Grand Mean	108.93
Avg SDr	11.13	10.49	10.89	10.61	Avg SDr	11.01	Avg SDr	10.56
SD btwn Labs	3.72	3.82	4.50	5.29	SD btwn Labs	3.74	SD btwn Labs	3.56
Labs Incld	44	45	45	47	SD btwn Wks	3.61	SD btwn Wks	3.82
Labs Excld	4	3	3	1	Labs Incld	46	Labs Incld	47
Labs not rcvd	0	0	0	0				

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 #549

Containerboard Interlaboratory Testing Program

Analysis 207

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

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
2A68H7	76.8	76.7	77.0	75.8	76.6	-0.75	4.6	0.5 L	78.3	-0.07	4.1	1.9	12	LJ
3GFVTJ	77.5	81.6	80.9	82.6	80.7	0.48	5.0	2.2	79.2	0.26	4.9	2.3	12	LZ
3KUQAF	71.3 *	78.6	75.4	76.8	75.5	-1.06	3.9	3.1	73.7	-1.75	3.8	2.3	12	LA
43QHL2	77.5	77.9	76.4	74.1	76.5	-0.78	4.5	1.7	76.1	-0.89	4.0	1.5	12	TP
49HKXE	84.8	78.9	83.1	83.9	82.7	1.07	5.9	2.6	82.6	1.47	5.5	2.2	11	LA
63AJDA	82.0	77.3	76.0	81.3	79.2	0.02	4.4	3.0	78.7	0.08	4.7	2.0	11	LC
6BHBFD	81.3	80.3	107.6 XH	80.7	87.5	2.51 *	6.7	13.4 H	82.0	1.26	5.8	8.5 H	12	AH
7TGNQZ	79.0	79.1	78.2	77.4	78.4	-0.20	4.6	0.8	79.2	0.27	4.8	2.5	8	LJ
7UQXGC	81.1	78.1	77.1	77.1	78.4	-0.22	4.2	1.9	79.3	0.30	5.3	2.1	12	AH
9QNEU4	79.3	80.2	83.6	83.0	81.5	0.73	4.3	2.1	80.4	0.70	4.0	2.2	12	LA
AEN3Y2	75.5	76.2	79.0	76.8	76.9	-0.66	5.3	1.5	78.2	-0.10	5.1	2.2	9	LC
BD9ADX	90.1 *	86.1 *	87.8 *	86.4 *L	87.6	2.55 *	3.2	1.8	88.5	3.64 X	3.7	2.3	12	AH
C4YDRR	86.6	86.2 *	84.9	80.3	84.5	1.61	4.9	2.9	84.2	2.08 *	4.4	2.2	12	LC
C7NMZ8	74.9	76.3	78.3	74.4	76.0	-0.93	3.6	1.8	77.0	-0.55	3.4	1.3	12	AH
CEF6EF	81.0	76.8	76.2	75.1	77.3	-0.54	5.4	2.6	76.7	-0.66	5.2	1.8	12	LA
DC8AA4	74.9	73.2	72.2 *	75.1	73.9	-1.56	6.0	1.4	74.6	-1.43	5.6	1.5	12	LC
DPW9Z7	77.5	75.4	76.9	72.2	75.5	-1.06	4.7	2.3	75.8	-1.00	4.8	1.7	12	AX
E7Y9NZ	74.1	72.0	73.7	75.1	73.7	-1.60	4.9	1.3	74.9	-1.30	5.6	2.4	12	LA
EKVML9	76.8	75.1	76.3	74.4	75.7	-1.02	5.3	1.1	76.0	-0.91	5.4	2.3	10	AH
FGBVDQ	82.3	81.8	78.0	80.0	80.5	0.43	5.3	1.9	82.5	1.46	5.8	2.6	12	AA
GANL4K	84.4	77.9	80.8	81.0	81.0	0.58	4.8	2.7	76.8	-0.62	4.5	4.7	12	AX
GD8G37	74.7	75.8	78.5	72.0	75.2	-1.15	5.2	2.7	75.0	-1.28	4.9	1.9	12	LC
GGBEDY	77.1	75.5	78.9	78.8	77.6	-0.44	5.2	1.6	76.1	-0.89	5.2	2.2	12	LA
GL3J74	81.0	80.2	81.7	78.9	80.5	0.41	5.6	1.2	82.0	1.27	5.0	2.1	12	LA
H98PAZ	74.1	80.0	77.9	78.8	77.7	-0.41	4.8	2.6	76.7	-0.65	4.7	2.2	12	LC
JFLVLW	81.8	80.7	81.2	80.7	81.1	0.60	5.0	0.5 L	79.9	0.51	5.0	1.2	12	LA
JGLXB2	74.9	74.1	78.1	76.8	76.0	-0.92	5.2	1.8	75.9	-0.93	5.1	2.2	12	TB
JZWT39	81.4	78.8	84.7	79.2	81.0	0.59	5.6	2.7	81.7	1.17	5.5	2.2	12	LZ
K4DCPM	77.4	77.1	75.2	74.0	75.9	-0.94	5.9	1.6	74.6	-1.42	5.2	2.1	12	AH
KFJPG9	78.6	79.2	81.0	75.5	78.6	-0.15	6.0	2.3	78.6	0.04	6.2	1.8	12	LA
KHV6B9	75.8	75.8	73.1 L	74.5	74.8	-1.28	2.5	1.3	76.4	-0.78	2.9	1.4	12	LB
LQHHPY	78.1	79.8	79.3	80.4	79.4	0.09	5.0	1.0	79.2	0.24	5.0	1.1	12	LA
LQZQET	75.1	73.8	78.4	74.3	75.4	-1.08	5.4	2.1	75.9	-0.95	5.3	2.2	12	LC
LZLXDH	80.3 L	79.2	79.9	79.9	79.9	0.24	3.1	0.4 L	80.3	0.66	3.2	0.8	12	LJ
MZHPMB	64.1 X	69.7 *	64.1 X	70.1 *H	67.0	-3.60 X	6.9	3.4	69.4	-3.32 X	7.1	3.6	12	XX

Report #549

Containerboard Interlaboratory Testing Program

Analysis 207

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

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
Q94V7L	80.2	78.0	80.6	79.1	79.5	0.12	5.4	1.2	79.0	0.17	5.1	1.3	12	LZ
QQ96CD	74.8	77.0	76.7	75.1	75.9	-0.95	4.2	1.1	75.1	-1.23	5.0	2.6	12	LA
QXJN8W	79.7	81.5	79.4	78.3	79.7	0.19	4.6	1.3	79.9	0.52	5.0	1.4	12	LA
RX2YKV	83.3	80.7	81.6	81.6	81.8	0.81	3.8	1.1	76.9	-0.59	4.7	6.2 H	12	AH
T4ZQKC	75.5	73.8	77.3	77.5	76.0	-0.91	4.7	1.7	76.0	-0.92	5.1	2.5	12	LC
TTJ4BC	80.1	80.1	80.9	80.3	80.4	0.38	4.3	0.4 L	80.0	0.54	3.9	0.7	12	AH
VP934A	83.0	79.8	82.6	80.0	81.4	0.68	4.3	1.7	81.7	1.17	4.1	1.5	8	RE
WD33DC	81.2 H	82.7 H	76.1	71.8	78.0	-0.34	7.7	5.0	78.6	0.03	5.1	3.3	12	LC
X3A7PF	85.4	81.0	81.2	79.7	81.8	0.82	5.3	2.5	83.5	1.80	6.0	2.3	12	TB
XJKUZV	82.0	80.1	82.5	80.0	81.2	0.62	6.6	1.3	82.8	1.56	5.6	1.7	12	LC
XVRZTA	81.5	79.4	79.9	77.2	79.5	0.13	5.6	1.8	81.3	1.01	5.0	3.7	12	AA
ZJBUUC	108.2XH	69.8 *	77.2	77.5	83.2	1.22	7.5	17.1H	79.5	0.35	5.8	9.8 H	12	LA
ZPYFXR	88.1 *	89.7 X	83.5	82.3	85.9	2.04 *	5.1	3.6	87.2	3.17X	4.8	2.6	12	TB

Consensus (All Labs) Results

Wk Mean	79.43	78.07	79.12	77.87	Month Mean	79.07	Grand Mean	78.51
Avg SDr	5.09	4.85	5.04	5.04	Avg SDr	5.09	Avg SDr	4.94
SD btwn Labs	4.05	3.45	3.25	3.45	SD btwn Labs	3.35	SD btwn Labs	2.75
Labs Incld	46	47	46	48	SD btwn Wks	3.75	SD btwn Wks	2.99
Labs Excld	2	1	2	0	Labs Incld	47	Labs Incld	45
Labs not rcvd	0	0	0	0				

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 #549

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
2A68H7	84.0	80.2	82.0	85.0	82.8	-1.07	3.5	2.2	83.0	-0.73	3.1	2.6	12	LC
3BT3HJ	84.7	82.7	82.4	86.4	84.1	-0.70	3.6	1.8	83.0	-0.73	3.6	1.6	12	EN
3GFVTJ	84.6	83.4	85.0	84.8	84.4	-0.60	4.7	0.7	84.2	-0.44	4.4	2.3	8	LC
3KUQAF	87.3	87.9	86.9	88.9	87.7	0.37	3.1	0.8	86.6	0.15	3.6	1.7	12	LD
3YX2W3	85.2	88.7	85.6	84.5	86.0	-0.14	3.6	1.8	86.7	0.17	3.8	1.5	12	LD
43A4JX	84.4	82.9	83.7	85.5	84.1	-0.68	4.1	1.1	84.6	-0.35	4.4	0.9	8	TH
43QHL2	87.7	89.8	89.9	86.6	88.5	0.58	4.5	1.6	87.1	0.27	4.4	2.4	12	TH
63AJDA	93.2	94.1	92.1	91.0	92.6	1.78	4.0	1.3	91.6	1.39	4.5	3.7	11	LC
7TGNQZ	86.0	84.3	85.5	84.9	85.2	-0.38	4.7	0.7	83.0	-0.73	4.4	3.7	12	LD
7UQXGC	84.7 H	78.6	86.8	84.8	83.7	-0.81	4.8	3.6	88.6	0.64	4.9	8.8 H	12	LC
9QNEU4	86.5	87.1	87.7 L	88.2	87.4	0.27	2.1	0.7	87.8	0.44	2.2	0.8	12	LZ
ARVBEY	84.0	84.2	83.0	82.5	83.4	-0.90	3.7	0.8	83.2	-0.68	4.0	1.3	12	LD
BD9ADX	90.9	88.0	89.9	89.4	89.5	0.89	3.0	1.2	91.9	1.46	3.9	2.4	12	LD
BNNF8Z	85.4	85.8	No Data	No Data	85.6	-0.26	4.4	0.3 L	85.6	-0.08	4.3	0.7	6	EX
C4YDRR	94.7	93.8	94.3	92.1	93.7	2.11 *	3.9	1.1	93.5	1.86	4.5	3.7	12	TC
C7NMZ8	78.3	81.8	80.7	77.0	79.4	-2.05 *	3.1	2.2	81.4	-1.13	3.1	2.2	12	EM
CEF6EF	87.5	76.5 *H	92.0	93.2	87.3	0.24	5.7	7.6 H	83.8	-0.55	6.9	11.4 H	12	LC
DC8AA4	89.7	88.5	87.4	86.9	88.1	0.47	3.7	1.2	85.6	-0.10	3.6	2.6	12	LD
DEVJLP	76.2 *	74.5 *	76.5 *	75.9 *	75.8	-3.12 X	3.6	0.9	77.5	-2.10 *	4.1	2.9	12	EM
DPW9Z7	84.3	78.7	85.7	83.7	83.1	-0.99	4.8	3.0	85.3	-0.17	4.8	3.7	12	LC
E7Y9NZ	83.9	83.1	85.1	85.6	84.4	-0.60	4.1	1.1	84.8	-0.29	3.8	2.5	12	LC
FXWK2R	85.8	84.5	86.3	90.7	86.8	0.09	3.3	2.7	86.5	0.14	4.1	2.7	12	TH
GANL4K	100.3XH	89.3	94.4	97.4 *	95.3	2.58 *	7.5	4.7	94.3	2.06 *	5.8	3.2	12	LZ
GCCXZ6	83.1	84.5	83.5	84.6	83.9	-0.75	4.2	0.7	85.2	-0.20	3.9	1.2	12	LD
GD8G37	88.9	89.4	85.8	88.4	88.1	0.48	4.1	1.6	89.0	0.74	4.8	2.2	12	LC
GGBEDY	85.6	85.6	85.1	85.8	85.5	-0.27	3.4	0.3 L	85.0	-0.25	3.7	1.2	12	LC
GL3J74	89.5	87.5	84.4	82.2 H	85.9	-0.17	5.5	3.2	83.5	-0.61	4.3	3.0	12	LZ
H8HJQN	75.4 *	76.1 *	74.1 X	75.0 *	75.1	-3.30 X	5.1	0.9	75.1	-2.68 *	5.1	0.9	4	MB
H98PAZ	90.7 H	86.1 H	88.6 H	76.9 *H	85.6	-0.27	9.7	6.1 H	86.6	0.16	8.7	4.2	12	LA
HZY64H	81.2	82.9	86.0	No Data	83.4	-0.90	4.1	2.4	82.4	-0.88	4.5	11.4 H	11	XX
JFLVLW	87.7	90.9	90.2	90.1	89.7	0.93	4.2	1.4	89.8	0.94	4.2	2.0	12	LD
JGLXB2	82.6	83.5	86.9	No Data	84.3	-0.64	4.2	2.2	78.2	-1.91	3.9	9.7 H	11	LZ
JZWT39	79.9	85.5	87.4	87.9	85.2	-0.39	3.1	3.6	85.2	-0.18	3.2	2.2	12	LC
K4DCPM	89.1	83.3 H	86.9	85.4	86.2	-0.09	5.7	2.5	87.1	0.28	5.0	2.1	12	LC
K7EH39	54.1 X	53.5 X	53.2 X	54.0 X	53.7	-9.55 X	4.6	0.4	69.8	-4.01 X	4.7	12.3 H	12	MB

Report #549

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
KFJPG9	85.2	85.3	85.6	85.9	85.5	-0.29	3.4	0.3 L	84.8	-0.29	3.7	1.4	12	LC
KFJPJT	89.3	83.5	86.2	88.3	86.9	0.11	4.4	2.6	85.9	-0.02	4.1	2.5	12	LD
KHV6B9	87.6	86.3	88.0	85.0	86.7	0.07	4.8	1.3	86.1	0.02	4.3	2.0	12	LC
LCYVHM	92.4	91.3 L	91.3 L	92.0 L	91.8	1.54	1.6	0.6	92.5	1.62	1.5	1.2	12	TD
LH7LMD	92.6	91.1	91.2	No Data	91.7	1.50	3.9	0.8	91.3	1.33	3.9	1.7	8	MB
LQHHPY	85.1	82.0	82.9	82.2 L	83.1	-0.99	3.2	1.4	84.1	-0.46	3.6	1.5	12	LD
LQZQET	83.5	87.2	83.0	86.4	85.0	-0.43	3.9	2.1	84.4	-0.40	4.3	1.5	12	LC
LZLXDH	87.9	87.3	87.5	87.1	87.4	0.28	3.0	0.3 L	89.6	0.90	3.1	3.5	12	LD
RX2YKV	85.2	85.4	82.3	85.2	84.5	-0.57	4.6	1.5	83.9	-0.52	3.9	2.9	12	LD
T4ZQKC	83.1	85.8	88.4	86.1	85.8	-0.19	3.2	2.2	86.0	0.02	4.3	2.1	12	LD
VP934A	87.2	88.3	84.5	85.8	86.4	-0.02	3.7	1.6	88.5	0.62	3.7	2.0	12	LZ
X3A7PF	83.8	83.6	85.3	82.5	83.8	-0.78	3.8	1.2	84.1	-0.47	3.8	2.2	12	LC
X89M3A	93.1	94.2	93.6	94.5	93.8	2.14 *	4.0	0.6	92.6	1.64	4.1	1.3	12	TH
X939TF	79.4	83.0	76.3 *	81.5	80.1	-1.87	3.3	2.9	79.9	-1.51	3.5	1.8	12	EX
XVRZTA	84.1	83.8	82.8	81.7	83.1	-0.98	3.1	1.1	82.6	-0.84	3.4	1.6	12	LD
ZJBUUC	86.9	92.5	89.5	86.5	88.8	0.68	4.3	2.8	89.7	0.92	4.1	2.2	10	LC
ZPYFXR	95.2 *	93.7	92.1	87.8	92.2	1.66	4.3	3.2	92.1	1.51	4.5	2.9	12	LX

Consensus (All Labs) Results

Wk Mean	86.09	85.64	86.50	85.95	Month Mean	86.49	Grand Mean	85.97
Avg SDr	4.12	4.40	4.07	4.17	Avg SDr	4.28	Avg SDr	4.27
SD btwn Labs	4.30	4.53	3.96	4.50	SD btwn Labs	3.43	SD btwn Labs	4.04
Labs Incld	50	51	49	47	SD btwn Wks	2.38	SD btwn Wks	3.67
Labs Excld	2	1	2	1	Labs Incld	49	Labs Incld	51
Labs not rcvd	0	0	1	4				

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 #549

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 36 lb Linerboard - 36Z3

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
2A68H7	77.6	72.7	76.3 L	77.4	76.0	-1.07	1.6	2.3	76.7	-1.18	2.2	1.9	12	LC
3BT3HJ	80.2	80.7	79.5	78.9	79.8	0.12	2.5	0.8	79.3	-0.28	3.3	1.4	12	EN
3GFVTJ	74.3	74.6	79.9	75.7	76.1	-1.03	3.8	2.6	76.7	-1.15	3.9	2.1	12	LC
3KUQAF	79.3	80.0	79.8	79.0	79.5	0.02	2.4	0.4 L	79.5	-0.23	2.6	0.7	12	LD
3YX2W3	80.8	82.2	79.7	81.7	81.1	0.52	2.2	1.1	81.2	0.36	2.3	0.7	12	LD
43A4JX	78.2 H	77.9 H	77.3	76.3 H	77.4	-0.63	5.4	0.8	78.7	-0.49	4.6	2.9	12	TH
43QHL2	82.5	82.3	78.8	81.4	81.2	0.56	2.5	1.7	80.6	0.15	2.6	2.0	12	TH
63AJDA	85.6	85.8	85.2	84.5	85.3	1.82	2.8	0.6	84.3	1.41	3.2	2.1	11	LC
7TGNQZ	73.5	76.3	77.5	77.1	76.1	-1.04	3.1	1.8	78.6	-0.53	3.3	4.2	8	LD
7UQXGC	78.6	75.0	79.4	74.8	76.9	-0.78	3.7	2.4	83.3	1.06	4.3	6.9 H	12	LC
9QNEU4	79.5 L	80.7	80.0	80.5	80.2	0.23	2.4	0.5	80.3	0.05	2.1	0.6	12	LZ
ARVBEY	77.0	80.2	78.5	79.5 L	78.8	-0.20	2.5	1.4	77.5	-0.91	2.4	1.4	12	LD
BD9ADX	77.8	73.6	77.3	77.7	76.6	-0.88	3.6	2.0	81.8	0.56	3.5	4.4	12	LD
BNNF8Z	76.9	79.8	No Data	No Data	78.4	-0.34	3.0	2.0	79.4	-0.24	2.9	2.0	6	EX
C4YDRR	87.2 *	87.2	86.8 *	83.3	86.1	2.08 *	3.3	1.9	86.2	2.05 *	3.2	2.4	12	TC
C7NMZ8	75.6	77.0	76.7	75.0	76.1	-1.04	2.4	0.9	76.3	-1.31	2.1	1.0	12	EM
CEF6EF	82.4	59.5 XH	83.7	81.8 H	76.9	-0.81	5.6	11.6 H	80.3	0.06	5.3	9.8 H	12	LC
DC8AA4	83.7	84.4	82.3	84.2	83.7	1.31	3.3	0.9	81.3	0.41	2.8	1.8	12	LD
DEVJLP	73.8	74.4	74.2	74.1	74.1	-1.66	2.4	0.2 L	75.9	-1.43	2.9	2.7	8	EM
DPW9Z7	84.6 H	70.2 *H	74.7	75.4 H	76.2	-0.99	5.9	6.0 H	77.6	-0.85	5.6	6.0 H	12	LC
E7Y9NZ	77.2	78.4	74.4 H	80.7	77.7	-0.55	5.2	2.6	77.0	-1.06	4.4	3.1	12	LC
FXWK2R	75.9	77.7	77.9	78.5	77.5	-0.60	3.4	1.1	76.4	-1.26	3.1	1.6	8	TH
GANL4K	78.6	85.7	80.5	86.5	82.9	1.06	2.9	3.9	85.8	1.92	4.0	3.6	12	LZ
GCCXZ6	77.2	76.5	76.0	77.9	76.9	-0.80	2.4	0.8	77.7	-0.84	2.7	1.0	12	LD
GD8G37	81.5	81.4	82.3	86.3	82.9	1.07	3.9	2.3	82.1	0.65	3.6	2.2	12	LC
GGBEDY	80.3	81.9	78.6	78.9	79.9	0.15	2.2	1.5	80.3	0.04	2.4	1.2	12	LC
GL3J74	85.2	83.2	81.6	80.4	82.6	0.98	3.6	2.1	82.0	0.62	3.3	1.9	12	LZ
H8HJQN	66.9 X	69.0 *	68.1 X	67.2 X	67.8	-3.63 X	3.4	1.0	67.8	-4.18 X	3.4	1.0	4	MB
H98PAZ	84.1 H	83.0 H	83.7 H	85.6 H	84.1	1.45	6.3	1.1	85.1	1.66	6.4	2.4	12	LA
HZY64H	70.3 *	77.8	79.3	No Data	75.8	-1.13	3.5	4.9	79.5	-0.21	3.7	4.1	11	XX
JFLVLW	83.3	83.9	85.1	85.2	84.3	1.53	3.4	0.9	83.5	1.13	3.7	1.2	12	LD
JGLXB2	77.5	81.4	79.8	No Data	79.6	0.04	2.4	2.0	77.5	-0.90	2.9	7.5 H	11	LZ
JZWT39	79.1	82.2	84.9	80.6	81.7	0.70	2.5	2.5	83.2	1.02	2.4	2.4	12	LC
K4DCPM	83.4	82.0	84.9	83.7	83.5	1.26	2.6	1.2	82.3	0.71	2.9	1.4	12	LC
K7EH39	43.0 X	42.1 X	41.4 X	42.8 X	42.3	-11.57 X	3.8	0.7	62.9	-5.82 X	3.7	15.7 H	12	MB

Report #549

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 36 lb Linerboard - 36Z3

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
KFJPG9	76.7	77.9	76.4	80.3	77.8	-0.50	2.4	1.8	80.2	0.01	2.6	2.1	12	LC
KFJPJT	78.5	77.7	78.9	81.2	79.1	-0.12	2.7	1.5	79.7	-0.15	3.0	1.7	12	LD
KHV6B9	80.8	80.7	79.6	79.9	80.2	0.24	3.8	0.6	79.3	-0.28	3.5	2.3	12	LC
LCYVHM	75.8	77.9	73.7	73.6	75.3	-1.31	1.8	2.0	76.9	-1.08	2.7	2.1	12	TD
LH7LMD	81.8	83.9	79.8	No Data	81.8	0.74	4.1	2.0	84.7	1.54	3.8	2.6	10	MB
LQHHPY	76.6	76.0	75.5	75.9 L	76.0	-1.08	2.8	0.5	76.3	-1.31	3.1	1.6	12	LD
LQZQET	78.3	81.0	79.5	79.2	79.5	0.02	3.6	1.1	79.2	-0.32	3.5	2.2	12	LC
LZLXDH	83.6	84.0	83.3	83.3	83.6	1.28	1.9	0.3 L	83.3	1.08	2.6	1.2	12	LD
RX2YKV	80.2	79.9	78.2	79.7	79.5	0.02	2.8	0.9	79.4	-0.26	2.6	2.7	12	LD
T4ZQKC	76.9	76.6	80.6	78.2	78.1	-0.42	3.7	1.8	79.1	-0.35	3.8	2.0	12	LD
VP934A	78.0	76.3	78.4	77.8 L	77.7	-0.56	2.1	0.9	80.5	0.10	2.6	3.1	8	LZ
X3A7PF	75.1	76.8	73.9	72.9	74.7	-1.48	3.4	1.7	76.4	-1.27	4.2	2.7	12	LC
X89M3A	81.9	83.1	82.3	82.9	82.5	0.96	2.6	0.5	81.0	0.30	2.6	2.1	12	TH
X939TF	75.3	75.0	75.0	75.5	75.2	-1.32	3.0	0.2 L	75.1	-1.70	3.1	1.4	12	EX
XVRZTA	78.7	76.4	77.0	75.9	77.0	-0.76	2.0	1.3	78.0	-0.73	2.1	1.1	12	LD
ZJBUUC	82.8	83.5	82.5	83.5	83.1	1.13	3.2	0.5	84.4	1.43	3.9	2.3	12	LC
ZPYFXR	87.8 *	85.7	84.0	83.5	85.3	1.81	4.5	2.0	86.0	1.98	4.2	2.8	12	LX

Consensus (All Labs) Results

Wk Mean	79.43	79.42	79.50	79.69	Month Mean	79.44	Grand Mean	80.15
Avg SDr	3.31	3.28	3.41	3.19	Avg SDr	3.35	Avg SDr	3.41
SD btwn Labs	3.74	4.09	3.33	3.58	SD btwn Labs	3.21	SD btwn Labs	2.96
Labs Incld	50	50	49	46	SD btwn Wks	2.51	SD btwn Wks	3.07
Labs Excld	2	2	2	2	Labs Incld	50	Labs Incld	50
Labs not rcvd	0	0	1	4				

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 #549

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
3BT3HJ	21.3	21.1	21.1	20.5	21.0	-0.84	1.7	0.3	20.6	-1.25	1.7	0.5	12	LY
3GFVTJ	22.3	21.4	22.8	23.6	22.5	0.29	2.0	0.9	22.8	0.61	2.0	0.7	8	LW
3KUQAF	21.4	22.0	20.9	21.4	21.5	-0.51	1.6	0.4	21.6	-0.42	1.4	0.5	12	BK
3YX2W3	21.2	21.9	22.2	22.3	21.9	-0.18	1.9	0.5	21.2	-0.69	1.9	0.6	12	LY
43QHL2	22.1	22.5	22.5	22.4	22.4	0.18	1.3	0.2	22.3	0.22	1.3	0.5	12	TT
49HKXE	24.8	23.3	23.0	23.0	23.5	1.03	2.3	0.8	23.6	1.27	2.2	0.8	11	LW
63AJDA	24.7 L	24.5 L	23.1 L	22.0 L	23.6	1.06	0.0	1.3	24.0	1.64	0.0	1.0	11	LA
6BHBFD	23.7	23.0	23.8	23.1	23.4	0.94	1.9	0.4	22.9	0.70	1.7	1.3	7	LW
7TGNQZ	21.9 L	21.2 L	22.1 L	21.3 L	21.6	-0.39	0.0	0.4	21.6	-0.39	1.6	1.0	12	LU
7UQXGC	22.3	23.3	22.9 L	23.0 L	22.9	0.55	0.8	0.4	22.7	0.52	0.9	0.5	12	LY
AEN3Y2	25.5 *	25.0 *	24.9 *	25.4 *	25.2	2.30 *	2.7	0.3	24.9	2.35 *	2.3	1.0	9	LA
ARVBEY	20.2	20.8	20.4	20.4	20.4	-1.28	2.0	0.3	21.2	-0.76	1.9	0.7	12	LY
BNNF8Z	25.2 L	25.8 *L	No Data	No Data	25.5	2.50 *	0.0	0.4	26.0	3.27 X	0.0	0.6	6	LZ
C4YDRR	23.3 L	23.9 L	23.4 L	24.1 L	23.7	1.14	0.4	0.4	23.0	0.80	0.6	0.7	12	LA
DC8AA4	21.9	22.4 L	22.3	24.1	22.6	0.37	1.3	1.0	22.0	-0.04	1.9	1.0	12	LA
DPW9Z7	20.3	20.6	20.1	20.1	20.3	-1.39	1.5	0.2	19.7	-2.01 *	1.6	0.9	12	XX
E7Y9NZ	19.7	19.6	22.9	21.7	21.0	-0.87	1.9	1.6 H	21.3	-0.61	2.1	1.4	12	LY
EKVML9	24.4	23.1	24.3	24.8 *	24.2	1.51	2.2	0.7	23.7	1.38	2.1	1.1	10	LU
FXWK2R	22.6	23.5	22.7	22.8	22.9	0.56	1.9	0.4	23.3	1.00	2.1	0.8	12	TT
GD8G37	22.5 L	21.7 L	22.0 L	21.9 L	22.0	-0.09	0.4	0.3	22.5	0.40	0.8	1.0	12	LA
GGBEDY	21.5	21.3	22.4	20.6	21.4	-0.53	1.7	0.7	21.4	-0.56	1.5	0.5	12	LW
GL3J74	22.1	21.3	21.0	21.3	21.4	-0.55	2.0	0.5	20.9	-0.94	1.9	0.6	12	LW
H98PAZ	21.8 L	21.3 L	21.7 L	21.7 L	21.6	-0.38	0.4	0.2	21.8	-0.27	0.5	0.9	12	LA
HZY64H	No Data	37.9 XL	21.5 L	No Data	29.7	5.67 X	0.1	11.6 H	27.1	4.19 X	0.1	9.0 H	10	XX
JFLVLW	23.2	22.6	22.9	22.8	22.9	0.56	2.0	0.3	22.7	0.53	1.9	0.3	12	XX
JGLXB2	21.1	21.7	22.0	20.0	21.2	-0.71	1.8	0.9	21.0	-0.86	1.8	0.7	12	LZ
JZWT39	22.7	21.0	22.6	21.0	21.8	-0.24	1.8	0.9	21.6	-0.38	1.8	0.7	12	LW
K4DCPM	22.3	21.5	22.0	21.4	21.8	-0.25	1.8	0.4	21.9	-0.15	1.9	0.4	12	LU
K7EH39	23.5 L	22.7 L	23.6 L	23.5 L	23.3	0.88	0.5	0.4	23.8	1.44	0.6	1.4	12	BK
KFJPG9	21.0	21.8	20.4	21.5	21.2	-0.72	2.1	0.6	21.2	-0.75	1.9	0.6	12	LA
KFJPJT	20.3	20.4	18.8 X	20.1	19.9	-1.68	1.6	0.8	20.0	-1.71	1.9	0.7	12	LY
KHV6B9	22.9	23.9	23.2	23.3	23.3	0.89	2.1	0.4	23.0	0.78	1.9	0.4	12	LU
LH7LMD	21.1 L	21.1 L	21.0 L	No Data	21.1	-0.80	0.1	0.1 L	21.5	-0.49	0.1	0.7	8	LA
LHP8HP	22.1 L	22.0 L	22.3 L	22.0 L	22.1	-0.03	0.0	0.1	22.8	0.60	0.0	0.9	12	LU
LQZQET	20.9 L	20.5 L	21.9 L	22.2 L	21.4	-0.59	0.4	0.8	21.7	-0.35	0.4	0.9	12	LA

Report #549

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
NXTJ3D	22.4 L	22.4 L	23.0 L	22.4 L	22.5	0.30	0.0	0.3	21.7	-0.30	0.0	1.5	12	TT
P4E2TU	20.0 L	18.7 *L	20.2 L	20.2 L	19.8	-1.77	0.4	0.7	21.5	-0.51	0.9	6.0 H	12	LW
Q94V7L	25.0	22.9	23.2	22.8	23.5	0.99	2.1	1.0	23.4	1.10	2.0	0.7	12	LZ
QQ96CD	21.5	20.6	21.0	22.1	21.3	-0.64	1.5	0.7	21.1	-0.81	1.7	0.4	11	LU
RX2YKV	21.0	20.6	21.7	20.2	20.9	-0.96	1.9	0.6	21.2	-0.77	1.8	0.6	12	LU
T366U8	22.0	21.1	22.7	21.1	21.7	-0.32	1.8	0.8	21.6	-0.43	1.8	0.6	12	LY
T4ZQKC	22.7	22.2	20.5	21.6	21.8	-0.29	2.2	0.9	21.8	-0.21	2.0	0.9	12	LZ
TTJ4BC	22.9	23.3	22.6	22.8	22.9	0.55	1.1	0.3	23.0	0.76	1.2	0.5	12	TT
VY27FJ	21.3	20.9	21.0	21.2	21.1	-0.80	1.7	0.2	21.3	-0.68	1.5	0.3	12	LW
WD33DC	21.0 L	20.2 L	21.4 L	20.5 L	20.8	-1.03	0.3	0.5	20.6	-1.19	0.3	0.7	12	LA
X3A7PF	23.6	21.6	22.6	23.0	22.7	0.42	1.9	0.8	22.8	0.65	1.9	0.9	12	LW
XJKUZV	24.8	24.5	25.7 X	24.8 *	24.9	2.10 *	2.4	0.5	24.8	2.32 *	2.2	0.6	12	LA
XVRZTA	20.1	20.4	20.8	20.7	20.5	-1.24	1.7	0.3	20.2	-1.55	1.7	0.6	12	LW

Consensus (All Labs) Results

Wk Mean	22.25	21.98	22.14	22.06	Month Mean	22.14	Grand Mean	22.07
Avg SDr	1.60	1.69	1.58	1.60	Avg SDr	1.63	Avg SDr	1.63
SD btwn Labs	1.49	1.45	1.12	1.37	SD btwn Labs	1.33	SD btwn Labs	1.20
Labs Incld	47	47	45	45	SD btwn Wks	0.64	SD btwn Wks	1.19
Labs Excld	0	1	2	0	Labs Incld	47	Labs Incld	46
Labs not rcvd	1	0	1	3				

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 #549

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 36 lb Linerboard - 36Z3

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
3BT3HJ	20.5	20.6	19.7	19.0 *	19.9	-1.28	1.1	0.8	20.1	-1.33	1.1	0.6	12	LY
3GFVTJ	22.7	22.9	21.8	20.8	22.0	0.70	1.8	0.9	22.3	1.06	1.5	0.6	12	LW
3KUQAF	21.0	20.5	20.9	20.8	20.8	-0.46	0.8	0.2	20.7	-0.65	0.8	0.3	12	BK
3YX2W3	20.6	21.1	20.5	20.8	20.8	-0.48	1.3	0.3	20.8	-0.53	1.2	0.3	12	LY
43QHL2	20.8	21.2	21.1	21.0	21.0	-0.27	0.8	0.2	20.8	-0.60	0.8	0.3	12	TT
49HKXE	23.0	22.7	22.7	22.9	22.8	1.43	1.7	0.2	22.9	1.71	1.6	0.5	11	LW
63AJDA	22.7 L	22.4 L	20.0 L	21.4 L	21.6	0.29	0.0	1.2	22.0	0.70	0.0	0.8	11	LA
6BHBFD	22.4	22.0	23.2 *	21.5	22.3	0.93	1.3	0.7	22.2	0.99	1.2	1.0	12	LW
7TGNQZ	21.6 L	21.8 L	21.8 L	21.4 L	21.7	0.34	0.0	0.2	21.6	0.25	1.0	0.8	8	LU
7UQXGC	21.8	22.0	21.0	21.7	21.6	0.32	0.6	0.4	21.6	0.31	0.6	0.8	12	LY
AEN3Y2	23.6 *	23.2	22.9	24.7 X	23.6	2.16 *	1.8	0.8	23.0	1.76	1.5	0.9	9	LA
ARVBEY	20.3	20.3	21.1	20.6	20.6	-0.70	1.5	0.4	20.8	-0.50	1.3	0.3	12	LY
BNNF8Z	19.4 L	18.9 *L	No Data	No Data	19.2	-2.02 *	0.0	0.3	19.6	-1.87	0.0	0.5	6	LZ
C4YDRR	21.3 L	21.9 L	22.0 L	20.6 L	21.5	0.15	0.3	0.6	21.7	0.40	0.3	0.7	12	LA
DC8AA4	21.7	21.2	21.1	21.7	21.4	0.14	1.2	0.3	21.3	-0.01	1.1	0.4	12	LA
DPW9Z7	19.3	19.0 *	19.8	19.5	19.4	-1.78	1.0	0.4	19.4	-2.09 *	1.1	0.7	10	XX
E7Y9NZ	19.7	21.0	21.9	21.0	20.9	-0.38	1.4	0.9	20.8	-0.58	1.4	0.9	12	LY
EKVML9	22.8	22.8	21.8	22.0	22.3	0.98	1.5	0.5	22.6	1.35	1.4	0.8	10	LU
FXWK2R	22.2	22.6	21.7	22.3	22.2	0.85	1.3	0.4	21.9	0.62	1.4	0.5	8	TT
GD8G37	21.3 L	21.4 L	21.5 L	21.4 L	21.4	0.09	0.3	0.1 L	21.4	0.14	0.2	0.6	12	LA
GGBEDY	21.0	21.4	21.1	21.3	21.2	-0.10	1.2	0.2	21.1	-0.19	1.1	0.2	12	LW
GL3J74	21.3	20.9	21.1	20.6	21.0	-0.30	1.2	0.3	20.8	-0.51	1.2	0.4	12	LW
H98PAZ	20.8 L	20.0 L	20.7 L	20.9 L	20.6	-0.64	0.3	0.4	21.2	-0.12	0.3	0.6	12	LA
HZY64H	21.6 L	29.1 XL	20.5 L	No Data	23.7	2.27 *	0.1	4.7 H	25.1	4.06 X	0.1	5.5 H	11	XX
JFLVLW	22.5	22.2	22.2	22.2	22.2	0.90	1.2	0.2	22.6	1.36	1.3	0.3	12	XX
JGLXB2	21.2	21.4	20.8	20.6	21.0	-0.30	1.1	0.4	21.1	-0.21	1.1	0.3	12	LZ
JZWT39	22.1	21.3	20.9	21.7	21.5	0.21	0.9	0.5	21.4	0.12	1.2	0.4	12	LW
K4DCPM	21.3	21.5	20.8	21.7	21.3	0.04	1.2	0.4	21.5	0.17	1.2	0.4	12	LU
K7EH39	21.7 L	21.9 L	22.1 L	21.9 L	21.9	0.57	0.3	0.2	22.8	1.57	0.3	0.8	12	BK
KFJPG9	20.6	20.6	20.2	20.5	20.5	-0.77	1.1	0.2	20.1	-1.34	1.1	0.6	12	LA
KFJPJT	18.4 *	18.9 *	19.1 *	18.3 X	18.7	-2.48 *	1.3	0.4	19.5	-1.89	1.4	0.8	12	LY
KHV6B9	22.3	22.7	21.8	23.0	22.4	1.08	1.3	0.5	21.7	0.46	1.2	0.8	12	LU
LH7LMD	20.0 L	20.6 L	19.6 L	No Data	20.1	-1.16	0.0	0.5	20.7	-0.69	0.0	0.6	10	LA
LHP8HP	22.2 L	22.4 L	21.9 L	21.8 L	22.1	0.73	0.0	0.3	21.5	0.25	0.0	0.6	12	LU
LQZQET	21.2 L	21.9 L	20.0 L	No Data	21.0	-0.24	0.4	1.0	21.0	-0.32	0.3	1.1	11	LA

Report #549

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 36 lb Linerboard - 36Z3

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
NXTJ3D	20.9 L	21.6 L	21.7 L	22.1 L	21.6	0.29	0.0	0.5	20.9	-0.42	0.0	0.8	12	TT
P4E2TU	20.3	18.7 *	20.2	19.5 L	19.7	-1.54	0.6	0.7	20.9	-0.46	1.1	3.4 H	12	LW
Q94V7L	23.1	21.9	22.2	22.3	22.4	1.01	1.5	0.5	22.8	1.56	1.5	0.5	12	LZ
QQ96CD	21.2	21.0	20.9	20.9	21.0	-0.28	1.2	0.2	20.8	-0.60	1.2	0.5	11	LU
RX2YKV	20.8	20.7	20.7	21.4	20.9	-0.37	1.1	0.3	21.2	-0.09	1.2	0.4	12	LU
T366U8	20.5	21.2	21.2	20.8	20.9	-0.33	1.2	0.3	21.1	-0.19	1.1	0.3	12	LY
T4ZQKC	22.3	20.9	21.0	22.3	21.6	0.31	1.2	0.8	22.2	0.97	1.4	0.8	12	LZ
TTJ4BC	21.3	21.8	21.4	21.0	21.4	0.07	0.9	0.3	21.3	-0.06	0.8	0.3	12	TT
VY27FJ	21.0	21.0	21.0	21.3	21.1	-0.20	1.3	0.2	21.0	-0.29	1.1	0.2	12	LW
WD33DC	20.7 L	19.4 L	20.3 L	19.8 L	20.1	-1.16	0.3	0.6	19.9	-1.48	0.2	0.4	12	LA
X3A7PF	22.1	22.5	21.9	21.9	22.1	0.75	1.3	0.3	22.2	0.93	1.4	0.5	12	LW
XJKUZV	23.3	22.9	23.2 *	23.1	23.1	1.73	1.4	0.2	23.0	1.81	1.4	0.4	12	LA
XVRZTA	20.1	20.7	20.1	19.5	20.1	-1.10	1.3	0.5	20.0	-1.45	1.3	0.4	12	LW

Consensus (All Labs) Results

Wk Mean	21.34	21.31	21.16	21.25	Month Mean	21.29	Grand Mean	21.31
Avg SDr	1.00	1.07	1.10	1.18	Avg SDr	1.09	Avg SDr	1.10
SD btwn Labs	1.11	1.12	0.93	0.94	SD btwn Labs	1.06	SD btwn Labs	0.94
Labs Incld	48	47	47	42	SD btwn Wks	0.84	SD btwn Wks	0.77
Labs Excld	0	1	0	2	Labs Incld	48	Labs Incld	47
Labs not rcvd	0	0	1	4				

Instrument Code List as Reported by the Labs

(BK) - Buchel Strip Compression Tester BK-155

(LA) - L & W Autoline

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

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

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

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

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

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

Report #549

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
3GFVTJ	139.6	0.35	12.2	136.1	0.18	11.6	2	EV
63AJDA	125.0	-0.60	11.9	126.5	-0.46	14.9	4	LA
6H6YD4	150.6	1.08	15.0	140.9	0.49	15.8	3	EV
7UQXGC	113.1	-1.38	7.6	98.1	-2.32 *	7.3	4	EV
AEN3Y2	122.7	-0.75	17.6	121.2	-0.80	15.8	4	LA
CEF6EF	146.2	0.79	12.7	132.3	-0.07	9.3	4	EV
GD8G37	329.3	12.81 X	43.1	186.1	3.46 X	26.3	4	LA
GGBEDY	153.8	1.29	13.7	150.1	1.09	13.1	4	EV
GL3J74	111.0	-1.52	14.8	118.8	-0.96	13.0	4	EV
HZY64H	149.5	1.01	12.6	155.4	1.44	20.9	4	EV
LH7LMD	133.0	-0.08	17.2	137.9	0.29	17.7	4	LA
LQZQET	154.8	1.35	33.4	154.4	1.37	27.0	4	LA
Q94V7L	119.0	-1.00	12.6	122.8	-0.70	15.5	4	LA
QQ96CD	143.3	0.60	13.4	143.9	0.68	13.0	4	EV
RX2YKV	140.8	0.44	11.3	141.3	0.51	12.9	4	EV
T4ZQKC	130.6	-0.24	11.0	137.5	0.27	12.3	4	LA
WD33DC	113.6	-1.35	10.6	117.9	-1.02	7.7	4	EV

Consensus (All Labs) Results

Month Mean	134.16	Grand Mean	133.44
Avg SDr	15.26	Avg SDr	15.01
SD btwn Labs	15.23	SD btwn Labs	15.25
Labs Incld	16	Labs Incld	16

Instrument Code List as Reported by the Labs

(EV) - Emveco Microgage Model 210-R

(LA) - L & W Autoline

Report #549

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
C4YDRR	132.6	-1.53	5.4	150.8	-0.84	5.0	4	SC
CEF6EF	230.0	2.15 *	7.9	200.0	1.40	14.1	4	SC
DC8AA4	69.9	-3.90 X	1.7	70.0	-4.53 X	1.2	4	LZ
DPW9Z7	141.0	-1.21	26.3	124.9	-2.02 *	17.8	4	SC
GGBEDY	212.0	1.47	12.1	200.1	1.41	9.7	4	HY
H98PAZ	176.2	0.12	20.5	165.6	-0.17	12.1	4	TM
K4DCPM	170.8	-0.09	4.1	170.9	0.07	5.3	4	HY
KFJPG9	185.0	0.45	11.2	193.9	1.12	9.5	4	HY
LQHHPY	177.3	0.16	6.4	176.2	0.32	7.4	4	SC
LQZQET	176.0	0.11	17.5	180.2	0.50	10.7	4	HY
M9XCVE	160.4	-0.48	3.2	161.2	-0.37	4.8	4	TM
Q94V7L	165.2	-0.30	7.3	152.0	-0.79	15.8	4	TM
RX2YKV	149.2	-0.90	5.5	149.9	-0.89	6.4	4	TM
XVRZTA	174.6	0.06	5.3	175.2	0.27	6.8	4	TM

Consensus (All Labs) Results

Month Mean	173.11	Grand Mean	169.28
Avg SDr	12.28	Avg SDr	10.49
SD btwn Labs	26.45	SD btwn Labs	21.93
Labs Incld	13	Labs Incld	13

Instrument Code List as Reported by the Labs

(HY) - Huygen Digitized Scott Internal Bond Tester

(SC) - Scott Internal Bond Tester (Manual)

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

(TM) - TMI Monitor/Internal Bond Tester

Report #549

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
3BT3HJ	24.5	-1.16	0.4	24.7	-1.30	1.2	4
3GFVTJ	25.6	-0.69	1.5	25.6	-0.84	1.3	2
6BHBFD	27.8	0.22	1.9	27.3	0.07	2.3	3
C4YDRR	30.0	1.12	1.2	29.8	1.32	1.3	4
CEF6EF	22.0	-2.17 *	0.7	25.2	-1.07	1.3	4
DC8AA4	29.2	0.79	1.3	29.3	1.06	1.3	4
GGBEDY	28.0	0.30	2.3	26.8	-0.21	2.2	4
H98PAZ	28.2	0.38	4.0	29.8	1.35	3.0	4
K4DCPM	25.4	-0.77	1.9	24.8	-1.28	1.7	4
LQZQET	29.2	0.79	0.4	28.7	0.75	1.6	4
Q94V7L	25.2	-0.85	3.7	25.1	-1.12	2.4	4
RX2YKV	28.2	0.38	1.1	29.2	1.05	1.8	4
X3A7PF	30.4	1.29	3.0	28.7	0.78	2.5	4
XVRZTA	25.6	-0.69	3.4	25.8	-0.74	2.6	4
ZJBUUC	29.8	1.04	1.9	27.6	0.18	3.0	4

Consensus (All Labs) Results

Month Mean	27.27	Grand Mean	27.21
Avg SDr	2.23	Avg SDr	2.05
SD btwn Labs	2.43	SD btwn Labs	1.92
Labs Incld	15	Labs Incld	15

Instrument Code List as Reported by the Labs

(ZZ) - Instruments No Longer Tracked

Report #549

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
3YX2W3	50.7	-0.26	1.3	50.1	-1.02	1.4	4	LP
63AJDA	53.7	1.57	2.9	52.8	1.27	2.7	4	TL
9QNEU4	50.4	-0.44	1.2	52.6	1.11	2.9	4	XX
CEF6EF	50.4	-0.44	1.9	51.6	0.26	2.7	4	HG
DC8AA4	52.9	1.07	1.3	46.7	-3.80 X	1.4	4	LA
GD8G37	49.6	-0.92	2.2	50.2	-0.86	1.9	4	LA
GGBEDY	51.8	0.41	1.5	51.6	0.26	1.9	4	LP
H98PAZ	50.2	-0.59	3.4	51.1	-0.16	2.7	4	LP
HZY64H	51.6	0.29	2.4	50.9	-0.35	3.1	4	LW
K4DCPM	52.1	0.58	2.4	51.4	0.12	2.8	4	TP
LQHHPY	50.5	-0.41	1.6	50.6	-0.59	1.5	4	LP
LQZQET	52.2	0.63	1.4	51.7	0.34	1.6	4	LA
Q94V7L	47.9	-1.95	3.9	45.5	-4.78 X	4.1	4	XX
QQ96CD	53.0	1.13	2.1	51.7	0.38	1.7	4	LP
VM9M2E	52.9	1.04	3.0	53.3	1.67	2.4	4	XX
X3A7PF	50.6	-0.34	1.9	50.6	-0.55	2.1	4	LP
XEN4UJ	47.9	-1.98	1.3	48.3	-2.46 *	2.1	4	LA
XVRZTA	52.1	0.61	2.4	52.0	0.58	2.4	4	HG

Consensus (All Labs) Results

Month Mean	51.13	Grand Mean	51.28
Avg SDr	2.24	Avg SDr	2.30
SD btwn Labs	1.66	SD btwn Labs	1.21
Labs Incld	18	Labs Incld	16

Instrument Code List as Reported by the Labs

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

(LA) - L & W Autoline

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

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

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

(TP) - Technidyne Profile/ plus Roughness & Porosity

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

Report #549

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
2A68H7	62.2	58.1	64.4	64.3	62.2	0.15	2.5	2.9	63.1	0.59	2.8	2.2	16	LC
2XMWLY	57.1	55.4 *	61.3	61.1	58.7	-1.52	3.1	3.0	58.7	-1.52	3.1	3.0	4	TH
3NXGFV	60.4	64.0	64.3	62.2	62.7	0.39	3.2	1.8	63.1	0.60	3.5	1.9	12	LC
43A4JX	61.2	62.7	61.2	63.3	62.1	0.08	2.1	1.1	61.6	-0.13	2.3	1.9	12	TD
43QHL2	63.1	61.6	62.0	63.2	62.5	0.26	2.9	0.8	61.9	-0.01	2.7	1.1	16	TH
49HKXE	59.9	59.4	59.3	57.6	59.0	-1.37	3.3	1.0	61.0	-0.44	3.9	1.8	14	LC
6873E9	63.8	63.6	64.8	63.6	64.0	0.98	3.3	0.6	64.0	1.00	5.8	3.4 H	16	LC
6BHBFD	60.9	61.0	61.1	62.3	61.3	-0.28	2.9	0.7	61.5	-0.16	2.9	1.3	12	LZ
76UQBC	No Data	62.7	62.7 L	62.9	62.8	0.41	1.7	0.1 L	62.8	0.42	1.9	0.3 L	15	LD
79D3QT	65.2	59.9 H	64.8 L	57.7	61.9	0.00	4.5	3.7	62.6	0.36	3.8	2.7	12	XX
7TGNQZ	68.8 *	68.2 *	69.3 *	67.8 *	68.5	3.14 X	2.5	0.7	68.9	3.36 X	4.6	5.1 H	10	LC
94CFAB	63.7	64.7	64.1	65.9	64.6	1.27	2.5	1.0	64.1	1.05	2.6	1.2	16	LD
BNNF8Z	61.3	61.1	No Data	No Data	61.2	-0.35	3.3	0.2 L	59.6	-1.12	2.8	1.5	6	LZ
C7NMZ8	65.9	61.1	66.2	64.9	64.5	1.24	3.1	2.3	64.9	1.47	2.9	1.5	16	EM
DC8AA4	60.3	60.2	59.6	60.8	60.2	-0.80	2.7	0.5	60.8	-0.53	2.6	3.2	12	XX
DF39FL	62.6	62.2	63.4	63.4	62.9	0.47	2.6	0.6	62.1	0.11	3.0	0.8	16	LD
DPW9Z7	59.8	61.6	62.6	64.4	62.1	0.09	3.3	1.9	60.9	-0.45	3.2	2.2	16	LC
DQ3QY2	62.4	61.1	63.7	61.9	62.3	0.17	2.0	1.1	61.7	-0.10	2.3	1.2	16	EM
FXWK2R	54.0 *	55.6 *	55.0 *	54.5 X	54.8	-3.39 X	2.6	0.7	59.8	-1.01	2.9	3.3 H	16	TH
G88ZUL	65.8 H	66.5	65.7	65.7	65.9	1.91	3.6	0.4	66.0	2.00	2.9	0.7	16	TM
GGBEDY	62.8	61.4	62.1	62.0	62.1	0.07	4.1	0.6	61.1	-0.40	4.1	1.1	15	LD
H8HJQN	68.4 *	67.7 *H	63.5 H	68.8 *	67.1	2.46 *	4.5	2.5	67.1	2.51 *	4.5	2.5	4	MB
HVKK24	61.6	62.1	61.8	62.0	61.9	-0.02	2.3	0.2 L	62.0	0.07	2.4	0.4	16	LC
HZY64H	57.2	61.3	57.1 H	No Data	58.5	-1.61	3.1	2.4	58.0	-1.89	5.6	4.2 H	15	XX
JFLVLW	58.1	60.4	61.8	63.0	60.8	-0.52	3.2	2.1	62.1	0.11	3.4	1.8	16	LD
JGLXB2	65.4	65.1	60.3	58.8	62.4	0.23	2.8	3.4	61.5	-0.21	2.9	3.1	16	LZ
JHV3NP	26.4 XH	16.5 X	17.4 X	28.1 XH	22.1	-18.95 X	4.9	6.0 H	18.8	-20.73 X	4.3	5.3 H	8	XX
JZWT39	64.1	64.6	65.2	75.4 X	67.3	2.58 *	2.9	5.4 H	65.8	1.86	2.5	3.1	16	LC
K4DCPM	58.9	61.6	60.5	59.7	60.1	-0.84	2.9	1.2	61.2	-0.32	3.4	1.2	16	LC
K7EH39	63.0 H	65.4	68.4 *H	65.4	65.6	1.74	4.5	2.2	65.3	1.65	3.9	2.9	16	MB
KF7W7E	61.6	61.9	61.9	61.5	61.7	-0.09	1.8	0.2 L	61.4	-0.21	1.7	0.5	13	LC
KFJPG9	59.0	62.4	61.8 L	64.5	61.9	0.01	2.5	2.3	60.4	-0.74	2.4	1.9	16	LC
KFJPJT	60.5	61.7	63.1	60.5	61.5	-0.22	3.7	1.2	62.2	0.13	4.5	1.8	16	LD
KHV6B9	61.3	61.0	63.3	62.2	61.9	0.01	1.9	1.1	61.8	-0.06	2.1	1.3	16	LD
LCYVHM	62.8 L	62.8 L	64.5 L	60.5 L	62.7	0.36	1.0	1.6	63.5	0.78	1.0	1.5	16	TD

Report #549

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
LH7LMD	57.0	65.6	54.3	* No Data	59.0	-1.40	2.8	5.9 H	58.7	-1.54	3.8	3.3 H	12	MB
LZLXDH	62.6	62.0	63.0	62.6	62.6	0.31	3.1	0.4	63.2	0.62	2.9	1.0	16	LD
QP98YW	62.8	60.5	60.8	62.1	61.6	-0.17	2.3	1.1	60.9	-0.46	2.4	1.2	16	LC
QQ96CD	58.1	62.6	63.0	63.0	61.7	-0.12	2.6	2.4	60.4	-0.71	2.7	1.6	16	LZ
RX2YKV	59.7	59.6	58.8	58.3	59.1	-1.34	2.6	0.7	58.6	-1.56	2.6	1.6	16	LD
T4ZQKC	62.0	58.8	58.6	62.9	60.5	-0.65	2.6	2.2	60.4	-0.71	2.7	1.9	16	LD
TTJ4BC	61.5 H	62.0 H	62.1	60.1	61.4	-0.24	5.2	0.9	61.1	-0.38	5.0	1.1	16	TG
VM9M2E	62.2	61.9	61.8	60.5	61.6	-0.15	2.7	0.7	62.1	0.10	2.6	0.9	16	LD
VU7CK4	54.1 *	60.2	60.6	61.2	59.0	-1.39	2.3	3.3	59.6	-1.12	2.6	2.0	14	LZ
X3A7PF	61.9	62.1	61.3	60.5	61.5	-0.21	2.4	0.7	62.8	0.44	3.0	1.8	16	LC
X4JDQN	62.3	62.0	61.8	61.6	61.9	0.01	2.7	0.3 L	62.1	0.10	2.5	0.5	16	LD
XEN4UJ	65.3	64.6 H	60.4	61.4	62.9	0.47	3.9	2.4	65.0	1.52	4.3	2.0	16	LC
XJKUZV	55.3	58.2	56.1	58.5	57.0	-2.33 *	3.3	1.6	58.1	-1.84	3.6	1.5	16	LD
ZPYFXR	63.8	60.6	61.9	61.1	61.8	-0.04	2.6	1.4	62.1	0.13	3.0	1.0	16	LD

Consensus (All Labs) Results

Wk Mean	61.52	61.89	62.03	62.22	Month Mean	61.91	Grand Mean	61.88
Avg SDr	3.03	3.24	2.88	2.89	Avg SDr	3.03	Avg SDr	3.24
SD btwn Labs	3.22	2.60	2.95	2.45	SD btwn Labs	2.10	SD btwn Labs	2.08
Labs Incld	47	48	47	43	SD btwn Wks	2.05	SD btwn Wks	1.99
Labs Excld	1	1	1	3	Labs Incld	46	Labs Incld	47
Labs not rcvd	1	0	1	3				

Instrument Code List as Reported by the Labs

(EM) - Emerson 1200 Series

(LD) - L&W Crush Tester 248

(MB) - Messmer Buchel K440

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

(TM) - TMI/Hinde & Dauch

(LC) - L & W Crush Tester 48

(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

Report #549

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
3NXGFV	75.7	76.8	79.8 L	80.4	78.2	1.46	1.7	2.3	77.8	1.41	2.7	1.8	12	LC
76UQBC	No Data	73.4	73.6	72.9	73.3	-0.11	1.8	0.3 L	72.8	-0.20	1.9	0.6	15	LD
79D3QT	76.4	72.0	73.1 H	64.4 H	71.5	-0.68	5.6	5.1 H	70.1	-1.07	4.6	6.1 H	16	TU
9QNEU4	74.0	74.5	74.2 L	74.7 L	74.4	0.24	1.4	0.3 L	73.1	-0.09	1.4	1.1	16	XX
DC8AA4	76.5	75.1	75.0	75.0	75.4	0.57	2.3	0.8	75.0	0.49	2.5	1.2	12	LD
H8HJQN	67.0 X	66.3 *	64.6 *	67.0	66.2	-2.35 *	3.8	1.1	66.2	-2.31 *	3.8	1.1	4	MB
JGLXB2	74.0 H	72.3	74.3 H	78.6	74.8	0.37	4.8	2.7	75.5	0.65	4.0	3.4	16	LZ
JZWT39	77.0	75.6	72.8	66.1	72.9	-0.24	3.0	4.9 H	74.5	0.35	2.6	2.5	16	LC
K4DCPM	76.8	79.6	81.3	76.5 L	78.5	1.56	2.7	2.3	78.2	1.54	2.4	1.2	16	LC
KHV6B9	71.9	71.1	71.7 L	70.1 L	71.2	-0.78	1.5	0.8	71.6	-0.57	1.5	0.7	16	LD
LCYVHM	75.1 L	74.2 L	74.2 L	75.7 L	74.8	0.38	0.4	0.7	73.3	-0.05	0.8	1.5	16	TD
QP98YW	74.5	73.5	74.1	70.4 H	73.1	-0.15	3.5	1.9	73.2	-0.09	3.5	1.6	16	LZ
X3A7PF	72.3	73.4	72.7	72.5	72.8	-0.27	2.4	0.5	73.2	-0.06	2.5	1.4	16	XX

Consensus (All Labs) Results

Wk Mean	74.92	73.68	73.95	72.63	Month Mean	73.61	Grand Mean	73.42
Avg SDr	2.64	2.32	3.63	3.36	Avg SDr	3.04	Avg SDr	2.84
SD btwn Labs	1.78	3.13	3.93	4.88	SD btwn Labs	3.14	SD btwn Labs	3.12
Labs Incld	11	13	13	13	SD btwn Wks	2.39	SD btwn Wks	2.35
Labs Excld	1	0	0	0	Labs Incld	13	Labs Incld	13
Labs not rcvd	1	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 #549

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
2A68H7	42.6	39.5	42.1	41.0	41.3	-0.32	1.9	1.3	41.1	-0.50	2.0	1.2	16	LC
2XMWLY	37.7	37.5	38.0	37.6	37.7	-1.14	2.6	0.2 L	37.7	-1.48	2.6	0.2 L	4	TH
7TGNQZ	54.2 XH	53.7 *	53.8 *	52.9 *	53.7	2.51 *	4.0	0.5	46.2	1.00	3.4	5.6 H	12	LD
94CFAB	46.0	45.4	46.3	46.7	46.1	0.78	2.3	0.6	45.9	0.91	2.2	0.7	16	LD
BNNF8Z	39.6	40.9	No Data	No Data	40.3	-0.55	3.3	0.9	41.3	-0.43	3.4	1.4	6	EM
DC8AA4	44.3	42.7	44.4	44.3	43.9	0.28	2.3	0.8	43.5	0.21	3.0	1.0	12	XX
DF39FL	48.7	48.4	48.2	48.3	48.4	1.31	1.9	0.2	48.0	1.54	2.2	0.5	16	LD
DQ3QY2	39.7	41.5	39.6 L	42.1	40.7	-0.45	1.5	1.2	41.3	-0.43	1.9	1.1	16	LC
G88ZUL	40.5	38.7	40.6	39.7	39.9	-0.64	1.9	0.9	40.2	-0.74	2.3	2.6	16	LD
H8HJQN	39.0	37.2	34.6	35.9	36.7	-1.37	2.1	1.9	36.7	-1.78	2.1	1.9	4	MB
HZY64H	39.2	43.0	41.1	No Data	41.1	-0.36	2.8	1.9	44.2	0.41	2.9	2.8	15	XX
JHV3NP	34.9 *H	30.3 *H	34.8 H	33.0 *H	33.3	-2.16 *	4.9	2.1	34.8	-2.31 *	4.7	2.6	8	XX
K4DCPM	43.6	43.3	43.3	44.3	43.6	0.21	3.0	0.5	44.0	0.38	2.9	0.8	16	LC
KF7W7E	45.8	45.7	45.9 L	46.1	45.8	0.72	1.3	0.2 L	44.7	0.58	1.3	2.8	13	LC
L24KAF	43.6 L	45.0 L	45.3	44.5	44.6	0.44	1.0	0.7	44.4	0.48	1.2	0.8	16	WK
LZLXDH	44.3	45.6	44.4	45.5	44.9	0.52	2.0	0.7	44.3	0.45	1.8	0.8	16	LD
MCU89L	43.6	40.9	39.1	41.2	41.2	-0.34	3.0	1.9	42.8	0.01	2.8	2.2	12	LZ
T4ZQKC	39.7	38.6	40.0	39.9	39.5	-0.72	1.8	0.6	40.2	-0.76	2.2	1.2	16	LD
VM9M2E	41.1 H	40.8	42.9	42.0	41.7	-0.23	3.9	0.9	42.6	-0.05	3.6	1.2	16	LD
X3A7PF	39.6	36.3	39.7	42.7	39.6	-0.71	2.3	2.6 H	41.4	-0.39	2.2	2.3	16	LC
X89M3A	43.2	43.7	44.2	43.2	43.5	0.20	1.7	0.5	42.9	0.04	2.1	1.0	16	TH
XEN4UJ	48.1	46.3	48.5	45.1	47.0	0.98	3.0	1.6	47.8	1.48	2.7	1.0	16	LD
ZPYFXR	47.0	47.8 H	47.0	47.3 H	47.3	1.05	4.0	0.4	47.4	1.36	3.7	0.9	16	LZ

Consensus (All Labs) Results

Wk Mean	42.34	42.30	42.89	43.00	Month Mean	42.68	Grand Mean	42.75
Avg SDr	2.76	2.57	2.77	2.54	Avg SDr	2.71	Avg SDr	2.68
SD btwn Labs	3.56	4.89	4.58	4.43	SD btwn Labs	4.38	SD btwn Labs	3.42
Labs Incld	22	23	22	21	SD btwn Wks	1.21	SD btwn Wks	1.95
Labs Excld	1	0	0	0	Labs Incld	23	Labs Incld	23
Labs not rcvd	0	0	1	2				

Report #549

Containerboard Interlaboratory Testing Program

Analysis 255

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

TAPPI Official Test Method T822

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

Report #549

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
43QHL2	15.1	14.4	15.0	14.9	14.8	-0.32	1.0	0.3	14.8	-0.35	0.8	0.3	16	TT
49HKXE	16.1	15.4	15.8	15.3	15.6	1.28	1.2	0.4	15.7	1.46	1.2	0.4	14	LW
6BHBFD	14.8	14.0	14.3	13.9	14.2	-1.46	1.1	0.4	14.3	-1.36	1.2	1.0 H	12	LW
76UQBC	No Data	14.6	14.4	13.9	14.3	-1.33	0.7	0.3	14.4	-1.27	0.8	0.3	15	LA
DC8AA4	14.5	14.7	15.0	15.4	14.9	-0.16	1.1	0.4	15.1	0.19	1.1	0.6	12	XX
DF39FL	15.2	15.6	15.3	15.8	15.5	0.94	0.8	0.3	15.2	0.34	1.2	0.4	16	LA
DQ3QY2	15.0	15.1	14.8	14.8	14.9	-0.11	1.1	0.2	14.8	-0.36	1.2	0.4	16	LB
E7Y9NZ	14.4	13.6	16.3 *	14.8	14.8	-0.39	1.0	1.1 H	14.6	-0.85	1.2	0.8	15	LB
FXWK2R	15.6	15.6	15.7	15.5	15.6	1.19	1.2	0.1	15.7	1.54	1.3	0.4	16	TT
G88ZUL	15.3	16.1	15.6	15.8	15.7	1.45	1.4	0.3	15.5	1.08	1.2	0.3	16	LA
HVKK24	15.1	14.8	15.0	14.9	15.0	-0.07	1.2	0.1	15.0	-0.04	1.1	0.1	16	LB
HZY64H	15.1 L	22.1 XL	15.1 L	No Data	17.4	4.77 X	0.0	4.0 H	17.1	4.28 X	0.1	4.5 H	15	XX
JHV3NP	14.8 L	14.9 L	14.5 L	14.5 L	14.7	-0.62	0.0	0.2	14.6	-0.86	0.0	0.3	8	TS
K4DCPM	15.1	14.8	15.3	15.2	15.1	0.21	1.2	0.2	15.1	0.25	1.1	0.2	16	LU
K7EH39	15.3 L	14.9 L	14.9 L	15.2 L	15.1	0.16	0.1	0.2	15.9	1.88	0.2	0.7	16	BK
KF7W7E	15.4	15.3	15.4	15.6	15.4	0.85	0.8	0.1	15.1	0.26	0.8	0.4	13	XX
LH7LMD	13.7 *L	13.7 L	14.8 L	No Data	14.1	-1.77	0.0	0.7	14.0	-1.91	0.0	0.4	12	LA
MCU89L	14.3	14.9	13.9 *	14.4	14.4	-1.23	1.1	0.4	14.9	-0.28	1.2	0.6	12	LA
QQ96CD	15.1	14.5	14.8	14.3	14.7	-0.62	1.2	0.3	14.6	-0.74	1.2	0.2	15	LU
T4ZQKC	15.6	14.8	14.6	15.7	15.2	0.35	1.4	0.6	15.5	1.03	1.3	0.6	16	LZ
VU7CK4	14.2	15.1	14.8	15.0	14.8	-0.42	1.1	0.4	15.0	-0.02	1.1	0.4	14	LW
X4JDQN	14.9	15.0	15.0	15.1	15.0	0.03	1.1	0.1	15.0	0.00	1.1	0.1	16	LB
XEN4UJ	16.2 *L	16.4 *L	15.7 L	15.9 L	16.0	2.06 *	0.0	0.3	19.0	8.04 X	0.0	4.9 H	16	LA

Consensus (All Labs) Results

Wk Mean	15.02	14.92	15.05	15.05	Month Mean	14.99	Grand Mean	14.99
Avg SDr	0.98	1.01	1.00	1.04	Avg SDr	1.01	Avg SDr	1.05
SD btwn Labs	0.59	0.68	0.54	0.59	SD btwn Labs	0.51	SD btwn Labs	0.49
Labs Incld	22	22	23	21	SD btwn Wks	0.41	SD btwn Wks	0.48
Labs Excld	0	1	0	0	Labs Incld	22	Labs Incld	21
Labs not rcvd	1	0	0	2				

Report #549

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)