Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #572 (E) - May 2017

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX11	Box Compression Strength, Corrugated Boxes
202	EC10	Edgewise Compressive Strength, Wax (T811), Corrugated Board
203	EC10	Edgewise Compressive Strength by Clamp (T839), Corrugated Board
205	42D2	Mullen Burst of Linerboard, 42 lb Linerboard
206	56A1	Mullen Burst of Linerboard, 56 lb Linerboard
215	42D2	Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard
216	56A1	Ring Crush of Linerboard, Rigid Platen Type, 56 lb Linerboard
223	42D2	STFI of Linerboard, 42 lb Linerboard
224	56A1	STFI of Linerboard, 56 lb Linerboard
228	56A	Roughness - Stylus Method, 56 lb Linerboard
229	42D2	Roughness - Sheffield Method, 42 lb Linerboard
231	42D	Internal Bond Strength, Linerboard, 42 lb Linerboard
234	42D	Coefficient of Static Friction - Inclined Plane, 42 lb Linerboard
237	42D	Air Resistance - Gurley Method, Linerboard, 42 lb Linerboard
240	CM91	Flat Crush Strength (CMT) of Medium, 26 lb Corrugating Medium
250	CM91	Fluted Crush of Medium, 26 lb Corrugating Medium
255	CM91	Ring Crush of Medium, 26 lb Corrugating Medium
261	CM91	STFI of Medium, 26 lb Corrugating Medium

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 56 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
26 lb Corrugating Medium	CM91	October 2016-Current
	CM81	October 2015-September 2016
36 lb Linerboard	36Z3	December 2014-Current
	36Z2	February 2012-October 2014
42 lb Linerboard	42D2	August 2016-Current
	42D1	April 2015-July 2016
56 lb Linerboard	56A1	July 2016-Current

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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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 SD	- For each week, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SD 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.
SD	- For each laboratory, the average of the weekly within-lab standard deviations (SD'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 SD	- For the current month, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.
SD btwn Labs	- For the current month, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
SD btwn Group	- For the current month, the standard deviation of the laboratory Means within the group about the Month Mean, excluding those laboratories flagged with an 'X'.
SD btwn Wks	- For the current month, the average of the laboratory between week standard deviations (SD Wks') for all the participants, excluding those laboratories flagged with an 'X'.

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 (SD'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 SD	- For the cumulative period, the average of the within-laboratory standard deviations (SD'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, excluding those laboratories flagged with an 'X'.

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 SD for each week is not shown, but laboratory average SD and consensus average SD values are shown.
L	Indicates low within-laboratory standard deviation. The laboratory SD for each week is not shown, but laboratory monthly average SD and consensus average SD 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).

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
7A8L2A	721.1	-0.37	52.08	833.6	0.93	113.99	4	ER
ANAJBB	669.0	-1.23	35.78	698.4	-1.07	21.08	4	LG
BQYAX2	758.1	0.23	22.32	761.7	-0.14	20.28	4	LM
CQDYX8	645.2	-1.62	21.73	643.8	-1.88	16.65	4	LL
ECQVJU	731.7	-0.20	26.57	765.6	-0.08	48.80	4	LS
EGJZCY	863.6	1.97 *	55.35	884.5	1.68	29.58	4	TE
EJ84UP	718.1	-0.42	56.63	718.4	-0.78	18.97	4	ER
FFLGWV	847.2	1.70	31.70	857.8	1.28	11.94	4	ER
FM2PCY	772.9	0.48	10.19	811.0	0.59	93.34	4	LG
KAYMZT	646.6	-1.60	54.72	668.7	-1.51	16.15	4	EX
LCZBTM	787.2	0.71	36.49	814.3	0.64	39.05	4	ET
LP9WE2	767.7	0.39	22.75	751.4	-0.29	14.49	3	LG
NWZKWU	739.0	-0.08	22.44	752.2	-0.28	34.84	4	ER
Q7JYQB	738.0	-0.10	52.99	738.5	-0.48	23.59	4	LG
QC42VR	770.4	0.44	48.26	744.4	-0.39	18.92	4	ES
TAXNFK	743.3	-0.01	24.37	791.6	0.31	42.27	4	LS
TCG88M	760.8	0.28	19.64	844.1	1.08	117.10	4	EX
U3LN7J	868.0	2.04 *	10.37	900.8	1.92 *	37.38	4	LH
XWTNGG	713.4	-0.50	34.05	724.9	-0.68	17.73	4	LS
ZJD3YE	689.0	-0.90	23.32	741.2	-0.44	115.36	4	TB
ZMUBME	704.6	-0.65	23.28	779.4	0.13	136.44	3	LL
ZZXTXE	711.1	-0.54	34.31	743.2	-0.41	45.44	2	LH

Consensus (All Labs) Results

Month Mean	743.91	Grand Mean	770.94
Avg SD	35.70	Avg SD Months	54.90
SD btwn Labs	60.81	SD btwn Labs	67.65
Labs Incld	22	Labs Incld	21

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	738.39	72.50	5.52	6
Clip sealing	744.67	45.89	0.77	14
Tape sealing	755.11	153.45	11.20	2

Key to Instrument Codes Reported by Participants

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		

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
7V7FZ7	36.8	0.18	1.73	36.8	0.18	0.00	1	EM
7XERH8	34.6	-0.69	1.92	34.6	-0.69	0.00	1	LC
ATQRYA	40.4	1.62	0.93	40.4	1.62	0.00	1	TB
ECQVJU	36.0	-0.16	1.90	36.0	-0.16	0.00	1	EM
EJ84UP	36.5	0.05	2.39	36.5	0.05	0.00	1	EN
Q7JYQB	40.2	1.53	1.28	40.2	1.53	0.00	1	LE
TAXNFK	35.3	-0.44	1.98	35.3	-0.44	0.00	1	EM
TB7X9H	33.9	-0.98	1.75	33.9	-0.98	0.00	1	WK
U3LN7J	32.7	-1.48	0.98	32.7	-1.48	0.00	1	TC
XWTNGG	37.3	0.36	1.55	37.3	0.36	0.00	1	LC

Consensus (All Labs) Results

Month Mean	36.37	Grand Mean	36.37
Avg SD	1.70	Avg SD Months	0.00
SD btwn Labs	2.49	SD btwn Labs	2.49
Labs Incld	10	Labs Incld	10

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200
LC	L&W Crush Tester 48	LE	L&W Crush Tester 840
TB	TMI Monitor/Compression Tester, Model 17-70	TC	TMI Monitor/Compression Tester, Model 17-37
WK	Zwick Z005 Crush Tester		

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
38CQPB	43.2	0.93	2.06	43.2	0.93	0.00	1	LC
6MXVBA	40.1	-0.18	1.61	40.1	-0.18	0.00	1	LC
7A8L2A	39.9	-0.27	1.42	39.9	-0.27	0.00	1	TB
7V7FZ7	36.8	-1.38	1.73	36.8	-1.38	0.00	1	EM
7XERH8	39.1	-0.54	1.25	39.1	-0.54	0.00	1	LC
ATQRYA	40.3	-0.12	1.01	40.3	-0.12	0.00	1	TG
BQYAX2	44.0	1.24	1.35	44.0	1.24	0.00	1	TG
CKARH4	41.7	0.38	1.30	41.7	0.38	0.00	1	XX
CNPRTX	42.8	0.80	1.40	42.8	0.80	0.00	1	TD
CQDYX8	39.7	-0.32	2.19	39.7	-0.32	0.00	1	LC
DMBHZ4	35.0	-2.03 *	5.01	35.0	-2.03 *	0.00	1	LD
ECQVJU	45.0	1.61	2.00	45.0	1.61	0.00	1	EM
EGJZCY	42.3	0.61	1.49	42.3	0.61	0.00	1	LD
EJ84UP	37.0	-1.30	1.99	37.0	-1.30	0.00	1	EX
FFLGWV	40.3	-0.11	1.29	40.3	-0.11	0.00	1	EM
FL9UPQ	40.8	0.07	1.36	40.8	0.07	0.00	1	LD
FM2PCY	40.2	-0.15	2.16	40.2	-0.15	0.00	1	EM
GYBH2X	44.9	1.57	1.22	44.9	1.57	0.00	1	TG
K8VMMU	39.6	-0.38	1.87	39.6	-0.38	0.00	1	LD
KAYMZT	44.7	1.50	2.75	44.7	1.50	0.00	1	CT
KXMHPQ	41.4	0.28	0.91	41.4	0.28	0.00	1	TL
L3FEYU	44.7	1.50	1.58	44.7	1.50	0.00	1	TK
LCZBTM	42.9	0.83	1.06	42.9	0.83	0.00	1	TD
LP9WE2	43.7	1.13	1.10	43.7	1.13	0.00	1	TL
MAUKBR	38.8	-0.64	3.65	38.8	-0.64	0.00	1	TD
NKT3EM	45.3	1.72	1.66	45.3	1.72	0.00	1	EM
NWZKWU	37.9	-0.98	1.63	37.9	-0.98	0.00	1	LD
Q6LQHQ	38.4	-0.81	0.89	38.4	-0.81	0.00	1	LD
Q7JYQB	37.6	-1.10	2.04	37.6	-1.10	0.00	1	LY
QC42VR	37.8	-1.01	1.84	37.8	-1.01	0.00	1	LD
QEG27N	43.9	1.20	1.85	43.9	1.20	0.00	1	TB
TAXNFK	40.4	-0.07	1.42	40.4	-0.07	0.00	1	EM
TB7X9H	35.7	-1.79	1.05	35.7	-1.79	0.00	1	WK
TCG88M	39.4	-0.45	1.33	39.4	-0.45	0.00	1	LD
TCGZUG	40.7	0.02	1.39	40.7	0.02	0.00	1	TD
U3LN7J	38.7	-0.69	0.67	38.7	-0.69	0.00	1	TX
WWE82B	43.0	0.88	1.18	43.0	0.88	0.00	1	LC
XWTNGG	42.0	0.50	1.78	42.0	0.50	0.00	1	LC
ZE2RU4	40.2	-0.17	1.65	40.2	-0.17	0.00	1	LD

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
ZJD3YE	35.3	-1.94 *	0.55	35.3	-1.94 *	0.00	1	LD
ZMUBME	39.9	-0.25	0.79	39.9	-0.25	0.00	1	BU
ZZXTXE	40.3	-0.10	2.27	40.3	-0.10	0.00	1	EM

Consensus (All Labs) Results

Month Mean	40.60	Grand Mean	40.60
Avg SD	1.81	Avg SD Months	0.00
SD btwn Labs	2.74	SD btwn Labs	2.74
Labs Incld	42	Labs Incld	42

Key to Instrument Codes Reported by Participants

BU	Buchel Digital Crush Tester	CT	Con-Ten
EM	Emerson 1200 Series	EX	Emerson (model not specified)
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LY	L&W 830	TB	TMI Monitor/Compression Tester, Model 17-70
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
TX	TMI (model not specified)	WK	Zwick Z005 Crush Tester
XX	Instrument make/model not specified by lab		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2X7RGA	109.3	106.2	109.0	109.3	108.4	-0.28	6.4	1.5	109.8	0.24	8.1	2.9	8	LA
2YKLAC	108.5	109.1	108.2	107.3	108.3	-0.33	8.5	0.8	108.0	-0.35	8.1	1.1	16	TP
38CQPB	105.5	110.3	111.0	105.1	108.0	-0.41	14.1	3.1	108.7	-0.11	12.1	3.4	16	LA
3LUJF3	110.7	105.7	107.0	109.1	108.1	-0.37	11.4	2.2	109.5	0.13	12.4	4.1	15	TB
4TQ496	109.8	100.7 *	121.9 *	126.7 XH	114.7	1.43	15.1	11.8	111.9	0.94	13.4	9.8	12	XX
66EZUG	110.2	108.9	108.2	109.9	109.3	-0.05	9.5	0.9	107.9	-0.39	9.5	1.7	16	LA
6DCUTE	106.8	102.4	107.4	107.8	106.1	-0.92	12.2	2.5	105.8	-1.08	10.7	4.2	11	AH
6HNXGV	107.0	107.0	97.5 *	106.8	104.6	-1.33	12.8	4.7	105.0	-1.37	11.2	3.1	16	LC
6LLJ7D	107.3	107.6	107.2	102.1 L	106.0	-0.94	10.0	2.6	105.6	-1.17	11.9	2.7	16	LC
7A8L2A	102.6	106.7	106.7	108.5	106.1	-0.92	10.4	2.5	106.0	-1.03	11.0	2.1	16	LA
A2MMYU	106.6	107.2	107.4	108.7	107.5	-0.54	8.2	0.9	107.6	-0.49	7.1	1.1	12	LA
C43TA2	115.8	110.2	107.3	No Data	111.1	0.44	10.1	4.3	107.8	-0.43	10.9	4.2	10	LC
DBDC9Q	115.1	105.9	116.8	106.4	111.1	0.43	12.4	5.7	108.5	-0.21	10.7	4.3	12	LC
DMBHZ4	114.9	116.9 *	107.9	111.1	112.7	0.87	9.3	4.0	111.7	0.88	9.8	4.7	16	LC
DQQMXY	108.1	110.9	106.9	110.5	109.1	-0.11	10.9	1.9	110.0	0.29	10.8	2.3	16	LZ
ECQVJU	98.0 *	94.3 X	101.4	98.8 *	98.1	-3.10 X	7.3	2.9	95.6	-4.47 X	8.2	6.2	16	RE
FB6CXZ	111.2	107.6	104.9	109.2	108.2	-0.34	8.9	2.6	109.5	0.13	11.1	3.1	16	TB
FC3RNY	104.2	149.7 XL	106.6	106.4 L	116.7	1.98 *	6.3	22.0	109.8	0.23	7.7	12.2	15	AC
FL9UPQ	114.7	116.9 *	112.6	109.8	113.5	1.10	10.0	3.0	112.4	1.11	9.8	2.9	16	LA
GJGPFW	109.6	111.1	108.1	117.5	111.5	0.56	12.0	4.1	111.5	0.80	11.7	2.5	16	LC
GME9HU	117.1	121.2 X	116.6	121.1 *	119.0	2.60 *	12.4	2.5	114.4	1.76	12.1	6.3	16	LA
HT2J8J	110.8	108.1	100.0	107.9	106.7	-0.76	12.4	4.7	107.8	-0.44	9.1	5.0	16	LA
HUUADX	108.5	108.4	108.7	108.7	108.6	-0.24	9.8	0.1	108.9	-0.07	7.2	0.3	16	LJ
K8VMMU	111.0	112.7	115.3	109.4	112.1	0.72	11.1	2.5	110.4	0.42	9.9	3.2	16	AA
KAWQCV	109.8	111.3	109.0	113.1	110.8	0.36	9.4	1.8	110.5	0.48	10.4	2.3	12	LA
KAYMZT	115.6	114.8	117.5	115.4	115.8	1.73	11.6	1.2	111.9	0.94	12.5	9.2	16	XX
KM77JZ	109.0	107.6	106.3	106.9	107.4	-0.56	9.1	1.2	109.3	0.06	10.6	2.5	15	LA
L22A3H	118.2 *	114.7	118.1	118.4	117.4	2.15 *	12.6	1.8	116.1	2.32 *	11.4	3.6	14	LA
LT8A2Q	111.1 L	111.2 L	110.0 L	111.9 L	111.1	0.43	3.8	0.8 L	111.6	0.85	3.6	0.9 L	16	XX
NWZKWU	107.6	105.8	102.5	99.3 *	103.8	-1.55	9.4	3.7	108.7	-0.13	10.4	4.2	16	AH
P349PL	112.7	110.3	109.8	112.6	111.3	0.51	9.8	1.5	112.5	1.14	9.1	3.3	16	LC
Q7JYQB	108.5	110.5	117.1	112.3	112.1	0.71	13.9	3.7	113.4	1.44	12.4	3.3	16	LZ
QA2X7Q	107.1	105.6	107.2	104.8	106.2	-0.90	12.8	1.2	105.9	-1.04	10.9	2.1	12	LC
QC42VR	103.0	105.3	106.4	107.7	105.6	-1.06	12.0	2.0	108.2	-0.28	10.9	3.8	16	LA
QD28CL	102.7	105.2	105.4	112.8	106.5	-0.81	10.0	4.4	104.3	-1.59	10.2	10.2	16	LA

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42D2

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
QNY8QB	108.3	116.7	114.1	106.1	111.3	0.50	8.5	4.9	111.1	0.67	8.3	3.0	16	TB
RNFDEM	111.3	108.0	96.0 *H	108.1	105.8	-0.99	18.2	6.7 H	108.0	-0.35	12.9	5.0	16	LC
RT8V3R	108.3	108.3	108.9	No Data	108.5	-0.27	10.1	0.3	109.8	0.24	11.2	1.9	9	AH
RX6E4P	111.4	103.2	109.1	101.9	106.4	-0.84	8.5	4.6	104.2	-1.61	8.8	3.1	16	LC
TCG88M	117.3	115.7	108.7	108.2	112.5	0.82	10.4	4.7	112.4	1.10	11.0	2.8	16	AH
TPPKHF	110.7	112.4	108.1	113.7	111.2	0.48	12.9	2.4	106.9	-0.74	11.1	4.0	12	XX
U3LN7J	107.8	105.8	112.8	107.0	108.3	-0.32	11.0	3.1	109.3	0.07	10.9	3.1	16	AA
U8HBZ8	109.5	111.8	108.3 H	108.5	109.5	0.01	19.5	1.6 H	105.7	-1.14	13.5	4.1	16	LB
UGQF2J	105.2	104.0 L	105.8	105.2	105.1	-1.21	5.1	0.8	103.7	-1.79	5.7	1.8	16	RE
V979PP	105.8	102.3	110.3	110.8	107.3	-0.59	11.1	4.0	106.7	-0.78	9.9	2.7	16	LC
VBVDJH	115.3	111.2	109.5	115.2	112.8	0.90	12.5	2.9	112.0	0.97	12.3	3.4	16	LA
W3YXA4	114.5	115.4	114.8	115.0	114.9	1.49	9.0	0.4	115.7	2.18 *	9.8	1.6	16	LC
X8ABPH	101.3	105.0	103.7	110.3	105.1	-1.20	9.0	3.8	109.5	0.14	10.9	5.7	16	LC
XJK6K8	107.0	113.5	112.1	120.0 *	113.2	1.00	13.6	5.4	112.1	1.00	12.5	4.4	16	AX
XWTNGG	106.5	102.1	115.6	112.2	109.1	-0.10	9.1	6.0	105.2	-1.28	9.8	4.1	16	AH
Z6E2LD	107.2 L	108.5	108.4	106.4	107.6	-0.51	5.2	1.0	107.7	-0.45	5.4	1.5	16	AH
ZE2RU4	100.1 *	102.6	100.7	101.8	101.3	-2.23 *	9.7	1.1	103.6	-1.84	8.9	2.6	16	LA
ZTZEJK	102.3	107.0	102.8	108.8	105.2	-1.16	10.5	3.2	105.6	-1.16	10.6	3.3	16	LC
ZXBPCE	108.2	110.3	113.8	105.7	109.5	0.00	11.5	3.4	107.6	-0.49	10.7	4.1	16	LJ
ZZFCR6	109.5	113.2	109.6	114.6	111.7	0.61	11.1	2.6	112.9	1.27	12.5	2.6	16	LZ

Consensus (All Labs) Results

Wk Mean	109.01	108.84	108.85	109.35	Month Mean	109.48	Grand Mean	109.08
Avg SDr	10.58	10.67	11.95	10.34	Avg SD	11.00	Avg SD	10.48
SD btwn Labs	4.42	4.14	5.14	4.72	SD btwn Labs	3.67	SD btwn Labs	3.01
Labs Incld	55	52	55	52	SD btwn Wks	4.62	SD btwn Wks	4.29
Labs Excld	0	3	0	1	Labs Incld	54	Labs Incld	54
Labs not Rcvd	0	0	0	2				

Key to Instrument Codes Reported by Participants

AA	Perkins Model A	AC	Perkins Model C
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		

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 56 lb Linerboard - 56A1

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2X7RGA	116.8	116.3	118.9	116.0	117.0	1.08	7.1	1.3	116.2	0.76	7.9	1.4	8	LA
2YKLAC	113.9	113.7	114.4	112.0	113.5	-0.06	7.4	1.0	112.9	-0.25	8.2	1.6	12	TP
38CQPB	115.4	112.1	121.0	113.5	115.5	0.60	11.8	3.9	115.0	0.40	11.5	2.9	12	LA
3LUJF3	115.7	109.2	119.1	108.5	113.1	-0.18	11.1	5.1	114.4	0.20	11.8	4.9	12	TB
4TQ496	106.2	111.1	115.8	114.1 H	111.8	-0.62	14.0	4.2	109.7	-1.23	11.9	4.3	8	XX
66EZUG	113.1	112.3	113.6	110.0	112.3	-0.47	12.1	1.6	112.6	-0.35	11.1	1.9	12	LA
6DCUTE	112.6	113.8	114.0	113.6	113.5	-0.06	10.8	0.6	117.1	1.03	10.7	6.6	11	AH
6HNXGV	107.5	108.0	109.3	101.4 *	106.6	-2.32 *	13.2	3.5	109.3	-1.37	12.1	3.1	12	LC
6LLJ7D	116.9	114.7	109.1	119.3	115.0	0.42	13.8	4.4	115.1	0.42	11.2	4.3	12	LC
7A8L2A	108.6	109.0	114.0	111.2	110.7	-0.97	12.0	2.5	110.7	-0.94	14.1	4.3	12	LZ
A2MMYU	114.2	112.0	112.7	114.5	113.3	-0.12	10.2	1.2	113.7	0.00	8.5	3.0	12	LA
C43TA2	110.2 H	111.5	115.1	No Data	112.3	-0.46	14.6	2.5	111.7	-0.62	12.7	3.5	10	LC
DBDC9Q	110.6	108.3	109.1	109.7	109.4	-1.38	10.4	1.0	111.6	-0.66	9.7	3.4	8	LC
DMBHZ4	111.5	117.9	113.3	112.0	113.7	0.00	12.4	2.9	113.7	-0.02	11.1	3.1	12	LC
DQQMXY	109.6	109.1	115.1	116.4	112.6	-0.36	10.4	3.7	112.4	-0.42	11.1	4.1	12	LZ
ECQVJU	105.4	105.1	97.5 XH	100.5 *	102.2	-3.74 X	11.2	3.8	105.9	-2.42 *	10.8	5.4	12	RE
FB6CXZ	113.5	114.7	112.9	116.6	114.4	0.24	10.2	1.6	114.1	0.12	11.3	3.1	12	TB
FC3RNY	109.1	109.5	112.3	111.9	110.7	-0.96	8.8	1.7	111.1	-0.82	9.2	3.0	12	AH
FL9UPQ	115.9	117.1	114.2	112.4	114.9	0.39	9.8	2.0	113.4	-0.09	10.3	4.2	12	LA
GJGPFW	109.8	114.9	118.3	113.4	114.1	0.14	11.6	3.5	113.1	-0.19	12.4	3.4	12	XX
GME9HU	114.9	115.8	120.3	123.6 *	118.7	1.62	13.7	4.1	118.9	1.60	13.7	4.8	12	LA
HT2J8J	113.8	111.0	109.4	105.8	110.0	-1.20	11.4	3.3	113.3	-0.13	10.2	4.0	12	LA
HUUADX	113.4	113.4	113.2	113.5	113.4	-0.11	10.8	0.1	113.7	0.00	8.9	0.3	12	LJ
K8VMMU	115.6	115.8	121.6	119.6	118.2	1.45	9.5	2.9	116.3	0.78	9.9	3.6	12	AA
KAWQCV	118.8	113.8	123.5 *	118.1	118.6	1.58	7.9	4.0	117.6	1.19	8.6	4.7	8	LA
KAYMZT	115.2 L	118.4	116.7	120.8	117.8	1.33	10.0	2.4	117.5	1.17	10.8	3.8	8	XX
KM77JZ	113.1	112.1	115.0	111.8	113.0	-0.22	9.4	1.4	113.9	0.06	10.5	1.7	11	LA
L22A3H	119.7	128.8 X	123.4 *	121.6	123.4	3.15 X	9.1	3.9	121.3	2.32 *	10.1	4.5	11	LA
LT8A2Q	126.2 *L	124.8 XL	124.6 *	No Data	125.2	3.74 X	4.5	0.9 L	125.2	3.54 X	4.6	1.2 L	11	XX
NWZKWU	105.1	112.9	117.3	118.2	113.4	-0.10	9.8	6.0	115.1	0.41	10.2	5.3	12	AH
Q7JYQB	114.4 H	121.2 *	115.3	121.4	118.1	1.43	14.4	3.7	118.4	1.42	12.2	3.5	12	LZ
QA2X7Q	110.4	107.8	111.2	109.7	109.7	-1.28	10.4	1.5	109.7	-1.23	10.6	3.4	12	LC
QC42VR	114.0	107.6	113.1	111.2	111.5	-0.72	9.8	2.8	111.7	-0.63	11.4	3.3	12	LA
QD28CL	117.6	111.4	106.2 *	116.5	112.9	-0.25	12.4	5.2	113.3	-0.12	12.2	4.9	8	LA
QNY8QB	120.7	115.0	119.8	116.9	118.1	1.43	12.3	2.6	119.2	1.68	11.6	3.4	12	TB

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 56 lb Linerboard - 56A1

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
RNFDEM	116.7	105.5	112.6	109.1	111.0	-0.88	11.7	4.8	112.1	-0.50	11.8	4.0	8	LC
RT8V3R	120.7	117.1	113.4	No Data	117.1	1.10	9.5	3.7	115.6	0.58	10.0	3.9	9	AH
RX6E4P	108.1	105.6	108.7	108.3	107.7	-1.95 *	10.9	1.4	107.6	-1.89	10.1	2.1	12	LA
TCG88M	115.8	113.8	116.4	116.9	115.7	0.66	11.8	1.4	115.9	0.66	10.1	2.4	12	AH
TPPKHF	112.0	115.4	114.1	114.6	114.0	0.11	11.5	1.4	111.4	-0.71	12.4	4.2	8	XX
U3LN7J	115.0	109.0	119.5	122.3	116.4	0.89	10.9	5.8	115.9	0.65	11.6	3.7	12	AA
U8HBZ8	122.9 *	114.0	117.1	118.5	118.1	1.44	7.7	3.7	112.2	-0.47	11.3	5.2	12	LB
UGQF2J	112.4	111.4	108.2	115.0	111.8	-0.63	7.5	2.8	111.3	-0.74	8.5	3.0	12	RE
V979PP	111.4	105.1	107.1	106.8	107.6	-1.97 *	10.4	2.7	108.5	-1.61	10.2	3.0	12	LA
VBVDJH	115.6	118.1	119.1	107.2	115.0	0.42	11.3	5.4	112.8	-0.29	10.7	3.9	12	LA
W3YXA4	110.4	117.0	113.3	114.4	113.8	0.03	11.4	2.7	118.7	1.53	10.7	4.6	12	LC
X8ABPH	109.5	112.1	113.9	113.0	112.1	-0.51	8.3	1.9	118.4	1.44	10.1	7.5	12	LC
XJK6K8	117.3	117.3	114.0	118.0	116.6	0.96	13.0	1.8	115.3	0.47	10.2	2.6	12	AX
XWTNGG	104.1 *	111.5	119.6	116.5	112.9	-0.25	11.1	6.8	112.3	-0.44	10.0	3.8	12	AH
Z6E2LD	111.2 L	110.1	113.1	112.2	111.7	-0.66	4.9	1.3	112.6	-0.36	5.3	1.3	12	AH
ZE2RU4	110.1	115.3	111.3	110.7	111.8	-0.60	8.2	2.3	109.7	-1.26	8.5	2.4	12	LA
ZTZEJK	114.7	108.9	113.3 H	112.8	112.4	-0.41	12.8	2.5	111.7	-0.62	10.0	2.2	12	LC
ZXBPCE	114.5	114.9	114.9	111.1	113.8	0.05	9.2	1.8	112.3	-0.43	9.9	3.6	8	LJ
ZZFCR6	124.4 *	123.6 *	121.3	113.8	120.8	2.30 *	10.3	4.8	119.8	1.88	11.9	3.6	12	LZ

Consensus (All Labs) Results

Wk Mean	113.63	112.73	114.97	113.66	Month Mean	113.68	Grand Mean	113.74
Avg SDr	10.91	10.89	10.18	11.17	Avg SD	10.89	Avg SD	10.70
SD btwn Labs	4.64	4.06	4.30	4.89	SD btwn Labs	3.08	SD btwn Labs	3.25
Labs Incld	54	52	53	51	SD btwn Wks	3.26	SD btwn Wks	3.80
Labs Excld	0	2	1	0	Labs Incld	51	Labs Incld	53
Labs not Rcvd	0	0	0	3				

Key to Instrument Codes Reported by Participants

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

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2X7RGA	89.3	88.9	89.8	91.1	89.8	0.22	4.0	0.9	90.2	0.31	3.3	1.1	8	LZ
2YKLAC	90.3	90.3	89.5 H	88.0	89.5	0.16	4.2	1.1	88.4	-0.14	3.6	1.5	16	TH
38CQPB	95.3 H	99.7 *H	90.1 H	98.3 *	95.9	1.61	6.3	4.3	91.4	0.58	7.5	4.8 H	16	LC
3LUJF3	78.1 *	76.0 *	77.1 *	68.4 XH	74.9	-3.21 X	6.4	4.4	77.8	-2.64 *	4.7	4.2	15	LZ
66EZUG	91.1	91.8	91.0	92.4	91.6	0.63	4.0	0.7	91.9	0.70	4.1	0.9	16	LD
6DCUTE	85.8	86.1	84.4	88.8	86.3	-0.59	3.1	1.8	86.7	-0.52	3.4	1.6	6	LC
6HNXGV	84.0	84.5	88.2	87.5	86.1	-0.64	3.3	2.1	85.2	-0.90	3.8	3.8	16	LC
6LLJ7D	92.5	93.8 H	94.4	94.9	93.9	1.16	6.1	1.0	92.8	0.91	5.1	2.0	16	LC
7A8L2A	87.9	86.8	85.3	85.9	86.5	-0.55	4.4	1.1	86.7	-0.54	4.0	1.0	16	LD
8PYZFU	85.4	88.2 H	82.9 H	85.4 H	85.5	-0.77	7.1	2.2 H	88.1	-0.20	4.0	2.0	16	MB
8YHEGB	90.7	92.0	90.7	91.7	91.3	0.56	3.5	0.7	90.8	0.44	3.5	0.7	16	LD
A2MMYU	84.7	87.2	85.7	84.0	85.4	-0.80	4.0	1.4	84.9	-0.96	3.6	1.5	12	LD
ADUZ82	88.2	94.1	93.2	88.4	91.0	0.48	4.0	3.1	92.0	0.73	4.2	2.1	11	MB
CRQVHY	92.1	93.8	92.8	94.0	93.2	1.00	4.7	0.9	92.8	0.91	4.1	1.4	16	EM
DBDC9Q	86.5	88.7	88.4	87.6	87.8	-0.24	4.0	1.0	87.4	-0.38	3.8	1.2	12	LD
DMBHZ4	91.8	87.6	88.3	88.5	89.0	0.05	4.0	1.9	88.2	-0.18	4.0	1.8	16	LD
ECQVJU	83.5	81.7	83.4	86.3	83.7	-1.18	3.4	1.9	86.3	-0.64	3.8	3.6	16	EM
EGJZCY	90.9	91.8	91.3	91.2	91.3	0.56	3.2	0.4	91.4	0.58	3.1	0.9	16	LD
EJ84UP	83.0	82.2	80.5	83.7	82.3	-1.50	3.5	1.4	82.7	-1.48	3.5	1.6	16	EN
EV4FFX	77.1 *	83.8	83.8	81.4	81.5	-1.68	4.2	3.2	82.7	-1.48	4.4	2.4	8	LC
FB6CXZ	87.7	84.0	89.4	87.7	87.2	-0.38	4.8	2.2	88.8	-0.04	4.7	2.6	16	LC
FC3RNY	93.0	90.9	93.4	96.4	93.4	1.05	5.3	2.2	96.4	1.77	4.6	3.8	16	LZ
FERHBP	90.8	90.1	93.3	90.7	91.2	0.55	3.3	1.4	90.7	0.42	3.7	1.7	16	MB
FFLGWV	89.0	89.2	88.4	89.1	88.9	0.02	3.1	0.4	86.8	-0.52	2.7	1.6	16	EM
FL9UPQ	92.0	89.7	90.3	91.4	90.8	0.46	3.7	1.0	90.6	0.40	3.3	1.2	16	LD
FM2PCY	84.1	82.3	85.6	87.5	84.9	-0.91	3.9	2.2	85.7	-0.77	3.9	1.7	16	EM
GME9HU	97.9 *	98.6 *	100.5 *	98.3 *	98.8	2.29 *	3.9	1.1	97.7	2.07 *	4.0	1.9	16	LD
GYBH2X	89.1	89.6	89.3	89.8 L	89.4	0.13	2.9	0.3	89.5	0.12	3.2	1.1	16	TH
HT2J8J	92.0	95.6	91.0	93.7	93.1	0.97	3.6	2.0	97.0	1.90	4.9	7.4	16	LC
HUUADX	89.4	89.5	89.8	89.5	89.5	0.16	4.2	0.2	88.6	-0.07	6.1	0.9	16	LD
K8VMMU	83.0	86.3	87.4	86.3	85.8	-0.71	3.8	1.9	86.7	-0.52	3.7	1.9	16	LD
KAWQCV	81.9	80.0 L	78.7 *	79.9 *	80.1	-2.01 *	3.4	1.3	79.9	-2.15 *	3.6	2.1	12	TU
L22A3H	93.6	91.9	90.0	89.5	91.3	0.55	4.0	1.9	92.4	0.81	4.0	2.9	14	LZ
L3FEYU	88.1	87.8	89.8	88.4	88.5	-0.08	2.3	0.9	88.5	-0.12	2.8	0.5	16	MB
LP9WE2	95.3	95.8	91.9	89.4	93.1	0.98	3.8	3.0	92.1	0.75	3.4	3.4	8	TJ

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42D2

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
LT8A2Q	83.2	92.5	89.5	85.3	87.6	-0.28	4.7	4.2	87.4	-0.37	4.8	4.6	16	LD
MAUKBR	93.7 L	91.4 L	89.4 L	92.9 L	91.8	0.68	1.0	1.9 L	91.2	0.52	3.0	1.3	16	TD
NWZKWU	86.6	88.5	86.7	87.0	87.2	-0.38	4.5	0.9	87.5	-0.36	3.9	1.5	16	LD
Q7JYQB	87.0	87.4	86.4	85.6	86.6	-0.51	2.9	0.8	86.4	-0.60	3.5	1.5	16	LG
QA2X7Q	92.7	92.0	87.4	109.5 XH	95.4	1.50	7.1	9.7 H	91.9	0.69	5.5	5.7	12	LC
QD28CL	94.3	94.7	95.0	100.3 *	96.1	1.66	3.7	2.8	93.3	1.03	5.1	6.8	16	LC
QNY8QB	100.1 *	93.4	98.0 *	95.8	96.8	1.83	4.7	2.9	98.8	2.33 *	5.0	2.2	16	LX
RNFDEM	95.6	87.9	94.4	89.4	91.8	0.68	3.9	3.7	93.8	1.14	3.8	3.3	16	LD
RX6E4P	82.0	82.8	81.4	82.2	82.1	-1.55	3.7	0.6	83.7	-1.25	3.7	1.3	12	LD
U8HBZ8	87.2	87.9	88.3	86.4	87.4	-0.32	2.9	0.8	88.9	0.00	3.5	2.2	16	LC
UGQF2J	85.7	87.3	84.9	85.6	85.9	-0.69	3.2	1.0	89.8	0.20	3.9	2.8	16	LZ
V979PP	86.7	83.3	85.2	84.5 H	84.9	-0.90	5.8	1.4	85.6	-0.80	4.8	3.5	16	LZ
VGLT9P	79.9	79.8	78.4 *	81.7	79.9	-2.05 *	3.6	1.4	80.2	-2.09 *	4.1	1.8	16	LD
XJK6K8	85.8 H	76.3 *	76.7 *	80.8	79.9	-2.06 *	4.6	4.4	86.8	-0.51	4.4	4.9	16	LC
XWTNGG	91.3	92.5	89.6	89.5	90.7	0.42	4.2	1.4	89.4	0.10	4.1	1.8	16	LC
XZBFKB	89.9	91.0	93.3	93.4	91.9	0.70	3.0	1.7	93.8	1.14	3.1	2.8	16	LD
ZE2RU4	89.8	88.8	87.7	88.6	88.7	-0.03	3.3	0.9	89.3	0.09	3.7	1.3	16	LD
ZTZEJK	91.2	91.4	89.1	91.7	90.9	0.46	3.4	1.2	88.5	-0.10	3.7	1.8	16	LD
ZXBPCE	89.8	89.8	86.1	88.2	88.5	-0.09	3.3	1.8	90.0	0.24	4.2	2.8	16	LD
ZZFCR6	86.6	82.4	85.6	89.7	86.1	-0.64	3.8	3.0	86.7	-0.54	4.0	1.8	16	LC
ZZXTXE	54.2 XH	56.7 X	53.4 XH	56.0 XH	55.0	-7.77 X	7.1	1.5 H	63.8	-5.97 X	8.4	9.4 H	8	EM

Consensus (All Labs) Results

Wk Mean	88.62	88.56	88.22	88.97	Month Mean	88.85	Grand Mean	88.96
Avg SDr	3.97	4.20	3.95	4.03	Avg SD	4.11	Avg SD	4.11
SD btwn Labs	4.75	5.03	4.83	4.47	SD btwn Labs	4.35	SD btwn Labs	4.22
Labs Incld	55	55	55	53	SD btwn Wks	2.36	SD btwn Wks	2.79
Labs Excld	1	1	1	3	Labs Incld	54	Labs Incld	55
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LG	L&W 753	LX	L&W 506
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TD	TMI Digital Crush Tester, Model 17-09	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2X7RGA	138.0	136.3	135.6	139.1	137.2	-0.01	4.4	1.6	137.3	-0.04	3.4	1.2	8	LZ
2YKLAC	139.9	137.0	137.3	139.7	138.5	0.18	3.6	1.6	134.3	-0.58	3.9	3.3	12	TH
38CQPB	143.4	149.7	146.2	151.3	147.7	1.57	4.3	3.5	141.8	0.77	9.1	8.7 H	12	LC
3LUJF3	120.8 *	131.5 L	124.3	112.0 XH	122.2	-2.30 *	6.6	8.1	122.8	-2.66 *	6.2	5.8	12	LZ
66EZUG	140.1	140.7	141.8	141.3	141.0	0.56	3.3	0.7	140.4	0.53	4.2	2.1	12	LD
6DCUTE	133.4	135.7	125.0	130.6	131.2	-0.93	4.1	4.6	135.9	-0.29	5.0	6.0	8	LC
6HNXGV	127.1	130.1	128.4	131.9	129.4	-1.20	3.8	2.1	133.9	-0.66	4.0	7.0	12	LC
6LLJ7D	155.1 *	143.7 H	140.1 H	148.4	146.8	1.45	10.5	6.5 H	145.9	1.51	8.0	4.7 H	12	LC
7A8L2A	134.2	139.2	136.3	134.1	136.0	-0.21	5.1	2.4	135.9	-0.29	4.3	1.6	12	LD
8PYZFU	138.2 H	141.7	144.4	141.6	141.5	0.63	6.7	2.6	137.6	0.02	4.6	3.9	12	MB
8YHEGB	143.4	142.3	138.4	142.2	141.6	0.65	4.5	2.2	140.1	0.47	4.4	2.6	12	LD
A2MMYU	131.6	131.2	131.6	129.5	131.0	-0.96	2.8	1.0	134.4	-0.57	4.1	4.7	12	LD
ADUZ82	143.1	147.2	141.3	138.3	142.5	0.78	5.9	3.7	141.9	0.79	7.8	7.3 H	12	MB
CRQVHY	143.1	143.3	145.9	144.7	144.2	1.05	5.0	1.3	143.6	1.09	4.8	2.9	12	EM
DBDC9Q	134.4	133.9	135.2	129.8	133.3	-0.60	4.6	2.4	132.9	-0.83	4.1	1.9	8	LD
DMBHZ4	141.1	137.0	135.7	136.3	137.5	0.03	5.3	2.4	136.5	-0.19	5.3	1.9	12	LD
ECQVJU	129.0	132.2	129.2	134.0	131.1	-0.94	3.9	2.4	133.8	-0.67	4.5	3.2	12	EM
EGJZCY	142.0	142.7	142.6	141.2	142.1	0.73	3.0	0.7	142.2	0.84	3.3	1.3	12	LD
EJ84UP	124.2	125.2 *	129.6	129.7	127.2	-1.54	5.0	2.9	128.8	-1.58	4.2	2.2	12	EN
EV4FFX	126.0	127.3 H	131.9	126.6	128.0	-1.42	6.3	2.7	128.5	-1.63	5.9	2.0	8	LC
FB6CXZ	139.5	143.3	140.6 H	147.6 H	142.8	0.83	7.2	3.6	140.8	0.60	5.9	3.5	12	LC
FC3RNY	149.5	103.7 X	146.5	148.8	137.1	-0.03	4.6	22.3	147.0	1.71	6.0	14.3	12	LZ
FERHBP	134.1	138.2	133.6	140.1	136.5	-0.12	4.3	3.2	137.4	-0.02	4.2	2.9	12	MB
FFLGWV	140.3	141.6	140.7	141.8	141.1	0.57	3.4	0.7	136.8	-0.14	3.2	3.3	12	EM
FL9UPQ	145.1	139.4	142.6	143.3	142.6	0.80	4.1	2.4	143.5	1.08	3.8	1.8	12	LD
FM2PCY	134.9	130.1	133.6	135.7	133.6	-0.57	4.1	2.5	134.8	-0.49	3.8	3.7	12	EM
GME9HU	153.2 *	151.8 *L	149.3	150.9	151.3	2.12 *	3.5	1.6	151.6	2.54 *	5.0	2.7	12	LD
GYBH2X	141.6	142.7	141.2	142.4	142.0	0.71	4.0	0.7	141.5	0.72	4.2	1.4	12	TH
HT2J8J	139.6	145.6	140.9	143.9	142.5	0.79	5.4	2.7	146.3	1.60	5.4	14.4	12	LC
HUUADX	138.0	138.2	138.1	138.1	138.1	0.12	6.2	0.1	137.1	-0.08	5.7	1.2	12	LD
K8VMMU	133.5	132.9	129.7	132.6	132.2	-0.78	3.4	1.7	131.0	-1.17	4.0	1.8	12	LD
KAWQCV	130.5	124.0 *	125.4	120.9 *	125.2	-1.84	4.2	4.0	124.9	-2.28 *	4.2	3.8	8	TU
L22A3H	138.8	141.8	141.1	136.6	139.6	0.34	3.7	2.4	139.8	0.42	4.4	2.0	11	LZ
L3FEYU	138.6	138.8	139.1	138.8	138.8	0.23	2.7	0.2	138.6	0.20	3.0	0.7	12	MB
LP9WE2	143.6	141.3	140.8	134.7	140.1	0.42	3.6	3.8	140.1	0.47	3.6	3.8	4	TJ

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 56 lb Linerboard - 56A1

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
LT8A2Q	137.9	145.6	140.1	134.6	139.6	0.34	5.5	4.6	138.1	0.10	5.1	3.8	12	LD
MAUKBR	138.4 L	134.5	136.7	134.2	135.9	-0.21	2.6	2.0	137.0	-0.10	2.4	2.6	12	TD
NWZKWU	132.0	136.2	136.1	135.5	135.0	-0.36	4.0	2.0	134.9	-0.47	4.0	3.2	12	LD
Q7JYQB	136.7	138.4	138.9	137.1	137.8	0.07	3.0	1.0	136.4	-0.21	3.0	3.2	12	LY
QA2X7Q	137.5	139.5	138.3	112.8 XH	132.0	-0.80	6.2	12.8	137.0	-0.09	4.6	7.7	12	LC
QD28CL	150.1	148.5	148.3	149.3	149.1	1.78	5.5	0.8	144.4	1.24	6.9	15.5	8	LC
QNY8QB	158.1 *H	144.7	153.5 *	154.4 *H	152.7	2.33 *	6.7	5.7	157.8	3.66 X	5.9	5.3	12	LY
RNFDEM	145.1	135.7	146.1	137.2	141.0	0.56	3.4	5.4	142.3	0.86	4.1	6.0	8	LD
RX6E4P	131.7	133.1	127.2	129.6	130.4	-1.05	3.4	2.6	132.8	-0.85	3.7	2.4	12	LD
U8HBZ8	131.3	132.2	132.8	136.1	133.1	-0.64	3.5	2.1	137.7	0.04	3.7	5.6	12	LC
UGQF2J	136.7	136.5	135.7	137.7	136.6	-0.10	3.5	0.8	137.5	0.00	4.3	2.2	12	LZ
V979PP	131.8	127.4	133.7	129.8	130.7	-1.01	4.1	2.7	130.3	-1.30	6.4	6.7	12	LZ
VGLT9P	127.7	127.9	127.4	128.6	127.9	-1.43	3.1	0.5	128.1	-1.71	4.3	2.7	12	LD
XJK6K8	140.5	117.6 X	120.9 *	123.8 *	125.7	-1.76	4.4	10.2	134.2	-0.59	4.7	8.9	12	LC
XWTNGG	139.7	136.2	142.1	146.8	141.2	0.59	3.9	4.4	138.5	0.18	3.9	3.4	12	LC
XZBFKB	142.0	139.1	145.0	142.1	142.1	0.72	4.1	2.4	143.6	1.10	4.0	2.6	12	LD
ZE2RU4	135.2	136.5	137.5	136.2	136.4	-0.14	3.3	0.9	136.8	-0.12	3.3	1.8	12	LD
ZTZEJK	143.4	143.4	138.3	141.0	141.5	0.64	4.0	2.4	140.4	0.51	3.9	2.2	12	LD
ZXBPCE	147.4	132.8	136.3	140.0	139.1	0.27	5.0	6.2	142.7	0.93	5.2	5.6	8	LD
ZZFCR6	131.1	129.6	130.0	133.6	131.1	-0.95	4.7	1.8	133.6	-0.71	5.0	3.9	12	LC
ZZXTXE	85.3 XH	85.4 XH	88.2 XH	83.3 XH	85.5	-7.86 X	10.2	2.0 H	85.5	-9.41 X	10.2	2.0 H	4	EM

Consensus (All Labs) Results

Wk Mean	138.23	137.64	137.25	138.00	Month Mean	137.30	Grand Mean	137.52
Avg SDr	4.37	5.11	4.16	4.65	Avg SD	4.69	Avg SD	4.80
SD btwn Labs	7.44	6.35	6.88	7.15	SD btwn Labs	6.59	SD btwn Labs	5.53
Labs Incld	55	53	55	53	SD btwn Wks	4.78	SD btwn Wks	5.28
Labs Excld	1	3	1	3	Labs Incld	55	Labs Incld	54
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LY	L&W Crush Tester 958	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	TD	TMI Digital Crush Tester, Model 17-09
TH	TMI Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TU	TMI Universal Crush Tester (TMI K440)		

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D2

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2YKLAC	22.6	21.9 L	22.2 L	22.3 L	22.3	0.06	1.0	0.3 L	22.3	-0.10	1.1	0.3	16	TT
38CQPB	24.2	24.5 *	23.8	22.7	23.8	1.65	1.6	0.8	23.7	1.39	1.8	0.7	16	LU
3LUJF3	21.0	21.0	21.5	21.0	21.1	-1.11	2.0	0.3	21.5	-0.87	1.9	0.4	15	LZ
4TQ496	21.1	20.5	20.5	19.8 L	20.5	-1.77	1.6	0.5	21.3	-1.13	1.6	1.3	12	XX
66EZUG	22.7	23.0	22.8	22.4	22.7	0.53	1.7	0.2	23.0	0.64	1.9	0.6	16	LY
6DCUTE	21.5 L	22.0 L	23.8	23.9 L	22.8	0.64	0.9	1.2 L	22.8	0.43	0.8	0.7 L	11	LY
6HNXGV	20.9	22.3	20.2 L	19.7 *	20.8	-1.47	1.3	1.1	21.7	-0.70	1.6	1.0	16	LA
6LLJ7D	23.1	23.0	21.3	21.7	22.3	0.07	2.1	0.9	22.4	0.02	1.9	0.8	16	LA
7A8L2A	21.9	21.9	21.1	22.8	21.9	-0.26	1.7	0.7	21.9	-0.47	1.5	0.4	16	LY
8PYZFU	23.4 L	23.8 L	22.6 L	24.0 L	23.5	1.31	0.6	0.6 L	23.0	0.68	0.5	0.7 L	16	BK
8YHEGB	22.2	21.6	21.8	22.1	21.9	-0.29	1.8	0.3	22.2	-0.16	1.8	0.7	16	LY
A2MMYU	21.1	22.4	21.3 L	21.1	21.5	-0.75	1.3	0.6	21.8	-0.63	1.3	0.8	11	LA
A4NPNV	19.6 *L	18.4 XL	16.1 XL	19.4 *L	18.4	-3.97 X	0.0	1.6 L	20.1	-2.33 *	0.1	2.0 L	16	LW
ADUZ82	73.3 XL	21.9 L	22.3 L	22.5 L	35.0	13.21 X	0.4	25.6 L	27.1	4.83 X	1.1	15.3	11	LA
C43TA2	23.4	22.4	24.6	No Data	23.4	1.28	2.2	1.1	23.4	1.01	2.1	0.8	10	LA
DMBHZ4	23.4 H	23.9 H	22.6 H	21.7	22.9	0.71	2.6	1.0 H	22.5	0.14	2.2	1.1	16	LA
DQQMXY	23.9	23.4	24.6	24.1 H	24.0	1.86	2.1	0.5	24.1	1.75	2.2	0.6	16	LZ
ECQVJU	21.2 H	22.3	22.4	20.5 H	21.6	-0.62	2.6	0.9 H	22.8	0.39	2.0	1.1	16	LZ
EGJZCY	20.2	21.6	20.7	20.6	20.8	-1.48	1.6	0.6	21.6	-0.83	1.7	0.6	16	LY
EJ84UP	20.2	20.5	19.8	20.3	20.2	-2.08 *	1.7	0.3	20.6	-1.78	1.9	0.5	16	LY
FB6CXZ	22.8	23.7	23.6	22.7	23.2	1.01	1.8	0.5	22.9	0.50	1.7	0.7	16	LW
FL9UPQ	23.3	22.8	22.6	23.1	23.0	0.78	1.6	0.3	22.9	0.53	1.7	0.4	16	LA
GJGPFW	23.5	24.2	24.7 H	23.9	24.1	1.94 *	2.0	0.5	24.3	1.93 *	2.2	0.6	13	XX
HT2J8J	22.2 L	22.1 L	20.8 L	21.2 L	21.6	-0.65	0.0	0.7 L	21.2	-1.18	0.0	1.1 L	16	LW
K8VMMU	20.4	20.5	20.2	20.8	20.5	-1.79	1.7	0.2	21.3	-1.15	1.8	0.8	16	LW
KM77JZ	22.8	22.8	23.2	22.9 H	22.9	0.75	2.3	0.2	23.2	0.81	2.1	0.5	15	LW
L22A3H	21.2	21.6	20.4	21.8	21.2	-0.99	1.7	0.6	21.7	-0.71	1.8	0.6	14	LW
NWZKWU	21.2	22.9	21.2	21.9	21.8	-0.40	2.1	0.8	21.9	-0.52	2.0	0.5	16	LU
P349PL	23.0	23.5	21.8	21.7	22.5	0.30	1.5	0.9	22.2	-0.15	1.5	1.0	16	LA
Q7JYQB	21.5	22.4	21.4	22.5	22.0	-0.25	2.0	0.6	21.9	-0.46	2.5	0.6 H	16	LW
QA2X7Q	22.5 L	21.1 L	20.8 L	20.9 L	21.3	-0.94	0.3	0.8 L	21.6	-0.84	0.4	0.6 L	12	LA
RNFDEM	23.2	21.9	22.9 H	22.2 L	22.5	0.34	1.9	0.6	23.1	0.74	2.0	0.7	16	LZ
RRVL3M	22.3	21.8 H	22.0	22.3 H	22.1	-0.10	2.3	0.2	21.5	-0.93	1.8	0.7	16	XX
RT8V3R	22.6	21.7	23.2	No Data	22.5	0.32	1.9	0.8	22.8	0.41	2.0	0.8	9	LU
RX6E4P	22.4	21.7	21.6 H	23.1	22.2	0.01	1.9	0.7	22.1	-0.25	1.7	0.5	16	LA

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D2

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
TPPKHF	21.2	21.1	24.4	19.9	21.7	-0.55	1.9	1.9	22.1	-0.32	1.8	1.1	12	XX
U8HBZ8	23.6	23.8	23.5	22.7	23.4	1.22	1.4	0.5	23.1	0.70	1.6	0.4	16	LU
V979PP	19.9 *	21.5	21.1	21.2	20.9	-1.32	1.7	0.7	20.9	-1.49	1.7	0.9	16	LA
VBVDJH	23.8	22.9	22.8	22.7	23.1	0.88	2.0	0.5	23.2	0.85	2.1	0.6	16	LU
VGLT9P	22.7	21.8	21.8	21.9	22.0	-0.16	1.8	0.4	21.7	-0.71	1.9	0.5	16	LY
W3YXA4	25.7 X	26.2 XH	25.9 *	24.3 H	25.5	3.43 X	2.1	0.8	24.9	2.56 *	2.1	0.7	16	LA
WZTFC9	21.9 L	22.8	23.2	23.2	22.8	0.63	1.7	0.6	23.0	0.63	1.9	0.8	12	LH
X8ABPH	20.8	20.6	20.6	21.2	20.8	-1.45	1.6	0.3	21.1	-1.27	1.4	0.5	16	LA
XJK6K8	23.2	18.3 X	18.9 *	23.0	20.8	-1.40	1.5	2.6	22.3	-0.13	1.6	1.5	16	XX
XWTNGG	22.3	22.5	21.8	22.5	22.3	0.06	1.8	0.3	22.4	0.06	2.0	0.4	16	LU
XZBFKB	22.7	22.2	23.4	23.1	22.8	0.65	1.3	0.5	23.1	0.77	1.2	0.6	16	LH
Z6AETJ	21.3 L	24.1 L	22.6 L	23.3 L	22.8	0.63	0.0	1.2 L	31.4	9.28 X	1.4	13.0	12	LU
Z6E2LD	22.7 L	22.9 L	22.5 L	22.5	22.6	0.46	1.0	0.2 L	22.7	0.28	1.1	0.2	16	TT
ZCTEBG	22.4	21.7	21.1	22.6	21.9	-0.27	1.5	0.7	21.7	-0.72	1.6	0.7	16	LW
ZE2RU4	22.1 L	22.0	22.1	22.4	22.2	-0.04	1.4	0.2	21.9	-0.44	1.6	0.6	16	BK
ZTZEJK	23.4	23.7	23.1	23.7	23.5	1.32	1.6	0.3	23.8	1.45	1.8	0.9	16	LA
ZXBPCE	24.3 H	23.2	21.3	No Data	22.9	0.74	2.0	1.5	24.1	1.78	1.3	3.9	15	LU
ZZFCR6	22.8	21.9	22.1	22.1 H	22.2	0.01	2.2	0.4	22.2	-0.17	2.0	0.5	16	LW

Consensus (All Labs) Results

Wk Mean	22.22	22.34	22.16	22.11	Month Mean	22.20	Grand Mean	22.38
Avg SDr	1.78	1.69	1.70	1.63	Avg SD	1.72	Avg SD	1.72
SD btwn Labs	1.16	1.02	1.41	1.21	SD btwn Labs	0.97	SD btwn Labs	0.98
Labs Incld	51	50	52	50	SD btwn Wks	0.80	SD btwn Wks	0.96
Labs Excld	2	3	1	0	Labs Incld	50	Labs Incld	51
Labs not Rcvd	0	0	0	3				

Key to Instrument Codes Reported by Participants

BK	Buchel Strip Compression Tester BK-155	LA	L&W Autoline
LH	L&W 282	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		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2YKLAC	33.8 L	33.5 L	33.7 L	33.8 L	33.7	0.09	1.1	0.1 L	33.4	-0.08	1.2	0.3 L	12	TT
38CQPB	37.3	35.9	36.8	38.1	37.0	1.96 *	2.8	0.9	36.7	1.93	3.0	0.7	12	LU
3LUJF3	32.6	31.7	33.0	31.2	32.1	-0.77	3.0	0.8	32.2	-0.84	2.7	0.7	12	LZ
4TQ496	31.8	30.5	31.1	30.7 L	31.0	-1.42	2.4	0.6	31.4	-1.33	2.4	1.9	8	XX
66EZUG	33.8	33.8	34.9	34.2 L	34.2	0.36	2.3	0.5	34.4	0.50	2.5	0.5	12	LU
6DCUTE	32.3	34.3	35.7	36.0	34.6	0.59	2.3	1.7	34.0	0.26	2.0	1.3	11	LY
6HNXGV	33.5	31.5	31.3	29.3	31.4	-1.19	3.0	1.7	32.1	-0.91	2.5	1.5	12	LA
6LLJ7D	31.5	33.8 L	32.2	35.2	33.2	-0.20	2.0	1.7	33.9	0.20	2.8	1.9	12	LA
7A8L2A	31.8	33.3	33.3	32.6 H	32.8	-0.43	2.7	0.7	33.3	-0.15	2.4	0.9	12	LZ
8PYZFU	36.0 L	36.2 L	36.1 L	38.3 *	36.6	1.73	1.4	1.1 L	34.5	0.58	1.3	4.0 L	12	BK
8YHEGB	33.1	31.9	33.1	34.7	33.2	-0.20	2.9	1.1	33.0	-0.34	2.8	0.7	12	LY
A2MMYU	33.6	33.0	33.5	33.4	33.4	-0.09	2.6	0.3	33.1	-0.29	2.6	0.4	8	LA
A4NPNV	31.8 L	30.7 L	29.0 *L	28.0 *L	29.9	-2.05 *	0.0	1.7 L	31.9	-1.05	0.1	1.8 L	12	LW
ADUZ82	115.1 X	35.3 L	34.4 L	35.2 L	55.0	11.99 X	0.8	40.1 L	40.6	4.39 X	0.5	23.5 L	12	LA
C43TA2	34.4	34.0	33.8	No Data	34.1	0.30	2.7	0.3	33.4	-0.09	2.6	1.1	10	LA
DMBHZ4	32.5	33.7	34.6	32.1	33.2	-0.17	2.7	1.2	34.1	0.34	2.5	1.4	12	LA
DQQMXY	37.9 *	36.3	37.8 *	36.9	37.2	2.07 *	3.1	0.8	37.5	2.44 *	3.3	0.8	12	LZ
ECQVJU	34.7	34.4	32.0	34.7	34.0	0.23	2.7	1.3	33.5	-0.03	2.6	1.1	12	LZ
EGJZCY	33.4	32.2	30.2	34.5	32.6	-0.54	2.4	1.9	32.6	-0.59	2.5	1.0	12	LY
EJ84UP	32.2	30.6	30.9	31.6	31.3	-1.24	2.5	0.7	31.0	-1.56	2.3	0.8	12	LY
FB6CXZ	35.7	35.3	35.7	33.4	35.0	0.83	2.7	1.1	34.2	0.38	2.7	1.1	12	LW
FL9UPQ	33.5	34.1	34.0	34.2	34.0	0.24	2.5	0.3	33.8	0.13	2.6	0.8	12	LA
GJGPFW	37.5 *	37.8 *	37.4 H	35.6 H	37.1	1.98 *	3.4	1.0	36.7	1.96 *	3.3	0.8	8	LU
HT2J8J	26.8 XL	26.7 XL	26.4 XL	26.6 *L	26.6	-3.86 X	0.1	0.2 L	31.2	-1.50	0.0	3.7 L	12	LW
K8VMMU	30.8	32.3	30.7	30.7	31.2	-1.33	3.1	0.8	31.7	-1.14	2.7	0.9	12	LW
KM77JZ	33.8	33.9	34.1	33.7	33.9	0.19	2.9	0.2	34.6	0.65	3.1	0.9	11	LW
L22A3H	32.9	32.9	32.0	31.8	32.4	-0.63	2.6	0.6	32.3	-0.76	2.6	0.9	11	LW
NWZKWU	30.9 H	32.7	32.3	32.8	32.2	-0.75	3.3	0.9	32.5	-0.65	3.2	0.8	12	LU
P349PL	34.7	35.9	33.5	33.3 L	34.4	0.46	2.6	1.2	33.6	0.02	2.1	1.7	12	LA
Q7JYQB	32.8	33.4	33.8	33.1	33.3	-0.14	2.4	0.4	33.1	-0.30	2.4	0.8	12	LW
QA2X7Q	32.7 L	33.9 L	26.6 X	26.9 *	30.0	-1.97 *	1.3	3.8 L	31.7	-1.18	1.0	2.4 L	12	LA
RNFDEM	34.5 H	32.4	34.2	33.0	33.5	0.01	3.4	1.0	33.6	0.01	3.3	1.2	8	LZ
RRVL3M	33.1	35.7	33.6	32.6	33.7	0.12	2.7	1.4	33.5	-0.07	3.1	0.9	12	XX
RT8V3R	36.7 H	32.7 L	34.9	No Data	34.7	0.68	2.8	2.0	34.6	0.63	2.6	1.1	9	LU
RX6E4P	33.5	34.2	32.0	33.1	33.2	-0.20	2.2	0.9	32.0	-0.94	2.2	2.5	12	LW

Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 56 lb Linerboard - 56A1

TAPPI Official Test Method T826

Report #572 (E)
May 2017

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
TPPKHF	31.2	33.3	34.9	30.8	32.6	-0.54	2.9	1.9	33.9	0.18	3.0	2.3	8	XX
U8HBZ8	34.7	34.5	34.1	34.2	34.4	0.47	2.1	0.2	34.6	0.63	2.3	0.3	12	LU
V979PP	32.2	31.5	30.9 L	32.2	31.7	-1.04	1.9	0.6	32.6	-0.60	1.3	1.4 L	12	LA
VBVDJH	36.9	36.3	36.2	35.6	36.3	1.52	3.0	0.5	35.4	1.15	3.0	1.2	12	LU
VGLT9P	32.9	32.4	33.2 H	34.0	33.1	-0.23	3.0	0.7	32.3	-0.80	2.8	1.4	12	LY
W3YXA4	35.7	37.7 *	37.3	37.5	37.0	1.96 *	2.9	0.9	37.2	2.28 *	3.0	0.8	12	LA
WZTFC9	35.9	33.1	34.6 H	37.8	35.4	1.02	3.1	2.0	35.6	1.26	2.8	1.4	8	LH
X8ABPH	32.9	30.4	31.4	32.8	31.9	-0.92	2.3	1.2	31.7	-1.18	2.1	1.0	12	LA
XJK6K8	34.5	29.3 *	29.0 *	32.9	31.4	-1.18	2.3	2.7	31.7	-1.16	2.4	2.0	12	XX
XWTNGG	32.4	33.2	32.9	32.4	32.7	-0.45	2.5	0.4	33.2	-0.23	2.6	0.7	12	LU
XZBFKB	35.1	33.2	36.1	34.6	34.7	0.68	2.2	1.2	34.6	0.63	2.1	0.8	12	LH
Z6AETJ	35.6 L	34.9 L	36.4 L	36.4 L	35.9	1.30	0.0	0.7 L	35.8	1.39	0.0	1.2 L	8	LU
Z6E2LD	34.2 L	33.7 L	33.9 L	34.2 L	34.0	0.26	1.1	0.3 L	33.8	0.12	1.2	0.3 L	12	TT
ZCTEBG	31.7	32.2	31.6	32.3	32.0	-0.88	2.4	0.4	32.1	-0.93	2.4	0.7	12	LW
ZE2RU4	32.7	33.2	32.8	31.2 L	32.5	-0.60	1.9	0.9	32.2	-0.85	2.2	0.9	12	BK
ZTZEJK	32.6	34.2	33.4	33.1	33.3	-0.11	2.0	0.7	33.5	-0.05	2.2	1.0	12	LA
ZXBPCE	38.0 *	34.4	33.4	34.4	35.1	0.85	2.8	2.0	37.2	2.23 *	2.0	2.7	8	LU
ZZFCR6	33.6	31.7	32.5	31.6	32.4	-0.65	3.2	0.9	33.1	-0.29	3.0	0.9	12	LW

Consensus (All Labs) Results

Wk Mean	33.80	33.52	33.54	33.32	Month Mean	33.53	Grand Mean	33.57
Avg SDr	2.58	2.49	2.51	2.49	Avg SD	2.54	Avg SD	2.46
SD btwn Labs	1.85	1.82	2.07	2.53	SD btwn Labs	1.79	SD btwn Labs	1.61
Labs Incld	51	52	51	51	SD btwn Wks	1.25	SD btwn Wks	1.45
Labs Excld	2	1	2	0	Labs Incld	51	Labs Incld	52
Labs not Rcvd	0	0	0	2				

Key to Instrument Codes Reported by Participants

BK	Buchel Strip Compression Tester BK-155	LA	L&W Autoline
LH	L&W 282	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		

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
38CQPB	152.0	-0.75	16.92	146.7	-1.32	5.39	4	EV
6DCUTE	133.2	-1.49	8.63	133.1	-2.01 *	0.21	2	EV
6LLJ7D	189.5	0.70	25.79	183.9	0.54	15.15	4	LA
7A8L2A	219.5	1.87	16.31	195.1	1.10	21.43	3	EV
8PYZFU	200.8	1.14	29.76	197.9	1.24	4.92	4	EV
ADUZ82	138.8	-1.27	24.01	158.9	-0.71	28.35	2	LA
EJ84UP	172.8	0.05	8.90	173.8	0.04	2.34	4	EV
FL9UPQ	165.3	-0.24	14.02	167.1	-0.30	1.57	4	XX
GME9HU	159.8	-0.45	16.12	152.6	-1.03	8.61	4	EV
HT2J8J	184.5	0.51	9.31	188.3	0.76	12.10	4	EV
L22A3H	156.6	-0.58	9.11	165.2	-0.40	16.38	4	EV
NWZKWU	176.3	0.19	12.43	177.3	0.21	5.45	4	EV
QA2X7Q	211.3	1.55	37.75	206.7	1.68	13.77	3	LA
RNFDEM	163.8	-0.30	20.67	166.1	-0.35	18.34	4	LA
RX6E4P	201.4	1.17	19.20	201.9	1.44	7.35	4	LA
V979PP	125.1	-1.80	12.06	136.1	-1.86	25.39	4	LA
VBVDJH	189.6	0.71	15.94	183.2	0.50	6.55	3	EV
X8ABPH	152.5	-0.73	12.46	154.5	-0.93	3.45	4	EV
YRCHHL	158.5	-0.50	14.10	158.6	-0.73	10.58	4	EV
ZZFCR6	177.0	0.22	18.51	178.6	0.28	2.36	4	XX

Consensus (All Labs) Results

Month Mean	171.41	Grand Mean	173.13
Avg SD	18.62	Avg SD Months	12.19
SD btwn Labs	25.72	SD btwn Labs	19.98
Labs Incld	20	Labs Incld	19

Key to Instrument Codes Reported by Participants

EV Emveco Microgage Model 210-R
LA L&W Autoline
XX Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 229

Roughness - Sheffield Method, 42 lb Linerboard - 42D2

TAPPI Official Test Method T538

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV		SD	Mean	CPV		SD Months	Months	Inst
43X68B	386.9	2.03	*	30.10	417.6	13.53	X	43.35	2	XX
6W6VJB	363.8	-0.21		7.68	362.0	-0.11		5.53	4	LA
7T2GDX	360.9	-0.49		8.10	360.9	-0.39		0.03	2	LA
A2MMYU	354.3	-1.13		7.90	358.3	-1.03		3.86	3	LA
DMBHZ4	362.9	-0.30		6.02	362.3	-0.05		3.64	4	LA
FC3RNY	360.4	-0.54		5.64	359.6	-0.71		13.02	4	TS
P349PL	363.1	-0.28		7.77	363.5	0.24		2.91	4	XX
XWTNGG	375.4	0.92		9.50	370.9	2.05	*	4.61	4	XX
ZTZEJK	440.8	7.27	X	0.42	439.2	18.84	X	1.81	4	XX

Consensus (All Labs) Results

Month Mean	365.96	Grand Mean	362.49
Avg SD	12.80	Avg SD Months	6.07
SD btwn Labs	10.30	SD btwn Labs	4.07
Labs Incld	8	Labs Incld	7

Key to Instrument Codes Reported by Participants

LA	L & W Roughness Sheffield - Autoline	TS	TMI Monitor/Smoothness
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 42 lb Linerboard - 42D

TAPPI Official Test Method T569

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
38CQPB	95.2	-0.64	7.60	93.5	-0.72	3.24	4	TM
6HNXGV	94.2	-0.69	4.49	103.9	-0.20	11.18	4	TM
7A8L2A	89.0	-0.94	12.45	91.5	-0.82	4.91	4	XX
8MBWY3	94.6	-0.67	8.02	94.9	-0.65	4.12	4	TM
A2MMYU	102.0	-0.30	8.28	102.6	-0.26	0.48	3	SC
DQQMXY	100.6	-0.37	4.34	96.1	-0.59	8.78	4	TM
GME9HU	124.6	0.82	9.45	129.1	1.07	6.67	4	HY
HT2J8J	158.0	2.47 *	10.37	171.8	3.21 X	13.43	4	SC
K8VMMU	118.6	0.52	5.94	117.7	0.49	3.76	4	TM
NWZKWU	89.4	-0.92	8.79	90.0	-0.89	2.96	4	TM
P349PL	111.6	0.18	3.97	123.5	0.79	27.09	4	SC
QA2X7Q	132.2	1.20	7.19	132.9	1.26	7.53	3	HY
RX6E4P	129.4	1.06	13.65	141.7	1.70	22.88	4	HY
V979PP	110.8	0.14	7.33	108.9	0.05	5.43	4	TM
VAMTPA	97.8	-0.51	3.19	98.5	-0.47	0.95	2	TM
VBVDJH	65.6	-2.10 *	3.91	60.3	-2.39 *	4.44	4	TM
XJK6K8	120.5	0.62	13.49	111.0	0.16	19.68	4	SC
XWTNGG	108.2	0.01	5.01	111.1	0.17	2.29	4	HY
ZTZEJK	54.3	-2.66 X	1.29	55.2	-2.64 X	1.52	4	LZ
ZXBPCE	110.6	0.12	3.96	133.4	1.29	32.27	2	HZ

Consensus (All Labs) Results

Month Mean	108.05	Grand Mean	107.81
Avg SD	8.11	Avg SD Months	13.16
SD btwn Labs	20.20	SD btwn Labs	19.89
Labs Incld	19	Labs Incld	18

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	107.57	21.13	0.48	16
Modified Scott Bond Mechanics	118.80	14.99	10.75	2

Analysis Notes

ZTZEJK - Method used is not covered in this test. Data excluded from consensus calculation.

Key to Instrument Codes Reported by Participants

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	XX	Instrument make/model not specified by lab

	Monthly Results			Cumulative Results			
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months
38CQPB	25.9	-0.49	3.29	28.2	0.27	1.84	4
4864P9	28.1	0.44	1.64	27.2	-0.25	1.28	4
4TQ496	26.8	-0.11	1.92	28.7	0.48	2.14	3
7A8L2A	22.0	-2.14 *	4.95	27.3	-0.19	3.53	4
DQQMXY	25.0	-0.87	0.71	25.3	-1.16	1.32	4
ECQVJU	25.5	-0.66	2.24	29.0	0.63	3.52	4
EJ84UP	28.4	0.56	2.49	28.4	0.36	0.73	4
FB6CXZ	25.2	-0.79	2.95	27.4	-0.15	3.91	4
FL9UPQ	26.2	-0.37	0.84	26.7	-0.49	0.66	4
GJGPFW	25.8	-0.53	3.05	24.9	-1.34	2.24	4
HT2J8J	27.6	0.23	1.95	29.7	0.98	2.09	4
K8VMMU	24.9	-0.92	1.47	25.5	-1.03	1.47	4
L22A3H	27.0	-0.03	0.71	25.0	-1.28	3.61	4
NWZKWU	30.8	1.58	1.64	28.1	0.22	2.14	4
P349PL	28.8	0.73	1.30	30.1	1.17	1.29	4
QA2X7Q	27.6	0.22	3.07	29.1	0.69	1.53	3
QD28CL	29.0	0.82	1.22	28.1	0.19	1.65	4
RX6E4P	24.6	-1.04	1.82	25.7	-0.97	0.96	4
TPPKHF	27.4	0.14	2.19	28.0	0.16	0.60	3
V979PP	30.2	1.33	2.59	31.6	1.87	1.36	4
VBVDJH	27.4	0.14	1.14	26.3	-0.64	1.15	4
XWTNGG	24.6	-1.04	1.67	23.9	-1.82	1.05	4
ZTZEJK	33.2	2.60 *	0.45	32.3	2.21 *	2.29	4
ZZFCR6	27.6	0.23	1.67	27.9	0.09	1.97	4

Consensus (All Labs) Results

Month Mean	27.06	Grand Mean	27.66
Avg SD	2.20	Avg SD Months	2.07
SD btwn Labs	2.36	SD btwn Labs	2.08
Labs Incld	24	Labs Incld	24

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2X7RGA	16.3	-1.31	0.95	16.6	-1.09	0.35	2	XX
38CQPB	17.5	-0.62	1.58	18.7	0.04	1.33	4	LA
4864P9	25.8	4.16 X	4.02	22.3	1.98 *	3.43	4	GA
6LLJ7D	17.7	-0.49	0.89	18.2	-0.19	0.93	4	LA
7A8L2A	18.8	0.12	0.93	19.1	0.28	0.37	4	LP
8DZ6FD	17.2	-0.80	1.27	18.2	-0.21	0.95	4	LP
8PYZFU	21.7	1.80	1.68	22.0	1.83	0.29	4	XX
A2MMYU	20.5	1.10	1.77	19.8	0.65	2.08	3	LA
DQQMXY	19.2	0.37	1.99	19.4	0.46	1.00	4	TD
EGJZCY	18.0	-0.33	2.21	20.4	0.95	2.38	4	LP
FB6CXZ	18.7	0.09	1.19	18.1	-0.27	1.01	3	LP
FL9UPQ	18.8	0.15	1.46	18.3	-0.13	0.37	4	LA
GDBWL2	16.6	-1.13	0.57	17.0	-0.83	0.84	3	LA
GJGPFW	17.3	-0.71	1.59	14.9	-1.99 *	4.31	4	LA
HT2J8J	16.5	-1.19	2.64	17.9	-0.38	2.09	4	HG
K8VMMU	17.3	-0.71	2.00	17.5	-0.60	0.60	4	HG
L22A3H	15.9	-1.54	0.32	15.3	-1.75	2.05	4	XX
LT8A2Q	20.9	1.35	1.97	18.9	0.16	2.40	4	GG
QA2X7Q	17.7	-0.51	1.32	18.8	0.13	1.15	3	LA
RX6E4P	21.6	1.75	2.07	20.8	1.17	0.68	4	LP
V979PP	19.2	0.36	1.20	18.6	0.03	0.47	4	LP
VBVDJH	17.2	-0.79	1.89	15.5	-1.65	4.99	4	LA
WKJQWM	20.0	0.82	1.79	19.0	0.21	1.12	4	XX
XWTNGG	20.0	0.83	3.29	18.7	0.05	1.02	4	TP
ZTZEJK	21.0	1.40	1.00	20.7	1.16	0.23	4	LA

Consensus (All Labs) Results

Month Mean	18.57	Grand Mean	18.58
Avg SD	1.69	Avg SD Months	1.91
SD btwn Labs	1.73	SD btwn Labs	1.86
Labs Incld	24	Labs Incld	25

Key to Instrument Codes Reported by Participants

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	TD	TMI Gurley Densometer
TP	Technidyne Profile/ plus Roughness & Porosity	XX	Instrument make/model not specified by lab

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2YKLAC	58.5	59.1	58.1	60.0	58.9	-0.52	3.1	0.8	59.0	-0.62	2.7	0.9	16	TH
38CQPB	59.2	59.8	65.2	50.2 X	58.6	-0.66	2.7	6.2	59.2	-0.50	4.0	3.1	16	LC
3LUJF3	56.7	59.6	56.8	62.2	58.8	-0.56	3.3	2.6	58.0	-1.10	3.3	2.1	15	LZ
4TQ496	62.4	51.9 *H	61.4	65.5 *	60.3	0.07	4.4	5.9	60.5	0.14	3.6	3.2	12	XX
66EZUG	61.0	57.5	60.6	57.4	59.1	-0.43	3.6	1.9	60.2	-0.01	3.6	1.6	16	LD
6HNXGV	63.6	56.7	57.9	55.3	58.4	-0.75	2.8	3.6	58.2	-0.98	2.4	3.6	16	LC
7A8L2A	58.5	59.7	62.2	58.6	59.7	-0.17	2.9	1.7	59.4	-0.39	3.5	1.2	16	LZ
8DZ6FD	61.4	62.5	64.6	62.9	62.9	1.16	3.3	1.3	62.6	1.15	3.1	1.1	16	LD
8KLMP2	57.8	57.2	59.2	58.5	58.2	-0.84	3.0	0.9	58.1	-1.01	3.2	1.5	16	TJ
8PYZFU	70.7 X	69.2 X	68.5 *	70.8 XH	69.8	4.13 X	4.0	1.1	63.1	1.38	2.4	4.2	16	MB
8YHEGB	67.6 X	65.5	66.1	65.3 *	66.1	2.55 *	2.9	1.0	63.1	1.40	2.8	2.2	16	LD
ADUZ82	59.6	58.8	59.6	57.6	58.9	-0.53	3.0	0.9	59.0	-0.58	3.5	1.4	11	MB
AJ3VZU	60.8	60.3	59.8	59.5	60.1	-0.02	3.0	0.6	59.8	-0.21	2.6	0.7	16	LD
B8JZXZ	64.2	67.2 *	63.4	65.3 *	65.0	2.08 *	3.7	1.6	65.0	2.32 *	4.4	4.7	16	LC
BFWPXU	59.0	60.0	59.5	60.1	59.7	-0.21	3.1	0.5	59.7	-0.26	2.5	0.6	16	LC
ECQVJU	56.8	57.7	55.9	57.0	56.9	-1.40	3.2	0.7	58.3	-0.92	3.3	1.8	16	LZ
EJ84UP	59.9 H	56.7	61.3	62.3	60.1	-0.03	3.8	2.4	59.9	-0.16	3.6	2.2	16	EN
EUQHU7	61.0	61.0	59.7	60.2	60.5	0.14	2.1	0.6	60.8	0.25	2.1	0.6	8	LD
FB6CXZ	61.0	64.0	61.6	58.5	61.3	0.48	3.0	2.3	60.3	0.01	3.2	2.0	16	LC
FERHBP	62.1	63.3	63.0	60.1	62.1	0.85	2.7	1.5	61.1	0.42	3.3	2.1	16	MB
FL9UPQ	61.6	60.4	60.4	61.6	61.0	0.36	3.1	0.7	61.3	0.52	2.6	1.0	16	LD
GDBWL2	63.1	64.0 H	63.7	63.8	63.6	1.50	3.6	0.4	63.4	1.50	3.2	0.9	12	LC
HJDVNX	66.3 *	63.6	65.4	63.3	64.7	1.93	3.1	1.4	65.0	2.32 *	2.9	1.7	16	TM
HUUADX	59.8	60.1	60.0	60.1	60.0	-0.07	2.7	0.1	59.6	-0.32	3.0	0.3	16	LD
KAWQCV	60.6	64.0	65.8 H	61.5	63.0	1.21	6.5	2.3 H	63.1	1.39	4.9	1.8	12	TU
KM77JZ	58.6	56.9	57.8	58.9	58.0	-0.91	2.4	0.9	57.5	-1.32	3.0	1.6	15	LC
L3FEYU	61.0	58.9	59.0	58.6	59.4	-0.32	2.8	1.1	60.3	0.03	2.5	1.0	16	MB
MAUKBR	66.3 *L	61.9 L	65.1	63.1 L	64.1	1.68	1.4	2.0 L	63.1	1.39	2.0	1.8	16	TD
NWZKWU	60.6	59.2	60.0	60.3	60.0	-0.05	3.2	0.6	58.7	-0.75	3.3	1.5	16	LD
Q7JYQB	59.1	63.7	62.8	62.5	62.0	0.80	2.4	2.0	60.9	0.31	2.5	1.8	15	LE
QNY8QB	59.6	61.5	59.6	59.7 L	60.1	-0.02	2.1	0.9	59.6	-0.32	2.6	1.2	16	LD
RNFDEM	58.4	57.1	57.3	55.9	57.2	-1.27	2.6	1.1	57.9	-1.13	3.3	1.4	16	LD
RX6E4P	59.1	58.7	57.1	57.8	58.2	-0.85	3.7	0.9	59.5	-0.38	3.7	1.8	8	LD
T43LYJ	49.2 X	47.3 X	45.6 X	48.5 X	47.7	-5.33 X	3.9	1.6	53.5	-3.25 X	2.2	3.7	16	TC
U8HBZ8	59.9	60.7	60.9	59.6	60.3	0.05	2.2	0.6	61.0	0.36	2.4	0.9	16	LD

Containerboard Interlaboratory Testing Program

Analysis 240

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM91

TAPPI Official Test Method T809

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
UB2BFM	57.5	58.8	57.9	59.5	58.4	-0.74	3.2	0.9	60.2	-0.01	3.1	1.3	16	EM
UGQF2J	56.5	57.1	55.7	57.0	56.5	-1.54	1.9	0.6	56.4	-1.85	2.3	1.1	12	XX
VBVDJH	61.5	55.0	61.2	59.5 H	59.3	-0.36	4.5	3.0	59.3	-0.46	4.0	1.7	15	XX
W3YXA4	59.4	60.7	59.4	59.0	59.6	-0.21	3.0	0.7	59.9	-0.16	3.2	2.0	16	LD
WKJQWM	59.3	60.2	60.4	60.6	60.1	-0.01	3.5	0.6	60.2	0.00	3.0	1.0	16	LD
WZTFC9	57.9	58.2 L	60.5	59.8	59.1	-0.44	2.1	1.3	59.0	-0.58	2.6	1.7	12	LD
XJK6K8	58.1	55.6	57.0	54.0 *	56.2	-1.70	3.8	1.8	58.3	-0.92	3.2	2.1	16	LC
XWTNGG	59.6 L	63.0	63.6	62.8	62.2	0.89	2.7	1.8	60.0	-0.11	2.8	2.1	16	LC
XZBFKB	60.6 L	62.0	60.4	61.9 L	61.3	0.48	1.6	0.9	61.8	0.77	2.1	1.0	16	LC
YNB8ED	59.8	61.1 L	60.7	61.3	60.7	0.25	1.6	0.7	60.6	0.16	2.7	1.4	16	LC
Z6E2LD	57.9 H	56.7	60.4	61.3 H	59.1	-0.46	5.0	2.1	59.2	-0.49	5.3	1.8 H	16	TG
ZTZEJK	54.9 *	55.6	54.4 *	55.4	55.1	-2.17 *	2.8	0.5	55.8	-2.15 *	3.0	1.7	16	LD
ZXBPCE	60.7	61.4 H	57.1	68.6 X	62.0	0.77	4.2	4.8	64.2	1.89	4.4	4.8	16	LC

Consensus (All Labs) Results

Wk Mean	60.03	59.88	60.59	60.11	Month Mean	60.14	Grand Mean	60.24
Avg SDr	3.10	3.11	3.53	3.10	Avg SD	3.20	Avg SD	3.19
SD btwn Labs	2.33	3.04	3.05	2.68	SD btwn Labs	2.34	SD btwn Labs	2.07
Labs Incld	45	46	47	44	SD btwn Wks	2.04	SD btwn Wks	2.01
Labs Excld	3	2	1	4	Labs Incld	46	Labs Incld	47
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200 Series
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LE	L&W CRUSH TESTER 275	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	TC	TMI Monitor/Compression Tester, 17-37
TD	TMI Digital Crush Tester, Model 17-09	TG	TMI Compression Tester, Model 17-10
TH	TMI Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TM	TMI/Hinde & Dauch	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 250

Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM91

TAPPI Official Test Method T824

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2X7RGA	73.6	72.5	73.8	73.1	73.2	-0.17	1.9	0.6	73.6	-0.11	1.8	1.0	8	XX
38CQPB	74.3 H	72.9	75.7	77.3	75.1	0.59	3.5	1.9	72.1	-0.83	6.0	4.8 H	12	XX
3LUJF3	73.6	74.8 H	64.2 XH	73.1	71.4	-0.94	4.2	4.9 H	72.6	-0.57	3.9	4.1	15	LZ
8DZ6FD	78.9	75.1	76.5	76.7	76.8	1.33	2.5	1.5	76.5	1.23	2.7	1.0	16	LD
AJ3VZU	73.0	73.2	72.4	72.8	72.9	-0.34	2.4	0.3	72.9	-0.46	2.7	0.4	16	XX
BFWPXU	73.4	73.1	72.5	72.8	73.0	-0.30	2.7	0.4	72.8	-0.48	2.7	0.4	16	LD
EUQHU7	72.5	73.1	72.4	72.4	72.6	-0.45	2.0	0.3	72.4	-0.69	2.0	0.4	8	LD
FB6CXZ	72.7	73.3	75.4	75.8	74.3	0.27	1.9	1.5	74.1	0.09	2.4	1.8	16	XX
FL9UPQ	68.2 *	71.7	70.3	70.8	70.2	-1.44	2.1	1.5	71.9	-0.92	2.4	1.4	16	LD
L3FEYU	74.9	75.0	74.0	73.7	74.4	0.32	2.8	0.7	73.9	0.02	2.8	0.9	16	MB
MAUKBR	72.1 L	71.2 L	70.9	70.9 L	71.3	-1.00	0.8	0.6 L	71.9	-0.89	1.7	1.2	16	TD
Q7JYQB	75.1	70.1	71.9	73.5	72.6	-0.43	2.2	2.1	74.8	0.45	2.5	2.2	16	LZ
RX6E4P	79.3 *	78.3 *	75.5	78.2	77.8	1.75	2.5	1.6	78.9	2.33 *	2.6	1.6	8	LD
U8HBZ8	70.2	69.3	69.8	69.7	69.8	-1.63	1.9	0.4	70.6	-1.49	1.8	0.9	16	LD
WKJQWM	73.5	72.8	73.4	74.1	73.5	-0.08	2.7	0.5	73.8	-0.04	2.3	0.9	16	XX
XWTNGG	76.9	76.4 L	78.0	78.6	77.5	1.60	2.1	1.0	77.2	1.56	2.1	1.1	16	LC
ZTZEJK	75.6	75.9	76.1	75.7	75.8	0.90	2.1	0.2	75.6	0.80	2.0	0.4	16	LD

Consensus (All Labs) Results

Wk Mean	73.97	73.46	73.67	74.07	Month Mean	73.65	Grand Mean	73.85
Avg SDr	2.52	2.41	2.34	2.21	Avg SD	2.49	Avg SD	2.79
SD btwn Labs	2.77	2.28	2.38	2.61	SD btwn Labs	2.38	SD btwn Labs	2.16
Labs Incld	17	17	16	17	SD btwn Wks	1.62	SD btwn Wks	1.87
Labs Excld	0	0	1	0	Labs Incld	17	Labs Incld	17
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

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	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM91

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
8DZ6FD	46.8	46.1	46.4	46.8	46.5	1.05	1.8	0.3	46.6	1.03	1.9	0.7	16	LD
8KLMP2	34.0 *	34.0	37.3	38.4	35.9	-2.31 *	1.7	2.3	36.9	-1.80	1.8	1.7	16	TJ
B8JZXZ	33.1 *	32.7 *	31.8 *	32.9 X	32.6	-3.36 X	2.8	0.6	31.2	-3.45 X	2.6	2.2	16	XX
ECQVJU	41.9	42.0	39.1	42.8	41.5	-0.56	2.2	1.6	42.9	-0.04	2.2	1.5	16	EM
FL9UPQ	45.5	43.9	42.8	44.3	44.1	0.29	3.0	1.1	44.5	0.42	2.5	0.9	16	LD
GDBWL2	48.4	48.6	48.3	49.7 *	48.7	1.76	2.0	0.6	49.1	1.76	1.9	1.2	12	LD
GYBH2X	42.9	42.6	43.0	42.6 L	42.8	-0.14	1.7	0.2	42.8	-0.08	2.0	0.8	16	TH
HJDVNX	49.5	47.0	50.0	48.0	48.6	1.72	2.7	1.3	49.5	1.87	2.5	1.3	16	LD
HUUADX	43.7	43.8	43.7	43.6	43.7	0.15	3.9	0.1	42.8	-0.07	4.0	2.2	16	LD
KAWQCV	39.8	38.2	35.7	38.5	38.0	-1.64	2.3	1.7	39.0	-1.18	2.1	1.3	12	TU
L3FEYU	42.3	42.0	42.3	41.9	42.1	-0.34	2.8	0.2	42.7	-0.11	2.8	0.7	16	MB
NNTBKH	44.8 H	44.0	45.3	44.7	44.7	0.47	2.8	0.5	44.0	0.26	3.4	2.2	16	LZ
QNY8QB	47.1	45.7 L	43.9	43.8	45.1	0.61	2.1	1.6	45.3	0.66	2.0	2.0	16	LZ
RNFDEM	45.8	43.0	43.1	41.0	43.2	0.00	2.6	2.0	44.9	0.55	2.5	1.7	16	LD
T43LYJ	29.6 X	31.2 *H	29.6 *H	28.8 XH	29.8	-4.25 X	5.2	1.0 H	34.3	-2.55 *	3.0	2.9	16	TC
TB7X9H	41.4 L	44.4 L	43.8 L	43.2	43.2	0.00	1.0	1.3 L	42.3	-0.23	1.1	1.1 L	16	WK
UB2BFM	43.0	43.8	43.9	42.2	43.2	0.00	3.1	0.8	43.9	0.25	2.6	0.8	16	LC
VWXVLQ	37.7	36.3	36.5	37.7 *	37.0	-1.96 *	2.7	0.7	37.7	-1.57	2.7	1.1	12	LZ
WKJQWM	42.2	41.2	40.8	42.1	41.6	-0.52	3.0	0.7	42.1	-0.26	3.3	0.9	16	LD
WZTFC9	43.9	45.7	40.4 L	44.9	43.7	0.16	1.8	2.3	43.1	0.00	2.2	2.1	12	LD
XWTNGG	45.0	43.4	44.7	43.8	44.2	0.32	3.2	0.8	43.8	0.21	2.9	1.2	16	LC
XZBFKB	44.2	42.9	43.5	46.0	44.1	0.29	2.3	1.3	44.9	0.55	2.0	1.0	16	LD
YNB8ED	40.3	41.0	41.1	41.8	41.1	-0.68	1.8	0.6	42.7	-0.10	2.8	3.2	16	LC
ZTZEJK	45.6	45.0	45.1	45.2	45.2	0.64	3.0	0.3	43.1	0.02	2.8	1.4	16	LD
ZXBPCE	45.1	43.4	46.6	46.6	45.4	0.70	2.7	1.5	44.6	0.44	2.8	2.5	16	LD

Consensus (All Labs) Results

Wk Mean	43.07	42.07	41.94	43.45	Month Mean	43.21	Grand Mean	43.05
Avg SDr	2.75	2.71	2.60	2.45	Avg SD	2.52	Avg SD	2.56
SD btwn Labs	3.99	4.39	4.80	2.97	SD btwn Labs	3.15	SD btwn Labs	3.43
Labs Incld	24	25	25	23	SD btwn Wks	1.23	SD btwn Wks	1.66
Labs Excld	1	0	0	2	Labs Incld	23	Labs Incld	24
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

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	TC	TMI Monitor/Compression Tester, 17-37
TH	TMI Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TU	TMI Universal Crush Tester (TMI K440)	WK	Zwick Z005 Crush Tester
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM91

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2YKLAC	14.5	14.4	14.6	14.6	14.5	0.22	0.7	0.1	14.5	-0.18	0.7	0.2	16	TT
4TQ496	13.4 H	14.0	12.4 X	13.4 L	13.3	-2.21 *	0.9	0.6	13.7	-2.00 *	0.9	0.9	12	XX
7A8L2A	13.6	14.5	13.9	14.4	14.1	-0.58	0.9	0.4	14.2	-0.92	0.8	0.3	16	LB
7T2GDX	14.4 L	14.8 L	15.0 L	14.7 L	14.7	0.68	0.0	0.2 L	21.7	16.20X	0.0	5.1 L	12	LZ
8DZ6FD	14.2	14.5	14.8	14.6	14.5	0.31	1.0	0.3	14.4	-0.38	0.9	0.2	16	LZ
8PYZFU	15.1 L	14.9 L	14.3 L	15.2 L	14.9	0.97	0.1	0.4 L	14.9	0.68	0.1	0.6 L	16	BK
ADUZ82	47.6 XL	14.1 L	13.9 L	13.8 L	22.4	16.10 X	0.1	16.8 L	20.7	13.98X	0.1	14.1 L	10	LA
AJ3VZU	14.4	14.5	14.4	13.9	14.3	-0.18	0.9	0.3	14.3	-0.52	0.9	0.3	16	LB
BFWPXU	14.4	14.5	14.5	13.9	14.3	-0.17	0.8	0.3	14.3	-0.48	0.8	0.2	16	LB
DMBHZ4	14.3	15.2	15.0 H	14.8	14.8	0.83	1.0	0.4	14.8	0.58	0.9	0.5	16	LA
ECQVJU	13.9	14.5	13.9	13.2 *H	13.9	-1.04	1.2	0.5	14.4	-0.41	1.1	0.6	16	LZ
EUQHU7	14.4 L	14.0	13.8	14.2 L	14.1	-0.60	0.5	0.2 L	14.2	-0.76	0.5	0.3 L	8	LA
FL9UPQ	14.6	14.2	14.6	14.3	14.4	0.07	0.9	0.2	14.4	-0.29	1.0	0.2	16	LB
GDBWL2	15.5 *	15.1	14.9	15.0	15.1	1.46	0.8	0.3	15.2	1.45	0.8	0.5	12	LA
HJDVNX	14.0	15.4 *	14.7	14.5	14.6	0.51	1.0	0.6	15.1	1.20	1.1	0.6	16	LA
KM77JZ	14.8 H	15.1	14.8	15.1	15.0	1.14	1.0	0.2	15.2	1.48	1.0	0.4	15	LW
NNTBKH	14.2	14.2	14.8 H	14.2	14.4	-0.05	1.1	0.3	14.5	-0.04	1.1	0.5	16	LA
NWZKWU	13.7	14.3	14.0 H	13.7 H	13.9	-0.94	1.1	0.3	14.2	-0.84	1.1	0.4	16	LU
RNFDEM	15.3 H	14.7	15.0 H	14.9	15.0	1.20	1.2	0.3	15.0	1.06	1.2	0.5	16	LZ
T43LYJ	14.2	14.1 H	13.9	13.8	14.0	-0.79	1.2	0.2	14.4	-0.29	0.8	0.4	16	TS
UB2BFM	12.8 *	13.4 *	13.7	14.6	13.6	-1.61	1.0	0.7	14.0	-1.36	1.1	1.0	16	LB
XWTNGG	14.5	14.7	14.1	14.2	14.4	-0.03	0.8	0.3	14.4	-0.45	0.9	0.2	16	LU
XZBFKB	14.9	14.8	15.8 *	15.1	15.1	1.50	0.8	0.4	15.2	1.40	0.8	0.3	16	LH
YNB8ED	13.7	13.9	13.4	13.6	13.7	-1.43	0.6	0.2	14.3	-0.61	0.8	0.9	16	XX
ZTZEJK	14.9	14.5	14.7	14.9	14.8	0.74	1.0	0.2	15.3	1.67	1.0	0.8	16	LA

Consensus (All Labs) Results

Wk Mean	14.31	14.49	14.44	14.34	Month Mean	14.39	Grand Mean	14.56
Avg SDr	0.94	0.88	0.90	0.85	Avg SD	0.91	Avg SD	0.91
SD btwn Labs	0.62	0.46	0.55	0.57	SD btwn Labs	0.50	SD btwn Labs	0.44
Labs Incld	24	25	24	25	SD btwn Wks	0.37	SD btwn Wks	0.53
Labs Excld	1	0	1	0	Labs Incld	24	Labs Incld	23
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

BK	Buchel Strip Compression Tester BK-155	LA	L&W Autoline
LB	L&W Model 152	LH	L&W 282
LU	L&W 52 without moisture correction (was 53)	LW	L&W 53 with moisture correction (was 53M)
LZ	L&W (model not specified)	TS	TMI Monitor/STFI Compression Tester, 17-33
TT	TMI Short Span Compression, 17-34 (MB K455)	XX	Instrument make/model not specified by lab