Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #569 (B) - February 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	ECT9	Edgewise Compressive Strength, Wax (T811), Corrugated board
203	ECT9	Edgewise Compressive Strength by Clamp (T839), Corrugated board
205	42D2	Mullen Burst of Linerboard, 42 lb Linerboard
207	36Z3	Mullen Burst of Linerboard, 36 lb Linerboard
215	42D2	Ring Crush of Linerboard, Rigid Platen Type, 42 lb Linerboard
217	36Z3	Ring Crush of Linerboard, Rigid Platen Type, 36 lb Linerboard
223	42D2	STFI of Linerboard, 42 lb Linerboard
225	36Z3	STFI of Linerboard, 36 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 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 the participants.

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).

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
47PWZ7	696.7	-0.88	35.1	715.0	-0.68	35.1	2	LL
6JQTWD	946.3	1.54	35.2	901.9	1.32	33.5	2	LG
9DANFL	745.4	-0.41	32.1	742.0	-0.39	23.8	2	LG
AGCMNT	906.0	1.15	88.2	918.2	1.50	69.9	2	ER
BL2LFT	745.0	-0.42	34.7	747.3	-0.33	26.0	2	LM
C9AEVX	775.9	-0.12	38.7	753.2	-0.27	37.7	2	LS
DKE2JK	728.0	-0.58	90.2	739.6	-0.42	80.1	2	ER
FFDUVT	702.2	-0.83	27.4	636.7	-1.52	22.4	2	LG
FKQDEV	920.1	1.28	23.1	898.6	1.29	27.0	2	TE
GV6RTG	738.4	-0.48	72.5	746.4	-0.34	58.7	2	ER
PPCFDD	942.6	1.50	38.1	933.0	1.66	41.7	2	EX
QUZJJM	716.7	-0.69	29.5	726.1	-0.56	51.3	2	LS
RWHZA7	737.2	-0.49	66.1	743.3	-0.38	55.7	2	ES
U33372	712.8	-0.73	23.0	743.9	-0.37	64.2	2	LM
UK7DEE	621.6	-1.61	27.2	626.1	-1.63	32.6	2	LL
UR6WGA	864.8	0.75	19.1	851.1	0.78	28.1	2	ER
WJLFYJ	681.6	-1.03	54.6	681.6	-1.04	54.6	1	EX
Y2UEWC	914.0	1.22	91.1	866.1	0.94	75.2	2	TB
Z8EWPE	716.4	-0.69	39.5	697.3	-0.87	37.9	2	LS
ZECQMC	781.7	-0.06	32.7	782.3	0.04	30.2	2	ET
ZTW9FG	953.0	1.60	45.1	896.5	1.27	49.3	2	LH

Consensus (All Labs) Results

Month Mean	787.93	Grand Mean	778.39
Avg SDr	50.19	Avg SDr	47.73
SD btwn Labs	103.04	SD btwn Labs	93.27
Labs Incld	21	Labs Incld	21

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	809.18	128.56	21.26	5
Clip sealing	768.07	88.60	19.86	13
Tape sealing	838.55	135.96	50.62	3

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	SDr	Mean	CPV	SDr	Months	Inst
9DANFL	44.0	0.51	2.1	44.8	0.72	2.6	3	LE
C9AEVX	40.5	-0.89	2.6	39.8	-1.13	2.1	3	EM
QUZJJM	42.9	0.06	1.9	41.9	-0.36	1.9	4	EM
WMXLBJ	45.8	1.23	1.7	45.8	1.08	1.7	1	LC
Z3LUNZ	44.2	0.60	2.0	44.8	0.72	1.4	4	TB
Z8EWPE	44.7	0.81	1.6	45.1	0.85	1.6	4	LC
ZEVATJ	38.3	-1.77	1.3	38.6	-1.60	1.3	4	WK
ZTW9FG	41.4	-0.54	1.2	42.1	-0.27	1.1	4	TC

Consensus (All Labs) Results

Month Mean	42.72	Grand Mean	42.87
Avg SDr	1.86	Avg SDr	1.77
SD btwn Labs	2.49	SD btwn Labs	2.68
Labs Incld	8	Labs Incld	8

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	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	SDr	Mean	CPV	SDr	Months	Inst
42FGT3	43.2	-1.46	1.1	43.8	-1.46	1.6	4	LD
47PWZ7	46.5	0.15	0.7	46.6	0.10	1.2	4	BU
6JQTWD	47.6	0.70	2.2	45.5	-0.52	3.4	4	EM
8TTU8N	43.9	-1.11	1.8	44.8	-0.94	1.7	4	LD
9DANFL	44.7	-0.74	1.9	44.6	-1.01	2.5	3	LY
AGCMNT	43.8	-1.17	1.4	43.4	-1.71	1.4	4	TB
BL2LFT	49.6	1.70	0.8	47.9	0.85	1.2	4	TG
BPXGUL	46.3	0.07	1.8	45.7	-0.40	2.4	4	TD
C3Z8CK	46.0	-0.08	0.7	46.0	-0.23	0.7	1	TD
C9AEVX	47.5	0.66	1.1	47.6	0.67	1.5	3	EM
DBAWPJ	46.1	-0.03	1.9	46.1	-0.17	1.9	1	WL
DKE2JK	44.2	-0.96	1.8	44.0	-1.40	2.2	4	EX
FKQDEV	47.0	0.40	1.2	47.0	0.36	1.0	2	LD
GV6RTG	45.1	-0.52	0.7	45.3	-0.65	1.4	4	LD
HAM2WY	46.4	0.09	2.5	47.4	0.55	2.1	3	XX
NBCDXQ	46.7	0.27	1.9	46.4	-0.02	1.8	4	LD
PPCFDD	43.4	-1.38	1.2	43.6	-1.59	1.6	4	LD
QRXJJP	43.4	-1.36	1.4	43.7	-1.56	1.6	3	EM
QUZJJM	45.2	-0.46	1.1	45.9	-0.31	1.6	4	EM
R39BLP	49.4	1.61	1.1	49.3	1.65	1.7	4	TG
RP2MB8	49.3	1.56	1.7	48.3	1.07	3.2	3	LC
RWHZA7	44.2	-1.00	0.9	44.5	-1.07	1.6	4	LD
U33372	48.4	1.12	1.7	49.3	1.65	2.1	4	EM
UBHJ3G	48.1	0.97	2.0	49.5	1.78	1.5	4	LC
UK7DEE	44.5	-0.85	2.1	47.7	0.74	2.3	4	LC
UR6WGA	45.2	-0.50	1.0	44.9	-0.89	1.7	4	EM
W63QZG	47.3	0.54	1.6	47.4	0.53	1.9	4	LC
WJLFYJ	46.4	0.13	3.1	46.6	0.11	2.7	3	CT
WMXLBJ	45.8	-0.18	1.8	46.0	-0.23	1.8	4	LC
WXKGE7	50.0	1.92	2.4	47.7	0.73	2.0	4	TK
XEKV4Y	49.3	1.56	1.0	48.2	1.04	1.3	4	EM
XQDBC9	43.6	-1.26	1.8	44.9	-0.86	1.5	4	LD
Y2UEWC	49.3	1.54	0.9	48.1	0.97	0.7	4	LD
Y4Y8QB	44.5	-0.83	1.9	48.1	0.93	1.7	4	TB
Z3LUNZ	44.1	-1.04	1.2	45.3	-0.61	1.1	4	TG
Z8EWPE	46.1	-0.02	2.4	47.1	0.42	1.9	4	LC
ZECQMC	54.9	4.34 X	1.2	53.8	4.18 X	1.3	4	TD
ZEVATJ	38.6	-3.79 X	1.7	39.2	-4.09 X	1.4	4	WK
ZQQL3C	46.0	-0.07	1.1	45.9	-0.28	1.8	4	LD

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
ZTW9FG	53.6	3.68 X	0.8	49.5	1.76	0.7	4	TX

Consensus (All Labs) Results

Month Mean	46.16	Grand Mean	46.41
Avg SDr	1.64	Avg SDr	1.83
SD btwn Labs	2.01	SD btwn Labs	1.76
Labs Incld	37	Labs Incld	38

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	TX	TMI (model not specified)
WK	Zwick Z005 Crush Tester	WL	Zwick Z020
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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
223BG8	107.6	106.7	109.7	108.9	108.2	-0.24	8.2	1.3	105.6	-0.94	10.4	2.9	16	LC
26RH26	98.1 *	105.6	101.1	103.5	102.1	-1.91	9.2	3.2	103.8	-1.46	10.1	2.8	16	LC
2KV9HZ	107.9	100.8 *	109.8	110.9	107.4	-0.48	10.5	4.5	106.0	-0.83	10.3	4.3	16	LC
2UMP84	114.2	107.8	110.6	110.1	110.7	0.43	11.5	2.6	109.6	0.21	10.9	3.0	16	AH
3ARGPY	106.9	110.6	106.5	103.6	106.9	-0.60	10.0	2.9	107.5	-0.40	10.4	2.7	7	LJ
42FGT3	106.9	107.0	107.3	107.9	107.3	-0.50	11.6	0.5 L	107.5	-0.40	11.4	2.1	16	LC
6A6PQY	110.2	110.3	105.9	115.7	110.5	0.38	9.9	4.0	111.1	0.63	9.9	3.1	16	LC
6ANBMV	116.0	111.5	107.9	109.2	111.1	0.55	9.5	3.6	111.8	0.85	7.0	3.8	12	LA
6MCHFP	112.8	111.9	108.4	108.5	110.4	0.35	8.7	2.3	110.7	0.53	10.1	3.4	14	LA
8TTU8N	105.1	103.9	101.2	106.8	104.2	-1.32	8.7	2.3	104.4	-1.28	8.1	1.7	16	LA
9B44PZ	112.3	113.1	105.7	111.8	110.7	0.43	10.6	3.4	108.5	-0.10	11.5	2.9	16	LA
9DANFL	115.3	117.2 *	117.8 *	113.4	115.9	1.85	12.0	2.0	113.8	1.42	11.7	2.6	13	LZ
A3UYDA	112.2 L	110.4 L	111.0 L	110.5 L	111.0	0.52	3.3	0.8	111.9	0.87	3.7	1.2	16	XX
A7RD3K	115.5	113.6	116.2	117.1	115.6	1.75	9.3	1.5	113.5	1.34	10.0	3.3	16	LC
AGCMNT	103.4	105.6	105.9	101.1	104.0	-1.38	10.6	2.2	102.6	-1.80	11.0	3.3	16	LA
AUDHML	110.3	112.6	107.2	103.5	108.4	-0.20	11.2	4.0	106.9	-0.56	10.1	2.5	16	LB
D3XTMQ	117.1	117.0 *	120.9 X	116.2	117.8	2.35 *	12.2	2.1	115.3	1.84	12.2	3.1	16	LA
D476ZL	116.5	No Data	No Data	114.7	115.6	1.76	9.0	1.3	116.8	2.27 *	10.8	2.5	13	LA
DDJWUQ	115.2	110.2	108.6	111.0	111.3	0.58	11.0	2.8	112.8	1.12	10.4	2.9	16	LJ
DDZ99P	108.6	108.7	108.7	108.7	108.7	-0.12	6.9	0.1 L	108.9	0.01	6.5	0.3 L	16	LJ
DGH9QQ	107.8	109.7	107.9	105.0	107.6	-0.41	9.3	1.9	107.6	-0.36	10.7	3.2	16	LZ
DJL4AT	111.0	106.5	107.4	114.1	109.7	0.17	13.2	3.5	108.7	-0.06	11.9	3.0	16	TB
E9J3AU	107.1 L	107.2	108.9	108.1	107.8	-0.35	8.2	0.8	106.5	-0.68	10.2	2.0	16	LA
ERB9HK	103.9	112.0	110.5	113.5	110.0	0.23	10.7	4.2	109.1	0.05	12.3	3.1	12	LA
FFDUVT	105.6	105.9	105.7	103.4	105.1	-1.08	11.1	1.2	107.1	-0.52	10.3	2.7	16	AH
GLHQGE	116.1	109.6	108.9	110.2	111.2	0.57	8.6	3.3	109.7	0.24	8.0	2.3	16	TB
GV6RTG	113.4	113.3	113.6	111.3	112.9	1.03	11.5	1.1	109.9	0.30	10.5	3.3	16	AH
H6R92H	113.2	109.8	108.9	111.0	110.7	0.44	11.0	1.9	110.0	0.32	11.6	3.3	12	LC
HTXQAW	104.8 L	105.8	103.8	104.8	104.8	-1.17	5.5	0.8	106.1	-0.79	5.5	2.3	16	RE
K7WEEV	113.2	120.0 X	112.7	113.7	114.9	1.57	10.6	3.4	113.9	1.43	9.6	3.9	16	LC
KTNWHL	103.2	103.6	108.0	103.6	104.6	-1.22	12.8	2.2	107.7	-0.32	11.2	4.1	16	LC
LGPF7P	121.2 *	111.0	108.6	105.9	111.6	0.69	9.4	6.7	104.0	-1.40	8.5	6.2 H	16	AC
MJBJEM	109.2	108.8	109.0 L	110.3	109.3	0.06	5.4	0.7	108.7	-0.04	6.6	1.4	16	AH
MM93FL	101.1	103.3	102.6	106.2	103.3	-1.58	10.6	2.1	104.5	-1.25	11.2	3.1	16	LC
NBCDXQ	109.0	109.6	111.0	109.3	109.7	0.17	9.0	0.9	109.8	0.28	9.8	2.7	16	AA

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42D2
TAPPI Official Test Method T807

Report #569 (B)
February 2017

	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
NMR7Q8	108.3	107.2	102.4	103.4	105.3	-1.03	10.6	2.9	105.6	-0.96	10.7	2.5	16	LC
NPV4WT	103.5	110.4	110.6	109.0	108.4	-0.20	12.7	3.3	111.9	0.85	11.7	3.9	16	LC
PET3V9	107.6	121.9 X	107.4	108.7	111.4	0.62	11.9	7.0 H	110.0	0.33	11.7	4.1	16	TB
PPCFDD	111.0	109.0	113.5	113.0	111.6	0.68	10.8	2.1	110.2	0.38	10.6	1.7	16	AH
QB8G3L	116.0	104.4	103.3	108.6	108.1	-0.28	10.9	5.7	107.3	-0.47	9.9	5.1	11	LC
QUZJJM	81.4 XL	90.7 XL	88.8 XL	84.8 X	86.4	-6.16 X	4.6	4.2	97.7	-3.22 X	11.1	7.5 H	16	RE
RP2MB8	103.9	109.0	114.1	106.5	108.4	-0.20	12.9	4.3	110.4	0.44	12.0	3.4	12	LA
RWHZA7	108.0	111.0	113.5	115.5	112.0	0.79	10.9	3.2	109.9	0.29	11.0	2.6	16	LA
T43J8E	108.0	109.6	103.4	106.0	106.8	-0.64	10.1	2.7	114.2	1.52	11.6	7.6 H	16	AH
TG3HVB	106.6	102.3	107.9	102.9	104.9	-1.14	8.0	2.7	104.7	-1.19	10.6	3.0	16	LC
U33372	110.2 L	114.8	112.4	112.7	112.5	0.93	5.9	1.9	111.9	0.85	6.4	3.4	16	AH
WABF22	108.7	115.7	112.4	113.9	112.7	0.96	12.4	3.0	113.0	1.17	11.9	4.1	16	LZ
WJLFYJ	94.1 X	94.3 X	95.4 X	119.1 *	100.7	-2.28 *	13.1	12.3 H	101.5	-2.11 *	11.9	6.7 H	12	XX
Y4G2PZ	114.3	111.0	114.0	107.6	111.7	0.71	10.8	3.1	112.7	1.10	11.3	3.6	16	AX
YN4KM4	103.9	108.0	102.7	103.1	104.4	-1.27	9.4	2.4	101.5	-2.11 *	9.5	5.1	10	LA
YQWG9D	108.0	108.2	108.0	110.4	108.7	-0.12	8.7	1.2	107.4	-0.43	7.6	2.3	16	TP
Z8EWPE	107.6	104.9	101.1	102.4	104.0	-1.39	11.9	2.9	106.0	-0.83	11.2	3.0	16	AH
ZQQL3C	108.0	107.9	110.3	110.3	109.1	0.00	9.4	1.4	109.4	0.14	11.2	2.3	16	LA
ZTW9FG	108.3	110.5	110.0	115.0	110.9	0.50	12.1	2.9	110.7	0.52	11.7	3.7	16	AA

Consensus (All Labs) Results

Wk Mean	109.49	109.07	108.47	109.27	Month Mean	109.11	Grand Mean	108.88
Avg SDr	10.36	10.14	9.87	10.52	Avg SDr	10.26	Avg SDr	10.30
SD btwn Labs	4.67	3.63	3.91	4.34	SD btwn Labs	3.68	SD btwn Labs	3.48
Labs Incld	52	49	50	53	SD btwn Wks	3.39	SD btwn Wks	3.43
Labs Excld	2	4	3	1	Labs Incld	53	Labs Incld	53
Labs not Rcvd	0	1	1	0				

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		

	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
223BG8	76.9	75.8	79.0	76.9	77.1	-0.80	5.4	1.3	76.6	-1.08	5.9	1.5	12	LA
26RH26	71.0 *	74.6	74.7	71.6 *	73.0	-2.21 *	4.9	2.0	74.4	-1.90	4.3	1.9	12	LA
2KV9HZ	76.2	78.7	74.4	77.1	76.6	-0.98	4.6	1.8	76.1	-1.25	4.5	1.8	12	LC
2UMP84	77.7	79.8	78.7	77.8	78.5	-0.33	5.4	1.0	78.5	-0.36	5.7	2.2	12	AH
3ARGPY	82.1	82.9	No Data	No Data	82.5	1.04	5.5	0.6	81.4	0.72	5.2	1.3	4	LJ
42FGT3	79.5	81.7	80.1	73.9	78.8	-0.22	4.7	3.4	78.5	-0.36	5.3	2.0	12	LC
6ANBMV	82.4	82.3	78.4	78.4	80.4	0.31	4.0	2.3	106.5	10.14X	4.0	89.1 H	12	LA
6MCHFP	79.0	79.8	76.6	81.7	79.3	-0.06	4.6	2.1	78.0	-0.54	5.5	2.1	12	LA
8TTU8N	74.8	77.0	76.9	78.5 L	76.8	-0.91	3.9	1.5	76.5	-1.10	4.1	1.4	12	LA
9B44PZ	80.0	80.7	78.5	79.1 L	79.6	0.04	4.6	1.0	80.0	0.19	5.6	1.3	12	LA
9DANFL	86.7 *	84.1	86.7 *	83.3	85.2	1.96	6.0	1.8	85.9	2.42 *	6.2	1.6	9	LZ
A3UYDA	88.0 *	84.6	86.0	86.5 *	86.3	2.32 *	3.0	1.4	84.8	1.98	3.9	1.4	12	XX
A7RD3K	84.0	80.7	81.8	87.6 *	83.5	1.38	5.9	3.1	85.0	2.07 *	5.3	2.1	12	LC
AGCMNT	76.8	74.9	71.7 *	73.5	74.2	-1.78	4.2	2.2	73.4	-2.28 *	4.8	1.9	12	LA
AUDHML	76.5	76.2	74.4	77.2	76.1	-1.16	3.8	1.2	76.8	-1.01	3.9	1.2	12	LB
D3XTMQ	82.6	79.7	80.2	80.4	80.7	0.43	5.7	1.3	81.4	0.72	5.8	1.3	8	LA
D476ZL	82.2	No Data	No Data	82.2 L	82.2	0.94	2.6	0.0 L	82.7	1.22	4.8	1.4	10	LA
DDJWUQ	81.1	77.7	81.3	83.8	81.0	0.52	5.6	2.5	79.7	0.09	4.6	2.5	12	LJ
DDZ99P	78.5	78.5	78.5	78.5	78.5	-0.32	4.6	0.0 L	78.8	-0.26	4.4	0.5	12	LJ
DGH9QQ	78.2	79.0	76.3	78.6	78.0	-0.48	5.0	1.2	78.1	-0.50	5.7	1.0	12	LZ
DJL4AT	83.0	81.2	81.3	83.6	82.3	0.96	5.7	1.2	80.3	0.32	5.9	2.4	12	TB
E9J3AU	79.1	77.9	77.4	77.6	78.0	-0.50	5.1	0.7	78.4	-0.40	5.4	1.3	12	LA
ERB9HK	77.3	79.9	75.4 H	80.3	78.2	-0.42	6.0	2.3	78.5	-0.37	6.0	1.8	8	LA
FFDUVT	76.6	77.1	77.5	76.3	76.9	-0.88	5.9	0.5	79.2	-0.11	5.8	2.3	12	AH
GLHQGE	87.8 *	85.6	84.2	87.0 *	86.1	2.28 *	5.8	1.6	85.4	2.22 *	5.7	1.6	12	TB
GV6RTG	82.8	81.1	81.1	80.8	81.5	0.68	4.7	0.9	81.0	0.57	5.2	1.0	12	AH
H6R92H	81.8	77.0	80.8	79.8	79.8	0.13	5.9	2.1	79.1	-0.12	5.3	1.8	8	LC
HTXQAW	81.6	81.2	81.6	82.8	81.8	0.80	3.7	0.7	81.8	0.88	4.0	1.3	12	RE
K7WEEV	82.6 H	83.4	86.0	87.2 *	84.8	1.82	7.1	2.2	81.5	0.77	5.7	3.4	12	LC
KTNWHL	73.9	77.8	77.0	77.8	76.6	-0.97	5.9	1.9	77.8	-0.62	5.9	2.1	12	LC
LGPF7P	80.3	83.3	81.6	81.9	81.8	0.78	5.7	1.2	82.5	1.15	5.1	6.7 H	12	AC
MJBJEM	78.4	79.0	79.2	77.7	78.6	-0.30	3.2	0.7	78.3	-0.44	3.6	1.3	12	AH
MM93FL	78.0	78.0	79.0	76.1	77.8	-0.58	5.9	1.2	76.7	-1.04	6.6	1.5	12	LC
NBCDXQ	81.7	77.1	77.6	80.0	79.1	-0.12	5.0	2.1	79.9	0.17	5.5	2.0	12	AA
NMR7Q8	76.9	72.6 *	76.6	75.3	75.4	-1.40	6.3	2.0	76.8	-1.01	5.6	2.5	12	LA

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
NPV4WT	78.9	77.5	79.6	82.0	79.5	0.02	5.7	1.9	79.8	0.14	5.2	2.3	12	LC
PET3V9	81.7	85.6	78.7	79.2	81.3	0.62	5.7	3.1	80.6	0.44	5.6	2.2	12	TB
PPCFDD	77.5	77.0	82.0	82.0	79.6	0.06	6.0	2.8	79.8	0.12	5.6	2.4	12	AH
QB8G3L	80.9	78.7	75.3	78.7	78.4	-0.36	4.6	2.3	78.4	-0.39	4.7	1.7	11	LC
QUZJJM	75.5 L	81.9	78.1 L	78.3	78.4	-0.35	2.3	2.7	75.9	-1.33	4.1	2.7	12	RE
RP2MB8	81.5	80.8	82.3	80.4 H	81.3	0.62	6.6	0.8	80.7	0.46	5.9	1.0	8	LA
RWHZA7	77.2	79.8	81.1	79.4	79.4	-0.03	4.9	1.6	79.2	-0.12	5.8	0.9	12	LA
T43J8E	80.8	80.2	75.8	79.8	79.2	-0.11	4.2	2.3	79.8	0.11	4.6	4.4 H	12	AH
TG3HVB	76.5	74.8	73.3	75.9	75.1	-1.48	6.5	1.4	76.1	-1.28	6.1	1.9	12	LC
U33372	81.2	83.9	84.7	82.8	83.2	1.26	4.1	1.5	80.4	0.36	4.8	2.7	12	AH
WABF22	79.0	83.0	84.4	81.6	82.0	0.86	5.1	2.3	82.1	1.00	5.4	2.9	12	LZ
WJLFYJ	74.6	69.9 XL	74.5	80.9	75.0	-1.53	4.7	4.5 H	67.5	-4.49 X	5.1	6.5 H	12	XX
Y4G2PZ	77.4	81.0	78.2	79.0	78.9	-0.19	4.8	1.5	80.1	0.22	5.0	1.8	12	AX
YN4KM4	80.9	78.1	81.0	78.1	79.5	0.02	5.6	1.7	80.8	0.49	5.6	2.2	8	LA
YQWG9D	78.6	77.9	79.0	78.3	78.5	-0.35	4.7	0.5	78.0	-0.54	4.9	1.1	12	TP
Z8EWPE	75.3	75.1	73.5	76.8	75.2	-1.46	5.1	1.4	76.5	-1.11	5.6	2.2	12	AH
ZQQL3C	79.3	79.3	80.7	81.6	80.2	0.26	4.2	1.2	79.1	-0.12	4.1	1.2	12	LA
ZTW9FG	79.5	82.8	82.3	75.5	80.0	0.18	5.3	3.3	81.6	0.82	6.1	2.3	12	AA

Consensus (All Labs) Results

Wk Mean	79.48	79.57	79.12	79.64	Month Mean	79.46	Grand Mean	79.46
Avg SDr	5.43	5.11	4.99	5.01	Avg SDr	5.12	Avg SDr	5.26
SD btwn Labs	3.35	3.00	3.46	3.41	SD btwn Labs	2.93	SD btwn Labs	2.67
Labs Incld	53	51	51	52	SD btwn Wks	1.90	SD btwn Wks	2.16
Labs Excld	0	1	0	0	Labs Incld	53	Labs Incld	51
Labs not Rcvd	0	1	2	1				

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		

	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
223BG8	86.6 H	88.9	86.0	85.8	86.8	-0.62	5.0	1.4	85.5	-0.90	5.6	4.6 H	16	LZ
26RH26	84.3	84.7	84.6 L	84.0	84.4	-1.22	3.6	0.3 L	85.6	-0.87	4.0	1.4	16	LD
3ARGPY	88.5	87.6	85.6	87.8 H	87.4	-0.47	5.3	1.3	87.8	-0.34	4.9	1.4	8	LD
42FGT3	86.2	87.8	86.8	87.7	87.1	-0.53	3.9	0.8	86.7	-0.61	4.2	1.6	16	LD
6ANBMV	91.2 L	91.9	90.3	89.4	90.7	0.37	2.4	1.1	91.1	0.48	2.4	2.0	12	LZ
6JQTWD	88.3	88.1	86.2	86.5	87.3	-0.50	4.2	1.1	86.6	-0.63	4.3	1.5	16	EM
6MCHFP	103.5 X	101.3 X	102.7 X	103.1 *	102.7	3.38 X	5.2	1.0	96.7	1.84	4.7	8.8 H	14	LC
84RMHZ	82.6 H	80.0 *	81.0 *	79.7	80.8	-2.13 *	4.6	1.3	80.4	-2.13 *	4.5	2.7	16	LD
8TTU8N	90.9	89.7	88.6	88.2	89.3	0.02	3.3	1.2	89.8	0.15	3.4	1.1	16	LD
9DANFL	89.7	85.7	85.0	83.4	85.9	-0.84	3.4	2.7	87.8	-0.33	3.2	2.3	13	LG
A3UYDA	82.7	85.3	86.3	97.0	87.8	-0.36	5.2	6.3 H	86.2	-0.71	4.8	4.3	16	LD
ABZYNW	90.5	90.6	91.8	90.7	90.9	0.42	3.8	0.6	90.2	0.26	3.7	1.6	16	LD
AGCMNT	88.3	87.9	87.5	86.7	87.6	-0.42	3.7	0.7	87.6	-0.38	3.8	1.5	16	LD
AUDHML	91.8	89.6	90.7	93.5	91.4	0.54	3.6	1.7	87.9	-0.30	4.3	3.9	16	LC
BN4LCJ	89.7	89.4 L	89.0	88.3 L	89.1	-0.04	2.3	0.6	87.2	-0.48	2.4	1.6	16	MB
D3XTMQ	97.7 *	97.2 *	93.5	97.4	96.5	1.82	4.4	2.0	97.6	2.05 *	4.5	3.1	16	LD
D476ZL	96.7	No Data	No Data	97.5	97.1	1.98	3.1	0.6	93.1	0.95	3.6	3.1	13	LZ
DDJWUQ	83.4	81.4 *	80.0 *	80.5	81.3	-2.00 *	3.9	1.5	80.9	-2.01 *	3.4	1.9	16	TU
DDZ99P	87.1	87.2	87.3	87.3	87.2	-0.52	4.7	0.1 L	87.4	-0.44	7.0	0.4 L	16	LD
DJL4AT	88.4	86.8	92.0	86.7	88.5	-0.20	3.4	2.5	89.7	0.14	4.2	2.0	16	LC
DKE2JK	85.5	82.7	82.3	83.5	83.5	-1.45	3.4	1.4	82.7	-1.57	3.9	2.1	16	EN
DQ6A7Z	86.3	85.4	92.4 L	88.0	88.0	-0.31	3.5	3.1	90.1	0.22	4.0	2.4	16	XX
E9J3AU	92.3	90.8	92.1	92.2	91.9	0.65	4.5	0.7	94.2	1.22	4.1	1.9	16	LD
FKQDEV	90.7	92.8	92.7	92.2	92.1	0.71	2.8	1.0	91.6	0.60	3.1	1.1	16	LD
GLHQGE	98.1 *	98.3 *	98.4 *	99.0	98.4	2.31 *	5.2	0.4	99.2	2.44 *	4.8	1.4	16	LX
GV6RTG	88.9	88.4	88.4	87.2	88.2	-0.27	3.6	0.7	87.6	-0.37	3.6	1.0	16	LD
HTXQAW	90.1	89.5	88.7	90.8	89.8	0.13	3.4	0.9	89.6	0.11	3.8	1.8	16	LZ
KTNWHL	93.0	90.1	90.7	90.0	91.0	0.43	4.7	1.4	90.9	0.43	4.1	3.3	16	LC
LGPF7P	101.8 X	101.9 X	93.5	99.1	99.1	2.48 *	5.2	3.9	98.5	2.28 *	4.7	3.0	16	LZ
LNU43C	98.6 *	96.7 *	91.8 L	98.4	96.4	1.80	3.5	3.2	93.7	1.09	2.9	3.1	16	LD
MM93FL	86.9	87.4	86.3	88.4	87.2	-0.52	3.4	0.9	88.5	-0.15	3.5	1.4	16	LD
NBCDXQ	85.5	86.1	89.1	87.8	87.1	-0.54	3.6	1.6	86.8	-0.56	3.4	1.7	16	LD
NMR7Q8	92.8	88.3	87.5	75.7 *	86.1	-0.80	3.6	7.3 H	88.6	-0.13	3.5	4.2	16	LC
NPV4WT	91.7	90.7 L	85.7	84.0 H	88.0	-0.32	4.8	3.8	84.7	-1.09	5.3	3.2	16	LC
NWCFBU	91.9	94.3	92.1	90.3	92.2	0.73	3.6	1.6	92.3	0.75	3.7	2.0	16	EM

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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
PET3V9	81.2 *	83.2	81.7	80.5	81.6	-1.92	3.4	1.1	80.0	-2.23 *	4.1	3.5	16	LZ
QB8G3L	91.5	94.7	97.7 *	96.6	95.1	1.48	3.9	2.7	92.5	0.82	4.1	2.7	11	LD
QUZJJM	81.4 *	90.7	88.8	84.8	86.4	-0.72	4.6	4.2	87.5	-0.39	3.9	2.5	16	EM
R39BLP	91.1	90.5	89.5	90.4	90.4	0.28	3.4	0.7	91.1	0.47	3.4	1.8	16	TH
RP2MB8	95.2	91.2	88.9 H	85.8 H	90.3	0.26	8.5	4.0	92.8	0.88	6.4	4.0	12	LC
RZMQGL	91.9	88.3	90.9	87.6	89.7	0.11	3.8	2.1	90.3	0.28	3.4	2.1	16	MB
T43J8E	88.1	87.3	No Data	No Data	87.7	-0.40	4.0	0.6	91.1	0.48	4.3	2.9	14	LC
TG3HVB	90.2	90.0	89.9	90.5	90.2	0.23	4.8	0.3 L	89.2	0.00	4.3	1.7	16	LC
U33372	94.2	91.8	93.4	92.4	92.9	0.93	3.9	1.1	92.2	0.74	3.9	1.2	16	EM
UR6WGA	85.8	84.5	85.3	85.4	85.2	-1.02	2.3	0.6	83.9	-1.28	2.7	2.7	16	EM
WABF22	87.1	88.2	85.3	85.8	86.6	-0.68	3.8	1.3	88.0	-0.29	4.2	2.9	16	LC
WVC8JM	90.5	94.0	92.6	No Data	92.4	0.79	4.0	1.8	88.8	-0.08	5.8	5.0 H	14	MB
WXKGE7	88.9 L	88.1	88.3	88.2	88.4	-0.22	2.3	0.4 L	86.6	-0.62	2.3	1.2	16	MB
Y4G2PZ	87.8	88.9	88.1	88.9	88.4	-0.21	3.9	0.6	85.5	-0.88	4.4	3.4	16	LC
YN4KM4	92.4	90.2	94.7	88.0	91.3	0.52	4.2	2.8	92.3	0.77	3.9	3.2	10	LC
YQWG9D	88.1	88.9	87.1	87.0	87.8	-0.37	3.9	0.9	87.6	-0.38	3.3	1.0	16	TH
Z8EWPE	90.4	88.2	89.6	88.6	89.2	-0.02	3.8	1.0	89.1	-0.01	3.8	1.1	16	LC
ZQQL3C	92.9	91.5	91.0	91.9	91.8	0.65	3.4	0.8	92.0	0.69	3.1	1.8	16	LD

Consensus (All Labs) Results

Wk Mean	89.52	89.03	88.93	89.02	Month Mean	89.26	Grand Mean	89.16
Avg SDr	3.86	3.81	4.52	3.96	Avg SDr	4.05	Avg SDr	4.12
SD btwn Labs	4.04	3.72	3.87	5.38	SD btwn Labs	3.96	SD btwn Labs	4.11
Labs Incld	51	50	50	51	SD btwn Wks	2.21	SD btwn Wks	2.79
Labs Excld	2	2	1	0	Labs Incld	52	Labs Incld	53
Labs not Rcvd	0	1	2	2				

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
TH	TMI Compression Tester, Model 17-76	TU	TMI Universal Crush Tester (TMI K440)
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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
223BG8	74.5 H	79.6	68.6 XH	80.8	75.8	-1.47	5.3	5.6	77.0	-1.09	5.5	7.0 H	12	LZ
26RH26	79.6	79.7	79.3	No Data	79.6	-0.51	2.1	0.2 L	79.9	-0.33	2.8	0.7	11	LD
3ARGPY	86.1	77.8	80.7	83.9	82.1	0.14	3.1	3.6	81.8	0.15	3.5	2.7	12	LD
42FGT3	78.1	79.0	80.1	77.2	78.6	-0.76	3.5	1.3	80.0	-0.31	3.4	1.7	12	LD
6ANBMV	83.4 L	84.8	83.6	83.2 L	83.8	0.57	2.6	0.7	84.7	0.90	2.5	2.4	12	LZ
6JQTWD	81.3	80.7	80.9	81.0	81.0	-0.15	3.2	0.3 L	81.3	0.01	2.8	1.4	12	EM
6MCHFP	91.3 *	88.2	90.3 *	93.3 X	90.8	2.38 *	2.7	2.1	86.1	1.26	4.7	5.7 H	12	LC
84RMHZ	74.7	77.3	74.1	77.5	75.9	-1.45	3.5	1.7	75.0	-1.59	4.1	2.6	12	LD
8TTU8N	81.5	80.8	79.5 L	80.0	80.5	-0.28	2.5	0.8	81.3	0.01	2.8	1.0	12	LD
9DANFL	83.4	82.5	81.8	76.6	81.1	-0.12	3.8	3.1	81.8	0.15	3.0	2.2	9	LG
A3UYDA	81.9	72.4 *	82.2	82.1 H	79.7	-0.49	4.3	4.8	76.5	-1.22	3.4	3.8	12	LD
ABZYNW	82.4	82.4	82.6	82.3	82.4	0.22	3.1	0.1 L	82.5	0.33	3.0	0.9	12	LD
AGCMNT	81.8	83.3	79.2	81.0	81.3	-0.06	3.7	1.7	80.1	-0.28	4.0	2.5	12	LD
AUDHML	83.3	84.5	85.7	85.1	84.7	0.80	3.4	1.0	81.7	0.14	3.3	3.5	12	LC
BN4LCJ	78.6	77.4	79.4	79.9	78.8	-0.70	2.2	1.1	81.5	0.07	2.6	2.3	12	MB
D3XTMQ	89.9 *	89.6 L	89.6	88.9 L	89.5	2.04 *	1.7	0.4 L	90.4	2.34 *	2.1	2.0	8	LD
D476ZL	85.5	No Data	No Data	89.2 *	87.4	1.49	3.0	2.6	85.1	0.99	2.9	2.7	10	LZ
DDJWUQ	76.8	76.1	75.9	72.1 *	75.2	-1.62	2.5	2.1	74.6	-1.69	2.5	1.7	12	LC
DDZ99P	80.3 H	80.4 H	80.2	80.4	80.3	-0.31	5.8	0.1 L	80.2	-0.27	5.8	0.3 L	12	LD
DJL4AT	78.9	81.3	80.7	79.2	80.0	-0.39	2.9	1.2	81.1	-0.03	3.2	2.2	12	LC
DKE2JK	79.7 L	76.6	76.7	78.1	77.8	-0.97	2.6	1.5	77.8	-0.87	2.5	1.0	12	EN
DQ6A7Z	81.7	80.7	84.3	85.7	83.1	0.41	2.8	2.3	84.7	0.90	3.1	2.3	12	XX
E9J3AU	84.2	84.1	82.5	81.7	83.1	0.41	2.7	1.2	85.1	1.00	3.1	1.8	12	LD
FKQDEV	83.2 L	82.9 L	83.4	82.4	83.0	0.37	1.9	0.4 L	83.5	0.59	2.1	0.7	12	LD
GLHQGE	88.6	90.0	88.5	88.2	88.8	1.88	4.5	0.8	89.8	2.20 *	5.3	1.4	12	LX
GV6RTG	79.0	80.4	79.4	81.4	80.1	-0.38	2.9	1.1	79.5	-0.45	2.5	1.2	12	LD
HTXQAW	82.4	82.3	83.9 L	82.3	82.7	0.30	2.5	0.8	79.6	-0.42	2.6	5.0	12	LZ
KTNWHL	85.6	85.9	87.0	84.8	85.8	1.10	2.5	0.9	86.1	1.25	3.1	1.8	12	LC
LGPF7P	93.5 X	92.1 *L	85.9	90.6 *	90.5	2.31 *	3.8	3.3	89.3	2.07 *	3.2	2.8	12	LZ
LNU43C	87.0	87.1	84.3 L	87.5	86.5	1.27	1.7	1.5	85.6	1.12	1.9	1.7	12	LD
MM93FL	81.6	81.3	81.4	81.7	81.5	-0.01	2.6	0.2 L	82.2	0.26	2.7	0.9	12	LD
NBCDXQ	78.6	79.3	79.8	80.0	79.4	-0.55	2.2	0.6	78.8	-0.61	2.1	3.3	11	LD
NMR7Q8	75.7	76.6	79.0	79.7	77.8	-0.98	2.2	1.9	79.0	-0.57	2.3	1.7	12	LC
NPV4WT	81.1 H	71.9 *H	72.5 *H	73.4 *H	74.7	-1.76	8.3	4.3	72.6	-2.20 *	8.2	2.9	12	LC
NWCFBU	85.3	83.3	85.3	80.4	83.6	0.53	3.2	2.3	83.9	0.68	3.1	2.1	12	EM

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 36 lb Linerboard - 36Z3

TAPPI Official Test Method T822

Report #569 (B)
February 2017

	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
PET3V9	70.2 X	77.1	71.1 *	75.9	73.6	-2.05 *	3.7	3.5	72.1	-2.33 *	4.3	4.1	12	LZ
QB8G3L	86.6	85.3	85.6	86.4	86.0	1.14	3.2	0.6	83.6	0.60	2.8	3.5	11	LD
QUZJJM	75.5	81.9	78.1 L	78.3	78.4	-0.80	2.3	2.7	79.1	-0.55	2.7	2.2	12	EM
R39BLP	82.2	82.3	81.4	81.8	81.9	0.10	2.9	0.4 L	81.1	-0.04	2.7	1.9	12	TH
RP2MB8	81.4 H	85.8	74.8 H	75.7 H	79.4	-0.55	6.2	5.2	82.5	0.34	5.7	6.7 H	8	LC
RZMQGL	81.0	84.6	81.9	77.8	81.3	-0.06	3.0	2.8	81.5	0.07	2.7	1.9	12	MB
T43J8E	77.9	78.7	No Data	No Data	78.3	-0.84	2.2	0.5 L	77.4	-0.98	3.0	3.5	8	LC
TG3HVB	80.6	81.7	82.2	80.4	81.2	-0.08	3.8	0.9	82.0	0.21	3.2	1.1	12	LC
U33372	83.8	84.9	85.7	81.8	84.0	0.64	3.2	1.7	84.0	0.73	3.3	2.1	12	EM
UR6WGA	78.1	76.6	78.1	79.5	78.1	-0.89	2.6	1.2	76.8	-1.13	2.5	1.9	12	EX
WABF22	77.5	79.4	77.0	78.1	78.0	-0.91	3.4	1.0	78.4	-0.73	3.7	2.8	12	LC
WVC8JM	80.9	86.9	83.5	No Data	83.8	0.57	3.6	3.0	78.4	-0.73	5.1	9.5 H	10	MB
WXKGE7	80.1	80.1	80.3	81.0	80.4	-0.30	2.3	0.4 L	80.3	-0.23	2.5	0.5 L	12	MB
Y4G2PZ	79.8	80.8	88.1	79.5	82.0	0.13	3.0	4.1	76.8	-1.12	4.1	6.3 H	12	LC
YN4KM4	86.0	58.9 XH	87.8	81.7	78.6	-0.75	5.2	13.4 H	80.6	-0.15	4.6	9.3 H	8	LC
YQWG9D	80.1	81.2	81.6	80.2	80.8	-0.20	3.3	0.8	80.7	-0.14	3.3	0.6	12	TH
Z8EWPE	82.6	83.6	83.5	80.8	82.6	0.27	3.2	1.3	83.0	0.46	2.9	1.1	12	LC
ZQQL3C	86.9	86.3	86.2	87.3	86.7	1.32	2.5	0.5	86.1	1.24	2.5	0.8	12	LD

Consensus (All Labs) Results

Wk Mean	81.72	81.76	81.74	81.32	Month Mean	81.55	Grand Mean	81.22
Avg SDr	3.52	3.32	3.40	3.31	Avg SDr	3.43	Avg SDr	3.54
SD btwn Labs	3.75	4.18	4.23	3.93	SD btwn Labs	3.88	SD btwn Labs	3.90
Labs Incld	51	51	50	49	SD btwn Wks	2.84	SD btwn Wks	3.32
Labs Excld	2	1	1	1	Labs Incld	53	Labs Incld	53
Labs not Rcvd	0	1	2	3				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	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	TH	TMI Compression Tester, Model 17-76
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D2

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
223BG8	22.0	21.3	22.1	21.2	21.6	-0.83	1.8	0.5	22.2	-0.19	1.0	1.0	16	LA
26RH26	22.2	22.3	21.5	21.9	22.0	-0.47	1.7	0.3	21.8	-0.66	1.9	0.6	16	LA
2KV9HZ	23.9	23.5	22.0	23.2	23.2	0.70	2.3	0.8	22.8	0.36	2.0	0.8	16	LA
2UMP84	23.4	23.0	23.5	22.7	23.1	0.65	2.1	0.4	22.7	0.32	1.9	0.8	16	LU
3ARGPY	22.8 L	22.0 L	23.8 L	22.4 L	22.8	0.29	0.0	0.8	22.6	0.17	0.0	0.6	7	LU
42FGT3	20.7	21.4	20.5	23.1	21.4	-1.06	1.9	1.2	22.3	-0.07	1.8	1.2	16	LA
6A6PQY	23.2 L	20.9 L	23.1 L	22.8 L	22.5	0.05	0.3	1.1	22.1	-0.27	0.4	1.3	16	LA
6MCHFP	20.4 L	19.1 XL	19.8 *L	20.9 L	20.0	-2.42 *	0.0	0.8	20.5	-1.87	0.0	1.2	13	LW
84RMHZ	21.3	22.2	21.5	20.9	21.5	-0.99	2.3	0.6	21.6	-0.85	1.9	0.5	16	LY
8TTU8N	22.7	21.9	21.5	21.2	21.8	-0.65	1.6	0.6	21.8	-0.59	1.6	0.5	16	BK
9B44PZ	24.0	23.2	23.1	23.9	23.5	1.08	2.2	0.4	23.9	1.44	2.2	0.8	16	LW
9BT6T7	22.0	22.6	22.3	21.6	22.1	-0.34	1.8	0.4	21.3	-1.09	2.0	1.0	16	XX
9DANFL	21.5	21.9	22.7	22.6	22.2	-0.29	1.7	0.6	22.2	-0.22	1.8	0.7	13	LW
A7RD3K	24.0	24.6 *	25.0 *	25.0 *	24.6	2.18 *	1.8	0.5	24.5	2.05 *	1.8	0.7	16	LA
ABZYNW	23.2	22.5	22.2	21.9	22.4	-0.03	1.7	0.6	22.2	-0.24	2.0	0.5	16	LY
AGCMNT	21.7	22.4	21.7 L	22.6 L	22.1	-0.40	1.2	0.5	22.4	0.03	1.8	0.8	16	LY
AUDHML	23.2	22.4	23.1	22.6	22.8	0.38	2.0	0.4	22.9	0.49	1.7	0.4	16	LU
BN4LCJ	23.4 L	23.2 L	22.2 L	23.4 L	23.0	0.56	0.4	0.6	23.7	1.29	0.4	1.2	16	BK
D476ZL	22.4	No Data	No Data	22.1	22.2	-0.23	1.9	0.3	21.8	-0.60	1.8	0.5	13	LW
DBAWPJ	40.4 X	No Data	No Data	No Data	40.4	17.97 X	1.1	0.0 L	40.4	18.05X	1.1	0.0 L	1	WL
DGH9QQ	24.9 *	24.8 *	24.2	24.3	24.5	2.08 *	2.2	0.4	25.0	2.56 *	2.3	0.8	16	LZ
DJL4AT	22.9	22.3	22.6	23.0	22.7	0.25	1.6	0.3	22.8	0.35	1.8	0.4	16	LW
DKE2JK	20.3	20.4 *	21.1	20.9	20.7	-1.77	1.9	0.4	20.6	-1.82	1.9	0.5	16	LY
DQ6A7Z	21.7 L	21.8	22.1	21.9	21.9	-0.59	1.5	0.2	22.6	0.23	0.7	1.0	16	XX
E9J3AU	23.0	23.5	23.8	23.8	23.5	1.06	2.0	0.4	24.0	1.59	1.8	0.9	16	LY
ERB9HK	23.7	22.7	23.4	22.8	23.1	0.68	1.7	0.5	23.6	1.21	2.7	0.8	12	LU
FFDUVT	No Data	23.5	20.4	19.7 *	21.2	-1.28	2.0	2.1 H	22.0	-0.46	2.0	2.1 H	15	LU
FKQDEV	21.9	22.1	20.9	22.0	21.7	-0.75	1.9	0.5	21.4	-1.00	1.9	0.4	16	LY
GV6RTG	21.8	21.8	21.8	22.0	21.8	-0.63	1.9	0.1 L	21.8	-0.63	2.0	0.4	16	LU
H6R92H	No Data	No Data	No Data	24.3	24.3	1.80	1.8	0.0 L	24.3	1.94	1.8	0.4	5	XX
K7WEEV	20.5	22.1	21.0	21.3	21.2	-1.23	1.5	0.7	21.0	-1.45	0.8	0.5	16	LA
KTNWHL	22.9 L	21.0 L	22.0 L	23.7 L	22.4	-0.08	0.4	1.2	22.7	0.26	0.5	1.0	15	LA
LNU43C	24.0	24.5 *	23.1	23.9	23.9	1.42	1.2	0.6	23.8	1.42	1.1	0.9	16	LZ
MJBJEM	22.7	22.5	23.0	22.9	22.8	0.29	1.1	0.2	22.8	0.38	1.1	0.3	16	TT
MM93FL	24.2	24.1	24.2	24.9	24.3	1.88	1.8	0.4	22.9	0.49	1.9	1.0	16	LA

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42D2

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
NBCDXQ	21.5	21.7	20.2	22.8	21.5	-0.92	1.8	1.1	21.3	-1.08	2.5	0.8	16	LW
NMR7Q8	22.4	22.7	22.7	22.7	22.6	0.16	1.5	0.2	21.4	-1.00	1.5	1.0	16	LA
NPV4WT	21.0	22.4	22.2	22.1	21.9	-0.55	1.9	0.7	21.8	-0.57	1.9	0.6	16	LU
P3XUC7	20.5 L	21.6 L	21.5 L	20.9 L	21.1	-1.36	0.1	0.5	21.3	-1.16	0.3	1.3	14	LW
PET3V9	21.8	22.1	22.0	21.5	21.8	-0.62	1.6	0.3	21.7	-0.72	1.9	0.6	16	LZ
QB8G3L	22.8	24.1	22.8	24.7	23.6	1.15	2.3	1.0	22.8	0.37	1.9	1.0	11	LZ
QUZJJM	22.9	23.9	24.1	23.5	23.6	1.14	1.4	0.5	22.6	0.22	1.8	0.8	16	LZ
RP2MB8	24.4	23.2	23.3	23.9	23.7	1.25	1.5	0.6	23.9	1.46	2.0	0.7	12	LU
T43J8E	22.6	22.5	22.8	22.9	22.7	0.24	0.8	0.2	22.5	0.11	0.8	0.7	16	LY
TBYD6C	20.8	22.5	20.8	20.6	21.2	-1.30	1.5	0.9	21.4	-1.01	1.8	0.7	16	LW
TG3HVB	21.3 L	21.5 L	21.4 L	22.5 L	21.7	-0.79	0.3	0.6	21.5	-0.91	0.4	0.7	16	LA
WABF22	22.8	22.2	21.5	22.5	22.2	-0.24	1.9	0.6	22.4	-0.05	2.0	1.1	16	LW
WVC8JM	23.0	22.8	21.5	No Data	22.4	-0.04	2.0	0.8	22.8	0.35	0.9	0.8	14	LA
XDQ2P3	47.7 XL	49.6 XL	52.6 XL	45.7 XL	48.9	26.45 X	0.1	2.9 H	35.9	13.50X	0.1	14.1 H	8	LU
Y4G2PZ	23.1	22.2	22.2	22.7	22.5	0.05	1.5	0.4	21.2	-1.25	1.7	1.2	16	XX
YQWG9D	22.0	22.2	22.6	21.9	22.2	-0.31	1.2	0.3	22.3	-0.07	1.2	0.2	16	TT
Z8EWPE	23.2	22.1	22.8	23.1	22.8	0.33	1.6	0.5	22.4	-0.03	1.8	0.4	16	LU
ZQQL3C	22.9	23.0	22.9	23.1	23.0	0.51	1.6	0.1 L	23.2	0.76	1.7	0.8	16	LA

Consensus (All Labs) Results

Wk Mean	22.47	22.52	22.29	22.57	Month Mean	22.46	Grand Mean	22.41
Avg SDr	1.64	1.65	1.64	1.61	Avg SDr	1.64	Avg SDr	1.67
SD btwn Labs	1.14	0.96	1.13	1.17	SD btwn Labs	1.00	SD btwn Labs	1.00
Labs Incld	49	48	49	50	SD btwn Wks	0.66	SD btwn Wks	0.86
Labs Excld	2	2	1	1	Labs Incld	51	Labs Incld	51
Labs not Rcvd	2	3	3	2				

Key to Instrument Codes Reported by Participants

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)	WL	Zwick Z020
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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
223BG8	21.4	21.8	20.7	22.2	21.5	-0.14	1.1	0.6	21.4	-0.31	0.7	0.5	12	LA
26RH26	20.8	19.9	20.9	20.6	20.6	-1.08	1.2	0.4	20.8	-0.93	1.1	0.4	12	LW
2KV9HZ	22.7	22.1	21.6	21.6	22.0	0.34	1.3	0.5	22.1	0.37	1.4	0.5	12	LA
2UMP84	21.3	21.7	21.5	21.4	21.5	-0.20	1.4	0.2	21.6	-0.15	1.3	0.8	12	LU
3ARGPY	22.2 L	22.5 L	22.5 L	22.2 L	22.3	0.68	0.0	0.2	22.7	1.04	0.0	0.6	6	LU
42FGT3	20.5	22.6	19.7	21.9	21.2	-0.48	1.3	1.3 H	21.9	0.22	1.2	1.2	12	LA
6A6PQY	23.0 L	21.5 L	21.7 L	23.2 L	22.3	0.66	0.3	0.9	22.2	0.47	0.3	1.0	12	LA
6MCHFP	21.8 L	20.8 L	21.9 L	21.6 L	21.5	-0.16	0.0	0.5	21.2	-0.55	0.0	0.9	12	LW
84RMHZ	20.9	20.1	21.1	21.1	20.8	-0.88	1.2	0.5	20.7	-0.99	1.4	0.6	12	LY
8TTU8N	20.0	20.4	20.6	20.4	20.4	-1.27	0.9	0.2	20.5	-1.19	0.8	0.2	12	BK
9B44PZ	22.8	23.3	23.8	22.3	23.1	1.37	1.7	0.6	23.1	1.42	1.6	0.5	12	LW
9BT6T7	21.6	21.6	21.1	21.1	21.4	-0.30	1.5	0.3	21.0	-0.69	1.6	0.7	12	LY
9DANFL	21.2	21.2	22.5	21.1	21.5	-0.16	1.1	0.7	21.4	-0.27	1.2	0.6	9	LW
A7RD3K	24.0 *	23.6	23.7	23.9 *	23.8	2.12 *	1.3	0.2	23.6	1.90	1.3	1.0	12	LA
ABZYNW	21.9	21.3	21.6	21.7	21.6	-0.02	1.2	0.2	21.6	-0.07	1.2	0.5	12	LY
AGCMNT	21.2	21.2	20.8 L	21.9 L	21.3	-0.40	0.9	0.5	21.4	-0.33	1.2	0.3	12	LY
AUDHML	21.7	21.9	22.8	22.5	22.2	0.54	1.3	0.5	22.3	0.58	1.3	0.4	12	LU
BN4LCJ	23.3 L	23.1 L	21.6 L	21.7 L	22.4	0.74	0.3	0.9	23.3	1.58	0.3	1.0	12	BK
D476ZL	21.3	No Data	No Data	21.7	21.5	-0.18	1.3	0.3	21.1	-0.64	1.3	0.4	10	LW
DGH9QQ	24.3 *	23.6	24.0 *	23.8 *	23.9	2.23 *	1.2	0.3	23.6	1.96	1.3	0.5	12	LZ
DJL4AT	22.1	21.5	21.8	22.6	22.0	0.32	1.2	0.5	22.1	0.43	1.2	0.4	12	LW
DKE2JK	19.6	19.8	19.6	19.9 *	19.7	-1.91	1.1	0.2	19.9	-1.80	1.1	0.3	12	LY
DQ6A7Z	20.7	21.5	21.0	21.8	21.2	-0.43	1.3	0.5	21.6	-0.12	0.8	0.5	12	XX
E9J3AU	22.5	22.9	22.2	22.3	22.5	0.80	1.3	0.3	22.7	1.02	1.4	0.5	12	LU
ERB9HK	22.7	22.6	23.3	No Data	22.9	1.17	1.3	0.3	22.7	1.02	1.3	0.4	7	LU
FFDUVT	21.5	21.0	21.6	21.5	21.4	-0.25	1.3	0.2	21.5	-0.20	1.3	0.5	12	LU
FKQDEV	20.8	20.5	20.4	20.4	20.5	-1.14	1.2	0.2	20.8	-0.95	1.2	0.2	12	LY
GV6RTG	21.5	21.8	21.4	21.8	21.6	-0.02	1.2	0.2	21.4	-0.30	1.1	0.4	12	LU
H6R92H	No Data	No Data	23.1	23.2	23.2	1.50	1.5	0.1 L	22.8	1.14	1.2	0.3	6	XX
K7WEEV	19.4	20.4	19.6	20.8	20.0	-1.62	1.2	0.7	20.1	-1.61	0.7	0.7	12	LA
KTNWHL	21.1 L	23.2 L	22.6 L	22.8 L	22.4	0.74	0.3	0.9	24.3	2.69 *	0.7	4.7 H	12	LA
LNU43C	23.5	23.4	22.4	23.3	23.1	1.46	1.1	0.5	23.1	1.45	1.0	0.4	12	LH
MJBJEM	22.0	22.1	22.0	22.1	22.0	0.38	0.7	0.1 L	21.9	0.19	0.8	0.3	12	TT
MM93FL	22.2	22.9	21.9 L	22.5	22.4	0.71	0.9	0.4	22.2	0.53	1.2	0.5	12	LA
NBCDXQ	20.5	20.0	20.3	20.6	20.3	-1.32	1.3	0.2	20.4	-1.35	1.2	0.7	11	LW

Containerboard Interlaboratory Testing Program
Analysis 225
STFI, 36 lb Linerboard - 36Z3
TAPPI Provisional Test Method T826

Report #569 (B)
February 2017

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
NMR7Q8	20.7	21.1	22.8	21.6	21.6	-0.11	1.1	0.9	20.9	-0.78	1.2	0.8	12	LA
NPV4WT	21.8	21.4	21.3 L	21.3	21.4	-0.24	1.0	0.2	21.6	-0.11	1.1	0.4	12	LU
P3XUC7	18.5 *L	20.7 L	20.4 L	20.4 L	20.0	-1.63	0.1	1.0	20.2	-1.52	0.3	1.0	12	LW
PET3V9	20.5	20.0	20.8	21.0	20.6	-1.08	1.1	0.4	20.8	-0.93	1.2	0.4	12	LZ
QB8G3L	22.6	22.5	23.4	22.2	22.7	1.00	1.4	0.5	22.2	0.54	1.4	0.9	11	LZ
QUZJJM	20.1	22.0	23.0	23.1	22.1	0.38	1.3	1.4 H	21.2	-0.51	1.3	1.0	12	LZ
RP2MB8	25.8 X	23.8	22.9	No Data	24.1	2.45 *	1.4	1.5 H	23.2	1.57	1.4	1.2	7	LU
T43J8E	21.2	20.5	21.0	20.7 L	20.8	-0.83	0.5	0.3	21.1	-0.64	0.6	0.4	12	LY
TBYD6C	20.8	20.3	20.5	No Data	20.5	-1.14	1.4	0.2	21.0	-0.70	1.2	0.4	11	LW
TG3HVB	20.5 L	20.7 L	20.5 L	20.6 L	20.6	-1.07	0.2	0.1	21.3	-0.45	0.2	0.6	12	LA
WABF22	21.7	21.2	20.8	20.9	21.1	-0.52	1.4	0.4	21.4	-0.34	1.4	0.7	12	LW
WVC8JM	19.4	22.3	20.6	No Data	20.7	-0.90	1.5	1.5 H	21.3	-0.41	0.8	1.0	10	LA
XDQ2P3	37.2 XL	35.5 XL	33.6 XL	32.8 XL	34.8	12.94 X	0.1	2.0 H	28.2	6.63 X	0.1	7.1 H	8	LU
Y4G2PZ	22.5	20.8	21.6	21.8	21.7	0.01	1.4	0.7	20.7	-1.06	1.3	1.0	12	XX
YQWG9D	21.6	21.4	21.7	21.6	21.6	-0.07	0.9	0.1	21.5	-0.24	0.9	0.2	12	TT
Z8EWPE	21.4	21.2	21.4	21.6	21.4	-0.28	1.3	0.2	21.4	-0.29	1.1	0.3	12	LU
ZQQL3C	22.1	21.6	21.7	22.1	21.9	0.20	1.7	0.3	22.0	0.29	1.4	0.3	12	LA

Consensus (All Labs) Results

Wk Mean	21.49	21.62	21.63	21.75	Month Mean	21.66	Grand Mean	21.70
Avg SDr	1.20	1.14	1.14	1.14	Avg SDr	1.17	Avg SDr	1.12
SD btwn Labs	1.18	1.08	1.10	0.93	SD btwn Labs	1.01	SD btwn Labs	0.98
Labs Incld	49	49	50	47	SD btwn Wks	0.60	SD btwn Wks	0.92
Labs Excld	2	1	1	1	Labs Incld	51	Labs Incld	51
Labs not Rcvd	1	2	1	4				

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 (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		

Containerboard Interlaboratory Testing Program

Analysis 228

Roughness - Stylus Method, 56 lb Linerboard - 56A

TAPPI Provisional Test Method T575

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
223BG8	174.1	-0.09	12.5	193.9	0.77	28.8	4	EV
26RH26	210.5	1.60	16.2	197.2	0.94	20.8	4	LA
2KV9HZ	170.3	-0.27	14.1	160.2	-1.04	15.9	4	LA
6MCHFP	187.2	0.52	16.9	187.5	0.42	14.9	4	EV
BN4LCJ	203.1	1.26	15.1	200.9	1.14	13.1	3	EV
D3XTMQ	156.9	-0.90	17.0	154.0	-1.37	16.1	4	EV
D476ZL	186.8	0.50	10.5	185.4	0.32	18.2	4	EV
DGH9QQ	164.0	-0.57	16.0	166.4	-0.70	14.2	4	XX
DKE2JK	172.9	-0.15	11.1	177.1	-0.13	12.1	4	EV
DQ6A7Z	197.6	1.00	18.3	207.5	1.50	18.6	4	EV
GV6RTG	176.3	0.01	15.2	187.6	0.43	17.7	4	EV
K7WEEV	159.6	-0.77	16.7	161.1	-0.99	51.1	4	EV
KTNWHL	194.0	0.83	24.3	189.7	0.54	23.4	4	LA
QB8G3L	161.8	-0.67	14.7	168.1	-0.61	14.6	3	LA
RP2MB8	150.7	-1.19	12.2	149.3	-1.62	18.3	3	EV
T43J8E	132.9	-2.02 *	8.7	118.2	-3.29 X	10.1	4	EV
TG3HVB	217.6	1.94	35.8	212.4	1.76	36.9	4	LA
WABF22	182.1	0.28	13.5	186.4	0.37	14.3	4	XX
WUJEN6	155.3	-0.97	10.0	161.1	-0.99	14.4	4	EV
ZQQL3C	168.8	-0.34	17.5	165.6	-0.75	16.7	4	XX

Consensus (All Labs) Results

Month Mean	176.12	Grand Mean	179.54
Avg SDr	16.82	Avg SDr	22.09
SD btwn Labs	21.43	SD btwn Labs	18.67
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

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
42FGT3	359.1	-0.71	7.5	360.2	-0.65	7.8	4	LA
6A6PQY	363.6	-0.60	7.4	358.4	-0.71	7.4	4	XX
LEJVHP	448.2	1.55	7.7	416.9	1.11	8.6	2	XX
LGPF7P	369.8	-0.44	8.0	365.8	-0.48	7.5	4	TS
MM93FL	440.7	1.36	0.9	437.4	1.75	1.0	4	XX
MPXA2H	360.8	-0.67	6.4	362.5	-0.58	7.5	4	LA
Z8EWPE	367.4	-0.50	8.0	366.7	-0.45	8.8	4	XX

Consensus (All Labs) Results

Month Mean	387.08	Grand Mean	381.13
Avg SDr	6.96	Avg SDr	7.37
SD btwn Labs	39.42	SD btwn Labs	32.10
Labs Incld	7	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		

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
223BG8	102.8	-0.30	10.7	102.8	-0.30	10.7	1	TM
26RH26	173.8	1.84	9.9	173.8	1.84	9.9	1	HY
4G7NNF	100.5	-0.37	4.9	100.5	-0.37	4.9	1	TM
6A6PQY	153.4	1.22	7.1	153.4	1.22	7.1	1	SC
6MCHFP	188.0	2.26 *	8.4	188.0	2.26 *	8.4	1	SC
AGCMNT	92.4	-0.61	6.6	92.4	-0.61	6.6	1	XX
D3XTMQ	122.2	0.28	11.4	122.2	0.28	11.4	1	HY
DGH9QQ	84.4	-0.85	12.2	84.4	-0.85	12.2	1	TM
ERB9HK	57.6	-1.66	9.2	57.6	-1.66	9.2	1	TM
GV6RTG	91.6	-0.64	6.5	91.6	-0.64	6.5	1	TM
MM93FL	57.4	-1.67	1.3	57.4	-1.67	1.3	1	LZ
NBCDXQ	116.6	0.12	3.1	116.6	0.12	3.1	1	TM
NMR7Q8	120.0	0.22	2.6	120.0	0.22	2.6	1	TM
NPV4WT	92.4	-0.61	4.8	92.4	-0.61	4.8	1	TM
RP2MB8	93.4	-0.58	8.4	93.4	-0.58	8.4	1	TM
TG3HVB	125.8	0.39	18.5	125.8	0.39	18.5	1	HY
Y4G2PZ	89.0	-0.72	21.4	89.0	-0.72	21.4	1	SC
Z8EWPE	113.2	0.01	7.6	113.2	0.01	7.6	1	HY

Consensus (All Labs) Results

Month Mean	112.77	Grand Mean	112.77
Avg SDr	10.22	Avg SDr	10.22
SD btwn Labs	33.24	SD btwn Labs	33.24
Labs Incld	17	Labs Incld	17

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	107.86	32.30	4.91	14
Modified Scott Bond Mechanics	143.50	42.85	30.73	2

Analysis Notes

MM93FL - Method used is not covered in this test.

Key to Instrument Codes Reported by Participants

HY	Huygen Digitized Scott Internal Bond Tester	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	SDr	Mean	CPV	SDr	Months
223BG8	31.0	1.23	3.7	31.0	1.23	3.7	1
26RH26	26.0	-0.82	2.0	26.0	-0.82	2.0	1
6A6PQY	31.0	1.23	1.0	31.0	1.23	1.0	1
6MCHFP	28.6	0.25	1.5	28.6	0.25	1.5	1
AGCMNT	28.7	0.29	3.8	28.7	0.29	3.8	1
D476ZL	25.4	-1.06	0.9	25.4	-1.06	0.9	1
DGH9QQ	27.0	-0.41	2.8	27.0	-0.41	2.8	1
DJL4AT	33.2	2.13 *	6.3	33.2	2.13 *	6.3	1
DKE2JK	27.5	-0.19	1.9	27.5	-0.19	1.9	1
ERB9HK	26.1	-0.78	3.8	26.1	-0.78	3.8	1
FFDUVT	26.2	-0.73	2.9	26.2	-0.73	2.9	1
GV6RTG	25.8	-0.90	1.3	25.8	-0.90	1.3	1
H6R92H	25.1	-1.18	1.7	25.1	-1.18	1.7	1
MM93FL	32.0	1.64	0.7	32.0	1.64	0.7	1
NBCDXQ	27.6	-0.15	2.1	27.6	-0.15	2.1	1
QUZJJM	26.6	-0.57	1.3	26.6	-0.57	1.3	1
RP2MB8	27.9	-0.04	2.1	27.9	-0.04	2.1	1
TG3HVB	30.6	1.08	1.0	30.6	1.08	1.0	1
TV9BN9	25.4	-1.06	2.6	25.4	-1.06	2.6	1
WABF22	30.4	0.98	2.5	30.4	0.98	2.5	1
YN4KM4	29.7	0.70	0.4	29.7	0.70	0.4	1
Z8EWPE	24.4	-1.47	1.8	24.4	-1.47	1.8	1
ZQQL3C	27.6	-0.16	0.9	27.6	-0.16	0.9	1

Consensus (All Labs) Results

Month Mean	28.00	Grand Mean	28.00
Avg SDr	2.50	Avg SDr	2.50
SD btwn Labs	2.45	SD btwn Labs	2.45
Labs Incld	23	Labs Incld	23

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
223BG8	18.4	-0.19	1.9	18.4	-0.19	1.9	1	LP
26RH26	20.2	0.76	0.9	20.2	0.76	0.9	1	LP
3YW6E8	17.8	-0.51	0.6	17.8	-0.51	0.6	1	LP
6ANBMV	16.8	-1.03	1.5	16.8	-1.03	1.5	1	XX
6MCHFP	19.4	0.34	1.7	19.4	0.34	1.7	1	HG
9HTL7W	16.5	-1.19	1.4	16.5	-1.19	1.4	1	LA
A3UYDA	16.6	-1.14	1.5	16.6	-1.14	1.5	1	GG
AGCMNT	19.3	0.29	1.8	19.3	0.29	1.8	1	LP
BN4LCJ	22.4	1.91	1.3	22.4	1.91	1.3	1	XX
D476ZL	14.3	-2.36 *	0.8	14.3	-2.36 *	0.8	1	XX
DGH9QQ	20.9	1.13	1.7	20.9	1.13	1.7	1	TD
DJL4AT	18.6	-0.09	1.3	18.6	-0.09	1.3	1	LP
DQ6A7Z	18.3	-0.26	1.7	18.3	-0.26	1.7	1	LW
ERB9HK	8.2	-5.56 X	1.0	8.2	-5.56 X	1.0	1	LA
FKQDEV	22.4	1.92	1.0	22.4	1.92	1.0	1	LP
H6R92H	8.4	-5.45 X	0.8	8.4	-5.45 X	0.8	1	LA
KTNWHL	19.6	0.44	1.0	19.6	0.44	1.0	1	LA
MM93FL	20.9	1.11	1.2	20.9	1.11	1.2	1	LA
NBCDXQ	17.2	-0.82	1.8	17.2	-0.82	1.8	1	HG
QAWYJF	18.7	-0.05	0.9	18.7	-0.05	0.9	1	XX
RP2MB8	17.8	-0.49	2.4	17.8	-0.49	2.4	1	LA
TG3HVB	20.0	0.64	1.8	20.0	0.64	1.8	1	LA
TV9BN9	19.1	0.16	2.0	19.1	0.16	2.0	1	GA
Z8EWPE	18.2	-0.27	2.2	18.2	-0.27	2.2	1	TP
ZQQL3C	18.3	-0.27	0.8	18.3	-0.27	0.8	1	LA

Consensus (All Labs) Results

Month Mean	18.76	Grand Mean	18.76
Avg SDr	1.52	Avg SDr	1.52
SD btwn Labs	1.90	SD btwn Labs	1.90
Labs Incld	23	Labs Incld	23

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	LW	L&W Gurley Densometer, Oil Flotation
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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
2AJPJD	64.6	61.0	60.9	61.0	61.9	0.81	3.0	1.8	61.9	1.06	3.0	1.8	4	LZ
3ARGPY	69.3 X	68.0 X	72.5 X	73.0 XH	70.7	4.69 X	4.8	2.4	70.6	5.60 X	5.6	2.6	8	LC
3YW6E8	62.8	62.8	64.8	62.2	63.1	1.37	3.1	1.1	62.2	1.21	3.3	1.5	16	LD
49CJTT	61.2	59.9	60.0	59.2	60.1	0.03	2.6	0.8	60.1	0.14	2.7	0.6	16	LD
7R3A4D	64.5	60.3	59.7	59.1	60.9	0.39	4.0	2.4	60.5	0.33	2.8	1.5	11	LC
8QQRLT	63.8	62.2	67.4 *H	67.6 X	65.3	2.30 *	4.0	2.7	61.0	0.60	3.9	3.7 H	12	LC
9B44PZ	58.2	56.6	57.8	55.5 H	57.0	-1.31	4.3	1.2	57.3	-1.30	4.1	2.2	16	LC
9DANFL	64.1	No Data	60.4	60.3	61.6	0.70	2.6	2.1	63.2	1.77	2.7	2.3	12	LJ
9HTL7W	62.0	63.4	63.7	64.9 *	63.5	1.54	2.6	1.2	63.4	1.88	2.7	1.7	16	LC
A7RD3K	58.9	60.9	61.7	61.5	60.8	0.32	3.5	1.3	58.9	-0.49	3.5	1.9	12	LD
ABZYNW	63.5	60.7	62.0	61.3	61.9	0.81	2.8	1.2	61.1	0.69	2.9	1.1	16	LD
AGCMNT	58.1	59.7	58.6	60.2	59.2	-0.38	4.0	1.0	59.2	-0.33	3.6	1.2	16	LZ
AUDHML	61.3	61.9	62.5	62.6	62.1	0.90	2.7	0.6	62.1	1.18	2.7	0.8	16	LD
BN4LCJ	60.4 L	60.4	61.2 L	61.8	60.9	0.41	1.4	0.7	60.4	0.28	1.6	0.8	16	MB
CYG79L	59.8	60.5	58.7	59.5	59.6	-0.17	2.4	0.7	59.9	0.05	2.5	0.6	16	LC
DDJWUQ	64.2	65.5 *	62.1	63.3	63.8	1.65	3.5	1.4	60.8	0.48	2.9	2.6	16	TU
DDZ99P	59.4	59.5 L	59.2	59.4	59.4	-0.29	2.2	0.1 L	59.9	0.02	5.1	0.8	16	LD
DJL4AT	59.9	60.6	64.4	61.4	61.6	0.69	2.8	2.0	61.5	0.86	2.9	1.6	16	LC
DKE2JK	60.9	58.1	61.3	63.9	61.0	0.45	3.2	2.4	60.0	0.07	3.3	2.1	8	XX
DQ6A7Z	37.1 XH	56.0 L	56.3	50.0 X	49.9	-4.46 X	6.9	8.9 H	53.3	-3.40 X	5.4	5.1 H	16	XX
E9J3AU	62.6	61.8	60.3	61.8	61.6	0.71	3.9	1.0	61.1	0.68	4.1	0.8	16	LD
ERB9HK	58.6	No Data	61.2 H	58.1	59.3	-0.31	4.6	1.7	57.7	-1.13	4.9	2.9	11	XX
FFDUVT	63.0	58.7	61.2	61.6	61.1	0.49	3.1	1.8	59.8	0.00	2.4	1.4	16	LZ
GLHQGE	58.9	58.1	60.8	57.4	58.8	-0.53	3.4	1.5	59.8	-0.03	2.6	1.4	16	LD
GV6RTG	55.6	58.3	58.0	61.1	58.3	-0.77	3.6	2.3	59.1	-0.38	3.6	1.3	16	LD
HTXQAW	54.5 *	55.5	56.1	55.5	55.4	-2.02 *	2.5	0.7	57.5	-1.20	3.5	1.8	16	XX
KERHHR	62.9	62.9	63.3	63.2	63.1	1.34	2.8	0.2 L	63.6	1.95	2.6	0.7	8	TM
LNU43C	62.3	64.1	62.5	62.2	62.8	1.22	2.7	0.9	60.6	0.42	2.6	1.5	16	LC
MJBJEM	57.8	57.3	58.1 H	58.1 H	57.8	-0.96	4.7	0.4	58.1	-0.89	5.1	1.3	16	TG
MM93FL	59.3	56.1	57.2	57.7	57.6	-1.07	2.8	1.4	56.2	-1.88	2.7	1.5	16	LD
N34PKR	60.6	59.9	62.6	60.2	60.8	0.36	3.5	1.2	60.9	0.58	3.9	1.3	16	LD
NMR7Q8	54.4 *	54.7 *	52.9 *	53.5 *	53.9	-2.69 *	2.5	0.8	55.7	-2.14 *	2.7	1.8	16	LC
NPV4WT	59.8	61.0	59.7	58.9	59.9	-0.06	3.1	0.9	61.4	0.83	3.4	1.9	16	LC
PET3V9	54.9 H	57.2	59.8	57.7	57.4	-1.15	3.9	2.0	58.1	-0.88	3.6	2.1	16	LZ
PKGLFC	57.7	56.4 L	56.0 L	56.4 L	56.6	-1.50	1.4	0.7	49.3	-5.47 X	2.2	4.5 H	16	TC

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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
QAWYJF	60.1	58.9	59.7	60.9	59.9	-0.04	2.8	0.8	59.6	-0.14	3.1	0.9	16	LD
QB8G3L	59.3	56.9	56.8	57.5	57.6	-1.05	3.5	1.2	59.3	-0.27	2.9	2.4	11	LD
QUZJJM	55.6	59.4	57.3	57.2	57.4	-1.16	3.2	1.6	57.8	-1.07	3.2	1.3	16	LZ
RP2MB8	58.6	62.0	61.2 H	58.1	60.0	-0.02	4.3	1.9	57.7	-1.09	4.0	4.1 H	12	LC
RZMQGL	60.4	62.0	61.8	58.9	60.8	0.34	2.1	1.5	60.9	0.54	2.5	1.7	16	MB
T9TTGC	61.4	60.3	60.2	60.0	60.5	0.20	3.0	0.6	60.1	0.12	2.7	0.6	12	EM
U33372	61.6	62.8	63.7	63.4	62.9	1.26	2.7	0.9	63.0	1.64	2.9	0.9	16	EM
UDJMRJ	53.9 *H	57.5	58.0	57.7	56.8	-1.42	3.4	1.9	54.9	-2.59 *	3.3	4.3 H	12	TH
WH6GGF	59.2	59.7	60.9	57.4	59.3	-0.31	3.3	1.4	59.6	-0.10	3.4	1.4	16	MB
WVC8JM	59.0	57.1	61.7	No Data	59.2	-0.34	3.7	2.3	58.3	-0.81	3.5	2.0	14	MB
WXKGE7	60.0	60.9	61.3	59.9	60.5	0.23	2.0	0.7	59.6	-0.11	1.9	0.7	16	MB
Y4G2PZ	60.3	58.0	59.8	60.4	59.6	-0.17	2.7	1.1	59.3	-0.26	3.2	1.3	16	LC
YQWG9D	59.1	60.4	58.8	59.1	59.3	-0.29	2.6	0.7	58.9	-0.49	2.9	1.6	16	TH
Z8EWPE	58.4	60.4	54.9	60.7	58.6	-0.62	3.2	2.7	59.5	-0.17	3.4	2.4	16	LC
ZQQL3C	59.7	61.1	60.7	59.8	60.3	0.13	2.3	0.7	60.6	0.38	2.7	1.1	16	LD

Consensus (All Labs) Results

Wk Mean	59.94	59.78	60.19	59.81	Month Mean	60.01	Grand Mean	59.83
Avg SDr	3.39	3.00	3.21	3.00	Avg SDr	3.17	Avg SDr	3.26
SD btwn Labs	2.72	2.42	2.71	2.40	SD btwn Labs	2.28	SD btwn Labs	1.92
Labs Incld	48	47	49	46	SD btwn Wks	1.44	SD btwn Wks	1.84
Labs Excld	2	1	1	3	Labs Incld	48	Labs Incld	47
Labs not Rcvd	0	2	0	1				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LJ	L&W 958
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TC	TMI Monitor/Compression Tester, 17-37	TG	TMI Compression Tester, Model 17-10
TH	TMI Compression Tester, Model 17-76	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 Method T824

	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
3YW6E8	76.2	76.0	76.6	78.2	76.7	1.59	2.5	1.0	76.5	1.57	2.5	0.9	16	LD
49CJTT	72.6	72.9	73.0	73.3	73.0	-0.61	3.0	0.3	72.6	-0.54	3.0	0.4	16	XX
6ANBMV	75.8	73.7	73.3 L	73.0	74.0	-0.01	1.8	1.3	74.0	0.23	1.9	2.1	12	XX
9DANFL	73.7	72.4	75.0	76.8	74.5	0.28	2.7	1.9	74.6	0.53	2.6	2.3	13	LJ
AUDHML	69.8 *	70.7	72.6	71.2	71.1	-1.69	1.5	1.2	72.1	-0.80	1.9	1.1	16	LD
CYG79L	72.4	72.9	73.1	73.4	73.0	-0.61	2.8	0.4	72.5	-0.61	2.9	0.5	16	LD
DJL4AT	73.9	73.1 L	76.1	73.1	74.1	0.03	2.4	1.4	74.2	0.32	2.8	1.1	16	XX
MM93FL	75.5	76.0	75.3	75.5	75.6	0.91	1.6	0.3	73.9	0.16	2.5	1.4	16	LD
N34PKR	75.3	73.1	74.3	74.1	74.2	0.10	2.4	0.9	74.7	0.56	2.1	1.2	16	LD
PET3V9	72.3	72.5	74.2	72.9	73.0	-0.58	2.9	0.9	72.9	-0.36	3.4	3.6 H	16	LZ
QAWYJF	72.6	73.4	73.8	73.7	73.4	-0.36	2.6	0.5	73.1	-0.27	2.3	1.4	16	XX
WXKGE7	73.7	72.3	73.3	73.0	73.1	-0.53	2.1	0.6	70.7	-1.54	2.2	1.5	16	MB
Z8EWPE	78.0	77.3 *	77.4	78.4	77.7	2.17 *	2.2	0.5	77.4	2.04 *	2.1	1.0	16	LC
ZQQL3C	73.8	72.6	72.6	72.3	72.8	-0.69	2.4	0.7	71.2	-1.30	2.5	2.3	16	LD

Consensus (All Labs) Results

Wk Mean	73.97	73.49	74.34	74.20	Month Mean	74.00	Grand Mean	73.60
Avg SDr	2.40	2.34	2.31	2.49	Avg SDr	2.39	Avg SDr	2.52
SD btwn Labs	2.05	1.75	1.54	2.18	SD btwn Labs	1.73	SD btwn Labs	1.86
Labs Incld	14	14	14	14	SD btwn Wks	0.96	SD btwn Wks	1.69
Labs Excld	0	0	0	0	Labs Incld	14	Labs Incld	14
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
LJ	L&W 958	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
2AJPJD	42.6	42.3	44.0	No Data	42.9	-0.22	2.9	0.9	43.6	-0.02	2.7	1.5	7	LZ
3ARGPY	45.1	44.1	44.4	43.7	44.3	0.20	3.0	0.6	44.8	0.45	2.8	1.0	8	LD
3P4U6C	44.2 H	41.5	42.3 H	42.4	42.6	-0.32	3.9	1.1	41.4	-0.86	4.1	2.5	16	LZ
3YW6E8	46.8	46.9	45.0	46.9	46.4	0.82	2.3	0.9	45.9	0.86	2.1	1.0	16	LD
7R3A4D	44.8 H	50.8 H	46.9	46.8	47.3	1.09	4.4	2.5	45.1	0.55	3.0	2.3	11	LC
8QQRLT	29.1 X	28.5 X	26.2 X	27.7 X	27.9	-4.71 X	2.3	1.3	29.8	-5.37 X	2.4	1.9	12	XX
9HTL7W	49.2	49.7	50.7 *	51.7 *	50.3	2.00	1.7	1.1	48.0	1.68	1.9	3.4 H	16	LD
DDJWUQ	39.8	40.6	39.6	40.0	40.0	-1.09	2.0	0.4	39.8	-1.50	2.2	0.8	16	TU
DDZ99P	39.5	39.6	39.5	39.6	39.6	-1.22	2.9	0.0 L	40.8	-1.11	2.8	1.5	16	LD
DJL4AT	39.7	35.7 *	43.2 H	46.0	41.2	-0.75	3.2	4.5 H	43.5	-0.07	2.8	3.2 H	15	LC
DQ6A7Z	46.0	45.7	49.1	47.1	47.0	1.00	2.0	1.5	47.3	1.41	2.5	2.1	16	XX
GLHQGE	45.0	45.7	44.7	46.1	45.4	0.52	2.6	0.6	44.2	0.20	2.2	1.5	16	LZ
KERHHR	49.9	49.0	49.8	49.5	49.6	1.77	2.4	0.4	49.1	2.11 *	2.4	0.8	8	LD
LNU43C	45.3	45.7	44.7	45.7	45.3	0.51	1.8	0.5	45.3	0.65	1.8	2.5	16	LD
MM93FL	42.8	42.6	42.5	42.2	42.5	-0.34	1.9	0.2	42.9	-0.29	2.6	1.4	16	LD
PKGLFC	35.0 *	35.7 *	34.3 X	35.3 *	35.1	-2.56 *	1.8	0.6	34.5	-3.55 X	1.6	4.5 H	16	TC
QAWYJF	42.0	42.3	43.7	42.9	42.7	-0.28	3.7	0.8	42.9	-0.28	3.6	0.8	16	LD
QB8G3L	45.7 L	45.4	47.5	45.6	46.1	0.72	2.5	1.0	44.8	0.45	2.2	1.7	11	LD
QUZJJM	41.6 L	43.7	41.5	43.6	42.6	-0.32	1.9	1.2	42.4	-0.48	2.5	1.3	16	EM
R39BLP	44.0	43.0	42.9	42.7	43.1	-0.16	1.8	0.6	42.9	-0.28	2.0	1.0	16	TH
T9TTGC	43.8	45.3	44.3	44.1	44.4	0.22	2.9	0.7	43.4	-0.11	2.8	1.3	12	LC
UDJMRJ	39.0	38.5	39.3	39.2	39.0	-1.39	1.8	0.3	38.1	-2.15 *	2.2	1.8	12	TH
WXKGE7	43.3	43.6	43.8	43.0	43.4	-0.07	2.7	0.3	40.3	-1.31	2.0	2.4	16	MB
Z8EWPE	42.6	42.3	43.4	45.0	43.3	-0.10	2.4	1.2	43.9	0.10	2.6	1.2	16	LC
ZEVATJ	40.0 L	42.6 L	42.2 L	41.6	41.6	-0.61	1.2	1.1	42.1	-0.62	1.3	0.9	16	WK
ZQQL3C	45.7	46.3	45.3	44.9	45.5	0.56	2.4	0.6	45.3	0.62	2.6	0.9	16	LD

Consensus (All Labs) Results

Wk Mean	43.33	43.54	44.18	43.99	Month Mean	43.65	Grand Mean	43.65
Avg SDr	2.75	2.70	2.43	2.47	Avg SDr	2.59	Avg SDr	2.55
SD btwn Labs	3.33	3.78	3.00	3.49	SD btwn Labs	3.34	SD btwn Labs	2.57
Labs Incld	25	25	24	24	SD btwn Wks	1.29	SD btwn Wks	1.79
Labs Excld	1	1	2	1	Labs Incld	25	Labs Incld	24
Labs not Rcvd	0	0	0	1				

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	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 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
3P4U6C	14.7	14.9	15.3	14.5	14.8	0.25	1.1	0.3	14.8	0.33	1.1	0.6	16	LA
3YW6E8	14.3	14.3	14.4	14.1	14.3	-0.63	0.8	0.1	14.2	-0.68	0.8	0.2	8	LH
42FGT3	14.3	15.6	13.8 L	14.3	14.5	-0.28	0.6	0.8	14.6	-0.02	0.9	0.7	16	LA
49CJTT	14.6	14.4	14.4	14.5	14.5	-0.33	0.9	0.1 L	14.2	-0.63	0.8	0.3	16	LB
7R3A4D	15.7	16.1	15.7	15.1	15.6	1.45	1.0	0.4	14.3	-0.59	0.8	1.1 H	11	XX
9B44PZ	15.9	15.4	16.2	15.5	15.7	1.60	1.2	0.4	15.7	1.78	1.1	0.4	16	LW
9HTL7W	15.7	15.7	15.9	15.6	15.7	1.59	0.9	0.1	15.6	1.72	0.8	0.4	16	LZ
AGCMNT	14.6	14.0 L	14.4 L	13.9 L	14.2	-0.69	0.6	0.4	14.3	-0.50	0.9	0.2	16	LB
BN4LCJ	15.1 L	15.0 L	15.3 L	14.9 L	15.1	0.57	0.2	0.2	16.0	2.31 *	0.2	0.7	16	BK
CYG79L	14.4	14.4	14.5	14.5	14.5	-0.35	0.8	0.1 L	14.3	-0.55	0.8	0.3	16	LB
DBAWPJ	21.0 XL	No Data	No Data	No Data	21.0	9.53 X	0.2	0.0 L	21.0	10.50X	0.2	0.0 L	1	WL
DQ6A7Z	14.0 L	14.2 L	14.9 L	14.5 L	14.4	-0.42	0.0	0.4	14.8	0.38	0.0	0.5	16	XX
FFDUVT	No Data	15.3	13.1	12.7 *	13.7	-1.52	1.0	1.4 H	13.9	-1.23	1.0	0.8	15	LU
GV6RTG	14.2	14.5	13.7	14.3	14.2	-0.75	1.0	0.3	14.1	-0.88	1.0	0.2	16	LU
KERHHR	15.7	15.6	14.9	15.4	15.4	1.06	1.1	0.4	15.6	1.57	1.1	0.3	8	LA
LNU43C	15.4	15.2	15.1	15.6	15.3	0.99	0.8	0.2	15.3	1.17	0.8	0.3	16	LZ
MM93FL	15.0 L	15.3	15.5	15.7	15.4	1.05	0.7	0.3	14.7	0.22	0.8	0.5	16	LA
N34PKR	14.5	14.7	14.7	14.5	14.6	-0.10	1.0	0.1	14.6	-0.04	1.0	0.4	16	LB
NPV4WT	14.1	13.9	13.5	14.6	14.0	-1.00	0.8	0.4	14.0	-0.97	0.8	0.4	4	LA
PKGLFC	15.3 L	14.6 L	14.9 L	14.8 L	14.9	0.35	0.0	0.3	14.2	-0.75	0.0	0.6	16	TS
QB8G3L	14.8	15.5	16.2	15.4	15.5	1.22	1.1	0.6	15.0	0.58	1.1	0.8	11	LZ
QUZJJM	13.8	15.3	14.7	13.7	14.4	-0.47	0.8	0.8	14.0	-1.04	1.0	0.6	16	LZ
T9TTGC	13.3 *	13.4	12.8 *	13.0 *	13.1	-2.37 *	0.9	0.3	14.0	-0.96	1.0	0.8	12	LB
WVC8JM	47.4 XL	13.7 L	14.3 L	No Data	25.1	15.88 X	0.2	19.3 H	17.3	4.51 X	0.1	9.1 H	13	LA
YQWG9D	14.3	14.2	14.4	14.4	14.3	-0.52	0.7	0.1	14.4	-0.43	0.7	0.3	16	TT
Z8EWPE	14.0	14.5	14.4	14.7	14.4	-0.46	0.9	0.3	14.4	-0.38	0.9	0.2	16	LU
ZKKUWZ	26.0 XL	25.9 XL	25.1 XL	24.8 XL	25.4	16.36 X	0.0	0.6	18.7	6.75 X	0.0	5.0 H	12	LZ
ZQQL3C	15.0	14.6	14.2	14.3	14.5	-0.25	1.1	0.3	14.4	-0.41	0.9	0.3	16	LB

Consensus (All Labs) Results

Wk Mean	14.69	14.78	14.65	14.58	Month Mean	14.68	Grand Mean	14.61
Avg SDr	0.86	0.87	0.85	0.82	Avg SDr	0.86	Avg SDr	0.87
SD btwn Labs	0.67	0.68	0.86	0.76	SD btwn Labs	0.66	SD btwn Labs	0.60
Labs Incld	24	26	26	25	SD btwn Wks	0.45	SD btwn Wks	0.54
Labs Excld	3	1	1	1	Labs Incld	25	Labs Incld	25
Labs not Rcvd	1	1	1	2				

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)	WL	Zwick Z020
XX	Instrument make/model not specified by lab		