Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #571 (D) - April 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, 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 (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, 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 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
2NUHPH	871.0	1.44	20.1	855.4	1.12	24.9	4	ER
3RNB8Y	842.8	1.04	32.9	788.4	0.18	42.4	4	LS
43J4TU	936.9	2.36 *	43.7	789.0	0.18	38.2	3	LL
AUTWTW	707.0	-0.87	33.1	738.7	-0.52	27.0	4	LG
CE7BDV	718.4	-0.71	72.7	716.0	-0.84	62.4	4	LS
DV9ZXE	821.6	0.74	81.3	813.2	0.52	67.8	4	ET
DVDUNR	666.6	-1.44	195.6	676.0	-1.40	147.6	3	EX
E7URDW	874.1	1.48	38.5	765.4	-0.15	57.8	4	LM
JP78J6	735.5	-0.47	72.0	726.7	-0.69	74.2	4	ER
KHK7N8	797.6	0.40	58.9	766.5	-0.13	49.9	4	LS
MEUCTV	703.0	-0.92	45.8	673.9	-1.43	37.4	4	LG
NM6VPZ	725.8	-0.60	21.7	739.1	-0.52	43.6	4	ES
PQWNUE	726.0	-0.60	62.3	884.7	1.53	45.9	4	EX
QL3ED9	897.3	1.81	22.9	887.9	1.57	28.0	4	TE
RNMQQ6	775.4	0.09	34.9	775.4	-0.01	34.9	1	LH
TZD89V	803.8	0.49	21.9	756.0	-0.28	51.2	4	ER
UFLCJZ	746.3	-0.32	45.4	743.2	-0.46	43.3	2	LG
UH8WP4	780.0	0.16	58.1	753.6	-0.31	68.2	3	EX
VBMJEP	791.0	0.31	30.2	759.6	-0.23	28.9	4	LM
VVR7X8	881.0	1.58	34.9	893.8	1.66	41.2	4	LH
YCPRQ6	753.0	-0.22	12.9	886.0	1.55	53.8	4	ER
YJ44WX	733.6	-0.49	36.4	832.1	0.79	42.1	4	LG
YXNLP2	685.6	-1.17	47.1	773.5	-0.03	61.2	4	TB
ZNZCVJ	646.2	-1.72	15.1	640.1	-1.91	30.2	4	LL

Consensus (All Labs) Results

Month Mean	768.81	Grand Mean	775.87
Avg SDr	60.08	Avg SDr	56.40
SD btwn Labs	71.19	SD btwn Labs	71.16
Labs Incld	23	Labs Incld	23

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	742.86	70.27	25.96	6
Clip sealing	787.41	72.35	18.60	16
Tape sealing	781.96	163.14	13.14	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		

Containerboard Interlaboratory Testing Program
Analysis 202

Edgewise Compressive Strength, by T811, Corrugated board - ECT9

TAPPI Official Test Method T811

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
3RNB8Y	46.8	1.16	1.2	41.5	-0.60	1.9	4	EM
83CVGC	39.8	-1.26	2.1	39.2	-1.45	1.6	3	WK
AUTWTW	43.9	0.16	1.7	45.1	0.75	2.1	4	LE
CE7BDV	45.4	0.69	1.4	45.0	0.74	1.4	4	LC
CYYMFH	43.5	0.03	1.4	44.8	0.64	1.6	2	XX
DV93MH	38.8	-1.60	3.9	38.8	-1.58	3.9	1	LC
GJUA22	45.5	0.72	1.0	45.0	0.71	1.3	4	TB
KHK7N8	40.3	-1.10	1.9	42.1	-0.36	1.8	4	EM
P6FB4C	46.7	1.13	1.1	46.7	1.36	1.1	1	XX
VVR7X8	43.6	0.07	1.4	42.5	-0.21	1.1	4	TC

Consensus (All Labs) Results

Month Mean	43.44	Grand Mean	43.06
Avg SDr	1.90	Avg SDr	1.96
SD btwn Labs	2.88	SD btwn Labs	2.67
Labs Incld	10	Labs Incld	10

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
XX	Instrument make/model not specified by lab		

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
28ML7J	51.4	1.91	2.9	49.2	1.55	3.2	4	LC
2NUHPH	46.7	0.20	0.7	45.6	-0.33	1.3	4	EM
3RNB8Y	52.7	2.40 *	1.8	48.5	1.17	1.3	4	EM
43J4TU	46.5	0.13	0.6	46.6	0.17	0.9	3	BU
7EC8BT	49.2	1.11	1.7	48.3	1.05	1.4	4	LC
83CVGC	41.6	-1.63	0.9	40.4	-3.05 X	1.2	4	WK
9ANAWM	50.3	1.53	1.0	49.8	1.85	1.1	4	EM
AUTWTW	43.3	-1.03	1.6	44.4	-0.98	2.1	4	XX
BKYL3G	48.5	0.86	2.2	46.2	-0.05	1.8	4	LD
CE7BDV	46.7	0.20	2.6	46.7	0.25	2.1	4	LC
DV93MH	47.5	0.49	2.2	48.2	1.02	1.9	4	LC
DV9ZXE	42.0	-1.49	1.6	47.9	0.87	1.3	4	TD
DVDUNR	46.7	0.21	1.2	47.6	0.73	2.1	3	CT
E7URDW	50.8	1.70	1.3	49.1	1.47	2.0	4	EM
FPYXWM	44.2	-0.70	1.5	46.2	-0.02	1.9	4	LC
GJUA22	44.8	-0.49	0.7	44.9	-0.73	1.0	4	TG
JP78J6	43.7	-0.87	1.7	43.7	-1.32	2.1	4	EX
KE47K7	44.8	-0.48	1.7	43.9	-1.25	1.5	4	LD
KHK7N8	48.7	0.95	2.8	46.4	0.07	1.8	4	EM
M3JB4C	46.0	-0.04	1.2	44.9	-0.72	1.6	4	TB
NM6VPZ	44.6	-0.55	2.2	44.5	-0.90	1.8	4	LD
PCWP7H	45.7	-0.16	1.8	46.0	-0.13	1.7	4	LD
PQWNUE	63.4	6.27 X	2.0	48.3	1.06	1.5	4	LD
Q9BCPR	45.1	-0.39	2.4	42.7	-1.84	2.8	3	TM
QL3ED9	47.5	0.51	1.5	47.3	0.53	1.4	4	LD
RNMQQ6	45.4	-0.27	2.9	45.4	-0.47	2.9	1	EM
TF743D	42.6	-1.28	1.5	43.5	-1.43	1.6	4	EM
TZD89V	45.4	-0.26	0.9	45.4	-0.44	1.2	4	LD
UFLCJZ	45.1	-0.38	1.9	45.1	-0.63	1.9	1	TJ
UH8WP4	46.6	0.16	0.9	46.6	0.17	0.8	3	TL
V8P34F	46.4	0.10	2.0	45.2	-0.57	1.7	4	LD
VBMJEP	47.2	0.40	1.0	48.0	0.92	1.1	4	TG
VP4NHB	50.2	1.50	2.0	56.2	5.19 X	2.2	4	TD
VVR7X8	48.0	0.67	1.2	48.9	1.40	1.0	4	TC
Y4ETAV	42.8	-1.20	0.6	41.8	-2.31 *	0.6	3	TD
YCPRQ6	61.7	5.68 X	1.7	48.4	1.11	1.7	4	TB
YGEUMW	46.1	-0.01	1.9	45.7	-0.27	2.3	4	TD
YJ44WX	44.4	-0.64	1.5	45.0	-0.64	2.1	4	EM
YMML6M	43.9	-0.81	1.3	44.8	-0.75	1.6	4	LD

Containerboard Interlaboratory Testing Program

Analysis 203

Edgewise Compressive Strength by T839, Corrugated board - ECT9

TAPPI Official Test Method T839

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
YXNLP2	40.2	-2.17 *	0.6	46.7	0.21	0.8	4	LD
YZUDQ8	47.4	0.48	1.4	48.0	0.90	1.6	4	TG
ZNZCVJ	44.3	-0.66	2.5	44.9	-0.73	2.0	4	LC

Consensus (All Labs) Results

Month Mean	46.11	Grand Mean	46.26
Avg SDr	1.73	Avg SDr	1.75
SD btwn Labs	2.75	SD btwn Labs	1.91
Labs Incld	40	Labs Incld	40

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
TB	TMI Monitor/Compression Tester, Model 17-70	TC	TMI Monitor/Compression Tester, Model 17-37
TD	TMI Digital Crush Tester, Model 17-09	TG	TMI Digital Crush Tester, 17-76
TJ	TLS Compression Tester, Model CDM-5	TL	Tech-Lab Systems Compression
TM	TMI/Hinde & Dausch	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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26JTCK	104.2	102.7	101.6	107.1	103.9	-1.24	13.0	2.4	106.2	-0.90	11.9	2.9	16	LC
28ML7J	107.4	109.9	105.9	107.6	107.7	-0.31	9.0	1.6	110.0	0.30	11.6	3.6	16	LA
2CFMAH	108.4	112.2	110.1	107.3	109.5	0.13	9.6	2.2	103.6	-1.75	10.3	11.6 H	12	LA
37Q2PW	101.6	102.4	104.2	105.4	103.4	-1.36	6.4	1.7	104.0	-1.60	5.8	2.6	16	RE
4N9QRH	113.5	113.4	112.1	115.1	113.5	1.10	12.1	1.2	111.4	0.76	11.6	2.9	16	LC
4QBLC7	109.0	108.6	110.6	108.6	109.2	0.05	10.6	1.0	107.2	-0.60	9.8	3.2	8	LC
6YL8YE	111.6 H	113.6	112.9	110.4	112.1	0.76	12.5	1.4	109.1	0.02	11.3	3.2	16	LZ
7ZTGBQ	98.9 *	110.6	102.6	103.5	103.9	-1.24	6.7	4.9	105.7	-1.08	8.5	5.9	15	AH
88MERJ	105.7	103.3	104.6	105.5	104.8	-1.03	10.0	1.1	103.5	-1.76	9.4	2.7	16	LA
A29M9W	109.3	113.4	113.0	114.9	112.7	0.89	9.4	2.4	112.4	1.10	12.2	5.5	16	LC
AUCLCC	113.5	116.3	113.3	111.4 H	113.6	1.12	13.5	2.0	111.0	0.63	12.5	3.7	16	LA
AUTWTW	117.8	112.9 H	111.0	112.6	113.6	1.11	12.2	2.9	113.5	1.45	11.7	3.1	16	LZ
BKYL3G	114.3	114.4	114.9	115.1	114.7	1.38	7.3	0.4 L	111.7	0.85	10.2	2.6	16	LA
CE7BDV	107.4	103.5	101.1	101.3	103.3	-1.38	7.9	2.9	104.4	-1.49	10.4	2.7	16	AH
DVDUNR	120.1 *	112.8	110.0 H	122.6 X	116.4	1.80	13.0	5.9	110.6	0.52	12.8	10.4 H	12	XX
DXK3ZX	102.7	115.8	115.7	112.4	111.7	0.65	12.4	6.2 H	112.0	0.96	11.8	4.2	16	AX
E2CQVV	107.9	106.0	107.8	109.5	107.8	-0.29	7.9	1.4	108.2	-0.26	7.6	3.3	12	LA
E4GTQL	112.7	107.7	104.8	112.6	109.4	0.11	10.8	3.9	108.8	-0.08	10.6	4.5	12	LC
E7URDW	107.6 L	110.1 L	No Data	No Data	108.8	-0.04	3.8	1.8	111.3	0.72	6.4	1.8	14	AH
E8LJVF	124.3 X	114.4	116.5	118.8 *	118.5	2.30 *	12.6	4.3	110.5	0.48	12.5	9.2 H	8	LC
EW3BNR	106.8	105.6	103.2	106.5	105.5	-0.84	10.4	1.6	105.3	-1.20	10.5	2.4	16	LC
F6TD39	107.1	106.4	108.0	109.7	107.8	-0.29	10.6	1.4	107.1	-0.61	9.9	2.1	16	LA
FQ9XZA	106.9	102.7	105.4	106.4	105.4	-0.88	10.6	1.9	106.6	-0.76	9.9	2.4	16	LC
G2APZM	109.1	109.1 L	109.2 L	109.1	109.1	0.03	6.0	0.0 L	108.9	-0.03	6.3	0.2 L	16	LJ
KE47K7	114.3	112.9	112.0	110.4	112.4	0.84	9.9	1.6	110.7	0.56	9.9	4.6	16	LC
KEJQ7N	109.6	104.7	108.6	No Data	107.6	-0.33	13.9	2.6	109.8	0.25	12.6	4.1	15	TB
KHK7N8	103.0	98.6 *	95.7 X	95.1 X	98.1	-2.65 *	10.1	3.6	97.2	-3.78 X	9.9	7.4 H	16	RE
LEFK6K	100.0 *	100.8	103.6	101.8	101.6	-1.80	7.6	1.6	104.8	-1.36	10.6	3.4	16	LB
LLXZNH	112.9	109.4	115.4	113.1	112.7	0.91	8.5	2.5	112.8	1.21	9.0	3.2	16	LC
MPT62L	118.9	116.0	111.3	107.4	113.4	1.07	10.9	5.1	115.8	2.18 *	10.9	3.8	13	LA
NM6VPZ	112.6	112.9	104.1	104.1	108.4	-0.14	10.8	5.0	108.8	-0.08	10.0	3.5	16	LA
NWQ47G	103.7	106.1	100.6	103.8	103.5	-1.33	10.7	2.3	107.0	-0.65	10.5	4.2	12	LJ
PBK64Z	110.3	109.5	112.4	106.2	109.6	0.15	11.3	2.6	104.6	-1.43	11.4	3.7	16	LC
PCWP7H	115.9	102.3	110.8	111.6	110.2	0.28	10.4	5.7	109.4	0.12	9.6	2.9	16	AA
PMYZJY	110.2	109.9	109.0	107.9	109.2	0.06	9.8	1.0	109.4	0.11	11.4	2.4	15	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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
PQWNUE	115.7	114.8	110.0	111.5	113.0	0.97	12.3	2.7	111.8	0.88	10.8	2.2	16	AH
PUH24H	110.4	107.6	111.2	110.6	109.9	0.23	7.2	1.6	110.8	0.58	7.9	2.3	16	TB
R4VCYD	113.1 L	112.3 L	112.3 L	111.7 L	112.4	0.82	3.6	0.6	112.0	0.96	3.5	0.8	16	XX
R9TQTV	112.0	109.1	110.6	106.7	109.6	0.15	11.7	2.2	109.1	0.04	11.7	3.3	16	TB
RQB2QA	107.6 L	107.9	105.4	106.9 L	107.0	-0.50	4.8	1.1	107.9	-0.35	5.6	1.5	16	AH
RR4F7T	105.5	104.5	104.7	106.2	105.2	-0.92	8.8	0.8	113.7	1.52	11.8	5.8	16	LA
TWBXPZ	108.9	106.0	104.9	103.3	105.8	-0.78	9.2	2.4	104.7	-1.40	10.2	2.6	8	XX
TZD89V	110.1	105.7	107.8	110.0	108.4	-0.14	10.8	2.1	109.6	0.20	10.5	3.2	16	AH
V8P34F	107.2	103.0	106.1	105.7	105.5	-0.85	9.0	1.8	104.4	-1.47	8.3	2.3	16	LA
VLAH8F	110.0	95.8 *	104.0	114.9	106.2	-0.68	7.0	8.2 H	109.4	0.12	8.1	5.4	16	LA
VVR7X8	111.5	109.5	109.8	104.0	108.7	-0.07	10.6	3.2	110.1	0.35	11.0	3.3	16	AA
WW3HYA	114.5	115.2	115.9	118.7 *	116.1	1.72	11.9	1.9	114.6	1.78	10.2	3.0	16	LC
YCPRQ6	106.7	107.7	106.8	107.8	107.2	-0.42	12.2	0.6	105.3	-1.19	11.3	2.3	16	LA
Z2LMKA	117.9 H	110.2	115.7	112.2	114.0	1.22	14.7	3.4	112.9	1.25	12.1	3.3	16	LZ
ZGEWCZ	107.7	105.4	108.3	107.1 L	107.1	-0.45	8.2	1.3	107.8	-0.39	7.8	1.3	16	TP
ZPQH83	106.4	109.0	111.1	111.8	109.6	0.14	10.9	2.4	110.7	0.54	10.5	2.7	12	LA

Consensus (All Labs) Results

Wk Mean	109.60	108.52	108.79	109.07	Month Mean	108.99	Grand Mean	109.02
Avg SDr	9.95	10.37	10.62	9.79	Avg SDr	10.21	Avg SDr	10.25
SD btwn Labs	4.72	4.79	4.28	4.13	SD btwn Labs	4.11	SD btwn Labs	3.12
Labs Incld	50	51	49	47	SD btwn Wks	2.97	SD btwn Wks	4.12
Labs Excld	1	0	1	2	Labs Incld	51	Labs Incld	50
Labs not Rcvd	0	0	1	2				

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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26JTCK	76.8	76.4	75.1	76.3	76.2	-1.08	5.2	0.7	77.4	-0.75	5.6	2.0	12	LC
28ML7J	77.1	77.0	78.3	78.0 L	77.6	-0.60	4.4	0.7	79.4	0.00	5.6	2.1	8	LA
2CFMAH	80.4	80.7	78.8	77.2	79.3	-0.05	4.8	1.6	80.2	0.27	5.2	2.2	10	LA
37Q2PW	81.8	81.4 L	86.4	86.0	83.9	1.49	3.0	2.7	82.4	1.07	3.9	1.9	12	RE
4N9QRH	82.0	84.0	80.8	83.1	82.5	1.02	6.0	1.4	81.2	0.63	5.9	2.1	8	LC
4QBLC7	79.1	78.5	74.8 L	79.8	78.0	-0.45	3.7	2.3	78.0	-0.50	3.7	2.3	4	LC
6YL8YE	81.3	78.8	78.2 H	79.2	79.4	-0.01	6.2	1.3	78.6	-0.29	5.8	1.1	12	LZ
7ZTGBQ	75.3	76.9	81.6	84.1	79.5	0.02	4.2	4.1 H	81.1	0.59	4.7	3.4	12	AH
88MERJ	No Data	76.8	74.7	74.0	75.2	-1.41	4.2	1.5	74.7	-1.74	4.4	2.1	11	LA
A29M9W	80.9	79.0	80.8	78.9	79.9	0.16	5.7	1.1	82.3	1.05	5.8	2.5	12	LC
AUCLCC	82.1	77.7	85.0	80.5	81.3	0.64	5.6	3.0	79.8	0.12	5.8	3.0	8	LA
AUTWTW	83.8	83.0	83.8	85.4	84.0	1.53	5.5	1.0	84.7	1.90	5.9	1.4	9	LZ
BKYL3G	83.8	84.1	83.2	84.7	83.9	1.51	3.9	0.6	81.1	0.61	4.2	2.3	12	LA
CE7BDV	74.6	75.8	75.3	76.9	75.7	-1.25	5.4	1.0	75.6	-1.39	5.5	1.6	12	AH
DVDUNR	84.0	80.3 H	81.5	76.8	80.7	0.41	6.1	3.0	72.6	-2.47 *	5.4	8.7 H	12	XX
DXK3ZX	81.8	82.5	80.3	81.4	81.5	0.70	5.5	0.9	80.6	0.43	5.4	1.8	12	AX
E2CQVV	79.9	79.6	78.7	78.4	79.1	-0.09	4.1	0.7	80.2	0.26	5.0	1.6	8	LA
E4GTQL	78.0	79.3	77.2	79.2	78.4	-0.33	5.4	1.0	78.4	-0.38	4.8	1.4	11	LC
E7URDW	79.6 L	84.5	No Data	No Data	82.0	0.88	3.7	3.4	81.9	0.90	3.9	2.0	10	AH
E8LJVF	82.8	81.1	77.9	79.1	80.2	0.26	6.2	2.2	80.2	0.28	6.2	2.2	4	LC
EW3BNR	77.0	74.8	79.1	77.6	77.1	-0.76	4.5	1.8	76.7	-1.01	5.3	1.8	12	LA
F6TD39	78.1	78.2	78.0	78.2	78.1	-0.43	4.8	0.1 L	78.5	-0.33	5.1	0.9	12	LA
FQ9XZA	74.2	73.9	74.5	76.0	74.6	-1.59	6.1	0.9	75.8	-1.31	5.8	1.5	12	LA
G2APZM	79.5	79.6 L	79.6	79.7	79.6	0.05	3.5	0.1 L	79.1	-0.14	4.3	0.4	12	LJ
KE47K7	74.3	78.6	77.5	78.3	77.2	-0.75	4.9	2.0	78.2	-0.44	5.3	2.3	12	LC
KEJQ7N	75.7	78.7	80.6	No Data	78.4	-0.35	4.4	2.5	80.0	0.19	5.4	2.7	11	TB
KHK7N8	75.5	74.4	69.3 X	70.3 *	72.3	-2.35 *	4.6	3.0	74.9	-1.67	4.0	3.6	12	RE
LEFK6K	77.3	78.8	79.6	77.8	78.4	-0.35	4.9	1.0	76.9	-0.91	4.2	1.4	12	LB
MPT62L	80.7	82.9	84.2	78.4	81.6	0.71	6.6	2.6	82.2	1.00	5.4	1.8	10	LA
NM6VPZ	78.0	79.7	77.6	80.4	78.9	-0.16	5.0	1.3	79.0	-0.14	5.5	1.2	12	LA
NWQ47G	75.1	No Data	75.7	74.0	74.9	-1.50	5.0	0.9	78.0	-0.54	5.2	4.2 H	5	LJ
PBK64Z	77.5	78.2	78.8	81.0	78.9	-0.18	6.0	1.5	77.9	-0.56	6.5	1.5	12	LC
PCWP7H	80.8	81.1	80.0	77.4	79.8	0.14	6.1	1.7	80.1	0.26	5.9	2.0	12	AA
PMYZJY	78.4	75.1	76.4	79.2	77.2	-0.72	4.2	1.9	78.9	-0.21	5.0	1.7	12	LA
PQWNUE	83.4	85.8	84.6	86.5 *	85.1	1.88	5.2	1.4	81.8	0.87	5.7	3.2	12	AH

Containerboard Interlaboratory Testing Program
Analysis 207
Bursting Strength (Mullen), 36 lb Linerboard - 36Z3
TAPPI Official Test Method T807

Report #571 (D)
April 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
PUH24H	84.4	85.2	87.2 *	86.6 *	85.9	2.14 *	5.8	1.3	86.0	2.40 *	5.6	1.3	12	TB
R4VCYD	83.8	82.2	84.0	84.9	83.7	1.44	4.4	1.1	84.7	1.91	3.8	1.5	12	XX
R9TQTV	77.9	80.3	77.6 H	79.3	78.8	-0.22	6.6	1.3	80.2	0.28	6.1	2.2	12	TB
RQB2QA	78.2	78.6	78.7	77.7	78.3	-0.37	3.4	0.5	78.0	-0.52	3.5	1.0	12	AH
RR4F7T	76.7	77.7	75.2	76.3	76.5	-0.97	6.3	1.0	79.8	0.12	6.0	2.7	12	LA
TWBXPZ	79.4	79.5	79.2	77.5	78.9	-0.17	5.1	0.9	78.9	-0.19	5.1	0.9	4	XX
TZD89V	80.5	76.5	80.4	77.3	78.7	-0.25	5.7	2.1	80.1	0.23	5.2	1.7	12	AH
V8P34F	77.2	74.8	73.2 L	75.5	75.2	-1.42	3.2	1.6	76.0	-1.25	3.9	1.5	12	LA
VLAH8F	77.7	87.4	* No Data	79.0	81.4	0.65	4.5	5.3 H	79.2	-0.10	4.7	3.2	11	LA
VVR7X8	79.0 H	83.0	81.5	79.5	80.8	0.45	6.4	1.8	80.9	0.53	6.3	2.3	12	AA
WW3HYA	84.7	87.9 *	87.4 *	85.3	86.3	2.30 *	5.8	1.6	85.0	2.02 *	5.5	2.2	12	LC
YCPRQ6	79.5	78.4	79.3	74.3	77.9	-0.51	5.5	2.4	75.1	-1.56	5.1	2.9	12	LA
Z2LMKA	82.2	80.4	81.4	83.1	81.8	0.78	4.9	1.2	82.0	0.95	5.2	1.6	12	LZ
ZGEWCZ	77.4	76.9	78.8	75.6	77.2	-0.75	4.4	1.3	77.8	-0.60	4.6	0.9	12	TP
ZPQH83	79.0	77.4	80.8	79.3	79.1	-0.10	5.5	1.4	79.8	0.14	5.3	1.8	12	LJ

Consensus (All Labs) Results

Wk Mean	79.35	79.66	79.65	79.27	Month Mean	79.41	Grand Mean	79.43
Avg SDr	5.00	5.09	5.06	5.41	Avg SDr	5.12	Avg SDr	5.19
SD btwn Labs	2.89	3.34	3.43	3.60	SD btwn Labs	3.00	SD btwn Labs	2.75
Labs Incld	49	49	47	48	SD btwn Wks	1.90	SD btwn Wks	2.43
Labs Excld	0	0	1	0	Labs Incld	50	Labs Incld	50
Labs not Rcvd	1	1	2	2				

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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26JTCK	94.7	92.5	96.0	91.4	93.6	1.13	4.7	2.1	92.0	0.70	4.3	2.8	16	LC
28ML7J	88.4 H	96.3	92.6 H	93.0	92.6	0.89	7.0	3.2	91.1	0.49	7.1	4.1	16	LC
2CFMAH	70.3 XH	96.5	93.3	95.3	88.9	0.06	5.7	12.4 H	92.4	0.79	5.4	7.6 H	12	LC
2NUHPH	87.1	86.2	87.5	87.9	87.2	-0.31	2.6	0.7	85.9	-0.76	2.6	1.1	16	EM
37Q2PW	92.0	93.8	91.1	88.9	91.4	0.63	4.0	2.0	91.4	0.55	4.3	1.5	16	LZ
4QBLC7	87.4	87.4	88.7	86.0	87.3	-0.27	3.6	1.1	87.1	-0.45	3.7	1.3	8	LD
4RK79F	84.0	84.2	83.2	84.1	83.9	-1.04	4.6	0.5 L	83.9	-1.22	4.6	0.7	8	LC
7ZTGBQ	96.1	94.8	91.0	93.6	93.9	1.18	3.2	2.2	97.0	1.90	4.4	3.4	16	LZ
AUTWTW	86.9	85.1	86.6	88.6	86.8	-0.39	4.1	1.4	87.0	-0.48	3.7	2.1	16	LC
BKYL3G	89.8	89.4	88.8	89.0	89.2	0.15	2.8	0.5 L	90.3	0.31	3.0	1.4	16	LD
CE7BDV	90.4	87.6	90.2	91.5	89.9	0.30	3.8	1.6	88.8	-0.07	4.0	1.6	16	LC
CYXP6L	90.4	91.2	92.3	92.5	91.6	0.67	4.8	1.0	92.8	0.88	3.7	1.5	16	EM
D9DTCP	88.6	88.1	88.6	89.0	88.6	0.00	2.5	0.3 L	88.0	-0.25	2.7	0.9	16	MB
DXK3ZX	87.2	90.7 H	88.0	88.8	88.7	0.03	5.1	1.5	88.7	-0.08	4.3	2.6	16	LC
E2CQVV	82.9	85.3	84.6	82.7	83.9	-1.04	3.6	1.3	86.5	-0.61	3.6	3.1	12	LD
E4GTQL	96.1	97.8	94.5	93.0	95.3	1.50	3.5	2.1	94.4	1.28	3.8	3.1	12	LD
E7URDW	92.5	94.3	91.9	89.7	92.1	0.78	3.1	1.9	92.3	0.77	3.7	1.4	16	EM
EW3BNR	83.8	84.0 H	86.4	86.4	85.2	-0.76	5.2	1.4	86.2	-0.67	3.8	4.6	16	LC
F6TD39	92.9	92.7	92.0	94.2	93.0	0.97	4.3	0.9	92.4	0.80	4.1	1.1	16	LD
F9VE6Q	88.7	90.6 L	87.6	89.3	89.1	0.11	2.3	1.3	88.6	-0.11	2.0	1.1	16	MB
FQ9XZA	81.9	80.6	78.2 *	86.5	81.8	-1.50	4.5	3.5	84.8	-1.00	4.9	4.5	16	LZ
G2APZM	89.0	89.0	89.0 H	88.8 H	88.9	0.08	7.4	0.1 L	88.0	-0.24	6.5	0.9	16	LD
GHEKMA	91.9	90.6	89.7	91.9	91.0	0.54	4.2	1.1	90.2	0.28	3.6	1.7	16	MB
JP78J6	83.5	81.5	79.5	80.6 *	81.3	-1.61	3.5	1.7	82.7	-1.50	3.5	2.0	16	EN
KE47K7	87.8	90.9	88.3	88.7	88.9	0.08	4.2	1.4	87.6	-0.35	4.1	1.9	16	LD
KEJQ7N	77.1 *	83.8	78.9	NO DATA	79.9	-1.92	3.6	3.5	78.4	-2.53 *	4.3	3.8	15	LZ
KHK7N8	85.3	85.3 L	83.4	84.6	84.6	-0.87	3.2	0.9	87.0	-0.49	3.7	3.1	16	EM
LEFK6K	86.6	86.6	87.0	87.4	86.9	-0.37	4.1	0.4 L	88.0	-0.25	3.8	3.3	16	LC
MPT62L	88.3	93.3	93.8	93.8	92.3	0.83	4.7	2.7	93.1	0.96	3.9	2.9	13	LZ
NGFF2T	79.5 *	78.7 *	79.6	77.2 X	78.8	-2.17 *	4.4	1.1	80.5	-2.04 *	4.3	1.8	16	LD
NRFFL8	95.2	95.3	94.9	94.0	94.9	1.40	2.6	0.6	94.7	1.36	3.3	2.7	16	LD
NWQ47G	89.5	93.9	92.3	94.0	92.4	0.85	4.1	2.1	90.5	0.34	4.4	2.9	12	LD
P82HG2	87.8	86.2	66.2 XH	88.0	82.0	-1.45	6.4	10.6 H	85.4	-0.86	5.5	8.2 H	16	XX
PBK64Z	87.1	86.2	88.9	89.5	87.9	-0.15	4.4	1.5	87.9	-0.28	3.6	1.2	16	LD
PCWP7H	87.5	87.1	86.3 L	88.9	87.4	-0.25	3.8	1.1	86.9	-0.52	3.6	1.8	16	LD

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
PUH24H	102.0 X	100.4 *	99.6 *	98.6 *	100.1	2.56 *	4.5	1.4	99.7	2.53 *	5.0	1.4	16	LX
QL3ED9	91.9	90.5	90.3	90.4	90.8	0.48	3.3	0.8	91.3	0.54	3.1	1.0	16	LD
R4VCYD	83.8	84.8	89.5 H	95.5	88.4	-0.04	5.0	5.3	87.5	-0.37	4.9	4.7	16	LD
R9TQTV	90.5	92.7	91.5	91.5	91.5	0.66	5.5	0.9	89.3	0.07	4.8	2.2	16	LC
RNMQQ6	72.6 XH	73.8 XH	72.1 XH	71.6 XH	72.5	-3.55 X	9.6	1.0	72.5	-3.93 X	9.6	1.0	4	EM
RR4F7T	97.1 *	99.4 *	99.5 *	99.1 *	98.8	2.26 *	4.0	1.1	97.0	1.90	4.0	2.4	16	LD
TZD89V	84.1	85.8	86.5	86.0	85.6	-0.66	4.0	1.0	87.4	-0.39	3.8	1.5	16	LD
UFLCJZ	85.5	93.9	91.7 L	93.5	91.1	0.57	3.0	3.9	91.1	0.50	3.0	3.9	4	TJ
V8P34F	88.2	89.1	87.8	90.0	88.8	0.04	3.8	1.0	89.4	0.09	3.8	1.2	16	LD
VLAH8F	91.0	89.4	85.3	91.5	89.3	0.16	4.2	2.8	97.4	1.98	4.9	9.5 H	16	LC
VP4NHB	90.0	91.0 H	93.1	90.1	91.1	0.55	5.0	1.5	91.3	0.55	3.1	1.3	16	TD
X38LMM	84.4	85.2	84.5	85.2	84.8	-0.83	3.5	0.4 L	85.6	-0.83	3.6	1.2	6	EX
XEDWRN	91.0	90.3	89.6	90.0	90.2	0.36	3.6	0.6	90.8	0.42	3.5	1.0	16	LD
YCPRQ6	85.3	86.1	87.1	85.5	86.0	-0.56	3.5	0.8	86.7	-0.56	3.8	1.3	16	LD
YJ44WX	86.1	83.7	84.8	84.1	84.7	-0.86	3.4	1.0	86.3	-0.66	4.1	1.6	16	EM
YZUDQ8	88.0	87.3	87.7	88.4	87.8	-0.16	3.5	0.5 L	90.2	0.28	3.3	1.8	16	TH
Z2LMKA	86.8	87.4	84.9	88.4	86.9	-0.38	4.0	1.5	87.2	-0.43	4.0	1.7	16	LC
ZGEWCZ	87.3	87.6	90.9	89.2	88.8	0.04	3.0	1.7	88.0	-0.24	3.4	1.3	16	TH
ZPQH83	81.8	77.8 *	76.3 *	76.8 X	78.2	-2.30 *	3.4	2.5	80.4	-2.07 *	3.5	2.4	12	TU

Consensus (All Labs) Results

Wk Mean	88.05	89.05	88.56	89.77	Month Mean	88.57	Grand Mean	89.04
Avg SDr	4.11	4.01	4.19	4.12	Avg SDr	4.20	Avg SDr	4.09
SD btwn Labs	4.18	4.96	4.89	3.81	SD btwn Labs	4.52	SD btwn Labs	4.20
Labs Incld	51	53	52	50	SD btwn Wks	2.87	SD btwn Wks	3.06
Labs Excld	3	1	2	3	Labs Incld	53	Labs Incld	53
Labs not Rcvd	0	0	0	1				

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	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)
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
26JTCK	84.8	83.7	84.5	83.5	84.1	0.84	2.6	0.6	85.2	1.07	3.0	1.9	12	LC
28ML7J	65.8 XH	83.7 H	80.2	84.5 H	78.6	-0.37	6.8	8.7 H	79.0	-0.55	6.5	6.6 H	8	LC
2CFMAH	64.2 XH	85.9	90.9	85.7	81.7	0.31	5.6	11.9 H	80.2	-0.24	5.2	10.5 H	10	LC
2NUHPH	79.7	78.3	80.3	80.0	79.6	-0.14	2.9	0.9	78.5	-0.68	2.6	1.2	12	EX
37Q2PW	77.7	81.0	82.6	80.3 L	80.4	0.03	2.5	2.1	82.1	0.25	2.7	1.7	12	LZ
4QBLC7	81.6	79.2	79.6	82.3	80.7	0.09	3.3	1.5	80.7	-0.11	3.3	1.5	4	LD
4RK79F	77.5	72.7	75.7	73.3	74.8	-1.18	4.2	2.2	74.8	-1.65	4.2	2.2	4	LC
7ZTGBQ	89.3	80.4 H	87.2	89.1	86.5	1.35	4.0	4.2	88.5	1.94	3.6	3.4	12	LZ
AUTWTW	78.8	79.9	80.5	80.3	79.9	-0.08	3.2	0.7	80.8	-0.09	3.4	2.2	9	LC
BKYL3G	83.0	82.0	82.9	81.8	82.4	0.47	3.1	0.6	84.8	0.97	2.7	1.9	12	LD
CE7BDV	83.4	81.3	82.5	82.0	82.3	0.45	3.4	0.9	82.8	0.45	3.1	1.0	12	LC
CYXP6L	84.4	87.0	87.5	87.2	86.5	1.36	2.9	1.4	85.2	1.07	3.1	2.1	12	EM
D9DTCP	81.4	80.7	81.2	80.3	80.9	0.14	3.1	0.5 L	80.5	-0.15	2.5	0.5 L	12	MB
DXK3ZX	77.7	81.8	82.2	82.1	80.9	0.15	4.5	2.2	79.5	-0.41	3.9	3.8	12	LC
E2CQVV	76.4	78.1	74.8	76.5	76.4	-0.82	3.0	1.4	78.0	-0.80	3.2	2.3	8	LD
E4GTQL	84.7	86.9	88.0	83.6	85.8	1.20	3.2	2.0	85.8	1.22	3.0	1.9	11	LD
E7URDW	84.8	85.1	85.1	84.2	84.8	0.99	2.6	0.4 L	84.5	0.88	3.2	1.4	12	EM
EW3BNR	77.4	75.9	78.8	78.2	77.6	-0.58	3.4	1.3	78.6	-0.67	2.8	1.9	12	LC
F6TD39	82.2	81.9	82.2	82.7	82.3	0.44	2.5	0.3 L	83.7	0.67	2.8	1.7	12	LD
F9VE6Q	80.7	78.9	77.0 L	76.8	78.3	-0.42	2.4	1.8	79.6	-0.38	2.8	2.0	12	MB
FQ9XZA	76.7	75.6	65.8 *H	71.7 *H	72.4	-1.69	8.0	4.9	75.6	-1.44	6.4	6.1 H	12	LZ
G2APZM	81.6	81.7	81.4	81.3	81.5	0.28	3.3	0.2 L	80.7	-0.09	5.9	0.6	12	LD
GHEKMA	80.5	82.2	82.2	81.6	81.6	0.30	2.7	0.8	81.5	0.09	2.8	1.7	12	MB
JP78J6	76.4	77.5	79.1	76.9	77.5	-0.61	3.2	1.2	77.7	-0.90	2.9	1.1	12	EN
KE47K7	75.9	80.7	78.1	80.3	78.8	-0.32	2.2	2.2	79.1	-0.53	3.1	1.5	12	LD
KEJQ7N	68.0 *	70.7 *	68.7 *	No Data	69.1	-2.41 *	3.7	1.4	72.2	-2.33 *	3.9	3.3	11	LZ
KHK7N8	77.1	77.1	76.7	77.4	77.1	-0.69	2.7	0.3 L	78.7	-0.63	2.6	2.2	12	EM
LEFK6K	77.6	76.8	78.2	78.9	77.9	-0.51	4.2	0.9	81.9	0.21	3.6	3.2	12	LC
MPT62L	86.5	86.9	88.7	86.4 L	87.1	1.49	2.7	1.1	86.2	1.32	2.9	2.7	10	LZ
NGFF2T	70.7	72.2	69.4	71.0 *	70.8	-2.05 *	2.8	1.1	73.0	-2.12 *	4.3	2.7	12	LD
NRFFL8	87.0 L	88.1 L	87.7	87.7 L	87.6	1.60	1.3	0.4 L	86.9	1.51	1.5	1.1	12	WK
NWQ47G	84.3	86.8	85.1	87.3	85.9	1.22	2.9	1.4	83.4	0.59	3.1	2.8	12	LD
P82HG2	84.8	80.4	55.2 XH	84.5	76.2	-0.87	6.9	14.2 H	82.0	0.23	4.7	8.8 H	12	XX
PBK64Z	80.2	80.7	81.3	80.2	80.6	0.07	3.5	0.5 L	81.6	0.14	2.9	1.0	12	LD
PCWP7H	79.4 L	80.6	78.5	79.6 L	79.5	-0.16	1.6	0.9	80.2	-0.22	2.1	1.3	12	LD

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 36 lb Linerboard - 36Z3

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
PUH24H	90.2 *	91.5 *	89.5 H	88.3 H	89.9	2.08 *	5.7	1.3	89.5	2.20 *	5.5	1.3	12	LX
QL3ED9	83.5	83.3	83.0	83.1	83.2	0.65	2.9	0.2 L	83.3	0.57	2.4	0.5 L	12	LD
R4VCYD	75.9	79.6	82.3	80.5	79.6	-0.14	3.3	2.7	78.0	-0.81	3.6	3.9	12	LD
R9TQTV	78.1	81.9	83.2	84.9	82.0	0.39	3.8	2.9	81.6	0.12	3.3	2.4	12	LC
RNMQQ6	68.0 *H	70.3 *H	66.0 *H	67.0 XH	67.8	-2.69 *	10.1	1.8	67.7	-3.52 X	9.8	2.8	8	EM
RR4F7T	90.5 *	89.6	90.6	90.1 *	90.2	2.15 *	2.7	0.5 L	90.3	2.40 *	2.3	1.6	12	LD
TZD89V	76.4	77.2	77.2	77.3	77.0	-0.70	2.3	0.4 L	79.1	-0.53	2.6	1.7	12	LD
UFLCJZ	78.0	81.9	85.7	82.3	82.0	0.38	2.2	3.2	82.0	0.23	2.2	3.2	4	TJ
V8P34F	79.2	80.7	80.8	80.3	80.3	0.00	2.6	0.7	80.8	-0.08	2.7	1.0	12	LD
VLAH8F	80.0	84.8	75.2	81.0	80.3	0.00	3.4	4.0	85.3	1.10	3.0	5.3 H	12	LC
VP4NHB	76.6	79.5	79.5	80.3	79.0	-0.28	4.1	1.7	79.2	-0.49	3.6	2.2	12	TD
X38LMM	77.5	76.1	75.7	76.8	76.5	-0.81	3.1	0.8	76.5	-1.20	3.1	0.8	4	EX
XEDWRN	83.8	84.0	84.5	83.4	83.9	0.79	2.9	0.5 L	83.0	0.50	3.0	0.9	12	LD
YCPRQ6	77.0	81.5	80.4	80.7	79.9	-0.07	3.1	2.0	80.6	-0.12	3.5	1.6	12	LD
YJ44WX	82.6	79.7	80.5	80.8	80.9	0.14	2.7	1.2	81.5	0.10	2.8	1.3	12	EM
YZUDQ8	80.0 L	79.7	80.9	78.6	79.8	-0.10	2.5	1.0	81.5	0.09	2.8	1.4	12	TH
Z2LMKA	79.7	77.8	77.1	79.9	78.6	-0.35	4.2	1.4	77.6	-0.92	3.7	2.0	12	LC
ZGEWCZ	78.2	81.6	83.1	82.2	81.3	0.22	3.4	2.1	81.0	-0.03	3.4	1.3	12	TH
ZPQH83	75.0	73.6	71.3	72.7 *	73.1	-1.54	2.6	1.5	74.5	-1.73	2.6	1.9	12	LC

Consensus (All Labs) Results

Wk Mean	80.04	80.67	80.58	81.20	Month Mean	80.24	Grand Mean	81.10
Avg SDr	3.38	3.56	3.39	3.76	Avg SDr	3.81	Avg SDr	3.47
SD btwn Labs	4.74	4.48	5.65	4.20	SD btwn Labs	4.61	SD btwn Labs	3.82
Labs Incld	52	54	53	52	SD btwn Wks	3.26	SD btwn Wks	3.05
Labs Excld	2	0	1	1	Labs Incld	54	Labs Incld	53
Labs not Rcvd	0	0	0	1				

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	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	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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26JTCK	22.9	22.2	22.1	21.6	22.2	-0.06	1.9	0.5	22.4	-0.03	1.6	0.8	16	LA
28ML7J	23.7	22.7	25.2 *	23.8	23.8	1.62	2.0	1.0	23.6	1.31	2.0	0.7	16	LU
4N9QRH	24.7 *	24.8 *	22.9	25.3 *	24.4	2.19 *	2.2	1.1	24.4	2.06 *	2.2	0.7	9	XX
6FAKBL	22.1	21.6	22.0	22.1	22.0	-0.31	1.8	0.2	21.6	-0.83	1.8	0.7	16	LW
6YL8YE	23.4	23.8	23.3	23.9	23.6	1.33	2.1	0.3	24.3	2.04 *	2.1	0.7	16	LZ
7LTHNU	21.3	20.8	20.3	21.3	20.9	-1.38	1.6	0.5	21.3	-1.15	1.7	0.7	16	XX
88MERJ	22.7	23.0	21.6	22.0	22.3	0.05	1.8	0.6	21.9	-0.50	1.8	0.6	16	LW
A29M9W	21.1	20.9	21.5	21.8	21.4	-0.94	1.6	0.4	21.3	-1.22	1.2	0.4	16	LA
AUCLCC	23.6	24.1	22.9	23.6	23.5	1.28	2.1	0.5	23.4	1.00	2.6	0.8	16	LU
AUTWTW	22.3 H	21.6	21.0	22.3	21.8	-0.49	3.8	0.6	21.9	-0.55	2.5	0.5	16	LW
BKYL3G	22.1	23.4	23.0	23.0	22.9	0.63	1.8	0.5	23.0	0.57	1.7	0.4	16	LA
CE7BDV	21.9	22.5	22.2	22.0	22.1	-0.13	2.4	0.3	22.5	0.06	2.0	0.4	16	LU
DXK3ZX	23.4	23.0	23.0	23.6	23.3	1.02	1.9	0.3	22.2	-0.17	1.7	1.2	16	XX
E2CQVV	21.5	21.4	21.7	No Data	21.5	-0.75	1.4	0.2	21.9	-0.51	1.2	0.9	7	LA
E4GTQL	23.6	23.1	24.0	23.1	23.4	1.21	1.9	0.4	23.3	0.93	2.0	0.7	12	LZ
E8LJVF	20.2 *	22.1 L	21.7	23.2	21.8	-0.51	1.7	1.2	21.7	-0.78	1.6	1.4	8	LA
EW3BNR	20.5	21.8	21.7	20.9	21.2	-1.07	1.8	0.6	21.8	-0.69	1.6	0.8	16	LA
F6TD39	23.0	23.0	22.3	23.0	22.8	0.58	1.9	0.3	23.2	0.85	1.9	0.6	16	LY
F9VE6Q	23.1 L	22.5 L	23.5 L	22.8 L	23.0	0.71	0.3	0.4	22.8	0.39	0.4	0.7	16	BK
FQ9XZA	19.0 X	21.1	19.2 *	20.6	20.0	-2.34 *	2.2	1.0	21.2	-1.30	1.5	1.2	16	LA
GTVU4U	19.7 *L	21.6 L	19.7 *L	18.8 XL	19.9	-2.41 *	0.0	1.2	21.1	-1.40	0.1	1.9 H	16	LW
JP78J6	20.2 *	20.8	20.5	21.2	20.7	-1.63	2.0	0.5	20.7	-1.78	1.9	0.6	16	LY
KE47K7	21.9	24.2	24.3	21.9	23.1	0.82	2.0	1.4	22.6	0.19	1.9	1.2	16	LA
KEJQ7N	21.7	21.5	21.6	No Data	21.6	-0.73	1.9	0.1 L	21.7	-0.74	1.9	0.5	15	LZ
KHK7N8	24.7 *	23.9	22.0	22.3	23.2	0.98	2.1	1.3	22.9	0.51	1.9	1.0	16	LZ
LEFK6K	23.6	23.3	22.6	22.8	23.1	0.84	1.1	0.4	23.0	0.58	1.6	0.4	16	LU
LLXZNH	23.0	23.3	21.5	22.2	22.5	0.21	2.1	0.8	22.0	-0.41	1.3	1.1	16	LA
MEWY9N	21.2	24.1 L	22.3	24.0	22.9	0.65	2.1	1.4	23.1	0.71	2.0	1.0	8	XX
MPT62L	21.5	21.5	22.7	21.4	21.8	-0.50	1.7	0.6	21.9	-0.57	1.8	0.4	13	LW
NGFF2T	22.2	21.2	21.9	21.6	21.7	-0.56	1.7	0.4	21.6	-0.89	1.9	0.5	16	LY
NRFFL8	22.6	23.1	23.0	22.7	22.8	0.59	1.1	0.3	23.1	0.68	1.1	0.6	16	LH
NWQ47G	21.9	22.3	23.1	20.5	22.0	-0.32	1.8	1.1	24.4	2.12 *	1.0	4.3 H	12	LU
P82HG2	22.6	21.1	21.1	20.4	21.3	-1.02	1.5	0.9	22.2	-0.23	1.2	0.9	16	XX
PBK64Z	22.3	22.1	22.7	23.2	22.6	0.32	1.6	0.5	23.5	1.14	1.9	1.2	16	LA
PCWP7H	21.6	21.5	21.0	21.4	21.4	-0.90	1.9	0.3	21.4	-1.05	1.9	0.7	16	LW

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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
PMYZJY	23.0	22.5	22.5	23.0	22.7	0.48	2.1	0.3	23.4	1.05	2.0	0.8	15	LW
QL3ED9	21.9	21.4	22.0	22.0	21.8	-0.46	1.6	0.3	21.7	-0.75	1.7	0.5	16	LY
R9TQTV	22.4	23.9	21.8	23.3	22.8	0.60	1.6	0.9	22.7	0.32	1.8	0.6	16	LW
RQB2QA	22.9	22.6	22.9	22.5	22.7	0.48	1.1	0.2	22.7	0.34	1.1	0.3	16	TT
TWBXPZ	21.7	22.6	22.3	22.2	22.2	-0.09	1.8	0.4	22.3	-0.15	1.8	0.5	8	XX
TZD89V	22.3	22.4	21.8	22.1	22.1	-0.14	1.8	0.3	22.0	-0.47	2.0	0.4	16	LU
V8P34F	22.8	20.8	22.6	21.6	22.0	-0.31	1.8	0.9	21.8	-0.62	1.6	0.6	16	BK
VLAH8F	21.6 L	21.9 L	19.8 L	21.0 L	21.1	-1.23	0.0	0.9	20.8	-1.75	0.0	1.3	16	LW
WW3HYA	23.9	24.6 *	24.2	24.9 *	24.4	2.19 *	2.2	0.5	24.6	2.35 *	2.0	0.5	16	LA
X38LMM	41.1 XL	44.4 XL	44.6 XL	38.2 XL	42.1	20.33 X	0.0	3.0 H	42.4	21.17X	0.0	2.4 H	6	TT
XEDWRN	22.3	22.7	21.1	21.1	21.8	-0.48	1.9	0.8	22.3	-0.15	1.8	0.8	16	LY
YCPRQ6	21.6	21.8	22.2	21.8	21.8	-0.44	1.7	0.2	22.2	-0.23	1.8	0.8	16	LY
Z234DG	23.2	23.5	22.5	21.2	22.6	0.36	2.4	1.0	31.5	9.57 X	1.4	13.0 H	12	LU
Z2LMKA	22.9	21.8	21.1	22.8	22.1	-0.13	2.0	0.9	22.2	-0.20	1.9	0.7	16	LW
ZGEWCZ	22.2	22.6	22.8	22.3	22.5	0.21	1.1	0.3	22.3	-0.09	1.1	0.3	16	TT

Consensus (All Labs) Results

Wk Mean	22.33	22.45	22.13	22.33	Month Mean	22.27	Grand Mean	22.41
Avg SDr	2.01	1.81	1.69	1.87	Avg SDr	1.84	Avg SDr	1.73
SD btwn Labs	1.08	1.06	1.17	1.10	SD btwn Labs	0.97	SD btwn Labs	0.95
Labs Incld	48	49	49	46	SD btwn Wks	0.71	SD btwn Wks	1.01
Labs Excld	2	1	1	2	Labs Incld	49	Labs Incld	48
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 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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
26JTCK	22.5	21.3	21.6	21.9	21.8	0.30	1.7	0.5	22.3	0.72	1.0	0.7	12	LA
28ML7J	23.5	22.4	23.2	23.1	23.0	1.65	1.2	0.5	23.5	2.07 *	1.3	1.1	7	LU
4N9QRH	23.2	23.7	22.9	23.6 *	23.3	1.97	1.2	0.4	23.3	1.82	1.3	0.3	6	XX
6FAKBL	21.0	21.1	21.3	20.7	21.0	-0.58	1.0	0.3	20.9	-0.76	1.2	0.4	11	LW
6YL8YE	22.7	22.5	23.6 *	23.3	23.0	1.61	1.2	0.5	23.3	1.87	1.3	0.5	12	LZ
7LTHNU	21.7	21.5	20.1	22.2	21.4	-0.16	1.5	0.9	21.1	-0.54	1.5	0.8	12	LY
88MERJ	21.6	22.0	21.2	21.2	21.5	-0.04	1.1	0.4	20.9	-0.76	1.1	0.5	12	LW
A29M9W	20.3	20.1	20.8	20.5	20.4	-1.22	1.2	0.3	20.0	-1.74	1.0	0.5	12	LA
AUCLCC	22.1	23.0	22.7	22.7	22.6	1.19	1.3	0.4	22.7	1.20	1.3	0.4	7	LU
AUTWTW	22.5	21.4	21.5	21.5	21.7	0.18	1.1	0.5	21.7	0.08	1.2	0.6	9	LW
BKYL3G	22.6	22.1	21.6	22.1	22.1	0.61	1.4	0.4	22.0	0.42	1.4	0.4	12	LA
CE7BDV	21.7	21.9	21.6	21.6	21.7	0.22	1.2	0.1	21.5	-0.14	1.3	0.3	12	LU
DXK3ZX	22.6	22.0	22.0	22.8	22.3	0.88	1.2	0.4	21.3	-0.40	1.2	1.2 H	12	XX
E2CQVV	21.4 L	22.3	21.7	No Data	21.8	0.29	0.9	0.5	21.8	0.19	0.9	0.5	3	LA
E4GTQL	23.2	22.8	23.8 *	22.1	23.0	1.59	1.3	0.7	22.8	1.29	1.3	0.6	11	LZ
E8LJVF	19.8	22.3	20.7	21.2	21.0	-0.58	1.2	1.0	21.0	-0.68	1.2	1.0	4	LA
EW3BNR	19.9	20.2	19.8	20.5	20.1	-1.57	1.4	0.3	20.9	-0.85	1.3	0.8	12	LA
F6TD39	22.1	22.2	22.1	22.2	22.1	0.67	1.3	0.1 L	22.5	0.94	1.2	0.4	12	LU
F9VE6Q	21.2 L	22.3 L	21.6 L	22.8 L	22.0	0.48	0.3	0.7	22.9	1.43	0.3	1.3 H	12	BK
FQ9XZA	19.5	20.1	19.5	20.2	19.8	-1.87	1.2	0.4	21.0	-0.73	1.0	1.0	12	LA
GTVU4U	19.5 L	22.0 L	20.3 L	19.2 *L	20.3	-1.40	0.0	1.3 H	20.0	-1.76	0.3	1.0	12	LW
JP78J6	19.6	19.5 *	19.4	19.7	19.6	-2.16 *	1.0	0.1	19.9	-1.92	1.1	0.4	12	LY
KE47K7	22.4	23.4	22.7	21.6 L	22.5	1.08	1.2	0.7	21.9	0.32	1.2	1.2 H	12	LA
KEJQ7N	20.5	21.1	20.5	No Data	20.7	-0.94	1.2	0.3	20.8	-0.91	1.2	0.4	11	LZ
KHK7N8	22.5	22.9	21.5	22.4	22.3	0.86	1.7	0.6	21.7	0.08	1.4	1.1	12	LZ
LEFK6K	21.9	21.5	21.3	21.4	21.5	0.01	1.1	0.3	22.0	0.39	1.2	0.5	12	LU
LLXZNH	22.9	23.3	21.8	21.8 L	22.4	0.98	1.2	0.8	22.1	0.56	0.7	1.0	12	LA
MEWY9N	22.2	22.2	22.0	21.7	22.0	0.54	1.1	0.2	22.0	0.44	1.1	0.2	4	XX
MPT62L	21.3	21.8	21.5	21.5	21.5	-0.03	1.4	0.2	21.3	-0.40	1.3	0.5	10	LW
NGFF2T	20.9	20.9	20.9	21.0	20.9	-0.65	1.1	0.1 L	20.6	-1.08	1.3	0.5	12	LY
NRFFL8	22.3	22.4	22.2	22.3	22.3	0.82	1.1	0.1	22.8	1.25	1.1	0.5	12	LH
NWQ47G	20.8	20.7	20.8	21.8	21.0	-0.56	1.1	0.5	21.7	0.07	0.8	0.8	8	LU
P82HG2	19.9	21.3	21.1	20.1	20.6	-1.01	1.3	0.7	21.3	-0.40	1.1	0.8	12	XX
PBK64Z	20.2	20.8	20.6	20.4	20.5	-1.14	0.8	0.3	21.6	-0.02	1.1	0.9	12	LA
PCWP7H	20.2	20.3	20.5	20.2	20.3	-1.32	1.4	0.1	20.6	-1.16	1.3	0.4	12	LW

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 36 lb Linerboard - 36Z3

TAPPI Official 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
PMYZJY	22.2	21.6	21.1	21.6	21.6	0.12	1.3	0.4	22.6	1.05	1.5	0.8	12	LW
QL3ED9	20.8	20.8	20.5	20.6	20.7	-0.92	1.2	0.1	20.7	-1.04	1.1	0.2	12	LY
R9TQTV	21.4	23.2	21.8	22.4	22.2	0.74	1.4	0.8	22.2	0.60	1.3	0.5	12	LW
RQB2QA	22.0	22.0	21.9	21.8	21.9	0.40	0.8	0.1	22.0	0.39	0.8	0.2	12	TT
TWBXPZ	20.3	20.7	21.4	21.6	21.0	-0.59	1.3	0.6	21.0	-0.69	1.3	0.6	4	XX
TZD89V	21.4	21.3	21.9	21.1	21.4	-0.13	1.2	0.3	21.4	-0.20	1.2	0.4	12	LU
V8P34F	20.5	20.5	20.6	21.0	20.7	-0.97	1.0	0.2	20.5	-1.21	0.9	0.2	12	BK
VLAH8F	20.4 L	21.9 L	19.6 L	20.9 L	20.7	-0.91	0.0	1.0	20.9	-0.82	0.0	0.8	12	LW
WW3HYA	23.8 *	23.4	23.3	23.3	23.5	2.10 *	1.4	0.3	23.5	2.05 *	1.3	1.0	12	LA
X38LMM	33.2 XL	31.6 XL	30.3 XL	31.0 XL	31.5	10.93 X	0.0	1.2 H	31.5	10.83X	0.0	1.2 H	4	LZ
XEDWRN	21.5	22.0	21.8	21.9	21.8	0.28	1.4	0.2	21.7	0.06	1.3	0.4	12	LY
YCPRQ6	21.2	20.9	21.2	21.1	21.1	-0.51	1.0	0.1	21.2	-0.43	1.0	0.3	12	LY
Z234DG	22.3	22.6	21.1	19.8	21.5	-0.08	1.3	1.3 H	28.1	7.09 X	1.0	7.3 H	8	LU
Z2LMKA	21.2	20.8	21.7	21.7	21.4	-0.20	1.3	0.4	21.1	-0.55	1.3	0.6	12	LW
ZGEWCZ	21.7	21.6	21.4	21.5	21.5	-0.01	0.9	0.1	21.5	-0.12	0.9	0.2	12	TT

Consensus (All Labs) Results

Wk Mean	21.49	21.73	21.42	21.52	Month Mean	21.54	Grand Mean	21.62
Avg SDr	1.23	1.20	1.21	1.14	Avg SDr	1.20	Avg SDr	1.15
SD btwn Labs	1.11	0.98	0.99	0.99	SD btwn Labs	0.91	SD btwn Labs	0.91
Labs Incld	49	49	49	47	SD btwn Wks	0.53	SD btwn Wks	0.69
Labs Excld	1	1	1	1	Labs Incld	49	Labs Incld	48
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 (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		

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SDr	Mean	CPV	SDr	Months	Inst
26JTCK	161.3	-0.74	18.7	184.0	0.53	24.6	4	LA
28ML7J	141.5	-1.78	15.8	145.6	-1.86	15.6	4	LA
88MERJ	203.3	1.46	24.6	197.4	1.36	21.1	4	EV
A29M9W	153.6	-1.15	8.4	155.1	-1.27	13.1	4	EV
AUCLCC	183.4	0.41	20.0	176.2	0.04	17.7	3	EV
BKYL3G	166.3	-0.48	20.3	167.0	-0.53	17.7	4	XX
D7EBH4	172.9	-0.13	11.2	160.8	-0.92	13.3	4	EV
E4GTQL	191.4	0.83	23.4	166.9	-0.54	18.4	3	LA
F9VE6Q	195.6	1.06	14.3	198.7	1.45	18.5	4	EV
FQ9XZA	122.7	-2.77 X	8.8	154.2	-1.33	18.8	4	LA
JP78J6	172.4	-0.16	20.2	177.7	0.14	14.5	4	EV
MPT62L	168.3	-0.37	10.2	173.4	-0.13	12.8	4	EV
P82HG2	185.7	0.54	8.1	194.4	1.17	14.2	4	EV
RR4F7T	140.3	-1.85	18.0	150.1	-1.59	15.4	4	EV
TZD89V	184.8	0.49	16.7	180.7	0.32	17.2	4	EV
VLAH8F	205.1	1.55	36.3	190.0	0.90	21.6	4	EV
YCPRQ6	179.2	0.19	27.7	183.0	0.46	23.1	2	EV
Z2LMKA	178.1	0.14	13.2	183.1	0.47	15.4	4	LS

Consensus (All Labs) Results

Month Mean	175.48	Grand Mean	175.53
Avg SDr	19.42	Avg SDr	17.65
SD btwn Labs	19.06	SD btwn Labs	16.06
Labs Incld	17	Labs Incld	17

Key to Instrument Codes Reported by Participants

EV	Emveco Microgage Model 210-R	LA	L&W Autoline
LS	L&W 263	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	SDr	Mean	CPV	SDr	Months	Inst
7ZTGBQ	341.0	-1.63	11.1	362.6	-0.06	8.6	4	TS
CE7BDV	374.2	1.32	5.4	368.9	1.97 X	7.5	4	XX
E2CQVV	358.6	-0.07	8.2	360.3	-0.80	10.1	2	LA
KE47K7	360.0	0.05	8.6	361.2	-0.52	7.3	4	LA
L2B4G4	355.2	-0.37	11.0	361.6	-0.37	7.6	4	LA
LLXZNH	367.1	0.69	5.7	362.2	-0.21	7.8	4	XX
PBK64Z	438.0	6.98 X	1.3	437.7	24.11 X	1.1	4	XX

Consensus (All Labs) Results

Month Mean	359.35	Grand Mean	362.80
Avg SDr	8.62	Avg SDr	8.22
SD btwn Labs	11.27	SD btwn Labs	3.11
Labs Incld	6	Labs Incld	6

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	SDr	Mean	CPV	SDr	Months	Inst
28ML7J	96.4	-0.46	4.2	92.9	-0.66	6.8	3	TM
6YL8YE	94.8	-0.54	7.2	94.6	-0.59	9.5	3	TM
88MERJ	122.0	0.71	5.1	145.8	1.64	7.2	3	HY
AUCLCC	62.2	-2.02 *	3.8	58.5	-2.16 *	6.4	3	TM
CE7BDV	112.6	0.28	3.6	112.1	0.17	6.4	3	HY
DH79GF	99.2	-0.34	8.1	99.2	-0.39	8.1	1	TM
DXK3ZX	133.2	1.22	17.8	107.9	-0.01	17.1	3	SC
E2CQVV	102.8	-0.17	10.6	102.8	-0.23	9.8	2	SC
EW3BNR	100.8	-0.26	3.3	107.1	-0.05	5.0	3	TM
FQ9XZA	115.4	0.40	8.0	108.3	0.01	8.2	3	TM
LLXZNH	92.0	-0.66	4.2	127.4	0.84	7.6	3	SC
NWN4Y9	90.6	-0.73	9.9	95.0	-0.57	6.5	3	TM
NWQ47G	156.2	2.27 *	5.0	156.2	2.09 *	5.0	1	HZ
PBK64Z	54.1	-2.40 *	0.9	55.5	-2.29 *	1.1	3	LZ
PCWP7H	113.2	0.30	5.7	117.3	0.40	6.3	3	TM
RR4F7T	135.4	1.32	13.0	130.6	0.98	14.7	3	HY
TZD89V	86.2	-0.93	6.5	90.3	-0.78	7.2	3	TM
VLAH8F	177.0	3.22 X	20.2	176.3	2.97 X	15.4	3	SC
YCPRQ6	98.0	-0.39	11.5	92.4	-0.69	8.8	3	XX

Consensus (All Labs) Results

Month Mean	106.53	Grand Mean	108.14
Avg SDr	8.42	Avg SDr	8.84
SD btwn Labs	21.89	SD btwn Labs	22.95
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	105.40	23.77	1.13	14
Modified Scott Bond Mechanics	117.32	6.62	10.79	2

Analysis Notes

PBK64Z - 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	SDr	Mean	CPV	SDr	Months
28ML7J	30.3	0.79	1.8	29.0	0.51	2.1	3
2CFMAH	26.0	-0.55	3.8	27.7	-0.03	2.5	3
4N9QRH	26.9	-0.27	1.7	24.6	-1.39	1.5	3
6YL8YE	25.2	-0.80	1.3	25.3	-1.06	2.1	3
88MERJ	26.8	-0.30	2.0	26.0	-0.77	1.9	3
A9WZFC	27.0	-0.24	1.4	26.8	-0.42	2.6	3
AUCLCC	24.8	-0.92	2.8	26.0	-0.79	2.8	3
BKYL3G	26.2	-0.49	0.8	26.8	-0.43	1.4	3
CE7BDV	24.2	-1.11	1.3	23.6	-1.78	1.6	3
E8LJVF	31.0	1.01	1.9	29.6	0.77	2.4	2
FQ9XZA	31.6	1.19	2.6	32.0	1.79	3.3	3
JP78J6	29.3	0.48	1.6	28.4	0.27	1.9	3
KHK7N8	30.8	0.94	2.1	30.1	1.00	2.0	3
LLXZNH	29.2	0.45	1.8	30.5	1.17	1.3	3
MPT62L	19.8	-2.48 *	2.9	24.3	-1.49	2.0	3
PBK64Z	34.6	2.13 *	0.5	31.9	1.76	1.0	3
PCWP7H	25.3	-0.77	2.2	25.7	-0.88	2.2	3
R9TQTV	25.2	-0.80	5.4	28.1	0.11	5.0	3
TWBXPZ	28.0	0.07	1.2	28.3	0.21	2.0	2
TZD89V	27.2	-0.18	3.3	27.2	-0.25	2.5	3
VLAH8F	32.4	1.44	2.3	30.4	1.11	3.2	3
YCPRQ6	29.0	0.38	2.9	29.0	0.52	3.4	3
Z2LMKA	27.8	0.01	1.8	27.9	0.05	1.9	3

Consensus (All Labs) Results

Month Mean	27.76	Grand Mean	27.81
Avg SDr	2.39	Avg SDr	2.44
SD btwn Labs	3.22	SD btwn Labs	2.34
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
26JTCK	17.9	-0.56	0.4	18.4	-0.08	0.9	3	LA
28ML7J	18.8	0.00	2.0	19.0	0.26	1.9	3	LA
4N9QRH	16.8	-1.31	2.0	14.0	-2.28 *	1.7	3	LA
6YL8YE	18.7	-0.08	1.6	19.5	0.49	2.0	3	TD
7GVPJJ	19.4	0.38	1.7	18.5	-0.01	1.1	3	LP
88MERJ	20.2	0.86	1.1	20.5	0.98	1.1	3	LP
A9WZFC	19.6	0.48	2.3	21.1	1.30	2.9	3	GA
AUCLCC	17.1	-1.08	0.7	14.9	-1.83	0.9	3	LA
BKYL3G	17.9	-0.57	0.9	18.2	-0.19	1.1	3	LA
CE7BDV	18.8	0.00	3.1	18.2	-0.15	2.3	3	TP
E2CQVV	21.4	1.64	1.9	19.4	0.46	1.6	2	LA
F9VE6Q	22.0	1.97	1.4	22.1	1.81	1.4	3	XX
FQ9XZA	18.8	-0.01	1.0	18.5	-0.04	1.5	3	LP
LCVD6X	19.7	0.55	2.0	18.6	0.05	1.4	3	XX
MPT62L	13.2	-3.55 X	1.7	15.1	-1.73	1.6	3	XX
P82HG2	17.4	-0.92	0.7	17.8	-0.35	1.4	3	LW
PBK64Z	20.6	1.12	0.9	20.7	1.08	1.1	3	LA
PCWP7H	17.0	-1.16	2.3	17.5	-0.52	2.0	3	HG
PVGBWZ	18.0	-0.53	2.0	17.3	-0.65	1.7	2	LA
QL3ED9	18.6	-0.15	1.1	21.1	1.32	1.0	3	LP
R4VCYD	21.0	1.37	3.0	18.2	-0.17	2.4	3	GG
VLAH8F	15.7	-1.97	2.2	18.3	-0.10	2.2	3	HG
YCPRQ6	18.8	-0.03	1.0	19.2	0.34	1.5	3	LP

Consensus (All Labs) Results

Month Mean	18.83	Grand Mean	18.53
Avg SDr	1.77	Avg SDr	1.68
SD btwn Labs	1.59	SD btwn Labs	1.96
Labs Incld	22	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
28ML7J	58.0	61.4	58.2	60.4	59.5	-0.16	4.4	1.7	58.1	-0.93	4.1	3.5 H	16	LC
37Q2PW	55.7 L	58.0	58.4	57.3	57.3	-1.26	2.4	1.2	57.5	-1.26	3.7	2.2	12	XX
4AN9YD	56.0 L	56.3 *L	56.0 L	55.9 L	56.1	-1.91	0.8	0.2 L	53.3	-3.29 X	1.1	4.0 H	16	TC
69RMRM	58.2	60.4	58.4	58.0	58.8	-0.54	3.1	1.1	56.0	-1.99	3.3	4.2 H	16	TJ
7GVPJJ	62.6	59.7	62.3	62.5	61.8	1.00	3.1	1.4	62.1	1.01	3.0	1.4	16	LD
88MERJ	60.0	62.3	61.7	59.0	60.8	0.47	3.6	1.5	59.0	-0.49	4.2	2.5	8	LD
AUCLCC	59.9	60.5	61.0	57.6	59.8	-0.03	3.4	1.5	58.3	-0.84	4.3	2.7	15	XX
AUTWTW	60.8	62.0	59.2	59.9	60.5	0.32	2.5	1.2	61.1	0.53	2.8	2.0	15	LZ
BEBDPU	60.9	62.2	62.4	59.6	61.3	0.74	3.0	1.3	61.1	0.52	3.6	1.1	16	LD
BKYL3G	63.2	61.5	61.5	62.4	62.1	1.16	2.0	0.8	61.1	0.53	2.5	1.1	16	LD
CE7BDV	59.8	59.0	60.8	58.0	59.4	-0.23	2.6	1.2	59.0	-0.49	3.0	1.7	16	LC
D9DTCP	60.8	59.9	59.3	59.8	60.0	0.07	2.7	0.6	60.3	0.10	2.2	1.0	16	MB
DMVHBR	60.4	60.8	60.9	61.2	60.8	0.51	1.8	0.3	60.5	0.23	2.9	1.6	12	LC
DN97T7	75.6 XH	72.8 XH	66.7 *H	66.2 *H	70.3	5.32 X	6.0	4.6 H	63.7	1.79	4.5	5.3 H	16	LC
DRVPXA	60.4	59.4	59.0	60.0	59.7	-0.06	2.1	0.6	59.8	-0.13	2.6	0.6	16	LD
DXK3ZX	58.4	58.0	57.3	55.5	57.3	-1.27	3.1	1.3	59.0	-0.50	3.0	1.5	16	LC
E4GTQL	57.0	58.9	61.5	55.7	58.3	-0.79	3.6	2.5	58.1	-0.94	3.4	1.5	12	LD
E7URDW	62.6	61.3	61.5	62.1	61.9	1.04	2.6	0.6	62.6	1.27	3.1	1.1	16	EM
E8LJVF	60.9	60.0	60.4	61.0	60.6	0.39	3.3	0.5	60.6	0.29	3.1	1.3	8	XX
EW3BNR	63.5	62.4	63.0	60.0	62.2	1.22	2.3	1.6	57.7	-1.13	2.4	3.3 H	16	LC
F6TD39	58.8	60.5	59.7	59.4	59.6	-0.11	3.7	0.7	60.7	0.32	4.0	1.2	16	LD
F9VE6Q	60.0	60.4	59.5	58.3	59.6	-0.12	2.0	0.9	60.9	0.40	1.7	1.2	16	MB
G2APZM	59.4	59.6	59.6	59.5	59.5	-0.14	3.6	0.1 L	59.3	-0.34	3.8	0.2 L	16	LD
GHEKMA	61.8	61.6	65.1	62.7	62.8	1.51	3.0	1.6	61.1	0.53	3.3	2.2	16	MB
H4ABA6	58.7	59.4 L	60.1	60.7	59.7	-0.05	2.1	0.9	59.8	-0.13	2.3	0.7	16	LC
JP78J6	57.0	59.0	61.4	56.3	58.4	-0.72	3.7	2.3	59.6	-0.21	3.5	2.0	16	EN
KEJQ7N	56.3	60.7	55.6	No Data	57.5	-1.16	2.4	2.7	57.9	-1.03	3.4	2.3	15	LZ
KHK7N8	59.2	59.5	58.9	58.3	58.9	-0.44	3.5	0.5	58.7	-0.68	3.3	1.6	16	LZ
LCVD6X	61.0	58.1	60.0	60.8	60.0	0.08	3.0	1.3	60.0	-0.02	2.9	1.2	16	LD
LEFK6K	61.2	60.7	60.0 L	59.8	60.4	0.31	2.0	0.6	61.5	0.70	2.6	1.0	16	LD
MDNQ6V	61.4	60.7	61.3	60.8	61.1	0.63	2.1	0.3	60.8	0.35	1.9	0.4	8	LD
MEWY9N	62.5	58.6	58.1	57.2	59.1	-0.36	2.6	2.3	59.0	-0.51	2.8	1.9	8	LZ
NRFFL8	61.0	61.7	61.8	61.1	61.4	0.80	2.0	0.4	61.6	0.77	2.3	1.1	16	LC
NWQ47G	65.6 *	61.7 H	61.7	63.9 H	63.2	1.73	4.6	1.9	64.9	2.38 *	4.4	4.7 H	12	LC
P82HG2	53.8 *	49.0 XH	52.6 X	55.7	52.8	-3.56 X	6.7	2.8	52.5	-3.69 X	6.6	5.6 H	16	XX

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
PBK64Z	52.7 *L	57.2	55.6	54.9	55.1	-2.39 *	3.1	1.9	56.1	-1.92	3.0	1.7	16	LD
PMYZJY	60.0	54.6 X	60.3	56.9	57.9	-0.95	2.5	2.7	57.3	-1.37	3.5	2.0	15	LC
PUH24H	58.4	59.0	58.8 L	58.7	58.7	-0.55	2.0	0.2 L	59.7	-0.19	2.6	1.2	16	LD
PVGBWZ	63.5	62.3	62.0	63.8	62.9	1.56	3.4	0.9	63.2	1.55	3.0	0.9	12	LC
PXHEM2	60.2	61.7	60.8	61.4	61.0	0.60	2.9	0.7	60.8	0.39	3.0	0.7	12	EM
R9TQTV	60.3 H	60.2	57.8 L	57.6	59.0	-0.44	3.4	1.5	60.0	0.00	3.1	1.7	16	LC
RQB2QA	61.4 H	58.1 H	62.5	59.5	60.4	0.28	5.2	1.9	58.7	-0.67	5.1	1.8	16	TG
TZD89V	56.7	58.1	58.1	57.0	57.5	-1.19	2.9	0.7	58.7	-0.64	3.5	1.5	16	LD
VP4NHB	61.4	61.9	65.4 *	65.3 L	63.5	1.86	2.6	2.2	62.3	1.09	2.0	1.8	16	TD
WATRQ4	68.6 X	64.9 *	66.7 *	64.4	66.2	3.21 X	2.5	1.9	64.9	2.38 *	2.7	1.7	16	TM
WW3HYA	58.1	57.2 H	57.2	56.6	57.3	-1.28	3.4	0.6	59.7	-0.18	3.4	2.1	16	LD
X38LMM	55.1	57.6	56.3	53.5 *	55.6	-2.12 *	3.7	1.8	56.5	-1.76	3.8	2.0	6	LZ
XEDWRN	62.5	60.5	60.2	64.5	61.9	1.07	2.6	2.0	62.0	0.94	2.8	1.3	16	LD
YCPRQ6	57.6	60.7	59.0	60.7	59.5	-0.16	3.1	1.5	59.1	-0.47	3.5	1.1	16	LZ
ZGEWCZ	59.8	58.0	59.4	59.3	59.1	-0.35	2.6	0.8	59.1	-0.46	2.6	0.9	16	TH
ZPQH83	61.2	65.1 *	62.6	61.6	62.6	1.42	4.1	1.8	62.5	1.22	3.4	1.8	12	TU

Consensus (All Labs) Results

Wk Mean	59.71	60.17	60.29	59.64	Month Mean	59.81	Grand Mean	60.05
Avg SDr	3.28	2.98	3.07	2.89	Avg SDr	3.03	Avg SDr	3.24
SD btwn Labs	2.59	1.86	2.51	2.85	SD btwn Labs	1.97	SD btwn Labs	2.04
Labs Incld	49	48	50	50	SD btwn Wks	1.41	SD btwn Wks	2.02
Labs Excld	2	3	1	0	Labs Incld	48	Labs Incld	49
Labs not Rcvd	0	0	0	1				

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
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

	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
28ML7J	69.6 H	79.6	70.8	76.4 H	74.1	0.01	4.8	4.7	70.6	-1.44	6.9	5.2 H	8	XX
7GVPJJ	77.2	75.4	77.3	75.0	76.2	0.86	2.9	1.2	76.5	1.32	2.6	0.9	16	LD
88MERJ	79.8	79.6	79.4 *	80.9 *	79.9	2.37 *	2.6	0.7	78.2	2.14 *	2.5	2.0	8	LD
AUTWTW	78.5	74.7	76.7	77.8	76.9	1.15	1.9	1.7	75.5	0.85	2.6	2.2	16	LZ
BEBDPU	75.0	72.9	73.4	74.4	73.9	-0.06	2.1	1.0	73.8	0.09	2.1	0.8	16	LD
BKYL3G	71.4	71.2	71.7	71.4	71.4	-1.08	2.0	0.2 L	72.7	-0.47	2.5	1.0	16	LD
CE7BDV	77.7	77.6	74.2	76.9	76.6	1.02	2.2	1.7	77.0	1.55	2.1	1.1	16	LC
D9DTCP	75.4	74.2	74.6	74.4	74.7	0.23	3.1	0.5	73.0	-0.33	2.7	1.6	16	MB
DRVPXA	72.5	73.3	73.0	72.1	72.7	-0.55	2.8	0.5	72.8	-0.41	2.8	0.4	16	XX
H4ABA6	73.1	72.8	73.4	72.3	72.9	-0.48	2.8	0.5	72.7	-0.45	2.7	0.5	16	LD
KEJQ7N	75.8	73.7	61.9 XH	No Data	70.5	-1.47	5.8	7.5 H	72.8	-0.39	3.8	4.1 H	15	LZ
LCVD6X	73.8	73.6	75.4	74.0	74.2	0.04	2.1	0.8	73.5	-0.08	2.2	1.4	16	XX
LEFK6K	70.9	70.5	69.9	70.6	70.5	-1.46	1.6	0.4 L	71.3	-1.09	1.8	1.0	16	LD
MDNQ6V	72.0	72.6	71.9 L	72.0	72.1	-0.79	2.0	0.3 L	71.2	-1.15	2.0	1.1	8	LD
PBK64Z	74.7	75.1	76.2	75.5	75.4	0.52	2.3	0.6	74.9	0.56	2.0	1.3	16	LD
R9TQTV	72.2	77.7	76.4	72.3	74.7	0.23	2.6	2.8	74.0	0.17	2.7	1.8	16	XX
VP4NHB	73.0	72.7	73.5	71.8	72.7	-0.54	2.5	0.7	71.8	-0.86	1.7	1.4	16	TD

Consensus (All Labs) Results

Wk Mean	74.28	74.54	74.23	74.23	Month Mean	74.08	Grand Mean	73.66
Avg SDr	2.54	2.32	2.61	2.95	Avg SDr	2.90	Avg SDr	2.92
SD btwn Labs	2.87	2.69	2.55	2.77	SD btwn Labs	2.47	SD btwn Labs	2.13
Labs Incld	17	17	16	16	SD btwn Wks	2.39	SD btwn Wks	2.02
Labs Excld	0	0	1	0	Labs Incld	17	Labs Incld	17
Labs not Rcvd	0	0	0	1				

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	SDr	SD Wks	Mean	CPV	SDr	SD Wks	Wks	Inst
4AN9YD	36.4	37.2	38.2 L	37.4 L	37.3	-1.69	1.1	0.7	34.5	-3.20 X	1.7	2.6	16	TC
69RMRM	35.9	37.6	35.8 L	36.1 L	36.3	-1.97	1.6	0.9	37.8	-2.02 *	2.1	1.7	16	TJ
7GVPJJ	45.9	46.2	48.3	46.6	46.7	1.08	1.8	1.0	46.5	1.09	2.0	1.0	16	LD
83CVGC	43.3 L	42.2	42.7 L	41.9 L	42.5	-0.17	1.1	0.6	41.8	-0.59	1.2	0.8	16	WK
BKYL3G	44.2	43.8	44.4	43.5	44.0	0.26	2.3	0.4	44.7	0.44	2.3	0.9	16	LD
CE7BDV	43.6	44.8	44.5	41.9	43.7	0.19	3.1	1.3	43.8	0.15	2.8	1.2	16	LC
D9DTCP	42.4	43.0	41.9	41.5	42.2	-0.26	2.8	0.6	42.5	-0.35	2.6	1.0	16	MB
DKCU6F	46.3	45.4	46.0	47.4	46.3	0.94	1.9	0.8	43.3	-0.04	3.8	2.7	16	LZ
DMVHBR	40.0	39.6	39.6 L	39.7	39.7	-0.98	1.8	0.2 L	43.2	-0.06	3.0	3.6 H	12	LC
DN97T7	32.4 *	31.9 X	32.4 *	30.7 X	31.8	-3.29 X	2.9	0.8	31.0	-4.43 X	2.5	2.1	16	XX
E4GTQL	44.5	46.0	46.6	45.3	45.6	0.74	2.5	0.9	45.5	0.74	2.5	1.3	12	LD
G2APZM	43.3 H	43.4	47.6 H	43.5	44.4	0.40	5.4	2.1	41.7	-0.60	3.7	2.5	16	LD
HE8NGC	38.6	38.7	36.9	37.1	37.8	-1.53	2.1	0.9	38.0	-1.95	2.7	1.1	8	LZ
KHK7N8	43.1	42.6	42.9	43.5	43.0	-0.01	2.1	0.4	43.1	-0.11	2.1	1.2	16	EM
LCVD6X	41.6	40.7	42.7	43.7	42.2	-0.26	3.5	1.3	42.5	-0.33	3.4	0.9	16	LD
MEWY9N	42.0	44.1	40.9	41.9	42.2	-0.25	2.3	1.4	42.7	-0.25	2.3	2.0	8	XX
NRFFL8	45.6	45.1	45.3	46.0	45.5	0.71	2.1	0.4	46.2	0.98	1.9	1.8	16	LD
NWQ47G	45.1	48.9	47.9	46.4	47.1	1.17	3.0	1.7	44.3	0.31	2.8	2.7	12	LD
P82HG2	46.3 H	43.8	35.5 H	47.6	43.3	0.07	4.3	5.4 H	44.7	0.45	3.4	4.1 H	16	XX
PBK64Z	42.2	44.4	42.7	42.2	42.9	-0.06	2.9	1.0	42.5	-0.35	2.7	0.8	16	LD
PUH24H	42.6	43.3	42.8	43.0	42.9	-0.04	1.5	0.3	44.8	0.51	1.9	2.2	16	LZ
PVGBWZ	48.0	47.6	49.1	48.3	48.2	1.51	1.9	0.6	49.1	2.01 *	1.8	2.3	12	LC
PXHEM2	43.5	43.5	45.0 L	44.7	44.2	0.33	2.0	0.8	44.1	0.25	2.4	0.7	12	LC
WATRQ4	52.3 *	51.7 *	50.6	49.1	50.9	2.29 *	3.0	1.4	49.4	2.15 *	2.4	1.2	16	LD
X38LMM	40.3	41.1	40.0	38.9	40.1	-0.87	1.9	0.9	40.7	-0.96	2.1	1.3	6	EM
YZUDQ8	42.0	42.2	41.8 L	41.1	41.8	-0.38	2.3	0.5	43.1	-0.11	2.0	1.0	16	TH
ZPQH83	39.8	39.0	37.9	39.0	38.9	-1.21	2.1	0.8	39.6	-1.36	2.1	0.7	12	TU

Consensus (All Labs) Results

Wk Mean	42.63	43.30	42.59	42.97	Month Mean	43.07	Grand Mean	43.42
Avg SDr	2.45	2.21	3.08	2.47	Avg SDr	2.57	Avg SDr	2.55
SD btwn Labs	3.97	3.37	4.54	3.56	SD btwn Labs	3.42	SD btwn Labs	2.80
Labs Incld	27	26	27	26	SD btwn Wks	1.44	SD btwn Wks	1.86
Labs Excld	0	1	0	1	Labs Incld	26	Labs Incld	25
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		

	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
4AN9YD	14.4	14.6	14.1	14.1	14.3	-0.55	1.1	0.3	14.4	-0.57	0.5	0.5	16	TS
7GVPJJ	14.2	14.6	14.4	14.6	14.4	-0.18	0.9	0.2	14.3	-0.76	0.9	0.2	16	LZ
BEBDPU	15.3	15.0	15.1	15.3	15.2	1.58	1.0	0.2	14.9	0.48	1.1	0.3	16	LB
BKYL3G	14.2	14.4	14.2	14.1	14.3	-0.62	1.1	0.1	14.4	-0.44	0.9	0.3	16	LB
CE7BDV	14.6	14.1	14.6	14.0	14.3	-0.48	1.0	0.3	14.4	-0.61	0.9	0.2	16	LU
DKCU6F	15.2	13.9	14.4	14.3	14.4	-0.22	1.1	0.6	14.7	0.18	1.1	0.6	16	LA
DMVHBR	13.7	13.8	14.0	13.9	13.9	-1.49	0.6	0.1	14.5	-0.31	0.8	1.0 H	12	XX
DRVPXA	14.6	14.3	13.9	13.7	14.1	-0.94	0.9	0.4	14.3	-0.67	0.8	0.2	16	LB
E4GTQL	15.2	15.6	15.2	14.9	15.2	1.62	1.0	0.3	15.0	0.88	1.2	0.6	12	LZ
E8LJVF	13.8	14.1	14.2	14.3	14.1	-1.00	0.9	0.2	13.9	-1.67	1.0	1.0 H	8	LA
F9VE6Q	14.3 L	14.2 L	14.1 L	14.0 L	14.1	-0.89	0.1	0.1	15.1	1.03	0.1	0.7	16	BK
H4ABA6	14.6	13.8	14.0	14.4	14.2	-0.74	0.8	0.4	14.3	-0.66	0.8	0.2	16	LB
KE47K7	15.2	15.2	15.3	15.6 *	15.3	1.82	1.0	0.2	14.7	0.23	0.9	0.6	16	LA
KHK7N8	14.5	14.1	13.8	15.0	14.4	-0.40	1.3	0.5	14.3	-0.64	1.1	0.6	16	LZ
MDNQ6V	14.3	14.0 L	14.5	14.7	14.4	-0.38	0.5	0.3	14.2	-0.98	0.5	0.3	8	LA
NRFFL8	15.2	15.4	15.2	15.4	15.3	1.86	0.7	0.1	15.3	1.37	0.8	0.3	16	LH
P82HG2	14.2	14.3	14.2	13.7	14.1	-0.97	1.0	0.3	14.6	0.01	0.7	0.6	16	XX
PBK64Z	14.7	14.4	14.5	14.6	14.5	0.03	0.6	0.1	15.3	1.41	1.0	0.8	16	LA
PMYZJY	15.2	14.9	14.9	14.9	15.0	1.03	1.0	0.1	15.4	1.74	1.0	0.5	15	LW
PVGBWZ	14.3	15.0	14.5	15.2	14.7	0.51	0.8	0.4	15.4	1.64	0.8	0.6	12	LA
PXHEM2	14.3	15.6 *	13.0 *	14.4	14.3	-0.44	1.3	1.1 H	14.1	-1.21	1.1	1.1 H	12	LB
TZD89V	14.4	14.7	15.2	14.5	14.7	0.39	1.0	0.4	14.2	-0.86	1.0	0.4	16	LU
WATRQ4	16.2 X	15.0	15.4	14.1	15.2	1.49	1.1	0.9 H	15.4	1.58	1.1	0.5	16	LA
YCPRQ6	14.4	14.6	14.1	14.0	14.3	-0.62	0.9	0.3	14.2	-0.92	0.8	0.3	16	LB
ZGEWCZ	14.4	14.3	14.2	14.4	14.3	-0.40	0.8	0.1	14.5	-0.24	0.6	0.2	16	TT

Consensus (All Labs) Results

Wk Mean	14.54	14.55	14.44	14.48	Month Mean	14.52	Grand Mean	14.63
Avg SDr	0.99	0.92	0.93	0.89	Avg SDr	0.94	Avg SDr	0.90
SD btwn Labs	0.45	0.54	0.57	0.53	SD btwn Labs	0.43	SD btwn Labs	0.46
Labs Incld	24	25	25	25	SD btwn Wks	0.39	SD btwn Wks	0.57
Labs Excld	1	0	0	0	Labs Incld	25	Labs Incld	25
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