Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #622 (H) - July 2021

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX15	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC13	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC13	Edgewise Compressive Strength by T839, Corrugated Board
205	42F3	Bursting Strength (Mullen), 42 lb Linerboard
206	56G2	Bursting Strength (Mullen), 56 lb Linerboard
215	42F3	Ring Crush, 42 lb Linerboard
216	56G2	Ring Crush, 56 lb Linerboard
223	42F3	STFI, 42 lb Linerboard
224	56G2	STFI, 56 lb Linerboard
228	42F3	Roughness - Stylus Method, 42 lb Linerboard
229	42F3	Roughness - Sheffield Method, 42 lb Linerboard
231	42F	Internal Bond, 42 lb Linerboard
234	42F	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42F	Air Resistance, 42 lb Linerboard
240	CM12	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM12	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM12	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM12	STFI, 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; 35 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# Corrugating Medium	CM11	April 2019 - Current
	CM92	January 2018 - March 2019
35# Corrugating Medium	35E2	June 2020 - Current
	35E1	June 2017 - April 2020
42# Corrugating Medium	42F3	November 2020 - Current
	42F2	March 2020 - October 2020
56# Corrugating Medium	56G2	May 2021 - Current
	56G1	January 2020 - March 2021

ABOUT CTS

Founded in 1971, Collaborative Testing Services, Inc. (CTS) is a privately-owned company that specializes in interlaboratory tests for a wide variety of industries, including rubber, plastics, fasteners and metals, containerboard, paper, color, and wine, as well as proficiency tests for forensic laboratories. All of the tests are designed to assist organizations in achieving and maintaining quality control objectives. Labs from the U.S., as well as more than 80 countries, currently participate in the CTS programs.

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EXPLANATION OF TABLES

Each analysis is divided into three time spans. On the left side of the table are the individual laboratory results for each week of the month; in the center are each lab's statistical data for the month; and on the right are each lab's cumulative data for up to 16 weeks. At the bottom of the table are the consensus statistics for all the participants for each of the three time spans.

Definitions of Terms Used

Weekly Results

Laboratory Data

WebCode - A six character laboratory identifier used to maintain information on a confidential basis. The WebCode is unique for each cycle and will change for each report. Your WebCode can be found in your Individual Report (Current Month Performance Report) and your datasheet.

Weekly Means - The average of the test results obtained by the participant for each week that data were reported.

Consensus Data

Wk Mean - For each week, the average of the Means for all the participants, excluding those laboratories flagged with an 'X'.

Avg SD - For each week, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'. The Avg SD is an indication of the variation of measurements within an average laboratory.

SD btwn Labs - For each week, the standard deviation of the laboratory Means about the Wk Mean, excluding those laboratories flagged with an 'X'. The SD LABS is an indication of the precision of measurement between the laboratories.

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

Labs Excld - The number of laboratory Means reported but excluded from the Wk Mean for that week because of outlying results ('X' following Mean).

Labs not rcvd - The number of laboratories failing to report for that week.

Monthly Results

Laboratory Data

Mean - For each laboratory, the average of all the weekly Means reported for this month.

CPV - Comparative Performance Value, an indication of how well a laboratory's Mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean). The closer a laboratory's CPV is to zero, the more consistent its results are with the other participants' data.

SD - For each laboratory, the average of the weekly within-lab standard deviations (SD's) for all reported Weekly Means this month.

SD Wk - The standard deviation among the laboratory's weekly Means, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.

Consensus Data

Month Mean - The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for this month.

Avg SD - For the current month, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.

SD btwn Labs - For the current month, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.

SD btwn Group - For the current month, the standard deviation of the laboratory Means within the group about the Month Mean, excluding those laboratories flagged with an 'X'.

SD btwn Wks - For the current month, the average of the laboratory between week standard deviations (SD Wks') for all the participants, excluding those laboratories flagged with an 'X'.

Cumulative Results

Laboratory Data

Mean	-	For each lab, the average of all the monthly Means reported for the weeks shown.
CPV	-	Comparative Performance Value, an indication of how well a laboratory's cumulative mean agrees with the other participants. The CPV is a ratio indicating the number of standard deviations from the consensus mean (Monthly Mean).
SDr	-	For each laboratory, the average of the weekly within-lab standard deviations (SD's) for the weeks shown.
SD Wk	-	The standard deviation among the laboratory's weekly Means for the weeks shown, including those Means flagged with an 'X'. The SD Wks is an indication of that laboratory's ability to obtain constant results from week to week.
Wks	-	The number of weeks included in the cumulative period.
Inst	-	The two letter instrument code. Codes are summarized at the bottom of the last analysis page.

Consensus Data

Grand Mean	-	The average of the Means for all the participants, excluding those laboratories flagged with an 'X,' reporting data for the number of weeks included in the cumulative period.
Avg SD	-	For the cumulative period, the average of the within-laboratory standard deviations (SD's) for all the participants, excluding those laboratories flagged with an 'X'.
SD btwn Labs	-	For the cumulative period, the standard deviation of the laboratory Means about the Month Mean, excluding those laboratories flagged with an 'X'.
SD btwn Wks	-	For the cumulative period, the average of the laboratory between week standard deviations for all the participants, excluding those laboratories flagged with an 'X'.
Labs Incld	-	The number of laboratory Means included in the Grand Mean.

Any laboratory that receives a 'flag' following a mean or standard deviation should refer to the chart below for an explanation of the data flag symbol:

Flag	Explanation

Data Flags " X " and " * " indicate a laboratory's performance on an average value differed from the consensus.
Data Flags " H " and " L " indicate a laboratory's performance on a standard deviation differed from the consensus.

Flags assigned to Weekly Means, Monthly Mean and Cumulative Mean:

X	Excluded from the weekly means, monthly means and/or the cumulative mean. Immediate review of data and/or testing procedure is recommended.
*	Included in the weekly means, monthly means and/or the cumulative mean; however, lab should review testing procedure and monitor future results.

Flags assigned to Weekly Means:

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

Flags assigned to Monthly SD Wks and Cumulative SD Wks:

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3FKWBP	848.4	0.80	44.79		818.4	0.11	25.71	4	ER
7HAGLA	850.2	0.84	10.94	L	864.9	1.18	27.23	4	LG
8KB6E6	858.7	1.01	27.45		802.8	-0.25	46.27	4	EX
9W6VJA	800.0	-0.21	105.71	H	824.8	0.26	36.39	4	LG
A7A6LT	780.7	-0.61	38.78		810.6	-0.07	58.16	4	ER
CTEFW7	768.9	-0.86	66.29		829.8	0.37	71.89	4	ET
D6HD3H	797.0	-0.27	54.22		734.3	-1.82	43.01	4	LL
ECWNMW	857.8	1.00	33.73		836.4	0.52	51.55	3	EX
ET83BL	788.3	-0.45	34.85		795.7	-0.41	27.88	4	LM
FQXDM4	809.7	-0.01	39.21		791.7	-0.51	38.24	4	LM
GK2CDZ	816.2	0.13	23.15		812.6	-0.03	10.25	4	LS
KUUX8N	789.0	-0.44	66.99		732.5	-1.86	50.41	4	TB
L7TNVG	797.2	-0.27	74.34		830.0	0.37	31.84	4	EX
LD7WX4	855.0	0.94	26.07		858.9	1.04	20.99	4	LO
PB76AM	799.6	-0.22	35.91		789.3	-0.56	58.26	3	LH
PGE9KV	763.7	-0.97	47.35		845.0	0.72	55.87	4	LG
RN8HJJ	773.6	-0.76	45.31		847.3	0.77	51.03	4	LS
RUAMF9	844.6	0.72	28.90		860.8	1.08	29.10	4	ER
TUQ6RT	736.4	-1.53	9.98	L	744.3	-1.59	18.94	4	LG
TXBQ8V	775.0	-0.73	48.35		810.0	-0.09	42.59	4	ES
UA2Y6N	768.4	-0.87	85.92		797.8	-0.36	51.67	4	XX
VC472L	769.2	-0.85	31.92		749.4	-1.48	20.10	4	LL
WDRZDG	870.4	1.26	26.92		858.8	1.04	23.99	4	LG
WKXNYV	843.5	0.70	25.80		787.1	-0.61	55.63	4	ER
WMZM93	910.1	2.09 *	14.79		911.6	2.25 *	3.00 L	4	EX
XW44CD	695.3	-2.39 *	50.19		742.8	-1.63	53.51	4	LS
Y7M2GN	897.4	1.82	11.13	L	853.3	0.91	41.82	4	EM
Z8CQEA	801.1	-0.19	121.25	H	828.9	0.35	30.40	4	LL
ZWTB9L	825.8	0.33	59.98		827.0	0.30	21.07	4	EX

Consensus (All Labs) Results

Month Mean	810.05	Grand Mean	813.67
Avg SD	51.80	Avg SD Months	41.16
SD btwn Labs	47.97	SD btwn Labs	43.55
Labs Incld	29	Labs Incld	29

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Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	821.70	58.67	11.65	9
Water based adhesive sealing	897.40	0.00	87.35	1
Clip sealing	799.93	38.09	10.12	19

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	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	LO	Lansmont 152-30k
LS	Lansmont Squeezer	TB	TMI Monitor/Compression Tester, Model 17-70
XX	Instrument make/model not specified by lab		

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	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4VNVQ7	46.6	1.03	1.99		45.7	0.92	2.49	4	LC
62AARH	39.6	-1.45	2.60		42.4	-0.66	2.16	4	XX
9W6VJA	43.4	-0.11	2.04		42.5	-0.59	1.28	4	LE
GC9XWA	39.2	-1.59	2.17		40.4	-1.58	1.81	4	LD
GK2CDZ	43.9	0.07	1.86		42.7	-0.51	1.13	4	LD
WDRZDG	46.3	0.95	1.20		45.3	0.72	1.15	4	EM
WKXNYV	44.7	0.38	4.15	H	45.3	0.75	1.03	4	EN
WMZM93	42.6	-0.40	1.53		42.1	-0.80	0.65	4	LC
XDRCF3	47.6	1.42	2.13		47.3	1.70	2.10	4	XX
XW44CD	32.6	-3.95	1.95	X	33.7	-4.81	1.28	4	EM
ZWTB9L	42.8	-0.30	3.14		43.8	0.05	1.35	4	LC

Consensus (All Labs) Results

Month Mean	43.67	Grand Mean	43.74
Avg SD	2.42	Avg SD Months	1.61
SD btwn Labs	2.80	SD btwn Labs	2.10
Labs Incld	10	Labs Incld	10

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LE	L&W Crush Tester 840	XX	Instrument make/model not specified by lab

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	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2Z9YQX	47.8	1.04	1.78		49.1	1.53	1.38	4	LD
36ZMMV	35.7	-3.06 X	2.74		38.6	-2.44 *	2.05	4	XX
3FKWBP	45.8	0.37	1.75		46.7	0.59	0.96	4	LD
3W4WXE	42.2	-0.87	1.96		44.0	-0.43	1.84	4	LD
4VNVQ7	47.7	1.03	1.91		47.5	0.90	0.79	4	LC
62AARH	42.6	-0.71	0.74	L	44.6	-0.19	1.64	4	XX
7HAGLA	49.3	1.55	1.39		46.3	0.46	3.88	4	MK
8KB6E6	47.1	0.82	1.74		45.7	0.24	1.37	4	TL
948NAR	47.8	1.06	2.39		47.5	0.91	1.33	4	TG
98LHQP	44.9	0.08	2.13		48.1	1.14	2.38	4	XX
9W6VJA	46.9	0.76	2.24		46.2	0.43	0.51	4	LY
A7A6LT	44.6	-0.04	1.16		46.4	0.49	1.26	4	LD
CTEFW7	43.0	-0.59	2.34		44.0	-0.41	1.84	4	TD
D6HD3H	42.7	-0.69	0.71	L	44.5	-0.23	1.41	4	LC
ECWNMW	43.3	-0.48	1.66		43.5	-0.61	0.84	3	CT
ET83BL	44.0	-0.25	2.33		45.1	0.01	1.21	4	TG
FQXDM4	46.0	0.43	2.99	H	45.7	0.22	0.84	4	EM
GC9XWA	38.6	-2.08 *	1.96		43.0	-0.79	3.34	4	LD
GK2CDZ	42.9	-0.61	1.20		43.8	-0.49	0.85	4	LD
HU8G4W	40.8	-1.33	0.79	L	41.8	-1.24	0.69	4	TD
HYDDMW	38.6	-2.08 *	2.29		43.2	-0.71	4.14 H	4	TD
KE6MRD	46.5	0.62	1.31		45.6	0.19	1.31	2	LC
KKAJBD	40.5	-1.41	1.76		38.5	-2.50 *	5.08 H	4	TK
KUUX8N	50.3	1.91	0.67	L	48.7	1.36	1.29	4	LD
L7TNVG	43.7	-0.33	1.71		46.9	0.67	2.33	4	LD
LBYGPD	43.2	-0.52	1.14		41.2	-1.47	2.74	4	TD
LD7WX4	42.3	-0.81	1.30		43.1	-0.75	0.55	4	LD
MGK22R	43.5	-0.43	0.75	L	46.6	0.58	2.79	3	EM
PB76AM	45.4	0.24	2.77		44.6	-0.20	1.71	3	EM
RN8HJJ	48.4	1.26	1.35		50.4	1.99 *	2.09	4	EM
RUAMF9	45.3	0.21	0.55	L	45.1	0.00	0.66	4	EM
TXBQ8V	47.4	0.92	1.90		47.1	0.76	0.37	4	LD
WKXNYV	45.7	0.35	1.73		45.1	0.02	0.90	4	EN
WMZM93	46.2	0.52	1.88		47.9	1.05	1.12	4	LC
XDRCF3	47.9	1.08	1.44		47.3	0.82	1.76	4	XX
XW44CD	39.6	-1.74	0.66	L	41.8	-1.24	1.91	4	EM
Y7M2GN	42.0	-0.92	4.42	H	41.2	-1.46	3.78	4	TH
Z8CQEA	47.5	0.96	0.85		46.4	0.49	1.07	4	BU
ZWTB9L	46.7	0.68	1.27		45.9	0.32	0.64	4	LC

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Consensus (All Labs) Results

Month Mean	44.70	Grand Mean	45.10
Avg SD	1.82	Avg SD Months	2.03
SD btwn Labs	2.94	SD btwn Labs	2.65
Labs Incld	38	Labs Incld	39

Key to Instrument Codes Reported by Participants

BU	Buchel Digital Crush Tester	CT	Con-Ten
EM	Emerson 1200 Series	EN	Emerson 2200
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LY	L&W 830	MK	Mark-10 ESM303
TD	TMI Digital Crush Tester, Model 17-09	TG	TMI Digital Crush Tester, 17-76
TH	TMI Monitor/Compression Tester, Model 17-76	TK	TLS Compression Tester, Model 5184
TL	Tech-Lab Systems Compression	XX	Instrument make/model not specified by lab

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
249AMX_AL	113.4	117.4	110.7	114.7	114.1	0.92	8.5	2.8	114.1	1.03	8.1	4.3	16	AL
2LQ73Q	108.0	108.4	112.8	108.8 L	109.5	-0.51	5.7	2.2	110.5	-0.12	5.9	2.0	16	AX
2LQ73Q_AL	109.2	112.0	107.8	109.9	109.7	-0.43	7.9	1.8	110.0	-0.27	7.8	2.6	16	AL
2NU9KF	121.8*H	127.3 XH	131.1 XH	136.7 X	129.2	5.69 X	16.1	6.3 H	123.1	3.94	X12.4	6.1	16	AX
2RW3LQ	108.1	110.8	111.1	107.5	109.4	-0.54	9.2	1.8	106.9	-1.28	9.1	3.1	16	TP
2Z9YQX_AL	114.5	118.1	113.0	120.6	116.6	1.71	7.4	3.4	115.1	1.36	7.0	2.6	16	AK
3FKWBP	102.4	100.3 *	106.0	106.7	103.9	-2.28 *	7.0	3.0	103.5	-2.37	* 8.4	3.1	16	AH
47PEAL	107.9	108.5 H	105.8	113.2	108.9	-0.71	11.1	3.1	108.2	-0.85	9.5	2.8	16	LC
4FEYFJ_AL	116.8	113.0	110.0	116.8	114.2	0.96	10.1	3.3	112.4	0.50	10.3	3.3	16	AK
6PHEYW	108.1 H	105.0	107.3	111.9	108.1	-0.95	11.5	2.9	108.2	-0.87	11.0	2.8	16	LJ
7MNC38	111.2 H	101.1 *	105.1	109.6	106.8	-1.37	10.8	4.6	106.3	-1.48	9.3	4.0	16	LA
7Q78CR	116.4	104.4	110.4	No Data	110.4	-0.22	9.8	6.0	109.5	-0.42	8.4	5.3	15	AH
7Q78CR_AL	111.2	114.1	113.6	No Data	113.0	0.58	8.2	1.6	114.9	1.32	10.2	2.8	15	AL
8P622B	109.2	111.3	No Data	No Data	110.3	-0.27	8.0	1.5	111.4	0.16	9.0	2.8	8	LC
99XY43	110.8	109.6	108.7	111.0	110.0	-0.34	5.9	1.1	109.9	-0.31	6.6	0.9	16	AH
9EPAD2	108.0	108.4	109.4	111.8	109.4	-0.54	6.1	1.7	110.1	-0.23	6.7	1.5	16	TP
9TMCYE	114.0	110.6	116.6	111.9	113.3	0.68	9.9	2.6	115.7	1.55	9.8	4.4	16	TB
9W6VJA	113.5	111.2	113.8	114.8	113.3	0.70	8.2	1.5	113.3	0.77	7.3	1.7	16	AH
9WMMUE_AL	108.8	106.0	110.8	106.6	108.0	-0.97	6.1	2.2	108.9	-0.64	7.6	2.1	16	XX
A7A6LT	111.0	107.1	112.8	106.9	109.5	-0.51	9.2	2.9	109.0	-0.59	9.6	2.8	16	LZ
AEYQRQ	112.6	110.0	118.6	110.6	113.0	0.58	10.2	3.9	114.0	1.03	8.8	4.0	16	LA
AKQXCK_AL	111.7	111.1	118.8	113.6	113.8	0.84	8.2	3.5	111.9	0.35	8.8	3.0	16	AL
AXFVDH	108.5	103.5	107.7	98.2 *	104.5	-2.08 *	11.2	4.7	104.4	-2.09	*14.6	5.2	8	XX
B9QUE4	103.2	109.1	107.4	110.5	107.6	-1.12	9.1	3.2	106.3	-1.47	9.4	2.5	12	LA
BY6LZ9	108.0	109.1	111.6	111.2	110.0	-0.36	10.7	1.7	107.8	-0.97	10.0	2.8	12	LB
CAH6VP	104.0	115.2	113.1	107.6	110.0	-0.35	9.1	5.1	110.9	0.01	8.7	3.6	16	LA
CYK6K7	113.9	112.7	111.2	109.9	111.9	0.26	6.4	1.7	114.5	1.16	6.4	2.8	16	LA
DQL73V	105.0	112.2	110.8	117.8	111.4	0.10	10.4	5.3	112.9	0.66	10.1	4.1	12	LC
DQL73V_AL	113.0	114.9	120.4 *	117.8	116.5	1.70	8.2	3.3	112.9	0.67	10.5	4.2	12	AL
ECWNMW	114.0	113.5	112.5	114.0	113.5	0.75	9.2	0.7	111.5	0.22	8.5	2.3	12	XX
GC9XWA	111.5	108.6	109.2	111.5 L	110.2	-0.28	5.2	1.5	109.3	-0.51	6.4	2.5	16	LA
GK2CDZ	108.8	109.6	108.0	111.9	109.6	-0.49	9.5	1.7	107.8	-0.97	8.9	2.7	16	LA
HU8G4W	106.2	105.6	105.1	105.0	105.5	-1.77	10.5	0.6	108.0	-0.92	11.7	3.3	16	XX
J3XDLC	108.3	107.6	113.4	111.7	110.3	-0.27	7.9	2.8	109.8	-0.34	7.8	1.9	16	LA
J6YH2H	111.2	111.4	111.1	111.2	111.2	0.04	6.0	0.1 L	111.4	0.18	5.4	0.3 L	12	LJ

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
KG9FLC_AL	115.5	115.8	113.8	116.0	115.3	1.30	5.5	1.0	111.4	0.16	6.6	2.9	16	AL
KH6T96_AL	115.8	116.0	120.6 *H	109.9	115.6	1.40	13.3	4.4	115.7	1.55	9.3	5.1	16	AL
L7TNVG	113.4	111.4	112.0	115.6	113.1	0.62	9.2	1.9	112.5	0.52	8.7	2.5	16	AH
L82ZE4	109.5 H	107.2	109.3	103.6	107.4	-1.16	10.4	2.7	108.4	-0.79	9.8	4.0	14	LZ
LPZDM6	107.4	115.8	117.3	118.7	114.8	1.16	6.7	5.1	111.6	0.25	7.1	4.2	16	LA
LPZDM6_AL	107.9 L	116.4	118.6	114.1	114.2	0.98	5.7	4.6	111.2	0.11	6.0	3.2	16	AL
LVPV42	106.8	105.4 L	107.3	104.0	105.9	-1.64	5.4	1.5	107.7	-1.02	8.5	2.8	16	LC
N6KRVU	129.8 X	134.4 XL	133.0 X	130.7 X	132.0	6.55 X	5.1	2.1	132.0	6.81 X	5.1	2.1	4	AH
PABL9L	108.8 L	108.5	No Data	109.7 L	109.0	-0.66	3.6	0.6	107.4	-1.10	4.1	1.5	15	XX
RMZX2B	104.5	111.1	116.8	118.6	112.8	0.51	8.2	6.4 H	109.1	-0.56	7.9	4.4	16	LA
RV66GA	114.5	111.3	112.0	110.2	112.0	0.28	7.4	1.8	110.9	0.01	8.8	2.8	16	LC
TXBQ8V	107.5	108.0	110.7	109.2	108.9	-0.71	9.7	1.4	108.5	-0.75	9.6	2.9	16	LA
TYJ8VT	100.6 *	100.6 *	100.9 *	100.6 *	100.7	-3.27 X	8.8	0.2 L	100.7	-3.28 X	8.8	0.2 L	4	XX
UN2P3M_AL	117.3	116.1	112.0 H	122.1 *	116.9	1.81	11.8	4.2	116.2	1.72	9.9	6.0	16	AK
UZAHEY_AL	113.1	113.6	106.7	107.0	110.1	-0.32	10.1	3.8	111.3	0.13	9.3	3.7	16	AL
VND4KF_AL	112.7	111.0	108.8	113.1	111.4	0.09	9.5	1.9	109.6	-0.40	8.9	2.3	16	AL
VRYGTY	101.4 L	105.9	106.6	107.3 L	105.3	-1.82	3.8	2.6	106.9	-1.28	3.9	2.4	16	LA
W3UAEU	102.3	111.6	114.6	115.4	111.0	-0.05	7.8	6.0	113.6	0.88	9.9	3.8	16	LA
W8LJNT_AL	114.5	112.6	111.9	112.2	112.8	0.53	7.1	1.2	112.3	0.46	7.1	1.2	16	AL
WMZM93	109.4	108.4	111.8	109.0	109.7	-0.46	9.4	1.5	109.9	-0.32	9.1	1.9	16	AH
WR9VRR	120.8*H	130.6 X	124.5 X	130.6 X	126.6	4.87 X	12.4	4.8	117.4	2.11 *	9.7	7.6 H	16	AC
WRVDFY_AL	112.6	110.7	111.5	111.4	111.6	0.14	9.5	0.8	109.2	-0.54	8.3	2.4	16	AL
WVTXHX_AI	111.5	113.1	116.0	112.5	113.3	0.67	8.0	1.9	111.6	0.26	9.2	3.9	16	AL
XDRCF3	114.8 L	114.9	115.4 L	114.0 L	114.8	1.15	4.0	0.6	116.5	1.82	3.9	1.7	16	LC
XQXMMP	114.4	112.4	109.8	115.4 L	113.0	0.59	6.0	2.5	112.6	0.55	5.8	2.7	16	AH
XRRB7K_AL	97.9 *	97.2 X	98.0 X	97.9 *	97.8	-4.19 X	6.8	0.4 L	107.7	-1.02	9.7	6.2	16	AL
Y3YMRE	112.3	113.9	113.8	113.8	113.4	0.73	8.6	0.8	112.1	0.39	10.7	3.2	10	LC
Y3YMRE_AL	109.1	102.6	111.6	104.3	106.9	-1.32	10.5	4.2	109.6	-0.39	9.9	4.0	10	AL
YRLGZK	119.0	111.5	127.3 X	113.9	117.9	2.14 *	8.1	7.0 H	118.0	2.31 *	8.6	4.4	16	TB
ZTUXNH	112.6	113.3	113.1	112.3 L	112.8	0.54	4.6	0.5 L	112.9	0.65	4.9	0.5 L	16	LA

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Consensus (All Labs) Results

Wk Mean	110.50	110.34	111.51	111.14	Month Mean	111.11	Grand Mean	110.85
Avg SDr	8.84	8.44	8.82	8.49	Avg SD	8.54	Avg SD	8.65
SD btwn Labs	4.74	4.15	4.02	4.91	SD btwn Labs	3.19	SD btwn Labs	3.10
Labs Incld	64	61	58	59	SD btwn Wks	3.13	SD btwn Wks	3.40
Labs Excld	1	4	5	3	Labs Incld	60	Labs Incld	62
Labs not Rcvd	0	0	2	3				

Key to Instrument Codes Reported by Participants

AC	Perkins Model C	AH	Perkins Model AH
AK	L & W Autoline 300	AL	L & W Autoline 400
AX	Perkins Mullen Tester (model not specified)	LA	L&W Bursting Strength Tester
LB	L&W Burst-O-Matic	LC	L&W Autoline (205 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
TB	TMI Monitor/Burst 1000	TP	Technidyne PROFILE/Plus
XX	Instrument make/model not specified by lab		

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
249AMX_AL	123.3	124.2	115.7	117.2	120.1	0.87	8.7	4.3	118.8	0.71	9.6	3.4	8	AL
2LQ73Q	114.2	111.8	114.0	113.6	113.4	-0.55	8.5	1.1	113.9	-0.53	7.8	1.6	8	LC
2LQ73Q_AL	113.7	117.7	113.4	115.1	115.0	-0.22	7.6	2.0	117.3	0.33	7.4	3.4	8	AL
2NU9KF	134.2XH	129.8 *H	133.2 X	132.5 X	132.4	3.49 X	15.6	1.9	127.8	2.94	X12.8	7.2 H	8	XX
2RW3LQ	111.7	111.1	116.6	112.6	113.0	-0.63	7.9	2.5	113.5	-0.61	8.3	1.7	8	TP
2Z9YQX_AL	118.8	116.7	122.4	115.4	118.3	0.49	8.9	3.1	120.8	1.21	8.4	3.6	8	AL
3FKWBP	107.6	106.9	109.6	110.2	108.6	-1.58	9.3	1.6	108.2	-1.95	*10.1	2.6	8	AH
47PEAL	114.4	115.7	114.8	115.6	115.1	-0.19	11.0	0.6	112.6	-0.85	10.2	3.9	8	LA
4FEYFJ_AL	115.7	116.3	125.1	117.0	118.5	0.54	10.7	4.4	119.4	0.86	11.0	3.3	8	AK
6PHEYW	114.5 H	111.8	108.9	107.7	110.7	-1.12	11.8	3.1	113.5	-0.61	10.6	5.7	8	LZ
7MNC38	104.7	102.3 *H	107.8	112.0	106.7	-1.98 *	11.4	4.2	108.0	-2.00 *	9.8	3.4	8	LA
7Q78CR	109.6	114.6	110.8	No Data	111.7	-0.92	11.5	2.6	112.2	-0.95	10.7	5.1	7	AH
7Q78CR_AL	111.4	116.7	109.4	No Data	112.5	-0.75	10.3	3.8	114.1	-0.47	11.3	4.2	7	XX
8P622B	116.5	115.5	No Data	No Data	116.0	0.00	7.0	0.7	117.6	0.41	8.8	2.0	4	XX
99XY43	112.5	112.7	114.9	113.8	113.5	-0.54	6.7	1.1	113.5	-0.62	6.6	1.0	8	AH
9EPAD2	114.5	112.1	115.0	114.2	114.0	-0.44	7.4	1.3	113.9	-0.53	7.5	1.4	8	TP
9TMCYE	119.1	115.2	120.9	119.1	118.6	0.54	10.0	2.4	118.9	0.73	10.7	2.2	8	TB
9W6VJA	124.0	125.5	122.9	121.9	123.6	1.61	8.2	1.5	123.9	1.99	* 8.2	1.5	8	AH
9WMMUE_Al	107.8	110.2	111.4 L	112.0	110.3	-1.21	7.1	1.9	112.1	-0.97	6.8	2.3	8	XX
A7A6LT	117.1	109.1	114.8	116.8	114.4	-0.33	10.8	3.7	114.5	-0.37	10.5	3.4	8	LZ
AEYQRQ	116.7	117.7	119.3	114.7	117.1	0.23	9.7	1.9	116.5	0.13	10.7	4.3	8	LA
AKQXCK_AL	112.9	114.5	110.2	114.6	113.1	-0.63	7.6	2.1	113.3	-0.66	8.6	1.8	8	AL
AXFVDH	115.7	116.6	121.5	115.5	117.3	0.28	8.7	2.8	117.3	0.33	8.7	2.8	4	XX
B9QUE4	109.0	110.3	111.6	110.8	110.4	-1.19	6.3	1.1	111.8	-1.05	8.4	1.7	8	XX
BY6LZ9	116.1	116.3	115.7	113.4	115.4	-0.13	10.1	1.3	115.4	-0.15	10.1	1.3	4	LB
CAH6VP	114.5	113.9	119.9	112.1	115.1	-0.20	10.9	3.4	114.9	-0.28	10.6	2.4	8	LA
CYK6K7	116.4	116.6	114.2	120.8	117.0	0.21	6.6	2.8	117.9	0.49	6.8	2.6	8	LA
DQL73V	124.3	119.9	121.5	126.1 *	122.9	1.48	10.0	2.8	118.8	0.71	9.8	5.9	8	LC
DQL73V_AL	119.3	120.3	107.9	122.3	117.5	0.31	10.5	6.5 H	116.2	0.05	10.0	5.6	8	XX
ECWNMW	119.0	120.5 H	113.5	115.0	117.0	0.21	11.9	3.3	117.0	0.26	11.9	3.3	4	XX
GC9XWA	117.0	113.5	118.1	121.0	117.4	0.30	9.9	3.1	116.0	0.00	9.0	3.3	8	LA
GK2CDZ	114.0	115.4	111.7	114.0	113.8	-0.47	12.0	1.6	114.2	-0.45	11.3	2.1	8	LA
HU8G4W	108.4	109.1	109.7	109.4	109.2	-1.46	13.1	0.6	111.1	-1.21	11.5	2.2	8	XX
J3XDLC	114.1	113.1	116.0	114.2	114.4	-0.35	7.7	1.2	114.5	-0.37	11.1	0.8 L	8	LA
J6YH2H	114.1	114.1	114.2	114.0	114.1	-0.41	7.4	0.1 L	113.7	-0.57	6.5	0.5 L	8	LJ

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
KG9FLC_AL	116.5	112.8	120.0	119.3	117.2	0.24	7.6	3.3	115.4	-0.14	7.8	3.3	8	AL
KH6T96_AL	113.4	112.1	117.9 H	118.3	115.4	-0.12	12.1	3.1	117.5	0.38	9.9	3.3	8	XX
L7TNVG	113.6	118.0	118.0	124.0	118.4	0.51	12.4	4.3	117.4	0.36	10.9	3.3	8	AH
L82ZE4	110.0	112.1	117.1	119.0	114.5	-0.31	11.4	4.2	114.4	-0.40	10.3	4.1	8	LZ
LPZDM6	119.9	126.1	119.8	121.6	121.8	1.24	8.0	2.9	121.0	1.25	8.7	2.8	8	LA
LPZDM6_AL	113.1	123.3	119.4	117.5	118.3	0.49	7.4	4.2	118.3	0.59	7.1	3.9	8	XX
LVPV42	119.6 L	115.3	109.5	109.5	113.5	-0.54	10.2	4.9	111.8	-1.04	10.2	4.8	8	LC
N6KRVU	128.8 *	128.1 *	135.9 X	136.9 X	132.4	3.49 X	6.4	4.6	132.4	4.11 X	6.4	4.6	4	AH
PABL9L	119.8 L	116.9 L	No Data	122.6	119.8	0.80	3.8	2.9	120.0	1.01	4.1	1.8	7	XX
RMZX2B	108.5	111.4	111.8	110.0	110.4	-1.19	8.1	1.5	109.9	-1.51	7.6	1.9	8	LA
RV66GA	118.5	110.9	122.8	114.6	116.7	0.15	10.0	5.1	117.3	0.34	11.4	3.9	8	LC
TXBQ8V	115.4	114.3	112.6	112.0	113.6	-0.52	9.8	1.6	114.0	-0.49	11.7	3.1	8	LA
TYJ8VT	106.4	103.7 *	109.1	108.2	106.8	-1.95 *	9.8	2.4	106.8	-2.28 *	9.8	2.4	4	XX
UN2P3M_AL	125.1	122.8	117.0	122.6	121.9	1.25	10.5	3.4	123.1	1.78	11.5	4.4	8	AK
UZAHEY_AL	120.0	120.9	116.1	118.3	118.8	0.60	9.4	2.1	117.5	0.39	9.6	3.0	8	AL
VND4KF_AL	113.0	112.2	109.0	116.8	112.7	-0.69	11.8	3.2	112.6	-0.83	11.9	2.7	8	AL
VRYGTY	105.8 L	110.4	111.0	113.7 L	110.2	-1.23	4.4	3.3	111.7	-1.07	4.4	3.2	8	LA
W3UAEU	129.6 *	122.9 H	120.5	120.2	123.3	1.55	10.8	4.4	123.6	1.90	10.0	4.9	8	LA
W8LJNT_AL	123.7	112.7	118.5	116.4	117.8	0.39	8.1	4.6	118.0	0.50	8.6	3.3	8	AL
WMZM93	110.2	113.7	110.9	111.2	111.5	-0.96	11.4	1.5	111.1	-1.22	11.1	1.2	8	AH
WR9VRR	129.6 *	122.4	130.7 X	131.9 X	128.7	2.69 *	10.0	4.3	123.5	1.88	9.1	6.3	8	AC
WRVDFY_AL	109.8	110.3	112.7	112.3	111.3	-1.01	11.6	1.4	112.9	-0.77	10.9	2.6	8	XX
WVTXHX_AI	127.0	114.0	123.0	124.9	122.2	1.32	9.4	5.7	119.1	0.78	10.8	5.5	8	AL
XQXMMP	118.0	115.8	112.6	122.6 L	117.3	0.26	6.4	4.2	119.3	0.83	6.0	4.7	8	AH
XRRB7K_AL	129.4 *	129.5 *	128.2 *	127.9 *	128.8	2.71 *	11.4	0.8	122.2	1.55	11.6	7.3 H	8	AL
Y3YMRE	117.6 H	115.2	116.3	119.5	117.1	0.24	11.5	1.8	118.0	0.50	11.5	1.8	8	LC
Y3YMRE_AL	118.0	120.5	112.8	118.3	117.4	0.29	8.2	3.2	117.9	0.48	12.4	3.0	8	AL
YRLGZK	121.5	129.0 *	128.1 *	124.0 H	125.7	2.05 *	12.6	3.5	125.2	2.29 *	11.5	3.6	8	TB
ZTUXNH	116.0 L	116.2 L	116.2 L	115.2 L	115.9	-0.02	3.6	0.5 L	115.6	-0.10	3.9	0.5 L	8	LA

Consensus (All Labs) Results

Wk Mean	116.20	115.95	115.66	116.42	Month Mean	116.01	Grand Mean	115.97
Avg SDr	9.65	9.48	9.50	9.92	Avg SD	9.58	Avg SD	9.62
SD btwn Labs	5.96	5.82	5.01	4.73	SD btwn Labs	4.70	SD btwn Labs	4.01
Labs Incld	63	64	59	58	SD btwn Wks	3.06	SD btwn Wks	3.43
Labs Excld	1	0	3	3	Labs Incld	62	Labs Incld	62
Labs not Rcvd	0	0	2	3				

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Key to Instrument Codes Reported by Participants

AC	Perkins Model C	AH	Perkins Model AH
AK	L & W Autoline 300	AL	L & W Autoline 400
LA	L&W Bursting Strength Tester	LB	L&W Burst-O-Matic
LC	L&W Autoline (206 Enrollment)	LJ	L&W Bursting Strength Tester J-Type
LZ	L&W (model not specified)	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2KJQUZ	93.1	93.1	93.5	92.6	93.1	0.71	3.0	0.4 L	91.8	0.19	2.9	1.6	16	LD
2NU9KF	86.1	87.8	87.3	87.6	87.2	-1.31	4.0	0.7	87.8	-1.47	3.9	2.6	16	LD
2RW3LQ	96.6	97.2 *	97.2	96.3	96.8	2.00 *	2.5	0.4	95.9	1.89	2.8	1.6	16	LD
2Z9YQX	93.0	93.6	95.7	95.7	94.5	1.20	2.5	1.4	94.0	1.11	2.6	1.2	16	LD
34QJBR	99.8 *	98.2 *	97.7 *	95.5	97.8	2.33 *	3.2	1.8	97.8	2.67 *	3.2	1.5	16	EX
3FKWBP	90.8	91.5	88.6	89.2	90.0	-0.34	2.4	1.4	89.5	-0.79	3.1	1.5	16	LD
47PEAL	91.1	90.5	94.0	91.8	91.8	0.28	2.5	1.5	92.4	0.41	2.5	1.3	16	LD
4FEYFJ	89.9	89.1	90.8	90.4	90.1	-0.33	3.4	0.7	90.2	-0.50	3.0	1.4	16	LD
4VNVQ7	86.8	88.5	87.2	87.5	87.5	-1.21	2.3	0.7	88.3	-1.26	2.5	1.3	16	LC
8P622B	93.0	87.9	89.4	91.8	90.5	-0.16	3.0	2.3	93.0	0.70	5.3	3.2	16	MB
948NAR	90.1	88.8	96.5	99.2 *	93.7	0.91	2.8	5.0 H	93.0	0.69	2.9	2.9	16	TH
9EPAD2	89.3	91.3	90.0	92.0	90.6	-0.12	3.2	1.2	91.6	0.10	3.6	1.2	16	TJ
9TMCYE	94.0	92.7 H	90.7	88.2	91.4	0.14	4.1	2.5	91.0	-0.16	4.7	2.8	16	LD
9W6VJA	89.6	89.6	88.6	92.3	90.0	-0.33	3.1	1.6	91.2	-0.07	2.7	1.7	16	LG
A7A6LT	90.9	89.7	90.4	92.6	90.9	-0.04	2.3	1.2	91.5	0.08	2.6	2.0	16	LD
AEYQRQ	101.8 X	101.0 X	102.8 X	100.0 *	101.4	3.56 X	3.6	1.2	104.2	5.33 X	3.3	2.1	16	LD
APJ6N2	96.5	96.0	97.0	95.7	96.3	1.82	3.2	0.6	92.2	0.36	4.9	6.6 H	15	MB
B9QUE4	89.7	86.4	89.6	91.2	89.2	-0.61	2.9	2.0	89.5	-0.78	3.0	2.9	12	LD
BY6LZ9	91.9	93.1	92.1	94.3	92.9	0.63	2.7	1.1	93.4	0.86	2.6	1.6	12	LC
CAH6VP	87.2	87.6	90.0	88.0	88.2	-0.97	4.0	1.3	86.9	-1.85	6.4	9.9 H	16	LD
CYK6K7	90.3	90.3	88.5	88.7	89.5	-0.54	2.6	1.0	90.5	-0.38	2.7	1.8	16	LC
DQL73V	85.7	86.6	86.7	87.1	86.5	-1.54	2.6	0.6	88.3	-1.29	3.1	4.2	12	LD
FXFQHW	78.1 X	75.1 X	75.9 X	76.0 X	76.3	-5.06 X	3.0	1.3	76.2	-6.31 X	3.4	1.5	16	EM
GC9XWA	89.6	88.7	88.3	89.0	88.9	-0.72	1.9	0.5	89.6	-0.73	2.4	0.9	16	LD
GG4RUB	94.0	92.7	92.1	91.5	92.6	0.55	3.2	1.1	92.5	0.46	2.9	1.6	16	LD
GK2CDZ	87.9	91.0	91.2	90.8	90.2	-0.26	2.0	1.6	90.5	-0.37	2.5	1.4	16	LD
H2826R	86.4	86.2	84.9	84.5 H	85.5	-1.89	5.2	0.9	89.1	-0.93	4.1	3.1	16	LZ
HGUEGX	86.5	89.4	85.1	86.8	86.9	-1.40	3.3	1.8	87.5	-1.62	3.5	2.4	12	TH
J6YH2H	91.5	91.1	91.8	91.6	91.5	0.17	2.6	0.3 L	91.7	0.12	2.5	0.3 L	12	LD
KG9FLC	89.8	91.8	87.5	93.3	90.6	-0.14	3.2	2.5	91.8	0.19	3.8	2.6	16	LZ
KH6T96	95.9	96.1	69.7 XH	83.2 *	86.2	-1.64	6.2	12.6 H	76.4	-6.24 X	6.8	10.8 H	16	LC
KKAJBD	93.7	93.0	93.2	93.4 L	93.3	0.80	1.7	0.3 L	93.1	0.72	1.5	0.5 L	16	MB
L82ZE4	88.4	87.4	87.4	86.0	87.3	-1.27	3.0	1.0	89.1	-0.93	2.8	1.6	14	LC
LPZDM6	89.2	90.1	91.0	93.9	91.1	0.02	2.4	2.0	90.7	-0.30	2.5	1.2	16	LD
LVPV42	93.1	90.8	92.8	95.0	92.9	0.65	3.6	1.7	93.7	0.98	4.3	4.5	16	LD

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Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42F3

TAPPI Official Test Method T822

Report #622 (H)
July 2021

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
LWJJLX	90.3	88.5	91.5	91.1	90.3	-0.23	4.1	1.3	92.0	0.27	8.1	3.5	16	TU
MGK22R	88.4	89.7	88.7	88.4	88.8	-0.75	2.2	0.6	88.3	-1.26	2.3	1.3	16	EM
N6KRVU	92.0	89.3	89.5	87.8	89.6	-0.47	3.4	1.7	89.6	-0.72	3.4	1.7	4	LD
PABL9L	81.6 *	80.1 X	No Data	82.7 *	81.5	-3.28 X	3.7	1.3	82.6	-3.64 X	4.9	5.2	15	LD
RMZX2B	91.9	92.6	93.3	93.3	92.8	0.61	2.8	0.7	91.1	-0.12	3.4	2.0	16	TU
RV66GA	91.5	91.8	95.8	88.6	91.9	0.31	2.4	3.0	92.1	0.31	2.7	1.9	16	LD
TYJ8VT	92.4	91.9	92.9	93.0	92.5	0.52	3.2	0.5	91.8	0.20	2.8	1.7	12	LZ
VKWEJR	88.6	88.9 L	88.5	89.1 L	88.8	-0.77	1.3	0.2 L	89.6	-0.75	1.4	1.0	16	RS
VND4KF	95.1	94.1	95.6	94.6	94.8	1.32	2.6	0.6	93.3	0.82	2.8	1.5	16	LD
VRYGTY	92.3	91.6	92.0	91.7	91.9	0.31	2.2	0.3 L	91.9	0.23	2.2	0.6 L	16	LZ
W3UAEU	96.1	92.8	91.9	92.4	93.3	0.79	2.6	1.9	94.1	1.15	3.0	1.6	16	LZ
WCXCVK	86.5	89.4	85.1	86.9	87.0	-1.38	3.3	1.8	87.8	-1.47	3.2	2.2	16	TH
WKXNYV	87.2	90.1	88.4	88.3	88.5	-0.86	3.1	1.2	88.5	-1.18	2.9	1.4	16	EN
WMZM93	94.0	93.7	94.4	96.7	94.7	1.27	2.3	1.4	93.6	0.95	2.8	1.2	16	LC
WRVDFY	88.6	89.9	89.1	88.8	89.1	-0.66	2.2	0.6	90.2	-0.49	2.1	1.2	16	LD
WVTXHX	89.0	88.0	90.6	91.0	89.7	-0.47	3.2	1.4	89.4	-0.84	3.5	3.1	16	LC
XRRB7K	114.0 XH	110.3 XH	116.6 XH	114.2 XH	113.8	7.82 X	10.1	2.6	99.8	3.51 X	6.9	8.7 H	16	LC
Y3YMRE	91.7	91.9	90.9	92.0	91.6	0.21	2.9	0.5	92.6	0.50	2.7	1.2	12	LD
YCAPDE	89.3 H	88.6 H	92.5	90.1	90.1	-0.30	4.8	1.7	93.3	0.79	3.8	4.6	16	TH
YRLGZK	99.9 *	94.0	98.7 *H	98.1	97.7	2.29 *	4.0	2.6	97.5	2.56 *	3.9	2.9	16	LX
ZTUXNH	93.5	93.7	93.7	93.1	93.5	0.86	2.1	0.3 L	93.6	0.92	2.7	0.4 L	16	LD

Consensus (All Labs) Results

Wk Mean	90.97	90.93	91.18	91.19	Month Mean	91.01	Grand Mean	91.36
Avg SDr	2.85	3.21	2.80	3.27	Avg SD	3.11	Avg SD	3.40
SD btwn Labs	3.55	2.72	3.37	3.75	SD btwn Labs	2.91	SD btwn Labs	2.40
Labs Incld	53	52	51	54	SD btwn Wks	2.32	SD btwn Wks	2.69
Labs Excld	3	4	4	2	Labs Incld	52	Labs Incld	51
Labs not Rcvd	0	0	1	0				

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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	RS	Regmed Digital Crush Tester CT-2000
TH	TMI Compression Tester, Model 17-76	TJ	TLS Compression Tester, Model CDM-5
TU	TMI Universal Crush Tester (TMI K440)		

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2KJQUZ	135.9	135.5	133.6	136.7	135.4	0.05	4.2	1.3	133.9	-0.37	4.5	3.0	8	LD
2NU9KF	128.8 H	136.7	130.7 H	131.9	132.0	-0.70	7.3	3.4	133.1	-0.58	6.7	2.6	8	LD
2RW3LQ	138.5	138.3	139.2	133.5	137.4	0.48	4.4	2.6	137.6	0.56	4.2	2.6	8	LD
2Z9YQX	134.8	135.7	132.4	135.0	134.5	-0.16	3.2	1.5	133.9	-0.37	3.0	1.3	8	LD
34QJBR	141.8	142.5	140.4	142.8	141.9	1.48	4.0	1.0	143.4	2.02 *	4.2	1.8	8	EX
3FKWBP	128.9	130.5	129.4	127.0	128.9	-1.38	3.8	1.5	128.5	-1.73	3.9	1.2	8	LD
47PEAL	134.8	134.2	135.7	132.5	134.3	-0.20	3.3	1.3	134.6	-0.19	3.5	1.2	8	LD
4FEYFJ	132.3	132.6	134.5	132.5	133.0	-0.49	4.3	1.0	132.7	-0.68	4.4	1.0	8	LD
4VNVQ7	130.7	129.5	132.7	131.7	131.1	-0.90	3.3	1.4	131.5	-0.97	3.5	1.0	8	LC
8P622B	137.0	135.2	135.7	138.8	136.7	0.33	5.5	1.6	137.7	0.60	5.0	2.7	8	MB
948NAR	142.6	144.0	136.9	133.0	139.2	0.88	3.9	5.1 H	136.0	0.15	4.2	5.3	8	TH
9EPAD2	133.9	136.2	134.9	136.1	135.3	0.02	5.3	1.1	135.9	0.13	5.8	1.3	8	TJ
9TMCYE	143.2	140.2	143.2	132.1 H	139.7	0.99	5.9	5.2 H	141.6	1.58	5.8	5.3	8	LD
9W6VJA	135.9	135.2	134.6	134.4	135.0	-0.03	3.2	0.7	136.2	0.20	3.0	2.5	8	LY
A7A6LT	132.7	133.2	134.5	133.0 L	133.3	-0.41	3.9	0.8	134.7	-0.17	3.9	2.0	8	LD
AEYQRQ	148.9 *	146.0 *H	145.0 *H	144.9 *	146.2	2.44 *	6.1	1.9	149.5	3.56 X	5.6	3.9	8	LD
APJ6N2	141.5	141.3	142.4	138.5	140.9	1.27	4.2	1.7	140.2	1.22	6.1	4.4	7	MB
B9QUE4	133.3	132.2	131.7	136.5	133.4	-0.39	3.3	2.1	132.1	-0.82	3.7	3.5	8	LD
BY6LZ9	139.2	139.0	138.9	142.0	139.8	1.01	3.6	1.5	139.8	1.11	3.6	1.5	4	LC
CAH6VP	135.6	134.8	135.6	132.5	134.6	-0.13	4.1	1.5	139.7	1.10	4.1	5.8	8	LD
CYK6K7	138.0	134.3	134.0	136.6	135.7	0.12	3.8	1.9	134.6	-0.21	3.7	3.0	8	LC
DQL73V	122.7 *	126.1	125.9 *	127.8	125.6	-2.12 *	3.7	2.1	129.3	-1.52	3.6	4.5	8	LD
FXFQHW	116.4 X	114.0 X	114.0 X	118.2 X	115.7	-4.32 X	4.2	2.1	115.1	-5.11 X	4.1	1.6	8	EM
GC9XWA	136.9	135.6	135.2	131.1	134.7	-0.11	2.5	2.5	134.0	-0.35	3.1	2.0	8	LD
GG4RUB	132.6	134.4	136.4	134.1	134.4	-0.18	4.0	1.6	134.6	-0.19	4.2	1.3	8	LD
GK2CDZ	129.2	133.7	134.9	132.4	132.5	-0.59	3.6	2.5	132.2	-0.79	4.1	2.4	8	LD
H2826R	126.0 H	125.4 *	120.0 X	129.7	125.3	-2.20 *	5.6	4.0	130.6	-1.20	5.7	6.6	8	LZ
HGUEGX	138.0	134.3	126.5	128.8	131.9	-0.73	5.2	5.3 H	130.8	-1.16	4.6	4.1	8	TH
J6YH2H	137.7	137.8	137.7	137.9	137.8	0.57	3.3	0.1 L	138.1	0.69	3.4	0.4 L	8	LD
KG9FLC	141.8	136.8	133.6	139.2	137.8	0.59	5.2	3.5	138.7	0.84	5.1	2.8	8	LZ
KH6T96	131.0	130.4	92.7 XH	128.9	120.8	-3.20 X	5.1	18.7 H	104.2	-7.88 X	7.8	21.6 H	8	LC
KKAJBD	139.6	139.1 L	139.3	139.4 L	139.4	0.92	1.8	0.2 L	139.5	1.03	1.6	0.3 L	8	MB
L82ZE4	125.6	124.4 *	123.5 *	125.3 *	124.7	-2.33 *	3.9	0.9	127.7	-1.94 *	3.7	3.4	8	LC
LPZDM6	133.4	136.8	135.2	130.3 H	133.9	-0.28	4.9	2.8	133.3	-0.53	4.4	2.2	8	LD
LVPV42	139.9	145.6 *	139.2	140.9	141.4	1.38	4.8	2.9	142.1	1.70	5.1	3.9	8	LD

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Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 56 lb Linerboard - 56G2

TAPPI Official Test Method T822

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
LWJJLX	134.2	130.0	127.2	128.2	129.9	-1.17	4.1	3.1	135.8	0.10	12.1	6.8	8	TU
MGK22R	128.2 L	129.8	129.4 L	129.4 L	129.2	-1.33	1.8	0.7	130.2	-1.30	2.6	1.7	8	EM
N6KRVU	137.3	134.3	129.3 H	133.1	133.5	-0.37	6.1	3.3	133.5	-0.47	6.1	3.3	4	LD
PABL9L	123.1 *	118.4 X	No Data	115.0 X	118.8	-3.62 X	5.7	4.1	118.1	-4.35 X	7.5	7.9 H	7	LD
RMZX2B	132.1	134.5	136.5	139.6	135.7	0.11	3.8	3.2	135.3	-0.02	5.2	3.7	8	TU
RV66GA	136.5	132.5	136.6	134.8	135.1	-0.01	3.7	1.9	135.2	-0.05	4.2	2.4	8	LD
TYJ8VT	143.0	143.1	139.7	139.9	141.4	1.38	4.1	1.9	139.2	0.97	4.8	2.9	8	LZ
VKWEJR	137.1 L	136.6 L	136.5 L	136.4 L	136.6	0.32	1.1	0.3 L	136.8	0.36	1.6	0.8 L	8	RS
VND4KF	137.6	137.7	137.3	135.7	137.1	0.42	4.3	0.9	138.0	0.66	4.3	1.6	8	LD
VRYGTY	135.9	136.4	136.5	136.5	136.4	0.26	3.1	0.3 L	136.0	0.17	2.7	0.9 L	8	LZ
W3UAEU	128.4	128.9	136.8	138.6	133.2	-0.44	4.1	5.3 H	133.6	-0.45	4.1	3.5	8	LZ
WCXCVK	137.0	134.4	130.4	131.8	133.4	-0.40	5.1	2.9	131.2	-1.06	4.6	4.1	8	TH
WKXNYV	134.3	125.7 *	129.8	131.8	130.4	-1.07	2.8	3.6	130.9	-1.13	3.8	3.2	8	EN
WMZM93	139.8	139.0	139.8	139.4	139.5	0.96	3.6	0.4 L	138.8	0.87	3.5	1.5	8	LC
WRVDFY	133.4	132.7 L	132.2	131.0	132.3	-0.64	3.5	1.0	134.3	-0.28	3.4	2.3	8	LD
WVTXHX	129.5	132.1	135.9	136.7	133.6	-0.36	3.9	3.4	133.5	-0.48	3.9	2.8	8	LC
XRRB7K	115.3XH	116.8 X	118.4 XH	117.1 XH	116.9	-4.05 X	10.0	1.3	129.7	-1.43	8.4	13.9 H	8	LC
Y3YMRE	134.9	133.8	135.3	134.2	134.5	-0.14	3.9	0.7	134.5	-0.21	4.5	1.5	8	LD
YCAPDE	134.0	137.3	139.0	140.2	137.6	0.54	5.0	2.7	142.0	1.67	4.9	5.2	8	TH
YRLGZK	146.2 *	143.0	151.0 X	145.6 *	146.5	2.49 *	4.3	3.3	145.7	2.61 *	3.9	4.3	8	LY
ZTUXNH	136.9	135.3	136.3	136.1	136.2	0.21	3.1	0.7	136.6	0.31	2.9	0.7 L	8	LD

Consensus (All Labs) Results

Wk Mean	135.22	135.18	134.96	134.84	Month Mean	135.19	Grand Mean	135.37
Avg SDr	4.01	4.37	4.23	4.14	Avg SD	4.20	Avg SD	4.65
SD btwn Labs	5.44	4.89	4.44	4.56	SD btwn Labs	4.52	SD btwn Labs	3.96
Labs Incld	54	53	50	53	SD btwn Wks	2.48	SD btwn Wks	3.68
Labs Excld	2	3	5	3	Labs Incld	52	Labs Incld	52
Labs not Rcvd	0	0	1	0				

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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	LY	L&W Crush Tester 958
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
RS	Regmed Digital Crush Tester CT-2000	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)

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Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F3

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
249AMX_AL	22.9	23.5	23.5	24.2	23.5	-0.06	1.9	0.5	23.7	0.00	1.7	0.6	16	AL
2CMZ6H	25.8	25.8	25.9	26.4 *	26.0	1.86	1.7	0.3	24.4	0.58	1.7	1.0	16	LU
2KJQUZ	25.8	25.2	25.7	24.7	25.4	1.37	1.7	0.5	25.1	1.18	1.8	0.7	16	LH
2LQ73Q	25.0	25.6	24.4	24.7	24.9	1.04	1.5	0.5	25.2	1.28	1.7	0.5	16	LU
2LQ73Q_AL	23.4 L	23.8	24.6	23.2	23.8	0.13	1.4	0.6	24.1	0.33	1.5	0.5	16	AL
2NU9KF	24.1	25.4 L	24.3	23.5	24.3	0.56	1.2	0.8	24.1	0.36	1.4	0.6	16	LH
2Z9YQX_AL	25.0	23.3	23.6	23.1	23.8	0.13	1.7	0.9	23.6	-0.12	1.6	0.7	16	AK
34QJBR	32.6 XL	29.2 XL	32.1 XL	31.5 XL	31.3	6.01 X	0.0	1.5	31.7	6.68 X	0.0	2.0	16	TT
36ZMMV	22.9	22.9	23.0	23.1	23.0	-0.48	1.8	0.1 L	23.9	0.13	1.8	0.8	16	XX
3FKWBP	21.4	22.4	22.7	22.1	22.2	-1.11	1.8	0.6	22.5	-0.98	1.6	0.5	16	LU
47PEAL	22.8	23.1	23.9	23.4	23.3	-0.24	1.6	0.4	22.7	-0.80	1.4	0.6	16	LA
4FEYFJ_AL	23.0	23.0	22.8	22.7	22.9	-0.54	1.8	0.1 L	23.1	-0.52	1.6	0.3	16	AK
6PHEYW	26.2 *	25.9	25.9	26.8 *	26.2	2.01 *	2.1	0.4	26.6	2.43 *	2.2	0.5	16	LH
6R3LYJ	23.4	23.5	24.7 H	22.4	23.5	-0.07	2.0	0.9	22.9	-0.67	1.7	0.8	16	LW
7MNC38	24.6	25.8	24.4 H	22.9	24.4	0.63	2.0	1.2	24.3	0.49	2.1	1.2	16	LH
7Q78CR	23.2	23.0	21.8	No Data	22.7	-0.71	1.7	0.7	23.7	-0.04	1.7	0.9	15	LH
7Q78CR_AL	22.8	24.1	22.8	No Data	23.2	-0.27	1.9	0.8	23.9	0.18	1.7	1.3	15	AL
8P622B	23.5	25.4	25.5	24.6	24.7	0.89	1.7	0.9	24.7	0.80	1.9	0.6	15	LA
99XY43	23.1	23.0	23.3	23.0	23.1	-0.38	1.4	0.2	23.3	-0.34	1.3	0.4	16	TT
9EPAD2	23.1	23.2	23.3	22.8	23.1	-0.38	1.4	0.2	23.2	-0.39	1.4	0.3	16	TT
9TMCYE	24.6	34.8 XH	24.5	24.1	27.0	2.66 *	2.2	5.2 H	24.7	0.83	1.9	2.9 H	16	LW
9W6VJA	22.6	22.3	22.3	22.2	22.3	-0.98	1.4	0.2 L	22.6	-0.89	1.6	0.4	16	LU
9WMMUE_Al	24.4	25.5	23.6	26.1 L	24.9	1.00	1.3	1.1	29.2	4.62 X	2.0	8.7 H	16	XX
A7A6LT	23.0	23.0	23.3	23.0	23.1	-0.39	1.5	0.1 L	23.6	-0.08	1.6	1.4	16	LY
AKQXCK	22.9 H	24.6	22.1	24.3	23.4	-0.12	1.9	1.2	23.8	0.10	2.0	1.1	16	LU
APJ6N2	21.2	21.8	22.1	23.4	22.1	-1.15	1.8	0.9	23.4	-0.22	1.7	1.4	15	LA
BY6LZ9	22.8	22.4	22.6	22.5	22.6	-0.80	1.6	0.2	22.6	-0.94	1.5	0.3	12	LW
CYK6K7	24.7	24.0	24.1	24.3	24.3	0.54	2.0	0.3	24.5	0.70	1.5	0.4	16	LA
DQL73V	18.4 X	19.6 *L	17.2 X	15.8 X	17.8	-4.53 X	1.7	1.6	16.9	-5.63 X	1.7	1.8	12	LZ
DQL73V_AL	38.8 XL	39.0 XL	39.4 XL	38.4 XL	38.9	11.90 X	0.0	0.4	39.6	13.30 X	0.0	1.7	12	AL
GC9XWA	23.8	22.7	22.9	22.9 L	23.1	-0.38	1.1	0.5	23.2	-0.41	1.2	0.4	16	BK
GK2CDZ	22.6	22.0	23.2	23.1	22.7	-0.68	1.8	0.6	22.9	-0.66	1.7	0.6	16	LZ
H2826R	24.3	24.4 H	24.6	25.3 H	24.7	0.83	2.4	0.5	25.4	1.40	1.8	0.9	16	XX
HGUEGX	22.1	21.1	21.5	21.3	21.5	-1.62	1.6	0.5	21.3	-2.02 *	1.7	0.9	8	LH
J3XDLC	23.6	23.3	23.0	22.7 L	23.2	-0.32	1.1	0.4	23.7	-0.03	1.7	0.5	16	LY

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Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F3

TAPPI Official Test Method T826

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
KG9FLC_AL	22.3	22.6	23.0	22.5	22.6	-0.76	1.6	0.3	23.0	-0.55	1.8	0.8	16	AL
KH6T96_AL	20.4 *	19.8 *	21.4	21.8	20.9	-2.12 *	1.8	0.9	21.7	-1.64	1.5	1.6	16	AL
L7TNVG	23.1	23.8	23.9	23.6	23.6	0.02	1.7	0.4	23.1	-0.50	1.7	0.6	16	XX
L82ZE4	24.2	23.5	22.6	23.8	23.5	-0.05	1.9	0.7	23.9	0.15	1.8	0.6	14	LY
LPZDM6_AL	22.9	23.6	23.4	24.1	23.5	-0.08	1.9	0.5	23.3	-0.33	1.8	0.6	16	AL
LVPV42	24.3	24.5	26.4 *	23.6	24.7	0.85	2.0	1.2	24.5	0.68	1.8	1.1	16	LA
LWJJLX	23.0	24.8	24.3	25.7	24.4	0.66	1.6	1.1	24.4	0.58	1.9	0.8	16	LA
N6KRVU	37.6 XH	41.3 XH	38.6 XH	39.5 XH	39.3	12.18 X	4.5	1.6	39.3	12.98 X	4.5	1.6	4	XX
RV66GA	22.8	23.1	23.2	23.3	23.1	-0.39	1.5	0.2	23.0	-0.59	1.7	0.6	16	LA
TYJ8VT	24.1	23.1	23.5	23.2	23.5	-0.09	1.8	0.4	23.0	-0.54	1.9	0.7	12	LA
UK39QT	27.7 X	26.9 *	28.0 X	27.2 *	27.5	3.02 X	1.9	0.5	26.3	2.18 *	1.6	0.8	16	LH
UN2P3M_AL	25.6 L	25.5	26.2	24.8	25.5	1.51	1.5	0.5	24.9	0.98	1.6	1.0	16	AK
VND4KF_AL	23.5	24.7	25.6	23.5	24.3	0.57	1.6	1.0	24.5	0.63	1.7	1.0	16	AL
W3UAEU	21.7	22.1	22.6	22.4	22.2	-1.06	1.7	0.4	22.1	-1.33	1.9	0.4	16	LW
W8LJNT_AL	22.3	24.1	23.3	23.0	23.2	-0.33	1.7	0.7	22.6	-0.89	1.8	0.7	16	AL
WCXCVK	22.1	21.1	21.5	21.3	21.5	-1.62	1.6	0.5	21.2	-2.07 *	1.8	0.6	16	LH
WKXNYV	21.7	22.3	21.1	22.3	21.9	-1.34	1.5	0.6	21.8	-1.54	1.6	0.4	16	LY
WMZM93	22.7	23.3	22.7	22.8	22.9	-0.56	1.7	0.3	22.9	-0.69	1.6	0.4	16	LU
WR9VRR	22.2	22.8	22.5	22.0	22.4	-0.94	1.8	0.4	22.4	-1.10	1.4	0.4	16	LH
WRVDFY_AL	32.8 XH	33.2 X	33.7 X	34.4 XH	33.5	7.74 X	2.6	0.7	25.9	1.84	1.7	4.6 H	16	AL
WVTXHX	23.2	25.8	24.9	26.4 *	25.1	1.16	1.9	1.4	24.4	0.55	1.7	1.4	16	LU
XDRCF3	25.1 L	25.3 L	26.5 *	25.6	25.6	1.59	1.5	0.6	25.1	1.13	1.9	1.0	16	LA
XQXMMP	26.3 *	25.0	25.9	25.8	25.7	1.68	1.9	0.6	26.1	1.97 *	1.7	0.6	16	LU
XRRB7K_AL	25.2	22.5	24.5	24.7	24.2	0.50	1.8	1.2	25.4	1.39	1.6	1.3	16	AL
Y3YMRE	23.3	22.6	23.5 L	23.1	23.1	-0.34	1.4	0.4	23.1	-0.51	1.6	0.4	12	LA
Y3YMRE_AL	23.1	22.9	23.6	23.2	23.2	-0.31	1.7	0.3	23.3	-0.37	1.7	0.4	12	AL
Y7M2GN	21.3	21.4	21.8	21.2	21.4	-1.67	1.7	0.3	22.3	-1.19	1.7	1.2	16	TT
YCAPDE	43.0 XH	40.6 XH	42.7 XH	41.4 X	41.9	14.26 X	5.4	1.2	41.7	15.01 X	3.7	1.9	16	TT
ZTUXNH	23.8	24.0	23.8	23.7	23.8	0.17	1.9	0.1 L	23.8	0.09	1.9	0.1 L	16	LA

Consensus (All Labs) Results

Wk Mean	23.41	23.54	23.64	23.63	Month Mean	23.59	Grand Mean	23.70
Avg SDr	1.67	1.78	1.66	1.69	Avg SD	1.71	Avg SD	1.70
SD btwn Labs	1.29	1.52	1.34	1.41	SD btwn Labs	1.29	SD btwn Labs	1.20
Labs Incld	57	58	57	56	SD btwn Wks	0.95	SD btwn Wks	1.06
Labs Excld	7	6	7	6	Labs Incld	57	Labs Incld	58
Labs not Rcvd	0	0	0	2				

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Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
BK	Buchel Strip Compression Tester BK-155	LA	L&W Autoline (223 Enrollment)
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		

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
249AMX_AL	33.6	34.6	34.5	36.0	34.7	-0.09	2.3	1.0	34.3	-0.17	2.5	0.9	8	AL
2CMZ6H	37.0	36.3	35.6	35.8	36.2	0.59	2.2	0.6	35.0	0.15	2.3	1.4	8	LU
2KJQUZ	37.8 L	36.5 L	35.5 L	35.6 L	36.3	0.66	0.2	1.1	35.9	0.63	1.6	1.0	8	LH
2LQ73Q	37.1	36.9	36.2	37.1	36.8	0.88	2.1	0.4	37.0	1.20	2.1	0.7	8	LA
2LQ73Q_AL	34.7	35.4	36.9	35.7	35.7	0.37	1.7	0.9	35.5	0.44	2.1	0.7	8	AL
2NU9KF	36.4	36.1	34.5 L	34.5	35.4	0.22	1.3	1.0	35.1	0.23	2.0	0.9	8	LH
2Z9YQX_AL	34.0 L	34.4	33.5	35.1	34.3	-0.28	2.1	0.7	33.9	-0.39	2.2	1.3	8	XX
34QJBR	46.2 XL	45.7 XL	41.6 *L	42.9 XL	44.1	4.13 X	0.0	2.2	44.3	4.81 X	0.0	2.0	8	LZ
36ZMMV	35.0 H	34.0	34.6 H	33.5	34.3	-0.27	2.9	0.6	34.9	0.11	2.6	0.9	8	XX
3FKWBP	32.0	31.5	32.3	31.5	31.8	-1.37	3.0	0.4	32.0	-1.34	2.7	0.4	8	LU
47PEAL	33.6	32.1	33.2	34.9	33.4	-0.64	2.4	1.1	33.5	-0.59	2.3	0.9	8	LW
4FEYFJ_AL	33.8	31.2	34.3	33.9	33.3	-0.72	2.0	1.4	33.6	-0.52	2.0	1.1	8	AK
6PHEYW	39.1	38.9	37.9	38.3	38.6	1.66	2.6	0.5	38.5	1.93	3.0	0.9	8	LZ
6R3LYJ	34.8	34.0	34.1	34.0	34.2	-0.28	2.2	0.4	33.6	-0.55	2.1	1.0	8	LW
7MNC38	37.7	37.0	36.0	33.8	36.1	0.55	2.6	1.7	35.7	0.55	2.7	1.5	8	LH
7Q78CR	34.6	33.5	32.4	No Data	33.5	-0.62	2.7	1.1	34.3	-0.17	2.5	1.3	7	LH
7Q78CR_AL	33.5	34.0	34.5	No Data	34.0	-0.39	1.9	0.5	34.2	-0.22	4.0	1.5	7	XX
8P622B	34.4	38.4	38.1	No Data	37.0	0.95	2.6	2.2	35.9	0.60	2.3	2.0	7	LA
99XY43	35.2	35.3 L	34.8	34.7	35.0	0.06	1.5	0.3	35.3	0.32	1.5	0.4	8	TT
9EPAD2	34.4 L	35.1	35.2	35.0	34.9	0.02	1.5	0.4	34.9	0.11	1.5	0.4	8	TT
9TMCYE	35.4	35.8	35.8	37.8	36.2	0.60	2.8	1.1	34.9	0.13	2.7	1.6	8	LW
9W6VJA	32.9	33.0	32.3	33.6	32.9	-0.86	2.2	0.5	33.4	-0.61	2.1	0.7	8	LU
9WMMUE_Al	37.4 H	36.6	37.9 L	35.2	36.8	0.86	2.8	1.2	36.0	0.69	2.5	1.3	8	XX
A7A6LT	33.9	33.5	33.8	33.2	33.6	-0.58	2.1	0.3	33.6	-0.55	2.3	0.6	8	LZ
AKQXCK	24.3 X	36.3	33.7	36.4	32.7	-0.98	1.9	5.7 H	33.8	-0.41	2.4	4.1 H	8	LU
APJ6N2	35.6	34.5	35.4	35.2	35.2	0.14	2.7	0.5	35.3	0.34	2.5	0.6	7	LA
BY6LZ9	33.4	33.5	33.3 L	33.1	33.3	-0.69	1.7	0.2 L	33.3	-0.67	1.7	0.2 L	4	ID
CYK6K7	37.4	36.7	36.4	35.6	36.5	0.74	2.2	0.7	35.9	0.62	1.9	1.0	8	LA
DQL73V	28.1 *	28.0 *	27.0 X	23.2 X	26.6	-3.70 X	2.2	2.3	25.5	-4.58 X	2.3	2.1	8	LZ
DQL73V_AL	39.9 *L	41.0 *L	40.8 *L	40.1 *L	40.5	2.51 *	0.0	0.5	41.3	3.34 X	0.0	1.2	8	XX
GC9XWA	34.7 L	35.2	35.0 L	33.9	34.7	-0.07	1.4	0.6	34.4	-0.13	1.3	1.0	8	BK
GK2CDZ	33.1	33.4	33.3	34.6	33.6	-0.57	2.4	0.7	33.7	-0.50	2.2	0.5	8	LZ
H2826R	38.7 L	34.1 L	36.3 L	37.0 L	36.5	0.74	0.2	1.9	37.6	1.49	2.0	1.9	8	XX
HGUEGX	30.9 H	30.6	28.3 *	28.1 X	29.5	-2.42 *	2.9	1.5	29.5	-2.60 *	2.9	1.5	4	XX
J3XDLC	33.0	34.0 L	34.7	34.6	34.1	-0.36	1.8	0.8	34.6	-0.05	2.1	0.8	8	LU

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Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 56 lb Linerboard - 56G2

TAPPI Official Test Method T826

Report #622 (H)
July 2021

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
KG9FLC_AL	33.4	33.3	33.1	31.5	32.8	-0.91	1.9	0.9	32.8	-0.92	2.0	0.6	8	AL
KH6T96_AL	29.7 *H	30.1	31.2	29.3 *L	30.1	-2.14 *	3.0	0.8	30.5	-2.07 *	2.5	2.0	8	XX
L7TNVG	35.0	34.3	33.6	35.4	34.6	-0.13	2.2	0.8	34.6	-0.05	2.1	0.9	8	XX
L82ZE4	35.2	35.6	33.5	34.4	34.7	-0.09	2.4	0.9	34.9	0.11	2.4	0.7	8	LW
LPZDM6_AL	33.9	35.1	34.2 L	34.3 L	34.4	-0.22	2.5	0.5	34.5	-0.07	2.4	1.0	8	AL
LVPV42	37.1	35.9	38.9	36.9	37.2	1.05	2.2	1.3	36.0	0.65	2.1	2.5 H	8	LA
LWJJLX	35.0 H	38.5	37.2 H	36.1	36.7	0.83	3.0	1.5	36.8	1.06	2.8	1.0	8	LA
N6KRVU	42.7 XH	40.1 *	42.2 *H	42.8 XH	42.0	3.18 X	4.0	1.3	42.0	3.65 X	4.0	1.3	4	XX
RV66GA	33.8	34.2	33.7	34.9	34.2	-0.32	2.4	0.6	34.4	-0.12	2.5	1.2	8	LU
TYJ8VT	35.9	34.6	33.3 L	33.9	34.5	-0.19	2.1	1.1	34.3	-0.18	2.3	1.2	8	LA
UK39QT	40.0 *	40.9 *	39.5	39.7 *	40.0	2.31 *	2.3	0.6	39.6	2.47 *	2.5	0.7	8	LH
UN2P3M_AL	38.6	36.5	36.9	40.0 *	38.0	1.40	2.3	1.6	37.2	1.25	2.6	1.9	8	AK
VND4KF_AL	36.3	37.9	37.5	36.3	37.0	0.96	2.6	0.8	36.6	0.99	2.5	1.5	8	XX
W3UAEU	32.5	32.3	31.9	33.7	32.6	-1.02	2.6	0.8	32.4	-1.13	2.7	0.7	8	LW
W8LJNT_AL	33.7	33.9	34.6	35.2	34.3	-0.24	1.9	0.7	34.2	-0.21	2.1	0.7	8	AL
WCXCVK	30.9 H	30.6	30.3	30.1 *	30.5	-1.97 *	2.9	0.3	30.1	-2.28 *	3.0	0.9	8	LU
WKXNYV	31.2	30.5	32.8	30.5 *	31.2	-1.62	2.5	1.1	31.4	-1.64	2.5	1.1	8	LY
WMZM93	33.4	33.2	34.4	33.7	33.7	-0.53	2.0	0.5	33.5	-0.58	2.1	0.5	8	LU
WR9VRR	32.4	33.5	33.6	33.3	33.2	-0.75	2.4	0.5	32.9	-0.86	2.0	0.5	8	LH
WRVDFY_AL	36.5	36.7	36.1 L	37.9	36.8	0.87	2.3	0.8	35.9	0.62	2.2	1.3	8	XX
WVTXHX	37.1	37.5	34.6	35.1	36.1	0.53	2.7	1.4	36.0	0.69	2.5	1.2	8	LU
XDRCF3	39.1 L	37.3	38.0	35.6 L	37.5	1.18	1.4	1.5	36.3	0.81	1.7	1.7	8	LA
XQXMMP	38.1	38.8	38.6	38.3 H	38.5	1.61	2.9	0.3	38.8	2.06 *	2.6	0.9	8	LU
XRRB7K_AL	37.5 H	38.7 H	37.0	36.6	37.5	1.16	3.3	0.9	37.9	1.63	3.0	0.8	8	AL
Y3YMRE	33.7	34.0	34.0	34.6	34.1	-0.34	2.3	0.4	34.0	-0.32	2.2	0.4	8	LA
Y3YMRE_AL	33.5	34.0	33.8	33.6	33.7	-0.51	2.0	0.2 L	33.7	-0.48	2.2	0.6	8	AL
Y7M2GN	31.8	32.2	31.4	32.7	32.0	-1.28	2.1	0.5	31.6	-1.55	1.9	0.7	8	TT
YCAPDE	43.0 X	43.0 XH	42.7 *H	43.7 X	43.1	3.68 X	3.2	0.4	44.4	4.89 X	3.2	1.6	8	TT
ZTUXNH	34.7	34.9	34.8	34.9	34.8	-0.02	2.9	0.1 L	34.8	0.09	2.9	0.2 L	8	LA

Consensus (All Labs) Results

Wk Mean	34.88	34.94	35.18	34.97	Month Mean	34.87	Grand Mean	34.66
Avg SDr	2.57	2.31	2.29	2.15	Avg SD	2.32	Avg SD	2.37
SD btwn Labs	2.51	2.64	2.74	2.20	SD btwn Labs	2.23	SD btwn Labs	2.00
Labs Incld	60	62	63	56	SD btwn Wks	1.18	SD btwn Wks	1.23
Labs Excld	4	2	1	5	Labs Incld	60	Labs Incld	59
Labs not Rcvd	0	0	0	3				

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Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
BK	Buchel Strip Compression Tester BK-155	ID	IDM Compression Tester
LA	L&W Autoline (224 Enrollment)	LH	L&W 282
LU	L&W 52 without moisture correction (was 53)	LW	L&W 53 with moisture correction (was 53M)
LY	L&W 152 with moisture correction	LZ	L&W (model not specified)
TT	TMI Short Span Compression, 17-34 (MB K455)	XX	Instrument make/model not specified by lab

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	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
249AMX_AL	134.2	-0.08	19.11		130.1	-0.57	4.95	4	AL
2LQ73Q_AL	134.7	-0.04	23.07		127.4	-0.79	6.46	4	AL
2Z9YQX	144.0	0.76	25.58	H	148.6	0.99	9.58	4	EV
3FKWBP	149.5	1.23	7.98		153.0	1.36	3.62	4	EV
47PEAL	145.5	0.89	17.98		142.7	0.49	2.49	3	LA
4FEYFJ	120.9	-1.22	15.83		120.5	-1.37	3.87	4	LS
4FEYFJ_AL	133.0	-0.18	23.75		120.2	-1.39	10.07	4	AK
6PHEYW	239.4	8.91 X	66.89	H	233.2	8.09 X	45.30 H	4	LS
7MNC38	132.1	-0.26	10.19		135.3	-0.13	3.64	4	EV
7Q78CR_AL	141.0	0.50	13.88		136.1	-0.06	4.23	4	AL
8P622B	140.7	0.47	5.29	L	140.6	0.32	10.89	4	LA
9TMCYE	129.2	-0.51	11.70		119.8	-1.43	7.57	4	XX
9WMMUE_AI	136.7	0.13	20.83		129.6	-0.60	7.88	4	XX
A7A6LT	144.3	0.78	12.79		146.6	0.82	5.91	4	EV
AEYQRQ	116.9	-1.56	14.78		118.2	-1.57	2.59	4	EV
AKQXCK	259.1	10.60 X	24.87	H	199.9	5.29 X	63.51 H	4	EV
APJ6N2	125.7	-0.81	22.46		133.7	-0.26	7.07	4	LA
CYK6K7	117.1	-1.54	12.31		117.3	-1.64	1.45 L	4	EV
DQL73V_AL	155.3	1.72	12.77		150.5	1.15	5.41	3	AL
KG9FLC_AL	127.8	-0.63	14.09		127.4	-0.79	3.16	4	XX
KH6T96_AL	181.0	3.92 X	13.81		154.5	1.48	21.17	4	AL
L82ZE4	131.9	-0.28	11.95		133.3	-0.30	2.91	4	LS
LVPV42	121.3	-1.18	3.20	L	127.6	-0.77	4.50	4	LA
LWJJLX	137.9	0.24	21.22		138.9	0.17	3.64	4	LA
UN2P3M_AL	132.1	-0.26	9.64		144.7	0.67	23.09 H	4	AK
V6NFJ2	126.9	-0.71	14.69		134.5	-0.19	5.95	4	LS
W3UAEU	155.0	1.70	10.66		150.5	1.15	8.71	4	EV
W8LJNT_AL	126.4	-0.75	12.16		128.8	-0.67	3.92	4	AL
WKXNYV	157.2	1.89	13.23		152.1	1.29	3.47	4	EV
WVTXHX	109.8	-2.17 *	10.95		132.5	-0.36	44.97 H	4	EV
XRRB7K_AL	143.3	0.70	13.86		158.0	1.78	12.85	4	AL
Y3YMRE	135.9	0.06	11.08		206.3	5.83 X	61.27 H	3	LA
Y3YMRE_AL	147.1	1.02	14.82		152.3	1.30	6.75	3	AL
ZTUXNH	136.2	0.09	13.43		136.0	-0.07	1.03 L	4	LS

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Containerboard Interlaboratory Testing Program
Analysis 228
Roughness - Stylus Method, 42 lb Linerboard - 42F
TAPPI Official Test Method T575

Consensus (All Labs) Results

Month Mean	135.15	Grand Mean	136.82
Avg SD	15.27	Avg SD Months	11.49
SD btwn Labs	11.70	SD btwn Labs	11.91
Labs Incld	31	Labs Incld	31

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
EV	Emveco Microgage Model 210-R	LA	L&W Autoline (228 Enrollment)
LS	L&W 263	XX	Instrument make/model not specified by lab

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	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
249AMX_AL	346.1	-1.14	6.72		352.7	-0.65	4.50	4	AL
2RW3LQ	354.2	-0.02	7.01		354.2	-0.39	0.00	1	PP
2Z9YQX	346.0	-1.15	9.80		351.2	-0.91	4.25	4	XX
2Z9YQX_AL	353.0	-0.18	15.66	H	351.4	-0.87	2.96	4	AK
7Q78CR_AL	345.0	-1.29	3.92		350.7	-1.00	5.59	4	AL
9WMMUE_AI	353.1	-0.17	7.36		352.6	-0.66	7.19	4	XX
FXFQHW	403.0	6.73 X	5.68		408.6	9.04 X	4.45	4	TS
GK2CDZ	354.0	-0.05	5.89		355.8	-0.10	4.10	4	XX
LPZDM6_AL	360.6	0.87	6.50		359.4	0.52	2.11	4	AL
UN2P3M_AL	350.1	-0.59	5.57		353.9	-0.45	4.37	4	AK
VND4KF	358.1	0.52	5.63		365.9	1.64	7.13	4	PP
WRVDFY_AL	367.0	1.75	3.94		367.5	1.92 *	3.93	4	AL
XDRCF3	367.1	1.77	4.25		363.5	1.22	3.99	4	XX
Y3YMRE_AL	352.1	-0.31	6.10		355.0	-0.25	3.67	3	AL

Consensus (All Labs) Results

Month Mean	354.33	Grand Mean	356.42
Avg SD	7.42	Avg SD Months	4.71
SD btwn Labs	7.23	SD btwn Labs	5.77
Labs Incld	13	Labs Incld	13

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
PP	Technidyne Profile/Plus	TS	TMI Monitor/Smoothness
XX	Instrument make/model not specified by lab		

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Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 42 lb Linerboard - 42F

TAPPI Official Test Method T569

Report #622 (H)
July 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2RW3LQ	104.0	0.86	4.69		102.4	0.65	1.32 L	4	HY
2Z9YQX	85.2	-0.93	4.21		84.1	-1.29	2.50	3	TM
3FKWBP	89.8	-0.49	4.15		91.7	-0.49	1.72	4	TM
3JGFDM	243.3	14.13 X	151.14 H		334.3	25.13 X	103.64 H	4	SC
47PEAL	107.4	1.19	3.65		111.9	1.65	3.12	4	HY
4FEYFJ	85.1	-0.93	1.70		88.0	-0.87	2.24	4	TM
6PHEYW	73.8	-2.01 *	1.48		80.7	-1.65	5.04	4	TM
7MNC38	98.0	0.29	10.37 H		102.6	0.67	3.25	4	SC
A7A6LT	102.7	0.74	4.35		96.5	0.02	8.94	4	XX
AEYQRQ	90.8	-0.39	1.48		90.3	-0.64	1.72	4	HY
AKQXCK	135.2	3.84 X	15.99 H		102.2	0.62	24.62 H	4	TM
CYK6K7	94.8	-0.01	4.76		94.5	-0.19	5.53	4	TM
KG9FLC	104.0	0.86	5.48		108.4	1.28	13.47	4	TM
KH6T96	142.8	4.56 X	2.95		130.2	3.58 X	40.62 H	4	SC
KRCFCY	92.7	-0.22	3.75		90.3	-0.63	3.76	4	TM
LPZDM6	96.9	0.19	3.29		97.2	0.10	2.44	4	TM
PXKP8M	111.6	1.59	7.23		109.5	1.39	2.32	3	TM
RV66GA	94.8	-0.01	4.60		100.0	0.40	4.39	4	HZ
UN2P3M	83.6	-1.08	1.95		82.8	-1.42	5.50	4	TM
V6NFJ2	102.6	0.73	6.99		101.0	0.50	2.14	4	HY
VND4KF	108.2	1.26	5.02		107.5	1.18	1.25 L	4	HY
WMZM93	109.8	1.42	4.12		108.8	1.32	2.74	4	HY
WRVDFY	42.8	-4.96 X	1.08		40.8	-5.86 X	1.38	4	LZ
WVTXHX	80.4	-1.38	4.04		92.7	-0.38	21.23 H	4	TM
XDRCF3	90.4	-0.43	2.51		88.2	-0.85	1.74	4	SC
XRRB7K	104.0	0.86	4.18		105.0	0.92	4.08	4	SC
Y3YMRE	80.0	-1.42	4.47		89.1	-0.75	8.02	3	TM
ZAFH7M	87.5	-0.70	1.97		81.7	-1.54	5.54	3	TM

Consensus (All Labs) Results

Month Mean	94.92	Grand Mean	96.27
Avg SD	4.63	Avg SD Months	8.04
SD btwn Labs	10.50	SD btwn Labs	9.47
Labs Incld	24	Labs Incld	25

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Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	93.63	10.30	1.30	21
Modified Scott Bond Mechanics	108.62	1.73	13.70	2

Analysis Notes

WRVDFY - 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

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	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months		Months
249AMX	29.1	0.41	2.66		29.2	0.42	0.68		4
2NU9KF	24.1	-0.93	2.78		26.4	-0.56	2.90		4
2RW3LQ	25.4	-0.58	6.40	H	24.5	-1.21	1.32		4
2Z9YQX	28.1	0.13	2.68		29.0	0.35	1.12		4
3FKWBP	29.0	0.38	3.98		29.3	0.44	1.71		4
47PEAL	27.4	-0.05	2.97		30.7	0.93	2.36		4
4FEYFJ	28.6	0.27	3.21		27.8	-0.06	0.71		4
6PHEYW	25.4	-0.58	1.52		24.8	-1.12	2.36		4
7MNC38	29.0	0.38	4.18		29.0	0.36	0.29	L	4
8P622B	22.4	-1.39	1.47		25.0	-1.05	2.28		4
8YYZYB	23.4	-1.12	1.52		24.6	-1.17	0.85		4
9TMCYE	24.6	-0.80	5.90	H	26.0	-0.70	3.66		4
A7A6LT	18.2	-2.51 *	0.84		22.3	-1.97 *	2.81		4
AKQXCK	33.4	1.56	3.85		30.6	0.91	4.60	H	4
B9QUE4	32.6	1.35	0.55	L	31.8	1.32	0.72		3
B9V878	23.0	-1.23	0.71	L	22.9	-1.76	0.14		2
CAH6VP	31.6	1.08	1.14		32.7	1.64	0.84		4
GK2CDZ	33.9	1.69	2.07		30.1	0.73	3.51		4
KG9FLC	27.1	-0.13	4.10		29.1	0.39	1.67		4
KH6T96	28.8	0.33	1.79		30.6	0.92	1.95		4
L82ZE4	27.8	0.05	6.58	H	28.4	0.16	0.75		4
UN2P3M	28.7	0.29	4.47		29.2	0.43	0.95		4
UZAHEY	34.2	1.77	1.92		33.9	2.04 *	0.70		4
VND4KF	33.0	1.45	4.64		32.0	1.38	0.72		4
W3UAEU	25.6	-0.53	3.21		25.1	-1.02	2.37		4
W8LJNT	27.8	0.06	1.92		27.4	-0.20	0.98		4
WKXNYV	31.5	1.05	1.55		29.6	0.55	3.61		4
WMZM93	28.9	0.36	1.91		26.6	-0.49	2.40		4
WRVDFY	25.2	-0.64	0.84		27.9	-0.05	1.98		4
WVTXHX	27.2	-0.10	4.21		30.2	0.77	3.25		4
XDRCF3	29.2	0.43	0.84		28.9	0.30	0.25	L	4
XRRB7K	25.0	-0.69	0.71	L	25.5	-0.86	1.99		4
Y3YMRE	21.2	-1.71	1.30		23.5	-1.54	2.21		3
ZTUXNH	27.4	-0.05	0.55	L	27.2	-0.27	0.16	L	4

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Containerboard Interlaboratory Testing Program
Analysis 234
COF Inclined Plane (Slide Angle), 42 lb Linerboard - 42F
TAPPI Official Test Method T815

Consensus (All Labs) Results

Month Mean	27.58	Grand Mean	27.98
Avg SD	3.11	Avg SD Months	2.08
SD btwn Labs	3.73	SD btwn Labs	2.88
Labs Incld	34	Labs Incld	34

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

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	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
249AMX_AL	21.4	-1.02	1.96		20.8	-1.85	0.59	4	AL
2KJQUZ	22.1	-0.42	3.73	H	21.4	-1.08	0.75	4	GS
2LQ73Q	23.2	0.52	1.03		22.8	0.52	0.43	4	LA
2LQ73Q_AL	22.5	-0.08	1.84		22.6	0.23	0.78	4	AL
2RW3LQ	22.1	-0.39	2.39		22.1	-0.27	0.00	1	TP
2Z9YQX_AL	22.6	0.04	2.07		22.1	-0.27	0.88	4	AK
3FKWBP	21.8	-0.68	2.90		22.6	0.26	2.38 H	4	GA
47PEAL	23.1	0.44	2.02		22.8	0.52	0.50	4	LP
4FEYFJ_AL	23.5	0.79	1.70		22.3	-0.13	0.86	4	AK
6PHEYW	24.4	1.59	2.19		23.0	0.68	3.74 H	4	TD
7MNC38	21.9	-0.58	1.19		22.8	0.51	0.68	4	LP
7Q78CR_AL	23.4	0.69	1.02		23.2	0.95	0.28	4	AL
8P622B	21.6	-0.87	1.57		21.7	-0.73	0.44	4	LA
9TMCYE	22.5	-0.08	2.92		21.8	-0.70	0.55	4	LP
9WMMUE_AI	22.8	0.15	2.20		22.9	0.64	0.34	4	XX
A7A6LT	23.1	0.43	1.56		22.8	0.51	0.96	4	LP
AKQXCK_AL	21.7	-0.74	0.94		21.9	-0.53	0.68	4	AL
APJ6N2	25.5	2.53 *	2.31		22.2	-0.25	2.32	4	LA
B9QUE4	22.4	-0.16	2.02		21.7	-0.77	0.84	3	LA
BPFX4K	22.6	-0.03	1.50		23.3	1.11	0.73	4	LP
D7ERPB	20.2	-2.05 *	2.43		20.3	-2.39 *	0.68	4	GA
DQL73V_AL	20.8	-1.55	1.24		21.1	-1.50	0.42	2	XX
G8FXHD	22.1	-0.43	0.81	L	22.0	-0.44	0.88	4	LP
GK2CDZ	23.6	0.89	3.02		23.2	0.92	0.96	4	GA
KG9FLC_AL	23.3	0.57	2.50		23.3	1.11	0.88	4	XX
KH6T96_AL	23.5	0.80	0.88	L	23.3	1.04	0.82	4	AL
L82ZE4	22.6	-0.04	3.18		21.5	-1.01	0.92	4	XX
LPZDM6_AL	22.5	-0.09	1.64		21.9	-0.57	0.43	4	AL
LVPV42	21.9	-0.62	0.42	L	23.0	0.73	0.90	4	LA
LWJJLX	23.3	0.62	1.52		23.4	1.22	0.71	4	LA
PABL9L	22.3	-0.25	1.49		23.4	1.18	1.19	4	GG
UN2P3M_AL	22.8	0.20	3.83	H	20.6	-2.04 *	2.58 H	4	AK
UZAHEY_AL	22.6	-0.03	1.95		22.6	0.21	0.27	4	AL
V6NFJ2	21.8	-0.65	1.43		22.4	0.03	0.45	4	LP
VND4KF	23.2	0.54	4.83	H	22.8	0.43	1.70	4	TP
VRYGTY	22.5	-0.08	1.78		21.9	-0.52	0.76	4	XX
W3UAEU	18.8	-3.22 X	1.23		18.4	-4.64 X	0.91	4	XX
W8LJNT_AL	21.8	-0.72	0.90	L	21.8	-0.67	0.14 L	4	AL
WMZM93	22.0	-0.48	3.08		21.9	-0.51	0.61	4	TP

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Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42F3

TAPPI Official Test Method T460

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV		SD	Mean	CPV		SD Months	Months	Inst
WRVDFY_AL	24.0	1.20		1.83	23.7	1.55		0.45	4	AL
WVTXHX_AI	21.3	-1.15		1.05	23.2	0.96		1.39	4	AL
XRRB7K_AL	19.8	-2.40	*	1.75	21.6	-0.90		2.45 H	4	AL
Y3YMRE	25.7	2.65	*	1.40	25.2	3.27	X	0.41	3	LA
Y3YMRE_AL	24.3	1.44		1.02	24.4	2.31	*	0.33	3	AL
ZTUXNH	22.0	-0.51		1.33	22.0	-0.49		0.19 L	4	LA

Consensus (All Labs) Results

Month Mean	22.59	Grand Mean	22.38
Avg SD	2.12	Avg SD Months	1.18
SD btwn Labs	1.16	SD btwn Labs	0.87
Labs Incld	44	Labs Incld	43

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
GA	Gurley Precision #4340 Automatic Densometer	GG	Gurley Precision #4320 Densometer
GS	Gurley Hill S-P-S Tester #4190	LA	L&W Autoline (237 Enrollment)
LP	L&W Air Permeance Tester SE 166	TD	TMI Gurley Densometer
TP	Technidyne Profile/ plus Roughness & Porosity	XX	Instrument make/model not specified by lab

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2KJQUZ	53.7	56.1 H	54.8	53.1	54.4	-1.41	5.4	1.3	54.4	-1.41	5.4	1.3	4	LD
2LQ73Q	65.7 *	64.0	64.4	61.1	63.8	1.95 *	3.0	2.0	63.8	1.95 *	3.0	2.0	4	LZ
2MLP6T	63.0	63.9 H	64.5 *	62.2	63.4	1.82	4.6	1.0	63.4	1.82	4.6	1.0	4	LC
2NU9KF	62.4	61.5	62.1	62.4	62.1	1.34	3.3	0.4	62.1	1.34	3.3	0.4	4	LD
34QJBR	53.3	57.0	55.2	55.0	55.1	-1.16	4.5	1.5	55.1	-1.16	4.5	1.5	4	EM
36ZMMV	61.4 L	60.0 L	64.0 L	60.9 L	61.6	1.15	1.0	1.7	61.6	1.15	1.0	1.7	4	XX
386DRP	44.7 XH	42.1 X	43.1 X	43.5 X	43.4	-5.38 X	5.4	1.0	43.4	-5.38 X	5.4	1.0	4	TC
3FKWBP	55.1	56.2	54.6	58.8	56.2	-0.79	3.2	1.9	56.2	-0.79	3.2	1.9	4	LD
3JGFDM	54.0	56.3	56.6	56.9	55.9	-0.87	3.2	1.3	55.9	-0.87	3.2	1.3	4	LC
47PEAL	54.2	55.7	54.7	57.6	55.6	-1.01	2.7	1.5	55.6	-1.01	2.7	1.5	4	LD
4WX6GH	59.4	59.4 L	59.3 L	59.6 L	59.4	0.37	1.5	0.1 L	59.4	0.37	1.5	0.1 L	4	LD
8P622B	52.4	49.3 X	50.7 *H	58.5	52.7	-2.02 *	5.8	4.1 H	52.7	-2.02 *	5.8	4.1 H	4	MB
8YYZYB	56.2	56.4	55.4	57.5	56.4	-0.71	3.3	0.9	56.4	-0.71	3.3	0.9	4	LZ
99XY43	58.2	58.0	57.0	60.0	58.3	-0.03	4.8	1.3	58.3	-0.03	4.8	1.3	4	TG
9EPAD2	59.8 H	58.7	58.6	59.2	59.1	0.26	5.4	0.6	59.1	0.26	5.4	0.6	4	TJ
9TMCYE	61.6	61.3	63.0	56.6	60.6	0.81	3.9	2.8	60.6	0.81	3.9	2.8	4	LD
9W6VJA	57.9	60.6	55.5	60.8	58.7	0.12	3.8	2.5	58.7	0.12	3.8	2.5	4	LZ
9WMMUE	56.9	57.6	57.4	56.3	57.1	-0.47	4.5	0.6	57.1	-0.47	4.5	0.6	4	LD
A7A6LT	60.2	58.2	58.8	57.8	58.7	0.13	3.4	1.0	58.7	0.13	3.4	1.0	4	LZ
APJ6N2	57.7	58.0	59.0	58.0	58.2	-0.07	4.7	0.5	58.2	-0.07	4.7	0.5	4	MB
BPFX4K	60.0	58.5	59.7	58.7	59.2	0.31	2.9	0.7	59.2	0.31	2.9	0.7	4	LD
BY6LZ9	59.5	58.7	58.4	58.2	58.7	0.11	2.1	0.6	58.7	0.11	2.1	0.6	4	LD
CYK6K7	54.8	55.2	58.8	63.4	58.1	-0.11	3.1	4.0 H	58.1	-0.11	3.1	4.0 H	4	LC
D4A9H3	65.1 *	63.9	61.2	64.9 *	63.8	1.93	4.4	1.8	63.8	1.93	4.4	1.8	4	TH
D7ERPB	60.2	57.8	58.4	55.8	58.0	-0.12	5.0	1.8	58.0	-0.12	5.0	1.8	4	LD
DQL73V	54.6	54.5	52.2 *	53.1	53.6	-1.71	3.7	1.2	53.6	-1.71	3.7	1.2	4	LD
E43CVA	56.9	56.1	56.9	57.8 L	56.9	-0.53	3.1	0.7	56.9	-0.53	3.1	0.7	4	LD
EX3W9M	60.8	58.1	58.1	55.9	58.2	-0.06	3.3	2.0	58.2	-0.06	3.3	2.0	4	LD
G8FXHD	57.3	54.1	56.6	58.2	56.5	-0.65	3.8	1.8	56.5	-0.65	3.8	1.8	4	LD
GK2CDZ	58.8	58.0	61.0	56.1	58.5	0.05	3.1	2.0	58.5	0.05	3.1	2.0	4	LZ
GXBVBV	58.3 L	57.4 L	58.0 L	57.6 L	57.8	-0.19	1.3	0.4	57.8	-0.19	1.3	0.4	4	LC
GXPDCF	57.8 L	57.7 L	57.7 L	57.5 L	57.7	-0.24	1.1	0.1 L	57.7	-0.24	1.1	0.1 L	4	LD
HBT3L2	61.3 H	61.4 H	57.6 H	50.7 *H	57.7	-0.23	9.5	5.0 H	57.7	-0.23	9.5	5.0 H	4	XX
HHQXJZ	56.2	60.1	56.3	56.1	57.2	-0.42	2.8	1.9	57.2	-0.42	2.8	1.9	4	TH
J3XDLC	64.0	63.1	60.3	61.2	62.2	1.36	3.6	1.7	62.2	1.36	3.6	1.7	4	LD

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
J6YH2H	59.1	59.1	59.8	59.4	59.4	0.36	3.2	0.3	59.4	0.36	3.2	0.3	4	LD
KKAJBD	65.1 *L	65.4 *L	65.3 *L	65.5 *	65.3	2.49 *	1.7	0.2 L	65.3	2.49 *	1.7	0.2 L	4	MB
LD7WX4	56.2	61.0	60.6	58.2	59.0	0.22	4.2	2.2	59.0	0.22	4.2	2.2	4	LD
LWJJLX	60.7	65.9 *	64.3	67.1 X	64.5	2.20 *	5.0	2.8	64.5	2.20 *	5.0	2.8	4	TU
RMZX2B	59.5	61.6	62.4	61.0	61.1	0.99	3.1	1.2	61.1	0.99	3.1	1.2	4	TU
RV66GA	58.0	56.2	57.9	57.9	57.5	-0.31	4.0	0.9	57.5	-0.31	4.0	0.9	4	LD
UK39QT	58.1	56.0	57.7	56.1	57.0	-0.49	2.9	1.1	57.0	-0.49	2.9	1.1	4	LD
UN2P3M	56.4	55.2	58.1	56.2	56.5	-0.68	4.7	1.2	56.5	-0.68	4.7	1.2	4	LD
V6NFJ2	No Data	No Data	No Data	57.0	57.0	-0.49	4.5	0.0	57.0	-0.49	4.5	0.0	1	LD
VND4KF	60.4	61.4	60.6	60.3	60.7	0.82	3.9	0.5	60.7	0.82	3.9	0.5	4	LD
VT9QKV	56.9	58.3	57.7	58.1	57.8	-0.22	3.0	0.6	57.8	-0.22	3.0	0.6	4	LD
W8LJNT	59.4	59.9	60.8 L	61.7	60.4	0.74	3.2	1.0	60.4	0.74	3.2	1.0	4	LZ
WCXCVK	51.9 *	54.7	55.7	55.7	54.5	-1.39	4.2	1.8	54.5	-1.39	4.2	1.8	4	TH
WKXNYV	62.6	64.3	57.9	61.0	61.4	1.10	3.3	2.7	61.4	1.10	3.3	2.7	4	EN
WMZM93	57.5	55.8	58.2	56.3	56.9	-0.51	3.4	1.1	56.9	-0.51	3.4	1.1	4	LC
WR9VRR	56.7	55.0	53.3	55.6	55.1	-1.16	2.8	1.4	55.1	-1.16	2.8	1.4	4	EN
WRVDFY	54.5	53.1	53.3	54.2	53.8	-1.64	3.0	0.7	53.8	-1.64	3.0	0.7	4	LD
WTP2YU	57.6	57.0	58.0	58.3	57.7	-0.23	3.3	0.6	57.7	-0.23	3.3	0.6	4	LC
WVTXHX	56.8	63.4	58.4	56.1	58.7	0.11	4.0	3.3	58.7	0.11	4.0	3.3	4	LC
Y3YMRE	56.1	56.6	55.3	56.4	56.1	-0.82	4.1	0.6	56.1	-0.82	4.1	0.6	4	LD
ZTUXNH	58.2	57.9	58.5	58.9	58.4	0.00	2.4	0.4	58.4	0.00	2.4	0.4	4	LD

Consensus (All Labs) Results

Wk Mean	58.34	58.70	58.33	58.17	Month Mean	58.36	Grand Mean	58.36
Avg SDr	3.80	3.94	4.10	3.45	Avg SD	3.84	Avg SD	3.84
SD btwn Labs	3.20	3.13	3.17	2.84	SD btwn Labs	2.79	SD btwn Labs	2.79
Labs Incld	54	53	54	54	SD btwn Wks	1.77	SD btwn Wks	1.77
Labs Excld	1	2	1	2	Labs Incld	55	Labs Incld	55
Labs not Rcvd	1	1	1	0				

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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	TG	TMI Compression Tester, Model 17-10
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

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Containerboard Interlaboratory Testing Program

Analysis 250

Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T843

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
36ZMMV	70.9 L	71.6 L	70.0 L	70.9 L	70.8	0.76	0.8	0.6	70.8	0.76	0.8	0.6	4	XX
47PEAL	73.7	74.2 *	71.7 H	73.0 *	73.2	1.94 *	4.2	1.1	73.2	1.94 *	4.2	1.1	4	LD
9TMCYE	73.6	67.0 H	68.7	59.8 XH	67.3	-1.05	5.2	5.7 H	67.3	-1.05	5.2	5.7 H	4	LD
9W6VJA	68.8	68.4	69.0	70.4	69.2	-0.09	4.1	0.9	69.2	-0.09	4.1	0.9	4	LZ
BPFX4K	66.5	68.8	67.9	68.2	67.9	-0.73	3.5	1.0	67.9	-0.73	3.5	1.0	4	LD
BY6LZ9	68.2	68.3	71.4	71.4	69.8	0.25	1.7	1.8	69.8	0.25	1.7	1.8	4	LD
G8FXHD	70.7	70.1	73.3 *	69.1	70.8	0.75	3.8	1.8	70.8	0.75	3.8	1.8	4	LD
GC9XWA	69.6	69.9	68.7	70.1	69.6	0.12	2.1	0.6	69.6	0.12	2.1	0.6	4	LD
GXPDCF	69.0 L	69.1	69.2	69.2	69.1	-0.10	1.7	0.1 L	69.1	-0.10	1.7	0.1 L	4	LD
KKAJBD	71.1	70.8 L	71.4	71.6	71.2	0.96	1.6	0.3	71.2	0.96	1.6	0.3	4	MB
UN2P3M	67.7	69.1	68.6	67.0	68.1	-0.63	3.9	0.9	68.1	-0.63	3.9	0.9	4	LD
V6NFJ2	No Data	No Data	No Data	71.2	71.2	0.96	3.4	0.0	71.2	0.96	3.4	0.0	1	LD
VND4KF	66.1	66.4	68.3	66.7	66.9	-1.24	3.8	1.0	66.9	-1.24	3.8	1.0	4	LD
VRYGTY	67.5	68.0	67.7	68.3	67.9	-0.73	2.2	0.4	67.9	-0.73	2.2	0.4	4	LZ
W8LJNT	67.5	67.2	66.1 *	67.1	67.0	-1.19	3.0	0.6	67.0	-1.19	3.0	0.6	4	LZ
WCXCVK	61.8 X	63.0 *	60.1 X	61.1 X	61.5	-3.98 X	2.9	1.2	61.5	-3.98 X	2.9	1.2	4	TH
WKXNYV	67.8	68.2	67.8	65.8	67.4	-0.98	4.1	1.1	67.4	-0.98	4.1	1.1	4	EN
WMZM93	73.1 L	67.9	70.1	70.0	70.3	0.48	2.1	2.1	70.3	0.48	2.1	2.1	4	LC
WRVDFY	67.8	66.9	68.2	67.4	67.6	-0.88	3.6	0.6	67.6	-0.88	3.6	0.6	4	LD
WTP2YU	70.8	70.7	69.6 H	68.8	70.0	0.33	4.4	1.0	70.0	0.33	4.4	1.0	4	LD
WVTXHX	72.3	71.2	70.6	81.8 X	74.0	2.36 *	3.4	5.3 H	74.0	2.36 *	3.4	5.3 H	4	LC
Y3YMRE	67.9	67.1	69.2	65.8	67.5	-0.93	4.1	1.4	67.5	-0.93	4.1	1.4	4	LD
ZTUXNH	68.8	68.9	68.5	68.4	68.7	-0.34	2.8	0.2 L	68.7	-0.34	2.8	0.2 L	4	LD

Consensus (All Labs) Results

Wk Mean	69.49	68.77	69.33	69.03	Month Mean	69.33	Grand Mean	69.33
Avg SDr	3.31	3.36	3.03	3.38	Avg SD	3.35	Avg SD	3.35
SD btwn Labs	2.30	2.26	1.66	2.02	SD btwn Labs	1.97	SD btwn Labs	1.97
Labs Incld	21	22	21	20	SD btwn Wks	1.97	SD btwn Wks	1.97
Labs Excld	1	0	1	3	Labs Incld	22	Labs Incld	22
Labs not Rcvd	1	1	1	0				

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Key to Instrument Codes Reported by Participants

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	TH	TMI Compression Tester, Model 17-76
XX	Instrument make/model not specified by lab		

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	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2MLP6T	32.0 *H	33.9 *H	29.5 XH	29.6 X	31.3	-3.56 X	5.4	2.1	31.3	-3.56 X	5.4	2.1	4	XX
34QJBR	43.8	42.8	44.3 H	44.1	43.7	0.38	3.6	0.7	43.7	0.38	3.6	0.7	4	EM
386DRP	35.3	38.9 H	36.0 *H	36.1	36.6	-1.88	5.3	1.6	36.6	-1.88	5.3	1.6	4	TC
3W4WXE	43.1	41.2	45.1	42.2	42.9	0.12	3.4	1.7	42.9	0.12	3.4	1.7	4	LD
47PEAL	42.1	45.6	44.4	44.6	44.2	0.52	2.7	1.5	44.2	0.52	2.7	1.5	4	XX
4WX6GH	45.7 L	45.8	45.6	45.4	45.6	0.98	1.4	0.2 L	45.6	0.98	1.4	0.2 L	4	LD
8P622B	43.6	43.0	43.6	41.0	42.8	0.09	3.7	1.2	42.8	0.09	3.7	1.2	4	MB
948NAR	47.6	41.9	41.6 L	44.8	43.9	0.44	2.5	2.8 H	43.9	0.44	2.5	2.8 H	4	TH
BPFX4K	44.9	43.8	43.5	41.6 H	43.4	0.29	4.4	1.4	43.4	0.29	4.4	1.4	4	LD
D4A9H3	35.5	38.5	35.4 *	38.8	37.0	-1.73	3.1	1.9	37.0	-1.73	3.1	1.9	4	LZ
D7ERPB	34.9	35.1 *H	41.0	33.8 *H	36.2	-2.00 *	5.1	3.2 H	36.2	-2.00 *	5.1	3.2 H	4	LD
DQL73V	41.5	41.2	38.9	39.3	40.2	-0.73	3.1	1.3	40.2	-0.73	3.1	1.3	4	LD
E43CVA	44.4	44.7 L	44.0	43.0	44.0	0.47	2.4	0.7	44.0	0.47	2.4	0.7	4	LC
EX3W9M	43.7	41.6	42.2	40.5	42.0	-0.17	3.2	1.3	42.0	-0.17	3.2	1.3	4	EM
G8FXHD	43.7	45.0	44.7	43.7	44.3	0.55	3.2	0.7	44.3	0.55	3.2	0.7	4	LD
GK2CDZ	38.1	40.8	42.4	42.0	40.8	-0.54	2.5	1.9	40.8	-0.54	2.5	1.9	4	LD
GXBVBV	48.0 L	47.8 L	48.0	47.7 L	47.9	1.69	1.1	0.2 L	47.9	1.69	1.1	0.2 L	4	LC
HHQXJZ	36.6	33.0 *	36.1 *	37.2	35.7	-2.15 *	2.2	1.9	35.7	-2.15 *	2.2	1.9	4	TH
J6YH2H	44.8	44.9	44.7	44.5	44.7	0.69	2.3	0.2 L	44.7	0.69	2.3	0.2 L	4	LD
KKAJBD	43.3 L	43.9	41.9	42.7	42.9	0.13	1.6	0.8	42.9	0.13	1.6	0.8	4	MB
LD7WX4	44.5	43.0	45.2	45.1	44.5	0.61	3.1	1.0	44.5	0.61	3.1	1.0	4	LD
RMZX2B	39.9	39.4	40.7	38.2	39.5	-0.94	2.5	1.0	39.5	-0.94	2.5	1.0	4	TU
RV66GA	44.6	42.3	44.4	43.5	43.7	0.37	4.0	1.0	43.7	0.37	4.0	1.0	4	LD
VND4KF	44.7	47.2	43.9	45.6	45.3	0.89	3.0	1.4	45.3	0.89	3.0	1.4	4	LD
WCXCVK	38.1	39.1	39.8	38.1	38.8	-1.18	2.5	0.8	38.8	-1.18	2.5	0.8	4	TH
WE6Q4C	44.9	42.1 H	44.0	45.3	44.1	0.49	4.2	1.4	44.1	0.49	4.2	1.4	4	XX
WMZM93	44.6	46.4	47.2	45.1	45.8	1.04	3.3	1.2	45.8	1.04	3.3	1.2	4	LC
WRVDFY	42.1	41.6 L	41.7	42.8	42.0	-0.16	1.7	0.5	42.0	-0.16	1.7	0.5	4	LD
YRLGZK	45.9	46.3	45.0	44.8	45.5	0.94	3.3	0.7	45.5	0.94	3.3	0.7	4	LZ
ZTUXNH	44.9	44.8	45.9	44.5	45.0	0.79	3.5	0.6	45.0	0.79	3.5	0.6	4	LD

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Consensus (All Labs) Results

Wk Mean	42.23	42.18	42.80	42.27	Month Mean	42.53	Grand Mean	42.53
Avg SDr	3.56	3.37	3.04	2.96	Avg SD	3.18	Avg SD	3.18
SD btwn Labs	4.05	3.71	3.18	3.31	SD btwn Labs	3.17	SD btwn Labs	3.17
Labs Incld	30	30	29	29	SD btwn Wks	1.40	SD btwn Wks	1.40
Labs Excld	0	0	1	1	Labs Incld	29	Labs Incld	29
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	TU	TMI Universal Crush Tester (TMI K440)
XX	Instrument make/model not specified by lab		

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Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T826

Report #622 (H)
July 2021

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2CMZ6H	13.6	13.2	14.5	14.6	14.0	0.67	0.9	0.7	14.0	0.67	0.9	0.7	4	LU
2NU9KF	14.3	14.4	14.2 L	13.9	14.2	1.03	0.7	0.2	14.2	1.03	0.7	0.2	4	LH
36ZMMV	13.8	12.3	12.8	12.9	12.9	-1.18	1.0	0.6	12.9	-1.18	1.0	0.6	4	XX
386DRP	13.0	12.7	12.9	13.2	12.9	-1.15	1.1	0.2	12.9	-1.15	1.1	0.2	4	TS
3FKWBP	12.8	13.4	13.2	12.7	13.0	-0.95	1.1	0.3	13.0	-0.95	1.1	0.3	4	LU
3W4WXE	13.1	12.9	13.5	13.2	13.2	-0.75	0.9	0.3	13.2	-0.75	0.9	0.3	4	LA
4FEYFJ	13.6	13.9	14.1	13.7	13.8	0.39	1.0	0.2	13.8	0.39	1.0	0.2	4	LA
8P622B	13.7	14.2 L	14.4	13.1	13.8	0.43	1.0	0.6	13.8	0.43	1.0	0.6	4	LA
9EPAD2	14.1	13.4	13.5	13.6	13.7	0.10	1.0	0.3	13.7	0.10	1.0	0.3	4	TT
APJ6N2	13.0	13.0	12.7	13.2	13.0	-1.05	1.2	0.2	13.0	-1.05	1.2	0.2	4	LA
D7ERPB	14.3 H	14.0 H	15.1	15.3 *	14.7	1.84	1.4	0.6	14.7	1.84	1.4	0.6	4	LA
DQL73V	9.4 X	10.3 X	10.2 X	7.5 XH	9.4	-7.35 X	1.1	1.3 H	9.4	-7.35 X	1.1	1.3 H	4	LZ
E43CVA	13.7	13.1	13.4	14.1	13.6	-0.06	1.0	0.4	13.6	-0.06	1.0	0.4	4	LH
GK2CDZ	13.4	12.9	13.7	12.7	13.2	-0.74	1.1	0.5	13.2	-0.74	1.1	0.5	4	LZ
GXPDCF	13.8 L	13.8 L	13.8 L	13.9 L	13.8	0.40	0.4	0.1 L	13.8	0.40	0.4	0.1 L	4	LA
LWJJLX	13.8	14.8 *	14.4	13.9	14.2	1.09	1.0	0.5	14.2	1.09	1.0	0.5	4	LA
TYJ8VT	14.5	14.4 L	14.4	14.1	14.3	1.25	0.9	0.2	14.3	1.25	0.9	0.2	4	LA
UN2P3M	14.7 *	14.6	15.1	15.2 *	14.9	2.26 *	1.2	0.3	14.9	2.26 *	1.2	0.3	4	LA
VND4KF	13.2 L	12.6 H	13.5	13.6	13.2	-0.66	1.1	0.4	13.2	-0.66	1.1	0.4	4	LB
VT9QKV	13.5	13.2	14.3	13.7	13.7	0.13	1.0	0.4	13.7	0.13	1.0	0.4	4	LB
WCXCVK	12.9	12.7	13.3	13.2	13.0	-0.99	1.2	0.3	13.0	-0.99	1.2	0.3	4	LH
WKXNYV	12.6	12.9	12.3 *	12.4	12.5	-1.86	0.9	0.3	12.5	-1.86	0.9	0.3	4	LB
WMZM93	13.0	13.4	14.3	13.5	13.5	-0.10	0.9	0.5	13.5	-0.10	0.9	0.5	4	LU
WR9VRR	13.6	13.9	13.0	13.8	13.6	-0.04	1.0	0.4	13.6	-0.04	1.0	0.4	4	LH
WRVDFY	14.0	13.9	14.1	13.5	13.9	0.49	1.0	0.3	13.9	0.49	1.0	0.3	4	LA
WTP2YU	13.2	13.9	13.0	12.6	13.1	-0.81	0.9	0.5	13.1	-0.81	0.9	0.5	4	LB
ZTUXNH	13.7	13.5	13.9	13.9	13.8	0.26	1.2	0.2	13.8	0.26	1.2	0.2	4	LB

Consensus (All Labs) Results

Wk Mean	13.57	13.49	13.74	13.59	Month Mean	13.60	Grand Mean	13.60
Avg SDr	0.93	1.04	1.11	0.98	Avg SD	1.01	Avg SD	1.01
SD btwn Labs	0.54	0.67	0.73	0.72	SD btwn Labs	0.58	SD btwn Labs	0.58
Labs Incld	26	26	26	26	SD btwn Wks	0.40	SD btwn Wks	0.40
Labs Excld	1	1	1	1	Labs Incld	26	Labs Incld	26
Labs not Rcvd	0	0	0	0				

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Key to Instrument Codes Reported by Participants

LA	L&W Autoline	LB	L&W Model 152
LH	L&W 282	LU	L&W 52 without moisture correction (was 53)
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

End of Report

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