Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #625 (L) - October 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	42F4	Bursting Strength (Mullen), 42 lb Linerboard
207	35E2	Bursting Strength (Mullen), 35 lb Linerboard
215	42F4	Ring Crush, 42 lb Linerboard
217	35E2	Ring Crush, 35 lb Linerboard
223	42F4	STFI, 42 lb Linerboard
225	35E2	STFI, 35 lb Linerboard
228	42F4	Roughness - Stylus Method, 42 lb Linerboard
229	42F4	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	CM12	July 2021 - Current
	CM11	April 2019 - June 2021
35# Corrugating Medium	35E2	June 2020 - Current
	35E1	June 2017 - April 2020
42# Corrugating Medium	42F4	August 2021 - Current
	42F3	November 2020 - July 2021
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
2GGBHD	843.6	0.53	35.63		830.6	0.35	14.94	4	EX
3AFKA8	826.3	0.20	34.39		815.5	0.06	34.48	4	EX
4TKH9U	871.2	1.07	19.69		866.5	1.05	15.75	4	ER
6CYATB	838.2	0.43	57.53		827.1	0.29	13.32	4	LM
7LDTL7	896.6	1.56	37.52		889.8	1.50	8.44	4	EM
8KHP74	791.2	-0.49	76.08		785.3	-0.52	8.30	2	LS
9KGYXZ	913.1	1.88	38.21		919.1	2.07 *	11.12	4	EX
9TA8F7	755.1	-1.19	42.79		692.6	-2.32 *	45.39	4	LS
BR97DB	832.8	0.32	67.50		854.4	0.81	21.77	4	ER
BTXKVU	820.1	0.08	45.72		822.7	0.20	30.97	4	ER
DRFAVR	752.2	-1.25	66.06		702.3	-2.13 *	80.37 H	4	TB
EHLN3Y	805.6	-0.21	28.50		778.8	-0.65	19.27	4	LS
F2GEXT	890.6	1.45	26.47		856.2	0.85	26.54	4	EX
FUVJWN	839.8	0.46	31.56		846.4	0.66	39.48	4	EX
GRMQFV	798.8	-0.34	97.96		784.3	-0.54	22.22	4	ET
HEFZHU	764.6	-1.00	22.96		737.5	-1.45	20.65	4	LG
JPQWVW	819.2	0.06	47.06		804.8	-0.15	40.51	4	LL
K3BW2P	861.6	0.88	24.15		847.6	0.68	21.81	4	LG
KL6PQT	746.6	-1.35	61.32		825.0	0.25	54.47	4	LG
KMLN7C	767.9	-0.94	40.36		756.7	-1.08	29.14	4	LM
NA39UN	808.6	-0.15	48.28		813.2	0.02	38.29	4	LG
QPNT6R	828.4	0.24	95.23		824.4	0.23	30.92	4	LG
RQJDP7	790.5	-0.50	22.92		802.6	-0.19	11.07	4	LL
TB2ZTQ	716.6	-1.94 *	67.12		774.7	-0.73	46.60	4	LJ
TD3D7H	718.6	-1.90	105.54 H		747.5	-1.26	22.79	4	LL
TK4H6T	872.0	1.09	39.41		836.1	0.46	44.65	4	ES
WF3D4K	872.0	1.09	44.10		858.6	0.90	54.20	4	LO
X3B6JN	817.7	0.03	94.30		815.2	0.05	31.35	4	ER
ZC8ZLC	811.0	-0.10	40.11		842.9	0.59	34.43	4	LS

Consensus (All Labs) Results

Month Mean	816.22	Grand Mean	812.36
Avg SD	55.72	Avg SD Months	34.18
SD btwn Labs	51.39	SD btwn Labs	51.62
Labs Incld	29	Labs Incld	29

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	814.28	66.12	1.95	9
Water based adhesive sealing	896.60	0.00	80.38	1
Clip sealing	812.92	42.34	3.31	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
LJ	TLS / L.A.B. Val Series	LL	Lansmont 76-5K
LM	Lansmont 122-15k	LO	Lansmont 152-30k
LS	Lansmont Squeezer	TB	TMI Monitor/Compression Tester, Model 17-70

Containerboard Interlaboratory Testing Program

Analysis 202

Edgewise Compressive Strength, by T811, Corrugated Board - EC13

TAPPI Official Test Method T811

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2GGBHD	44.6	0.32	3.20		44.4	0.24	1.13	4	LC
7GKQH7	43.2	-0.27	0.63	L	42.2	-0.73	1.11	3	TX
9TA8F7	33.6	-4.31 X	2.29		32.0	-5.09 X	1.28	4	EM
K3BW2P	45.5	0.70	1.41		45.7	0.79	1.11	4	EM
QPNT6R	41.7	-0.90	3.17		42.9	-0.40	0.83	4	LE
R86Y9B	48.6	1.98 *	1.27		47.0	1.36	1.40	4	XX
TFV2PD	45.1	0.52	2.66		46.3	1.05	1.02	4	LC
X3B6JN	41.6	-0.93	3.29		42.9	-0.41	1.39	4	EN
ZC8ZLC	43.3	-0.25	1.65		43.8	-0.03	0.73	4	LD
ZV3NZE	41.0	-1.18	1.65		39.5	-1.87 *	2.24	4	LD

Consensus (All Labs) Results

Month Mean	43.84	Grand Mean	43.87
Avg SD	2.30	Avg SD Months	1.29
SD btwn Labs	2.38	SD btwn Labs	2.32
Labs Incld	9	Labs Incld	9

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	TX	TMI (model not specified)
XX	Instrument make/model not specified by lab		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2GGBHD	46.8	0.47	1.58		46.6	0.62	0.24 L	4	LC
2JMXVG	45.4	-0.18	1.49		43.9	-0.38	2.10	2	TU
3AFKA8	47.7	0.95	1.10		46.6	0.60	1.03	4	TL
3VVZRY	47.4	0.77	1.12		47.4	0.91	0.79	4	TG
4TKH9U	46.1	0.16	0.81		46.0	0.40	0.52	4	EM
66UFV9	47.8	0.97	1.92		44.1	-0.31	3.91 H	4	TD
6CYATB	43.8	-0.98	0.83		45.2	0.10	0.99	4	EM
6Y6Z3V	39.4	-3.12 X	1.02		38.0	-2.58 *	4.14 H	4	TD
7GKQH7	44.9	-0.43	0.99		43.8	-0.43	2.09	4	BU
7LDTL7	44.6	-0.59	2.78		41.6	-1.23	2.39	4	TH
9TA8F7	41.9	-1.91	1.58		41.4	-1.33	1.48	4	EM
A82LVQ	42.6	-1.55	1.72		38.3	-2.45 *	3.89 H	4	TK
B7LP3Q	46.1	0.15	1.11		46.9	0.72	0.78	4	LD
BR97DB	48.6	1.36	1.33		47.4	0.90	1.33	4	LD
BTXKVU	46.4	0.28	2.76		45.4	0.16	0.76	4	LD
DRFAVR	50.6	2.34 *	0.77		49.0	1.49	2.35	4	LD
EHLN3Y	47.0	0.59	2.40		48.0	1.11	0.81	4	EM
F2GEXT	42.4	-1.66	1.76		42.1	-1.04	1.82	4	CT
FUVJWN	46.0	0.10	3.25 H		44.7	-0.10	0.97	4	LD
GRMQFV	44.4	-0.66	1.33		43.8	-0.41	0.83	4	TD
H7J86T	44.9	-0.45	1.55		43.5	-0.55	1.56	4	LD
HN32WH	46.0	0.10	1.05		46.2	0.46	0.23 L	4	LC
JPQWVW	47.3	0.73	0.95		46.8	0.69	0.98	4	BU
KL6PQT	48.4	1.25	1.39		49.3	1.59	1.18	4	MK
KMLN7C	45.3	-0.22	1.46		43.5	-0.54	1.49	4	TG
QPNT6R	45.7	-0.03	2.73		46.5	0.56	0.55	4	LY
R86Y9B	47.1	0.65	1.00		47.3	0.86	0.80	4	XX
RQJDP7	44.0	-0.87	2.02		43.5	-0.53	1.09	4	LC
TFV2PD	47.7	0.94	1.18		47.3	0.87	0.61	4	LC
TK4H6T	47.7	0.93	2.06		47.6	0.96	0.36	4	LD
TLVKR9	46.7	0.45	1.92		45.8	0.30	1.32	4	XX
UDKJ78	35.5	-5.00 X	2.41		35.5	-3.47 X	0.34	4	XX
WF3D4K	43.0	-1.37	2.38		42.9	-0.75	0.43	4	LD
X3B6JN	44.0	-0.90	2.90 H		45.7	0.26	1.21	4	EN
XMZC8E	45.7	-0.06	1.27		46.4	0.52	2.27	4	EM
ZC8ZLC	47.2	0.68	0.84		45.7	0.29	2.24	4	LD
ZV3NZE	41.7	-2.02 *	1.05		40.3	-1.73	1.30	4	LD

Consensus (All Labs) Results

Month Mean	45.79	Grand Mean	44.95
Avg SD	1.74	Avg SD Months	1.72
SD btwn Labs	2.05	SD btwn Labs	2.71
Labs Incld	35	Labs Incld	36

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	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	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2GZEUJ_AL	108.1	109.5	113.6	116.5	111.9	0.52	5.0	3.8	109.7	-0.19	6.7	3.2	12	AL
3AXM2F	111.3 L	113.3	113.4	114.9	113.2	0.96	4.9	1.5	114.6	1.57	5.7	1.5	12	LC
3GE84R_AL	115.5	112.2	113.4	114.7	114.0	1.20	8.5	1.5	110.9	0.24	8.6	3.6	11	AL
3ZQWF6	108.4	110.5	108.4	112.6	110.0	-0.14	7.6	2.0	110.3	0.02	7.0	1.8	12	TP
4ARUKJ	110.1	104.5	107.8	109.6	108.0	-0.80	9.3	2.5	112.5	0.81	10.2	4.4	12	TB
4CFBR7	130.3 XL	129.8 XL	131.3 XL	130.7 X	130.5	6.79 X	3.0	0.6	131.5	7.76 X	4.8	2.5	12	AH
4G9DXR_AL	113.2	108.9	No Data	111.2	111.1	0.23	9.0	2.2	111.2	0.36	9.4	1.6	10	AL
4PQLN9_AL	105.1	109.5	110.8	104.8	107.6	-0.96	9.6	3.0	108.9	-0.48	9.2	3.3	12	AK
4W4T4C	106.7	106.8	106.5	102.9	105.7	-1.57	8.8	1.9	108.3	-0.72	8.7	3.1	12	LZ
6D9GUH	113.4	116.8	108.0	112.6	112.7	0.78	4.8	3.6	113.4	1.15	5.6	3.7	8	AH
7GKQH7	108.5	104.7	107.7 H	104.3 H	106.3	-1.38	12.3	2.1	107.3	-1.06	13.3	1.7	12	XX
7ZWCJF_AL	115.1 H	114.5	115.0	121.1 *	116.4	2.04 *	10.1	3.1	114.2	1.46	8.9	3.0	12	AL
89APW6	104.4	106.2	109.5	107.3	106.8	-1.20	7.1	2.1	106.2	-1.48	7.1	2.8	12	LA
89P9G3	101.7 *	101.4 *	103.3 *	99.0 *	101.4	-3.05 X	7.2	1.8	100.7	-3.47 X	8.8	2.1	12	LA
9J2XQR	111.9	110.8 L	110.6	110.0	110.8	0.15	4.0	0.8	108.7	-0.57	5.0	2.1	12	LA
9KGYXZ	102.3	111.0	111.0	105.2	107.4	-1.02	8.2	4.4	106.5	-1.37	10.6	3.5	12	AH
9PR6GD	110.2	106.3	109.0	109.3	108.7	-0.57	9.6	1.7	109.5	-0.27	9.2	2.5	12	LA
AN8QKM	115.9	113.4	112.3	110.0	112.9	0.84	9.9	2.4	112.4	0.77	9.9	3.7	12	LJ
B7LP3Q_AL	111.8	110.2	112.5	113.8	112.1	0.57	6.2	1.5	113.8	1.30	6.8	2.7	12	AK
B8JUKK_AL	112.9	112.9	113.4	107.1	111.6	0.40	6.6	3.0	111.2	0.34	8.0	1.8	12	AL
BKQZG6_AL	111.9	110.2	117.4 *	115.3	113.7	1.11	7.6	3.3	112.7	0.89	7.9	2.4	12	AL
BR97DB	103.5	103.6	102.1 *	105.4	103.7	-2.27 *	9.1	1.4	104.3	-2.16 *	8.7	1.7	12	AH
BTXKVU	105.0	106.4	104.2	104.4	105.0	-1.81	8.8	1.0	107.2	-1.12	8.3	2.1	12	LZ
F2GEXT	116.0	117.5	114.5	110.5	114.6	1.43	8.2	3.0	113.0	1.00	9.4	3.5	12	XX
F6GPUT_AL	107.5	109.4	112.3	108.4	109.4	-0.33	9.3	2.1	108.6	-0.59	8.7	2.3	7	AL
FJHEUY_AL	112.4	113.7	111.2	111.0	112.1	0.57	7.9	1.2	109.9	-0.14	8.6	2.4	12	AL
FNQMDN	111.3	111.3	111.2	111.4	111.3	0.30	5.7	0.1 L	111.3	0.39	5.6	0.1 L	12	LJ
FUVJWN	114.0	113.2	112.0	106.8	111.5	0.37	9.9	3.2	109.9	-0.13	8.8	3.2	12	AH
G4ZL48_AL	111.7	108.7	113.0	114.1	111.9	0.51	8.5	2.3	109.3	-0.34	8.6	6.6	12	AK
G7P3CU	118.0	109.2	107.3	109.5	111.0	0.21	8.3	4.8	110.2	0.00	8.9	3.6	12	LC
GA8J7K_AL	90.3 X	98.2 X	88.8 X	91.9 X	92.3	-6.10 X	7.6	4.1	107.3	-1.07	8.7	11.5 H	12	AL
JHAG8T	122.2 *	126.6 X	130.4 X	126.6 X	126.5	5.42 X	10.5	3.4	125.3	5.48 X	11.1	3.6	12	AC
KQJZ94_AL	103.9	106.4	107.6	106.4	106.1	-1.46	8.4	1.5	105.6	-1.71	7.6	1.7	12	XX
KWC3C4	112.4	114.8	107.9	119.6 *	113.7	1.11	7.9	4.9	113.6	1.21	7.8	3.5	12	LA
KWC3C4_AL	112.4	114.0	110.3	108.8	111.4	0.33	7.5	2.3	112.4	0.77	7.3	2.1	12	AL

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42F4

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
MYL46C	95.6 X	102.4	102.8 *	100.8 *	100.4	-3.37 X	8.3	3.3	98.5	-4.31 X	8.5	3.3	12	LA
NQPT9M	112.9	113.0 L	113.3	113.2	113.1	0.91	4.5	0.2 L	113.2	1.06	4.3	0.3 L	8	LA
P4CBKQ	108.4	115.1	112.7	110.4	111.7	0.43	8.4	2.9	112.8	0.93	9.4	4.2	12	LA
PD2YFT	114.2	108.6	112.8	116.1 H	112.9	0.86	11.7	3.2	109.8	-0.16	10.1	3.7	12	LB
PHB3KA	112.8	105.8	108.6	107.6	108.7	-0.57	4.5	3.0	108.9	-0.50	5.6	3.0	8	AX
PHB3KA_AL	108.3	112.1	109.5	109.1	109.8	-0.22	9.2	1.6	109.7	-0.20	8.5	2.1	8	AL
PKHJGK	106.9	109.9	113.6 H	111.5 H	110.5	0.03	11.7	2.8	110.5	0.07	10.9	3.0	12	LC
PKHJGK_AL	109.6	115.9	112.4	110.3	112.0	0.55	8.7	2.8	112.9	0.98	9.9	2.8	12	AL
Q8MPJG	110.6	112.3	109.0	117.9	112.4	0.69	8.2	3.9	113.6	1.23	8.7	4.1	11	LC
Q8MPJG_AL	112.9	115.8	114.2	115.7	114.7	1.44	8.7	1.4	112.6	0.87	9.2	3.4	12	AL
QPNT6R	114.3	117.1	117.5 *	111.1	115.0	1.55	6.2	3.0	114.5	1.55	7.7	2.3	12	AH
R86Y9B	115.2	114.8	114.2	114.9	114.8	1.47	5.8	0.4 L	114.9	1.70	4.3	0.6 L	12	LC
RTKLUG	107.4 L	104.5	106.3	103.7 L	105.5	-1.66	3.6	1.7	106.7	-1.29	3.8	1.6	11	XX
RVPAA7	102.6	101.8 *	115.0	No Data	106.5	-1.32	8.3	7.4 H	107.3	-1.08	9.0	4.6	11	AH
RVPAA7_AL	116.7	110.6	No Data	No Data	113.7	1.10	10.3	4.3	114.6	1.59	10.7	3.5	10	AL
TK4H6T	109.4	109.4	110.2	106.4	108.9	-0.52	7.6	1.7	109.5	-0.26	8.9	1.5	12	LA
TTFL8L	116.3 H	117.3	130.0 X	119.8 *	120.9	3.53 X	11.0	6.3 H	123.1	4.70 X	9.9	6.1	12	AX
UN7KPN_AL	108.2	109.8	107.9	108.2	108.5	-0.63	6.6	0.9	108.5	-0.63	6.6	0.9 L	4	AL
V3FT2C	111.0	110.9	111.7	109.0	110.7	0.09	7.8	1.2	110.3	0.01	6.9	0.9 L	12	AH
WZ73C8	116.9	112.8	111.4	109.3	112.6	0.75	9.8	3.2	112.6	0.87	9.6	2.5	12	LC
X9GLBX	106.3	108.1	108.2	104.8	106.8	-1.20	5.7	1.6	105.0	-1.92	5.2	2.2	12	LA
XNPZ6Z	109.8	104.9	106.5	108.0	107.3	-1.04	8.8	2.1	107.9	-0.86	9.4	3.1	12	XX
XRQYLK	102.3	105.5	105.7	114.2	106.9	-1.17	8.5	5.1	109.2	-0.39	8.3	6.8 H	12	ME
YGL9HN	110.9	111.3	108.1	107.0	109.3	-0.36	7.1	2.1	106.3	-1.46	7.4	3.6	12	LC
YPGBLL	109.7	106.5	107.3	109.3	108.2	-0.74	9.0	1.5	108.1	-0.80	8.3	2.1	8	LC
YTFMHL_AL	109.9	109.0	112.8	110.1	110.4	0.01	7.1	1.6	113.3	1.12	6.8	3.5	12	AL
ZC8ZLC	116.2	110.2 H	110.8	110.2	111.8	0.48	10.8	2.9	109.0	-0.47	9.5	3.6	12	LA
ZV3NZE	106.7	108.0	106.8	107.8	107.3	-1.04	5.5	0.7	107.9	-0.85	6.0	1.7	12	LA

Consensus (All Labs) Results

Wk Mean	110.58	110.09	110.29	110.08	Month Mean	110.39	Grand Mean	110.25
Avg SDr	8.14	8.72	7.93	8.04	Avg SD	8.17	Avg SD	8.30
SD btwn Labs	4.39	4.03	3.46	4.61	SD btwn Labs	2.96	SD btwn Labs	2.74
Labs Incld	60	60	57	58	SD btwn Wks	2.75	SD btwn Wks	3.36
Labs Excld	3	3	4	3	Labs Incld	57	Labs Incld	58
Labs not Rcvd	0	0	2	2				

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)
ME	Messmer Automatic Burst Tester ME-06	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2GZEUJ_AL	92.9	89.5	93.9 L	95.4	92.9	0.10	5.5	2.5	92.8	0.10	6.2	1.6	12	XX
3AXM2F	94.8	92.6	96.3	93.1	94.2	0.54	5.0	1.7	96.1	1.29	5.1	2.3	12	LC
3GE84R_AL	93.8	93.8	91.0	98.2	94.2	0.53	8.7	3.0	92.2	-0.11	9.1	3.4	12	AL
3ZQWF6	92.6	90.9	92.5	89.3	91.3	-0.45	6.9	1.6	91.1	-0.54	6.4	1.3	12	TP
4ARUKJ	89.1	91.7	91.5	94.5	91.7	-0.33	8.5	2.2	94.0	0.53	7.9	3.0	12	TB
4CFBR7	106.9 X	105.5 X	105.0 X	104.2 X	105.4	4.39 X	3.6	1.1	106.3	5.02 X	3.9	1.4	8	AH
4G9DXR_AL	96.1	93.8	98.1	93.5	95.4	0.94	7.6	2.1	92.1	-0.16	9.6	8.5 H	12	AL
4PQLN9_AL	91.5	91.9	92.1 H	91.2 H	91.7	-0.34	11.8	0.4 L	95.2	0.98	10.3	3.7	12	AK
4W4T4C	87.7	92.9	80.4 X	91.4	88.1	-1.57	7.8	5.6	90.7	-0.66	8.1	3.8	12	LZ
6D9GUH	102.0 *	95.8	98.8	93.6	97.6	1.69	4.3	3.7	97.8	1.91	4.5	2.7	8	AH
7GKQH7	88.0	90.8	88.2	88.7	88.9	-1.28	8.5	1.3	87.6	-1.80	8.3	1.6	12	XX
7ZWCJF_AL	92.3	96.9	94.8	96.6	95.2	0.86	7.3	2.1	91.5	-0.38	7.5	3.8	12	AL
89APW6	86.0	90.2	94.0	89.4	89.9	-0.94	7.9	3.3	88.3	-1.55	8.3	3.5	12	LA
89P9G3	89.7	88.0	85.2 *	88.9	87.9	-1.62	6.9	2.0	87.1	-2.01 *	8.1	3.0	8	LA
9J2XQR	90.1 L	90.7 L	91.2 L	91.9 L	91.0	-0.57	1.5	0.8	91.8	-0.27	4.3	2.2	12	LA
9KGYXZ	92.1	88.7	91.1	86.1	89.5	-1.08	6.4	2.7	89.6	-1.08	8.1	2.8	12	AH
9PR6GD	88.8	88.3	91.5	88.3	89.2	-1.18	7.5	1.5	92.3	-0.09	8.0	3.1	12	LA
AN8QKM	93.9	99.4 *	95.9	94.5	95.9	1.13	7.6	2.5	91.9	-0.22	8.3	3.7	12	LJ
B7LP3Q_AL	96.3	95.8	96.4	94.5	95.8	1.07	5.7	0.9	97.1	1.67	5.9	2.0	12	AK
B8JUKK_AL	96.9	94.5	96.6	93.9	95.4	0.97	6.3	1.5	93.9	0.48	6.2	2.4	12	AL
BKQZG6_AL	89.5	96.0	92.3	96.3	93.5	0.30	7.9	3.2	92.9	0.14	6.6	2.4	12	AL
BR97DB	84.2	89.9	83.5 *	89.8	86.9	-1.99 *	7.3	3.5	87.0	-2.02 *	7.4	2.7	12	AH
BTXKVU	93.6	90.8	88.7	84.5 L	89.4	-1.12	6.3	3.8	89.5	-1.11	7.6	3.0	12	LA
F2GEXT	94.5	96.0	94.0	98.5	95.8	1.07	7.0	2.0	95.2	0.96	8.6	1.7	12	XX
F6GPUT_AL	86.4	91.9	91.8	87.7	89.4	-1.11	8.0	2.8	90.5	-0.77	8.0	2.8	8	AL
FJHEUY_AL	95.7	96.5	95.2	98.5	96.5	1.32	7.7	1.5	94.1	0.58	7.5	2.8	12	AL
FNQMDN	91.8	91.9	91.8	91.9	91.9	-0.27	5.6	0.0 L	91.7	-0.30	5.0	0.3 L	12	LJ
FUVJWN	90.0	93.2	99.6	94.8	94.4	0.60	7.2	4.0	92.7	0.06	7.7	4.4	12	AH
G4ZL48_AL	93.8	91.6	92.0	92.5	92.5	-0.06	8.7	1.0	92.0	-0.19	8.0	3.2	12	AK
G7P3CU	93.6	94.1	95.0	92.0	93.7	0.36	8.0	1.3	93.4	0.30	8.2	1.6	10	LC
GA8J7K_AL	111.9XH	111.3 X	108.5 XH	116.0 X	111.9	6.64 X	11.7	3.1	101.0	3.11 X	10.0	8.6 H	12	AL
JHAG8T	104.3 *	111.7 X	109.9 X	115.9 X	110.5	6.13 X	9.1	4.8	103.4	3.96 X	9.7	7.4 H	12	AC
KQJZ94_AL	91.1	91.7	90.6	84.5	89.5	-1.09	5.0	3.3	90.7	-0.68	5.3	2.4	12	XX
KWC3C4	100.3	94.3	98.7	101.3 *	98.6	2.06 *	7.8	3.1	94.4	0.68	8.3	5.0	12	LA
KWC3C4_AL	99.4	93.7	93.5	95.1	95.4	0.96	7.1	2.8	94.8	0.83	6.9	2.3	12	AL

Containerboard Interlaboratory Testing Program

Analysis 207

Bursting Strength (Mullen), 35 lb Linerboard - 35E2

TAPPI Official Test Method T807

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
MYL46C	82.5 *	81.6 X	84.5 *	83.4 *	83.0	-3.31 X	6.1	1.3	83.0	-3.51 X	7.1	2.3	12	LA
NQPT9M	93.7 L	93.9	94.2 L	92.8 L	93.7	0.35	3.0	0.6	93.4	0.31	2.7	0.5 L	8	LA
P4CBKQ	100.7	93.9	95.4	87.7	94.4	0.61	9.5	5.4	93.9	0.50	8.5	3.6	12	LA
PD2YFT	86.5	91.0	92.5	95.6	91.4	-0.43	8.9	3.8	91.5	-0.37	6.8	3.2	12	LB
PHB3KA	93.0	96.6	96.2	96.2	95.5	0.98	7.2	1.7	95.5	1.07	6.1	1.7	8	AX
PHB3KA_AL	93.4	94.7	92.0	92.5	93.2	0.17	7.1	1.2	92.8	0.08	6.9	1.6	8	AL
PKHJGK	94.0	92.2	93.2	93.9	93.3	0.23	8.1	0.8	93.1	0.21	7.9	2.4	10	LC
PKHJGK_AL	89.4	92.0	95.4	96.3	93.3	0.22	7.0	3.2	94.2	0.59	8.5	2.2	10	AL
Q8MPJG	85.9	97.6	93.9	94.8	93.1	0.14	7.1	5.0	94.2	0.60	8.6	3.3	12	LC
Q8MPJG_AL	96.1	93.8	95.7	95.6	95.3	0.92	8.2	1.0	95.4	1.04	7.8	1.9	12	XX
QPNT6R	95.7	95.4	97.7	94.8	95.9	1.12	6.6	1.3	97.9	1.95 *	6.5	2.4	12	AH
RTKLUG	87.0	87.8	87.6	88.2	87.7	-1.72	4.5	0.5	87.6	-1.80	4.1	0.8 L	11	XX
RVPAA7	87.0	91.6	95.6	No Data	91.4	-0.43	5.6	4.3	93.6	0.39	6.9	3.2	11	AH
RVPAA7_AL	92.6	96.9	No Data	No Data	94.8	0.73	6.1	3.0	93.7	0.41	7.3	2.7	10	AL
TK4H6T	94.9	91.1	93.8	88.4	92.1	-0.20	7.7	2.9	90.4	-0.79	8.0	2.5	12	LA
TTFL8L	89.9	97.0 H	99.7	95.1	95.4	0.96	9.8	4.1	99.2	2.42 *	11.3	4.7	12	AX
UN7KPN_AL	93.3	90.9 L	93.2	91.0	92.1	-0.18	5.1	1.3	92.1	-0.16	5.1	1.3	4	AL
V3FT2C	91.9	92.8	92.0	90.2	91.7	-0.32	6.8	1.1	91.7	-0.32	6.2	0.8 L	12	AH
WZ73C8	96.0	97.5	92.4	94.2 H	95.0	0.82	9.4	2.2	92.8	0.10	8.5	3.2	12	LC
X9GLBX	88.2	90.3 L	90.3	86.6	88.8	-1.31	3.5	1.8	87.5	-1.83	4.0	2.1	12	LA
XNPZ6Z	86.6	88.7	85.4 *	85.5	86.5	-2.10 *	8.7	1.5	89.4	-1.16	8.3	4.6	12	XX
XRQYLK	94.0	92.2	91.9	89.4	91.9	-0.26	8.4	1.9	95.8	1.18	9.3	4.1	11	ME
YGL9HN	93.5	92.2	93.3	89.1	92.0	-0.22	6.8	2.0	92.3	-0.10	7.3	3.6	12	LC
YPGBLL	90.9	92.5	86.4	87.2	89.3	-1.17	8.6	2.9	89.4	-1.14	13.5	3.5	8	LA
YTFMHL_AL	90.0	109.4 XH	94.6	97.9	98.0	1.83	13.4	8.3 H	95.6	1.11	11.8	7.2 H	12	AL
ZC8ZLC	98.8	88.4	96.6	93.8	94.4	0.61	6.8	4.5	91.6	-0.35	7.3	4.3	12	LA
ZV3NZE	89.3	90.6	91.1	90.0	90.3	-0.82	6.0	0.8	91.1	-0.54	5.7	2.1	12	LA

Consensus (All Labs) Results

Wk Mean	92.29	92.79	92.99	92.11	Month Mean	92.64	Grand Mean	92.54
Avg SDr	7.29	7.07	7.00	7.75	Avg SD	7.40	Avg SD	7.65
SD btwn Labs	4.41	2.76	3.66	4.00	SD btwn Labs	2.91	SD btwn Labs	2.73
Labs Incld	60	57	57	57	SD btwn Wks	2.85	SD btwn Wks	3.20
Labs Excld	2	5	4	3	Labs Incld	58	Labs Incld	58
Labs not Rcvd	0	0	1	2				

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 (207 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
ME	Messmer Automatic Burst Tester ME-06	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42F4

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
2GZEUJ	90.9	93.0	94.5 H	92.8	92.8	0.38	4.1	1.5	92.2	0.28	4.7	2.8	12	LZ
33VKUU	92.1	90.6	87.6	92.1	90.6	-0.34	3.2	2.2	91.2	-0.12	3.0	1.8	12	LD
3AXM2F	89.3	90.0	88.5	88.6	89.1	-0.81	2.9	0.7	90.3	-0.46	3.0	1.6	12	LC
3VU79T	92.0	92.1	93.7	91.2	92.2	0.19	3.3	1.0	96.0	1.77	3.6	4.6	12	EX
3VVZRY	97.5	96.7	97.9	98.2	97.6	1.90	2.8	0.6	96.2	1.83	2.9	1.8	12	TH
3ZQWF6	92.4	90.1	89.6 H	91.2 H	90.8	-0.26	3.9	1.3	91.1	-0.14	4.1	1.2	12	TH
4ARUKJ	95.0	92.1 H	95.9 H	97.5	95.1	1.12	4.5	2.3	92.5	0.39	4.4	3.8	12	LD
4CFBR7	90.1	91.8	91.6	91.3	91.2	-0.14	2.9	0.7	91.3	-0.09	3.5	1.3	12	LD
4G9DXR	88.4	88.8	90.5	90.4	89.5	-0.67	3.2	1.1	89.1	-0.92	3.0	1.4	12	LC
4L2EY7	75.5 X	78.2 X	72.3 X	76.8 X	75.7	-5.10 X	3.4	2.5	76.7	-5.76 X	3.1	1.7	12	EM
4W4T4C	89.5	92.7	90.7	91.1	91.0	-0.20	2.6	1.4	88.4	-1.20	2.6	2.9	12	LC
78FLN4	82.9 *H	97.2	101.1 *	98.6 *	95.0	1.06	5.5	8.2 H	95.2	1.45	5.7	7.1 H	8	MB
7ZWCJF	90.7	90.2	90.9	90.3	90.5	-0.36	2.2	0.4 L	90.1	-0.55	3.1	1.4	12	LD
89P9G3	88.7	89.2	89.4	88.6	89.0	-0.86	2.1	0.3 L	91.2	-0.10	2.7	3.5	12	LZ
9J2XQR	94.2 L	93.9 L	93.9	94.0 L	94.0	0.75	1.0	0.2 L	94.3	1.11	1.6	1.5	12	TU
9KGYXZ	93.3	93.4	95.4	93.8	94.0	0.74	2.5	1.0	94.1	1.00	2.8	1.4	12	LC
A82LVQ	93.7	93.3	93.5	93.2 L	93.4	0.57	1.6	0.2 L	92.9	0.56	1.7	0.7 L	12	MB
AMV7H6	79.5 XH	80.9 XH	95.8	92.4	87.2	-1.43	6.0	8.2 H	90.1	-0.54	5.6	9.3 H	12	TU
B7LP3Q	87.4 L	84.7 *	84.6	91.4	87.0	-1.47	1.9	3.2	89.3	-0.87	2.1	2.9	12	LD
BMBWY4	86.7	82.2 X	86.7	89.5	86.3	-1.72	3.3	3.0	87.3	-1.63	3.3	2.6	12	TH
BR97DB	89.7	88.1	89.0	90.8	89.4	-0.72	2.3	1.2	89.3	-0.85	2.5	1.7	12	LD
BTXKVU	90.9	89.5	91.6	92.7	91.2	-0.15	3.0	1.4	90.9	-0.23	2.7	1.1	12	LD
DHTB32	94.5	95.4	97.8	95.3	95.7	1.31	2.6	1.4	91.0	-0.20	3.3	5.4	8	LZ
EELD9K	95.7	95.5	95.9	95.4	95.6	1.27	2.8	0.2 L	96.1	1.81	2.8	1.5	12	LD
F6GPUT	93.9	93.3	89.4	92.1	92.2	0.17	2.7	2.0	92.2	0.30	2.8	1.4	12	LD
FJHEUY	98.8 *	98.2 *	97.3	98.2	98.1	2.07 *	2.2	0.6	91.9	0.16	4.9	5.3	12	LC
FNQMDN	91.4	91.3	91.7	91.9	91.6	-0.01	3.3	0.3 L	91.4	-0.03	2.9	0.2 L	12	LD
G4ZL48	92.8	92.0	91.5	87.3	90.9	-0.24	3.0	2.5	91.0	-0.17	3.1	1.7	12	LD
G7P3CU	94.5	97.6	91.4	96.2	94.9	1.06	3.5	2.7	93.1	0.63	3.1	2.9	12	MB
KWC3C4	92.2	92.2	89.0	89.9	90.8	-0.26	2.6	1.6	90.4	-0.41	2.9	1.1	12	LD
MYL46C	68.7 XH	71.2 XH	70.3 XH	68.4 XH	69.6	-7.03 X	10.9	1.3	82.2	-3.60 X	8.6	11.5 H	12	LB
MZX4ZL	90.1	94.6	91.6	90.4	91.7	0.01	3.3	2.0	90.4	-0.43	4.2	3.1	12	TH
NQPT9M	92.1	93.1	92.2	93.0	92.6	0.31	2.8	0.5	93.2	0.67	2.6	0.8 L	8	LD
P4CBKQ	96.4	93.5	95.5	96.0 H	95.3	1.18	3.8	1.3	94.2	1.05	4.0	2.1	12	LZ
PD2YFT	94.2 L	93.4	95.7	92.9 L	94.1	0.77	2.4	1.2	93.3	0.71	2.4	1.8	12	LC

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42F4

TAPPI Official Test Method T822

WebCode	Weekly Means Week 1	Week 2	Week 3	Week 4	Monthly Results Mean	CPV	SD	SD Wks	Cumulative Results Mean	CPV	SD	SD Wks	Wks	Inst
PKHJGK	90.9	94.2	91.2	94.1	92.6	0.31	3.1	1.8	89.0	-0.98	4.5	9.1 H	12	LD
Q8MPJG	85.3 *	94.2	86.6	88.0	88.5	-0.99	2.4	3.9	87.7	-1.49	2.8	2.8	12	LD
QBM2EG	81.1 XH	74.8 XH	65.2 XH	68.9 XH	72.5	-6.11 X	6.5	7.0 H	72.5	-7.38 X	6.5	7.0 H	4	XX
QPNT6R	91.1	91.0	91.6	94.2	92.0	0.12	2.3	1.5	91.9	0.15	2.5	1.6	12	LG
RTKLUG	88.0	83.8 *	83.8 *	78.8 X	83.6	-2.57 *	3.6	3.8	80.8	-4.17 X	4.1	3.9	11	LD
TFV2PD	89.2	89.5	89.1	88.7	89.1	-0.80	2.2	0.3 L	88.0	-1.37	2.5	2.7	12	LC
TTFL8L	93.9	90.6	88.6	88.5 H	90.4	-0.39	3.6	2.5	87.7	-1.47	3.8	3.1	12	LD
V7GU7F	88.6 L	88.1	88.5	88.0 L	88.3	-1.07	1.5	0.3 L	88.7	-1.08	1.5	0.9	12	RS
VWWKLR	92.6	94.9	92.4	92.6	93.1	0.47	2.5	1.2	92.4	0.36	2.9	1.4	12	LD
WZ73C8	92.6	93.3	93.9	94.6	93.6	0.64	2.5	0.8	93.9	0.95	3.5	2.7	12	LD
X3B6JN	88.5	86.8	88.1	88.1	87.9	-1.20	2.9	0.7	88.8	-1.04	2.7	1.2	12	EN
X9GLBX	90.8	91.2	91.2	91.4	91.2	-0.15	1.7	0.3 L	91.8	0.11	1.8	1.2	12	LZ
XMZC8E	88.3 L	85.5 *	85.1	86.8	86.4	-1.66	2.2	1.5	86.9	-1.80	2.1	1.4	12	EM
XRQYLK	99.4 *	92.1	98.8	99.7 *	97.5	1.88	2.9	3.6	98.2	2.61 *	2.9	2.7	12	LX
YGL9HN	94.9 H	94.1	96.1	96.2	95.3	1.18	4.4	1.0	93.9	0.96	3.9	2.6	12	LD
YPGBLL	93.1	93.6	92.9	91.5	92.8	0.36	2.0	0.9	93.2	0.68	2.4	1.0	8	LD
YTFMHL	73.6 XH	72.7 XH	86.9 H	88.6 H	80.5	-3.58 X	6.3	8.5 H	80.8	-4.17 X	6.5	12.5 H	12	LC
ZC8ZLC	92.4	88.7	89.5	88.7	89.8	-0.58	2.2	1.8	90.5	-0.38	2.6	1.5	12	LD
ZV3NZE	89.6	88.4	89.1	89.7	89.2	-0.78	2.2	0.6	89.0	-0.97	2.2	0.8 L	12	LD

Consensus (All Labs) Results

Wk Mean	91.66	91.82	91.66	92.16	Month Mean	91.64	Grand Mean	91.48
Avg SDr	3.11	2.79	2.92	3.06	Avg SD	3.02	Avg SD	3.25
SD btwn Labs	3.27	3.21	3.83	3.20	SD btwn Labs	3.13	SD btwn Labs	2.57
Labs Incld	49	48	51	50	SD btwn Wks	2.33	SD btwn Wks	3.11
Labs Excld	5	6	3	4	Labs Incld	50	Labs Incld	49
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	LB	L&W Crush Tester 240
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
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	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2GZEUJ	80.9	80.8	84.8	82.6 H	82.3	0.48	4.1	1.9	82.1	0.46	3.6	2.1	12	LZ
33VKUU	79.6	78.9	77.4	79.2	78.8	-0.49	3.4	0.9	78.9	-0.72	3.7	2.3	12	LD
3AXM2F	75.9	76.3	76.6	73.1 *	75.5	-1.40	3.4	1.6	77.9	-1.11	3.4	2.9	12	LC
3VU79T	88.5 *	87.7 *	88.7 H	86.5	87.9	2.03 *	4.7	1.0	86.1	1.97 *	4.7	1.7	12	EX
3VVZRY	84.2	85.1	84.3	82.7	84.1	0.98	3.1	1.0	82.9	0.78	3.4	1.6	12	TH
3ZQWF6	82.5	79.4	80.7 H	80.9	80.9	0.09	4.3	1.3	80.4	-0.17	4.3	1.5	12	TJ
4ARUKJ	82.9 H	78.5 H	85.0	82.4 H	82.2	0.46	5.8	2.7	80.1	-0.28	6.2	4.0	12	LC
4CFBR7	77.9	77.2	75.6	76.3	76.7	-1.05	2.7	1.0	77.1	-1.40	3.1	1.4	8	LD
4G9DXR	77.3	74.8	76.6	74.6	75.8	-1.31	4.3	1.3	79.1	-0.67	4.2	2.8	12	LC
4L2EY7	63.8 X	59.1 X	50.7 XH	60.5 X	58.5	-6.10 X	5.3	5.6 H	65.6	-5.72 X	4.6	6.2 H	12	EM
4W4T4C	80.2	80.5	77.6	80.3	79.6	-0.25	3.2	1.3	78.1	-1.05	3.4	2.5	12	LC
78FLN4	75.8 H	83.6	91.1 *	88.3 *	84.7	1.15	5.8	6.7 H	80.7	-0.04	6.4	6.9 H	8	MB
7ZWCJF	82.6	81.0	82.0	81.6	81.8	0.36	3.3	0.7	80.4	-0.18	3.2	1.4	12	LD
89P9G3	82.6	80.6	78.4	81.7	80.9	0.09	3.7	1.8	80.2	-0.25	3.6	1.7	8	LZ
9J2XQR	79.2 L	79.4 L	79.5 L	79.3	79.3	-0.34	1.1	0.1 L	79.4	-0.56	2.3	1.6	12	TU
9KGYXZ	84.7 L	82.5	82.5	84.5	83.6	0.84	3.3	1.2	84.0	1.17	3.3	0.9	12	LC
A82LVQ	81.9 L	82.0	81.0	81.1	81.5	0.27	1.6	0.5	82.4	0.58	1.5	1.4	12	MB
AMV7H6	69.5 XH	68.9 XH	82.2	80.6	75.3	-1.45	6.2	7.1 H	76.8	-1.54	8.7	7.1 H	12	TU
B7LP3Q	78.8	75.7	74.1	80.0	77.1	-0.94	2.7	2.7	80.6	-0.10	2.9	3.6	12	LD
BMBWY4	72.7 *	73.8 *	72.7	73.0 *	73.1	-2.07 *	3.1	0.5	75.3	-2.11 *	3.5	2.1	12	TH
BR97DB	80.3	81.2	78.9	81.7	80.5	0.00	2.8	1.2	79.5	-0.51	2.8	1.1	12	LD
BTXKVU	81.8	81.7	81.9	80.4	81.5	0.26	3.0	0.7	81.8	0.34	3.6	1.1	12	LD
DHTB32	81.1	84.3	86.1	81.2	83.2	0.73	2.7	2.4	79.1	-0.67	3.3	5.0	12	LZ
EELD9K	85.1	84.2	85.4	83.2	84.5	1.10	2.3	1.0	84.9	1.51	2.5	1.1	12	LD
F6GPUT	85.3	82.7	82.4	81.7	83.0	0.69	2.8	1.5	84.0	1.19	2.9	1.4	12	LD
FJHEUY	72.8 *	73.4 *	73.9	72.6 *	73.2	-2.04 *	5.1	0.6	81.8	0.37	5.2	6.6 H	12	LC
FNQMDN	81.1	81.4	81.4	81.4	81.3	0.22	3.0	0.2 L	81.8	0.36	2.5	0.4 L	12	LD
G4ZL48	79.3	79.4	78.2	75.2	78.0	-0.70	3.5	2.0	78.2	-1.00	3.5	2.1	12	LD
G7P3CU	87.6	86.6	78.9	86.4	84.9	1.21	4.2	4.0	83.1	0.83	3.9	2.8	12	MB
KWC3C4	82.8	80.6	81.4	81.1	81.5	0.26	4.4	1.0	80.6	-0.09	3.8	1.2	12	LD
MYL46C	80.1	84.9	86.0	84.8	83.9	0.94	2.5	2.6	84.9	1.53	3.0	2.7	8	LB
MZX4ZL	80.1	80.8 H	79.0	77.2	79.3	-0.36	4.6	1.6	78.3	-0.98	4.5	2.7	12	TH
NQPT9M	82.4	82.8	82.9	83.0	82.8	0.62	2.6	0.3 L	83.2	0.86	2.8	0.5 L	8	LD
P4CBKQ	83.6	85.0	85.6	85.5	84.9	1.21	3.2	0.9	84.2	1.26	3.4	1.8	12	LZ
PD2YFT	85.5	84.8	87.3	83.9	85.4	1.34	3.1	1.4	85.4	1.71	3.2	1.0	12	LC

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 35 lb Linerboard - 35E2

TAPPI Official Test Method T822

Report #625 (L)
October 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
PKHJGK	79.5	78.7	79.9	81.4	79.9	-0.18	3.8	1.1	79.1	-0.65	4.7	3.1	12	LD
Q8MPJG	75.9	82.6	78.7	77.3	78.6	-0.53	2.9	2.9	76.8	-1.51	2.7	2.7	12	LD
QBM2EG	80.4 L	76.1	75.2	75.2	76.7	-1.05	2.9	2.5	76.7	-1.55	2.9	2.5	4	XX
QPNT6R	83.4	82.7	84.7	86.7	84.4	1.07	2.7	1.8	84.1	1.20	2.8	1.6	12	LG
RTKLUG	78.0 H	74.0 *	72.4	72.7 *	74.3	-1.74	4.2	2.6	72.3	-3.23 X	4.7	3.3	11	LD
TFV2PD	81.2	80.5	79.6	79.1	80.1	-0.12	3.1	0.9	79.5	-0.53	3.2	0.7 L	12	LC
TTFL8L	79.8 H	83.7	79.5	82.6	81.4	0.24	4.7	2.1	80.3	-0.21	4.2	3.0	12	LD
V7GU7F	77.3 L	77.6	76.5 L	78.2 L	77.4	-0.87	1.4	0.7	78.6	-0.84	1.4	1.0	12	RS
VWWKLR	83.0	83.5	82.7	84.3	83.4	0.78	3.2	0.7	81.9	0.40	3.1	1.7	12	LD
WZ73C8	83.4	85.8	83.6	83.2	84.0	0.96	2.9	1.2	83.4	0.96	3.1	1.1	12	LD
X3B6JN	81.2	78.2	79.9	77.6	79.2	-0.37	2.9	1.6	80.0	-0.34	3.3	2.1	12	EN
X9GLBX	75.4	79.7	78.1	78.5	78.0	-0.71	2.9	1.8	81.2	0.11	3.0	2.6	12	LZ
XMZC8E	81.2 L	79.6 L	81.7	80.0	80.6	0.02	2.1	1.0	80.0	-0.34	2.0	1.1	12	EM
XRQYLK	90.3 *	80.7	87.6	88.6 *H	86.8	1.74	5.0	4.2	85.7	1.82	4.2	4.1	12	LX
YGL9HN	81.2	80.7	83.1	80.8	81.5	0.26	3.6	1.1	83.1	0.86	4.2	2.4	12	LD
YPGBLL	84.7 L	84.9	83.1	83.8	84.2	1.00	2.4	0.8	83.6	1.04	2.7	1.0	8	LD
YTFMHL	76.6	63.8 XH	69.7 *	79.0	72.3	-2.29 *	6.2	6.9 H	69.6	-4.23 X	6.3	5.7 H	12	LC
ZC8ZLC	80.3	77.2	77.0	78.4	78.2	-0.65	2.5	1.5	78.3	-0.98	3.1	1.4	12	LD
ZV3NZE	79.2	78.3	78.0	79.7	78.8	-0.49	2.8	0.8	78.3	-0.95	2.6	1.0	12	LD

Consensus (All Labs) Results

Wk Mean	80.95	80.71	80.59	80.65	Month Mean	80.54	Grand Mean	80.86
Avg SDr	3.74	3.44	3.41	3.37	Avg SD	3.60	Avg SD	3.72
SD btwn Labs	3.58	3.42	4.39	3.86	SD btwn Labs	3.61	SD btwn Labs	2.66
Labs Incld	52	51	53	53	SD btwn Wks	2.32	SD btwn Wks	2.69
Labs Excld	2	3	1	1	Labs Incld	53	Labs Incld	51
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	EN	Emerson 2200
EX	Emerson (model not specified)	LB	L&W Crush Tester 240
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)
XX	Instrument make/model not specified by lab		

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
2GZEUJ_AL	22.1	23.6	23.2	24.0 H	23.2	-0.63	1.7	0.8	23.1	-0.67	1.6	0.9	12	AL
33VKUU	25.6	24.8	25.4	24.4	25.0	1.08	1.8	0.5	22.9	-0.89	1.9	3.0 H	12	LH
3AXM2F	24.4	24.5	25.1 L	25.4	24.9	0.90	1.2	0.5	25.1	1.27	1.3	0.4	12	LA
3VU79T	28.9 XL	28.9 XL	30.0 XL	30.0 XL	29.4	5.18 X	0.0	0.6	30.4	6.41 X	0.0	1.9	12	TT
3ZQWF6	23.7	23.2	23.2	23.8	23.5	-0.38	1.4	0.3	23.5	-0.24	1.4	0.3	12	TT
4ARUKJ	26.4 H	26.0	26.6 *	24.5	25.9	1.84	2.1	1.0	24.5	0.71	2.0	1.2	12	LW
4CFBR7	36.2 X	35.8 X	36.5 X	36.4 X	36.2	11.48 X	1.7	0.3	36.4	12.26 X	2.1	0.6	12	XX
4G9DXR	25.1 H	25.0	25.6	23.8	24.9	0.93	1.8	0.8	24.8	0.95	1.8	1.3	11	LU
4PQLN9_AL	24.5	23.5	23.8	25.2	24.2	0.33	1.9	0.8	24.6	0.75	2.0	0.6	12	AK
4W4T4C	26.1	25.5	24.3	25.1	25.2	1.26	1.9	0.8	24.6	0.78	1.8	1.1	12	LY
6D9GUH	26.6 *	28.6 X	25.2 L	27.9 *L	27.1	2.96 X	1.1	1.5	26.5	2.64 *	1.6	1.2	8	LU
78FLN4	24.2	24.7	25.5	25.4	24.9	0.98	1.8	0.6	24.7	0.91	1.9	0.8	8	LA
7LDTL7	26.0	25.4	25.3	24.9	25.4	1.41	1.9	0.5	23.0	-0.74	1.7	1.9	12	TT
7ZWCJF_AL	22.2	23.1	22.4	22.6	22.6	-1.23	1.7	0.4	23.2	-0.59	1.8	0.7	12	AL
89APW6	24.4	25.6 H	23.3	24.0	24.3	0.43	2.0	1.0	24.2	0.38	2.0	1.2	12	LH
89P9G3	21.5 *	20.9 *	21.4	23.6	21.9	-1.89	1.3	1.2	23.6	-0.20	1.8	1.8	12	LA
9KGYXZ	22.7	22.9	23.2	23.4	23.0	-0.78	1.7	0.3	22.9	-0.86	1.6	0.4	12	LU
9PR6GD	23.6	23.1	23.9 L	24.4	23.7	-0.15	1.5	0.6	23.6	-0.17	1.4	0.4	12	LY
AMV7H6	26.0	24.6	25.9	20.2 *	24.2	0.28	1.5	2.7 H	24.0	0.22	1.6	1.9	12	LA
AN8QKM	24.4	25.0	24.9	26.3 H	25.2	1.18	2.1	0.8	26.0	2.12 *	2.2	1.0	12	LH
B7LP3Q_AL	23.1	22.1	24.7 H	23.4	23.3	-0.52	1.8	1.1	23.1	-0.67	1.6	0.8	12	AK
B8JUKK	23.3	24.3 L	No Data	24.3	24.0	0.06	1.8	0.5	23.7	-0.03	2.0	0.7	10	LU
BKQZG6_AL	23.2	22.8	22.8	22.7	22.9	-0.93	1.7	0.2	23.3	-0.44	1.8	0.6	12	AL
BMBWY4	19.3 X	19.2 X	21.5 H	20.4 *	20.1	-3.52 X	2.1	1.1	21.0	-2.71 *	1.7	1.1	12	LZ
BR97DB	23.3	22.3	22.9	22.2	22.7	-1.12	1.6	0.5	22.6	-1.10	1.6	0.4	12	LU
BTXKVU	23.9	23.2	23.2 L	22.8	23.3	-0.57	1.7	0.4	23.4	-0.39	1.7	0.4	12	LY
C3J4TY	24.5	23.9	23.7	24.2	24.1	0.20	1.8	0.3	23.6	-0.22	1.6	0.5	12	LU
DHTB32	47.1 X	44.4 XH	45.5 XH	45.3 XH	45.6	20.18 X	2.9	1.1	35.5	11.36 X	2.4	10.8 H	8	XX
F6GPUT_AL	25.7	25.2	24.9	24.4	25.1	1.09	1.7	0.5	24.9	1.06	1.8	0.5	8	AL
FJHEUY_AL	24.4	24.6	25.0 L	24.7 L	24.7	0.74	1.1	0.2	25.2	1.38	1.6	0.9	12	AL
G4ZL48_AL	23.9	23.1	22.4	23.1	23.1	-0.71	1.5	0.6	23.5	-0.29	1.5	0.5	12	AK
G7P3CU	24.6	25.4	24.1	25.0	24.8	0.82	1.7	0.5	24.0	0.23	1.7	1.2	12	LA
GA8J7K_AL	25.0	24.5	25.6	27.6 *L	25.7	1.65	1.7	1.3	24.7	0.90	1.6	1.2	12	AL
JHAG8T	22.3	21.8	22.6	22.5	22.3	-1.47	1.6	0.4	22.5	-1.26	1.7	0.3	12	LH
KQJZ94_AL	26.1	26.5 *H	26.3	26.6	26.4	2.30 *	1.7	0.2	25.7	1.83	1.8	0.9	12	XX

	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
KWC3C4_AL	23.4 H	24.1	23.4	23.2	23.5	-0.35	1.8	0.4	23.4	-0.38	1.7	0.7	12	AL
LMFTXQ	24.3	24.1	24.4	24.6	24.3	0.43	1.5	0.2	25.1	1.32	1.6	1.1	8	LH
MYL46C	42.0 XL	40.3 XL	41.5 XL	44.6 XL	42.1	16.94 X	0.0	1.8 H	43.3	18.89 X	0.0	1.5	12	LH
MZX4ZL	40.8 XH	40.1 XH	40.0 X	39.1 X	40.0	14.98 X	2.6	0.7	40.8	16.49 X	2.8	1.2	12	TT
NQPT9M	23.8	23.7	23.7	23.8	23.7	-0.13	2.1	0.1 L	23.8	0.02	2.0	0.1 L	8	LA
P4CBKQ	22.4	22.1	23.0	23.4	22.7	-1.10	2.0	0.6	22.3	-1.43	2.0	0.6	12	LU
PD2YFT	22.6	23.4	23.4	22.4	23.0	-0.86	1.6	0.5	23.0	-0.73	1.6	0.6	12	LW
PHB3KA	24.7	24.3	24.0 L	24.6 L	24.4	0.49	1.2	0.3	24.8	0.96	1.5	0.5	8	LU
PHB3KA_AL	24.1	23.0	20.7 *	23.8	22.9	-0.92	1.3	1.6 H	23.3	-0.49	1.3	1.3	8	AL
PKHJGK	23.5	23.0	22.7	22.9	23.0	-0.80	1.4	0.3	23.1	-0.67	1.6	0.3	12	LA
PKHJGK_AL	22.8	22.6	23.6	24.1	23.3	-0.56	1.4	0.7	23.2	-0.52	1.5	0.5	12	AL
PUKWGK	25.2	26.3 *	26.1	25.1	25.7	1.67	1.5	0.6	25.8	1.94 *	1.6	0.8	12	LH
Q8MPJG	19.0 X	17.5 XH	13.8 XH	15.4 XH	16.4	-6.94 X	2.6	2.3 H	17.1	-6.50 X	2.2	2.0 H	12	LZ
Q8MPJG_AL	38.3 XL	39.4 XL	38.3 XL	39.4 XL	38.9	13.93 X	0.0	0.6	37.9	13.65 X	0.0	2.0 H	12	AL
QPNT6R	22.6	22.3	21.9	23.1	22.5	-1.31	1.7	0.5	22.7	-1.01	1.6	0.5	12	LU
R86Y9B	23.1	23.6	23.0	26.6	24.1	0.18	1.6	1.7 H	24.8	1.01	1.8	1.2	12	LA
RVPAA7	23.9	24.3 H	23.7	No Data	24.0	0.07	2.0	0.3	23.2	-0.61	1.7	0.7	11	LH
RVPAA7_AL	24.6	25.4	No Data	No Data	25.0	1.04	1.6	0.6	23.6	-0.18	1.6	0.9	10	AL
TTFL8L	25.4 L	25.1	23.9 L	24.1 L	24.6	0.69	0.8	0.7	24.2	0.37	0.8	0.7	12	LH
UDKJ78	22.8	24.3	25.8	24.3	24.3	0.39	1.6	1.2	24.0	0.17	1.6	0.9	12	XX
UN7KPN_AL	23.6	24.9	24.2	24.3	24.3	0.35	1.8	0.6	24.3	0.47	1.8	0.6	4	AL
V3FT2C	23.7	23.7	23.8	23.4	23.7	-0.20	1.4	0.2	23.8	0.04	1.4	0.2 L	12	TT
VC9Y4P	22.6 L	22.4	22.4	23.3	22.7	-1.13	1.4	0.4	23.0	-0.71	1.4	0.6	8	LW
WZ73C8	23.1	23.1	23.8	22.9	23.2	-0.62	1.6	0.4	23.5	-0.24	1.8	0.7	12	LA
X3B6JN	22.3	21.8	21.7	22.2	22.0	-1.74	1.7	0.3	22.0	-1.73	1.7	0.5	12	LY
YGL9HN	23.1	22.9	24.2	24.0	23.6	-0.30	1.4	0.7	23.9	0.15	2.3	0.7	12	LA
YPGBLL	22.5	21.9	22.8	22.1	22.3	-1.45	1.7	0.4	22.7	-1.05	1.7	0.6	8	LA
YTFMHL_AL	26.1 L	24.0	24.2 L	25.3 H	24.9	0.95	1.5	1.0	24.0	0.18	1.6	1.4	12	AL
ZC8ZLC	22.6	23.5	22.4	22.2	22.7	-1.12	1.7	0.6	22.7	-0.99	1.7	0.4	12	LZ
ZV3NZE	23.2	22.2	23.3 L	23.5 L	23.1	-0.75	1.1	0.6	23.2	-0.53	1.1	0.5	12	BK

Consensus (All Labs) Results

Wk Mean	23.94	23.80	23.82	23.96	Month Mean	23.88	Grand Mean	23.78
Avg SDr	1.74	1.61	1.58	1.63	Avg SD	1.65	Avg SD	1.69
SD btwn Labs	1.27	1.27	1.32	1.46	SD btwn Labs	1.08	SD btwn Labs	1.03
Labs Incld	57	56	56	56	SD btwn Wks	0.78	SD btwn Wks	0.96
Labs Excld	8	9	7	7	Labs Incld	56	Labs Incld	58
Labs not Rcvd	0	0	2	2				

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		

	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
2GZEUJ_AL	22.1	22.8	23.2	23.6	22.9	-0.36	1.7	0.7	23.0	-0.23	1.5	1.0	12	XX
33VKUU	25.2	24.6	24.2	26.4 *	25.1	1.72	1.8	0.9	24.0	0.83	1.7	2.1 H	12	LH
3AXM2F	23.1	23.3	23.1	23.4	23.2	-0.08	1.4	0.1	23.3	0.08	1.2	0.4	12	LA
3VU79T	28.1 XL	28.8 XL	30.3 XL	30.1 XL	29.4	5.78 X	0.0	1.1	28.9	5.84 X	0.0	1.3	12	TT
3ZQWF6	23.2	22.4	23.0	22.7	22.8	-0.46	1.4	0.4	22.7	-0.53	1.4	0.4	12	TT
4ARUKJ	24.9	24.9 H	25.9 *	24.2	25.0	1.59	2.3	0.7	23.9	0.71	2.1	1.1	12	LW
4CFBR7	31.7 X	30.9 XH	31.2 X	32.6 X	31.6	7.93 X	2.2	0.7	31.4	8.35 X	1.9	0.6	8	XX
4G9DXR	24.5	24.1	24.1	23.9	24.2	0.81	1.9	0.3	24.3	1.11	1.8	0.8	12	LU
4PQLN9_AL	24.5	23.9	23.8	25.7 *	24.5	1.10	1.8	0.9	24.6	1.43	1.9	1.0	12	AK
4W4T4C	23.8	24.2	23.9	24.2	24.0	0.68	1.7	0.2	23.6	0.41	2.0	0.6	12	LZ
6D9GUH	25.8 *	25.9 *	24.2 L	25.5	25.3	1.94 *	1.4	0.8	25.4	2.23 *	1.7	0.5	8	LU
78FLN4	24.1	23.8	24.4	21.9	23.5	0.22	1.9	1.1	23.2	-0.02	2.1	1.2	8	LA
7LDTL7	23.8	25.1 H	24.7	25.5	24.8	1.38	2.0	0.7	22.1	-1.08	1.6	2.0 H	12	TT
7ZWCJF_AL	22.3	23.5	24.6	22.7	23.3	-0.03	1.5	1.0	22.9	-0.34	1.6	0.9	12	AL
89APW6	23.4	25.0	22.2	22.7	23.3	0.02	1.8	1.2	23.0	-0.20	2.0	1.1	12	LH
89P9G3	23.3	22.7	23.2 L	23.4	23.2	-0.15	1.0	0.3	22.8	-0.35	1.7	1.3	8	LA
9KGYXZ	22.4	22.5	22.6	22.7	22.5	-0.76	1.7	0.1	22.5	-0.71	1.6	0.2 L	12	LU
9PR6GD	24.1	23.0	23.6	23.3	23.5	0.18	1.7	0.5	23.2	0.03	1.7	0.5	12	LU
AMV7H6	23.5	24.4	25.5	19.7 X	23.3	-0.05	2.0	2.5 H	23.9	0.68	2.1	1.7	12	LA
AN8QKM	25.7 *	24.6	24.2	24.3	24.7	1.31	2.0	0.7	25.8	2.68 *	2.0	1.0	12	LH
B7LP3Q_AL	22.2	22.2	23.0	23.2	22.7	-0.63	1.7	0.5	22.8	-0.38	1.8	0.6	12	AK
B8JUKK	24.6 H	21.9	No Data	23.8	23.5	0.13	1.9	1.4 H	23.7	0.56	1.9	1.2	11	LU
BKQZG6_AL	22.8	22.2	23.3	21.9	22.5	-0.74	1.7	0.6	22.4	-0.82	1.6	0.4	12	XX
BMBWY4	20.3 *	19.5 XL	20.8 *	21.9	20.6	-2.57 *	1.3	1.0	21.6	-1.66	1.6	1.1	12	LZ
BR97DB	22.7	22.6	22.2	22.6	22.5	-0.73	1.9	0.2	22.0	-1.26	1.9	0.7	12	LU
BTXKVU	23.2	21.6	22.1	22.8	22.4	-0.87	1.7	0.7	22.9	-0.29	1.7	1.1	12	LY
C3J4TY	24.0	23.5	23.9	23.4	23.7	0.38	1.7	0.3	23.7	0.55	1.7	0.3	12	LU
DHTB32	41.5 XH	38.5 XH	42.5 XH	36.7 XH	39.8	15.78 X	3.6	2.7 H	29.2	6.11 X	2.8	8.0 H	12	LZ
F6GPUT_AL	25.1	24.5	25.6	24.2	24.9	1.47	2.1	0.6	24.8	1.66	2.1	0.7	8	AL
FJHEUY_AL	21.7	21.5	21.4	21.5	21.5	-1.71	1.2	0.1	23.3	0.15	1.4	1.4	12	AL
G4ZL48_AL	22.8	23.0	22.7	22.7 H	22.8	-0.49	1.8	0.1	22.7	-0.48	1.9	0.4	12	AK
G7P3CU	24.2	25.1	24.3	24.1	24.4	1.05	1.8	0.4	23.6	0.38	1.6	1.3	11	LA
GA8J7K_AL	25.4	25.4	26.0 *	25.2 L	25.5	2.09 *	1.6	0.3	24.2	0.98	1.6	1.1	12	AL
JHAG8T	21.4	21.0 *	22.0	22.4	21.7	-1.54	1.5	0.6	22.0	-1.20	1.6	0.5	12	LH
KQJZ94_AL	24.9	23.6	24.9	24.8	24.6	1.19	1.5	0.7	24.3	1.14	1.6	1.1	12	XX

	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
KWC3C4_AL	23.9	22.4	23.0	23.3	23.1	-0.17	1.8	0.6	23.1	-0.07	1.7	0.7	12	AL
LMFTXQ	23.4	22.8	23.4	24.0	23.4	0.09	1.6	0.5	24.0	0.80	1.6	0.8	8	LH
MYL46C	32.5 XL	30.6 XL	29.4 XL	31.3 XL	30.9	7.29 X	0.0	1.3	35.7	12.73 X	0.0	3.6 H	12	LH
MZX4ZL	34.5 XH	33.9 XH	34.0 XH	33.5 X	34.0	10.20 X	3.2	0.4	33.9	10.91 X	2.7	1.4	12	TT
NQPT9M	22.9	23.1	23.0	22.9	22.9	-0.35	1.8	0.1 L	23.0	-0.20	1.9	0.1 L	8	LA
P4CBKQ	21.4	21.9	22.1 H	21.9	21.8	-1.43	2.0	0.3	21.8	-1.37	1.8	0.4	12	LU
PD2YFT	23.3	22.7	23.1	22.2	22.8	-0.49	1.7	0.5	22.4	-0.82	1.5	0.5	12	LW
PHB3KA	24.7 L	24.2 L	22.4	24.5	24.0	0.63	1.0	1.0	24.2	1.06	1.6	0.8	8	LU
PHB3KA_AL	23.3	22.9	20.9 *	23.2	22.6	-0.72	1.5	1.1	22.8	-0.36	1.6	0.9	8	AL
PKHJGK	22.4	23.1	22.6	22.3	22.6	-0.69	1.6	0.4	22.7	-0.48	1.6	0.3	12	LA
PKHJGK_AL	23.6	23.0	23.4 H	23.0	23.2	-0.08	1.8	0.3	22.9	-0.29	1.8	0.5	12	AL
PUKWGK	25.4	25.1	25.2	25.2	25.2	1.84	1.6	0.1	25.3	2.17 *	1.6	0.5	12	LH
Q8MPJG	16.2 X	18.1 X	16.1 XH	16.1 XH	16.6	-6.42 X	2.5	1.0	16.7	-6.63 X	1.9	1.6	12	LZ
Q8MPJG_AL	32.7 XL	34.2 XL	32.8 XL	32.3 XL	33.0	9.25 X	0.0	0.8	32.3	9.29 X	0.0	1.1	12	AL
QPNT6R	22.0	22.8	21.5	22.9	22.3	-0.98	1.6	0.7	22.0	-1.24	1.7	0.6	12	LW
R86Y9B	22.0	23.4	22.8 L	23.5	22.9	-0.37	1.6	0.7	23.7	0.52	1.8	1.0	12	LA
RVPAA7	22.9	23.4	22.9	No Data	23.1	-0.23	1.7	0.2	23.0	-0.24	1.8	0.4	11	LH
RVPAA7_AL	23.4	24.0	No Data	No Data	23.7	0.37	2.2	0.4	23.4	0.25	1.9	0.7	10	AL
TTFL8L	24.1 L	25.1 L	23.4 L	24.0	24.2	0.80	0.7	0.7	24.1	0.88	0.9	0.5	12	LH
UDKJ78	23.4 L	23.2	23.4	23.0	23.2	-0.08	1.5	0.2	22.8	-0.35	1.5	0.8	12	XX
UN7KPN_AL	24.5	24.0	24.7	24.7	24.5	1.10	1.8	0.3	24.5	1.29	1.8	0.3	4	AL
V3FT2C	23.2	23.4	23.2	23.1	23.2	-0.09	1.4	0.1 L	23.0	-0.16	1.3	0.3	12	TT
VC9Y4P	23.7	22.7	22.4	23.4	23.0	-0.28	1.3	0.6	22.4	-0.76	1.4	0.8	8	LW
WZ73C8	23.2	23.0	22.7	24.0	23.2	-0.09	1.8	0.6	22.5	-0.72	1.8	0.7	12	LA
X3B6JN	22.5	20.8 *	20.9	21.2 *	21.3	-1.88	1.7	0.8	21.2	-2.07 *	1.7	0.5	12	LY
YGL9HN	22.8	23.3	22.6	23.5	23.1	-0.23	1.4	0.4	23.5	0.27	1.5	1.0	12	LA
YPGBLL	22.5	23.5	22.8	23.0	23.0	-0.34	1.5	0.4	22.9	-0.32	1.6	0.5	8	LW
YTFMHL_AL	23.2 L	23.6 L	22.8	23.8 L	23.4	0.04	0.8	0.4	21.8	-1.44	1.3	1.7	12	AL
ZC8ZLC	22.5	22.0	22.1	22.0	22.2	-1.10	1.7	0.2	22.3	-0.94	1.7	0.5	12	LZ
ZV3NZE	21.6	21.7 L	22.0 L	22.4 L	21.9	-1.33	1.0	0.4	21.7	-1.48	1.1	0.3	12	BK

Consensus (All Labs) Results

Wk Mean	23.39	23.33	23.24	23.41	Month Mean	23.31	Grand Mean	23.19
Avg SDr	1.65	1.72	1.68	1.55	Avg SD	1.65	Avg SD	1.69
SD btwn Labs	1.18	1.14	1.22	1.13	SD btwn Labs	1.05	SD btwn Labs	0.98
Labs Incld	58	57	56	55	SD btwn Wks	0.70	SD btwn Wks	0.90
Labs Excld	7	8	7	8	Labs Incld	58	Labs Incld	58
Labs not Rcvd	0	0	2	2				

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 (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	SD		Mean	CPV	SD Months	Months	Inst
2GZEUJ_AL	115.5	-1.45	13.06		121.6	-1.17	5.36	4	XX
3AXM2F	110.2	-1.88	4.98	L	112.2	-2.01 *	3.33	4	EV
4ARUKJ	117.0	-1.33	12.82		118.9	-1.41	7.05	4	XX
4G9DXR	154.6	1.72	25.88		146.2	1.04	47.53 H	4	EV
4PQLN9_AL	135.2	0.15	14.98		131.2	-0.31	6.99	4	AK
4W4T4C	129.3	-0.33	8.65		130.3	-0.39	2.29	4	LS
78FLN4	133.3	-0.01	20.47		131.7	-0.26	5.36	3	LA
89APW6	134.4	0.08	10.07		132.4	-0.20	1.94	4	EV
AMV7H6	135.4	0.17	22.00		138.2	0.32	2.21	4	LA
AN8QKM	180.5	3.82 X	66.12	H	193.8	5.29 X	38.09 H	4	LS
B7LP3Q	139.2	0.48	24.10		141.4	0.60	5.98	4	EV
BKQZG6_AL	113.0	-1.65	10.56		117.8	-1.51	5.89	4	AL
BR97DB	137.8	0.36	12.84		148.5	1.24	7.78	4	EV
BTXKVU	144.9	0.94	17.14		147.4	1.14	3.34	4	EV
FHZ9PH	138.3	0.40	17.49		132.5	-0.19	4.66	4	LS
FJHEUY_AL	157.4	1.95 *	26.47		145.1	0.94	10.19	4	AL
G4ZL48	129.1	-0.35	11.32		124.2	-0.93	3.97	4	LS
G4ZL48_AL	124.8	-0.70	18.97		133.8	-0.08	7.46	4	AK
G7P3CU	153.3	1.61	25.60		178.7	3.94 X	61.85 H	4	LA
GA8J7K_AL	111.8	-1.75	13.83		120.6	-1.26	9.57	4	AL
KQJZ94_AL	122.1	-0.91	17.55		129.8	-0.44	6.87	4	XX
NQPT9M	137.1	0.30	13.63		136.5	0.17	0.52 L	3	LS
P4CBKQ	144.8	0.93	10.62		149.3	1.31	6.06	4	EV
PHB3KA_AL	117.9	-1.25	17.27		124.5	-0.91	8.98	3	AL
PKHJGK	133.9	0.04	14.94		135.4	0.07	1.32 L	3	LA
PKHJGK_AL	138.8	0.44	19.30		143.3	0.77	4.19	3	AL
RVPAA7_AL	127.2	-0.50	15.38		133.1	-0.14	7.27	4	AL
UN7KPN_AL	131.7	-0.13	19.86		131.7	-0.26	0.00	1	AL
X3B6JN	150.2	1.37	11.77		152.5	1.60	3.24	4	EV
YGL9HN	139.3	0.48	12.03		125.1	-0.86	12.44	4	LA
YPGBLL	134.1	0.06	21.97		141.1	0.58	6.17	3	LA
YTFMHL_AL	140.5	0.58	20.78		159.8	2.25 *	17.27	4	AL
ZC8ZLC	135.5	0.17	12.89		138.1	0.31	3.74	2	LS

Consensus (All Labs) Results

Month Mean	133.36	Grand Mean	134.65
Avg SD	17.07	Avg SD Months	10.99
SD btwn Labs	12.33	SD btwn Labs	11.18
Labs Incld	32	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

Containerboard Interlaboratory Testing Program
Analysis 229
Roughness - Sheffield Method, 42 lb Linerboard - 42F4
TAPPI Official Test Method T538

Report #625 (L)
October 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4L2EY7	395.1	3.60 X	7.40		396.6	4.15 X	3.16	3	TS
4PQLN9_AL	351.4	-0.49	5.87		350.4	-0.75	1.48	3	AK
7ZWCJF_AL	371.4	1.38	10.09		369.5	1.28	2.87	3	AL
9KGYXZ	359.6	0.28	7.99		360.5	0.32	4.91	3	XX
B7LP3Q	354.3	-0.22	10.15		356.6	-0.09	4.39	3	LA
B7LP3Q_AL	346.0	-0.99	9.13		352.8	-0.49	8.90	3	AK
EELD9K	359.5	0.27	6.86		355.4	-0.22	3.64	3	PP
F4K8WX	370.0	1.26	13.45 H		369.0	1.23	3.45	3	PP
F6GPUT	354.1	-0.24	7.32		352.1	-0.57	3.73	3	PP
G4ZL48_AL	344.7	-1.12	4.41		344.7	-1.35	0.00	1	AK
GA8J7K_AL	345.9	-1.00	6.03		348.3	-0.97	2.51	3	AL
JU26YL	373.5	1.58	8.59		373.5	1.70	0.00	1	TS
KQJZ94_AL	116.9	-22.43 X	10.07		120.4	-25.11 X	3.16	3	XX
KWC3C4_AL	359.5	0.27	8.36		359.5	0.22	0.55 L	3	AL
MYL46C	375.7	1.79	6.57		372.8	1.63	3.12	3	LA
MYL46C_AL	343.4	-1.24	3.23 L		345.7	-1.24	2.55	3	AK
PKHJGK_AL	350.1	-0.61	6.17		360.8	0.36	14.79 H	3	AL
R86Y9B	365.1	0.79	5.45		364.9	0.79	0.97	3	XX
RVPAA7_AL	347.2	-0.88	8.47		345.5	-1.27	1.62	3	AL
ZC8ZLC	347.6	-0.84	8.73		351.9	-0.58	5.09	3	XX

Consensus (All Labs) Results

Month Mean	356.61	Grand Mean	357.45
Avg SD	7.95	Avg SD Months	5.26
SD btwn Labs	10.69	SD btwn Labs	9.44
Labs Incld	18	Labs Incld	18

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
LA	L & W Autoline (229 Enrollment)	PP	Technidyne Profile/Plus
TS	TMI Monitor/Smoothness	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 42 lb Linerboard - 42F

TAPPI Official Test Method T569

Report #625 (L)
October 2021

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
2GZEUJ	96.8	-0.37	2.17	99.2	0.05	3.50	4	TM
3AXM2F	99.0	-0.20	2.00	100.2	0.16	4.40	4	TM
4G9DXR	127.6	2.01 *	8.91	93.9	-0.53	22.53 H	4	TM
4PQLN9	111.2	0.74	2.05	97.1	-0.18	15.82	4	TM
7ZWCJF	41.7	-4.62 X	2.38	42.8	-6.11 X	0.77 L	4	LZ
89APW6	112.0	0.80	5.70	106.8	0.88	7.09	4	SC
9KGYXZ	127.2	1.98 *	9.06	116.1	1.90 *	7.82	4	HY
AN8QKM	73.8	-2.15 *	4.60	75.8	-2.50 *	4.13	4	TM
B7LP3Q	89.6	-0.93	3.85	86.2	-1.37	3.00	4	TM
B8JUKK	93.4	-0.63	1.95	99.4	0.08	25.39 H	4	TM
BR97DB	92.6	-0.70	6.19	93.4	-0.59	3.62	4	TM
BTXKVU	106.3	0.36	3.05	88.8	-1.08	31.31 H	4	HZ
CXQ4BX	112.6	0.85	7.02	111.1	1.35	3.41	4	TM
DE9EK3	73.6	-2.16 *	5.03	248.6	16.38 X	144.15 H	4	SC
EELD9K	106.2	0.35	1.64	105.4	0.73	1.43 L	4	HY
F6GPUT	106.4	0.37	4.04	104.0	0.58	4.02	4	HY
FHZ9PH	103.2	0.12	6.22	102.9	0.45	2.30	4	HY
FJHEUY	105.0	0.26	9.35	109.0	1.12	5.35	4	SC
G4ZL48	99.4	-0.17	5.93	93.1	-0.61	5.96	4	TM
KWC3C4	103.1	0.12	5.30	99.7	0.11	2.61	4	TM
PKHJGK	102.4	0.06	2.88	97.6	-0.13	11.87	4	TM
R86Y9B	88.6	-1.00	3.13	88.3	-1.14	1.75 L	4	SC
WKWE3D	96.6	-0.39	1.75	92.4	-0.68	4.36	4	TM
WZ73C8	104.4	0.22	6.73	101.3	0.28	5.28	4	HZ
YPGBLL	107.6	0.46	5.18	108.8	1.10	2.25	3	HY
YTFMHL	144.2	3.29 X	4.97	136.1	4.09 X	15.83	4	SC

Consensus (All Labs) Results

Month Mean	101.61	Grand Mean	98.71
Avg SD	5.29	Avg SD Months	11.16
SD btwn Labs	12.95	SD btwn Labs	9.15
Labs Incld	24	Labs Incld	23

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	100.23	12.49	1.38	21
Modified Scott Bond Mechanics	117.40	13.86	15.79	2

Analysis Notes

7ZWCJF - 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		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months		Months
2GZEUJ	28.9	0.44	0.60	L	28.3	0.35	1.10		4
3GE84R	32.2	1.28	2.59		31.0	1.23	3.73		4
4ARUKJ	26.2	-0.25	5.76		26.3	-0.27	1.24		4
4G9DXR	33.0	1.48	2.74		30.2	0.98	4.65	H	4
4PQLN9	28.8	0.41	4.97		28.3	0.38	0.75		4
4W4T4C	30.4	0.83	4.60		28.6	0.48	1.22		4
7ZWCJF	24.2	-0.76	1.60		23.9	-1.04	1.13		4
89APW6	32.6	1.38	0.38	L	31.0	1.22	1.48		4
AN8QKM	22.4	-1.22	3.36		23.8	-1.06	3.57		4
B7LP3Q	29.7	0.64	2.31		29.4	0.71	0.88		4
B8JUKK	32.2	1.28	2.59		31.5	1.37	2.14		4
BKQZG6	27.0	-0.04	3.54		25.4	-0.57	2.42		4
BR97DB	24.2	-0.76	3.19		27.2	0.02	3.47		4
BTXKVU	20.2	-1.78	1.10		20.0	-2.29	1.26	*	4
EELD9K	23.2	-1.01	4.60		26.3	-0.28	2.56		4
F6GPUT	32.2	1.28	1.96		30.9	1.18	2.06		4
FJHEUY	23.4	-0.96	1.52		24.5	-0.86	0.72		4
G4ZL48	27.6	0.11	3.60		27.6	0.13	1.11		4
G7P3CU	20.2	-1.78	4.71		21.2	-1.91	1.17		4
GA8J7K	30.0	0.72	3.36		29.4	0.72	0.53		4
NQPT9M	26.6	-0.15	0.55	L	26.8	-0.11	0.53		3
P4CBKQ	20.0	-1.83	3.39		23.4	-1.21	3.13		4
PKHJGK	24.2	-0.76	2.59		23.6	-1.13	1.62		4
R86Y9B	29.0	0.47	0.71	L	28.9	0.56	0.26	L	4
RB8UZR	23.4	-0.96	2.19		23.6	-1.14	0.44		4
TTFL8L	29.7	0.64	1.44		28.9	0.56	3.23		4
X3B6JN	28.6	0.37	3.52		28.2	0.35	2.42		4
YPGBLL	31.4	1.08	2.51		28.9	0.55	2.20		3
YTFMHL	28.5	0.34	0.55	L	31.2	1.28	2.90		4
Z2DGFJ	23.4	-0.96	2.07		23.6	-1.14	0.19	L	4
ZC8ZLC	28.9	0.44	6.19	H	30.1	0.93	2.78		4

Consensus (All Labs) Results

Month Mean	27.17	Grand Mean	27.14
Avg SD	3.14	Avg SD Months	2.17
SD btwn Labs	3.93	SD btwn Labs	3.14
Labs Incld	31	Labs Incld	31

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

Containerboard Interlaboratory Testing Program
Analysis 237
Air Resistance, 42 lb Linerboard - 42F4
TAPPI Official Test Method T460

Report #625 (L)
October 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2GZEUJ_AL	22.2	-0.13	1.58		22.5	0.04	0.78	4	XX
33VKUU	19.7	-1.73	1.70		21.2	-1.03	1.05	4	GL
3GE84R_AL	22.2	-0.13	0.94		22.0	-0.35	0.95	4	AL
4ARUKJ	21.6	-0.51	1.93		21.5	-0.76	0.96	4	LP
4G9DXR_AL	24.7	1.46	1.63		22.5	0.06	1.51	4	AL
4PQLN9_AL	21.8	-0.42	2.10		22.4	-0.04	0.46	4	AK
4W4T4C	21.1	-0.81	1.36		21.5	-0.73	0.73	4	XX
639QDG	20.4	-1.32	0.54	L	21.0	-1.19	0.78	4	LP
78FLN4	23.7	0.80	1.30		24.5	1.63	0.97	3	LA
7ZWCJF_AL	24.4	1.26	0.94		24.4	1.60	0.63	4	AL
89APW6	23.6	0.78	3.14		23.5	0.83	1.08	4	LP
9KGYXZ	22.9	0.30	3.84	H	22.4	0.00	1.27	4	TP
AMV7H6	26.2	2.41 *	2.37		24.6	1.73	2.18 H	4	LA
AN8QKM	25.1	1.71	3.20		24.4	1.57	0.50	4	TD
B7LP3Q_AL	21.6	-0.52	1.41		22.0	-0.38	0.67	4	AK
B8JUKK_AL	21.3	-0.72	1.62		22.5	0.03	1.23	4	AL
BKQZG6_AL	21.9	-0.32	1.45		21.9	-0.41	0.50	4	AL
BR97DB	22.2	-0.13	3.41	H	21.9	-0.48	0.55	4	GA
BTXKVU	22.6	0.11	0.86	L	22.3	-0.10	0.70	4	LP
EELD9K	22.2	-0.16	2.89		22.5	0.01	0.78	4	TP
F6GPUT	24.6	1.39	4.79	H	23.7	1.05	1.03	4	TP
FHZ9PH	21.2	-0.77	1.50		22.0	-0.34	0.69	4	LP
FJHEUY_AL	18.5	-2.50 *	1.72		19.2	-2.67 *	0.75	4	AL
G4ZL48_AL	21.6	-0.55	1.49		22.5	0.08	0.80	4	AK
G7P3CU	20.8	-1.02	2.39		21.4	-0.86	0.38	4	LA
GA8J7K_AL	21.3	-0.72	1.47		21.2	-1.01	0.25	4	AL
KQJZ94_AL	23.1	0.45	2.12		22.6	0.10	0.48	4	XX
KWC3C4_AL	21.7	-0.46	2.20		21.8	-0.51	0.47	4	AL
MYL46C	16.0	-4.08 X	1.73		17.1	-4.33 X	0.93	3	LA
MYL46C_AL	19.9	-1.62	2.04		20.4	-1.63	1.72	3	AK
NQPT9M	22.1	-0.20	1.45		22.1	-0.31	0.06 L	3	LA
P4CBKQ	21.1	-0.86	2.29		20.0	-1.96 *	1.92 H	4	XX
PHB3KA	22.5	0.08	1.92		22.9	0.34	0.47	2	LA
PHB3KA_AL	22.0	-0.26	1.25		22.0	-0.33	0.45	3	AL
PKHJGK	25.4	1.92	0.73	L	25.2	2.25 *	0.42	4	LA
PKHJGK_AL	23.9	0.96	1.38		24.3	1.52	0.53	4	AL
RTKLUG	23.4	0.63	2.12		22.8	0.31	1.30	4	GG
RVPAA7_AL	23.7	0.83	1.53		23.5	0.86	0.14 L	4	AL
TME8N6	22.9	0.31	0.88	L	22.6	0.09	0.24	4	LP

Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42F4

TAPPI Official Test Method T460

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
UN7KPN_AL	23.4	0.63	0.66	L	23.4	0.77	0.00	1	AL
X9GLBX	21.7	-0.46	1.77		21.8	-0.54	0.85	4	XX
YGL9HN	22.2	-0.17	1.79		22.0	-0.33	0.18	4	LA
YPGBLL	21.3	-0.71	1.77		22.1	-0.25	0.91	3	LP
YTFMHL_AL	22.9	0.28	2.36		23.3	0.70	0.67	4	AL
ZC8ZLC	23.8	0.90	2.44		23.2	0.62	0.65	4	GA

Consensus (All Labs) Results

Month Mean	22.41	Grand Mean	22.45
Avg SD	2.05	Avg SD Months	0.90
SD btwn Labs	1.56	SD btwn Labs	1.24
Labs Incld	44	Labs Incld	44

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
GL	Giddings and Lewis Sheffield	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

	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
33VKUU	55.7	55.5	54.3	55.8	55.3	-1.16	3.1	0.7	55.2	-1.27	4.1	1.5	16	LD
3AXM2F	58.4	57.7	59.0	59.2	58.6	0.11	3.2	0.7	59.5	0.56	3.2	2.4	16	LC
3L838K	58.6	58.1	57.9	59.2	58.5	0.06	3.3	0.6	58.2	0.03	3.0	0.6 L	16	LC
3VU79T	59.5	56.6	56.5	55.3	57.0	-0.51	3.4	1.8	55.2	-1.25	3.7	2.0	16	EM
3ZQWF6	59.4	59.2	58.0	59.9	59.1	0.32	4.2	0.8	59.1	0.42	4.8	1.2	16	TJ
43DV9T	57.3 H	52.9 H	56.5 H	55.6 H	55.5	-1.07	14.7	1.9	61.3	1.36	8.9	3.7	16	LC
4ARUKJ	60.2	62.3	66.6 X	63.5 *	63.2	1.90	3.5	2.7	61.3	1.33	3.8	2.2	16	LD
4G9DXR	60.5	57.8	58.7	58.6	58.9	0.24	3.8	1.1	58.9	0.31	4.0	1.9	16	LC
4PQLN9	50.8 X	56.3	57.8	56.5	55.4	-1.15	4.4	3.1	55.9	-0.98	4.4	2.8	16	LD
4VRZ64	57.7 L	63.6	59.7 L	59.9	60.2	0.76	2.6	2.5	58.9	0.30	2.5	1.8	16	LC
639QDG	56.4	60.1	60.3	58.5	58.8	0.21	3.5	1.8	58.0	-0.05	3.5	2.2	16	LD
78FLN4	53.3 *	43.9 X	52.9 *	56.7	51.7	-2.58 *	3.8	5.4 H	53.9	-1.82	5.1	5.0 H	12	MB
7ZWCJF	53.3 *	54.8	55.1	54.7	54.5	-1.49	3.4	0.8	53.1	-2.15 *	3.5	1.9	16	LD
9J2XQR	63.0 *L	62.4 L	62.4 L	62.5 L	62.6	1.67	1.3	0.3	59.0	0.37	2.2	3.2	16	TU
9KGYXZ	58.6	60.1	55.5	56.5	57.7	-0.24	4.0	2.0	57.1	-0.46	3.8	1.4	16	LC
9PR6GD	58.6	58.3	59.2	58.2	58.6	0.11	3.7	0.5	59.0	0.38	3.7	2.7	16	LD
A3UXHN	58.4 L	58.4	58.4 L	58.4 L	58.4	0.05	1.6	0.0 L	58.3	0.05	1.5	0.4 L	16	LD
A82LVQ	60.6	60.4 L	60.7 L	60.5 L	60.5	0.88	1.7	0.1 L	63.1	2.09 *	1.6	2.6	16	MB
AMV7H6	55.8	54.3	59.8	53.3 *	55.8	-0.98	4.1	2.8	58.6	0.18	4.9	4.5 H	16	TU
BKQZG6	58.6	60.4	56.9	60.0	59.0	0.26	4.0	1.6	59.9	0.76	3.5	1.7	16	LZ
BMBWY4	57.0	53.7	56.9	54.9	55.6	-1.05	3.9	1.6	55.7	-1.05	3.8	1.7	16	TH
BR97DB	55.8	57.1	55.3	57.4	56.4	-0.74	2.5	1.0	57.0	-0.49	3.4	2.4	16	LD
BTXKVU	59.9	54.7 H	56.6	55.3	56.6	-0.65	4.3	2.3	58.4	0.12	4.0	2.0	16	LZ
DDFEWZ	55.7	57.5	58.9	56.3	57.1	-0.48	3.0	1.4	57.0	-0.50	2.7	1.6	12	TH
DE9EK3	54.3	50.5 *	54.4	54.7	53.5	-1.88	3.2	2.0	53.9	-1.80	3.2	1.8	16	LC
EJJUMZ	61.7	63.1	59.5	62.4	61.7	1.32	4.3	1.6	61.9	1.62	4.1	1.8	16	TX
EU2E8W	59.5 L	59.7 L	59.6	59.6 L	59.6	0.51	1.9	0.1 L	59.4	0.54	1.3	0.2 L	16	LD
F6GPUT	59.8	60.4	59.0	60.5	59.9	0.63	4.0	0.7	60.1	0.84	4.1	1.4	16	LD
FHZ9PH	No Data	No Data	No Data	59.7	59.7	0.56	2.7	0.0	58.3	0.07	3.7	2.0	5	LD
FNQMDN	58.1	58.2	58.4	58.2	58.2	-0.02	3.9	0.1 L	58.7	0.22	3.8	0.5 L	16	LD
G4EFF2	72.6 XH	76.7 XH	73.3 X	75.4 X	74.5	6.32 X	6.6	1.9	48.7	-4.05 X	6.2	19.3 H	16	XX
G7P3CU	34.3 X	46.0 X	55.9	56.1	48.1	-3.99 X	3.1	10.3 H	53.3	-2.08 *	4.6	6.4 H	16	MB
JHAG8T	55.6	56.2	54.6 L	55.1	55.4	-1.12	2.2	0.7	55.9	-0.96	2.6	1.1	16	EN
KQJZ94	59.8	57.9	60.0	60.7	59.6	0.50	4.7	1.2	59.1	0.40	4.2	1.8	16	LD
LMFTXQ	63.4 *	64.4 *	66.7 XL	65.0 *L	64.9	2.57 *	2.7	1.4	65.5	3.13 X	3.2	1.9	8	LD

	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
MFUDRX	56.6	56.0 L	55.9 L	55.9	56.1	-0.86	2.3	0.4	56.7	-0.63	2.5	0.7	16	LD
NQPT9M	57.9	57.6	58.0 L	58.6	58.0	-0.10	1.7	0.4	58.4	0.10	2.1	0.5 L	12	LD
PD2YFT	60.9	58.8	57.4	59.4	59.1	0.33	3.2	1.4	59.7	0.66	3.1	1.4	16	LD
PHB3KA	62.6	62.7	63.8 *	61.4	62.6	1.69	3.3	1.0	63.1	2.11 *	3.5	1.4	12	LZ
PKHJGK	56.4	58.0	61.4	58.2	58.5	0.09	4.0	2.1	56.8	-0.56	3.7	1.6	16	LD
PUKWGK	53.8	54.9	54.0	54.4	54.3	-1.57	3.5	0.5	55.4	-1.18	3.2	1.4	16	LD
Q8MPJG	57.3	56.5	55.5	55.8	56.3	-0.79	4.0	0.8	55.3	-1.22	3.7	1.7	16	LD
QNB7MD	61.8	61.6	60.7	61.5	61.4	1.21	4.3	0.5	59.3	0.47	3.9	2.1	16	LD
QPNT6R	58.4	57.9	58.0	60.2	58.6	0.13	3.5	1.0	57.9	-0.11	3.3	1.9	16	LZ
TME8N6	57.8	57.9	61.0	59.7	59.1	0.31	3.4	1.5	58.8	0.29	3.1	1.6	16	LD
TTFL8L	60.9	60.8	62.6	61.7	61.5	1.26	3.4	0.8	62.6	1.88	3.7	1.6	16	LD
UDKJ78	60.1 L	63.4 L	59.2 L	62.9 L	61.4	1.22	0.7	2.1	61.1	1.25	0.9	1.5	16	XX
UV3FRT	57.7	58.8	58.2	58.5	58.3	0.01	2.8	0.5	58.2	0.04	2.9	0.5 L	16	LD
V3FT2C	57.6	59.0	58.4	60.6	58.9	0.24	5.3	1.3	58.3	0.08	5.3	1.2	16	TG
WF3D4K	55.4	56.2	60.5	57.0	57.3	-0.39	4.6	2.2	60.0	0.78	4.1	3.2	16	LD
WZ73C8	59.5	58.4	56.7	59.7	58.6	0.11	3.8	1.4	57.3	-0.37	3.6	1.5	16	LD
X3B6JN	56.4	58.5	62.7	57.1	58.7	0.15	3.4	2.8	59.4	0.55	3.5	2.8	16	EN
XRQYLK	61.0	58.9	63.5 *	59.2	60.7	0.93	4.5	2.1	59.6	0.64	4.1	2.1	12	LD
YPGBLL	56.7	57.4	57.4	56.4	57.0	-0.51	2.8	0.5	56.3	-0.80	2.8	1.3	8	LD
Z2DGFJ	54.2	54.7	55.5	56.3	55.2	-1.22	3.4	0.9	55.6	-1.08	3.6	1.2	16	LZ
ZC8ZLC	57.0	59.4	59.4	59.5	58.8	0.21	2.7	1.2	58.2	0.01	3.5	1.7	16	LZ

Consensus (All Labs) Results

Wk Mean	58.15	58.27	58.23	58.41	Month Mean	58.29	Grand Mean	58.15
Avg SDr	3.93	3.93	4.15	3.97	Avg SD	3.97	Avg SD	3.73
SD btwn Labs	2.46	2.88	2.54	2.60	SD btwn Labs	2.56	SD btwn Labs	2.34
Labs Incld	52	52	52	55	SD btwn Wks	1.65	SD btwn Wks	2.21
Labs Excld	3	3	3	1	Labs Incld	54	Labs Incld	54
Labs not Rcvd	1	1	1	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200 Series	EN	Emerson 2200 Series
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
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)
TX	TMI Crush Tester (model not specified)	XX	Instrument make/model not specified by lab

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
3L838K	68.5	68.0	69.1	68.2	68.5	-0.48	2.7	0.5	69.0	-0.01	4.1	0.8	16	LD
4ARUKJ	70.2	67.8	71.5	68.5	69.5	0.15	2.5	1.7	68.3	-0.43	4.1	3.0	16	LD
4G9DXR	69.4	71.0	70.1	69.3	70.0	0.41	3.1	0.8	70.5	0.86	3.8	3.5	16	LC
4PQLN9	69.4	72.6 *	70.6	68.3	70.2	0.58	3.2	1.8	68.4	-0.37	3.6	2.0	16	LD
639QDG	70.7	70.3	70.5	70.9	70.6	0.80	3.2	0.3 L	70.7	1.00	3.6	1.2	16	LD
7ZWCJF	69.5	70.0	69.8	69.9	69.8	0.32	3.6	0.2 L	68.1	-0.53	3.5	1.5	16	LD
9KGYXZ	71.3	67.1	70.9	70.8	70.0	0.45	2.8	2.0	69.8	0.46	2.9	1.9	16	LC
A3UXHN	68.6	68.7	68.6	68.6	68.6	-0.38	2.0	0.0 L	68.9	-0.09	1.8	0.4 L	16	LD
A82LVQ	70.1 L	70.0	70.1	70.2	70.1	0.50	1.7	0.1 L	70.8	1.04	1.6	0.6	16	MB
BKQZG6	65.1	68.6	65.4	67.1 H	66.5	-1.61	4.1	1.6	66.7	-1.38	3.3	1.3	16	LZ
BMBWY4	61.0 X	61.3 X	62.0 *	60.0 X	61.0	-4.88 X	3.7	0.8	62.2	-4.01 X	3.2	1.4	16	TH
F6GPUT	67.1	67.0 H	66.0	66.9	66.8	-1.49	4.1	0.5	66.5	-1.48	3.8	0.8	16	LD
FHZ9PH	No Data	No Data	No Data	71.7	71.7	1.46	2.6	0.0	71.0	1.16	3.2	1.3	6	LD
MYL46C	53.6 X	53.8 X	54.4 X	48.7 X	52.6	-9.90 X	2.8	2.7	52.6	-9.61 X	3.4	1.5	12	LD
NQPT9M	68.6	69.0	68.1	68.2	68.5	-0.46	1.8	0.4	68.7	-0.20	2.2	0.4 L	12	LD
PD2YFT	67.6	68.1	72.6	65.8 *	68.5	-0.43	2.6	2.9	69.8	0.44	2.2	2.2	16	LD
PKHJGK	66.0	65.6	67.5	69.9	67.3	-1.19	3.2	2.0	66.1	-1.74	4.2	3.8	16	LD
QPNT6R	70.8	66.0	70.9	68.5	69.1	-0.12	2.9	2.3	68.3	-0.40	3.3	2.1	16	LZ
TME8N6	72.2	68.7	67.4	71.1	69.9	0.36	3.3	2.2	68.1	-0.51	3.0	1.8	16	LD
UDKJ78	73.8 L	70.3 L	70.2 L	72.4 L	71.7	1.43	0.9	1.7	71.1	1.20	0.8	1.5	12	XX
X3B6JN	68.4 H	69.2	61.8 *H	70.2	67.4	-1.09	6.2	3.8 H	67.8	-0.74	4.8	3.3	16	EN
X9GLBX	67.8	68.7	68.2	68.7	68.3	-0.56	2.3	0.4	68.6	-0.22	2.2	0.8	16	LZ
YPGBLL	75.3 *	71.7	72.0	73.8 *	73.2	2.34 *	3.3	1.7	73.2	2.44 *	3.8	1.3	8	LD
ZV3NZE	66.3	67.1	67.6	69.4	67.6	-0.99	2.5	1.3	68.1	-0.51	2.3	1.3	14	LD

Consensus (All Labs) Results

Wk Mean	69.37	68.82	68.68	69.46	Month Mean	69.25	Grand Mean	69.02
Avg SDr	3.32	2.89	3.15	3.19	Avg SD	3.11	Avg SD	3.25
SD btwn Labs	2.50	1.80	2.88	1.87	SD btwn Labs	1.68	SD btwn Labs	1.70
Labs Incld	21	21	22	22	SD btwn Wks	1.67	SD btwn Wks	1.93
Labs Excld	2	2	1	2	Labs Incld	22	Labs Incld	22
Labs not Rcvd	1	1	1	0				

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		

Containerboard Interlaboratory Testing Program

Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T822

Report #625 (L)
October 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
3VU79T	41.8	41.7	40.0	44.6	42.0	-0.89	3.8	1.9	44.2	0.30	4.0	2.4	16	EM
3VVZRY	43.9	43.9 H	43.8	43.3	43.7	0.04	4.3	0.3	43.2	-0.44	3.2	1.7	16	TH
43DV9T	34.1 XH	34.3 XH	31.1 XH	31.6 XH	32.8	-5.89 X	6.5	1.6	34.8	-6.53 X	5.4	3.3 H	16	XX
4VRZ64	47.6 *L	48.1 H	47.9 L	47.5	47.8	2.25 *	3.2	0.3	47.2	2.47 *	2.2	1.5	16	LC
639QDG	43.9	41.2	44.2	42.7	43.0	-0.36	2.7	1.4	44.0	0.16	2.9	1.5	16	LD
7ZWCJF	42.1 H	42.1	42.5	42.1	42.2	-0.78	3.6	0.2 L	42.2	-1.12	3.4	1.6	16	LD
9J2XQR	43.0 L	43.8	43.3	43.3 L	43.3	-0.17	1.5	0.3	41.4	-1.76	2.1	1.9	16	TU
9KGYXZ	47.0	47.9	43.8	42.3	45.2	0.85	3.6	2.7	44.6	0.59	3.6	2.2	16	LC
A82LVQ	43.1	43.3	43.9	43.1	43.4	-0.15	1.6	0.4	42.7	-0.81	1.5	1.1	16	MB
BMBWY4	40.6 *	40.0	40.1	39.9	40.2	-1.89	2.9	0.3	39.3	-3.31 X	2.8	1.1	16	TH
DDFEWZ	35.4 X	35.5 X	37.5 *	35.6 X	36.0	-4.14 X	2.1	1.0	35.6	-5.99 X	2.6	1.3	12	TH
EJJUMZ	38.0 X	37.9 *	37.8 *	43.8	39.4	-2.32 *	3.0	3.0	37.3	-4.77 X	2.9	2.2	16	LZ
EU2E8W	45.1 L	45.3 L	45.7 L	45.6 L	45.4	0.96	0.8	0.3	45.4	1.18	1.2	0.3 L	16	LD
F6GPUT	45.5	45.9	46.0	44.1 H	45.4	0.93	4.6	0.9	45.3	1.14	3.5	1.0	16	LD
FNQMDN	43.2	43.1	43.5	43.5	43.3	-0.17	2.4	0.2 L	43.7	-0.04	2.6	0.6	16	LD
G7P3CU	45.0	42.0	39.7	48.4	43.8	0.07	3.0	3.7 H	43.4	-0.27	3.1	2.2	16	MB
H7J86T	44.1	45.1	46.3	47.0	45.6	1.07	2.5	1.3	44.2	0.33	2.9	1.7	16	LD
LUFDZL	44.4	46.3 H	43.8 H	42.9	44.4	0.38	4.8	1.4	44.3	0.41	4.8	1.2	16	XX
MFUDRX	44.8	44.9	44.2	45.5	44.8	0.64	2.4	0.5	44.6	0.63	2.6	0.7	16	LC
NQPT9M	43.7	44.0	43.8	44.0	43.9	0.12	2.4	0.2 L	44.5	0.52	3.1	0.7	12	LD
Q8MPJG	43.6	45.0	40.4	42.0	42.8	-0.49	2.9	2.0	41.6	-1.59	3.5	2.4	16	LD
QNB7MD	45.0	43.4	45.4	47.5	45.3	0.90	3.2	1.7	42.6	-0.85	3.1	2.3	16	EM
TME8N6	42.2	40.0	40.5	41.1	41.0	-1.46	3.5	0.9	42.0	-1.27	3.8	1.5	16	LD
WF3D4K	43.5	44.8	43.5	46.7	44.6	0.53	2.3	1.5	44.3	0.36	2.8	1.4	16	LD
WZ73C8	44.2	46.3	46.5	39.9	44.2	0.31	3.3	3.1	44.1	0.22	3.5	2.1	16	LD
XRQYLK	43.9	43.4	46.3	43.7	44.3	0.37	2.9	1.3	44.9	0.80	3.3	1.7	15	LZ
YPGBLL	44.3	44.4	42.6	46.2	44.4	0.38	2.3	1.4	44.3	0.36	2.5	1.4	8	XX
ZC8ZLC	40.3 *	42.1	43.3	40.6	41.6	-1.13	2.5	1.4	42.0	-1.32	3.0	1.7	16	LD

Consensus (All Labs) Results

Wk Mean	43.83	43.69	43.19	43.89	Month Mean	43.65	Grand Mean	43.77
Avg SDr	2.71	3.37	3.29	2.77	Avg SD	3.06	Avg SD	3.10
SD btwn Labs	1.69	2.41	2.67	2.36	SD btwn Labs	1.85	SD btwn Labs	1.37
Labs Incld	25	26	27	26	SD btwn Wks	1.59	SD btwn Wks	1.63
Labs Excld	3	2	1	2	Labs Incld	26	Labs Incld	24
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants			
EM	Emerson 1200 Series	LC	L&W Crush Tester 48
LD	L&W Crush Tester 248	LZ	L&W Crush Tester (model not specified)
MB	Messmer Buchel K440	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM12

TAPPI Official Test Method T826

Report #625 (L)
October 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
3L838K	14.1	13.0	13.5	13.0	13.4	-0.75	0.8	0.5	13.4	-0.59	0.8	0.5	16	LB
3ZQWF6	13.1	12.9	12.8	13.1	13.0	-1.73	1.1	0.2	13.5	-0.27	1.0	0.4	16	TT
4PQLN9	14.5	14.3	14.5	14.8	14.5	1.81	1.1	0.2	14.6	2.41 *	1.1	0.5	16	LA
78FLN4	13.5	14.0	14.5	14.4	14.1	0.88	1.0	0.5	13.7	0.21	1.1	0.6	12	LA
7ZWCJF	13.8	12.9	13.5	12.1 *L	13.1	-1.49	0.9	0.8	13.8	0.35	0.9	0.6	16	LA
89P9G3	13.9 H	13.1 H	14.5 H	14.3	13.9	0.48	1.6	0.6	14.1	1.15	1.3	0.6	16	LA
9KGYXZ	13.3	13.8	13.9	13.8	13.7	-0.06	1.1	0.3	13.4	-0.47	1.1	0.4	16	LU
A3UXHN	13.6 L	13.7 L	13.7 L	13.6 L	13.6	-0.21	0.4	0.1 L	13.7	0.09	0.4	0.1 L	16	LA
AMV7H6	14.6 *H	14.7	14.7	11.7 *L	13.9	0.46	1.1	1.5 H	13.6	0.06	1.0	1.0 H	16	LA
BMBWY4	12.9	13.5	13.4 H	13.4	13.3	-0.96	1.3	0.3	13.0	-1.46	1.0	0.4	16	LZ
BR97DB	13.2	13.6	13.8	13.6	13.5	-0.41	1.0	0.2	13.2	-1.04	1.1	0.3	16	LU
C3J4TY	13.9	14.7	14.3	14.1	14.3	1.26	1.0	0.4	13.9	0.68	0.9	0.4	16	LU
F6GPUT	12.9 L	13.8	13.9	14.0	13.7	-0.14	0.8	0.5	13.3	-0.85	1.0	0.4	16	LB
G4ZL48	13.4	13.9 H	13.6	13.8	13.7	-0.14	1.4	0.2	13.8	0.48	1.2	0.2	16	LA
G7P3CU	14.1	14.3	14.1	14.2 H	14.2	1.07	1.1	0.1	14.0	1.04	1.0	0.6	12	LA
H7J86T	13.6 L	13.9 L	14.6 L	12.5 L	13.6	-0.17	0.1	0.9	13.5	-0.34	0.8	0.6	16	LA
JHAG8T	13.7	13.3	13.2	13.5	13.4	-0.67	1.0	0.2	13.5	-0.41	1.1	0.2	16	LH
MFUDRX	13.9	14.1	14.1	14.2	14.1	0.86	1.0	0.1	14.0	0.93	1.1	0.4	16	LH
NQPT9M	13.8	14.0	13.6	13.8	13.8	0.13	1.1	0.2	13.8	0.34	1.2	0.1	12	LB
PKHJGK	14.3	13.9	13.6	13.5	13.8	0.23	1.0	0.4	13.6	-0.03	1.0	0.3	12	LA
Q8MPJG	8.3 X	8.4 X	5.3 XH	8.9 X	7.7	-13.73 X	1.2	1.7 H	9.1	-11.03 X	1.3	1.4 H	16	LZ
TTFL8L	14.0 L	15.1 *L	14.5 L	14.6 L	14.6	1.90	0.3	0.5	14.3	1.63	0.5	0.3	16	LH
UDKJ78	13.5	14.0	13.2	14.4	13.8	0.11	0.9	0.6	13.0	-1.40	1.0	0.6	16	XX
UV3FRT	13.1	13.5	14.1	13.8	13.6	-0.21	0.8	0.4	13.6	0.03	0.8	0.4	16	LB
X3B6JN	12.8	13.1	12.4 *	12.7	12.8	-2.21 *	1.1	0.3	12.8	-2.07 *	1.1	0.3	16	LB
ZC8ZLC	13.5	14.0	13.4	13.8	13.7	-0.05	1.1	0.3	13.4	-0.44	1.1	0.4	16	LZ

Consensus (All Labs) Results

Wk Mean	13.64	13.81	13.81	13.62	Month Mean	13.72	Grand Mean	13.62
Avg SDr	1.01	1.06	1.03	0.94	Avg SD	1.01	Avg SD	1.01
SD btwn Labs	0.49	0.58	0.59	0.77	SD btwn Labs	0.44	SD btwn Labs	0.41
Labs Incld	25	25	25	25	SD btwn Wks	0.50	SD btwn Wks	0.47
Labs Excld	1	1	1	1	Labs Incld	25	Labs Incld	25
Labs not Rcvd	0	0	0	0				

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)	TT	TMI Short Span Compression, 17-34 (MB K455)
XX	Instrument make/model not specified by lab		

End of Report