Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #626 (M) - November 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	EC14	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC14	Edgewise Compressive Strength by T839, Corrugated Board
205	42F4	Bursting Strength (Mullen), 42 lb Linerboard
206	56G2	Bursting Strength (Mullen), 56 lb Linerboard
215	42F4	Ring Crush, 42 lb Linerboard
216	56G2	Ring Crush, 56 lb Linerboard
223	42F4	STFI, 42 lb Linerboard
224	56G2	STFI, 56 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
2NQQKZ	829.4	0.04	67.03	862.7	1.00	22.96	4	ER
2Q33MB	719.0	-2.20 *	72.19	698.5	-3.23 X	47.38	4	LS
33TA2R	769.6	-1.17	88.73	834.7	0.28	48.39	4	ER
3CGABA	865.8	0.78	28.83	801.8	-0.57	46.69	4	LS
7Q92TF	835.9	0.18	51.89	853.8	0.77	55.45	4	LO
8929FD	893.2	1.34	35.79	815.4	-0.22	55.49	4	ET
89JH9E	785.7	-0.84	20.83	785.5	-0.99	5.87 L	3	LS
8H8D79	664.7	-3.30 X	59.91	671.2	-3.93 X	55.98	4	TB
9QDDGV	768.4	-1.19	89.73	839.2	0.39	52.06	4	EX
A2RRX3	825.4	-0.04	80.86	810.9	-0.34	41.58	4	LL
AZZVBU	816.0	-0.23	73.01	763.7	-1.55	40.30	4	LM
B339DD	842.0	0.30	81.37	793.1	-0.80	56.74	4	LG
C28P87	759.3	-1.38	17.47	743.2	-2.08 *	23.25	4	LG
C3F8ZA	840.0	0.26	37.18	848.9	0.64	30.06	4	LS
CKVG3V	920.1	1.88	37.77	921.6	2.52 *	9.42	4	EX
D6LPZQ	856.5	0.59	69.71	841.7	0.46	16.49	4	ER
GCRU3X	891.1	1.30	96.73	834.5	0.27	55.67	3	LH
HB9972	767.2	-1.22	82.25	816.0	-0.21	35.63	4	EX
HWUXJZ	898.7	1.45	31.64	846.9	0.59	39.64	4	LG
LEZRJV	869.4	0.86	73.78	841.8	0.46	32.11	4	LG
LTYHGU	819.6	-0.15	86.00	805.7	-0.47	21.07	4	EX
M3K4ZW	859.3	0.65	93.73	827.3	0.09	56.03	4	LG
QHJDFY	849.5	0.45	77.16	837.1	0.34	10.52	4	LM
QQEH6U	851.0	0.48	85.79	878.2	1.40	19.31	4	EM
RW2MGU	767.8	-1.21	57.16	796.3	-0.71	31.41	4	ER
U6PZUY	801.3	-0.53	30.49	803.7	-0.52	10.54	4	LL
VVCDCH	770.9	-1.14	49.11	748.0	-1.96 *	23.33	4	LL
WUWN9W	852.6	0.51	24.08	855.5	0.81	18.38	4	ES
YHWJBG	837.9	0.22	64.69	839.5	0.40	15.65	4	LG

Consensus (All Labs) Results

Month Mean	827.23	Grand Mean	823.93
Avg SD	65.67	Avg SD Months	36.30
SD btwn Labs	49.29	SD btwn Labs	38.83
Labs Incld	28	Labs Incld	27

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	819.77	66.42	7.46	7
Water based adhesive sealing	851.00	0.00	23.77	1
Clip sealing	828.66	44.80	1.42	20

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

Containerboard Interlaboratory Testing Program

Analysis 202

Edgewise Compressive Strength, by T811, Corrugated Board - EC14

TAPPI Official Test Method T811

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2Q33MB	30.7	-1.82 *	0.98		30.7	-1.82 *	0.00	1	EM
3VR64F	37.8	-0.03	0.47	L	37.8	-0.03	0.00	1	TD
AKATWB	34.5	-0.85	1.60		34.5	-0.85	0.00	1	XX
C3F8ZA	34.7	-0.80	2.12		34.7	-0.80	0.00	1	LD
CKVG3V	39.7	0.45	1.35		39.7	0.45	0.00	1	LC
D9LZWQ	46.5	2.14 *	2.18		46.5	2.14 *	0.00	1	XX
HB9972	38.8	0.23	1.06		38.8	0.23	0.00	1	LC
LEZRJV	37.9	0.00	1.89		37.9	0.00	0.00	1	LE
QCXHEV	37.8	-0.04	1.72		37.8	-0.04	0.00	1	LD
RW2MGU	38.0	0.02	1.73		38.0	0.02	0.00	1	EN
YHWJBG	40.7	0.69	1.20		40.7	0.69	0.00	1	EM

Consensus (All Labs) Results

Month Mean	37.92	Grand Mean	37.92
Avg SD	1.56	Avg SD Months	0.00
SD btwn Labs	4.00	SD btwn Labs	4.00
Labs Incld	11	Labs Incld	11

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	TD	TMI Digital Crush Tester, Model 17-09
XX	Instrument make/model not specified by lab		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
23URHB	41.8	0.41	0.79		41.8	0.41	0.00	1	LC
2NQQKZ	41.9	0.45	1.17		41.9	0.45	0.00	1	EM
2Q33MB	38.5	-0.68	0.72	L	38.5	-0.68	0.00	1	EM
33TA2R	42.0	0.47	1.25		42.0	0.47	0.00	1	LD
3CGABA	43.3	0.89	0.67	L	43.3	0.89	0.00	1	EM
3G9GUH	40.5	-0.03	1.37		40.5	-0.03	0.00	1	LD
3VR64F	40.0	-0.18	0.67	L	40.0	-0.18	0.00	1	TD
4JW9LE	39.3	-0.41	2.00		39.3	-0.41	0.00	1	BU
7Q92TF	38.6	-0.62	1.16		38.6	-0.62	0.00	1	LD
8929FD	40.7	0.04	1.03		40.7	0.04	0.00	1	TD
8H8D79	44.3	1.22	0.65	L	44.3	1.22	0.00	1	LD
8J22P4	44.9	1.41	2.33		44.9	1.41	0.00	1	LD
9NBGW8	42.6	0.68	1.31		42.6	0.68	0.00	1	LC
9QDDGV	39.1	-0.48	2.11		39.1	-0.48	0.00	1	LD
A2RRX3	43.1	0.83	0.89		43.1	0.83	0.00	1	BU
AHJRN3	32.7	-2.54 *	2.73	H	32.7	-2.54 *	0.00	1	XX
AKATWB	38.0	-0.84	1.20		38.0	-0.84	0.00	1	XX
AZZVBU	39.7	-0.26	2.01		39.7	-0.26	0.00	1	TG
C3F8ZA	43.4	0.94	1.33		43.4	0.94	0.00	1	LD
CKVG3V	43.1	0.81	1.44		43.1	0.81	0.00	1	LC
D6LPZQ	39.2	-0.44	1.60		39.2	-0.44	0.00	1	LD
D9LZWQ	47.3	2.20 *	3.07	H	47.3	2.20 *	0.00	1	XX
DVXYDY	39.6	-0.32	0.91		39.6	-0.32	0.00	1	TG
FTLXA4	41.4	0.29	1.13		41.4	0.29	0.00	1	TU
GCRU3X	43.4	0.91	3.21	H	43.4	0.91	0.00	1	EM
HB9972	39.4	-0.36	1.60		39.4	-0.36	0.00	1	LC
LBFL2Z	43.9	1.09	1.25		43.9	1.09	0.00	1	EM
LEZRJV	40.2	-0.12	2.56		40.2	-0.12	0.00	1	LY
LTYHGU	33.5	-2.29 *	1.44		33.5	-2.29 *	0.00	1	TL
LUT7ZP	34.3	-2.04 *	1.28		34.3	-2.04 *	0.00	1	TD
M3K4ZW	42.5	0.64	1.22		42.5	0.64	0.00	1	MK
Q3PRTJ	37.8	-0.89	1.08		37.8	-0.89	0.00	1	TK
QCXHEV	41.0	0.13	1.60		41.0	0.13	0.00	1	LD
QHJDFY	37.5	-0.98	0.66	L	37.5	-0.98	0.00	1	EM
QQEH6U	37.8	-0.90	3.22	H	37.8	-0.90	0.00	1	TH
RW2MGU	41.1	0.18	1.82		41.1	0.18	0.00	1	EN
U6PZUY	41.4	0.28	0.76		41.4	0.28	0.00	1	LC
WUWN9W	44.3	1.22	1.16		44.3	1.22	0.00	1	LD
YMT9U9	38.3	-0.72	1.76		38.3	-0.72	0.00	1	CT

Consensus (All Labs) Results

Month Mean	40.55	Grand Mean	40.55
Avg SD	1.65	Avg SD Months	0.00
SD btwn Labs	3.08	SD btwn Labs	3.08
Labs Incld	39	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	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
2FKNJ9	109.4 L	110.9 L	110.2 L	110.0 L	110.1	0.01	1.9	0.6	109.1	-0.38	4.4	1.9	16	LA
2JKWQ6_AL	107.2	110.5	102.5 *	116.8	109.3	-0.27	8.1	6.0	110.7	0.22	9.0	3.3	14	AL
32HEDE	109.9	107.6	112.8	108.3 H	109.6	-0.15	10.4	2.3	112.6	0.92	9.2	4.1	15	LC
32HEDE_AL	115.4	116.5	112.8	111.4	114.0	1.26	7.6	2.4	113.0	1.08	8.8	3.2	16	AL
33TA2R	102.5	105.3	105.8	106.0	104.9	-1.67	7.8	1.6	104.5	-2.06 *	8.5	1.6	16	AH
3VR64F	108.2	111.2	109.4	107.5	109.1	-0.33	9.6	1.6	107.8	-0.85	12.4	1.8	16	XX
4TJ7AY	102.8	103.7	99.7 X	101.0 *	101.8	-2.66 *	6.5	1.8	104.2	-2.17 *	5.6	2.5	16	LA
69RK42	108.4	105.6	108.8	106.5 H	107.3	-0.90	12.0	1.5	107.7	-0.86	10.1	2.8	16	XX
6QC7VK	105.2	107.5	113.3 H	113.3	109.8	-0.10	9.8	4.1	109.8	-0.09	10.1	3.7	16	LB
73VFN3	105.1 L	106.7	104.5	103.0 L	104.8	-1.69	4.5	1.5	106.2	-1.43	4.0	1.8	15	XX
8J22P4_AL	114.4	119.8	114.6	115.1	116.0	1.88	6.6	2.6	114.4	1.59	6.7	2.7	16	AK
8TM6W4	115.1	114.5	112.7	109.2	112.9	0.89	8.5	2.7	112.7	0.97	9.3	2.5	16	LC
92GR3U_AL	112.7	108.0 H	114.3	112.3	111.8	0.55	11.3	2.7	111.2	0.40	9.4	3.3	15	AL
99VECX_AL	113.4	108.6	113.7	111.4	111.8	0.53	7.4	2.3	111.3	0.47	7.9	1.9	16	AL
9QDDGV	108.0	108.8	109.6	111.6	109.5	-0.20	9.8	1.5	109.8	-0.10	9.1	2.8	16	AH
A4X8DL_AL	111.8	113.7	111.2	118.7	113.9	1.21	8.9	3.4	110.5	0.15	8.6	6.2	16	AL
A6CY4G_AL	112.7	115.6	111.6	114.3	113.6	1.10	7.8	1.8	114.1	1.48	8.7	2.7	16	AL
AJUP3J	105.2	106.0	105.0	100.6 *	104.2	-1.90	7.0	2.4	105.7	-1.60	7.3	3.4	16	LC
BCBJ6D	114.5	118.7 L	114.7	116.9	116.2	1.96 *	8.0	2.0	114.2	1.54	7.9	3.4	16	LA
BCBJ6D_AL	110.7	113.3	111.1	108.5	110.9	0.25	7.0	2.0	112.0	0.71	7.2	2.1	16	AL
BUUEJK_AL	119.4 *	119.5	107.0	112.4	114.6	1.44	9.8	6.0	113.6	1.32	7.7	4.1	16	AL
C3F8ZA	115.3	112.5	106.1	108.8	110.7	0.18	7.8	4.0	109.4	-0.25	9.1	3.7	16	LA
CKVG3V	116.6	105.9	113.2	111.3	111.8	0.53	9.1	4.5	107.8	-0.84	10.3	4.3	16	AH
D6LPZQ	105.1	106.5	113.9	106.5	108.0	-0.67	8.0	4.0	107.4	-0.99	8.2	2.5	16	LZ
D9LZWQ	113.4	114.6 L	115.1 L	115.9	114.8	1.49	3.9	1.0	114.9	1.77	4.2	0.7 L	16	LC
DAWVHH	111.5	109.7	105.2	108.7	108.8	-0.43	8.4	2.7	108.3	-0.65	8.3	2.2	12	LC
E2GGB8	125.5XH	121.5 *H	134.6 X	125.9 X	126.9	5.38 X	12.9	5.5	125.7	5.77 X	11.6	4.0	16	AC
E2XW2T_AL	102.6 H	109.9	110.0	109.5	108.0	-0.67	9.6	3.6	108.4	-0.61	9.1	2.7	11	AL
E373LA	105.5	108.7	110.7	111.2 L	109.0	-0.35	4.2	2.6	113.2	1.15	5.4	3.0	16	LC
E6K8K8	110.8	108.4	109.7	111.6	110.1	0.01	8.7	1.4	108.8	-0.49	8.7	2.9	16	LZ
F3LQEN	112.3	106.9	108.9	111.3	109.8	-0.08	7.4	2.4	109.3	-0.30	8.9	2.3	12	LA
FFU9BX	109.0	110.1	109.5	111.9	110.1	0.01	7.1	1.3	110.2	0.06	7.0	0.9	16	AH
FPLME4_AL	108.1	109.2	105.6	107.1	107.5	-0.84	6.6	1.5	108.0	-0.76	6.6	1.3	8	AL
G3L3GB	105.5	105.7	112.7	106.9	107.7	-0.77	9.2	3.4	109.1	-0.37	9.2	2.7	16	LA
JQK7PT_AL	112.9	105.0	106.9	111.7	109.1	-0.32	5.8	3.8	107.8	-0.85	8.0	10.0 H	16	AL

Containerboard Interlaboratory Testing Program

Analysis 205

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

TAPPI Official Test Method T807

Report #626 (M)
November 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
K84GPZ	103.5	108.4	115.1	107.9	108.7	-0.44	7.7	4.8	109.9	-0.08	8.6	3.8	16	LC
LEZRJV	113.3	116.6	114.3	113.9	114.5	1.42	6.5	1.4	114.5	1.64	7.4	2.1	16	AH
LLLMKZ	113.0	112.8	116.1	118.1	115.0	1.57	9.6	2.5	113.4	1.22	9.5	3.9	16	LA
LPKXGZ_AL	112.0	107.8	115.8	107.5	110.7	0.21	8.5	3.9	112.2	0.79	8.0	2.9	16	AL
MBBP6V	109.5	109.6	106.8	108.9	108.7	-0.46	8.4	1.3	106.8	-1.20	7.5	2.7	16	LA
N3ZMKU_AL	110.4	113.7	106.4	102.8	108.3	-0.57	8.1	4.7	108.8	-0.47	8.9	3.6	16	AK
N667Q3_AL	107.0	110.1	111.3	110.6	109.7	-0.12	8.6	1.9	109.8	-0.09	8.6	2.2	16	AL
NGXW6E	118.5 *	113.1	111.4	108.7	112.9	0.91	9.2	4.1	113.0	1.07	10.7	3.1	8	LA
QAPCTU	127.0 X	128.1 X	128.3 XL	130.5 X	128.5	5.89 X	3.9	1.5	130.8	7.65 X	4.6	2.6	16	AH
QCXHEV	104.8	106.6	108.8	109.6	107.4	-0.86	7.7	2.2	107.8	-0.84	6.5	1.8	16	LA
QH7QXK	111.3	111.3	111.2	111.2	111.2	0.36	5.8	0.0 L	111.3	0.45	5.6	0.1 L	16	LJ
R77AU2	107.6	109.2	No Data	No Data	108.4	-0.54	9.0	1.1	109.4	-0.23	8.7	3.0	10	TP
R8J4A2	108.3	100.3 *	107.1	108.6	106.1	-1.29	9.4	3.9	110.9	0.30	10.0	5.0	16	TB
RA6VFC	110.7	110.1	110.9	109.8	110.4	0.08	9.9	0.5 L	111.9	0.67	9.9	3.3	16	LJ
RG3MLK	110.1	109.3	108.8	109.2	109.4	-0.24	6.7	0.5	110.1	0.00	7.0	1.7	16	TP
RMDU6X	104.2	106.2	106.3	99.7 *	104.1	-1.93	7.4	3.1	107.9	-0.79	8.1	6.4	16	TB
TM9EQC	111.0	111.8	107.0 L	113.8	110.9	0.25	6.1	2.9	109.6	-0.19	5.7	3.0	12	AX
TM9EQC_AL	108.1	109.0	106.5	109.0	108.2	-0.63	7.4	1.2	109.2	-0.33	8.2	2.0	12	AL
UGV9AW_AL	107.6	113.9	109.1	112.9	110.9	0.24	7.0	3.0	110.0	-0.02	6.7	3.1	16	AL
UYDA4Y	111.8	116.0	111.8	112.2	113.0	0.91	6.3	2.0	113.3	1.18	5.9	3.1	12	AH
VQ38HX_AL	105.2	107.3	105.5	106.8	106.2	-1.26	6.7	1.0	105.7	-1.61	7.4	1.5	16	XX
WUWN9W	111.2	109.4	108.3	111.0	110.0	-0.04	8.3	1.4	109.7	-0.15	8.8	1.5	16	LA
WZ6U3H	121.9 X	122.2 *	121.3 X	122.2 *	121.9	3.78 X	11.7	0.4 L	122.8	4.71 X	10.4	5.3	16	AX
XHJQYM	112.6	118.4	114.3	120.8 *	116.5	2.06 *	9.5	3.7	104.7	-1.99 *	9.0	7.5 H	16	LC
XLWN9V	111.0	110.0	116.4	100.2 *	109.4	-0.23	9.5	6.7 H	107.9	-0.82	9.1	5.1	15	AH
XLWN9V_AL	111.0	120.5 *	111.6	105.6	112.2	0.66	8.3	6.2 H	113.9	1.42	10.1	4.3	14	AL
YMT9U9	103.5 H	113.5	109.0	110.5	109.1	-0.32	10.4	4.2	112.0	0.73	9.7	4.0	16	XX
YN2HJK	112.4	112.5	114.7	112.5	113.0	0.94	4.6	1.1	113.1	1.12	4.4	0.6 L	12	LA

Consensus (All Labs) Results

Wk Mean	109.84	110.91	110.30	110.19
Avg SDr	8.12	8.24	7.98	8.36
SD btwn Labs	4.00	4.66	3.46	4.63
Labs Incld	60	62	58	60
Labs Excld	3	1	4	2
Labs not Rcvd	0	0	1	1

Month Mean	110.11
Avg SD	8.08
SD btwn Labs	3.12
SD btwn Wks	3.04
Labs Incld	60

Grand Mean	110.07
Avg SD	8.25
SD btwn Labs	2.70
SD btwn Wks	3.44
Labs Incld	60

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		

	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
2FKNJ9	120.2 L	121.2 L	121.8 L	120.9 L	121.0	2.09 *	2.1	0.7	114.7	-0.36	5.8	4.9	12	LA
2JKWQ6_AL	117.3	118.1	120.3	118.7	118.6	1.13	9.8	1.3	119.9	1.20	10.1	4.3	12	AL
32HEDE	121.9	119.4	125.1 *	111.8	119.6	1.52	11.0	5.7	121.5	1.67	10.4	4.1	11	LC
32HEDE_AL	121.9	116.4 H	125.1 *	113.4	119.2	1.38	11.6	5.3	117.4	0.44	10.5	5.8	12	XX
33TA2R	106.7	109.4	107.7	105.2 X	107.3	-3.29 X	10.1	1.8	107.5	-2.48 *	9.6	2.1	12	AH
3VR64F	115.9	115.4	117.9	116.3	116.4	0.27	10.5	1.1	112.3	-1.07	12.1	3.4	12	XX
4TJ7AY	112.9	113.6	115.6	111.8	113.5	-0.85	8.4	1.6	113.1	-0.84	6.8	3.4	12	LA
69RK42	110.7	114.9	114.3	113.6	113.4	-0.90	12.1	1.9	115.9	0.00	10.4	2.8	12	XX
6QC7VK	112.6	109.6	116.8	112.8	112.9	-1.06	10.2	2.9	115.5	-0.11	9.8	3.0	12	LB
73VFN3	115.2	110.0	109.6	108.8 *	110.9	-1.86	6.0	2.9	116.1	0.07	4.7	4.7	11	XX
8J22P4_AL	125.5 *	122.0	124.0 *	125.3 X	124.2	3.32 X	6.6	1.6	122.2	1.88	8.1	3.8	12	AL
8TM6W4	123.4	119.8	122.3	117.6	120.8	1.99 *	8.6	2.6	118.9	0.89	9.3	4.0	12	LC
92GR3U_AL	114.6	117.2	115.7	114.6	115.5	-0.07	10.9	1.2	117.1	0.35	10.8	2.4	11	AL
99VECX_AL	114.0	107.6 *	116.9	117.0	113.9	-0.71	7.0	4.4	113.3	-0.76	7.5	2.6	12	AL
9QDDGV	110.0 L	114.4	114.4	118.4	114.3	-0.54	9.0	3.4	116.8	0.28	10.1	4.4	12	AH
A4X8DL_AL	110.0	121.2 H	115.6	117.0	115.9	0.10	12.0	4.6	116.4	0.15	12.1	3.7	12	AL
A6CY4G_AL	122.6	108.3	119.5	110.6	115.3	-0.17	9.1	6.9 H	115.7	-0.04	10.3	6.3	12	XX
AJUP3J	109.6	113.6 L	111.5	117.5	113.0	-1.04	6.1	3.4	111.2	-1.38	8.7	4.9	12	LC
BCBJ6D	121.1	124.5	128.8 X	124.8 X	124.8	3.56 X	9.5	3.2	121.9	1.80	9.3	3.8	12	LA
BCBJ6D_AL	114.3	117.4	118.4	115.0	116.3	0.23	10.9	1.9	117.8	0.57	9.0	3.5	12	XX
BUUEJK_AL	128.9 *	114.1	115.6	117.0	118.9	1.25	9.1	6.8 H	118.5	0.78	11.8	6.7	12	XX
C3F8ZA	120.6	115.5	112.5	114.2	115.7	0.01	10.5	3.5	114.7	-0.35	10.9	2.3	12	LA
CKVG3V	115.5	120.6	121.7	112.4	117.6	0.73	9.8	4.4	113.4	-0.75	10.5	4.4	12	AH
D6LPZQ	105.9 *	116.0	114.6	115.4	113.0	-1.05	10.7	4.8	113.5	-0.72	11.3	3.6	12	LZ
DAWVHH	108.5	113.9	113.0	117.2	113.2	-0.99	7.7	3.6	113.4	-0.75	9.5	2.7	12	LA
E2GGB8	125.3 *	133.8 X	135.9 X	122.6 *	129.4	5.35 X	12.1	6.4	128.0	3.60 X	11.1	4.6	12	AC
E2XW2T_AL	115.4 H	109.8	114.3	110.5	112.5	-1.25	12.1	2.8	112.5	-1.00	12.1	2.8	11	AL
E373LA	117.0	119.1	115.5	117.1 L	117.2	0.58	5.7	1.5	117.4	0.44	6.6	2.0	12	LA
E6K8K8	113.2	117.3	116.9	115.7	115.8	0.05	10.9	1.8	115.2	-0.21	11.8	3.2	12	LZ
F3LQEN	112.2	114.9	116.5	115.1	114.7	-0.40	10.9	1.8	113.2	-0.78	11.0	3.3	12	LA
FFU9BX	108.6	115.1	111.5	115.4	112.7	-1.18	7.9	3.2	113.4	-0.74	7.4	2.0	12	AH
FPLME4_AL	115.1	115.9	113.1	115.5	114.9	-0.31	7.0	1.2	114.9	-0.29	7.0	1.2	4	AL
G3L3GB	114.7	111.7 H	113.7	117.1	114.3	-0.54	13.3	2.2	114.4	-0.43	11.1	1.9	12	LA
JQK7PT_AL	115.1 H	113.0	113.1	118.1	114.8	-0.33	10.0	2.4	118.0	0.62	8.8	4.1	12	AL
K84GPZ	123.6	118.3	115.6	119.3	119.2	1.37	11.9	3.3	119.7	1.13	11.9	3.5	10	XX

Containerboard Interlaboratory Testing Program

Analysis 206

Bursting Strength (Mullen), 56 lb Linerboard - 56G2

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
LEZRJV	119.4	120.5	119.6 L	119.3	119.7	1.57	6.9	0.5 L	121.3	1.62	7.7	2.0	12	AH
LLLMKZ	117.7	122.7	116.3	115.2 H	118.0	0.89	10.2	3.3	120.9	1.49	10.9	4.2	12	LA
LPKXGZ_AL	120.3	120.2	119.4	118.6	119.6	1.54	6.7	0.8	117.8	0.58	7.9	3.1	12	AL
MBBP6V	114.0	121.0	108.8	114.7	114.6	-0.41	7.7	5.0	110.4	-1.62	9.5	5.0	12	LA
N3ZMKU_AL	115.1	114.5	115.7	117.1	115.6	-0.02	9.4	1.1	119.5	1.06	9.6	4.4	12	AK
N667Q3_AL	115.6	120.1	115.5	115.1	116.6	0.34	10.3	2.4	120.6	1.40	10.0	6.2	12	AL
NGXW6E	114.4	123.5	110.0	117.7	116.4	0.27	11.9	5.7	116.7	0.25	10.9	4.0	8	LA
QAPCTU	138.6XL	138.7 XL	139.3 XL	143.1 XL	139.9	9.45 X	3.7	2.1	137.3	6.35 X	4.8	4.5	12	AH
QCXHEV	114.2	115.3	112.0	115.2	114.2	-0.59	6.6	1.6	115.1	-0.25	8.3	3.1	12	LA
QH7QXK	115.0	114.9	114.9	114.9	114.9	-0.29	5.5	0.0 L	114.5	-0.41	6.4	0.4 L	12	LJ
R77AU2	113.9	111.5	No Data	No Data	112.7	-1.14	10.1	1.7	114.5	-0.40	9.2	2.8	10	TP
R8J4A2	117.9	119.1	118.2	120.8	119.0	1.29	10.3	1.3	119.3	1.02	10.2	2.6	12	TB
RA6VFC	118.4	121.1	118.5	119.2	119.3	1.41	12.2	1.2	115.1	-0.25	11.4	4.2	12	LZ
RG3MLK	113.5	114.5	112.2	113.5	113.4	-0.88	8.3	0.9	114.1	-0.54	8.1	1.2	12	TP
RMDU6X	111.2	115.8	107.0 *	113.9	112.0	-1.45	8.5	3.8	115.9	0.02	10.1	7.8 H	12	TB
TM9EQC	116.0	116.6	118.4	116.4	116.9	0.46	7.1	1.1	114.9	-0.30	7.5	2.9	12	AH
TM9EQC_AL	112.2	107.7 *	110.6	114.7	111.3	-1.71	8.3	2.9	114.3	-0.47	8.2	3.7	12	AL
UGV9AW_AL	117.8	118.4	112.1	115.0	115.8	0.06	8.8	2.9	115.8	-0.03	8.4	2.8	12	AL
UYDA4Y	121.2	117.2	111.8	115.4	116.4	0.28	8.2	3.9	118.4	0.73	7.4	4.2	12	AH
VQ38HX_AL	113.1	119.7	109.6	111.1	113.4	-0.89	8.1	4.4	111.4	-1.33	7.7	3.2	12	XX
WUWN9W	112.1	118.2	111.8	116.2	114.6	-0.43	9.4	3.1	114.7	-0.35	9.8	2.6	12	LA
WZ6U3H	120.1	123.8	118.0	117.5	119.9	1.63	6.9	2.9	124.0	2.41 *11.6		7.9 H	12	XX
XHJQYM	107.2	105.7 *	102.0 X	105.3 X	105.1	-4.14 X	6.6	2.2	107.4	-2.51 *	8.8	3.1	12	LC
XLWN9V	118.6	112.6	116.4	108.4 *	114.0	-0.65	10.2	4.5	112.6	-0.98	10.5	4.0	11	AH
XLWN9V_AL	110.0	116.1	109.5	115.3	112.7	-1.15	9.7	3.5	113.5	-0.70	10.5	3.1	11	AL
YMT9U9	110.5 H	118.5	119.5	114.5	115.8	0.03	12.9	4.1	116.5	0.17	12.4	3.1	12	XX
YN2HJK	117.0	117.1 L	116.1 L	116.5	116.7	0.39	4.5	0.5 L	116.4	0.16	4.1	0.6 L	12	LA

Consensus (All Labs) Results

Wk Mean	115.68	116.26	115.47	115.62	Month Mean	115.68	Grand Mean	115.88
Avg SDr	9.11	9.51	9.22	9.73	Avg SD	9.40	Avg SD	9.58
SD btwn Labs	4.92	4.31	4.21	2.86	SD btwn Labs	2.56	SD btwn Labs	3.36
Labs Incld	61	60	57	56	SD btwn Wks	3.26	SD btwn Wks	3.85
Labs Excld	1	2	4	5	Labs Incld	56	Labs Incld	60
Labs not Rcvd	0	0	1	1				

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

	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
2FKNJ9	95.8 L	95.9 L	96.3 L	95.7 L	95.9	1.36	0.5	0.2 L	94.7	1.19	1.4	1.4	16	TU
2JKWQ6	83.8 *	87.2	87.3	85.9	86.1	-2.04 *	3.5	1.6	88.3	-1.28	3.1	2.0	16	LC
2X2R72	91.3	90.2	89.1	88.4	89.7	-0.77	3.3	1.3	90.8	-0.33	3.1	1.8	16	LD
32HEDE	92.0	90.7	93.2	83.9 *	90.0	-0.70	3.2	4.2 H	88.2	-1.32	2.9	3.2	16	LD
33TA2R	92.4	89.0	87.6	89.6	89.6	-0.80	2.5	2.0	89.4	-0.88	2.5	1.7	16	LD
4TJ7AY	91.2	91.4	93.5	92.6	92.2	0.08	3.0	1.1	91.9	0.08	2.2	1.2	16	LZ
4VNY2C	91.7	95.9	94.9	94.6 H	94.3	0.79	4.5	1.8	83.4	-3.19 X	5.6	12.6 H	8	XX
6CBUYK	94.7	99.7 *	97.2	98.8	97.6	1.93	3.2	2.2	92.0	0.12	5.1	8.7 H	16	TU
6QC7VK	87.3	92.3	93.0	91.4	91.0	-0.33	2.6	2.6	92.7	0.42	2.4	2.2	16	LC
73VFN3	83.7 *	78.6 X	81.3 *H	82.6 *	81.6	-3.58 X	4.4	2.2	81.0	-4.13 X	4.2	3.5	15	LD
8J22P4	101.7 X	100.3 *	93.0	94.6	97.4	1.87	2.6	4.3 H	91.3	-0.14	2.3	4.8	16	LD
8TM6W4	95.2	94.1	92.0	93.2	93.6	0.57	2.8	1.4	93.9	0.85	3.4	2.4	16	LD
9NBGW8	91.1	90.2	92.4	90.3	91.0	-0.33	2.6	1.0	88.7	-1.13	2.5	2.7	16	LC
A4X8DL	90.4	90.3	91.7	89.9	90.6	-0.49	3.2	0.8	90.9	-0.28	3.1	1.5	16	LD
A6CY4G	90.2	89.8	90.9	91.7	90.6	-0.46	2.4	0.9	90.2	-0.56	2.9	1.3	16	LD
AJUP3J	90.2	91.0	92.8	90.2	91.1	-0.32	4.4	1.2	93.2	0.60	4.1	2.6	16	LD
BCBJ6D	90.6	88.8	88.1	92.1	89.9	-0.71	3.3	1.8	90.3	-0.52	3.0	1.3	16	LD
BUUEJK	64.5 XH	70.0 XH	82.6 *	92.2	77.3	-5.04 X	7.1	12.5 H	79.9	-4.54 X	6.6	12.2 H	16	LC
C3F8ZA	91.4	90.4	91.1	91.9	91.2	-0.27	2.6	0.6	90.7	-0.38	2.6	1.3	16	LD
CBR482	86.3	88.3	91.1	95.2	90.2	-0.60	3.3	3.9 H	88.0	-1.40	3.3	3.1	16	TH
CKVG3V	92.7	94.0	93.8	95.6	94.0	0.69	2.5	1.2	94.0	0.92	2.8	1.3	16	LC
D6LPZQ	90.8	91.1	91.0	91.1	91.0	-0.34	3.6	0.1 L	90.9	-0.29	3.0	1.0	16	LD
DAWVHH	91.2	91.0	89.6	89.0	90.2	-0.61	2.5	1.1	92.2	0.22	2.4	1.8	12	LD
DVXYDY	96.3	97.5	98.4	97.4	97.4	1.87	2.9	0.9	96.5	1.87	2.9	1.7	16	TH
E2XW2T	90.5	90.7	93.7	91.8	91.7	-0.10	2.3	1.5	92.1	0.17	2.7	1.4	16	LD
E373LA	93.6	89.6	90.2	89.5	90.7	-0.43	3.0	1.9	90.4	-0.48	3.0	1.6	16	LC
E6K8K8	90.1	92.5	88.9	86.0	89.4	-0.90	3.0	2.7	88.6	-1.17	2.7	2.8	16	LC
E9E9FU	90.8 H	90.6 H	89.1	89.6 H	90.0	-0.68	5.5	0.8	90.3	-0.53	4.6	2.6	16	TH
F3LQEN	92.8	90.9	92.7	93.6	92.5	0.18	3.6	1.1	92.0	0.14	4.5	3.2	12	LD
K84GPZ	90.3	87.1	91.6	94.8	91.0	-0.35	3.7	3.2	92.6	0.35	3.2	3.0	16	MB
KMGPRP	68.6 X	72.5 X	74.5 X	74.4 X	72.5	-6.71 X	4.7	2.8	75.6	-6.19 X	3.6	2.7	16	EM
LBFL2Z	89.6 L	89.7	86.7	88.0	88.5	-1.20	2.0	1.4	87.3	-1.70	2.1	1.5	16	EM
LEZRJV	93.0	93.2	95.3	92.2	93.4	0.51	3.2	1.3	92.3	0.24	2.7	1.7	16	LG
LLLMKZ	94.9	93.8	96.9	94.7	95.1	1.06	3.7	1.3	94.4	1.06	3.9	1.9	16	LZ
M3ZKYW	87.5 L	87.8 L	87.1 L	87.7 L	87.6	-1.52	1.1	0.3 L	88.4	-1.25	1.4	1.0	16	RS

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
N667Q3	88.8 H	87.6 H	87.8	88.9 H	88.3	-1.27	6.1	0.7	91.0	-0.26	5.3	4.8	16	LC
NGXW6E	104.5 X	105.5 X	103.8 *	105.2 X	104.7	4.39 X	3.0	0.8	105.2	5.24 X	3.2	1.2	8	LD
Q3PRTJ	93.4	93.4 L	93.8	93.5	93.5	0.53	1.6	0.2 L	93.1	0.55	1.6	0.6 L	16	MB
QAPCTU	90.4	86.9	88.8	91.7	89.4	-0.87	3.4	2.1	90.8	-0.33	3.5	1.7	16	LD
QCXHEV	88.8 L	85.7 L	88.2	89.2	88.0	-1.37	1.8	1.6	88.7	-1.12	2.1	1.1	16	LD
QH7QXK	91.5	91.5	91.8	91.9	91.7	-0.10	3.4	0.2 L	91.5	-0.07	3.0	0.3 L	16	LD
QJZEGF	98.2 *	101.7 *	97.4	96.0	98.3	2.18 *	3.9	2.4	96.6	1.91	3.7	4.2	16	EX
R77AU2	94.0 L	94.0	93.4	94.8	94.1	0.72	2.7	0.6	95.6	1.53	2.8	1.6	16	LD
R8J4A2	97.2 H	97.1 H	96.1	94.7	96.3	1.48	4.3	1.2	93.4	0.69	4.3	3.7	16	LD
RG3MLK	91.4	92.4	93.6 H	92.1	92.4	0.14	4.4	0.9	91.4	-0.09	4.2	1.3	16	TJ
RMDU6X	98.3 *H	96.3	100.6	100.1 *	98.8	2.36 *	3.8	1.9	98.3	2.58 *	3.1	2.5	16	LX
RW2MGU	85.6	89.6	92.2	92.2	89.9	-0.72	2.6	3.1	89.1	-1.00	2.7	1.8	16	EN
U6MEXJ	86.3	88.3	91.1	95.2	90.2	-0.60	3.3	3.9 H	88.6	-1.17	3.3	3.2	8	TH
UGV9AW	89.9	93.2	90.7	95.7	92.4	0.14	2.7	2.6	92.2	0.23	4.3	2.7	16	LZ
UWVYAF	103.4 X	101.4 *	104.0 *	102.3 *	102.8	3.71 X	3.9	1.1	97.7	2.35 *	5.2	6.8 H	12	MB
WZ6U3H	88.0	91.2	91.5	90.3	90.3	-0.59	3.8	1.6	88.3	-1.28	3.8	3.0	16	LD
XA46UP	92.3	92.7	No Data	No Data	92.5	0.19	2.6	0.3	92.4	0.29	2.9	1.3	14	LD
XHJQYM	92.5	94.0	95.1	92.3	93.5	0.51	3.3	1.3	91.8	0.05	2.9	3.2	16	LZ
YN2HJK	92.4	93.1	93.0	93.1	92.9	0.32	2.7	0.3	93.1	0.56	2.6	0.6 L	12	LD

Consensus (All Labs) Results

Wk Mean	91.26	92.10	92.24	92.15
Avg SDr	3.46	3.27	3.23	3.29
SD btwn Labs	3.25	3.73	4.33	3.76
Labs Incld	49	50	52	51
Labs Excld	5	4	1	2
Labs not Rcvd	0	0	1	1

Month Mean	91.97
Avg SD	3.26
SD btwn Labs	2.91
SD btwn Wks	1.88
Labs Incld	49

Grand Mean	91.65
Avg SD	3.25
SD btwn Labs	2.59
SD btwn Wks	2.78
Labs Incld	49

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)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 216

Ring Crush, 56 lb Linerboard - 56G2

TAPPI Official Test Method T822

Report #626 (M)
November 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
2FKNJ9	144.5 *L	144.6 L	145.6 L	145.7 L	145.1	1.71	1.0	0.6	141.7	1.24	2.6	4.7	12	TU
2JKWQ6	135.2	135.5	133.4	133.2	134.3	-0.43	3.7	1.2	134.9	-0.25	3.9	2.6	12	LC
2X2R72	133.2	128.1	129.4	129.0	129.9	-1.31	4.3	2.3	132.9	-0.68	4.2	3.5	12	LD
32HEDE	133.8	130.3	135.5	124.7 *	131.1	-1.08	4.3	4.8	128.8	-1.57	3.7	3.9	12	LD
33TA2R	136.0	129.6	128.8	129.6	131.0	-1.09	3.6	3.4	129.9	-1.35	3.6	2.4	12	LD
4TJ7AY	135.0 L	135.3	136.7	135.4	135.6	-0.18	3.0	0.8	136.3	0.06	2.9	0.9 L	12	LZ
4VNY2C	133.4 H	141.8	148.0 *	149.3 *H	143.1	1.31	21.5	7.2 H	143.1	1.55	21.5	7.2	4	XX
6CBUYK	137.8 L	139.9	137.3	141.1	139.0	0.50	2.9	1.8	136.1	0.02	4.2	5.0	12	TU
6QC7VK	135.3	139.2	133.5	133.7	135.4	-0.21	3.2	2.7	138.0	0.43	3.3	3.0	12	LC
73VFN3	118.2 X	122.8 *	116.5 X	116.9 X	118.6	-3.55 X	4.8	2.9	118.2	-3.89 X	5.7	4.7	11	LD
8J22P4	143.0 *L	145.0	134.9	133.6	139.1	0.51	2.7	5.7 H	134.3	-0.37	3.0	5.3	12	LD
8TM6W4	139.1	139.1	136.0	136.9	137.7	0.24	3.1	1.6	137.3	0.27	3.6	2.6	12	LD
9NBGW8	136.2	129.2 H	132.1	134.2	132.9	-0.71	9.0	3.0	131.2	-1.06	5.8	2.3	12	LC
A4X8DL	132.0	131.4	132.0	132.4	131.9	-0.91	3.4	0.4 L	132.4	-0.80	3.8	1.5	12	LD
A6CY4G	137.7 L	134.8	134.4	134.8	135.4	-0.22	3.5	1.5	134.7	-0.28	3.8	2.1	12	LD
AJUP3J	136.6	141.0	139.3	138.0	138.7	0.44	4.8	1.9	139.8	0.82	5.2	4.2	12	LD
BCBJ6D	132.7	131.2	130.6	134.6	132.3	-0.84	3.9	1.8	132.7	-0.73	4.5	2.5	12	LD
BUUEJK	91.4 XH	88.5 XH	99.3 XH	130.9	102.5	-6.73 X	11.6	19.5 H	116.2	-4.35 X	8.0	20.4 H	12	LC
C3F8ZA	136.3 L	135.2	134.5	134.6	135.1	-0.27	3.4	0.8	133.8	-0.48	3.7	2.0	12	LD
CBR482	131.0	131.8	135.1	137.9	134.0	-0.51	5.2	3.2	132.7	-0.72	4.9	2.8	12	TH
CKVG3V	140.7	139.2	142.3	139.8 L	140.5	0.79	3.5	1.3	140.1	0.88	3.7	1.6	12	LC
D6LPZQ	130.9	132.2	134.7	132.8	132.7	-0.76	4.6	1.6	134.1	-0.42	3.9	2.0	12	LD
DAWVHH	134.6 L	133.5	134.3	134.8	134.3	-0.44	3.0	0.6	134.8	-0.27	3.2	1.2	12	LD
DVXYDY	138.8 L	142.4	141.6	144.5	141.8	1.05	3.6	2.4	140.2	0.90	3.7	3.2	12	TH
E2XW2T	136.1 L	134.9	136.4	135.1	135.6	-0.18	3.3	0.7	135.9	-0.04	3.8	1.2	12	LD
E373LA	137.2 L	132.8	132.4	133.9	134.1	-0.48	4.1	2.2	134.9	-0.24	3.9	2.0	12	LC
E6K8K8	131.8	132.9	129.1	124.0 *	129.4	-1.40	4.2	4.0	126.3	-2.13 *	3.8	3.6	12	LC
E9E9FU	138.1	128.1 H	133.2	127.7	131.8	-0.94	6.5	4.9	133.6	-0.53	6.4	4.5	12	TH
F3LQEN	135.6	138.0	138.3	137.9	137.5	0.19	4.0	1.2	137.3	0.28	4.0	2.7	12	LD
K84GPZ	134.4	No Data	141.5	141.7	139.2	0.53	3.3	4.1	138.7	0.57	4.6	3.3	11	MB
KMGPRP	109.6 X	110.7 XH	114.0 XH	112.7 X	111.8	-4.91 X	8.4	2.0	114.9	-4.63 X	6.1	3.0	12	EM
LBFL2Z	127.4 *L	129.9	130.5	130.0 L	129.5	-1.40	2.0	1.4	130.0	-1.31	2.0	1.7	12	EM
LEZRJV	142.0	138.5	138.0	134.7	138.3	0.35	3.3	3.0	136.4	0.08	3.1	2.2	12	LY
LLLMKZ	135.6 L	134.2	137.7	133.5	135.3	-0.25	3.6	1.8	134.5	-0.33	4.0	3.2	12	LZ
M3ZKYW	134.2 L	134.2 L	133.3 L	134.5 L	134.0	-0.49	1.2	0.5	134.7	-0.29	1.1	1.5	12	RS

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
N667Q3	128.2	128.4 H	129.2 H	124.7 *H	127.6	-1.76	9.6	2.0	129.2	-1.49	8.4	11.3 H	12	LC
NGXW6E	151.3 X	151.3 X	147.9 *H	147.2	149.4	2.56 *	6.4	2.2	147.8	2.58 *	6.3	2.5	8	LD
Q3PRTJ	137.1 L	137.6 L	138.0 L	137.8 L	137.6	0.22	1.6	0.4 L	138.8	0.61	1.7	0.9 L	12	MB
QAPCTU	136.5	134.7	135.1	135.8	135.5	-0.20	4.4	0.8	133.0	-0.67	5.4	3.0	12	LD
QCXHEV	129.6	130.7	132.8	133.7 L	131.7	-0.95	2.6	1.9	132.9	-0.67	2.8	2.3	12	LD
QH7QXK	137.1 L	137.2	137.1	137.2	137.1	0.13	3.0	0.0 L	137.4	0.30	3.1	0.3 L	12	LD
QJZEGF	146.0 *	147.7 *	142.8	144.3	145.2	1.72	4.8	2.1	146.0	2.18 *	4.2	4.2	12	EX
R77AU2	134.8	133.6	138.1	138.0	136.1	-0.07	4.2	2.3	136.9	0.20	4.2	2.2	12	LD
R8J4A2	150.2 X	139.4	147.2	145.3	145.5	1.79	4.3	4.6	141.1	1.11	5.1	5.6	12	LD
RG3MLK	135.3	136.8	134.9	137.8	136.2	-0.06	5.3	1.4	135.8	-0.05	5.4	1.5	12	TJ
RMDU6X	148.4 X	141.4	150.5 *H	148.7 *	147.2	2.13 *	5.4	4.0	146.6	2.30 *	4.7	3.3	12	LY
RW2MGU	129.2	130.1	131.6	132.5	130.9	-1.12	3.8	1.5	130.2	-1.28	3.7	2.5	12	EN
U6MEXJ	131.0	131.8	135.1	137.9	134.0	-0.51	5.2	3.2	132.9	-0.68	5.2	4.2	8	TH
UGV9AW	134.0 L	134.5	134.4	135.0	134.5	-0.41	4.5	0.4	135.9	-0.02	5.2	2.9	12	LZ
UWVYAF	149.9 X	146.5 *	149.5 *	148.4 *	148.6	2.39 *	4.2	1.5	143.0	1.53	6.6	8.4 H	12	MB
WZ6U3H	135.5	137.8	136.5	139.6	137.3	0.17	6.2	1.8	134.6	-0.31	6.6	3.7	12	LD
XA46UP	136.1	133.8	No Data	No Data	135.0	-0.31	4.7	1.6	134.8	-0.26	4.0	1.8	10	LD
XHJQYM	138.4	140.9	142.6	141.4	140.8	0.85	5.6	1.8	142.2	1.35	4.7	2.3	12	LZ
YN2HJK	135.9	136.0	136.7	135.5	136.0	-0.10	3.1	0.5	136.2	0.03	3.0	0.5 L	12	LD

Consensus (All Labs) Results

Wk Mean	135.55	135.51	136.81	136.38
Avg SDr	7.33	4.74	4.20	4.42
SD btwn Labs	3.86	5.23	5.46	5.97
Labs Incld	47	50	50	51
Labs Excld	7	3	3	2
Labs not Rcvd	0	1	1	1

Month Mean	136.51
Avg SD	5.28
SD btwn Labs	5.05
SD btwn Wks	2.59
Labs Incld	51

Grand Mean	136.03
Avg SD	5.26
SD btwn Labs	4.57
SD btwn Wks	3.63
Labs Incld	51

Key to Instrument Codes Reported by Participants

EM	Emerson 1200
EX	Emerson (model not specified)
LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)
RS	Regmed Digital Crush Tester CT-2000
TJ	TLS Compression Tester, Model CDM-5
XX	Instrument make/model not specified by lab
EN	Emerson 2200
LC	L&W Crush Tester 48
LY	L&W Crush Tester 958
MB	Messmer Buchel K440
TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F4

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
2JKWQ6	24.4	23.6	26.1	25.1	24.8	0.64	1.4	1.0	24.8	0.76	1.7	1.2	15	LU
2X2R72	25.5	25.0	24.6	25.4 H	25.1	0.88	2.1	0.4	23.4	-0.41	1.9	2.8 H	16	LH
32HEDE	16.9 X	17.7 X	16.3 X	12.2 X	15.8	-6.38 X	1.9	2.4 H	16.8	-6.22 X	2.1	2.1	16	LZ
32HEDE_AL	37.9 XL	38.8 XL	38.8 XL	35.9 XL	37.9	10.82 X	0.0	1.4	37.9	12.16 X	0.0	1.8	16	AL
33TA2R	21.1	21.6	20.9 *	22.2	21.5	-1.96 *	1.9	0.6	22.3	-1.35	1.7	0.7	16	LU
6CBUYK	24.5	24.4	24.0	25.0	24.5	0.39	1.8	0.4	24.1	0.20	1.7	1.6	16	LA
6QC7VK	22.4	22.4	23.4	21.8	22.5	-1.15	1.3	0.6	22.9	-0.87	1.5	0.6	16	LW
7AXHVN	23.6	24.2	21.7	22.4	23.0	-0.79	1.6	1.1	23.0	-0.76	1.5	0.7	12	LW
8J22P4_AL	23.0	24.2	24.1	23.3 L	23.7	-0.25	1.4	0.6	23.2	-0.58	1.5	0.7	16	AK
8TM6W4	23.9	24.1	24.8	24.0	24.2	0.16	1.6	0.4	23.7	-0.17	1.7	0.7	16	LA
99VECX	23.2	21.9	No Data	23.9	23.0	-0.77	1.6	1.0	23.6	-0.28	1.9	0.8	13	LU
A4X8DL_AL	23.5 H	23.3	23.2	23.6	23.4	-0.46	2.0	0.2	23.5	-0.39	1.7	0.5	16	AL
A6CY4G_AL	25.2	24.2	24.7	23.1	24.3	0.25	1.8	0.9	23.5	-0.38	1.8	0.9	16	AL
AHJRN3	25.0	25.0	25.1	24.6	24.9	0.75	1.5	0.2	24.2	0.26	1.6	0.9	16	XX
AJUP3J	24.7	25.1	24.2	23.9	24.5	0.39	1.8	0.5	24.1	0.15	2.1	0.7	16	LA
BCBJ6D_AL	23.5	25.1	23.9 L	22.9	23.9	-0.09	1.6	0.9	23.5	-0.34	1.7	0.7	16	AL
BUUEJK_AL	24.6 L	23.8 L	23.4 H	23.3	23.8	-0.16	1.8	0.6	23.9	0.02	1.6	1.3	16	AL
BV2WDA	24.8	25.2	25.1	24.3	24.8	0.67	1.3	0.4	25.5	1.44	1.5	0.9	16	LH
C3F8ZA	22.1	23.0	21.4	23.3	22.5	-1.18	1.5	0.9	22.7	-1.06	1.7	0.5	16	LZ
CBR482	21.4	21.2 *	21.7	21.0 *	21.3	-2.07 *	1.8	0.3	21.1	-2.47 *	1.7	0.9	16	LZ
CKVG3V	23.3	23.6	23.4	23.3	23.4	-0.44	1.6	0.1	23.0	-0.76	1.6	0.4	16	LU
D6LPZQ	23.5	24.6	23.2	23.4	23.7	-0.22	1.8	0.6	23.5	-0.38	1.7	0.5	16	LY
D9LZWQ	24.8	25.8 L	24.8	24.1 H	24.9	0.69	1.9	0.7	24.8	0.82	1.8	1.1	16	LA
DAWVHH	23.1	22.7	24.6	22.7	23.3	-0.56	1.3	0.9	22.9	-0.88	1.6	0.7	12	LA
E2GGB8	22.5	22.4	22.1	21.9	22.2	-1.36	1.7	0.3	22.4	-1.29	1.7	0.3 L	16	LH
E2XW2T_AL	25.1	25.3	23.7	26.0	25.0	0.82	2.1	1.0	24.9	0.90	1.9	0.6	12	AL
E373LA	25.2	24.4 L	24.1	24.7	24.6	0.49	1.2	0.5	25.0	0.93	1.3	0.4	16	LA
E6K8K8	21.0 L	25.9 H	24.0	24.0	23.7	-0.19	1.7	2.0 H	24.4	0.41	1.8	1.3	16	LY
E9E9FU	42.5 X	38.9 XH	41.5 XH	39.8 XH	40.7	13.02 X	2.7	1.6 H	40.8	14.69 X	2.8	1.3	16	TT
FFU9BX	23.6	24.0	23.5	23.6	23.7	-0.24	1.4	0.3	23.8	-0.10	1.4	0.2 L	16	TT
FPLME4_AL	24.4	24.4	25.3	24.5	24.6	0.52	1.7	0.4	24.5	0.49	1.8	0.5	8	AL
G3L3GB	22.9	23.7	23.5	23.3	23.3	-0.50	1.7	0.4	23.5	-0.31	1.5	0.4	16	LY
JQK7PT_AL	45.9 XH	26.6	25.7	26.1	31.1	5.54 X	2.3	9.9 H	26.3	2.09 *	1.8	5.4 H	16	AL
K84GPZ	22.3	No Data	26.3 L	24.8	24.5	0.39	1.6	2.0 H	24.1	0.18	1.7	1.3	15	LA
LEZRJV	23.2	22.3	22.8	22.8	22.8	-0.93	1.4	0.4	22.7	-1.00	1.6	0.5	16	LU

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F4

TAPPI Official Test Method T826

Report #626 (M)
November 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
LLLMKZ	21.9	22.4	23.1	22.8	22.5	-1.13	1.6	0.5	22.4	-1.34	1.9	0.6	16	LU
LPKXGZ_AL	22.5	23.0	23.0	24.0	23.1	-0.66	1.9	0.6	23.3	-0.54	1.8	0.6	16	AL
MBBP6V	24.9 H	23.4	24.2	24.1	24.2	0.14	1.9	0.6	24.2	0.24	2.0	1.1	16	LH
N3ZMKU_AL	26.4 H	25.0	24.8	22.9	24.8	0.62	2.1	1.5	24.6	0.62	2.0	0.9	16	AK
N667Q3_AL	27.0	26.8 *	26.4 L	26.5 L	26.7	2.11 *	1.3	0.3	25.6	1.46	1.6	1.0	16	AL
QAPCTU	36.8 XH	37.4 X	No Data	No Data	37.1	10.24 X	2.5	0.4	36.5	11.00 X	2.2	0.7	14	XX
QCXHEV	22.6	21.8	23.7	23.9	23.0	-0.73	1.3	1.0	23.2	-0.62	1.1	0.6	16	BK
QJZEGF	30.1 XL	32.4 XL	29.2 XL	30.7 XL	30.6	5.16 X	0.0	1.3	30.4	5.70 X	0.0	1.7	16	TT
QL2G4W	26.0	25.7	26.2	25.6	25.9	1.47	1.6	0.3	25.4	1.29	1.6	0.9	12	LH
QQEH6U	27.2 *	26.3	26.9 *	27.0 *	26.9	2.26 *	1.6	0.4	24.0	0.07	1.7	2.4	16	TT
R8J4A2	22.4	23.0	22.5	22.8	22.7	-1.03	2.0	0.3	24.0	0.13	2.0	1.3	16	LW
RA6VFC	27.1 *H	25.6 H	26.3	27.1 *	26.5	1.97 *	2.4	0.7	26.1	1.92	2.3	0.9	16	LH
RG3MLK	24.1	24.0	24.0	24.2	24.1	0.09	1.2	0.1 L	23.7	-0.19	1.3	0.4	16	TT
RW2MGU	21.6	21.6	21.4	22.4	21.7	-1.75	1.6	0.5	21.9	-1.72	1.7	0.5	16	LY
TM9EQC	25.4	25.9	25.2	24.8	25.3	1.05	1.9	0.5	24.9	0.92	1.6	0.6	12	LU
TM9EQC_AL	24.6	23.7	23.9	25.7	24.5	0.38	1.6	0.9	23.7	-0.20	1.4	1.3	12	AL
U6MEXJ	21.4	21.2 *	21.7	21.0 *	21.3	-2.07 *	1.8	0.3	21.5	-2.11 *	1.9	0.6	8	LZ
UGV9AW_AL	24.0 L	23.6	23.8	23.4 L	23.7	-0.22	1.3	0.3	23.2	-0.57	1.5	0.8	16	AL
UWVYAF	25.5	24.3	24.2	25.5	24.9	0.72	1.7	0.7	24.8	0.77	1.8	0.8	12	LA
UYDA4Y	26.5	26.6	26.4	26.6	26.5	2.00 *	1.8	0.1 L	26.5	2.28 *	1.7	1.0	12	LU
VQ38HX_AL	24.3 L	23.5	23.5	24.1	23.8	-0.10	1.6	0.4	25.2	1.15	1.7	1.1	16	XX
WZ6U3H	25.4 L	24.7 L	24.8	25.8 L	25.2	0.93	0.9	0.5	24.4	0.45	0.8	0.8	16	LH
XHJQYM	32.7 XL	33.1 X	35.2 XL	34.2 XL	33.8	7.66 X	1.1	1.1	26.1	1.94 *	1.6	4.9 H	16	LA
XLWN9V	23.1	23.3	26.0 H	24.6	24.3	0.22	2.1	1.4	23.4	-0.39	1.8	1.0	15	LY
XLWN9V_AL	25.9	23.4	24.6	24.0	24.5	0.39	1.6	1.1	23.8	-0.05	1.6	1.0	14	AL
YN2HJK	23.9	23.8	23.9	24.0	23.9	-0.08	2.0	0.1 L	23.8	-0.06	2.0	0.1 L	12	LA
YWUQ9H	24.2	23.8	23.7	22.8	23.6	-0.28	1.8	0.6	23.6	-0.28	1.7	0.5	16	LU

Consensus (All Labs) Results

Wk Mean	23.98	23.99	24.06	24.00	Month Mean	23.97	Grand Mean	23.89
Avg SDr	1.65	1.74	1.65	1.74	Avg SD	1.69	Avg SD	1.70
SD btwn Labs	1.56	1.41	1.42	1.40	SD btwn Labs	1.28	SD btwn Labs	1.15
Labs Incld	55	55	55	56	SD btwn Wks	0.75	SD btwn Wks	1.34
Labs Excld	7	6	5	5	Labs Incld	55	Labs Incld	57
Labs not Rcvd	0	1	2	1				

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
2JKWQ6	36.6	33.4	31.2	35.3	34.1	-0.43	2.3	2.4 H	35.0	0.15	2.5	2.2	12	LU
2X2R72	36.8	35.5	36.1	34.9 H	35.8	0.47	2.9	0.8	33.3	-0.72	2.3	4.2 H	12	LH
32HEDE	25.4 XL	29.4 *	25.1 X	20.1 X	25.0	-5.23 X	2.0	3.8 H	26.1	-4.45 X	2.3	2.6	12	LZ
33TA2R	32.0	32.3	31.6	32.1 H	32.0	-1.54	2.7	0.3	32.3	-1.24	2.7	0.8	12	LU
6CBUYK	35.8	37.1 H	37.7	37.6 L	37.1	1.12	3.0	0.9	36.7	1.03	2.8	1.7	12	LA
6QC7VK	33.2	33.3	32.7 L	32.2	32.9	-1.08	2.0	0.5	33.4	-0.69	2.0	0.6	12	ID
7AXHVN	33.8	32.5	33.5	33.3 L	33.3	-0.87	2.0	0.5	33.5	-0.61	2.1	0.6	12	LW
8J22P4_AL	33.1	35.4	34.5	34.5	34.4	-0.29	2.0	1.0	33.8	-0.48	2.0	1.1	12	XX
8TM6W4	35.1	35.6	34.1	34.6	34.8	-0.05	2.2	0.6	34.8	0.04	2.3	0.7	12	LU
99VECX	33.7 L	33.7	No Data	36.0	34.5	-0.25	2.0	1.3	34.0	-0.37	2.1	3.6 H	10	LU
A4X8DL_AL	34.4	33.8	34.0	34.2	34.1	-0.43	2.0	0.2	33.9	-0.44	2.2	0.9	12	AL
A6CY4G_AL	34.1 L	35.0 L	34.4	36.0	34.9	-0.03	1.6	0.9	35.6	0.43	2.0	1.2	12	XX
AHJRN3	34.0	35.4	36.1	35.4 L	35.2	0.17	2.2	0.9	34.2	-0.27	2.6	1.1	12	XX
AJUP3J	36.6	35.7 L	37.7	36.1	36.5	0.85	2.0	0.9	37.1	1.22	2.3	0.9	12	LA
BCBJ6D_AL	34.8	34.3 L	34.6	34.6	34.6	-0.19	2.0	0.2	34.6	-0.08	2.4	0.6	12	AL
BUUEJK_AL	33.8	35.2 L	33.9	32.6	33.9	-0.56	1.9	1.0	32.1	-1.38	2.4	1.9	12	XX
BV2WDA	35.5	36.1	35.7	36.1	35.9	0.49	2.0	0.3	38.6	1.99 *	2.2	2.1	12	LH
C3F8ZA	33.7	33.3	33.2	33.9	33.5	-0.74	2.3	0.3	33.3	-0.71	2.3	0.6	12	LZ
CBR482	29.9 *	30.8 *	29.0 *	29.4 *	29.8	-2.71 *	2.6	0.8	30.4	-2.25 *	2.3	1.1	12	LU
CKVG3V	33.5	34.7	34.3	34.6	34.3	-0.34	2.1	0.5	33.8	-0.45	2.1	0.5	12	LU
D6LPZQ	34.0	34.8	34.3	34.2	34.3	-0.32	2.3	0.3	33.9	-0.42	2.2	0.5	12	LZ
D9LZWQ	36.9	38.7	33.6 H	35.1 L	36.1	0.60	2.3	2.2 H	37.4	1.39	2.2	1.9	12	LA
DAWVHH	32.9	32.5	33.3	34.3	33.3	-0.88	1.8	0.8	33.5	-0.62	2.1	0.8	12	LW
E2GGB8	32.0	32.1	32.6	32.5	32.3	-1.38	1.9	0.3	32.8	-0.97	2.1	0.8	12	LH
E2XW2T_AL	36.8	36.9 H	37.7	38.0	37.4	1.28	2.7	0.6	36.7	1.04	2.5	0.9	12	XX
E373LA	35.2	36.0	35.5	36.4	35.8	0.45	1.9	0.5	36.2	0.75	2.3	0.7	12	LA
E6K8K8	32.2	36.6	34.2	35.4	34.6	-0.17	2.2	1.9	34.6	-0.04	2.3	1.2	12	LW
E9E9FU	45.7 X	44.4 X	42.8 XL	43.4 X	44.1	4.82 X	1.9	1.3	44.2	4.94 X	2.9	1.3	12	TT
FFU9BX	33.8 L	34.6	35.0 L	34.3	34.4	-0.25	1.5	0.5	34.7	0.00	1.5	0.4 L	12	TT
FPLME4_AL	35.9	35.8	35.3	34.4 H	35.3	0.21	3.4	0.7	35.3	0.31	3.4	0.7	4	AL
G3L3GB	33.0	33.3 L	33.7	33.1	33.3	-0.86	1.9	0.3	33.9	-0.44	1.9	0.6	12	LU
JQK7PT_AL	36.0	37.9	36.0 H	38.5	37.1	1.14	2.6	1.3	35.9	0.60	2.5	1.4	12	AL
K84GPZ	36.1	36.9	No Data	38.2	37.1	1.13	2.7	1.0	36.9	1.11	2.4	1.4	10	LA
LEZRJV	33.6	33.1	33.3	32.6	33.1	-0.93	1.8	0.4	33.1	-0.86	2.0	0.7	12	LU
LLLMKZ	32.7	33.2	34.0	32.6	33.1	-0.96	2.2	0.7	32.7	-1.04	2.3	0.7	12	LU

Containerboard Interlaboratory Testing Program

Analysis 224

STFI, 56 lb Linerboard - 56G2

TAPPI Official Test Method T826

Report #626 (M)
November 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
LPKXGZ_AL	32.6	32.4	33.4	34.4	33.2	-0.91	2.1	0.9	33.6	-0.60	2.0	0.9	12	AL
MBBP6V	37.5	34.5	34.5	33.5	35.0	0.03	2.6	1.8	35.2	0.26	2.5	1.5	12	LH
N3ZMKU_AL	37.9	36.9	36.2	35.4	36.6	0.88	2.3	1.1	36.7	1.04	2.4	1.5	12	AK
N667Q3_AL	36.6	36.6	36.6	36.5 L	36.6	0.87	2.1	0.0 L	37.0	1.21	2.8	0.6	12	AL
QAPCTU	43.4 X	42.3 X	No Data	No Data	42.9	4.17 X	1.9	0.8	42.2	3.86 X	3.0	0.9	10	XX
QCXHEV	34.3	34.2	35.1	33.8	34.3	-0.31	2.0	0.6	34.4	-0.17	1.8	0.5	12	BK
QJZEGF	35.0 L	40.0 *L	32.0 L	38.0 L	36.3	0.70	0.0	3.5 H	41.6	3.58 X	0.0	4.6 H	12	LZ
QL2G4W	38.8	36.5	37.7	36.7	37.4	1.33	2.4	1.1	37.4	1.42	2.4	1.1	4	LH
QQEH6U	38.7	38.3	39.9 *	39.8 *	39.2	2.24 *	2.8	0.8	34.6	-0.06	2.2	3.4 H	12	TT
R8J4A2	32.2	35.0	33.6	34.0	33.7	-0.65	2.5	1.1	34.7	0.01	2.7	1.4	12	LW
RA6VFC	40.0 *H	38.1	37.8	38.1	38.5	1.89	3.1	1.0	38.7	2.04 *	3.0	0.7	12	LZ
RG3MLK	34.8	34.8	34.7	35.0	34.8	-0.05	1.6	0.1 L	34.8	0.03	1.5	0.3 L	12	TT
RW2MGU	32.4	31.2	33.2	33.1	32.5	-1.29	2.3	0.9	32.1	-1.33	2.3	1.0	12	LY
TM9EQC	37.2	37.3	36.7	36.9	37.0	1.11	2.2	0.3	36.9	1.11	2.2	0.5	12	LA
TM9EQC_AL	35.5	35.2	35.0 L	36.4 L	35.5	0.31	1.8	0.6	35.3	0.29	1.6	0.8	12	AL
U6MEXJ	29.9 *	30.8 *	29.0 *	29.4 *	29.8	-2.71 *	2.6	0.8	29.6	-2.64 *	2.8	1.1	8	XX
UGV9AW_AL	34.5	35.5	33.6	34.9	34.6	-0.16	2.4	0.8	33.8	-0.47	2.2	1.0	12	AL
UWVYAF	37.3	37.7	37.9	37.5	37.6	1.40	2.7	0.2	36.4	0.90	2.6	1.1	12	LA
UYDA4Y	37.2	39.4 *	38.5	38.3	38.4	1.80	2.5	0.9	38.6	1.99 *	2.6	0.8	12	LU
VQ38HX_AL	37.5 H	36.0	35.3	36.0	36.2	0.66	2.3	0.9	36.3	0.80	2.6	1.2	12	XX
WZ6U3H	36.0 L	35.7 L	34.5 L	35.7 L	35.5	0.31	0.8	0.7	35.1	0.22	1.2	0.8	12	LH
XHJQYM	23.7 XL	24.2 XL	22.9 X	23.7 XL	23.6	-5.94 X	1.4	0.5	30.7	-2.07 *	2.1	5.6 H	12	LA
XLWN9V	35.2	36.2	36.5	35.5	35.8	0.48	2.5	0.6	34.8	0.03	2.6	1.2	11	LH
XLWN9V_AL	34.6	34.3	34.1	34.1	34.3	-0.34	2.0	0.2	34.5	-0.09	2.2	0.7	11	AL
YN2HJK	34.8	34.8	34.9 H	34.8	34.8	-0.06	3.0	0.1 L	34.9	0.07	2.9	0.1 L	12	LA
YWUQ9H	34.5	34.3	34.5	34.6	34.5	-0.22	2.3	0.1 L	34.8	0.03	2.2	1.2	12	LU

Consensus (All Labs) Results

Wk Mean	34.85	35.01	34.69	35.01	Month Mean	34.92	Grand Mean	34.71
Avg SDr	2.29	2.38	2.25	2.22	Avg SD	2.29	Avg SD	2.32
SD btwn Labs	2.10	2.17	2.11	2.07	SD btwn Labs	1.90	SD btwn Labs	1.93
Labs Incld	57	58	55	57	SD btwn Wks	0.99	SD btwn Wks	1.53
Labs Excld	4	3	3	3	Labs Incld	57	Labs Incld	57
Labs not Rcvd	0	0	3	1				

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2JKWQ6	248.9	9.47 X	30.16	H	181.0	2.35 *	60.95 H	4	EV
32HEDE_AL	149.8	1.36	19.93		103.8	-1.82	89.86 H	3	AL
33TA2R	147.0	1.13	11.75		147.9	0.56	7.77	4	EV
6CBUYK	134.9	0.14	17.56		137.4	-0.01	2.77 L	4	LA
8J22P4	129.2	-0.33	15.99		137.7	0.00	8.04	4	EV
99VECX	247.2	9.33 X	33.32	H	172.5	1.89	64.77 H	3	EV
A4X8DL	123.9	-0.76	18.95		124.9	-0.68	3.39 L	4	LS
A4X8DL_AL	129.9	-0.27	18.24		133.0	-0.25	7.72	4	AL
AJUP3J	139.0	0.48	19.82		129.5	-0.44	13.74	4	LA
BUUEJK_AL	140.3	0.59	33.32	H	149.7	0.65	11.74	4	AL
C3F8ZA	133.9	0.06	14.78		136.7	-0.05	3.61 L	3	XX
D6LPZQ	143.1	0.81	9.09		147.1	0.52	3.75 L	4	EV
DAWVHH	139.4	0.51	18.03		139.1	0.08	4.85	3	LA
E373LA	113.1	-1.64	12.42		111.2	-1.43	1.43 L	4	EV
E6K8K8	129.5	-0.30	6.98	L	129.7	-0.43	2.04 L	4	LS
FPLME4_AL	128.2	-0.41	11.31		130.0	-0.41	2.47	2	AL
JQK7PT_AL	226.1	7.60 X	59.35	H	143.6	0.33	55.09 H	4	AL
K84GPZ	131.8	-0.11	16.21		176.5	2.11 *	63.79 H	4	LA
LLLMKZ	142.6	0.77	8.76		146.2	0.47	5.31	4	EV
LPKXGZ_AL	108.9	-1.98 *	16.39		113.4	-1.31	3.30 L	4	AL
MBBP6V	136.6	0.28	16.43		133.5	-0.22	2.80 L	4	EV
N3ZMKU_AL	131.3	-0.16	24.75		131.0	-0.36	6.97	4	AK
N667Q3_AL	154.0	1.71	14.76		147.8	0.55	10.94	4	AL
R8J4A2	116.1	-1.40	11.80		115.7	-1.19	1.80 L	4	XX
RA6VFC	160.1	2.20 *	21.01		174.0	1.97 *	24.74	4	LS
RW2MGU	148.3	1.24	7.88		150.3	0.69	1.48 L	4	EV
TM9EQC_AL	111.4	-1.78	16.32		116.7	-1.13	4.81	3	AL
UGV9AW_AL	124.4	-0.72	4.25	L	120.7	-0.91	4.18 L	4	XX
UWVYAF	134.1	0.08	24.14		134.5	-0.17	1.44 L	3	LA
VQ38HX_AL	123.2	-0.82	8.85		126.4	-0.61	5.51	4	XX
WH38JV	129.2	-0.32	15.87		133.1	-0.24	3.79 L	4	LS
XLWN9V_AL	126.7	-0.53	20.03		129.6	-0.43	5.37	4	AL
YN2HJK	135.1	0.16	18.86		136.1	-0.08	1.00 L	3	LS

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

Consensus (All Labs) Results

Month Mean	133.16	Grand Mean	137.58
Avg SD	16.89	Avg SD Months	27.32
SD btwn Labs	12.22	SD btwn Labs	18.49
Labs Incld	30	Labs Incld	33

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV		SD	Mean	CPV		SD Months	Months	Inst
32HEDE_AL	169.5	-22.06	X	9.40	295.4	-7.91	X	109.00 H	3	AL
8J22P4	350.8	-0.89		8.63	355.2	-0.30		4.62	4	LA
8J22P4_AL	356.3	-0.25		7.07	353.7	-0.49		7.47	4	AK
A4X8DL_AL	357.5	-0.10		10.27	351.1	-0.82		9.09	2	AL
A6CY4G_AL	360.1	0.20		8.63	367.2	1.22		5.25	4	AL
BCBJ6D_AL	358.8	0.05		6.25	359.4	0.23		0.58 L	4	AL
C3F8ZA	346.2	-1.42		8.95	350.5	-0.90		5.04	4	XX
CKVG3V	362.5	0.48		8.36	361.0	0.44		4.13	4	XX
D9LZWQ	366.4	0.93		4.48	365.3	0.98		1.10	4	XX
E2XW2T	358.1	-0.04		8.45	353.6	-0.50		4.27	4	PP
EJXP92	371.6	1.54		5.99	372.6	1.91	*	1.34	2	TS
JQK7PT_AL	373.1	1.72		8.80	354.5	-0.39		12.57 H	4	AL
KMGPRP	393.7	4.12	X	8.10	395.9	4.88	X	2.98	4	TS
N3ZMKU_AL	344.2	-1.66		5.92	348.9	-1.11		3.33	4	AK
R77AU2	356.8	-0.19		6.73	355.8	-0.23		3.05	4	PP
UEQP3N	368.2	1.14		8.77	368.8	1.43		2.85	4	PP
VQ38HX_AL	355.8	-0.30		4.98	179.2	-22.69	X	117.75 H	4	XX
XLWN9V_AL	348.0	-1.21		6.38	346.1	-1.46		1.83	4	AL

Consensus (All Labs) Results

Month Mean	358.40	Grand Mean	357.56
Avg SD	7.59	Avg SD Months	5.42
SD btwn Labs	8.56	SD btwn Labs	7.86
Labs Incld	16	Labs Incld	15

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2JKWQ6	82.0	-1.41	6.00		94.3	-0.57	22.22	4	TM
33TA2R	88.2	-0.87	4.82		93.0	-0.69	4.18	4	TM
6WEHH4	108.4	0.92	2.41		110.3	0.85	3.62	4	TM
8J22P4	85.4	-1.11	2.07		86.3	-1.28	2.98	4	TM
8TM6W4	98.2	0.02	9.01		102.2	0.12	4.00	4	HZ
99VECX	96.0	-0.18	6.63		89.6	-0.99	9.67	4	TM
A4X8DL	101.3	0.29	6.74		97.2	-0.32	3.84	4	TM
A6CY4G	42.5	-4.90 X	1.59		42.7	-5.14 X	0.78 L	4	LZ
BCBJ6D	105.6	0.67	5.52		101.9	0.10	3.08	4	TM
BUUEJK	98.8	0.07	3.83		125.1	2.16 *	23.19 H	4	SC
CKVG3V	107.6	0.85	4.41		115.5	1.31	8.46	4	HY
D6LPZQ	102.3	0.38	1.35		88.7	-1.07	31.25 H	4	HZ
D9LZWQ	89.0	-0.80	3.54		87.9	-1.14	1.24 L	4	SC
DAWVHH	145.2	4.17 X	9.23		121.4	1.83	20.70	3	HY
E2XW2T	107.6	0.85	6.11		103.9	0.28	3.82	4	HY
E373LA	103.0	0.44	10.49 H		102.3	0.13	2.58	4	TM
HLDDZ4	97.1	-0.08	1.19		94.8	-0.52	3.25	4	TM
MBBP6V	118.6	1.82	2.61		111.9	0.99	6.01	4	SC
N3ZMKU	80.6	-1.54	4.77		96.4	-0.39	16.72	4	TM
N667Q3	116.0	1.59	4.18		112.0	1.00	4.97	4	SC
NGXW6E	101.0	0.26	3.74		98.1	-0.23	4.10	2	HY
R77AU2	102.8	0.42	2.39		105.1	0.39	1.88 L	4	HY
RA6VFC	85.4	-1.11	1.82		78.7	-1.95 *	5.94	4	TM
UGV9AW	103.6	0.49	5.18		99.1	-0.15	3.31	4	TM
WH38JV	101.4	0.30	3.21		102.6	0.16	2.42	4	HY
ZMM7PM	72.3	-2.27 *	3.48		205.9	9.32 X	169.39 H	4	SC

Consensus (All Labs) Results

Month Mean	98.01	Grand Mean	100.75
Avg SD	4.95	Avg SD Months	11.42
SD btwn Labs	11.32	SD btwn Labs	11.28
Labs Incld	24	Labs Incld	24

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	97.34	11.59	0.66	22
Modified Scott Bond Mechanics	107.64	0.00	9.63	1

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
2JKWQ6	39.2	3.27 X	4.27		33.2	1.75	5.80 H	4
33TA2R	26.1	-0.16	4.59		26.5	-0.22	3.26	4
7Q7CNJ	23.0	-0.98	1.87		23.6	-1.08	0.44	4
8J22P4	28.5	0.46	3.43		29.5	0.66	0.68	4
92GR3U	31.2	1.17	4.71		30.3	0.88	3.13	4
99VECX	34.4	2.01 *	1.52		31.7	1.31	2.48	4
A4X8DL	29.0	0.60	3.86		27.7	0.12	1.25	4
A6CY4G	20.1	-1.74	2.04		22.6	-1.36	1.81	4
BUUEJK	29.6	0.75	1.14		31.4	1.21	2.70	4
C3F8ZA	31.6	1.28	1.56		29.5	0.66	1.77	4
CKVG3V	26.3	-0.12	0.81		25.0	-0.65	2.51	3
D6LPZQ	17.2	-2.50 *	0.84		19.7	-2.21 *	1.73	4
D9LZWQ	28.8	0.54	0.84		28.8	0.46	0.16 L	4
DAWVHH	25.0	-0.45	3.00		28.1	0.24	3.21	3
E2XW2T	33.0	1.65	2.55		30.9	1.06	2.06	4
E6K8K8	27.6	0.24	5.23 H		28.6	0.40	1.26	4
F3LQEN	30.8	1.07	3.11		32.6	1.56	1.63	3
JQK7PT	24.2	-0.66	1.06		28.2	0.27	2.68	4
K84GPZ	22.0	-1.24	1.58		21.1	-1.82	1.04	4
LLLMKZ	25.6	-0.29	0.55 L		23.4	-1.14	3.13	4
LPKXGZ	25.0	-0.45	1.22		24.7	-0.76	1.81	4
MBBP6V	29.5	0.73	1.96		31.1	1.12	1.27	4
N3ZMKU	29.4	0.70	3.37		28.5	0.37	0.92	4
N667Q3	23.4	-0.87	1.67		24.1	-0.94	0.75	4
R77AU2	22.0	-1.24	3.61		25.4	-0.54	3.37	4
R8J4A2	24.8	-0.50	1.92		26.4	-0.26	1.15	4
RA6VFC	24.8	-0.50	2.17		23.7	-1.05	3.49	4
RW2MGU	28.9	0.57	2.29		27.6	0.10	1.37	4
UGV9AW	28.9	0.58	2.47		28.7	0.43	0.80	4
UQLTFU	24.4	-0.61	2.07		23.8	-1.01	0.43	4
WZ6U3H	26.9	0.05	0.74		29.6	0.69	1.87	4
YN2HJK	26.4	-0.08	0.89		26.5	-0.23	0.12 L	3

Consensus (All Labs) Results

Month Mean	26.72	Grand Mean	27.24
Avg SD	2.54	Avg SD Months	2.23
SD btwn Labs	3.81	SD btwn Labs	3.41
Labs Incld	31	Labs Incld	32

Key to Instrument Codes Reported by Participants

ZZ Instruments No Longer Tracked

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
2JKWQ6_AL	22.7	0.41	2.24		22.9	0.44	1.25	4	AL
2TQUFT	17.3	-4.54 X	1.18		18.0	-3.51 X	1.31	3	GA
2X2R72	21.7	-0.53	1.83		21.1	-1.02	0.95	4	XX
32HEDE_AL	20.7	-1.44	1.42		20.7	-1.33	0.00	1	XX
33TA2R	21.6	-0.62	3.24	H	21.8	-0.43	0.57	4	GA
4TJ7AY	22.9	0.55	2.56		21.9	-0.38	0.98	4	XX
6CBUYK	27.0	4.24 X	1.74		25.5	2.54 *	2.24 H	4	LA
73VFN3	23.4	1.00	4.30	H	23.1	0.61	1.27	4	GG
8J22P4_AL	20.6	-1.54	1.74		21.5	-0.71	0.77	4	AK
92GR3U_AL	21.1	-1.05	1.94		21.7	-0.55	0.95	4	AL
99VECX_AL	21.3	-0.85	1.12		22.4	0.03	1.32	4	AL
A4X8DL_AL	22.3	-0.03	0.81	L	22.2	-0.09	0.47	4	AL
A6CY4G_AL	23.4	0.99	0.95		24.3	1.55	0.81	4	AL
AJUP3J	21.9	-0.33	1.93		22.0	-0.24	0.17	4	LA
BBUP3H	23.3	0.91	1.90		22.7	0.32	0.44	4	LP
BCBJ6D_AL	22.0	-0.29	1.96		21.7	-0.53	0.24	4	AL
BUUEJK_AL	23.7	1.25	2.17		23.4	0.81	0.69	4	AL
C3F8ZA	21.8	-0.48	1.43		22.7	0.32	0.88	4	GA
CKVG3V	22.3	-0.03	2.77		22.5	0.13	1.25	4	TP
CQP7RF	22.6	0.25	0.98		21.1	-1.00	1.00	4	LP
D6LPZQ	21.4	-0.81	0.78	L	21.9	-0.36	0.58	4	LP
DAWVHH	23.2	0.82	2.15		22.2	-0.14	0.96	3	LP
E2XW2T	25.3	2.67 *	3.12		24.3	1.53	1.18	4	TP
E6K8K8	21.4	-0.81	1.64		21.3	-0.87	0.29	4	XX
FPLME4_AL	23.3	0.95	2.09		23.4	0.82	0.04	2	AL
JQK7PT_AL	21.8	-0.48	1.45		21.3	-0.85	0.38	4	AL
K84GPZ	21.5	-0.75	1.41		21.4	-0.79	0.37	4	LA
LLLMKZ	21.7	-0.57	1.26		20.7	-1.29	1.86	4	XX
LPKXGZ_AL	22.9	0.56	3.23		22.2	-0.10	0.66	4	AL
MBBP6V	21.4	-0.82	2.36		23.3	0.80	1.34	4	LP
N3ZMKU_AL	22.6	0.30	1.65		22.3	0.00	0.41	4	AK
N667Q3_AL	20.6	-1.52	0.97		19.4	-2.40 *	1.03	4	AL
R77AU2	22.2	-0.05	1.86		22.5	0.11	0.76	4	TP
R8J4A2	21.9	-0.34	1.06		21.4	-0.79	0.78	4	LP
RA6VFC	26.5	3.77 X	2.76		24.9	2.05 *	1.16	4	TD
TM9EQC	24.7	2.19 *	2.79		23.6	1.03	1.54	2	GG
TM9EQC_AL	21.6	-0.62	2.01		21.7	-0.49	0.23	3	AL
UGV9AW_AL	23.2	0.81	1.33		22.5	0.11	0.75	4	XX
UWVYAF	25.8	3.18 X	1.93		24.6	1.77	1.12	3	LA

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
VQ38HX_AL	22.0	-0.25	1.87		22.4	0.03	0.52	4	XX
W86BE9	20.4	-1.75	2.52		20.4	-1.60	0.00	1	GG
WH38JV	22.8	0.49	0.83	L	22.3	-0.05	0.77	4	LP
XLWN9V_AL	24.2	1.69	1.49		23.7	1.09	0.33	4	AL
YN2HJK	22.4	0.10	1.51		22.2	-0.11	0.17	3	LA

Consensus (All Labs) Results

Month Mean	22.29	Grand Mean	22.34
Avg SD	2.02	Avg SD Months	0.94
SD btwn Labs	1.11	SD btwn Labs	1.25
Labs Incld	40	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
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
2FKNJ9	59.3 L	59.5 L	59.7 L	59.7 L	59.5	0.16	0.8	0.2 L	58.6	0.17	1.7	3.0	16	TU
2JKWQ6	60.6	60.8	56.7	56.9	58.8	-0.09	4.1	2.3	58.9	0.29	4.0	1.6	16	LC
2TQUFT	60.5	60.9	60.3	53.6	58.8	-0.06	4.0	3.5	59.1	0.38	4.8	2.5	12	LD
2X2R72	55.4	55.1	55.1	55.8	55.4	-1.15	4.0	0.3	55.4	-1.17	3.7	1.3	16	LD
32HEDE	56.1	57.8	58.0	53.6	56.4	-0.84	3.7	2.0	56.0	-0.93	3.7	1.5	16	LD
33TA2R	56.7	58.2	55.4	54.9	56.3	-0.86	3.4	1.5	57.0	-0.49	3.5	2.4	16	LD
6CBUYK	53.9	59.5	56.8	60.3	57.6	-0.44	4.5	2.9	56.9	-0.57	4.7	2.8	16	TU
6QC7VK	60.4	58.7	59.4	59.1	59.4	0.12	2.9	0.7	59.9	0.70	3.2	1.3	16	LD
77Y7YN	56.6	56.2	56.0	57.4	56.6	-0.78	2.6	0.6	56.6	-0.67	2.4	0.7	16	LD
7Q92TF	61.6	61.1 L	57.7 H	57.4	59.4	0.13	4.0	2.2	60.1	0.78	4.1	3.2	16	LD
7QJ6ZD	59.2 L	59.3	59.2 L	59.5 L	59.3	0.09	1.5	0.1 L	59.4	0.49	1.3	0.2 L	16	LD
8TM6W4	60.0	58.9	58.9	57.9	58.9	-0.03	3.5	0.9	57.6	-0.24	3.4	1.7	16	LD
A6CY4G	52.6	52.3 *	53.3	54.6	53.2	-1.83	2.8	1.0	53.0	-2.19 *	3.5	1.9	16	LD
AHJRN3	59.8 L	62.0 L	60.4 L	61.3 L	60.9	0.58	0.8	1.0	60.9	1.13	0.8	1.4	16	XX
AU8T69	55.8	62.9 H	60.5	57.6	59.2	0.06	4.8	3.2	59.2	0.42	4.8	3.2	4	LD
BBUP3H	61.8	58.7	58.6	59.2	59.6	0.17	3.1	1.5	58.9	0.29	3.1	1.7	16	LD
BV2WDA	53.0	56.4	54.7	56.5	55.2	-1.22	3.8	1.7	54.9	-1.36	3.4	1.2	16	LD
BV3YY9	65.2 *	67.2 *	66.3 *H	65.0	65.9	2.18 *	4.9	1.0	62.5	1.79	4.3	2.4	16	TH
C3F8ZA	60.0	57.9	58.5	60.0	59.1	0.02	3.9	1.1	58.3	0.05	3.7	1.6	16	LZ
CBR482	55.1	55.7	54.3	53.3 H	54.6	-1.39	4.1	1.1	55.7	-1.04	3.8	1.6	16	TH
CKVG3V	56.4	60.8 H	57.5	59.7	58.6	-0.14	4.6	2.0	57.5	-0.30	4.1	1.8	16	LC
CQP7RF	58.8	59.0	59.7	58.7	59.0	0.00	2.9	0.5	58.7	0.19	3.3	1.8	16	LD
D6LPZQ	60.6	56.8 H	56.5	58.4	58.1	-0.30	4.3	1.9	58.3	0.03	4.2	2.1	16	LZ
DAWVHH	54.9	57.5	55.0	56.8	56.0	-0.94	3.1	1.3	56.5	-0.71	3.0	1.0	8	LD
E2GGB8	56.7	56.7	56.6	56.9	56.7	-0.72	2.6	0.1 L	56.3	-0.80	2.5	0.9	16	EN
E2XW2T	59.8	60.7	59.3	60.7	60.1	0.34	3.7	0.7	60.0	0.74	4.1	1.4	16	LD
E373LA	56.4	58.5	58.5	60.8	58.6	-0.15	2.6	1.8	59.6	0.57	3.0	1.8	16	LC
FFU9BX	57.2 H	55.1	59.9 H	58.7 H	57.7	-0.42	5.6	2.1	58.2	-0.01	5.5	1.4	16	TG
G3L3GB	53.4	56.1	55.5	54.9	55.0	-1.28	4.2	1.2	57.3	-0.40	3.9	2.3	16	LD
JKCX74	58.6	58.9	58.3	57.8	58.4	-0.20	2.9	0.5	58.4	0.08	2.9	0.5 L	16	LC
K62CJ8	58.5 L	58.4	58.3 L	58.4 L	58.4	-0.20	1.7	0.1 L	58.4	0.10	1.7	0.1 L	16	LD
K84GPZ	No Data	55.4	56.5	55.6	55.8	-1.00	3.6	0.6	53.9	-1.79	4.0	6.4 H	15	MB
L7P6V2	59.1	58.7	58.3	58.0	58.5	-0.16	3.3	0.5	58.4	0.09	3.0	0.4 L	16	LD
LEZRJV	60.8	58.4	57.1	56.8	58.3	-0.24	2.8	1.8	57.8	-0.18	3.0	1.7	16	LZ
LPKXGZ	58.2	63.6	62.0	63.8	61.9	0.90	3.1	2.6	60.3	0.87	3.5	2.2	16	LZ

	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
N3ZMKU	55.8	56.4	54.3	59.8	56.6	-0.77	3.5	2.3	55.9	-0.97	4.1	2.9	16	LD
P6MLDH	58.9	59.4	58.5	58.3	58.8	-0.08	2.2	0.5	59.1	0.37	2.6	1.7	16	LC
Q3PRTJ	61.0	60.7	60.1	60.6	60.6	0.50	1.9	0.4	61.9	1.53	1.7	2.4	16	MB
QH7QXK	58.1	58.1	58.2	58.2	58.2	-0.27	3.8	0.1 L	58.4	0.07	3.9	0.3 L	16	LD
QJZEGF	58.3	58.5	59.4	56.4	58.2	-0.27	3.7	1.3	56.0	-0.93	3.5	2.4	16	EM
QL2G4W	67.6 *	65.3	64.6 *	65.9 *	65.8	2.15 *	3.6	1.3	65.6	3.09 X	3.4	1.7	12	LD
R3KXMH	63.6	67.9 *	67.1 X	67.8 *	66.6	2.39 *	4.2	2.0	61.4	1.32	4.1	3.7	16	LD
R77AU2	55.2	55.5	54.5	56.5	55.4	-1.14	3.3	0.8	55.4	-1.17	3.3	0.8	4	LD
R8J4A2	61.4	63.8	64.5 *	71.3 X	65.3	1.97 *	3.8	4.3 H	62.4	1.76	3.7	3.1	16	LD
RG3MLK	58.5	59.4	58.2	59.7	59.0	-0.02	3.6	0.7	59.1	0.38	4.3	1.3	16	TJ
RMDU6X	No Data	59.7	62.2	65.5	62.5	1.09	3.5	2.9	60.2	0.84	4.0	2.5	15	LD
RW2MGU	56.2 H	60.1	57.6	59.8	58.4	-0.20	4.7	1.8	58.7	0.20	3.9	2.4	16	EN
TM9EQC	67.1 *	66.7 *	64.9 *	62.2	65.2	1.96 *	2.9	2.2	63.6	2.25 *	3.4	1.8	12	LZ
TU9V6N	68.6 X	68.7 *	61.3 H	61.4 H	65.0	1.88	6.0	4.2 H	50.5	-3.23 X	5.0	20.4 H	16	XX
UQLTFU	61.9	61.6 H	63.1	64.9	62.9	1.22	4.7	1.5	57.2	-0.40	4.0	3.6	16	LZ
UWVYAF	56.6	55.6	54.9	52.9	55.0	-1.27	3.6	1.6	52.8	-2.25 *	4.8	4.2	12	MB
VQ38HX	62.6	62.2	59.9	66.3 *	62.8	1.18	3.1	2.6	60.5	0.97	3.9	2.2	16	LD
WH38JV	No Data	No Data	No Data	63.0	63.0	1.26	5.0	0.0	59.5	0.55	3.9	2.7	5	LD
WZ6U3H	60.4	63.6	61.9	60.0	61.5	0.77	3.2	1.6	62.4	1.75	3.6	1.8	16	LD
YN2HJK	58.3	58.3	58.7 L	58.5	58.5	-0.18	2.1	0.2 L	58.4	0.08	2.0	0.5 L	12	LD
ZAZ7NL	54.8	55.3	58.1	55.0	55.8	-1.01	3.0	1.5	56.5	-0.70	2.8	1.5	12	TH
ZMM7PM	52.1	51.6 *	57.2	56.1	54.3	-1.50	3.9	2.8	53.5	-1.97 *	3.4	1.8	16	LC

Consensus (All Labs) Results

Wk Mean	58.52	59.32	58.56	58.90	Month Mean	59.02	Grand Mean	58.21
Avg SDr	3.57	3.57	3.65	3.55	Avg SD	3.62	Avg SD	3.58
SD btwn Labs	3.36	3.57	2.86	3.42	SD btwn Labs	3.17	SD btwn Labs	2.39
Labs Incld	53	56	55	56	SD btwn Wks	1.80	SD btwn Wks	2.22
Labs Excld	1	0	1	1	Labs Incld	57	Labs Incld	55
Labs not Rcvd	3	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)
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
2JKWQ6	75.3 *	73.6	73.5	72.5	73.7	2.16 *	3.8	1.2	70.4	0.71	3.8	2.6	16	LC
4TJ7AY	69.3	69.0	68.5	69.5 L	69.1	-0.12	3.1	0.4	68.9	-0.17	2.4	0.6	16	LZ
6QC7VK	67.3	68.1	70.0	69.6	68.7	-0.29	3.4	1.3	69.5	0.15	2.7	2.1	16	LD
A6CY4G	66.6	69.0	66.8	69.1	67.9	-0.72	2.8	1.4	68.2	-0.62	3.3	1.6	16	LD
AHJRN3	71.6 L	70.2 L	73.2 L	71.8 L	71.7	1.16	0.9	1.2	71.4	1.26	0.8	1.6	12	XX
BBUP3H	68.0	71.4	70.0	70.4	69.9	0.30	3.4	1.4	68.7	-0.34	3.0	2.0	16	LD
CBR482	62.3 *	59.9 X	59.7 X	61.1 *	60.7	-4.22 X	2.7	1.2	62.0	-4.29 X	3.1	1.5	16	TH
CKVG3V	71.6	72.5	67.6 L	69.0	70.2	0.41	2.0	2.3	69.8	0.32	2.9	2.0	16	LC
CQP7RF	71.0	68.2	71.1	70.4	70.2	0.41	4.0	1.4	70.6	0.79	3.7	1.1	16	LD
DAWVHH	72.7	68.3	71.6	70.5 H	70.7	0.70	4.0	1.9	72.0	1.62	3.7	2.1	8	LD
E2XW2T	65.7	68.7	66.5	65.6	66.6	-1.32	3.9	1.4	66.4	-1.66	3.9	0.9	16	LD
JKCX74	69.5	68.6	68.3	69.0	68.9	-0.23	2.9	0.5	68.7	-0.30	3.8	0.5	16	LD
K62CJ8	68.8 L	68.8	69.2	68.9	68.9	-0.20	1.9	0.2 L	68.8	-0.25	1.8	0.3 L	16	LD
LEZRJV	69.3	71.7	69.0	66.9	69.2	-0.05	2.8	2.0	68.4	-0.52	3.0	2.3	16	LZ
LPKXGZ	66.6	64.4 *	68.4	64.3	65.9	-1.68	2.3	2.0	66.4	-1.68	3.2	1.6	16	LZ
N3ZMKU	70.4	61.9 X	71.0	67.3 H	67.6	-0.83	3.7	4.1 H	68.3	-0.57	3.5	2.7	16	LD
Q3PRTJ	71.9	71.3	71.1	71.1	71.3	0.99	1.7	0.4	70.8	0.94	1.7	0.7	16	MB
QCXHEV	66.4	66.9	66.0 L	67.4	66.6	-1.32	1.8	0.6	67.3	-1.14	2.2	1.0	14	LD
R77AU2	72.8	72.8	72.5	73.0	72.8	1.68	3.7	0.2 L	72.8	2.09 *	3.7	0.2 L	4	LD
R8J4A2	70.3 H	69.0 H	66.0 H	63.1	67.1	-1.09	5.9	3.2	68.3	-0.58	4.4	2.2	16	LD
RW2MGU	66.2	68.6	67.9 H	69.9	68.1	-0.59	4.1	1.6	67.9	-0.77	4.8	3.4	16	EN
WH38JV	No Data	No Data	No Data	71.3	71.3	0.96	2.0	0.0	71.0	1.05	3.0	1.3	6	LD
YN2HJK	68.4	69.3	68.6 L	68.4	68.7	-0.32	1.6	0.4	68.7	-0.33	1.8	0.4 L	12	LD

Consensus (All Labs) Results

Wk Mean	69.17	69.52	69.35	68.68	Month Mean	69.32	Grand Mean	69.23
Avg SDr	2.89	3.28	3.64	3.11	Avg SD	3.20	Avg SD	3.19
SD btwn Labs	2.96	2.19	2.26	2.95	SD btwn Labs	2.04	SD btwn Labs	1.69
Labs Incld	22	20	21	23	SD btwn Wks	1.69	SD btwn Wks	1.73
Labs Excld	0	2	1	0	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		

	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
2FKNJ9	43.9 L	44.8 L	44.5 L	44.6 L	44.5	0.22	0.9	0.4	42.6	-0.61	1.8	1.9	16	TU
2TQUFT	43.5	46.5	45.0	43.9	44.7	0.40	4.1	1.4	42.7	-0.55	4.1	3.7	12	LD
2X2R72	40.9	42.3	42.7	41.2	41.8	-1.73	2.9	0.9	41.8	-1.09	2.9	0.9	4	LD
32HEDE	45.6	40.5	43.6	41.2	42.7	-1.04	2.5	2.3	42.2	-0.82	3.3	2.4	16	LD
3G9GUH	43.3	43.9	41.4	43.1	42.9	-0.92	3.4	1.1	44.2	0.34	2.9	1.6	16	LD
77Y7YN	43.5	43.7	43.3 L	42.8	43.3	-0.62	1.8	0.4	44.5	0.48	2.5	0.9	16	LC
7Q92TF	44.0	45.0	44.3	43.3	44.2	-0.01	2.3	0.7	44.2	0.32	2.5	1.3	16	LD
7QJ6ZD	45.6 L	45.7 L	45.6 L	45.6 L	45.6	1.04	1.2	0.1 L	45.4	1.01	1.2	0.2 L	16	LD
8TM6W4	45.7	43.9	43.3	44.3	44.3	0.10	3.6	1.0	44.2	0.34	3.4	2.1	16	LD
A6CY4G	46.4	42.7	40.8 *	41.0	42.7	-1.04	2.6	2.6	42.4	-0.71	3.5	2.0	16	LD
AU8T69	45.2 H	49.5 *	45.5	45.5	46.4	1.65	4.4	2.1	46.4	1.63	4.4	2.1	4	LD
BBUP3H	41.9	41.7	44.3	45.7	43.4	-0.54	3.6	2.0	42.0	-0.94	3.5	1.6	16	LD
BV3YY9	48.1	47.4	45.7	49.2 *	47.6	2.50 *	3.9	1.5	39.9	-2.19 *	3.2	5.1 H	16	LZ
C3F8ZA	41.7	41.2	44.5	43.8	42.8	-0.98	2.8	1.6	42.5	-0.68	3.1	1.5	16	LD
CBR482	39.2 *	40.0	38.6 X	39.8	39.4	-3.46 X	3.1	0.6	39.4	-2.47 *	2.9	1.0	16	TH
CKVG3V	42.8	47.3	45.6	46.3 H	45.5	0.98	4.1	1.9	44.5	0.50	3.8	2.3	16	LC
CQP7RF	42.3	41.7	43.9 L	45.4	43.3	-0.61	3.5	1.6	43.8	0.07	3.0	1.7	16	LD
DAWVHH	42.8	45.8	43.8	41.0	43.3	-0.59	3.4	2.0	43.9	0.12	2.9	1.7	8	XX
DVXYDY	48.5 *	46.1	44.4	45.8	46.2	1.48	2.4	1.7	43.7	0.06	3.2	1.9	16	TH
E2XW2T	44.4	44.3	42.9	43.7	43.8	-0.24	2.9	0.7	45.0	0.77	3.5	1.1	16	LD
K84GPZ	43.9	47.4	42.1	45.8	44.8	0.48	3.3	2.3	43.9	0.15	3.0	2.4	16	MB
P6MLDH	47.5	47.9	47.7 *	51.3 XH	48.6	3.22 X	5.1	1.8	47.3	2.16 *	3.4	1.8	16	LC
Q3PRTJ	43.2	43.4	43.3 L	43.0	43.2	-0.68	1.7	0.1 L	42.7	-0.53	1.5	1.0	16	MB
QH7QXK	43.5	43.5	43.5	43.5	43.5	-0.47	3.0	0.0 L	43.4	-0.13	2.8	0.2 L	16	LD
QJZEGF	47.3	43.3 H	44.1 H	45.6	45.1	0.65	6.3	1.8	44.5	0.51	4.7	2.5	16	EM
R3KXMH	40.7	43.4	42.0	46.2	43.1	-0.79	3.3	2.4	42.9	-0.44	3.1	2.4	16	EM
R77AU2	46.6	47.5	46.7	45.2	46.5	1.70	2.8	1.0	46.5	1.67	2.8	1.0	4	LD
RMDU6X	44.2	47.4	43.4	40.7	43.9	-0.17	2.7	2.8	44.4	0.47	3.2	2.1	15	LZ
WVBZ6G	44.7	44.4	41.6 H	43.7	43.6	-0.42	4.0	1.4	44.2	0.34	4.7	1.2	16	XX
YN2HJK	43.5	43.7	43.6	43.9	43.7	-0.35	2.9	0.2 L	44.0	0.23	2.9	0.5 L	12	LD
ZAZ7NL	36.2 X	35.4 X	37.0 X	38.7 *	36.8	-5.31 X	2.9	1.4	36.0	-4.49 X	2.8	1.3	12	TH

Consensus (All Labs) Results

Wk Mean	44.14	44.53	43.90	43.78	Month Mean	44.16	Grand Mean	43.64
Avg SDr	3.26	3.23	3.27	3.14	Avg SD	3.25	Avg SD	3.21
SD btwn Labs	2.22	2.40	1.56	2.28	SD btwn Labs	1.38	SD btwn Labs	1.71
Labs Incld	30	30	29	30	SD btwn Wks	1.57	SD btwn Wks	1.98
Labs Excld	1	1	2	1	Labs Incld	28	Labs Incld	30
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 #626 (M)
November 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
2TQUFT	14.4	15.2 *	14.5	15.3 *	14.9	2.00 *	1.2	0.5	14.8	2.26 *	1.2	0.6	12	LA
32HEDE	8.2 XH	10.1 X	7.9 X	6.1 X	8.0	-10.17 X	1.3	1.6 H	8.7	-10.64 X	1.3	1.5 H	16	LZ
33TA2R	12.4	13.0	12.6 *	12.5	12.6	-2.00 *	1.3	0.3	13.1	-1.32	1.2	0.4	16	LU
3G9GUH	12.7	13.4 H	12.9	13.0	13.0	-1.34	1.4	0.3	13.4	-0.57	1.0	0.6	16	LA
6CBUYK	13.5	13.6	14.0	14.3	13.9	0.19	1.4	0.4	13.5	-0.32	1.1	0.9	16	LA
77Y7YN	13.9	14.3	13.4	13.2	13.7	-0.08	1.1	0.5	14.0	0.73	1.1	0.4	16	LH
A4X8DL	13.8	14.0	13.9	13.7	13.8	0.18	1.1	0.1	13.8	0.27	1.2	0.2	16	LA
A6CY4G	13.3	13.5	14.0 L	13.7	13.6	-0.21	1.1	0.3	13.7	0.00	0.9	0.6	16	LA
AHJRN3	14.7	14.1	12.9	13.4	13.8	0.08	1.0	0.8	13.3	-0.95	1.0	0.7	16	XX
C3F8ZA	13.5	13.6	13.6	13.8	13.6	-0.23	1.2	0.1	13.6	-0.32	1.1	0.3	16	LZ
CBR482	12.0 *	12.7	13.8	12.3 *	12.7	-1.86	1.1	0.8	12.9	-1.64	1.0	0.5	16	LZ
CKVG3V	13.5	14.5	14.1	13.7	14.0	0.38	0.9	0.4	13.5	-0.37	1.1	0.4	16	LU
E2GGB8	13.0	13.4	13.3	13.0	13.2	-1.01	0.9	0.2	13.4	-0.75	1.1	0.2	16	LH
E2XW2T	12.8	13.5	13.6	13.3	13.3	-0.77	1.1	0.4	13.3	-0.87	1.0	0.4	16	LB
JKCX74	13.4	12.9	13.8	14.0	13.5	-0.35	0.9	0.5	13.5	-0.47	0.8	0.4	16	LB
K62CJ8	13.6 L	13.8 L	13.6 L	13.8 L	13.7	-0.03	0.4	0.1	13.6	-0.15	0.4	0.1 L	16	LA
K84GPZ	14.9	13.9	13.9	14.5 L	14.3	0.98	0.9	0.5	14.2	1.07	0.9	0.6	12	LA
L7P6V2	14.1	13.0	13.9	13.5	13.6	-0.19	0.9	0.5	13.6	-0.16	0.8	0.4	16	LB
N3ZMKU	13.7	14.4	13.9	14.3	14.1	0.58	1.3	0.3	14.4	1.51	1.2	0.5	16	LA
RG3MLK	13.7	13.9	14.0	14.0	13.9	0.29	0.9	0.1	13.6	-0.28	1.0	0.5	16	TT
RW2MGU	13.1	13.2	13.5	13.0	13.2	-0.97	1.0	0.2	12.9	-1.64	1.1	0.3	16	LB
UWVYAF	13.8	14.8	14.6 H	14.2	14.3	1.08	1.5	0.5	14.2	0.98	1.2	0.4	12	LA
WZ6U3H	15.3 *	14.6 L	14.8 *L	14.8	14.9	2.05 *	0.5	0.3	14.5	1.64	0.5	0.4	16	LH
XHJQYM	13.5	14.2	14.4	15.0 H	14.3	0.93	1.6	0.6	14.1	0.82	1.5	0.6	16	LA
YN2HJK	13.8	13.6	13.8	13.7	13.7	-0.01	1.2	0.1	13.8	0.12	1.2	0.1 L	12	LB
YWUQ9H	14.1	13.7	14.1	13.8	13.9	0.32	1.0	0.2	13.9	0.40	1.0	0.3	16	LU

Consensus (All Labs) Results

Wk Mean	13.62	13.80	13.79	13.75	Month Mean	13.74	Grand Mean	13.70
Avg SDr	1.00	1.12	1.17	1.13	Avg SD	1.11	Avg SD	1.04
SD btwn Labs	0.75	0.62	0.51	0.73	SD btwn Labs	0.56	SD btwn Labs	0.47
Labs Incld	25	25	25	25	SD btwn Wks	0.40	SD btwn Wks	0.48
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