Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #617 (B) - February 2021

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX15	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC13	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC13	Edgewise Compressive Strength by T839, Corrugated Board
205	42F3	Bursting Strength (Mullen), 42 lb Linerboard
207	35E2	Bursting Strength (Mullen), 35 lb Linerboard
215	42F3	Ring Crush, 42 lb Linerboard
217	35E2	Ring Crush, 35 lb Linerboard
223	42F3	STFI, 42 lb Linerboard
225	35E2	STFI, 35 lb Linerboard
228	42F3	Roughness - Stylus Method, 42 lb Linerboard
229	42F3	Roughness - Sheffield Method, 42 lb Linerboard
231	42F	Internal Bond, 42 lb Linerboard
234	42F	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42F	Air Resistance, 42 lb Linerboard
240	CM11	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM11	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM11	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM11	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 lb Corrugating Medium	CM11	January 2020-Current
35 lb Linerboard	35E2	June 2020-Current
	35E1	February 2020-April 2020
42 lb Linerboard	42F2	February 2020-Current
	42F1	January 2020-January 2020
56 lb Linerboard	56G1	January 2020-Current

ABOUT CTS

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

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EXPLANATION OF TABLES

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

Definitions of Terms Used

Weekly Results

Laboratory Data

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

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

Consensus Data

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

Avg 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
278UUP	647.1	-3.67	X	39.22	680.2	-2.59	*	46.75	2	LS
2EXFYM	821.0	-0.19		110.96	826.1	0.10		7.21	2	EX
36QX2P	881.0	1.01		7.78 L	873.4	0.97		10.75	2	LG
4Z72HB	843.2	0.25		14.70 L	814.0	-0.13		41.25	2	ER
62GU4J	900.0	1.39		29.79	883.0	1.15		24.04	2	LS
6ZMD2F	842.6	0.24		45.92	838.1	0.32		6.36	2	EX
88HMBK	732.4	-1.96	*	38.58	795.1	-0.47		88.67	2	LL
9FLWZ2	748.8	-1.64		81.61	756.8	-1.18		11.31	2	LG
B7AG7Y	820.8	-0.19		60.54	807.3	-0.25		19.09	2	LG
BFJ9RA	865.0	0.69		83.39	874.8	1.00		13.94	2	LG
D78TX7	784.8	-0.91		90.71	786.9	-0.62		3.01	2	LS
FUNXVC	883.9	1.07		34.34	847.1	0.49		52.13	2	LH
GTMKMA	888.6	1.17		93.30	885.3	1.19		4.67	2	ET
JRPUU2	581.4	-4.99	X	44.52	707.3	-2.09	*	178.05	2	EM
M8R3AX	885.8	1.11		55.16	890.2	1.28		6.31	2	ER
MDXYTX	765.3	-1.31		89.96	820.2	-0.01		77.65	2	LL
MNQMKR	828.8	-0.03		40.00	822.7	0.04		8.63	2	ER
NTZZ3P	867.7	0.75		53.66	871.3	0.93		5.11	2	LO
PHZCGU	788.4	-0.84		28.21	785.5	-0.65		4.10	2	LG
PJCQBV	774.0	-1.13		39.24	799.1	-0.40		35.51	2	LG
QBV8DU	829.0	-0.03		34.15	816.0	-0.09		18.38	2	ER
RPBRAR	808.2	-0.45		66.82	805.1	-0.29		4.41	2	LM
T9ZVHZ	601.6	-4.59	X	39.76	625.1	-3.61	X	33.33	2	TB
TB8MGL	873.4	0.86		19.65	837.1	0.30		51.43	2	LM
X9MVPL	805.2	-0.51		46.59	831.5	0.20		37.19	2	EX
XRYHBU	903.2	1.46		75.38	910.7	1.66		10.61	2	LS
YNA6UF	789.6	-0.82		126.22 H	775.5	-0.84		19.94	2	ES

Consensus (All Labs) Results

Month Mean	830.44	Grand Mean	820.78
Avg SD	64.62	Avg SD Months	48.05
SD btwn Labs	49.91	SD btwn Labs	54.19
Labs Incld	24	Labs Incld	26

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	825.95	57.87	4.49	8
Clip sealing	832.69	47.33	2.25	16

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

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
278UUP	34.2	-2.00 *	2.16		37.0	-1.91 *	3.90 H	4	EM
36QX2P	46.1	0.97	1.16		46.1	0.81	0.11	2	EM
4Z72HB	43.2	0.23	4.49	H	44.6	0.37	1.35	4	EN
62GU4J	44.8	0.63	1.39		44.6	0.39	1.20	4	LC
AHU2FB	48.4	1.52	1.63		48.7	1.60	0.49	4	XX
B7AG7Y	41.3	-0.23	2.43		42.9	-0.14	1.65	4	LE
D78TX7	39.7	-0.62	4.30	H	41.0	-0.71	2.56	4	LD
FEBZVY	40.8	-0.35	1.62		43.2	-0.04	1.75	4	LD
L6NHYZ	37.7	-1.12	1.16		39.0	-1.30	1.50	4	TF
P2DX32	44.1	0.47	1.59		46.0	0.79	2.22	4	XX
X9MVPL	44.3	0.50	1.57		43.8	0.13	1.16	4	LC

Consensus (All Labs) Results

Month Mean	42.23	Grand Mean	43.34
Avg SD	2.41	Avg SD Months	1.90
SD btwn Labs	4.03	SD btwn Labs	3.35
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	TF	TMI Digital Crush Tester, Model 17-19
XX	Instrument make/model not specified by lab		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
278UUP	43.0	-1.23	0.91		42.6	-1.34	2.48	4	EM
2EXFYM	44.7	-0.54	1.39		44.2	-0.64	1.17	4	CT
3MNTLL	49.6	1.48	3.75	H	48.1	1.04	2.17	4	TD
4Z72HB	42.9	-1.25	4.83	H	44.7	-0.42	2.34	4	EN
62GU4J	47.0	0.43	0.97		47.6	0.83	0.86	4	LC
6ZMD2F	42.6	-1.41	1.02		44.5	-0.54	2.80	4	LD
8DNJUK	45.9	-0.04	2.12		46.4	0.30	1.01	4	TL
AHU2FB	48.9	1.20	1.51		48.8	1.36	0.41	4	XX
B7AG7Y	45.3	-0.28	2.50		46.0	0.11	0.98	4	LY
BFJ9RA	44.6	-0.55	2.19		46.1	0.17	1.99	4	TJ
CAC2PC	46.3	0.14	1.62		46.7	0.41	1.37	4	TG
CP3FBC	37.9	-3.32 X	2.88		40.8	-2.12 *	3.30	4	XX
D78TX7	45.3	-0.27	1.97		43.9	-0.77	1.52	4	LD
FEBZVY	46.8	0.34	1.72		46.0	0.14	1.92	4	LD
FUNXVC	49.5	1.44	2.00		49.2	1.49	0.51	3	EM
G9YY69	48.7	1.11	1.38		49.2	1.53	1.18	4	LD
GTMKMA	45.0	-0.39	1.07		45.0	-0.33	1.03	4	TD
JRPUU2	46.1	0.03	2.08		46.7	0.42	0.82	4	TH
KNHQ43	45.5	-0.19	1.12		43.7	-0.87	1.31	4	TK
L6NHYZ	42.3	-1.51	1.06		44.1	-0.72	1.32	4	TD
M8R3AX	40.7	-2.15 *	2.09		42.8	-1.25	2.56	4	LD
MDXYTX	43.4	-1.05	2.79		47.0	0.54	3.34	4	LC
MNQMKR	44.8	-0.48	2.23		45.1	-0.26	1.20	4	LD
NTZZ3P	45.3	-0.27	1.46		44.2	-0.64	1.12	4	LD
QBV8DU	44.7	-0.54	0.85		44.2	-0.63	0.36 L	4	EM
REV6ET	47.5	0.61	1.62		47.5	0.77	1.22	4	TD
RPBRAR	47.8	0.74	0.99		43.5	-0.95	4.28	4	TG
T6H76V	48.3	0.94	0.98		45.9	0.06	3.44	2	LC
T9ZVHZ	47.3	0.54	0.31	L	45.9	0.09	1.67	4	LD
TB8MGL	45.1	-0.34	1.95		47.5	0.76	1.75	4	EM
V2UZCW	48.9	1.18	1.11		47.8	0.91	0.95	4	LC
WQR34N	46.5	0.19	1.06		47.0	0.57	0.42	4	EM
X7F67P	36.0	-4.09 X	2.19		40.3	-2.32 *	7.26 H	3	XX
X9MVPL	44.2	-0.72	1.89		44.5	-0.53	0.89	4	LC
XRYHBU	52.4	2.63 *	0.84	L	51.0	2.29 *	1.43	4	TB
YNA6UF	46.4	0.17	2.41		46.9	0.52	0.74	4	LD

Consensus (All Labs) Results

Month Mean	45.98	Grand Mean	45.70
Avg SD	1.91	Avg SD Months	2.19
SD btwn Labs	2.44	SD btwn Labs	2.31
Labs Incld	34	Labs Incld	36

Key to Instrument Codes Reported by Participants

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
TB	TMI Monitor/Compression Tester, Model 17-70	TD	TMI Digital Crush Tester, Model 17-09
TG	TMI Digital Crush Tester, 17-76	TH	TMI Monitor/Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TK	TLS Compression Tester, Model 5184
TL	Tech-Lab Systems Compression	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program
Analysis 205
Bursting Strength (Mullen), 42 lb Linerboard - 42F3
TAPPI Official Test Method T807

Report #617 (B)
February 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
2EXFYM	111.0	108.0	110.5	109.5	109.8	-0.24	9.9	1.3	109.1	-0.65	9.5	3.7	16	XX
2XTHLB	112.0	113.8	115.8	115.4	114.3	1.01	5.4	1.7	113.9	0.97	6.1	1.8	15	AH
3TE3VJ_AL	105.7	108.1	106.0	111.0	107.7	-0.82	7.5	2.4	108.0	-1.00	8.4	3.1	14	AL
62GU4J	111.4	110.0	106.6	109.3	109.3	-0.36	9.2	2.0	109.9	-0.39	8.6	2.5	16	AH
6YET4M	112.7	112.8	112.9	112.4	112.7	0.58	4.8	0.2 L	113.0	0.65	5.0	0.5 L	16	LA
6ZMD2F	109.2	112.8	105.6	109.2	109.2	-0.39	8.6	2.9	107.8	-1.10	8.8	2.8	16	AH
7RCCFE	110.3	111.0	116.7	105.9	111.0	0.10	7.6	4.4	112.0	0.35	8.9	2.6	16	LC
7ZPVPL	118.8 *	125.5 X	115.9	120.9 X	120.3	2.68 *	8.2	4.0	121.0	3.34 X	9.1	3.1	16	AX
9BC4ZJ	105.2	106.5	110.1	106.3	107.0	-1.00	8.9	2.1	110.6	-0.13	10.4	3.4	16	LC
9BC4ZJ_AL	112.2	105.6 H	105.6	107.2	107.6	-0.83	14.6	3.1	112.0	0.34	12.4	4.2	16	AL
ADETRC	107.1 L	108.7	106.9	111.0	108.4	-0.61	5.2	1.9	109.3	-0.57	4.6	2.0	16	LA
AHU2FB	114.2	115.5	114.7	113.9	114.6	1.09	4.3	0.7	115.5	1.52	3.1	1.3	16	LC
AMKJR2_AL	112.7	111.3	109.3	108.8	110.5	-0.03	10.9	1.8	111.2	0.06	9.2	2.9	16	AL
AVXVZF	109.4 L	108.3 L	103.3	109.1 L	107.5	-0.86	3.6	2.9	108.3	-0.90	3.7	1.5	16	XX
B26FAB	95.2 X	96.1 X	96.6 X	102.0 *	97.5	-3.64 X	8.5	3.1	89.1	-7.37 X	7.6	18.8 H	16	LA
B7AG7Y	117.8	117.8	116.9	119.3 *	118.0	2.03 *	5.9	1.0	115.5	1.52	6.5	2.7	16	AH
BDDQTE_AL	118.2 *	121.2 *	114.6	113.9	117.0	1.76	6.5	3.4	116.5	1.84	9.0	3.4	16	AL
BPPQ8Y	109.9	107.4	110.3 H	112.9	110.1	-0.15	11.0	2.2	111.9	0.31	10.0	3.4	16	LB
CMYJR9	110.7	110.9	111.0	110.2	110.7	0.02	4.9	0.3 L	110.6	-0.14	4.6	0.3 L	16	LJ
CRUDPA	115.2	117.0 L	116.4	111.8	115.1	1.24	4.8	2.3	112.5	0.51	5.3	3.6	11	AX
CRUDPA_AL	105.6	112.5	110.2	113.3	110.4	-0.06	9.5	3.5	109.0	-0.67	8.0	2.7	11	AL
D787N2	115.7	114.5	115.6 H	106.5	113.1	0.68	10.2	4.4	115.0	1.35	9.8	2.8	16	LA
D78TX7	106.0	110.8	107.1	108.2	108.0	-0.72	9.8	2.1	107.6	-1.15	9.1	2.6	16	LA
DA3XWX	104.0	116.2	125.3 X	127.9 X	118.4	2.14 *	8.7	10.8 H	115.6	1.55	9.5	7.5 H	16	TB
DYLDC2	110.0	107.7	112.7	115.3	111.4	0.22	7.3	3.3	112.5	0.51	6.1	2.1	16	LA
DYLDC2_AL	112.5	110.9	111.9	112.2	111.9	0.35	6.8	0.7	112.0	0.32	5.8	1.7	16	AL
FEBZVY	102.2 L	107.3	108.0	111.0	107.1	-0.97	5.3	3.7	107.3	-1.24	6.0	3.5	16	LA
FWQW76	103.6	107.0	101.7 *	104.6	104.2	-1.77	8.7	2.2	105.1	-1.97 *	8.7	4.2	16	LA
G9YY69_AL	119.1 *	113.2	116.2	116.9	116.4	1.59	5.6	2.4	118.3	2.45 *	6.9	2.8	16	AK
GCFWJ3	113.0	117.9	116.4	113.7	115.2	1.28	10.1	2.3	115.0	1.35	10.4	2.3	12	LA
GKB2D4	112.2	107.8	108.8	109.6	109.6	-0.28	7.7	1.9	107.8	-1.07	8.9	3.0	16	AH
GKB2D4_AL	110.2	116.1	116.9	111.3	113.6	0.83	9.1	3.4	111.6	0.19	8.9	3.6	16	XX
J9T2RU_AL	128.2XH	128.9XH	123.1 X	114.0	123.6	3.59 X	11.2	6.9 H	117.0	2.01 *	8.5	6.1	16	AL
JEK4Y2	112.7	113.2	114.8	112.0	113.2	0.71	8.7	1.2	110.3	-0.25	10.2	3.2	16	LJ
JTZWGY	107.7	111.6	110.3	107.1	109.2	-0.40	9.3	2.1	107.0	-1.35	8.4	3.8	16	AC

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42F3

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
KF7YR7	112.2	112.3	No Data	No Data	112.3	0.46	8.6	0.1	111.5	0.18	9.6	1.2	8	LC
KYN93Z	109.0	109.3	110.9 L	109.2 L	109.6	-0.28	3.7	0.9	109.4	-0.55	3.9	0.7 L	16	LA
KYYBNY	105.0	109.1	106.4	107.6	107.0	-1.00	8.1	1.8	109.2	-0.60	9.3	4.3	12	LA
L6NHYZ	110.9	114.3	111.0	114.7	112.7	0.58	9.3	2.1	111.1	0.03	10.0	2.4	16	XX
M8R3AX	111.6 H	104.4	102.9	110.7	107.4	-0.89	11.5	4.4	108.0	-1.01	9.3	3.7	16	LZ
MNQMKR	99.0 *	106.0	102.2 *	104.2	102.9	-2.15 *	8.5	3.0	110.1	-0.31	9.1	8.1 H	16	AH
MT6MW6	109.3	109.6	111.6	110.6	110.3	-0.10	7.4	1.0	109.7	-0.44	7.6	1.2	16	TP
NUB2NN_AL	110.7	109.5	111.7	110.9	110.7	0.02	7.8	0.9	111.2	0.07	8.7	3.0	16	AL
PKPNFY_AL	107.1	98.9 X	104.8	101.8 *	103.2	-2.07 *	9.9	3.5	106.7	-1.45	8.7	3.6	16	AL
PXADJN	110.7	109.0	111.4	110.2	110.3	-0.08	7.4	1.0	109.8	-0.42	7.4	1.6	12	LA
QY7BCV_AL	108.6	109.0	112.1 L	112.8	110.6	0.00	7.4	2.1	110.9	-0.05	7.7	2.7	16	AL
R9P9DK_AL	114.1	114.1	109.1	110.2	111.9	0.34	9.7	2.6	112.5	0.51	9.7	1.9	8	AK
TLNXZR_AL	103.4	109.6	112.9	103.2	107.3	-0.93	9.7	4.8	116.1	1.72	10.1	7.3 H	16	AK
TYE8RK_AL	106.1	105.4 H	109.1	106.6	106.8	-1.06	12.1	1.6	114.4	1.14	8.5	6.8	16	AL
VD6DTX	110.8	110.8	112.0	109.2	110.7	0.02	8.1	1.1	110.0	-0.34	7.2	1.0	16	AH
VFC7TJ	107.3	112.6	110.1	111.5	110.4	-0.07	10.5	2.3	110.2	-0.28	9.3	3.4	16	LZ
W2R7EP_AL	111.5	120.1 *	116.3	110.6	114.6	1.10	8.7	4.4	112.8	0.59	10.4	4.5	15	AL
WBDAMP_AI	107.9	110.1	112.9	103.6	108.6	-0.56	7.4	3.9	109.9	-0.37	7.1	3.2	16	AL
WF7YWN	107.9	107.4	108.0	108.5 H	108.0	-0.74	10.6	0.4 L	107.2	-1.27	9.2	2.5	16	LA
WPWWRG_A	107.2 H	109.4	110.6	107.6	108.7	-0.53	10.0	1.6	108.6	-0.80	9.9	1.5	8	XX
YNA6UF	112.6	109.4	107.9	105.4	108.8	-0.50	8.1	3.0	110.0	-0.34	7.9	2.6	16	LA
YU2E4E	107.5	109.8	108.9	110.2	109.1	-0.42	9.6	1.2	107.4	-1.23	9.0	2.2	16	LC

Consensus (All Labs) Results

Wk Mean	109.98	111.03	110.61	109.89	Month Mean	110.62	Grand Mean	111.01
Avg SDr	8.05	9.12	8.11	8.43	Avg SD	8.52	Avg SD	8.39
SD btwn Labs	4.15	3.77	4.09	3.69	SD btwn Labs	3.61	SD btwn Labs	2.98
Labs Incld	55	53	53	54	SD btwn Wks	2.92	SD btwn Wks	3.45
Labs Excld	2	4	3	2	Labs Incld	55	Labs Incld	55
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
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		

Containerboard Interlaboratory Testing Program

Analysis 207

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

TAPPI Official Test Method T807

Report #617 (B)
February 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
2EXFYM	91.5	83.5 *	87.0	93.0	88.8	-0.94	9.1	4.3	88.3	-1.59	8.8	3.6	8	XX
2XTHLB	97.2	97.8	99.6 *	101.2 X	99.0	2.24 *	5.6	1.8	96.8	2.11 *	5.6	3.1	12	AH
3TE3VJ_AL	91.5	97.5	92.1	86.3 *	91.8	0.02	7.5	4.6	92.9	0.41	6.6	2.9	12	AL
62GU4J	91.5	91.3	95.0	92.2	92.5	0.23	7.7	1.7	91.8	-0.05	8.3	2.5	12	AH
6YET4M	93.7	93.0 L	92.6 L	92.9 L	93.1	0.40	2.8	0.5	93.3	0.56	2.9	0.5 L	12	LA
6ZMD2F	89.6	90.4	88.4	89.6	89.5	-0.70	6.6	0.8	89.8	-0.91	8.0	3.2	12	AH
7RCCFE	88.4	93.2	94.6	94.1	92.6	0.25	7.9	2.8	92.7	0.34	8.0	2.4	12	LC
7ZPVPL	92.5	91.4	93.0	92.7	92.4	0.20	8.8	0.7	94.7	1.19	8.9	2.4	12	XX
9BC4ZJ	94.8	90.8	89.4	93.1	92.0	0.08	5.7	2.4	93.3	0.58	7.8	2.3	12	LC
9BC4ZJ_AL	94.4	77.7 XH	95.0	90.5	89.4	-0.74	14.5	8.0 H	91.8	-0.06	10.7	4.8	12	AL
ADETRC	85.7 L	90.9 L	86.8 L	89.0 L	88.1	-1.14	2.9	2.3	90.0	-0.85	4.4	1.9	12	LA
AMKJR2_AL	95.8	94.6	97.7	94.5	95.6	1.20	7.9	1.5	106.5	6.25 X	8.7	11.7 H	8	AL
AVXVZF	88.7	89.5	90.9	87.5	89.2	-0.81	4.3	1.4	88.5	-1.48	4.1	2.2	11	XX
B26FAB	86.9	81.8 *	83.4 *	81.3 X	83.4	-2.61 *	7.3	2.6	83.7	-3.57 X	7.5	2.0	12	LA
B7AG7Y	97.8 *	97.1	93.9	95.0	96.0	1.30	4.8	1.8	96.2	1.84	6.2	2.1	12	AH
BDDQTE_AL	89.0	96.9	96.4	95.4	94.4	0.83	6.0	3.7	96.7	2.05 *	6.9	3.4	12	AL
BPPQ8Y	88.8	87.3	91.6	91.3	89.7	-0.63	5.1	2.1	91.9	-0.04	6.8	2.9	12	LB
CMYJR9	90.2	91.0	90.2	90.6	90.5	-0.40	4.7	0.4 L	90.6	-0.59	4.9	0.3 L	12	LJ
CRUDPA	99.0 *	96.0	100.4 *	100.0 X	98.9	2.21 *	4.8	2.0	95.7	1.63	4.5	4.1	8	AX
CRUDPA_AL	90.6	95.2	92.9	93.3	93.0	0.39	7.3	1.9	95.1	1.34	6.6	6.2	8	AL
D787N2	90.9	91.9	93.9	93.3	92.5	0.23	8.5	1.4	93.5	0.66	9.1	3.0	12	LA
D78TX7	88.9	92.0	92.8	89.5	90.8	-0.30	7.9	1.9	89.1	-1.24	7.3	2.6	12	LA
DA3XWX	87.0	101.6 *	96.4	105.3 X	97.6	1.81	7.8	7.9 H	94.1	0.92	7.8	6.4	11	TB
DYLDC2	90.2	95.2	89.3	93.6	92.1	0.10	5.7	2.8	90.9	-0.44	6.6	2.7	12	LA
DYLDC2_AL	92.9	96.6	91.2	93.5	93.5	0.55	4.5	2.3	93.1	0.52	5.5	1.7	12	AL
FEBZVY	91.5	85.8	88.9	90.6	89.2	-0.80	4.9	2.5	88.6	-1.45	5.1	2.7	12	LA
FWQW76	89.3	87.0	86.5	86.7	87.4	-1.36	8.1	1.3	89.1	-1.23	8.0	2.6	12	LA
G9YY69_AL	98.6 *	98.6	96.7	105.4 X	99.8	2.51 *	6.4	3.8	100.0	3.47 X	6.5	2.3	12	AK
GCFWJ3	96.8	96.4	96.9	98.4 *	97.1	1.68	8.8	0.9	94.6	1.15	12.4	4.1	12	LA
GKB2D4	97.8 *	93.0	92.6	94.2	94.4	0.82	7.9	2.4	91.1	-0.36	8.3	4.4	12	AH
GKB2D4_AL	92.3	88.4	91.8	90.4	90.7	-0.32	7.3	1.7	91.5	-0.19	7.3	2.6	12	AL
J9T2RU_AL	105.7XH	104.9XH	99.6 *	97.7 *	102.0	3.18 X	10.4	3.9	95.7	1.62	7.2	5.2	12	AL
JEK4Y2	91.2	93.0 H	89.1 H	93.0	91.6	-0.06	10.2	1.9	91.1	-0.36	9.0	2.7	12	LJ
JTZWGY	89.7	93.7	91.0	93.1	91.9	0.04	6.6	1.9	89.3	-1.15	5.9	2.7	12	AC
KF7YR7	94.3	99.1	No Data	No Data	96.7	1.54	7.4	3.4	95.6	1.59	8.0	5.6	6	LC

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
KYN93Z	89.9	90.6 L	90.4 L	89.3	90.1	-0.53	3.1	0.6	90.4	-0.65	3.2	0.8 L	8	LA
KYYBNY	89.0	90.1	87.9 H	91.5	89.6	-0.66	9.9	1.5	89.3	-1.12	9.4	2.6	8	LA
L6NHYZ	87.9	91.2	86.3	87.5	88.2	-1.10	7.2	2.1	89.3	-1.16	8.3	2.0	12	XX
M8R3AX	87.1	85.8	90.2	87.5	87.6	-1.28	7.7	1.8	88.6	-1.46	8.3	2.0	12	LA
MNQMKR	87.1	88.4	79.4 X	88.5	85.9	-1.84	7.3	4.3	92.1	0.05	7.8	8.1 H	12	AH
MT6MW6	91.0	89.3	93.3	93.6	91.8	0.01	6.0	2.0	91.2	-0.31	6.7	1.4	12	TP
NUB2NN_AL	92.5	94.1	92.1	96.4	93.8	0.63	6.7	2.0	91.3	-0.27	8.1	2.5	12	AL
PKPNFY_AL	90.6	90.0	90.1	90.0	90.2	-0.50	7.1	0.3 L	90.5	-0.61	8.4	1.9	12	AL
PXADJN	89.5	93.2	93.6	91.6	92.0	0.07	6.5	1.9	92.4	0.21	6.5	1.4	8	LA
QY7BCV_AL	91.8	92.6 L	94.2	93.5	93.0	0.39	5.3	1.0	92.6	0.28	6.8	2.1	12	AL
R9P9DK_AL	91.3	96.6	93.7	92.7	93.5	0.56	6.4	2.2	93.5	0.69	6.4	2.2	4	AK
TLNXZR_AL	91.7	89.5	93.6	88.9	90.9	-0.27	7.1	2.2	94.4	1.05	7.7	6.0	12	AK
TYE8RK_AL	92.5	91.6	88.2	89.7	90.5	-0.39	6.5	1.9	91.2	-0.31	6.0	1.6	8	AL
VD6DTX	91.2	89.4	90.9	92.8	91.1	-0.21	5.6	1.4	91.2	-0.33	6.1	1.1	12	AH
VFC7TJ	94.2	90.7	91.9	90.7	91.9	0.04	8.0	1.7	92.0	0.04	8.4	2.0	12	LZ
W2R7EP_AL	90.7	91.2	95.6 H	82.8 XL	90.1	-0.53	9.7	5.3	93.4	0.64	8.3	4.3	11	AL
WBDAMP_AI	90.8	90.3	93.1	92.5	91.7	-0.03	6.3	1.3	92.7	0.35	5.8	1.9	12	XX
WF7YWN	91.2	94.4	89.4	90.4	91.4	-0.12	7.1	2.2	90.2	-0.75	11.7	3.5	12	LA
WPWWRG_A	90.9	89.5	86.9	89.5	89.2	-0.80	9.4	1.7	89.2	-1.19	9.4	1.7	4	XX
YNA6UF	90.7	92.8	86.1	89.3	89.7	-0.63	6.7	2.8	90.2	-0.74	6.8	2.2	12	LA
YU2E4E	89.5	90.3	89.9	89.5	89.8	-0.61	9.0	0.4 L	89.8	-0.94	8.2	2.9	12	LA

Consensus (All Labs) Results

Wk Mean	91.45	92.09	91.94	91.64	Month Mean	91.76	Grand Mean	91.94
Avg SDr	6.71	7.16	7.09	7.16	Avg SD	7.22	Avg SD	7.50
SD btwn Labs	3.08	3.91	3.69	2.73	SD btwn Labs	3.21	SD btwn Labs	2.32
Labs Incld	55	54	54	49	SD btwn Wks	2.73	SD btwn Wks	3.29
Labs Excld	1	2	1	6	Labs Incld	55	Labs Incld	53
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
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)
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
2D7GLP	88.3	87.4	89.5	87.8	88.3	-1.21	3.9	0.9	89.0	-1.17	3.4	2.0	12	TC
3LZLEQ	91.2	92.4	92.9	94.1	92.6	0.36	3.7	1.2	92.6	0.45	3.7	1.2	4	TH
4EBN2M	94.7	94.5	96.9 L	96.6	95.7	1.44	2.5	1.2	95.0	1.49	2.6	2.6	16	LZ
4Z72HB	93.1	88.7	92.3	90.2	91.1	-0.20	3.0	2.0	88.8	-1.28	2.9	3.0	16	EN
62GU4J	92.1	92.5	92.1	93.8	92.6	0.35	3.1	0.8	93.1	0.65	2.7	1.0	16	LC
6YET4M	93.9	93.4	93.9	93.3	93.6	0.71	2.5	0.3 L	93.1	0.64	2.3	0.5 L	16	LD
7RCCFE	91.8	90.6	95.1	93.4	92.7	0.38	2.9	2.0	93.1	0.65	2.8	1.5	16	LD
7ZPVPL	91.6	91.8	89.2	88.9	90.4	-0.46	3.5	1.5	91.1	-0.27	3.9	1.8	16	LD
99ABFD	101.9 *L	102.7 X	101.1 *	100.1 *	101.4	3.50 X	2.9	1.1	99.6	3.55 X	3.1	1.6	16	EX
9BC4ZJ	89.5	90.1	91.0	92.8	90.8	-0.28	3.5	1.4	90.6	-0.48	3.0	1.1	16	LD
A4VM9A	94.6	95.0	95.5	95.2	95.1	1.22	2.5	0.4	92.1	0.20	2.9	4.5	16	LZ
ADETRC	93.8	95.9	94.5	94.9 L	94.8	1.12	2.2	0.9	93.2	0.69	2.0	2.1	16	LZ
AMKJR2	88.6 H	91.1 H	89.5	91.7 H	90.2	-0.51	5.9	1.4	98.6	3.10 X	5.1	5.4 H	16	LC
AVXVZF	81.9 *	82.8 *	82.8 *	76.7 X	81.1	-3.78 X	3.1	2.9	82.1	-4.29 X	3.8	3.6	16	LD
B7AG7Y	91.4	93.7	90.5	90.6	91.6	-0.03	2.7	1.5	92.0	0.17	2.8	1.5	16	LG
BPPQ8Y	91.2 L	85.3	85.5	88.5	87.6	-1.44	2.3	2.8	91.4	-0.10	2.4	3.4	16	LC
CAC2PC	90.8	93.7	92.5	95.0	93.0	0.48	2.9	1.8	94.3	1.20	2.9	1.8	16	TH
CMYJR9	91.7	92.2	92.0	91.8	91.9	0.10	2.5	0.2 L	91.8	0.09	2.5	0.6 L	16	LD
CRAX98	95.6	94.0	92.9	88.3	92.7	0.37	2.7	3.2	89.2	-1.10	2.7	3.6	16	LD
D787N2	96.9	95.2	99.9	96.2	97.1	1.93 *	3.0	2.1	95.8	1.85	3.7	1.8	16	LZ
D78TX7	94.1	90.8	92.5	95.5	93.2	0.56	2.1	2.0	91.9	0.12	2.3	1.7	16	LD
DA3XWX	92.8	96.2	98.6	97.8	96.4	1.68	3.1	2.6	95.3	1.62	3.5	2.0	16	LX
DYLDC2	89.7	93.9	89.0	90.4	90.7	-0.33	3.0	2.2	89.4	-1.00	2.7	1.9	16	LD
FEBZVY	89.9 L	89.0	89.1	90.8	89.7	-0.70	2.5	0.8	89.0	-1.19	2.4	1.1	16	LD
G9YY69	101.3 *	95.0	94.4	92.9	95.9	1.51	2.9	3.7	93.9	0.99	2.6	2.5	16	LD
GC3UNB	84.0 H	92.4 H	99.4	88.7 H	91.1	-0.18	6.4	6.5 H	91.9	0.13	5.2	6.4 H	14	MB
GCFWJ3	102.1 *	103.5 X	102.9 *	99.6 *	102.0	3.71 X	3.1	1.7	102.4	4.82 X	3.3	1.7	12	LD
GNVD62	89.6 L	89.7	90.3 L	90.7 L	90.1	-0.56	1.1	0.5	90.5	-0.51	1.9	0.8	16	RS
KF7YR7	99.2	93.8 L	93.3	99.7 *	96.5	1.73	2.7	3.4	97.5	2.63 *	3.1	3.9	15	MB
KNHQ43	86.6 L	86.1	86.3	85.8	86.2	-1.95 *	1.7	0.3	84.6	-3.18 X	1.7	6.0 H	12	MB
KYN93Z	90.9	91.3	89.9	91.2	90.9	-0.28	2.7	0.6	90.5	-0.50	2.8	1.0	16	TU
KYYBNY	92.9	92.9	95.0	93.7	93.6	0.71	2.9	1.0	95.7	1.82	3.4	2.7	12	LD
KZEEHQ	95.1 H	92.6 H	95.7	90.0 H	93.3	0.60	6.8	2.6	89.5	-0.98	6.7	5.3	16	TU
M8R3AX	96.1	92.7	94.2	95.7	94.7	1.09	2.8	1.5	93.4	0.79	3.0	3.0	16	LD
MNQMKR	86.9	86.5	87.1	87.2	86.9	-1.69	2.9	0.3	88.3	-1.50	2.8	1.9	16	LD

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42F3

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
MT6MW6	90.2	89.5	89.3	91.7 H	90.2	-0.52	4.4	1.1	91.1	-0.23	3.9	1.3	16	TJ
NUB2NN	88.7	88.5 L	88.5	89.6	88.8	-1.00	1.8	0.5	90.8	-0.36	2.4	1.6	16	LD
PKPNFY	91.5	91.7	92.1	94.0	92.3	0.24	3.2	1.1	92.6	0.41	2.8	1.1	16	LD
R2677H	92.4	94.9	93.4	88.8	92.4	0.26	2.3	2.6	93.8	0.97	2.8	2.0	16	LC
R9P9DK	87.6	89.8	85.8	86.9	87.5	-1.46	2.6	1.7	88.2	-1.55	2.6	1.6	16	LD
TYE8RK	97.5	96.9	97.4	94.3	96.5	1.74	3.5	1.5	91.8	0.08	4.4	6.7 H	16	LC
UDB9YY	74.3 X	75.3 X	75.8 X	73.8 X	74.8	-6.01 X	4.0	0.9	73.8	-7.99 X	3.4	1.5	16	EM
V2UZCW	87.5	87.5	87.5	87.5	87.5	-1.47	3.3	0.0 L	88.5	-1.41	2.9	1.1	16	LC
VFC7TJ	91.8	94.9	91.3	92.7	92.7	0.37	3.1	1.6	89.8	-0.81	3.0	2.5	16	LC
VXRFTJ	91.0	95.4	91.5	91.7	92.4	0.27	3.1	2.0	90.3	-0.61	2.8	2.6	16	LD
W2R7EP	89.7	93.0	93.5	95.0	92.8	0.41	3.6	2.2	90.8	-0.38	3.4	3.1	16	LC
W6AVRU	88.3	87.4	89.5	87.8	88.3	-1.21	3.9	0.9	89.6	-0.90	3.6	2.0	8	LZ
WBDAMP	90.0 H	88.4	87.6	89.4	88.8	-1.00	5.4	1.1	94.1	1.12	5.0	4.3	16	LZ
WF7YWN	91.0	88.4	90.5	88.9	89.7	-0.70	2.6	1.3	89.6	-0.94	3.2	1.9	16	LD
WQR34N	87.3	86.7	88.1	87.1	87.3	-1.55	2.5	0.6	89.8	-0.85	2.6	3.3	16	EM
YU2E4E	88.9	90.8	91.2	91.6	90.6	-0.37	2.7	1.2	90.7	-0.42	2.5	1.2	16	LD
Z6GBEH	89.9	90.0	90.2	90.5	90.1	-0.54	3.5	0.3 L	91.2	-0.21	3.2	1.2	16	LD

Consensus (All Labs) Results

Wk Mean	91.74	91.36	92.06	92.00	Month Mean	91.64	Grand Mean	91.65
Avg SDr	3.57	3.36	2.98	3.27	Avg SD	3.32	Avg SD	3.22
SD btwn Labs	4.11	3.21	4.11	3.52	SD btwn Labs	2.80	SD btwn Labs	2.23
Labs Incld	51	49	51	50	SD btwn Wks	1.90	SD btwn Wks	2.69
Labs Excld	1	3	1	2	Labs Incld	48	Labs Incld	46
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)	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
TC	TMI Monitor/Compression Tester, Model 17-37	TH	TMI Compression Tester, Model 17-76
TJ	TLS Compression Tester, Model CDM-5	TU	TMI Universal Crush Tester (TMI K440)

Containerboard Interlaboratory Testing Program

Analysis 217

Ring Crush, 35 lb Linerboard - 35E2

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
2D7GLP	80.5	77.5	78.6	80.7	79.3	-0.93	3.5	1.5	80.9	-0.36	4.0	2.1	12	EN
3LZLEQ	83.9 H	78.3	83.2	82.3	81.9	-0.03	4.8	2.5	81.9	0.04	4.8	2.5	4	TH
4EBN2M	85.3	84.5	87.3	87.2	86.1	1.41	2.0	1.4	81.1	-0.28	3.4	5.4 H	12	LZ
4Z72HB	81.2	83.8	82.0	84.8	82.9	0.32	3.0	1.7	79.9	-0.75	3.1	3.6	12	EN
62GU4J	84.8	85.8	84.8	82.6	84.5	0.86	2.9	1.4	84.2	0.93	3.3	1.5	12	LC
6YET4M	83.6	83.8	83.9	83.8	83.8	0.61	2.3	0.1 L	83.1	0.48	2.4	0.8	12	LD
7RCCFE	85.2	80.8	82.6	83.7	83.1	0.36	3.4	1.9	82.9	0.39	3.6	1.9	12	LD
7ZPVPL	84.4	81.8	84.0	83.2	83.3	0.46	4.0	1.1	82.8	0.39	4.2	1.4	12	LD
99ABFD	89.4 *	90.8 *	88.9	89.7 *	89.7	2.66 *	4.3	0.8	87.3	2.11 *	3.8	2.1	12	EX
9BC4ZJ	82.0	80.9	77.3	80.5	80.2	-0.64	4.1	2.0	79.8	-0.81	4.8	2.8	12	LD
A4VM9A	86.4	86.1	85.0	85.9	85.9	1.33	3.0	0.6	83.8	0.78	3.1	1.9	12	LZ
ADETRC	82.6	82.1	82.4 H	83.3	82.6	0.20	4.0	0.5	81.9	0.03	2.9	1.8	12	LZ
AMKJR2	74.2 *	76.8	78.6	76.8	76.6	-1.87	4.3	1.8	101.2	7.55 X	5.3	32.9 H	12	LC
AVXVZF	70.2 X	71.4 *	72.1 *	65.5 X	69.8	-4.24 X	4.4	3.0	70.9	-4.28 X	4.0	4.6	12	LD
B7AG7Y	85.2	84.4	81.5	82.8	83.5	0.51	2.5	1.6	84.1	0.86	3.2	1.5	12	LG
BPPQ8Y	81.4	75.4	76.9	79.7	78.3	-1.29	4.0	2.7	82.5	0.26	3.8	3.7	12	LC
CAC2PC	85.1	83.7	83.6	83.9	84.1	0.71	2.7	0.7	84.3	0.97	2.9	1.3	12	TH
CMYJR9	82.8	82.6	82.9	82.3	82.7	0.22	2.1	0.2 L	82.5	0.25	2.5	0.2 L	12	LD
CRAX98	83.9 L	85.7	84.2	79.3	83.3	0.44	4.0	2.8	79.7	-0.84	3.8	3.6	12	LD
D787N2	86.6	83.1 H	89.0	86.6	86.3	1.49	4.0	2.4	86.6	1.84	3.8	1.5	12	LZ
D78TX7	81.3	81.5	82.4	84.4	82.4	0.13	3.7	1.4	81.1	-0.30	3.5	1.6	12	LD
DA3XWX	82.8	83.5	85.5	89.3 *	85.3	1.13	4.1	2.9	83.4	0.60	3.8	3.5	11	LX
DYLDC2	79.3	83.7	82.4	78.1	80.9	-0.40	2.6	2.6	78.5	-1.30	3.1	2.4	12	LD
FEBZVY	78.0	76.4	78.3	82.6	78.8	-1.11	2.8	2.6	79.9	-0.74	2.9	3.1	12	LD
G9YY69	88.8	83.5	81.9	84.1	84.6	0.89	2.9	2.9	83.9	0.80	2.9	2.0	12	LD
GC3UNB	74.9 *H	84.5	85.5	75.5	80.1	-0.66	6.0	5.7 H	80.6	-0.48	5.8	6.6 H	12	MB
GCFWJ3	89.4 *	90.2 *	92.2 *	91.9 *	90.9	3.08 X	3.8	1.3	91.6	3.79 X	3.8	1.3	12	LD
GNVD62	79.0 L	80.0 L	79.2 L	79.8 L	79.5	-0.87	1.2	0.5	79.7	-0.83	1.1	0.4 L	12	RS
KF7YR7	87.1	80.8	80.5	87.2	83.9	0.66	4.1	3.7	85.8	1.53	3.8	5.3 H	11	MB
KNHQ43	77.0 L	78.5	77.9 L	78.9	78.1	-1.37	1.6	0.8	77.5	-1.69	1.6	0.8	12	MB
KYN93Z	82.4	82.2	81.7	81.9	82.1	0.02	1.8	0.3 L	81.7	-0.05	2.3	0.7 L	8	TU
KYYBNY	85.5	86.6	85.4	85.6	85.8	1.30	3.5	0.6	87.0	2.02 *	4.3	2.1	8	LC
KZEEHQ	83.1 H	83.3	72.7 *H	79.9 H	79.7	-0.79	6.8	5.0 H	78.6	-1.27	6.5	4.5	12	TU
M8R3AX	85.3	83.9	83.1	86.2	84.6	0.91	3.3	1.4	84.5	1.03	3.4	3.4	12	LD
MNQMKR	79.2	76.3	79.0	77.8	78.1	-1.37	3.2	1.3	78.2	-1.42	3.0	1.3	12	LD

Containerboard Interlaboratory Testing Program
Analysis 217
Ring Crush, 35 lb Linerboard - 35E2
TAPPI Official Test Method T822

Report #617 (B)
February 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
MT6MW6	81.3	78.5	82.6	78.8	80.3	-0.59	4.7	2.0	80.1	-0.69	4.3	1.6	12	TJ
NUB2NN	80.3	80.4	78.8 L	79.5	79.7	-0.79	2.8	0.7	80.7	-0.43	3.1	1.2	12	LD
PKPNFY	82.8	84.1	82.8	82.0	82.9	0.31	3.9	0.9	82.8	0.38	3.6	1.4	12	LD
R2677H	76.6	77.4	77.0	78.8	77.5	-1.58	3.0	1.0	79.6	-0.89	3.3	2.7	12	LC
R9P9DK	76.8	75.6	77.2	76.6	76.5	-1.90	3.6	0.7	76.7	-2.01 *	3.7	0.9	12	LD
TYE8RK	86.9	86.0	86.0	83.8	85.7	1.27	3.8	1.3	85.9	1.58	3.7	1.4	8	LC
UDB9YY	66.3 X	65.4 X	68.4 X	65.3 X	66.3	-5.44 X	4.1	1.4	66.2	-6.10 X	4.4	1.9	12	EM
V2UZCW	80.2	80.2	80.2	80.2	80.2	-0.62	3.0	0.0 L	79.8	-0.79	3.1	1.3	12	LC
VFC7TJ	79.5	79.5	79.4	81.7	80.0	-0.70	3.7	1.1	79.3	-0.99	3.6	1.8	12	LC
VXRFTJ	80.4	83.6	82.4	80.6	81.7	-0.09	2.7	1.5	79.2	-1.05	2.6	2.2	12	LD
W2R7EP	76.9	83.5 H	83.1	84.1	81.9	-0.04	4.5	3.4	81.1	-0.30	4.7	2.6	12	LC
WBDAMP	80.9	79.4	80.4	79.4	80.0	-0.69	4.1	0.7	83.2	0.52	4.2	3.7	12	LZ
WF7YWN	80.5	77.6	82.0	78.8	79.7	-0.79	3.2	1.9	79.7	-0.85	3.7	2.1	12	LD
WQR34N	83.8	78.5	79.0	79.1	80.1	-0.67	3.7	2.5	81.1	-0.28	3.6	1.6	12	EM
YU2E4E	82.8	84.2	83.3	81.9	83.0	0.35	2.9	1.0	82.5	0.26	2.9	1.2	12	LD
Z6GBEH	85.6	85.8	85.3	86.0	85.6	1.26	4.0	0.3 L	85.4	1.37	5.1	0.6 L	12	LD

Consensus (All Labs) Results

Wk Mean	82.38	81.77	81.92	82.31	Month Mean	82.02	Grand Mean	81.84
Avg SDr	3.63	3.35	4.00	3.45	Avg SD	3.59	Avg SD	3.67
SD btwn Labs	3.61	3.83	3.82	3.56	SD btwn Labs	2.88	SD btwn Labs	2.57
Labs Incld	49	50	50	49	SD btwn Wks	2.02	SD btwn Wks	2.58
Labs Excld	2	1	1	2	Labs Incld	48	Labs Incld	47
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)	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)		

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F3

TAPPI Official Test Method T826

Report #617 (B)
February 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
2D7GLP	20.0 *	20.1 *	20.4 X	20.0 X	20.1	-3.31 X	1.4	0.2	21.3	-2.22 *	1.6	1.4	12	LH
2XTHLB	25.2	25.8	25.9 *	25.5 *	25.6	1.58	1.9	0.3	25.6	1.93	2.0	0.6	15	LU
3LZLEQ	42.0 XH	40.7 XH	40.4 XH	41.2 X	41.1	15.47 X	3.0	0.7	41.1	17.10 X	3.0	0.7	4	TT
4EBN2M	23.7 L	23.0 L	22.6 L	22.6 L	23.0	-0.75	0.2	0.5	23.7	0.10	0.8	0.9	16	XX
4Z72HB	21.9	22.8	23.1	23.9	22.9	-0.81	1.9	0.8	22.4	-1.14	1.7	0.6	16	LY
62GU4J	23.9	22.5	23.9	23.3	23.4	-0.38	1.7	0.7	23.1	-0.53	1.7	0.5	16	LU
6YET4M	23.6	23.6	23.7	23.7	23.6	-0.17	1.7	0.1 L	23.5	-0.14	1.9	0.2 L	16	LA
6ZMD2F	23.3	24.0	23.5	23.1	23.5	-0.33	1.4	0.4	23.6	-0.06	1.6	0.5	16	XX
7RCCFE	23.4	22.9	23.3	23.7	23.3	-0.46	1.4	0.3	22.9	-0.71	1.6	0.6	16	LA
7ZPVPL	23.8	23.8	23.4	24.4	23.9	0.03	1.8	0.4	23.8	0.19	1.7	0.7	16	LH
99ABFD	29.9 XL	42.5 XL	30.0 XL	30.6 XL	33.2	8.43 X	0.0	6.2 H	31.5	7.76 X	0.0	3.0 H	16	TT
9BC4ZJ	23.2	23.3	23.8	22.8	23.3	-0.51	1.6	0.4	23.5	-0.08	1.6	0.3	16	LA
9BC4ZJ_AL	23.3	23.9 H	23.2	23.8	23.5	-0.26	1.9	0.4	23.5	-0.15	1.7	0.3	16	AL
A4VM9A	22.4	23.3	22.5	22.5	22.7	-1.03	1.4	0.4	22.9	-0.74	1.6	0.8	16	LA
AHU2FB	26.5	26.1	25.6	23.5 L	25.4	1.43	1.4	1.3	24.7	1.11	1.5	1.1	16	LA
AMKJR2_AL	30.0 X	24.6 L	23.8 L	26.6 XL	26.3	2.18 *	0.7	2.8 H	25.2	1.60	1.4	1.8	16	AL
B26FAB	45.3 XH	44.8 XH	45.2 XH	46.7 XH	45.5	19.44 X	44.6	0.8	44.2	20.17 X	27.9	2.0	16	XX
B7AG7Y	23.5	22.4	23.5	23.0	23.1	-0.66	1.8	0.5	23.1	-0.53	1.7	0.5	16	LU
BDDQTE_AL	24.0	23.2	23.3	24.2	23.7	-0.14	1.6	0.5	24.2	0.57	1.7	1.6	16	AL
BPPQ8Y	22.8	22.4 L	22.3 L	22.2	22.4	-1.26	1.2	0.3	23.0	-0.63	1.4	0.6	16	LW
C7NQQ7	26.3	25.6	25.9 *	25.6 *	25.9	1.82	1.7	0.3	24.7	1.11	1.5	2.0	12	LH
CP3FBC	23.3	23.1	23.3	23.1 L	23.2	-0.56	1.5	0.1 L	21.5	-2.06 *	3.6	4.6 H	16	XX
CRAX98	27.1 *H	24.6 L	26.4 *	25.2	25.9	1.82	1.7	1.1	24.4	0.80	1.7	1.3	12	LH
CRUDPA	25.1	24.5	25.5	24.6	24.9	0.98	1.6	0.5	24.7	1.03	1.8	0.5	11	LU
CRUDPA_AL	23.8	23.9	23.4	23.7	23.7	-0.11	1.5	0.2	24.1	0.46	1.5	0.9	11	AL
D787N2	23.5	23.0	23.2	22.9	23.2	-0.61	1.7	0.3	22.9	-0.71	1.7	0.5	16	LW
D78TX7	22.2	23.2	23.1	22.7	22.8	-0.92	2.0	0.5	22.8	-0.79	1.7	0.4	16	LZ
DYLDC2_AL	22.5	23.8	23.6	22.9	23.2	-0.59	1.4	0.6	23.1	-0.53	1.6	0.7	16	AL
FEBZVY	22.3	22.7	22.4 L	23.1	22.6	-1.08	1.3	0.3	22.8	-0.80	1.8	0.4	16	BK
FWQW76	25.9	26.1	24.8	24.3	25.3	1.31	2.0	0.9	24.6	0.98	2.0	1.2	16	LH
G9YY69_AL	24.5	23.3	23.1	24.2 L	23.8	-0.05	1.1	0.7	24.0	0.41	1.4	0.5	16	AK
GC3UNB	22.3	23.0	24.3	24.2	23.4	-0.35	2.0	1.0	23.7	0.08	1.9	0.8	14	LA
GKB2D4	25.2	22.3	23.0	22.5	23.3	-0.51	1.8	1.3	23.1	-0.50	1.7	0.9	16	LH
GKB2D4_AL	27.6 *	25.8	24.9	27.5 X	26.4	2.35 *	1.8	1.3	26.0	2.29 *	1.8	1.0	16	AL
J9T2RU_AL	20.5 *	22.0	22.4	22.9	22.0	-1.67	1.1	1.0	22.8	-0.79	1.8	0.9	16	AL

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42F3

TAPPI Official Test Method T826

Report #617 (B)
February 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
JBF6GZ	21.7	22.5	22.7	20.4 X	21.8	-1.78	1.5	1.0	22.5	-1.14	1.1	1.0	8	LU
JEK4Y2	25.8	25.0	24.5	25.6 *	25.2	1.25	2.1	0.6	25.7	2.05 *	2.1	1.2	16	LH
JRPUU2	25.2 H	24.3	23.9	23.2	24.1	0.28	2.0	0.8	24.6	1.00	1.9	0.7	16	TT
JTZWGY	22.7	21.9	22.0	22.5	22.3	-1.39	1.3	0.4	22.6	-1.04	1.3	0.5	16	LH
KF7YR7	23.0	24.6	24.5 H	24.4	24.1	0.27	1.9	0.7	24.6	1.00	1.8	1.4	16	LA
KZEEHQ	26.5	25.3	25.6	25.2 H	25.7	1.64	2.1	0.6	24.7	1.08	1.9	0.8	16	LA
KZTZRT	23.5	23.1	22.3	22.9	22.9	-0.79	1.6	0.5	22.5	-1.13	1.6	0.6	16	LW
M8R3AX	24.1	23.6	23.7	24.6	24.0	0.15	1.6	0.5	23.5	-0.09	1.7	0.6	16	LY
MNQMKR	23.0	23.8	22.9	23.5	23.3	-0.50	1.6	0.4	23.1	-0.50	1.9	0.6	16	LU
MT6MW6	23.3	23.9	23.7	23.8	23.7	-0.13	1.3	0.3	23.5	-0.12	1.5	0.3	16	TT
NUB2NN_AL	23.4	23.8 L	22.8	22.9	23.2	-0.54	1.4	0.5	22.9	-0.66	1.6	0.6	16	AL
PKPNFY_AL	24.3 H	24.8	24.8	25.0	24.7	0.81	2.0	0.3	24.4	0.79	1.9	0.9	16	AL
PXADJN	23.1	23.1	24.4	23.0	23.4	-0.37	1.8	0.7	23.8	0.18	1.7	0.5	12	LY
QY7BCV	22.9	25.4	24.0 H	24.3	24.1	0.27	2.1	1.0	24.2	0.55	1.7	2.1	15	LU
R2677H	25.0	25.6	25.1	23.5	24.8	0.87	1.5	0.9	25.2	1.54	1.5	0.9	16	LA
R9P9DK_AL	21.9	22.3	23.4	23.3	22.7	-1.01	1.7	0.7	22.8	-0.76	1.7	0.4	16	AK
TLNXZR_AL	25.8	25.7	24.8	25.4	25.4	1.45	1.8	0.4	24.7	1.04	1.7	0.8	16	AK
TYE8RK_AL	22.7	24.3	23.9	22.9	23.4	-0.35	2.0	0.8	22.6	-1.02	1.6	1.1	16	AL
VD6DTX	23.9	23.8	24.0	23.5	23.8	-0.03	1.2	0.2	23.4	-0.17	1.4	0.4	16	TT
VFC7TJ	24.4	25.0	24.7	24.4	24.6	0.70	1.6	0.3	24.2	0.59	1.6	0.5	16	LW
W2R7EP	25.9	24.6	24.7	24.4 H	24.9	0.94	2.0	0.7	24.3	0.69	1.8	0.8	16	LU
W6AVRU	20.0 *	20.1 *	21.4 *	20.0 X	20.4	-3.09 X	1.4	0.7	21.7	-1.91	1.7	1.4	8	XX
WBDAMP_AI	23.4	25.7	22.2	22.9	23.5	-0.27	1.5	1.5	23.3	-0.28	1.5	1.4	16	AL
WPWWRG	22.8	22.3	23.5	22.4	22.7	-0.97	1.7	0.6	23.0	-0.61	1.8	0.7	16	LY
WPWWRG_A	45.0 XL	45.9 X	47.7 X	43.8 XH	45.6	19.52 X	2.4	1.6 H	43.7	19.66 X	2.1	2.4 H	8	XX
YU2E4E	23.1	22.7	23.0	23.1	23.0	-0.78	1.7	0.2	23.0	-0.63	1.6	0.4	16	LA

Consensus (All Labs) Results

Wk Mean	23.72	23.71	23.73	23.66	Month Mean	23.83	Grand Mean	23.61
Avg SDr	1.63	1.62	1.63	1.71	Avg SD	1.65	Avg SD	1.72
SD btwn Labs	1.62	1.34	1.09	0.93	SD btwn Labs	1.11	SD btwn Labs	1.02
Labs Incld	56	57	56	52	SD btwn Wks	0.77	SD btwn Wks	1.10
Labs Excld	5	4	5	9	Labs Incld	55	Labs Incld	57
Labs not Rcvd	0	0	0	0				

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	

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 35 lb Linerboard - 35E2

TAPPI Official Test Method T826

Report #617 (B)
February 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
2D7GLP	21.8	21.8	21.3	21.4	21.6	-1.51	1.4	0.3	21.1	-2.30 *	1.7	1.4	12	LH
2XTHLB	23.7	23.9	23.5	24.7	24.0	0.73	2.1	0.5	24.1	1.01	1.7	0.4	12	LU
3LZLEQ	34.3 XH	31.1 X	33.0 X	34.5 X	33.2	9.36 X	2.4	1.6 H	33.2	10.93 X	2.4	1.6	4	TT
4EBN2M	22.5 L	21.9 L	22.4 L	22.2 L	22.2	-0.88	0.1	0.3	23.2	0.00	1.1	1.5	12	XX
4Z72HB	21.7	22.1	22.7	22.6	22.3	-0.86	1.7	0.5	21.8	-1.52	1.7	0.5	12	XX
62GU4J	22.5	21.9	22.5	22.4	22.3	-0.79	1.7	0.3	22.4	-0.86	1.6	0.4	12	LU
6YET4M	23.2	23.0	22.9	23.2	23.1	-0.11	1.9	0.1	22.9	-0.31	1.9	0.2 L	12	LA
6ZMD2F	23.0	23.6	22.6	23.7	23.2	0.03	1.8	0.5	23.1	-0.13	1.7	0.5	12	XX
7RCCFE	22.4	22.9	21.9	22.3 L	22.4	-0.74	1.5	0.4	22.3	-0.95	1.6	0.3	12	LU
7ZPVPL	23.9	22.6	23.2	23.4	23.3	0.09	1.6	0.5	23.5	0.29	1.7	0.7	12	LH
99ABFD	30.4 XL	30.6 XL	30.5 XL	28.9 XL	30.1	6.43 X	0.0	0.8	29.4	6.77 X	0.0	0.9	12	TT
9BC4ZJ	23.0	22.8	22.5	23.4	22.9	-0.26	1.7	0.4	22.7	-0.52	1.6	0.5	12	LA
9BC4ZJ_AL	23.0	23.2	22.2	22.9	22.8	-0.34	1.7	0.5	22.7	-0.51	1.7	0.5	12	AL
A4VM9A	22.0	22.0 L	22.3	20.6 *	21.7	-1.38	1.6	0.8	22.5	-0.77	1.5	1.0	12	LA
AHU2FB	23.1	23.9	24.7	24.7 H	24.1	0.84	2.1	0.8	23.7	0.48	1.6	0.8	12	LA
AMKJR2_AL	22.8	22.8	22.9	23.5	23.0	-0.18	1.5	0.3	23.7	0.51	1.7	0.8	12	AL
B26FAB	38.0 XH	37.6 XH	38.4 XH	38.8 XH	38.2	14.02 X	14.7	0.5	37.4	15.53 X	13.9	1.2	12	LH
B7AG7Y	23.0	23.3	23.5	22.2	23.0	-0.19	1.8	0.6	22.0	-1.32	1.7	2.8 H	12	LW
BDDQTE_AL	23.7	23.4	55.6 XH	23.1	31.5	7.73 X	2.7	16.1 H	26.2	3.22 X	2.0	9.3 H	12	AL
BPPQ8Y	21.8	21.6	21.4	21.6 L	21.6	-1.50	1.5	0.2	22.1	-1.18	1.5	0.6	12	LW
C7NQQ7	25.5 *	25.6 *	25.7 *	25.9 *	25.7	2.34 *	1.6	0.2	24.5	1.45	1.6	1.3	12	LH
CP3FBC	22.5	23.3	22.8	22.8	22.8	-0.33	1.7	0.3	23.8	0.66	1.9	0.8	12	XX
CRAX98	26.0 *	24.4 L	25.9 *	25.5	25.5	2.12 *	1.7	0.7	24.5	1.40	1.6	1.2	8	LH
CRUDPA	24.0	24.7	24.6	23.8	24.3	1.02	2.0	0.4	24.3	1.24	1.6	0.4	8	LU
CRUDPA_AL	23.7	22.7	23.2	23.2 L	23.2	-0.01	1.5	0.4	23.9	0.78	1.4	0.9	8	AL
D787N2	22.8	22.8	23.2	23.2	23.0	-0.17	1.6	0.2	23.0	-0.19	1.7	0.5	12	LW
D78TX7	22.1	21.6	22.6	22.4	22.2	-0.95	1.8	0.4	22.3	-1.01	1.6	0.4	12	LZ
DYLDC2_AL	22.1	23.0	22.7	23.4	22.8	-0.35	1.7	0.6	22.6	-0.72	1.5	0.7	12	AL
FEBZVY	21.2	21.9 L	22.6 L	23.2	22.2	-0.92	1.1	0.9	22.3	-1.00	1.1	0.7	12	BK
FWQW76	23.2	23.8	23.3	23.6	23.5	0.26	2.1	0.3	24.4	1.25	2.0	0.9	12	LH
G9YY69_AL	23.1 H	22.3	23.6	23.7	23.2	-0.01	1.8	0.6	23.4	0.18	1.7	0.5	12	AK
GC3UNB	22.5	23.3	22.2	22.4	22.6	-0.55	1.9	0.5	22.8	-0.47	1.9	0.5	12	LA
GKB2D4	26.0 *	22.3	23.6	22.8	23.7	0.43	1.8	1.6 H	23.0	-0.24	1.6	1.4	12	LH
GKB2D4_AL	28.7 X	24.8	24.4	25.8 *	25.9	2.57 *	1.7	1.9 H	25.2	2.20 *	1.7	1.3	12	AL
J9T2RU_AL	21.8	21.2	21.1	21.7	21.4	-1.63	1.6	0.3	22.0	-1.34	1.6	0.6	12	XX

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 35 lb Linerboard - 35E2

TAPPI Official Test Method T826

Report #617 (B)
February 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
JBF6GZ	19.4 X	19.0 X	18.6 XL	19.3 X	19.1	-3.84 X	1.2	0.4	19.1	-4.53 X	1.2	0.4	4	LU
JEK4Y2	24.4	25.3 *	26.2 *	26.2 *	25.5	2.19 *	2.1	0.9	24.8	1.70	2.1	1.6	12	LH
JRPUU2	24.4	24.1	24.6	24.0	24.3	1.02	1.9	0.3	24.2	1.13	1.9	0.9	12	TT
JTZWGY	22.9	21.9	22.7	23.0	22.6	-0.53	1.4	0.5	22.8	-0.51	1.5	0.6	12	LH
KF7YR7	22.5 L	24.3 L	24.0 L	25.3 L	24.0	0.78	0.1	1.2	24.1	0.97	1.2	0.9	12	LA
KZEEHQ	24.3	24.6	24.8	23.9	24.4	1.13	1.7	0.4	24.1	1.00	1.9	0.9	12	LA
KZTZRT	21.9	21.8	22.3	22.3	22.1	-1.03	1.6	0.3	22.4	-0.84	1.6	0.6	12	LW
M8R3AX	23.3	23.3	22.7	23.4	23.2	0.00	1.8	0.3	23.0	-0.27	1.8	0.5	12	LY
MNQMKR	22.3	22.9	22.7	22.4	22.6	-0.58	1.8	0.3	22.9	-0.33	1.9	0.5	12	LU
MT6MW6	22.8	23.1	23.2	22.9	23.0	-0.18	1.4	0.2	22.9	-0.35	1.5	0.3	12	TT
NUB2NN_AL	23.3	22.7	24.2	22.3	23.1	-0.08	1.8	0.8	23.1	-0.14	1.9	0.6	12	AL
PKPNFY_AL	25.6 *	23.4	24.3	24.9	24.6	1.27	1.8	0.9	24.0	0.88	1.9	0.8	12	AL
PXADJN	23.7	23.9 L	23.9	23.3	23.7	0.49	1.5	0.3	23.8	0.59	1.5	0.2 L	8	LU
QY7BCV	23.3	23.2	22.4	23.4	23.1	-0.10	1.9	0.5	23.4	0.21	1.9	0.7	10	LU
R2677H	24.2	24.1	24.6 L	23.5	24.1	0.85	1.3	0.5	24.6	1.49	1.1	0.7	12	LA
R9P9DK_AL	22.2	21.5	22.2	22.3	22.0	-1.08	1.6	0.3	22.2	-1.14	1.7	0.4	12	AK
TLNXZR_AL	23.7	24.2	25.5	24.2	24.4	1.13	1.9	0.8	24.3	1.15	1.9	0.7	12	AK
TYE8RK_AL	22.4 L	22.3	22.4	23.4	22.6	-0.51	1.6	0.5	22.1	-1.23	1.4	0.8	8	AL
VD6DTX	23.1	22.8	22.9	22.7	22.9	-0.31	1.3	0.2	22.8	-0.42	1.3	0.2 L	12	TT
VFC7TJ	23.7	24.0	24.3	24.3	24.1	0.82	1.7	0.3	24.3	1.13	1.8	0.5	12	LW
W2R7EP	24.3	24.8	24.6	24.6	24.6	1.28	1.8	0.2	24.5	1.44	1.8	0.7	12	LU
W6AVRU	21.8	21.8	21.3	21.4	21.6	-1.51	1.4	0.3	21.8	-1.50	1.6	0.9	8	LZ
WBDAMP_AI	24.7	20.9 *	22.2	22.1	22.5	-0.66	1.7	1.6 H	22.9	-0.37	1.8	1.2	12	XX
WPWWRG	22.4	23.2	22.8	21.8	22.5	-0.61	1.9	0.6	22.9	-0.32	1.8	0.8	12	LY
WPWWRG_A	40.7 XH	40.8 XH	40.2 XL	40.3 X	40.5	16.16 X	2.5	0.3	40.5	18.89 X	2.5	0.3	4	XX
YU2E4E	22.9	23.0	22.3	22.0	22.5	-0.60	1.5	0.5	22.9	-0.38	1.6	0.5	12	LW

Consensus (All Labs) Results

Wk Mean	23.15	23.07	23.21	23.23	Month Mean	23.19	Grand Mean	23.21
Avg SDr	1.67	1.59	1.69	1.75	Avg SD	1.67	Avg SD	1.67
SD btwn Labs	1.10	1.08	1.18	1.20	SD btwn Labs	1.07	SD btwn Labs	0.91
Labs Incld	55	56	55	56	SD btwn Wks	0.64	SD btwn Wks	0.88
Labs Excld	6	5	6	5	Labs Incld	55	Labs Incld	55
Labs not Rcvd	0	0	0	0				

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		

Containerboard Interlaboratory Testing Program

Analysis 228

Roughness - Stylus Method, 42 lb Linerboard - 42F

TAPPI Official Test Method T575

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
4Z72HB	151.3	1.51	11.01		148.1	1.05	3.64	4	EV
6YET4M	141.0	0.68	13.40		141.2	0.39	0.51 L	4	LS
9BC4ZJ	142.2	0.77	11.09		203.4	6.30 X	67.46 H	4	LA
9BC4ZJ_AL	142.0	0.76	20.03		145.4	0.79	4.35	4	AL
AEUXL4	113.9	-1.51	9.98		119.6	-1.65	5.05	4	XX
BDDQTE_AL	142.5	0.80	31.02	H	131.0	-0.57	9.47	4	AL
CRUDPA_AL	120.8	-0.95	12.46		125.1	-1.13	3.82	3	AL
D787N2	140.1	0.60	11.79		138.8	0.17	4.66	4	EV
FWQW76	124.2	-0.67	16.05		130.3	-0.64	7.55	4	EV
G9YY69	145.9	1.07	21.83		137.2	0.02	6.21	4	EV
GC3UNB	122.1	-0.84	13.07		133.8	-0.30	11.89	4	LA
GCFWJ3	112.7	-1.60	7.62	L	131.8	-0.49	32.70	3	EV
GKB2D4_AL	120.7	-0.96	11.61		124.1	-1.23	3.15	4	AL
H62DZ4	136.1	0.28	16.66		126.4	-1.00	11.93	4	LS
J9T2RU_AL	121.9	-0.86	14.75		135.6	-0.14	12.48	4	AL
JEK4Y2	206.4	5.94 X	69.41	H	176.4	3.73 X	21.57	4	LS
KF7YR7	146.6	1.13	24.39		144.7	0.73	7.77	4	LA
KZEEHQ	141.7	0.74	21.54		145.1	0.76	8.23	4	LA
MNQMKR	152.5	1.60	16.10		154.0	1.61	3.38	4	EV
QY7BCV	137.4	0.39	12.08		140.8	0.35	2.96	4	EV
R2677H	112.6	-1.61	11.52		116.7	-1.93 *	6.64	4	EV
R9P9DK	118.3	-1.16	16.01		149.4	1.17	57.41 H	4	LS
TLNXZR_AL	115.3	-1.39	11.21		137.7	0.06	27.21	4	AK
TYE8RK_AL	145.5	1.04	19.61		145.4	0.80	2.99	4	AL
VFC7TJ	133.6	0.08	10.65		134.7	-0.22	1.67 L	4	LS
W2R7EP	133.1	0.04	16.11		160.2	2.19 *	41.32 H	4	EV
WBDAMP_AI	125.4	-0.58	15.89		126.4	-1.01	5.66	4	AL
WPWWRG_A	141.4	0.71	45.82	H	190.9	5.11 X	69.91	2	XX
YU2E4E	131.9	-0.06	17.86		139.2	0.21	5.77	4	LA

Consensus (All Labs) Results

Month Mean	132.60	Grand Mean	137.02
Avg SD	18.11	Avg SD Months	17.33
SD btwn Labs	12.42	SD btwn Labs	10.55
Labs Incld	28	Labs Incld	26

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 - 42F3

TAPPI Official Test Method T538

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
62GU4J	362.2	0.92	8.18		363.7	0.96	1.51	4	XX
9BC4ZJ_AL	351.4	-0.92	8.95		351.5	-0.97	2.87	4	AL
AHU2FB	367.1	1.75	7.16		367.5	1.56	2.82	4	XX
AMKJR2_AL	149.2	-35.29 X	11.18		149.2	-32.79 X	0.00	1	AL
BDDQTE_AL	350.5	-1.07	8.71		350.2	-1.17	3.50	4	AL
D78TX7	356.4	-0.07	7.52		357.7	0.02	3.45	4	XX
DYLDC2_AL	358.5	0.29	7.01		356.1	-0.24	2.09	4	AL
G9YY69	358.3	0.25	10.77		357.7	0.01	0.85	2	LA
G9YY69_AL	353.7	-0.53	7.75		352.8	-0.75	1.38	4	AK
GKB2D4_AL	348.0	-1.50	5.21		350.1	-1.18	1.57	4	AL
NUB2NN_AL	364.8	1.36	4.02		368.5	1.71	6.39	4	AL
PKPNFY	358.2	0.24	6.78		360.5	0.45	10.86 H	4	PP
TLNXZR_AL	352.5	-0.73	5.91		355.1	-0.40	3.43	4	AK
UDB9YY	402.4	7.74 X	1.79 L		408.6	8.02 X	7.31	4	TS
WPWWRG_A	120.6	-40.14 X	8.62		248.6	-17.14 X	181.02	2	XX

Consensus (All Labs) Results

Month Mean	356.80	Grand Mean	357.61
Avg SD	7.53	Avg SD Months	4.31
SD btwn Labs	5.88	SD btwn Labs	6.36
Labs Incld	12	Labs Incld	12

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 #617 (B)
February 2021

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
62GU4J	106.8	1.24	2.17		108.6	1.04	1.51 L	4	HY
7RCCFE	100.8	0.66	5.89		102.2	0.46	2.31	4	HZ
9BC4ZJ	95.6	0.16	2.79		93.7	-0.32	2.46	4	TM
AHU2FB	88.0	-0.58	3.67		86.7	-0.95	1.96	4	SC
AMKJR2	108.0	1.36	7.58		115.3	1.65	7.27	4	SC
DYLDC2	91.0	-0.29	3.79		95.4	-0.15	3.78	4	SC
FWQW76	112.2	1.76	5.89		107.7	0.96	6.30	4	SC
G9YY69	81.4	-1.22	1.52		83.1	-1.28	2.09	4	TM
GCFWJ3	100.4	0.62	7.16		98.9	0.16	3.07	3	HY
H62DZ4	97.6	0.35	3.05		98.8	0.15	4.13	4	HY
JEK4Y2	80.4	-1.32	9.40		107.9	0.98	41.41 H	4	TM
M8R3AX	92.5	-0.14	9.82		90.1	-0.64	2.61	4	XX
MNQMKR	87.8	-0.60	2.17		89.7	-0.68	2.54	4	TM
NUB2NN	39.1	-5.31 X	0.65 L		41.5	-5.07 X	1.64 L	4	LZ
PKPNFY	102.0	0.77	3.81		106.0	0.81	2.90	4	HY
PKPXGP	80.3	-1.32	16.87 H		95.1	-0.19	27.75 H	4	SC
QY7BCV	81.8	-1.18	4.09		78.4	-1.71	6.31	4	TM
R2677H	86.4	-0.74	3.65		89.0	-0.75	1.72 L	4	TM
R9P9DK	84.5	-0.92	4.46		88.5	-0.78	3.39	4	TM
TLNXZR	95.2	0.12	11.88		88.1	-0.82	5.56	4	TM
TYE8RK	183.4	8.66 X	7.83		191.0	8.56 X	11.09	4	SC
W2R7EP	85.2	-0.85	4.32		82.8	-1.31	3.25	4	TM
WBDAMP	112.9	1.83	5.21		106.0	0.81	7.14	4	TM
WMP6TV	87.3	-0.64	1.83		91.8	-0.48	5.09	4	TM
YU2E4E	145.2	4.96 X	12.76 H		121.0	2.17 *	16.60	4	HY
ZZMEPR	103.8	0.95	5.26		106.6	0.86	4.54	4	TM

Consensus (All Labs) Results

Month Mean	94.00	Grand Mean	97.12
Avg SD	6.55	Avg SD Months	11.42
SD btwn Labs	10.33	SD btwn Labs	10.97
Labs Incld	23	Labs Incld	24

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	93.75	10.30	0.25	21
Modified Scott Bond Mechanics	106.80	0.00	12.80	1

Analysis Notes

NUB2NN - Method used is not covered in this test. Data excluded from consensus calculation.

Key to Instrument Codes Reported by Participants

HY	Huygen Digitized Scott Internal Bond Tester	HZ	Huygen Internal Bond Tester with AccuPress
LZ	L&W (model not specified)	SC	Scott Internal Bond Tester (Manual)
TM	TMI Monitor/Internal Bond Tester	XX	Instrument make/model not specified by lab

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months		Months
3LZLEQ	27.7	0.02	6.98	H	27.7	-0.01	0.00		1
3TE3VJ	29.4	0.58	3.65		31.6	1.55	1.61		4
4Z72HB	28.0	0.12	1.22		28.6	0.35	0.66		4
62GU4J	30.6	0.96	1.44		27.0	-0.30	2.54		4
63DKG7	25.4	-0.72	2.30		24.3	-1.37	0.93		4
6YET4M	26.8	-0.27	0.84		26.8	-0.38	0.41		4
7ZPVPL	27.5	-0.04	2.68		29.5	0.70	1.32		4
9BC4ZJ	25.0	-0.85	1.87		24.8	-1.17	1.44		4
AEUXL4	26.8	-0.27	4.60		28.5	0.32	2.13		4
AHU2FB	28.4	0.26	0.89		28.6	0.36	0.43		4
AMKJR2	23.0	-1.51	0.71		24.1	-1.45	1.28		4
BDDQTE	30.1	0.81	3.02		29.3	0.64	0.97		4
D787N2	22.6	-1.64	2.79		24.2	-1.39	1.88		4
D78TX7	31.2	1.17	2.93		30.7	1.17	1.24		4
FWQW76	28.4	0.26	4.22		27.6	-0.05	1.28		4
G9YY69	30.2	0.85	2.05		28.1	0.18	2.13		4
J9T2RU	24.2	-1.11	1.30		24.7	-1.21	0.77		4
JEK4Y2	24.6	-0.98	3.36		22.8	-1.97	* 1.40		4
KF7YR7	23.2	-1.44	2.17		24.3	-1.35	1.71		4
KYYBNY	28.4	0.26	2.51		28.2	0.20	1.31		3
M8R3AX	29.1	0.48	4.72		23.2	-1.80	4.53	H	4
MNQMKR	26.0	-0.53	2.92		28.6	0.34	2.10		4
NUB2NN	22.4	-1.70	1.14		28.0	0.12	3.79		4
PKPNFY	31.0	1.10	2.00		30.2	1.00	1.14		4
QY7BCV	30.4	0.91	1.14		29.8	0.81	0.85		4
R9P9DK	26.6	-0.33	5.08		27.0	-0.29	1.23		4
TLNXZR	32.2	1.50	1.92		30.1	0.96	1.40		4
TYE8RK	33.8	2.02	* 1.30		30.5	1.09	5.94	H	4
VFC7TJ	29.6	0.65	5.75	H	29.5	0.71	0.48		4
W2R7EP	23.0	-1.51	0.00	L	25.8	-0.78	2.30		4
WBDAMP	26.6	-0.34	2.59		29.2	0.61	2.44		4
WF7YWN	32.4	1.56	1.34		32.2	1.76	0.30	L	4
YU2E4E	26.8	-0.27	2.59		29.4	0.65	1.79		4

Consensus (All Labs) Results

Month Mean	27.62	Grand Mean	27.70
Avg SD	3.03	Avg SD Months	2.05
SD btwn Labs	3.07	SD btwn Labs	2.52
Labs Incld	33	Labs Incld	33

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
3TE3VJ_AL	22.1	-0.27	1.30		22.7	0.24	0.59	4	AL
62GU4J	22.7	0.12	3.57	H	22.0	-0.26	0.74	4	TP
6YET4M	21.7	-0.55	2.00		21.6	-0.54	0.17 L	4	LA
9BC4ZJ	25.8	2.18 *	1.62		25.4	2.30 *	0.68	4	LA
9BC4ZJ_AL	24.2	1.11	1.50		24.3	1.48	0.32	4	AL
ADETRC	22.5	-0.02	3.10		21.7	-0.51	1.40	4	XX
AEUXL4	23.0	0.32	0.94		21.8	-0.46	1.23	4	LP
AMKJR2_AL	22.7	0.12	0.67	L	20.7	-1.24	1.96	4	AL
AVXVZF	25.4	1.92 *	2.84		23.8	1.04	1.99	4	GG
BDDQTE_AL	20.8	-1.15	1.99		21.3	-0.80	0.59	4	AL
CRUDPA	21.2	-0.88	1.69		21.2	-0.87	0.00	1	XX
CRUDPA_AL	22.2	-0.22	2.04		22.0	-0.25	0.21	3	AL
D787N2	19.1	-2.28 *	1.50		18.8	-2.64 *	0.65	4	XX
D78TX7	21.8	-0.50	2.23		23.4	0.75	1.28	4	GA
DYLDC2_AL	22.0	-0.33	1.83		22.5	0.09	0.74	4	AL
FWQW76	23.0	0.29	0.63	L	22.4	0.04	0.46	4	LP
G9YY69_AL	21.4	-0.78	1.36		21.6	-0.60	0.43	3	AK
GDAMMW	17.6	-3.27 X	1.71		19.7	-1.98 *	1.89	3	GA
GKB2D4_AL	23.0	0.34	1.99		23.5	0.87	0.58	4	AL
H62DZ4	21.4	-0.77	1.97		22.7	0.22	0.88	4	LP
J9T2RU_AL	21.7	-0.57	1.77		22.1	-0.19	0.96	4	AL
JEK4Y2	24.3	1.20	2.41		24.0	1.25	1.77	4	TD
KF7YR7	22.0	-0.38	2.38		21.5	-0.62	0.56	4	LA
KG3P6T	21.5	-0.66	1.04		21.8	-0.42	0.26	4	LP
KZEEHQ	25.1	1.73	1.41		24.1	1.31	0.71	4	LA
M8R3AX	23.1	0.39	1.62		22.7	0.23	0.46	4	LP
MNQMKR	23.3	0.52	3.20	H	24.2	1.39	1.11	4	GA
NBLJYX	23.5	0.62	1.68		23.4	0.81	1.00	4	LP
NUB2NN_AL	25.6	2.07 *	1.38		23.8	1.05	1.52	4	AL
PKPNFY	21.7	-0.57	2.57		21.8	-0.43	2.04	4	TP
QY7BCV_AL	22.6	0.06	2.57		23.0	0.51	1.42	3	AL
R9P9DK_AL	21.9	-0.45	1.56		21.9	-0.38	0.00	1	AK
TLNXZR_AL	19.0	-2.34 *	2.59		19.7	-1.96 *	0.84	4	AK
TYE8RK_AL	23.3	0.53	1.43		22.3	-0.06	1.21	4	AL
VFC7TJ	21.2	-0.86	2.07		21.8	-0.39	0.87	2	XX
W2R7EP_AL	23.3	0.50	1.23		23.4	0.75	0.45	4	AL
WBDAMP_AI	23.1	0.37	1.30		23.6	0.90	0.64	4	AL
WF7YWN	6.3	-10.82 X	0.49	L	14.1	-6.20 X	8.91 H	4	LA
WPWWRG_A	22.5	-0.01	1.94		22.3	-0.06	0.32	2	XX

Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42F

TAPPI Official Test Method T460

	Monthly Results			Cumulative Results				
WebCode	Mean	CPV	SD	Mean	CPV	SD Months	Months	Inst
YU2E4E	22.7	0.12	1.34	22.4	-0.01	0.40	4	LP
Z6GBEH	21.2	-0.90	1.61	21.6	-0.55	0.86	4	XX

Consensus (All Labs) Results

Month Mean	22.52	Grand Mean	22.36
Avg SD	1.96	Avg SD Months	1.04
SD btwn Labs	1.49	SD btwn Labs	1.34
Labs Incld	39	Labs Incld	40

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
2D7GLP	57.2	57.0	59.3	57.9	57.9	-0.07	3.6	1.0	56.3	-0.65	3.9	2.6	12	TX
4Z72HB	60.0	59.4	57.8 H	56.6	58.4	0.23	4.6	1.5	58.9	0.49	3.7	1.3	16	EN
62GU4J	59.4	56.2	59.4	58.3	58.3	0.17	2.8	1.5	57.5	-0.11	3.7	1.9	16	LC
63DKG7	60.5	55.7	55.3	55.3	56.7	-0.66	4.0	2.5	56.3	-0.63	3.7	2.2	16	LZ
6J2U49	57.5	58.5	57.3	58.8	58.0	0.02	3.5	0.7	58.2	0.16	3.6	1.1	16	LD
6YET4M	57.9	58.8 L	58.2	57.7	58.2	0.09	2.0	0.5	58.3	0.20	1.9	0.5 L	16	LD
7RCCFE	55.5	56.3	54.5	59.8	56.5	-0.73	3.3	2.3	55.2	-1.10	3.3	1.9	16	LD
7ZPVPL	60.1	59.6	56.8	60.8	59.3	0.68	3.1	1.8	58.8	0.41	3.5	2.0	16	LD
99ABFD	57.0	57.2	58.5	57.9	57.7	-0.16	3.3	0.7	58.3	0.19	3.1	1.3	16	EM
9BC4ZJ	57.6	57.8	59.5	58.9	58.5	0.24	3.9	0.9	58.1	0.15	3.9	1.8	16	LD
AYX7VF	58.8	60.7	57.1	58.8	58.9	0.44	2.8	1.5	58.5	0.29	2.3	1.0	16	LC
B7AG7Y	60.8	59.1	59.1	56.3	58.8	0.41	3.4	1.8	58.5	0.31	3.1	1.7	16	LZ
BPPQ8Y	60.0	59.2	59.0	60.5	59.7	0.85	4.0	0.7	59.0	0.50	3.5	0.9	16	LD
C79779	65.9 X	67.9 X	67.3 X	68.0 X	67.3	4.71 X	4.5	1.0	65.2	3.14 X	4.5	2.0	16	XX
C7NQQ7	54.7	55.0	58.0	55.8	55.9	-1.08	2.6	1.5	55.1	-1.14	3.6	2.1	12	LD
CMYJR9	58.9	59.1	58.6	59.0	58.9	0.45	2.9	0.2	58.9	0.46	3.4	0.3 L	16	LD
CP3FBC	60.7 L	59.5 L	62.5 *L	60.6 L	60.8	1.44	1.0	1.2	61.2	1.46	1.6	1.7	16	XX
CRAX98	55.0	54.2	53.7 *	50.7 X	53.4	-2.32 *	3.3	1.9	53.5	-1.83	2.9	2.3	12	LD
CRUDPA	62.1 *	60.2	65.1 X	63.3 *	62.7	2.37 *	3.4	2.1	62.7	2.07 *	3.4	2.1	4	XX
D78TX7	58.1	58.8	58.5	57.9	58.3	0.17	2.4	0.4	57.6	-0.07	2.9	1.5	16	LZ
DA3XWX	60.7	58.2	60.4	60.9 H	60.1	1.06	4.9	1.3	60.5	1.16	4.1	2.0	14	LD
FZWUN7	57.8 L	57.7	57.9 L	57.8 L	57.8	-0.08	1.5	0.1 L	57.8	0.00	1.4	0.3 L	16	LD
G6GAR3	66.1 X	65.5 X	60.9	68.3 X	65.2	3.65 X	4.2	3.1 H	62.1	1.83	6.4	7.9 H	12	LC
GC3UNB	53.8 *	55.9	57.5	55.1	55.6	-1.22	3.3	1.6	55.1	-1.16	3.3	1.3	16	MB
GDAMMW	59.1	57.9	60.2	58.2	58.8	0.44	4.7	1.0	58.4	0.26	4.0	1.5	12	LD
GKW392	59.3	59.4	59.4 L	59.6	59.4	0.72	2.2	0.1 L	59.3	0.64	1.9	0.2 L	16	LD
H62DZ4	No Data	No Data	No Data	66.8 XH	66.8	4.48 X	7.6	0.0	66.8	3.85 X	7.6	0.0	1	LD
J9T2RU	56.7	56.5	58.6	56.5	57.0	-0.47	3.3	1.0	56.8	-0.45	4.0	2.0	16	LZ
JTZWGY	59.3	58.3	58.5	59.2	58.8	0.41	2.2	0.5	58.7	0.39	2.5	1.0	16	EN
KF7YR7	53.7 *	52.5 *	51.9 X	53.2 *	52.8	-2.60 *	4.0	0.8	52.1	-2.41 *	5.6	4.9 H	15	MB
KFLTDU	56.7	57.2	57.9	58.1	57.5	-0.26	3.6	0.6	57.9	0.04	3.6	0.8	16	LC
KG3P6T	58.7	59.4	55.8	56.3	57.5	-0.22	3.2	1.8	60.1	0.98	4.1	2.1	16	LD
KNHQ43	59.7 L	59.6	59.5 L	59.6 L	59.6	0.82	1.5	0.1 L	60.2	1.00	1.5	1.0	12	MB
KYN93Z	42.4 XL	41.6 XL	40.9 XL	41.5 X	41.6	-8.29 X	1.5	0.6	55.0	-1.20	2.0	8.1 H	16	TU
KZEEHQ	57.8	58.9	60.7	60.8	59.5	0.79	4.6	1.4	58.8	0.44	4.8	1.7	16	TU

Containerboard Interlaboratory Testing Program

Analysis 240

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T809

	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
M8R3AX	59.1	59.1	58.8	59.2	59.0	0.53	4.3	0.2 L	57.8	0.01	4.2	1.6	16	LZ
MNDFEW	57.1	55.2	55.9	56.8	56.2	-0.88	3.5	0.9	56.4	-0.61	3.6	1.7	16	TH
MNQMKR	55.8	59.8	58.0	59.2	58.2	0.11	3.5	1.8	57.8	-0.01	3.5	1.8	16	LD
MT6MW6	57.9	56.7	57.5	59.2	57.8	-0.09	4.8	1.0	57.9	0.04	4.8	1.1	16	TJ
NBLJYX	57.3	57.2	56.9	57.6	57.2	-0.37	3.4	0.3	57.8	-0.02	3.0	1.1	16	LD
NTZZ3P	60.0	62.2 *	59.5	60.3	60.5	1.27	4.2	1.2	61.4	1.55	4.3	1.4	16	LD
NUB2NN	55.0	56.2	56.9	55.2	55.8	-1.09	2.9	0.9	54.2	-1.54	3.4	1.5	16	LD
PKPNFY	57.4	56.3	56.0	58.3	57.0	-0.49	3.9	1.1	56.8	-0.41	3.8	1.6	16	LD
PKPXGP	55.0	53.5 *	54.0 *	55.1	54.4	-1.81	3.1	0.8	53.9	-1.65	3.2	1.0	16	LC
PXADJN	60.3	60.4	59.3	60.4	60.1	1.07	4.6	0.5	58.9	0.45	4.2	1.2	12	LD
QGKREN	58.4	57.7	57.1	58.0	57.8	-0.09	3.8	0.5	57.9	0.04	3.7	0.6 L	16	LD
R2677H	61.7	64.4 X	62.7 *	62.9 *	62.9	2.50 *	3.7	1.1	62.8	2.15 *	3.1	2.0	16	LC
TLNXZR	54.2	58.0	56.8	58.1	56.8	-0.61	4.0	1.8	52.9	-2.08 *	4.0	3.2	16	LD
VD6DTX	58.2	55.8 H	58.3	56.1	57.1	-0.44	5.4	1.4	57.1	-0.30	5.2	1.3	16	TG
W2R7EP	57.9	54.2	58.8	57.5	57.1	-0.45	4.6	2.0	57.2	-0.28	4.0	2.1	16	LC
WPWWRG	57.8	56.4	54.5	54.4	55.8	-1.12	3.9	1.6	57.8	-0.01	3.7	1.8	16	LD
ZFFEQK	64.7 X	66.2 X	65.6 X	67.6 X	66.0	4.06 X	4.8	1.2	66.0	3.50 X	4.8	1.2	4	EM

Consensus (All Labs) Results

Wk Mean	58.04	57.66	58.07	58.21	Month Mean	57.98	Grand Mean	57.80
Avg SDr	3.64	3.56	3.66	3.46	Avg SD	3.57	Avg SD	3.65
SD btwn Labs	2.08	2.04	1.98	2.13	SD btwn Labs	1.98	SD btwn Labs	2.35
Labs Incld	47	46	46	46	SD btwn Wks	1.27	SD btwn Wks	2.36
Labs Excld	4	5	5	6	Labs Incld	47	Labs Incld	49
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 - CM11

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
2D7GLP	58.4 X	58.5 X	59.6 X	57.0 *	58.4	-2.04 *	3.1	1.1	58.5	-2.11 *	2.8	1.2	12	TX
4Z72HB	68.0 L	70.6	70.6	67.6	69.2	0.44	3.4	1.6	70.2	0.79	3.6	1.7	16	XX
62GU4J	73.6 *	74.1 X	73.6	71.8	73.3	1.37	2.6	1.0	71.1	1.00	2.6	2.1	16	LC
6YET4M	68.4	68.7	68.9	68.6	68.7	0.31	2.1	0.2 L	68.8	0.44	1.9	0.5 L	16	LD
9BC4ZJ	69.7	69.0	67.9	67.0	68.4	0.26	3.4	1.2	67.9	0.23	3.8	1.7	16	LD
ADETRC	68.5	68.8	68.9	68.5 L	68.7	0.32	2.6	0.2 L	68.7	0.42	2.1	1.2	16	LZ
B26FAB	56.1 X	55.1 X	55.3 X	57.9 *	56.1	-2.55 *	3.3	1.3	56.8	-2.53 *	3.9	1.5	16	LD
B7AG7Y	68.2	66.0	71.1	68.9	68.5	0.29	3.0	2.1	67.8	0.19	3.2	1.8	16	LZ
BPPQ8Y	68.6	68.3	74.7 *	72.4	71.0	0.85	3.6	3.1 H	70.8	0.94	3.0	2.6	16	LD
CP3FBC	69.7 L	70.9 L	72.8	71.4 L	71.2	0.90	1.3	1.3	69.8	0.68	1.2	2.8	16	XX
FEBZVY	68.9	65.5	66.7	68.7	67.4	0.03	3.3	1.7	67.8	0.18	3.3	1.5	16	LD
FZWUN7	68.8	69.1	68.8	68.6	68.8	0.35	1.8	0.2 L	68.9	0.47	1.6	0.4 L	16	LD
H62DZ4	No Data	No Data	No Data	57.5 *	57.5	-2.24 *	2.2	0.0	57.5	-2.36 *	2.2	0.0	1	LD
J9T2RU	70.2	64.7 H	68.4	68.0	67.8	0.12	4.4	2.3	67.3	0.07	4.0	1.7	16	LZ
KFLTDU	68.4	69.0	69.3	67.9	68.7	0.31	3.7	0.6	68.6	0.38	4.0	0.6	16	LD
KG3P6T	68.8	66.7	68.1	69.0	68.2	0.20	3.7	1.0	67.5	0.12	3.4	1.8	16	LD
KNHQ43	66.2 L	66.8	65.3 L	67.0 L	66.3	-0.22	1.4	0.7	66.0	-0.25	1.6	1.0	12	MB
NBLJYX	68.6 H	69.8	67.6	70.7	69.2	0.43	4.3	1.3	68.8	0.44	3.7	1.5	16	LD
NUB2NN	64.0 *	65.9	65.8	66.0	65.4	-0.42	3.2	0.9	66.8	-0.06	3.2	1.5	16	LD
PKPNFY	71.7	66.5	69.8	68.2 H	69.0	0.40	4.5	2.2	69.3	0.56	4.2	1.7	16	LD
TLNXZR	71.3 H	66.2	66.7	69.0	68.3	0.23	4.3	2.3	67.1	0.02	6.1	2.9	16	LD
W2R7EP	72.4	69.2	71.2	68.4	70.3	0.69	3.9	1.8	68.7	0.41	5.2	5.0 H	16	LC

Consensus (All Labs) Results

Wk Mean	69.15	67.86	69.26	67.27	Month Mean	67.28	Grand Mean	67.02
Avg SDr	3.57	2.87	3.23	3.50	Avg SD	3.27	Avg SD	3.41
SD btwn Labs	2.14	1.86	2.56	4.28	SD btwn Labs	4.38	SD btwn Labs	4.05
Labs Incld	19	18	19	22	SD btwn Wks	1.54	SD btwn Wks	2.00
Labs Excld	2	3	2	0	Labs Incld	22	Labs Incld	22
Labs not Rcvd	1	1	1	0				

Key to Instrument Codes Reported by Participants

LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
TX	TMI Digital Crush Tester (model not specified)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 255

Ring Crush (RCT), 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T822

Report #617 (B)
February 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
2D7GLP	41.6	40.6 *	43.6	42.3	42.0	-1.72	2.8	1.3	41.9	-1.51	3.3	1.7	12	TX
62GU4J	46.4	48.2	46.4	48.8	47.4	1.70	2.3	1.2	45.7	0.79	2.8	1.8	16	LC
6J2U49	44.0	43.3	43.8	43.7	43.7	-0.66	2.6	0.3	43.5	-0.53	2.8	0.6 L	16	LC
6YET4M	44.8	43.9	44.9	45.2	44.7	-0.03	3.2	0.6	44.1	-0.19	3.0	0.5 L	16	LD
7RCCFE	45.1	43.7	46.3	48.8	46.0	0.76	3.1	2.1	45.1	0.41	3.4	1.3	16	LD
99ABFD	45.1	47.3	48.5 *	46.0	46.7	1.25	3.8	1.5	46.7	1.40	4.0	1.4	16	EM
A4VM9A	45.4	45.4	45.4	45.2	45.3	0.37	3.6	0.1 L	44.5	0.04	3.8	2.4	16	LZ
AYX7VF	47.3	48.5	47.9	47.2	47.7	1.87	1.7	0.6	47.8	2.04 *	2.9	1.1	16	LC
BYWVDH	45.7	41.3 H	45.4	45.5	44.5	-0.19	4.9	2.1	42.1	-1.41	4.3	3.0	8	XX
C79779	46.3	47.1	44.5	47.8	46.4	1.04	4.3	1.4	44.3	-0.08	4.2	2.1	16	LZ
CAC2PC	46.2	43.2	43.4	41.9	43.7	-0.68	2.1	1.8	43.7	-0.46	2.7	1.1	16	TH
CMYJR9	43.8	45.3	44.1	43.9	44.3	-0.30	2.7	0.7	44.0	-0.26	2.8	0.4 L	16	LD
D78TX7	45.5	46.6	41.9	44.9	44.7	-0.03	3.7	2.0	43.9	-0.30	3.2	1.6	16	LD
DA3XWX	45.9	45.7	47.1 H	43.9	45.7	0.56	4.6	1.3	45.7	0.76	3.9	1.7	14	LZ
G6GAR3	38.1 XH	37.9 XH	38.2 X	38.4 *	38.1	-4.17 X	5.1	0.2 L	36.0	-5.09 X	5.2	1.9	12	XX
GDAMMW	41.1 *	35.0 X	46.0	45.6	41.9	-1.78	3.7	5.2 H	43.4	-0.62	3.5	3.4	12	LD
GKW392	44.1	44.1	44.2	44.2	44.2	-0.38	2.1	0.1 L	44.2	-0.15	1.6	0.0 L	16	LD
KF7YR7	45.9	43.9	42.8	47.7	45.0	0.18	3.3	2.2	46.1	1.03	3.6	3.9	15	MB
KG3P6T	44.4	46.8	44.3	44.5	45.0	0.15	2.9	1.2	44.0	-0.28	3.2	1.6	16	LD
KNHQ43	42.6 L	42.4	42.6	42.7 L	42.6	-1.39	1.5	0.1 L	41.8	-1.61	1.6	1.0	12	MB
KYN93Z	60.3 X	61.6 X	59.1 X	60.0 X	60.2	9.76 X	1.9	1.0	46.5	1.24	2.1	8.3 H	16	TU
MNDFEW	36.2 X	33.9 X	37.6 X	36.1 X	35.9	-5.56 X	2.5	1.5	35.3	-5.49 X	2.4	1.6	16	TH
NBLJYX	42.4	45.1	43.7	42.4 H	43.4	-0.86	4.0	1.3	43.3	-0.66	3.8	1.5	16	LD
NTZZ3P	47.1	48.8	46.8	44.7	46.9	1.32	3.4	1.7	46.3	1.10	3.2	1.9	16	LD
NUB2NN	43.7	43.2	42.8	43.3	43.2	-0.95	3.5	0.4	43.4	-0.59	3.2	1.6	16	LD
PKPNFY	42.2 H	45.0	45.3	46.5	44.7	-0.01	5.2	1.8	45.8	0.85	4.1	1.5	16	LD
QR3WG2	44.3	43.5 L	44.0	41.5 L	43.3	-0.91	1.7	1.3	41.3	-1.85	2.8	3.0	16	LZ
ZFFEQK	46.2	44.3	45.1	47.8	45.8	0.69	3.9	1.5	45.8	0.85	3.9	1.5	4	EM

Consensus (All Labs) Results

Wk Mean	44.69	44.88	44.82	44.77	Month Mean	44.75	Grand Mean	44.43
Avg SDr	3.89	3.26	3.13	3.08	Avg SD	3.37	Avg SD	3.29
SD btwn Labs	1.70	2.18	1.70	2.46	SD btwn Labs	1.59	SD btwn Labs	1.66
Labs Incld	25	24	25	26	SD btwn Wks	1.69	SD btwn Wks	2.47
Labs Excld	3	4	3	2	Labs Incld	25	Labs Incld	26
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)	TX	TMI Digital Crush Tester (model not specified)
XX	Instrument make/model not specified by lab		

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM11

TAPPI Official Test Method T826

Report #617 (B)
February 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
2D7GLP	12.7 *	13.6	13.3	13.0	13.1	-1.74	1.0	0.4	13.2	-1.81	1.0	0.5	12	LH
4Z72HB	13.4	13.5	13.8	13.9	13.6	-0.66	1.0	0.2	13.6	-0.82	0.9	0.2	8	XX
62GU4J	14.1	14.3	14.1	13.8	14.1	0.46	1.1	0.2	13.8	-0.36	1.1	0.4	16	LU
6J2U49	14.3	15.0	14.1	14.1	14.4	1.02	1.1	0.4	14.3	1.01	1.1	0.3	16	LH
6YET4M	13.9	13.9	13.8	13.9	13.9	-0.07	1.2	0.1	13.8	-0.22	1.1	0.1 L	16	LB
7ZPVPL	13.7	14.2	13.9	14.2	14.0	0.22	1.1	0.2	14.2	0.87	1.1	0.5	16	LH
9BC4ZJ	14.6	15.0	14.7	14.4	14.7	1.73	1.1	0.3	14.2	0.78	1.4	0.5	16	LA
A4VM9A	14.0	12.8	13.5 L	13.7 L	13.5	-0.95	0.7	0.5	13.6	-0.73	0.9	0.5	16	LA
CP3FBC	13.4	12.4 *	13.8	13.4	13.2	-1.48	1.0	0.6	16.4	6.43 X	1.3	4.2 H	16	XX
D78TX7	13.6	13.0	13.8	13.5	13.5	-0.95	1.1	0.3	13.4	-1.23	1.0	0.3	16	LZ
FZWUN7	13.9 L	13.7 L	13.9 L	13.9 L	13.8	-0.11	0.4	0.1	13.8	-0.25	0.4	0.1 L	16	LA
GC3UNB	14.0	13.4	13.3	13.8	13.6	-0.66	1.2	0.3	13.5	-1.10	1.1	0.3	14	LA
GDAMMW	14.1	14.9 H	13.6	15.1	14.4	1.16	1.1	0.7	14.5	1.63	1.2	0.6	12	LA
JBF6GZ	14.6	13.5	13.4	13.2 L	13.7	-0.53	0.8	0.6	13.8	-0.27	0.7	0.5	8	LU
JTZWGY	13.1 L	13.4	13.2	13.6	13.3	-1.28	0.9	0.2	13.6	-0.80	0.9	0.4	16	LH
KF7YR7	13.8 H	14.1 H	14.6 H	15.2 *H	14.4	1.19	3.1	0.6	14.8	2.20 *	2.3	0.8	16	LA
KFLTDU	14.0	13.6	13.6	14.1	13.8	-0.19	0.9	0.3	13.8	-0.40	0.9	0.3	16	LB
KZEEHQ	14.6	14.1 L	14.1	14.2	14.2	0.78	1.1	0.2	13.9	-0.13	1.2	0.6	16	LA
MNQMKR	14.2	14.3	14.5	14.1	14.3	0.80	1.3	0.2	13.9	0.05	1.2	0.4	16	LU
MT6MW6	14.2	14.4	13.9	13.8	14.1	0.36	1.2	0.3	13.9	0.04	1.0	0.3	16	TT
NUB2NN	14.3 L	14.1	14.2	14.1	14.2	0.64	1.0	0.1	14.0	0.34	1.1	0.2	16	LA
PKPNFY	14.2	13.3	13.5	13.3	13.6	-0.76	1.2	0.4	13.5	-1.15	1.1	0.4	16	LB
QGKREN	13.3	14.0	13.3	14.2	13.7	-0.48	0.9	0.5	13.7	-0.47	0.9	0.4	16	LB
QR3WG2	14.9	15.5 *	15.8 X	15.6 *	15.4	3.44 X	1.4	0.4	14.3	1.02	1.3	1.0 H	16	LA
R9P9DK	12.8 *	14.0	14.0	13.9	13.7	-0.53	1.1	0.6	13.9	0.04	1.0	0.4	16	LA
TLNXZR	15.1 *	14.7	14.6	14.8	14.8	2.05 *	1.1	0.2	14.6	1.76	1.1	0.4	16	LA

Consensus (All Labs) Results

Wk Mean	13.95	13.94	13.85	14.01	Month Mean	13.90	Grand Mean	13.90
Avg SDr	1.16	1.13	1.31	1.22	Avg SD	1.20	Avg SD	1.13
SD btwn Labs	0.59	0.72	0.44	0.63	SD btwn Labs	0.45	SD btwn Labs	0.39
Labs Incld	26	26	25	26	SD btwn Wks	0.38	SD btwn Wks	0.46
Labs Excld	0	0	1	0	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