Collaborative Testing Services, Inc.

Containerboard Interlaboratory Testing Program

Participant Summary Report #661 - October 2024

Introduction to the Containerboard Program

Explanation of Tables and Definitions of Terms

Analysis	Sample	Analysis Name
201	BX18	Top to Bottom Box Compression Strength, Corrugated Boxes
202	EC16	Edgewise Compressive Strength, by T811, Corrugated Board
203	EC16	Edgewise Compressive Strength by T839, Corrugated Board
205	42L1	Bursting Strength (Mullen), 42 lb Linerboard
207	31K1	Bursting Strength (Mullen), 31 lb Linerboard
215	42L1	Ring Crush, 42 lb Linerboard
217	31K1	Ring Crush, 31 lb Linerboard
223	42L1	STFI, 42 lb Linerboard
225	31K1	STFI, 31 lb Linerboard
228	42L1	Roughness - Stylus Method, 42 lb Linerboard
229	42L1	Roughness - Sheffield Method, 42 lb Linerboard
231	42L	Internal Bond, 42 lb Linerboard
234	42L	COF Inclined Plane (Slide Angle), 42 lb Linerboard
237	42L	Air Resistance, 42 lb Linerboard
240	CM13	Flat Crush Strength (CMT), 26 lb Corrugating Medium
250	CM13	Fluted Edge Crush Strength (CFC), 26 lb Corrugating Medium
255	CM13	Ring Crush (RCT), 26 lb Corrugating Medium
261	CM13	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	CM13	September 2023 - Current
	CM12	June 2022 - August 2023
31# Linerboard	31K1	August 2024 - Current
	35E3	June 2022 - June 2024
42# Linerboard	42L1	July 2024 - Current
	42H3	June 2023 - June 2024
52# Linerboard	52J2	September 2024 - Current
	52J1	November 2023 - July 2024

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, agriculture, hemp, 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 100 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
27YVDP	561.8	-0.39	28.23		580.5	0.04	14.90	4	EX
2CNETL	631.9	1.42	46.58		603.0	0.70	34.77	4	LS
4PZTMV	538.8	-0.99	19.86		558.8	-0.60	20.62	4	ER
9X42HD	571.9	-0.13	54.61		540.9	-1.13	48.41	4	TB
AJDR9D	661.2	2.17 *	22.39		652.8	2.18 *	68.66 H	3	LG
ALM2YP	524.4	-1.36	39.41		563.9	-0.45	45.74	4	ER
BPY7CB	612.8	0.92	30.61		605.9	0.79	20.94	4	LG
BQ9BLT	603.0	0.67	40.38		597.5	0.54	21.48	4	EX
CCTDGR	554.8	-0.57	43.93		550.1	-0.86	15.32	4	ER
CU9LGT	587.3	0.27	41.58		584.3	0.15	18.96	4	ER
CXP749	580.6	0.09	75.07 H		573.7	-0.16	13.84	4	EX
DHDVCE	525.3	-1.34	41.62		511.8	-1.99 *	27.97	4	LL
EL87KK	569.8	-0.19	32.54		580.8	0.05	20.42	4	EX
F87UQ7	580.7	0.09	0.71 L		580.7	0.05	0.00	1	EX
GMFZFB	579.4	0.06	15.63		580.6	0.04	28.39	4	LG
JQM9V6	532.5	-1.15	15.05		517.2	-1.83	36.79	4	ET
JXMRVF	576.8	-0.01	27.15		565.4	-0.41	16.33	4	LM
KNT2ND	554.6	-0.58	33.53		556.9	-0.66	15.92	4	LG
Q8NMWX	644.0	1.73	49.21		614.1	1.03	34.16	4	LS
QNXAH9	561.5	-0.40	42.83		600.7	0.64	33.40	4	LO
REGCRR	557.7	-0.50	30.79		575.8	-0.10	14.37	4	EX
TK2ULU	617.6	1.05	43.41		638.0	1.74	17.79	4	ER
TNNEQX	516.5	-1.56	16.05		520.0	-1.74	32.65	4	LG
TW4VKT	601.4	0.63	27.52		582.6	0.10	13.26	4	LG
TY6X9A	557.1	-0.52	30.23		586.7	0.22	20.88	4	EX
TY8Q6W	618.3	1.07	19.54		591.3	0.36	21.31	4	LG
UQAFAR	616.4	1.02	28.77		632.7	1.58	33.81	4	EX
YE4WX2	519.0	-1.50	38.12		568.6	-0.31	35.61	4	ES

Consensus (All Labs) Results

Month Mean	577.04	Grand Mean	579.12
Avg SD	36.38	Avg SD Months	29.76
SD btwn Labs	38.68	SD btwn Labs	33.87
Labs Incld	28	Labs Incld	28

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Hot melt adhesive sealing	560.91	30.96	16.13	9
Clip sealing	582.85	40.68	5.81	18
Staple sealing	617.58	0.00	40.54	1

Key to Instrument Codes Reported by Participants

ER	Emerson 6200 Series	ES	Emerson 8510
ET	Emerson 7200	EX	Emerson Apparatus (Model not specified)
LG	TLS / L.A.B. Validator Series	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
27YVDP	50.0	0.79	3.58		50.0	0.89	0.87	4	LC
4PZTMV	39.6	-2.05 *	4.92	H	40.4	-1.66	4.33	H 4	EN
ABJN3V	45.2	-0.52	3.06		45.2	-0.39	0.00	1	TD
D8UDJ9	41.9	-1.43	1.99		41.9	-1.26	0.14	L 3	TS
E7TZB7	49.1	0.54	2.36		48.4	0.46	1.02	2	LC
K7DUE3	51.0	1.06	2.11		51.1	1.17	0.43	3	XX
KNT2ND	49.4	0.61	1.88		50.5	1.01	1.43	4	EX
Q8NMWX	46.6	-0.15	3.24		46.7	0.00	1.31	4	LD
REGCRR	47.6	0.14	3.23		46.5	-0.03	1.53	4	LC
UV3KZA	50.8	1.01	2.16		50.1	0.92	0.59	4	XX
ZTFUHR	47.1	0.00	2.41		42.5	-1.12	4.12	3	TS

Consensus (All Labs) Results

Month Mean	47.12	Grand Mean	46.66
Avg SD	2.94	Avg SD Months	2.10
SD btwn Labs	3.67	SD btwn Labs	3.76
Labs Incld	11	Labs Incld	11

Key to Instrument Codes Reported by Participants

EN	Emerson 2200	EX	Emerson (model not specified)
LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
TD	TMI Digital Crush Tester, Model 17-09	TS	TMI Digital Crush Tester, Model 17-56
XX	Instrument make/model not specified by lab		

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
27YVDP	53.0	0.78	2.53		52.2	0.79	0.95	4	LC
2CNETL	48.0	-0.28	1.43		46.3	-0.98	1.55	4	EM
2VDR7P	47.8	-0.31	2.72		49.6	0.01	1.71	4	TU
44M3A2	42.3	-1.47	3.25		42.2	-2.21 *	1.26	3	IX
4PZTMV	45.9	-0.71	1.54		46.5	-0.92	1.16	4	EN
62CFBM	46.0	-0.68	1.51		47.5	-0.61	2.48	4	BU
87JMRG	51.2	0.41	1.13		53.6	1.21	3.22	4	EM
8YZKJE	54.5	1.10	2.46		54.1	1.35	2.65	4	EM
9X42HD	51.5	0.46	0.92	L	50.4	0.25	5.38	4	LD
ABJN3V	45.2	-0.86	3.06		49.4	-0.03	3.92	3	TD
AJDR9D	48.8	-0.10	0.84	L	51.4	0.56	2.56	3	BU
ALM2YP	53.1	0.81	1.17		51.4	0.55	3.44	4	LD
BGN6QA	52.5	0.67	1.66		52.5	0.87	0.00	1	LC
BPY7CB	51.5	0.47	1.51		45.2	-1.29	4.52	4	EM
BQ9BLT	38.9	-2.19 *	2.24		45.9	-1.08	4.92	4	LD
CCTDGR	51.8	0.53	0.93	L	52.0	0.75	0.85	4	EM
CU9LGT	40.1	-1.94 *	4.03	H	45.5	-1.20	4.24	4	LD
D8UDJ9	41.4	-1.65	1.95		43.1	-1.93 *	3.52	3	TS
F87UQ7	48.7	-0.12	0.51	L	48.7	-0.25	0.00	1	TL
JQM9V6	50.8	0.32	1.98		49.9	0.11	1.59	4	TD
JXMRVF	47.1	-0.45	0.69	L	49.2	-0.09	2.86	4	EM
KNT2ND	50.2	0.19	1.40		48.7	-0.26	1.15	4	LY
Q8NMWX	47.8	-0.30	1.65		49.1	-0.14	1.66	4	LD
QNXAH9	43.4	-1.24	1.78		42.7	-2.05 *	4.17	4	LD
QU39TX	57.1	1.65	1.43		53.1	1.06	3.60	3	TD
REGCRR	55.3	1.28	1.70		53.0	1.04	1.88	4	LC
RFZ42C	53.4	0.87	2.11		49.9	0.11	3.39	4	TG
TK2ULU	53.5	0.89	2.77		52.1	0.77	2.35	4	LD
TW4VKT	49.1	-0.04	1.49		47.5	-0.60	1.99	4	EM
TY8Q6W	49.9	0.13	3.90	H	53.2	1.09	2.27	4	MK
UQAFAR	49.4	0.02	2.90		50.7	0.34	2.44	4	CT
UV3KZA	49.6	0.06	1.98		50.3	0.23	0.94	4	XX
WVC7P3	53.1	0.81	1.58		50.6	0.31	3.75	4	LD
WZNC3N	37.9	-2.40 *	2.59		36.4	-3.93 X	1.14	4	XX
XQDAGM	56.3	1.48	2.22		55.7	1.85	1.13	4	TG
YE4WX2	53.1	0.80	1.82		51.4	0.55	3.71	4	LD
Z8DZCM	53.3	0.84	5.65	H	52.8	0.99	0.65	4	TE
ZTFUHR	50.1	0.18	1.72		45.8	-1.12	3.32	4	TS

Consensus (All Labs) Results

Month Mean	49.28	Grand Mean	49.54
Avg SD	2.25	Avg SD Months	2.89
SD btwn Labs	4.75	SD btwn Labs	3.33
Labs Incld	38	Labs Incld	37

Key to Instrument Codes Reported by Participants

BU	Buchel Digital Crush Tester	CT	Con-Ten
EM	Emerson 1200 Series	EN	Emerson 2200
IX	Instron (model not specified)	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
TE	TMI Monitor/Compression Tester, Model 17-60	TG	TMI Digital Crush Tester, 17-76
TL	Tech-Lab Systems Compression	TS	TMI Digital Crush Tester, Model 17-56
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
3VVZRY	111.1	113.8	No Data	No Data	112.5	-0.50	8.3	1.9	113.6	-0.43	7.7	2.6	10	LJ
3VVZRY_AL	112.5	117.3	No Data	No Data	114.9	0.02	9.1	3.4	112.0	-0.81	7.4	3.8	10	AL
4MZHTG_AL	122.9	117.9	116.3	115.0	118.0	0.69	8.5	3.5	118.6	0.72	8.0	2.7	16	AL
6MVMKU_AI	111.8	118.0	116.2	109.4	113.9	-0.20	8.6	4.0	114.4	-0.26	9.3	2.5	16	AL
82L4PJ	107.3	105.4	109.8	107.1 L	107.4	-1.59	4.8	1.8	107.0	-1.96 *	6.4	3.6	16	LZ
8CKYME	115.6	117.0	116.7	117.2	116.6	0.40	5.5	0.7	114.9	-0.15	5.3	1.8	16	AH
8D2Y3X	117.0	120.2	119.9	122.4	119.8	1.09	8.1	2.2	118.0	0.59	11.4	4.0	16	LC
8FKBJE	113.7	114.2	115.2	114.2	114.3	-0.10	4.5	0.6	112.6	-0.66	5.5	2.8	16	TP
8KDCKT_AL	118.6	119.0	116.7	114.4	117.2	0.51	7.5	2.1	116.4	0.20	8.4	2.5	16	AL
9JX9NF	105.9	111.8	107.6	110.9	109.1	-1.23	8.2	2.8	109.7	-1.35	8.3	2.2	16	LA
9LPARJ_AL	116.7	114.9	111.2	111.9	113.7	-0.25	6.2	2.6	113.1	-0.56	5.8	2.5	8	AL
9MKRUK_AL	112.8 H	117.6	105.8	107.9	111.0	-0.81	13.0	5.3	110.8	-1.08	14.3	4.0	12	AL
9X42HD	104.3	102.9 *	110.3	107.4	106.2	-1.84	8.0	3.3	107.9	-1.77	7.9	3.2	16	XX
A38RXN_AL	123.9	124.6	120.0	118.2	121.7	1.48	6.6	3.1	120.1	1.08	7.1	2.4	16	AL
A43BZQ_AL	116.2	113.9	108.5	113.3	113.0	-0.39	9.9	3.2	114.1	-0.31	8.7	2.7	16	XX
ALM2YP	123.5	117.1	117.5	115.3	118.4	0.77	8.2	3.6	116.8	0.31	7.9	2.8	16	AH
BDNVHT	114.3	113.0	113.3	114.9	113.9	-0.20	5.0	0.9	114.1	-0.32	6.4	1.1	16	LJ
BQ9BLT	109.8	108.4	106.8	110.4	108.9	-1.28	8.5	1.6	109.5	-1.40	8.1	2.3	16	AH
CG3QXQ_AL	110.2	113.4	110.0	103.9	109.4	-1.16	6.7	4.0	108.7	-1.57	6.0	2.8	16	XX
CU9LGT	106.9	107.2	108.5	111.9	108.6	-1.33	7.6	2.3	109.2	-1.45	7.5	2.9	16	LZ
CYKP7A	119.8	126.9 *	125.4 *	124.2	124.1	2.00 *	8.8	3.0	127.1	2.70 *	9.7	4.2	16	LJ
EP7MXD_AL	109.8	113.8	115.9	118.7	114.6	-0.05	6.7	3.8	117.7	0.51	7.6	3.8	16	AL
F2DRLL_AL	125.1	122.1 H	125.4	123.1	123.9	1.96 *	13.4	1.6	122.1	1.53	11.3	1.9	16	AL
FB4DQJ	125.3	121.9	123.2	122.5 H	123.2	1.82	9.4	1.5	117.9	0.55	7.4	4.0	16	LZ
FBKRW8	115.8	116.1	115.4	116.6	116.0	0.26	4.4	0.5 L	116.5	0.23	5.4	0.7 L	12	LA
GAP9U7	137.5 X	148.0 X	140.5 XH	148.0 X	143.5	6.18 X	11.2	5.3	138.3	5.30 X	11.6	6.8	16	AX
GQUZAG	122.1	120.6	119.6	115.3	119.4	0.99	6.3	2.9	120.2	1.08	6.4	2.6	16	LA
HWCPAG	113.8	111.1	111.6	111.4	112.0	-0.60	6.6	1.2	112.6	-0.68	7.1	3.5	16	LC
HX89BH	116.0	118.7	112.7	114.3	115.4	0.13	7.5	2.6	115.4	-0.02	7.9	2.5	16	LA
J7GWPG	109.6	110.1	114.0	110.7	111.1	-0.79	7.5	2.0	110.7	-1.12	8.1	1.9	16	LC
KF3FK2_AL	107.4	109.0	112.4	108.8	109.4	-1.16	11.2	2.1	112.0	-0.82	9.3	2.5	16	AL
KGTJD9_AL	120.2	116.1	115.7	114.2	116.5	0.38	7.6	2.6	115.1	-0.09	8.5	1.9	16	AL
KNDKTK	119.5	111.4	109.8	125.4 *	116.5	0.37	6.9	7.3 H	116.1	0.14	4.1	4.6	16	LA
KNT2ND	117.2	131.4 X	123.6	122.8	123.8	1.93	10.7	5.8	125.3	2.27 *	9.2	4.3	16	AX
KNT4DH_AL	115.6	114.8	109.9	No Data	113.4	-0.29	10.0	3.1	117.3	0.42	8.3	4.0	12	AL

Containerboard Interlaboratory Testing Program

Analysis 205

Bursting Strength (Mullen), 42 lb Linerboard - 42L1

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
L7APDY_AL	114.5	112.9 L	114.7	117.4	114.9	0.02	8.1	1.9	114.9	-0.14	8.1	1.9	4	AL
MR6TRC	114.0	115.2	113.1	112.3	113.6	-0.25	8.2	1.2	116.1	0.14	8.4	2.7	16	LA
MR6TRC_AL	109.7	113.7	115.5	113.7	113.1	-0.36	7.6	2.5	113.2	-0.53	6.3	2.4	16	AL
N2BR3X	116.0	111.7 H	122.7	120.5	117.7	0.63	10.1	4.9	117.2	0.41	9.2	3.3	16	LC
N2BR3X_AL	117.5	111.7 H	116.7	124.2	117.5	0.59	8.9	5.2	118.3	0.65	9.1	3.8	16	AL
Q8NMWX	113.7	118.4	114.5	116.7	115.8	0.23	9.1	2.1	115.6	0.01	9.3	3.4	16	LA
QFFZTC_AL	116.2	No Data	No Data	116.2	116.2	0.31	5.2	0.0	117.7	0.50	7.2	1.8	4	AL
QW8XV8	133.6 X	105.3	105.4	104.7	112.3	-0.55	8.8	14.2 H	123.2	1.79	9.6	11.1 H	16	ME
RE4KZB_AL	114.0	116.1	114.5	119.1	115.9	0.24	8.8	2.3	118.1	0.60	6.7	3.0	16	AL
REGCRR	116.7	116.2	114.2	112.1	114.8	0.00	8.9	2.1	115.8	0.08	8.1	2.3	16	AH
TK2ULU	118.0	113.1 H	109.8	113.7	113.6	-0.25	10.1	3.3	115.3	-0.04	8.5	3.4	16	LC
TK2ULU_AL	110.1	106.5	108.2	107.2	108.0	-1.47	8.2	1.5	112.2	-0.77	7.6	4.7	8	AK
TY6X9A	No Data	No Data	No Data	111.2	111.2	-0.78	8.9	0.0	114.6	-0.20	8.0	3.0	4	XX
UCQTZT	100.7 *L	100.0 *	100.2 *L	100.7 *L	100.4	-3.10 X	3.3	0.4 L	110.9	-1.07	3.2	9.9 H	16	AH
UQAFAR	121.5	117.5	119.5	122.0	120.1	1.15	8.7	2.1	120.0	1.05	9.8	1.8	16	XX
UV3KZA	116.1	119.2	123.1 H	114.8	118.3	0.76	14.5	3.7	115.7	0.04	10.4	2.9	16	LC
VRKHT6	121.0	119.8	No Data	No Data	120.4	1.21	4.7	0.8	120.5	1.16	5.3	3.3	13	AH
WVEYKP	103.3 *L	102.8 *L	102.5 *L	102.6 *L	102.8	-2.58 *	2.5	0.4 L	102.8	-2.95 X	2.5	0.4 L	4	XX
X2VQAU	111.8	110.2	108.6	111.0	110.4	-0.95	7.5	1.3	110.7	-1.11	7.6	3.1	16	XX
X84CXQ_AL	109.0	114.1	113.3	111.2	111.9	-0.63	7.8	2.3	112.7	-0.64	7.9	3.6	16	AL
YE4WX2	106.1	111.6	113.2	112.3	110.8	-0.86	6.9	3.2	113.4	-0.48	8.3	3.5	16	LA
Z6A8F4	122.1	118.5	122.5	115.2	119.6	1.03	8.6	3.4	120.0	1.04	8.9	3.0	16	LJ
Z8DZCM	125.7	119.6	117.8	120.0	120.8	1.29	8.3	3.4	120.5	1.15	8.7	2.4	16	LC
ZEVCM3	116.0	No Data	No Data	No Data	116.0	0.26	3.7	0.0	122.4	1.60	6.2	8.9 H	9	AX
ZEVCM3_AL	109.8 L	110.3	No Data	No Data	110.1	-1.02	5.4	0.4	109.4	-1.42	5.9	2.0	11	AL
ZLWNJZ	124.1	115.7	121.6	115.7	119.3	0.97	8.6	4.3	118.5	0.69	9.3	3.4	11	TB

Consensus (All Labs) Results

Wk Mean	114.82	114.29	114.27	114.22	Month Mean	114.79	Grand Mean	115.49
Avg SDr	7.93	8.20	8.68	8.20	Avg SD	8.23	Avg SD	8.08
SD btwn Labs	5.92	5.40	5.76	5.66	SD btwn Labs	4.64	SD btwn Labs	4.31
Labs Incld	58	56	53	54	SD btwn Wks	3.49	SD btwn Wks	3.71
Labs Excld	2	2	1	1	Labs Incld	59	Labs Incld	59
Labs not Rcvd	1	3	7	6				

Key to Instrument Codes Reported by Participants

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	LC	L&W Autoline (205 Enrollment)
LJ	L&W Bursting Strength Tester J-Type	LZ	L&W (model not specified)
ME	Messmer Automatic Burst Tester ME-06	TB	TMI Monitor/Burst 1000
TP	Technidyne PROFILE/Plus	XX	Instrument make/model not specified by lab

	Weekly Means				Monthly Results				Cumulative Results					
WebCode	Week 1	Week 2	Week 3	Week 4	Mean	CPV	SD	SD Wks	Mean	CPV	SD	SD Wks	Wks	Inst
3VVZRY	71.7	72.1	No Data	No Data	71.9	-0.92	6.0	0.3	74.9	-0.18	4.7	2.8	5	LJ
3VVZRY_AL	70.7	73.9	No Data	No Data	72.3	-0.80	5.0	2.3	73.0	-0.89	6.1	2.0	5	AL
4MZHTG_AL	76.4	77.8	77.4 H	74.5	76.5	0.54	8.1	1.4	77.1	0.66	7.0	1.9	8	AL
6MVMKU_AI	79.1	76.4	76.7	75.6	76.9	0.67	6.2	1.5	75.3	-0.02	6.0	2.4	8	AL
82L4PJ	64.7 *	70.9	70.5	67.8 *	68.5	-2.01 *	4.9	2.8	69.6	-2.21 *	5.3	2.3	8	LZ
8CKYME	73.8	76.8	75.5	72.6	74.7	-0.04	3.5	1.9	74.3	-0.41	4.0	2.2	8	AH
8D2Y3X	77.8	75.8	75.8	75.5	76.2	0.45	5.4	1.1	76.8	0.58	5.6	1.2	8	LC
8FKBJE	75.2	74.6	75.3	75.6	75.2	0.11	4.1	0.4 L	74.7	-0.25	4.3	1.3	8	TP
8KDCKT_AL	73.6	78.3	73.1	73.9	74.7	-0.03	6.5	2.4	75.0	-0.14	6.2	2.2	8	AL
9JX9NF	71.5	72.1	71.2	71.3	71.5	-1.04	5.3	0.4 L	71.2	-1.58	6.6	2.2	8	LA
9LPARJ_AL	71.0	72.2	73.2	72.4	72.2	-0.83	5.1	0.9	72.2	-1.20	5.1	0.9	4	AL
9MKRUK_AL	71.7 H	67.2 *H	67.8 *H	68.9 H	68.9	-1.88	11.7	2.0	70.3	-1.93	12.8	2.9	8	AL
9X42HD	72.6	70.8	74.5	72.4	72.6	-0.70	4.2	1.5	72.6	-1.05	4.9	1.1	8	XX
A38RXN_AL	81.6	81.1	77.3	80.1	80.0	1.65	6.7	1.9	78.9	1.36	5.6	1.7	8	AL
A43BZQ_AL	75.8	75.2	74.0	73.7	74.7	-0.05	6.0	1.0	75.5	0.06	6.2	1.1	8	XX
ALM2YP	79.4	80.6	84.1 X	79.2	80.8	1.91	6.8	2.3	80.2	1.86	5.8	1.7	8	AH
BDNVHT	73.3	75.7	73.5	73.8	74.1	-0.24	3.8	1.1	76.5	0.45	4.1	2.7	8	LJ
BQ9BLT	73.4	75.2	75.6	77.0	75.3	0.15	4.7	1.5	74.8	-0.20	4.8	2.1	8	AH
CG3QXQ_AL	74.9	72.7	72.1	72.4	73.0	-0.57	4.8	1.3	72.8	-0.98	4.6	0.9	8	XX
CU9LGT	69.6	72.5	72.0	73.1	71.8	-0.96	5.5	1.5	72.1	-1.25	5.6	1.6	8	LA
CYKP7A	69.9	71.9	74.4	75.1	72.8	-0.63	5.6	2.4	75.4	0.03	5.4	3.2	8	LJ
EP7MXD_AL	74.8	75.7	72.6	74.9	74.5	-0.10	5.7	1.3	75.6	0.11	5.5	1.6	8	AL
F2DRLL_AL	83.7 *	79.5 H	77.2	80.4	80.2	1.70	8.4	2.7	79.2	1.48	7.3	2.1	8	XX
FB4DQJ	72.4	75.8	73.8	74.0	74.0	-0.26	5.9	1.4	74.0	-0.49	5.1	1.4	8	LZ
FBKRW8	75.2	76.5	75.9	76.2 L	76.0	0.36	3.5	0.6	76.0	0.24	3.5	0.6 L	4	LA
GAP9U7	85.5 *	78.5	80.0 *	77.5	80.4	1.76	6.7	3.6	78.7	1.28	6.6	3.3	8	AX
GQUZAG	78.7	80.9	76.4	74.0	77.5	0.85	4.4	3.0	78.1	1.05	4.7	2.2	8	LA
HWCPAG	69.2	72.1	72.0	74.7	72.0	-0.89	5.1	2.2	73.2	-0.81	5.1	2.4	8	LC
HX89BH	74.2	75.5	72.3	72.9	73.7	-0.35	6.7	1.4	75.5	0.05	6.8	2.2	8	LA
J7GWPG	74.1	73.5	75.0	72.4	73.8	-0.34	4.9	1.1	72.9	-0.95	5.3	1.9	8	LA
KF3FK2_AL	74.1	75.5	73.3	76.5	74.9	0.02	4.9	1.4	74.8	-0.21	5.9	1.4	8	AL
KGTJD9_AL	75.2	70.4	72.4	73.3	72.8	-0.63	7.0	2.0	73.9	-0.57	7.0	2.4	8	AL
KNDKTK	82.3 L	70.1	67.2 *	98.4 X	79.5	1.49	5.3	14.2 H	75.5	0.07	4.0	10.3 H	8	LA
KNT2ND	80.6	79.6	79.8 L	81.8 *	80.5	1.79	4.8	1.0	80.9	2.14 *	4.8	0.9	8	AH
KNT4DH_AL	78.2	No Data	73.9 H	No Data	76.1	0.39	9.3	3.0	74.6	-0.29	7.6	2.4	5	AL

Containerboard Interlaboratory Testing Program
Analysis 207
Bursting Strength (Mullen), 31 lb Linerboard - 31K1
TAPPI Official Test Method T807

Report #661
October 2024

	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
L7APDY_AL	74.2	76.2	73.2	74.2	74.5	-0.11	7.4	1.2	74.5	-0.34	7.4	1.2	4	AL
MR6TRC	74.9	78.2	75.5	75.7	76.0	0.39	5.6	1.5	76.8	0.55	5.2	2.0	8	LA
MR6TRC_AL	75.1	78.7	78.3	78.6	77.7	0.90	5.1	1.7	76.3	0.37	4.6	1.9	8	AL
N2BR3X	77.3	77.5	77.5	78.1	77.6	0.87	5.7	0.3 L	78.1	1.04	5.6	1.7	8	LC
N2BR3X_AL	74.1	77.5	75.7	78.2	76.4	0.49	6.3	1.8	76.4	0.40	6.3	1.3	8	XX
Q8NMWX	74.7	79.2	75.4	76.7	76.5	0.54	7.1	2.0	75.9	0.20	7.1	1.6	8	LA
QW8XV8	77.9	70.4	71.1	73.4	73.2	-0.52	4.9	3.4	76.0	0.27	5.0	5.0	8	ME
RE4KZB_AL	75.9	73.6	72.7	75.7	74.5	-0.11	4.7	1.6	75.7	0.13	4.7	2.4	8	AL
REGCRR	76.6	77.2	76.0	77.9	76.9	0.67	5.0	0.8	76.7	0.52	5.5	1.4	8	AH
TK2ULU	76.3	73.0	74.7	69.8	73.4	-0.44	5.4	2.8	74.6	-0.28	5.8	2.3	8	LC
TK2ULU_AL	69.2	66.1 *	71.5	67.0 *	68.4	-2.02 *	5.6	2.4	72.5	-1.10	6.0	4.6	8	AK
TY6X9A	No Data	No Data	No Data	75.6	75.6	0.24	6.7	0.0	77.6	0.87	8.1	3.0	3	LA
UCQTZT	79.2	79.3	79.0	78.9	79.1	1.36	3.3	0.2 L	79.7	1.69	3.8	0.7 L	8	AH
UQAFAR	78.5	76.5	76.0	77.0	77.0	0.69	5.8	1.1	77.9	0.97	5.6	3.8	8	XX
VRKHT6	77.2	79.2	No Data	No Data	78.2	1.07	5.8	1.4	80.5	1.99 *	4.6	2.3	5	AH
X2VQAU	73.0	73.6	69.2	73.3	72.3	-0.80	4.3	2.1	72.6	-1.04	4.7	1.5	8	XX
X84CXQ_AL	66.4 *H	71.7	68.4 *	71.7	69.6	-1.67	7.9	2.6	70.4	-1.89	7.5	2.4	8	AL
YE4WX2	72.1	74.8	70.2	72.4	72.4	-0.77	5.0	1.9	72.8	-0.99	5.6	1.7	8	LA
Z6A8F4	79.0	80.4	77.2	77.5	78.5	1.17	6.0	1.5	77.8	0.93	6.1	2.4	8	LJ
Z8DZCM	78.5	76.3	76.2	74.9	76.5	0.53	5.8	1.5	77.2	0.70	5.2	2.0	8	LC
ZEVCM3	68.4 L	No Data	No Data	No Data	68.4	-2.03 *	2.5	0.0	76.4	0.39	4.1	6.2 H	4	AX
ZEVCM3_AL	72.7 L	70.3	No Data	No Data	71.5	-1.05	4.6	1.7	72.2	-1.20	4.7	1.1	5	AL
ZLWNJZ	80.7	79.5	106.0 X	80.2	86.6	3.73 X	6.2	13.0 H	86.6	4.31 X	6.2	13.0 H	4	TB

Consensus (All Labs) Results

Wk Mean	75.05	75.20	74.19	74.90	Month Mean	74.81	Grand Mean	75.33
Avg SDr	5.90	5.78	6.14	5.62	Avg SD	5.87	Avg SD	5.84
SD btwn Labs	4.13	3.53	2.95	3.16	SD btwn Labs	3.15	SD btwn Labs	2.61
Labs Incld	57	55	50	51	SD btwn Wks	2.64	SD btwn Wks	2.69
Labs Excld	0	0	2	1	Labs Incld	57	Labs Incld	57
Labs not Rcvd	1	3	6	6				

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program

Analysis 215

Ring Crush, 42 lb Linerboard - 42L1

TAPPI Official Test Method T822

Report #661
October 2024

	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
4B74TK	97.2	97.7 L	97.9 L	96.4	97.3	0.28	1.8	0.7	97.5	0.51	1.5	2.1	14	MZ
4PZTMV	87.9	90.8	88.5	91.0	89.5	-2.00 *	2.6	1.6	90.3	-1.41	2.7	1.5	16	LC
4YBV9W	94.6	90.5	95.8	91.0	93.0	-1.00	2.5	2.6	94.4	-0.31	3.0	2.5	16	LD
69A8JG	101.9	98.7	103.1	98.0 H	100.4	1.18	3.7	2.4	98.5	0.79	3.5	2.5	16	MB
6MVMKU	97.7	97.5	99.8	98.2	98.3	0.56	2.8	1.0	98.2	0.71	3.6	1.4	16	LD
82L4PJ	100.3	102.5	98.7	95.8	99.3	0.86	3.5	2.8	96.5	0.25	3.2	3.9	16	XX
87JMRG	90.1	91.2	89.6	87.5 *	89.6	-1.98 *	3.3	1.6	95.5	-0.02	3.6	5.0	16	EM
8D2Y3X	99.9 L	102.1	98.6	98.7	99.8	1.01	2.8	1.6	98.1	0.68	2.6	2.3	16	LD
8FKBJE	94.3	95.9	97.0	98.2	96.4	0.00	2.5	1.7	94.3	-0.35	2.7	2.5	16	TX
8KDCKT	95.6	96.4	95.4	96.3	95.9	-0.14	2.5	0.5	96.7	0.30	2.1	1.0 L	16	LD
ABJN3V	95.4	96.0	95.9	95.5	95.7	-0.20	1.7	0.3 L	95.8	0.07	1.7	0.6 L	12	MB
ALM2YP	97.3	95.5	95.8	97.3	96.4	0.02	3.4	1.0	95.3	-0.07	2.8	1.7	16	LD
BDNVHT	94.8	96.8	96.2	96.6	96.1	-0.08	2.9	0.9	95.7	0.05	2.5	0.7 L	16	LD
BGN6QA	91.5	93.5	93.5	92.1	92.7	-1.09	3.2	1.0	93.2	-0.63	2.9	1.7	16	LC
CG3QXQ	94.3	95.6	93.7	95.6	94.8	-0.47	2.6	0.9	94.6	-0.26	2.6	1.2 L	16	LD
CU9LGT	89.9	90.8	91.9	93.6	91.6	-1.41	3.6	1.6	91.7	-1.04	3.6	1.9	16	LD
DCLNRL	99.3	97.2	101.0	99.2	99.2	0.82	3.5	1.6	99.3	0.99	3.7	2.4	16	LD
F2DRLL	68.3 XH	75.2 XH	73.0 XH	101.1	79.4	-4.97 X	8.0	14.8 H	87.8	-2.08 *	6.9	16.4 H	16	LZ
FVCFPN	102.9	104.4	101.9	100.4	102.4	1.76	2.4	1.7	102.0	1.73	2.6	1.5	16	LD
GAP9U7	84.7 *H	81.9 *H	84.1 *L	82.8 X	83.4	-3.81 X	6.1	1.2	86.1	-2.54 *	5.3	3.0	16	LD
GQUZAG	100.1 H	96.5 H	103.1	102.1	100.5	1.19	5.4	2.9	98.8	0.86	4.6	2.5	16	LC
HC9K8G	100.9	103.4	104.0 H	100.0	102.1	1.67	4.0	1.9	100.1	1.23	3.9	3.4	16	TU
HWCPAG	95.8	94.6	94.6	93.6	94.7	-0.50	3.0	0.9	94.9	-0.19	3.6	1.7	16	LD
J7GWPG	96.9	96.4	96.0	95.0	96.1	-0.09	2.5	0.8	95.4	-0.04	2.7	1.1 L	16	LD
JLU7PK	94.8 L	93.9	94.6	94.5	94.5	-0.56	1.7	0.4	93.9	-0.44	1.6	0.7 L	12	LZ
KF3FK2	67.1 XH	66.9 XH	67.9 XH	67.1 XH	67.3	-8.53 X	10.0	0.4	67.1	-7.67 X	9.1	1.7	16	LD
KNDKTK	96.7	90.1	93.1	95.1 L	93.8	-0.77	2.3	2.8	93.0	-0.69	1.4	1.9	16	TU
KNT2ND	97.7	95.4	98.6	97.7	97.3	0.28	2.9	1.3	95.9	0.09	3.0	1.8	16	LG
KNT4DH	96.7	95.7	98.0	95.0	96.4	-0.01	3.3	1.3	96.2	0.17	3.1	1.1 L	16	LC
L7APDY	95.5	99.7	96.9	96.8	97.2	0.24	3.6	1.8	94.5	-0.28	3.8	3.6	8	LD
MR6TRC	97.2	93.3	91.4	94.5	94.1	-0.67	2.8	2.4	96.1	0.13	2.8	2.0	16	LD
N2BR3X	89.2	89.6 H	84.4 *H	92.6 H	89.0	-2.18 *	4.9	3.4 H	87.8	-2.10 *	3.9	3.3	16	LD
P93RUV	85.1 *	80.9 *H	82.6 *	88.8 *	84.4	-3.52 X	4.4	3.4 H	88.0	-2.05 *	3.8	3.3	16	EM
Q8NMWX	96.9	95.3	96.9	97.1	96.5	0.04	2.0	0.9	95.8	0.06	2.3	3.5	16	LD
QW8XV8	104.7 H	108.6 *	106.3	108.4 X	107.0	3.11 X	4.1	1.8	102.8	1.95 *	4.9	6.6	16	LX

Containerboard Interlaboratory Testing Program
Analysis 215
Ring Crush, 42 lb Linerboard - 42L1
TAPPI Official Test Method T822

Report #661
October 2024

	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
R8JKJY	101.4	101.7	99.9	100.7	100.9	1.33	2.4	0.8	100.4	1.30	2.7	1.0 L	16	LD
REGCRR	96.6	95.6	97.8	98.1	97.0	0.19	2.4	1.1	97.1	0.41	2.8	1.1 L	16	LC
UCQTZT	81.2 X	81.7 *	81.3 *	81.2 X	81.4	-4.40 X	2.0	0.2 L	94.5	-0.29	3.2	13.7 H	16	LD
X3AHZP	99.2	96.7	98.0	96.4	97.6	0.35	1.8	1.3	97.8	0.61	1.6	2.4	14	MZ
XQDAGM	97.2 L	96.6	96.6	100.8	97.8	0.42	2.4	2.0	95.9	0.08	2.4	2.1	16	TH
Z8DZCM	100.2	102.8	100.4	102.4	101.5	1.49	3.3	1.3	99.1	0.96	3.3	2.8	16	MB
ZLWNJZ	94.9	96.3	94.6	92.5	94.6	-0.53	2.9	1.6	98.8	0.86	2.8	11.2 H	11	LD

Consensus (All Labs) Results

Wk Mean	96.08	95.50	95.68	96.22	Month Mean	96.38	Grand Mean	95.56
Avg SDr	3.40	3.28	3.01	2.90	Avg SD	3.02	Avg SD	3.28
SD btwn Labs	4.52	5.77	5.66	3.52	SD btwn Labs	3.42	SD btwn Labs	3.72
Labs Incld	39	40	40	38	SD btwn Wks	1.69	SD btwn Wks	4.50
Labs Excld	3	2	2	4	Labs Incld	36	Labs Incld	41
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	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	MZ	Messmer Buchel (model not specified)
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

	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
4B74TK	73.1	73.6	75.5 L	75.4	74.4	0.38	1.8	1.2	74.7	0.66	1.5	0.9	7	MZ
4PZTMV	68.6 *	68.0	68.4	70.3	68.8	-1.90	2.8	1.0	68.7	-1.55	2.7	0.8	8	LC
4YBV9W	75.6	71.6	67.7	69.9	71.2	-0.93	2.5	3.3	72.1	-0.30	2.6	2.5	8	LD
69A8JG	73.1 H	71.8	74.8	72.9	73.2	-0.13	4.4	1.2	73.9	0.38	3.9	1.3	8	MB
6MVMKU	74.7	73.5	76.3	75.3	75.0	0.61	3.2	1.2	74.2	0.48	3.0	1.8	8	LD
82L4PJ	73.6	73.3	72.6	73.3	73.2	-0.11	2.6	0.4 L	73.2	0.10	2.7	1.1	8	LZ
87JMRG	68.1 *	70.5	70.3	68.4 *	69.3	-1.70	3.5	1.2	71.7	-0.44	3.0	2.8	8	EM
8D2Y3X	74.3	78.9	72.7	75.1	75.2	0.72	3.0	2.6	75.1	0.80	2.9	1.7	8	LD
8FKBJE	72.2 L	73.4	74.2	77.2	74.2	0.31	2.3	2.1	74.1	0.43	2.6	1.7	8	TX
8KDCKT	75.2	74.8	72.6	75.7	74.6	0.44	2.4	1.4	74.4	0.55	2.2	1.0	8	LD
ABJN3V	81.6 X	81.9 *	81.7 *	81.5 *	81.7	3.34 X	1.7	0.1 L	82.6	3.58 X	1.7	1.0	8	MB
ALM2YP	74.5	73.2	73.0	74.6	73.8	0.14	2.5	0.8	72.5	-0.14	2.5	1.5	8	LD
BDNVHT	74.6	74.2	74.1	74.6	74.4	0.37	2.8	0.2 L	74.8	0.70	2.5	0.6 L	8	LD
BGN6QA	72.8	70.4	73.1	71.6	72.0	-0.62	3.1	1.2	71.8	-0.40	2.8	1.0	8	LC
CG3QXQ	72.9	74.7	72.7	74.0	73.6	0.05	2.0	0.9	73.0	0.05	2.0	0.9	8	LD
CU9LGT	68.4 *	68.4 H	70.9	69.0	69.2	-1.75	3.9	1.2	69.7	-1.20	3.7	1.3	8	LD
DCLNRL	73.4	70.1	71.7	72.6	71.9	-0.63	4.0	1.4	71.9	-0.36	4.0	1.4	4	LC
F2DRLL	55.8 XH	79.8	77.7	77.6	72.7	-0.32	4.3	11.3 H	66.6	-2.34 *	5.9	11.7 H	8	LZ
FVCFPN	76.7	80.2	77.0	77.3	77.8	1.76	2.1	1.6	77.8	1.81	2.5	1.1	8	LD
GAP9U7	62.5 X	61.6 X	66.2 *H	65.1 X	63.9	-3.92 X	5.2	2.1	62.9	-3.70 X	5.4	1.8	8	LD
GQUZAG	74.3	75.7	78.2	77.8	76.5	1.23	3.4	1.8	76.1	1.17	2.8	2.2	8	LC
HC9K8G	76.1	75.5	81.5 *	79.0	78.0	1.84	2.6	2.8	77.1	1.55	3.8	2.4	8	TU
HWCPAG	72.4	75.3	72.8	75.3 H	74.0	0.20	3.7	1.6	72.1	-0.28	3.6	2.4	8	LD
J7GWPG	74.0	72.8 L	73.7	73.9	73.6	0.04	2.0	0.5	73.0	0.05	2.2	1.0	8	LD
JLU7PK	70.9 L	70.7	71.5	71.2	71.1	-0.98	1.7	0.3 L	71.2	-0.62	1.7	0.7 L	8	LZ
KF3FK2	51.4 XH	51.3 XH	51.8 XH	50.8 XH	51.3	-9.02 X	7.6	0.4	51.1	-8.08 X	8.1	0.4 L	8	LD
KNDKTK	74.1	68.2	67.8	74.3	71.1	-0.97	2.1	3.6	67.4	-2.06 *	1.6	4.7	8	TU
KNT2ND	75.2 L	72.0	73.2	74.2	73.6	0.07	2.5	1.4	73.1	0.07	2.7	1.2	8	LG
KNT4DH	72.6	72.2	73.2	71.9	72.5	-0.41	3.4	0.6	72.8	-0.03	3.3	1.4	8	LC
L7APDY	73.9	75.2	73.0	71.3 H	73.4	-0.04	3.5	1.6	73.4	0.18	3.5	1.6	4	LD
MR6TRC	77.0	72.2	74.0	74.0	74.3	0.33	2.7	2.0	74.7	0.68	2.7	1.7	8	LD
N2BR3X	70.1	67.3	63.8 *H	72.4	68.4	-2.07 *	4.0	3.7	68.5	-1.62	3.8	2.8	8	LD
P93RUV	65.1 X	65.9 *	61.5 X	64.1 X	64.2	-3.80 X	2.8	1.9	66.1	-2.51 *	3.1	2.5	8	EM
Q8NMWX	73.4	72.5	76.4	77.1	74.8	0.54	2.1	2.2	74.7	0.68	2.7	1.5	8	LD
QW8XV8	77.1 H	83.3 *	80.4	77.8	79.6	2.51 *	4.9	2.8	76.3	1.25	4.8	7.7 H	8	LX

Containerboard Interlaboratory Testing Program
Analysis 217
Ring Crush, 31 lb Linerboard - 31K1
TAPPI Official Test Method T822

Report #661
October 2024

	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
R8JKJY	74.9	75.8	75.6	75.5	75.4	0.80	2.4	0.4 L	75.2	0.84	2.2	0.5 L	8	LD
REGCRR	73.5	74.7	73.7	75.3	74.3	0.32	2.6	0.8	73.3	0.13	2.6	1.4	8	LC
UCQTZT	71.4	71.4	71.7	71.3	71.4	-0.84	2.4	0.2 L	72.9	-0.01	2.8	1.6	8	LD
X3AHZP	73.0	73.6	75.8 L	75.7	74.5	0.42	2.1	1.4	74.7	0.67	1.6	1.1	7	XX
XQDAGM	72.0	71.9	73.4	71.2	72.1	-0.56	3.1	0.9	71.8	-0.41	2.6	0.8	8	TH
Z8DZCM	74.2	76.7	76.4	77.1	76.1	1.07	2.4	1.3	75.7	1.05	2.6	1.1	8	MB
ZLWNJZ	74.2	74.3	71.9	71.4	73.0	-0.21	3.2	1.5	73.0	0.02	3.2	1.5	4	LC

Consensus (All Labs) Results

Wk Mean	73.41	73.48	73.52	74.20	Month Mean	73.48	Grand Mean	72.91
Avg SDr	3.24	2.57	3.16	2.89	Avg SD	2.99	Avg SD	3.02
SD btwn Labs	2.18	3.77	3.74	2.90	SD btwn Labs	2.46	SD btwn Labs	2.70
Labs Incld	37	40	40	39	SD btwn Wks	2.51	SD btwn Wks	2.82
Labs Excld	5	2	2	3	Labs Incld	38	Labs Incld	39
Labs not Rcvd	0	0	0	0				

Key to Instrument Codes Reported by Participants

EM	Emerson 1200	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	MZ	Messmer Buchel (model not specified)
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

	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
3UZHQX	24.8	24.5	24.3	23.1 L	24.2	-0.93	1.2	0.7	23.9	-0.95	1.2	0.5 L	16	LW
3VVZRY	23.4	23.1	No Data	No Data	23.3	-1.89	1.2	0.2	23.0	-1.80	1.4	0.7	10	LH
3VVZRY_AL	23.0	22.5	* No Data	No Data	22.8	-2.42 *	1.6	0.4	22.6	-2.19 *	1.4	1.3	10	AL
4B74TK	24.8 L	24.8	25.4	25.7 L	25.2	0.13	0.9	0.5	24.9	-0.02	0.7	0.7	14	LZ
4MZHTG_AL	24.4	26.1	24.8	24.7	25.0	-0.07	1.6	0.8	24.5	-0.41	1.5	1.0	16	AL
4PZTMV	23.8	23.8	23.7	23.3	23.6	-1.50	1.6	0.2	23.5	-1.40	1.5	0.4 L	16	LZ
69A8JG	25.9	25.6	23.5	24.4	24.9	-0.22	1.6	1.1	24.7	-0.15	1.6	0.9	16	LA
6MVMKU_AI	25.6	25.8	24.2	25.7	25.3	0.27	1.6	0.8	25.6	0.70	1.7	0.5 L	16	AL
82L4PJ	25.0 H	24.3	24.5	24.6	24.6	-0.52	2.0	0.3	24.4	-0.46	1.7	0.8	16	LZ
8D2Y3X	25.4	25.3	25.8	26.1	25.6	0.60	1.3	0.4	25.1	0.15	1.5	0.8	16	LA
8KDCKT_AL	24.8 L	25.0	25.6 L	26.4	25.5	0.41	1.1	0.7	25.0	0.11	1.4	0.6	16	AL
9JX9NF	25.5	26.0	26.5	25.2	25.8	0.75	1.8	0.6	26.1	1.20	1.8	0.5 L	16	LH
9LPARJ_AL	25.4	25.0	26.3	26.5	25.8	0.73	1.4	0.7	25.5	0.55	1.5	0.6 L	16	AL
9MKRUK_AL	43.5 XL	43.0 XL	43.9 XL	43.3 XL	43.4	19.14 X	0.0	0.4	242.1	210.45X	0.0	293.9H	12	AL
A38RXN_AL	23.2	24.4	24.0	22.9	23.7	-1.47	1.5	0.7	23.8	-1.09	1.5	1.1	16	AL
A43BZQ_AL	26.8	25.4	26.1 L	25.5 L	25.9	0.91	0.9	0.7	25.2	0.26	1.4	1.0	16	XX
ALM2YP	24.7	24.9	24.8	24.6	24.8	-0.33	1.4	0.1	24.5	-0.40	1.6	0.4 L	16	LU
CG3QXQ_AL	24.1	24.0	23.6	24.7	24.1	-1.02	1.5	0.5	24.1	-0.75	1.6	0.5 L	16	XX
CU9LGT	24.8	24.7	24.6	24.8	24.7	-0.36	1.4	0.1 L	25.0	0.06	1.5	0.4 L	16	LY
EP7MXD_AL	26.6	26.4	25.4	26.8	26.3	1.30	1.6	0.6	25.2	0.25	1.7	0.9	16	AL
F2DRLL_AL	23.7	38.6 XH	38.1 X	39.2 XH	34.9	10.26 X	2.4	7.5 H	27.6	2.64 *	2.4	6.8 H	16	AL
FB4DQJ	20.5 X	21.1 X	20.1 X	22.6 *H	21.1	-4.14 X	2.0	1.1	24.1	-0.82	3.6	3.2	16	LY
FBKRW8	25.0	24.8	25.2	25.0	25.0	-0.07	1.9	0.2	24.4	-0.47	1.9	0.6 L	12	LZ
FDBTZB	26.1	25.6	25.4	26.0	25.8	0.73	1.6	0.3	26.3	1.31	1.5	0.5 L	16	LH
FVCFPN	23.6	24.4	27.1	27.6 *	25.7	0.64	1.5	2.0 H	24.5	-0.39	1.5	1.2	16	LH
GAP9U7	24.4 L	24.1 L	24.7 L	24.8 L	24.5	-0.58	0.0	0.3	24.9	-0.01	0.0	0.3 L	16	LH
GQUZAG	25.2	24.6	25.4	26.1	25.3	0.27	1.5	0.6	24.6	-0.32	1.5	0.6 L	16	LA
HC9K8G	27.5	26.4	27.2	26.6 H	26.9	1.94 *	1.9	0.5	26.0	1.09	1.6	0.8	16	LA
HWCPAG	27.8 *	28.2 XH	27.9 *	29.1 XL	28.2	3.32 X	1.9	0.6	26.5	1.58	1.7	1.2	16	LA
HX89BH	26.2	25.1	25.5	25.5	25.6	0.52	1.6	0.5	25.4	0.49	2.3	0.6 L	16	LY
J7GWPG	27.7 *	24.5	24.5	24.6	25.3	0.26	1.8	1.6	24.7	-0.20	1.5	1.0	16	LA
JLU7PK	12.1 XL	12.2 X	12.5 XL	12.4 XL	12.3	-13.32 X	0.8	0.2	26.8	1.89	0.6	15.6 H	8	XX
KF3FK2	25.6	25.1	24.8	25.2	25.2	0.10	1.5	0.3	23.9	-0.94	1.7	0.9	16	LY
KF3FK2_AL	24.2	24.2	23.8	24.3	24.1	-0.99	1.8	0.2	23.9	-0.96	1.6	0.4 L	16	AL
KGTJD9_AL	29.9 X	30.4 X	30.3 X	30.3 XH	30.2	5.38 X	2.1	0.2	29.9	4.85 X	2.0	0.9	16	AL

	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
KNDKTK	22.4 *	19.2 X	22.6 *H	23.8 L	22.0	-3.20 X	1.8	2.0 H	22.1	-2.71 *	1.5	1.2	16	ID
KNT2ND	26.3 L	25.4 L	26.2 L	24.0 L	25.5	0.43	0.0	1.1	25.5	0.55	1.6	0.7	16	BK
KNT4DH	24.6	25.4 L	20.9 X	No Data	23.6	-1.51	1.1	2.4 H	24.2	-0.64	1.8	1.3	12	LU
KWM97J	26.3	26.6	26.5	26.7	26.5	1.52	1.4	0.1 L	25.8	0.89	1.6	0.9	16	LZ
L7APDY_AL	24.4	23.3	22.5 *	23.7	23.5	-1.66	1.7	0.8	23.5	-1.38	1.7	0.8	4	AL
MD7MZ2	22.8	26.8	27.5 *	27.4	26.2	1.13	1.6	2.2 H	26.4	1.42	1.6	1.2	16	LA
MR6TRC_AL	24.7	25.4	24.5	25.3	25.0	-0.11	1.4	0.5	24.9	-0.01	1.6	0.4 L	16	AL
N2BR3X	23.1	22.8 *	24.8 L	24.6	23.8	-1.31	1.4	1.0	23.6	-1.28	1.5	0.7	16	LZ
N2BR3X_AL	41.0 XL	40.1 XL	39.9 XL	40.3 XL	40.3	15.92 X	0.0	0.5	39.8	14.45 X	0.0	0.8	16	AL
Q8NMWX	24.8	24.5	24.2	24.9	24.6	-0.50	1.5	0.3	24.7	-0.17	1.6	0.4 L	16	LY
QNXAH9	25.0	25.5	25.2	24.8	25.1	0.06	1.5	0.3	24.9	-0.04	1.5	0.7	16	LH
QW8XV8	25.6	26.4	24.1 H	29.0 XH	26.3	1.24	3.9	2.0 H	26.0	1.09	3.2	1.6	16	LZ
QWPRX3	24.9 H	24.3	24.3	24.1	24.4	-0.68	1.8	0.3	24.6	-0.32	2.5	0.7	15	LH
RE4KZB	23.9	25.1	24.8	24.4	24.5	-0.55	1.7	0.5	24.2	-0.71	1.5	0.6 L	16	LU
REGCRR	24.7	24.4	24.9	24.4	24.6	-0.50	1.4	0.3	24.5	-0.39	1.5	0.5 L	16	LU
TK2ULU_AL	24.8	24.7	22.1 *	23.8	23.9	-1.27	1.3	1.3	24.7	-0.22	1.3	1.3	8	AK
UCQTZT	28.3 *	29.0 X	28.7 X	27.7 *	28.4	3.51 X	1.2	0.6	31.7	6.62 X	3.4	4.3	16	XX
UV3KZA	24.6	22.2 *	24.7	24.9	24.1	-1.01	2.0	1.3	24.6	-0.32	1.7	1.1	16	LA
V9LMXT	25.4	26.0	25.8	23.8	25.2	0.18	1.6	1.0	26.5	1.51	1.7	1.2	16	LH
VRKHT6	26.6	27.1	No Data	No Data	26.9	1.86	2.0	0.3	26.9	1.93	1.8	0.6 L	13	LU
WZNC3N	25.5	26.1	25.1 L	26.4	25.8	0.76	1.1	0.6	24.7	-0.23	1.2	1.3	16	XX
X2VQAU	25.8	25.2	25.5	25.8 H	25.6	0.53	1.8	0.3	25.5	0.56	1.6	1.0	16	LH
X3AHZP	24.4 L	24.4	24.8	24.9 L	24.6	-0.45	0.9	0.3	24.7	-0.20	0.7	0.7	14	LZ
X84CXQ_AL	25.7	25.1	24.4	24.6	25.0	-0.12	1.5	0.6	24.3	-0.61	1.4	0.8	16	AL
Z6A8F4	25.6	25.8 H	24.9	25.1	25.3	0.27	2.2	0.4	25.2	0.33	2.0	0.8	16	LH
Z8DZCM	26.8	26.2	27.1 L	27.6 *	26.9	1.94 *	1.4	0.6	26.0	1.11	1.7	1.3	16	LA
ZBZKGR	25.1	25.6	24.7	25.3	25.2	0.10	1.6	0.4	25.2	0.30	1.6	0.6 L	16	LU
ZEVCM3	25.8	25.0	No Data	No Data	25.4	0.32	1.8	0.5	25.5	0.59	1.6	0.5 L	11	LU
ZEVCM3_AL	26.4	27.3 *	No Data	No Data	26.9	1.86	1.7	0.6	25.0	0.10	1.5	1.2	11	AL
ZLWNJZ	26.0	24.6	25.3	25.4	25.3	0.26	2.0	0.6	25.2	0.32	2.0	0.8	11	LW

Containerboard Interlaboratory Testing Program

Analysis 223

STFI, 42 lb Linerboard - 42L1

TAPPI Official Test Method T826

Consensus (All Labs) Results

Wk Mean	25.15	25.02	25.02	25.12	Month Mean	25.06	Grand Mean	24.90
Avg SDr	1.65	1.52	1.61	1.56	Avg SD	1.64	Avg SD	1.69
SD btwn Labs	1.25	1.08	1.21	1.20	SD btwn Labs	0.96	SD btwn Labs	1.03
Labs Incld	60	56	52	52	SD btwn Wks	0.84	SD btwn Wks	2.37
Labs Excld	5	9	8	7	Labs Incld	56	Labs Incld	61
Labs not Rcvd	0	0	5	6				

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 (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)
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
3UZHQX	20.0	19.4	20.3	20.1	19.9	-0.62	1.3	0.4	19.7	-0.70	1.2	0.4	8	LW
3VVZRY	19.3	19.2	No Data	No Data	19.2	-1.60	1.2	0.1	18.6	-2.32 *	1.2	0.6	5	LH
3VVZRY_AL	20.1	18.9 L	No Data	No Data	19.5	-1.21	1.0	0.8	19.0	-1.79	1.3	0.9	5	AL
4B74TK	20.0	19.6	20.7 L	20.1	20.1	-0.44	0.9	0.4	20.2	0.07	0.8	0.4	7	LZ
4MZHTG_AL	20.3	20.5	19.1	20.3	20.1	-0.46	1.5	0.6	20.0	-0.34	1.4	0.6	8	AL
4PZTMV	19.7	19.1	19.6	19.5	19.5	-1.26	1.5	0.3	19.1	-1.61	1.4	0.4	8	LZ
69A8JG	20.6	19.7 L	20.2	20.0	20.1	-0.39	1.4	0.4	20.0	-0.21	1.5	0.5	8	LA
6MVMKU_AI	20.1	20.8	21.0	19.2	20.3	-0.19	1.5	0.8	20.6	0.58	1.5	0.7	8	AL
82L4PJ	19.4 L	20.2	18.9	19.7	19.6	-1.13	1.4	0.5	19.3	-1.35	1.2	0.5	8	XX
8D2Y3X	20.4	20.4	21.5	20.3	20.6	0.31	1.4	0.6	20.4	0.33	1.4	0.5	8	LA
8KDCKT_AL	21.0	21.5	20.1	21.2	21.0	0.75	1.1	0.6	20.4	0.34	1.2	0.7	8	AL
9JX9NF	21.0	21.8 H	21.4	22.2 H	21.6	1.61	2.3	0.5	21.3	1.71	1.9	0.5	8	LH
9LPARJ_AL	19.8	20.8	20.9	20.8	20.6	0.24	1.4	0.5	20.6	0.69	1.3	0.4	8	AL
9MKRUK_AL	36.9 XL	37.1 XL	36.7 XL	35.9 XL	36.6	21.75 X	0.0	0.5	54.2	51.04 X	0.0	18.9 H	8	AL
A38RXN_AL	20.8	20.6	19.9	19.7	20.2	-0.24	1.3	0.5	19.5	-1.10	1.4	1.0	8	XX
A43BZQ_AL	21.1 H	20.7	21.4 L	21.2	21.1	0.95	1.4	0.3	20.9	1.11	1.2	0.8	8	XX
ALM2YP	19.7	20.0	20.3	19.9	20.0	-0.60	1.2	0.3	19.9	-0.46	1.3	0.3	8	LU
CG3QXQ_AL	19.7	20.2	19.9	19.9	19.9	-0.64	1.3	0.2	19.5	-1.08	1.2	0.5	8	XX
CU9LGT	20.2	20.7	20.2	20.2	20.3	-0.15	1.4	0.2	20.3	0.17	1.3	0.3	8	LY
EP7MXD_AL	21.8	20.8	20.4	21.9	21.2	1.12	1.4	0.8	20.7	0.80	1.5	0.9	8	AL
F2DRLL_AL	30.8 XH	33.0 X	19.4	34.0 X	29.3	11.91 X	1.4	6.8 H	24.0	5.71 X	1.2	7.2 H	8	XX
FB4DQJ	16.2 X	15.9 X	17.2 X	16.9 X	16.6	-5.15 X	1.1	0.6	17.7	-3.73 X	1.0	1.4	8	LZ
FBKRW8	20.2	19.4	19.9	19.8	19.8	-0.79	1.5	0.3	19.8	-0.56	1.5	0.3	4	LA
FDBTZB	21.1	20.7	20.4	20.7	20.7	0.46	1.1	0.3	20.4	0.39	1.2	0.4	8	LH
FVCFPN	19.2	19.5	20.2	20.8	19.9	-0.65	1.2	0.7	19.9	-0.42	1.4	0.5	8	LH
GAP9U7	20.5 L	20.4 L	20.3 L	20.8 L	20.5	0.15	0.0	0.2	20.3	0.23	0.0	0.3	8	LH
GQUZAG	20.0	19.8 H	20.4 L	20.2	20.1	-0.40	1.5	0.3	19.9	-0.45	1.4	0.3	8	LA
HC9K8G	22.1 L	20.9 L	21.8	20.9	21.4	1.37	1.1	0.6	20.8	0.84	1.1	1.0	8	LA
HWCPAG	19.9	21.3 L	20.9	21.9 L	21.0	0.78	1.0	0.9	20.9	1.03	1.2	0.9	8	LA
HX89BH	21.1	20.3	21.0	20.7	20.8	0.48	1.4	0.4	20.5	0.46	1.5	0.4	8	LU
J7GWPG	20.0	19.0 L	19.3	19.4	19.4	-1.30	1.1	0.4	19.7	-0.74	1.2	0.5	8	LW
JLU7PK	10.0 XL	10.0 XL	9.7 XL	9.9 XL	9.9	-14.06 X	0.4	0.1	9.9	-15.46 X	0.4	0.1 L	4	ID
KF3FK2	20.5	20.0	20.5	20.0	20.2	-0.22	1.6	0.3	19.4	-1.26	1.5	1.0	8	LU
KF3FK2_AL	20.0	20.7	19.9	20.1	20.2	-0.31	1.5	0.4	19.8	-0.57	1.3	0.6	8	AL
KGTJD9_AL	24.6 X	24.4 X	23.7 X	24.3 X	24.2	5.13 X	1.4	0.4	24.0	5.66 X	1.5	0.5	8	AL

	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
KNDKTK	18.0 *	15.9 X	16.5 X	17.3 X	16.9	-4.66 X	1.5	0.9	17.2	-4.45 X	1.5	0.7	8	ID
KNT2ND	20.9 L	20.2 L	23.0 XL	23.0 *L	21.8	1.84	0.0	1.4 H	20.8	0.88	0.0	1.4	8	LW
KNT4DH	19.8	19.2	19.2	No Data	19.4	-1.35	1.3	0.3	19.8	-0.66	1.6	0.6	6	LU
KWM97J	21.3	20.9	21.3	21.0	21.1	0.96	1.4	0.2	21.0	1.15	1.4	0.3	8	XX
L7APDY_AL	18.0 *	18.9	18.8 L	19.1	18.7	-2.28 *	1.1	0.5	18.7	-2.24 *	1.1	0.5	4	AL
MD7MZ2	20.6	20.9	20.9 L	21.2	20.9	0.68	1.3	0.3	21.2	1.51	1.5	0.6	8	LA
MR6TRC_AL	20.4	20.6	20.4	21.8 H	20.8	0.53	1.9	0.7	20.6	0.69	1.7	0.6	7	AL
N2BR3X	20.0	19.5	19.0	19.7	19.5	-1.17	1.6	0.4	19.1	-1.58	1.5	0.5	8	LZ
N2BR3X_AL	33.9 XL	32.6 XL	35.1 XL	33.5 XL	33.8	17.92 X	0.0	1.0	33.4	19.78 X	0.0	1.3	8	AL
Q8NMWX	20.3	19.6	20.7	19.5	20.0	-0.51	1.5	0.6	20.2	0.03	1.5	0.5	8	LY
QNXAH9	20.7 L	20.0	20.4	20.4	20.4	-0.04	1.3	0.3	20.3	0.13	1.3	0.4	8	LH
QW8XV8	21.2	20.6	20.8	20.7	20.8	0.56	1.5	0.2	21.0	1.22	2.2	0.3	8	LZ
QWPRX3	20.5	19.7	19.3	19.0	19.6	-1.03	1.4	0.6	19.6	-0.83	1.6	0.4	8	LH
RE4KZB	19.1 L	21.2	20.1	19.6	20.0	-0.52	1.3	0.9	19.9	-0.50	1.1	0.7	8	LU
REGCRR	19.8	19.7 L	19.8	20.2	19.9	-0.70	1.2	0.2	19.9	-0.42	1.3	0.2 L	8	LU
TK2ULU_AL	20.8	20.1	19.9	20.5	20.3	-0.10	1.0	0.4	20.0	-0.28	1.2	0.6	8	AK
UCQTZT	21.6 H	22.4 *H	21.3 H	22.6 *H	22.0	2.11 *	3.9	0.6	22.2	3.02 X	4.3	0.7	8	XX
UV3KZA	19.5 L	20.3	18.2 *	22.3 L	20.1	-0.44	1.1	1.7 H	20.9	0.99	1.0	2.2 H	8	LA
V9LMXT	20.6	20.6	20.4	19.0	20.2	-0.33	1.3	0.8	20.9	1.11	1.4	1.0	8	LH
VRKHT6	22.2 *	21.2	No Data	No Data	21.7	1.72	1.6	0.7	21.1	1.43	1.5	0.7	5	LU
WZNC3N	21.1	20.4	20.9	19.6 L	20.5	0.09	1.3	0.7	19.9	-0.36	1.2	0.7	8	XX
X2VQAU	21.5	22.0	21.1	21.4	21.5	1.47	1.3	0.4	21.1	1.29	1.4	0.7	8	LH
X3AHZP	19.8	17.8 XL	20.1 L	19.7 L	19.3	-1.43	0.9	1.0	19.7	-0.73	0.7	0.9	7	LZ
X84CXQ_AL	19.3	19.6	19.3 L	20.2	19.6	-1.07	1.2	0.4	19.4	-1.17	1.2	0.4	8	AL
Z6A8F4	21.1	20.8	21.3	21.0	21.0	0.84	1.5	0.2	21.0	1.29	1.6	1.1	8	LH
Z8DZCM	21.1	21.5	21.2	20.3	21.0	0.86	1.7	0.5	20.8	0.92	1.5	0.4	8	LA
ZBZKGR	20.4	19.8	21.0	20.8	20.5	0.12	1.5	0.5	20.3	0.22	1.5	0.4	8	LU
ZEVCM3	20.6	20.5	No Data	No Data	20.6	0.24	1.4	0.1	20.2	0.01	1.4	0.4	5	LU
ZEVCM3_AL	22.3 *	22.0 *	No Data	No Data	22.1	2.31 *	1.4	0.2	20.6	0.65	1.4	1.5 H	5	AL
ZLWNJZ	21.6	22.1 *H	19.4 H	21.5	21.2	1.02	1.9	1.2	21.2	1.47	1.9	1.2	4	LW

Containerboard Interlaboratory Testing Program

Analysis 225

STFI, 31 lb Linerboard - 31K1

TAPPI Official Test Method T826

Consensus (All Labs) Results

Wk Mean	20.39	20.37	20.27	20.49	Month Mean	20.40	Grand Mean	20.19
Avg SDr	1.42	1.46	1.49	1.51	Avg SD	1.46	Avg SD	1.38
SD btwn Labs	0.88	0.84	0.80	0.94	SD btwn Labs	0.75	SD btwn Labs	0.67
Labs Incld	59	57	53	52	SD btwn Wks	0.60	SD btwn Wks	0.73
Labs Excld	6	8	7	7	Labs Incld	58	Labs Incld	57
Labs not Rcvd	0	0	5	6				

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
ID	IDM Compression Tester	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)	XX	Instrument make/model not specified by lab

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3VVZRY_AL	234.2	-0.06	20.48		243.0	0.36	7.78	4	AL
4MZHTG_AL	236.1	-0.02	14.75		248.8	0.47	16.59	4	AL
4PZTMV	278.7	0.89	30.02		277.0	1.04	11.31	4	EV
69A8JG	285.7	1.04	41.75		279.2	1.09	8.78	4	LA
6MVMKU	226.9	-0.21	13.35		233.2	0.16	10.61	4	LS
6MVMKU_AL	254.9	0.38	39.32		264.7	0.80	16.53	4	AL
9JX9NF	268.9	0.68	27.10		262.3	0.75	6.61 L	4	EV
9LPARJ_AL	263.9	0.58	19.26		263.2	0.77	5.44 L	4	AL
9MKRUK_AL	4.1	-4.94 X	0.42	L	53.7	-3.48 X	64.78	3	XX
A38RXN_AL	280.1	0.92	23.34		206.2	-0.39	61.57	4	AL
A43BZQ_AL	174.6	-1.32	26.72		161.5	-1.29	11.88	4	AL
ALM2YP	282.2	0.96	20.89		282.0	1.15	5.84 L	4	EV
CU9LGT	270.5	0.71	22.90		249.0	0.48	34.13	4	EV
EP7MXD_AL	0.4	-5.02 X	0.02	L	211.0	-0.29	140.63 H	4	AL
F2DRLL_AL	130.1	-2.27 *	26.77		136.8	-1.79	9.64	4	AL
FB4DQJ	233.5	-0.07	16.70		225.0	-0.01	6.58 L	4	LS
FBKRW8	223.7	-0.28	16.32		225.6	0.00	2.69	2	LS
HC9K8G	279.9	0.91	37.43		251.4	0.53	45.46	4	LA
HWCPAG	236.3	-0.01	14.03		203.1	-0.45	49.74	4	LA
J7GWPG	282.4	0.97	46.14	H	241.6	0.33	48.05	4	LA
KF3FK2	240.7	0.08	23.13		221.8	-0.07	35.85	4	XX
KF3FK2_AL	264.0	0.58	33.37		244.3	0.38	15.21	4	AL
KGTJD9_AL	152.7	-1.79	15.95		175.3	-1.01	19.19	4	AL
KNT4DH	250.1	0.28	20.34		181.8	-0.88	59.39	3	EV
MD7MZ2	282.1	0.96	28.54		276.1	1.03	5.35 L	4	LA
N2BR3X	187.5	-1.05	23.38		94.3	-2.65 *	108.44 H	4	LA
N2BR3X_AL	165.0	-1.53	36.13		181.1	-0.90	13.26	4	AL
Q8NMWX	281.6	0.95	40.73		266.9	0.84	9.95	4	LS
RE4KZB	179.8	-1.21	11.91	L	187.7	-0.76	5.60 L	4	EV
TY6X9A	283.7	1.00	36.68		296.9	1.45	9.56	4	LS
X84CXQ_AL	250.1	0.28	49.51	H	240.4	0.30	10.78	4	AL
Z6A8F4	242.6	0.12	36.25		251.7	0.53	8.09	4	LS
Z8DZCM	280.1	0.92	25.82		285.5	1.22	21.33	4	LA
ZEVCM3_AL	163.7	-1.55	23.08		165.4	-1.22	4.72 L	4	AL
ZLWNJZ	149.5	-1.86	12.69		129.9	-1.93 *	17.36	3	XX

Consensus (All Labs) Results

Month Mean	236.85	Grand Mean	225.40
Avg SD	28.38	Avg SD Months	38.90
SD btwn Labs	47.09	SD btwn Labs	49.40
Labs Incld	33	Labs Incld	34

Key to Instrument Codes Reported by Participants

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 - 42L1

TAPPI Official Test Method T538

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
3VVZRY_AL	374.7	-0.57	5.76		372.0	-0.67	2.32	4	AL
4MZHTG_AL	388.3	0.30	7.39		384.8	0.12	3.88	4	AL
6MVMKU_AL	421.3	2.41 *	5.05		423.0	2.47 *	1.88	4	AL
8KDCKT_AL	383.1	-0.03	7.08		380.5	-0.14	3.19	4	AL
9MKRUK_AL	84.7	-19.09 X	7.68		218.8	-10.09 X	196.88 H	3	XX
A43BZQ_AL	367.9	-1.00	4.79		371.9	-0.68	4.09	4	XX
CG3QXQ_AL	375.1	-0.54	4.53		376.5	-0.39	2.96	4	XX
EP7MXD_AL	389.4	0.37	3.50		391.4	0.52	2.65	4	AL
KF3FK2_AL	402.5	1.21	7.52		393.0	0.63	14.30 H	4	AL
L7APDY	393.2	0.62	5.96		392.6	0.60	0.85	2	PP
MR6TRC_AL	384.2	0.04	7.45		383.8	0.06	2.17	4	AL
N2BR3X_AL	370.1	-0.86	6.45		371.0	-0.73	1.50	4	AL
P93RUV	350.7	-2.10 *	5.09		343.3	-2.43 *	7.65	4	TS
Q8NMWX	381.2	-0.15	9.86		394.3	0.71	10.85	4	XX
REGCRR	388.7	0.33	7.79		386.9	0.25	1.60	4	XX
TK2ULU_AL	392.9	0.60	6.31		387.9	0.31	7.13	2	AK
UV3KZA	387.7	0.26	8.49		385.8	0.18	4.04	4	XX
X84CXQ_AL	369.4	-0.90	2.76	L	369.8	-0.80	1.06	4	AL

Consensus (All Labs) Results

Month Mean	383.55	Grand Mean	382.84
Avg SD	6.47	Avg SD Months	5.56
SD btwn Labs	15.66	SD btwn Labs	16.26
Labs Incld	17	Labs Incld	17

Key to Instrument Codes Reported by Participants

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

Containerboard Interlaboratory Testing Program

Analysis 231

Internal Bond, 42 lb Linerboard - 42L

TAPPI Official Test Method T569

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
6MVMKU	119.2	-1.19	14.06		129.1	-0.79	7.88	4	TM
8D2Y3X	160.0	1.19	11.94		161.6	1.23	4.46	4	HZ
8KDCKT	149.0	0.55	4.69		154.2	0.77	4.83	4	LZ
9JX9NF	153.6	0.82	14.81		149.2	0.46	4.73	4	TM
ALM2YP	135.2	-0.26	4.76		139.9	-0.11	5.33	4	TM
CG3QXQ	159.8	1.18	8.23		156.5	0.92	2.63	4	HY
CU9LGT	134.4	-0.30	22.11		152.5	0.67	13.92	4	HZ
F2DRLL	133.2	-0.37	10.69		141.3	-0.03	17.55 H	4	TM
GQUZAG	140.6	0.06	7.64		136.0	-0.36	4.25	4	TM
J7GWPG	169.8	1.76	16.05		170.3	1.78	14.87	4	HY
KF3FK2	126.8	-0.75	3.35		124.6	-1.07	1.51	4	TM
KNT4DH	107.8	-1.86	6.87		115.4	-1.64	8.27	3	TM
L7APDY	149.6	0.58	2.30 L		152.9	0.70	4.67	2	HY
MR6TRC	133.6	-0.35	11.24		139.4	-0.14	4.08	4	TM
QWPRX3	141.4	0.11	6.02		138.8	-0.18	6.79	4	HY
RE4KZB	114.2	-1.48	38.51 H		124.9	-1.05	7.38	4	TM
REGCRR	161.7	1.29	5.84		164.8	1.44	2.76	4	HY
TY6X9A	156.6	0.99	8.56		150.7	0.56	5.48	4	HY
UV3KZA	123.6	-0.93	5.12		113.6	-1.75	7.91	4	SC
V9KU27	140.4	0.05	5.41		138.9	-0.18	12.99	4	TM
X84CXQ	121.2	-1.08	4.09		121.8	-1.24	5.73	4	TM

Consensus (All Labs) Results

Month Mean	139.60	Grand Mean	141.71
Avg SD	12.87	Avg SD Months	8.21
SD btwn Labs	17.11	SD btwn Labs	16.07
Labs Incld	21	Labs Incld	21

Consensus By Method

Test Method	Group Mean	SD btwn Group	Difference from Grand Mean	Labs Included
Scott Bond Type	135.64	16.57	3.97	16
Modified Scott Bond Mechanics	160.16	10.48	20.56	3

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
4MZHTG	26.9	-0.45	3.38		28.2	0.13	1.84	4
4PZTMV	26.0	-0.77	4.32		26.2	-0.65	2.96	4
6MVMKU	24.4	-1.34	2.61		25.5	-0.93	2.35	4
8FKBJE	33.4	1.84	2.04		31.8	1.50	2.05	4
8KDCKT	25.0	-1.13	5.48	H	22.1	-2.19 *	2.20	4
9JX9NF	30.4	0.77	4.44		29.9	0.78	2.04	4
9MKRUK	25.2	-1.06	1.10		25.1	-1.06	0.17 L	3
A38RXN	23.4	-1.70	1.14		24.8	-1.19	3.07	4
AATKAN	26.8	-0.49	2.68		28.0	0.05	1.26	4
ALM2YP	31.8	1.27	1.79		28.9	0.37	2.28	4
CG3QXQ	28.6	0.14	2.70		28.5	0.22	1.72	4
CU9LGT	24.3	-1.38	1.20		24.2	-1.42	5.41 H	4
EP7MXD	30.8	0.92	4.09		29.1	0.47	1.32	4
F2DRLL	31.1	1.02	3.75		30.2	0.87	0.97	4
FB4DQJ	29.2	0.35	0.84		29.0	0.43	0.97	4
FBKRW8	27.8	-0.14	0.45	L	27.5	-0.16	0.31 L	3
GAP9U7	27.4	-0.28	2.07		24.7	-1.20	2.45	4
HUTB7G	27.4	-0.28	2.19		28.0	0.03	0.60	4
J7GWPG	31.0	0.99	3.16		31.2	1.27	0.52	4
KF3FK2	27.6	-0.21	2.61		26.5	-0.52	1.52	4
KGTJD9	24.4	-1.34	3.23		26.4	-0.55	1.79	4
KNT4DH	34.0	2.05 *	1.22		30.5	1.01	3.16	3
L7APDY	28.8	0.21	1.92		26.3	-0.60	3.54	2
Q8NMWX	26.8	-0.49	2.05		31.8	1.51	3.39	4
QFFZTC	30.2	0.71	3.35		28.2	0.12	3.62	4
QWPRX3	27.0	-0.42	1.22		27.2	-0.27	0.70	4
RE4KZB	29.0	0.28	2.24		32.5	1.75	2.86	4
REGCRR	27.2	-0.36	1.36		26.2	-0.64	0.92	4
TY6X9A	31.2	1.06	3.11		30.9	1.14	1.63	4
UV3KZA	26.4	-0.64	1.52		25.8	-0.79	1.77	4
VRKHT6	28.2	0.00	1.64		27.9	-0.01	2.36	4
X84CXQ	28.4	0.07	2.17		29.4	0.60	1.24	4
Z6A8F4	22.2	-2.12 *	0.84		22.2	-2.19 *	0.34 L	4
Z8DZCM	30.2	0.71	2.39		28.1	0.08	1.74	4
ZEVCM3	31.4	1.13	2.07		30.2	0.87	1.85	4
ZLWNJZ	31.2	1.06	5.07		31.0	1.19	1.51	3

Consensus (All Labs) Results

Month Mean	28.20	Grand Mean	27.87
Avg SD	2.71	Avg SD Months	2.20
SD btwn Labs	2.83	SD btwn Labs	2.62
Labs Incld	36	Labs Incld	36

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
3CFQRX	33.5	-0.24	1.38	L	32.9	-0.70	0.71	4	LP
3VVZRY_AL	34.6	0.34	1.38	L	35.1	0.87	2.15	4	AL
4MZHTG_AL	32.4	-0.78	1.96		30.9	-2.01 *	1.03	4	AL
69A8JG	32.7	-0.61	2.11		32.4	-1.00	0.41	4	LA
6MVMKU_AL	32.4	-0.79	1.94		33.5	-0.27	1.08	4	AL
8KDCKT_AL	33.7	-0.10	1.44		35.5	1.12	1.65	4	AL
9JX9NF	35.5	0.79	3.10		34.0	0.11	1.04	4	LP
9LPARJ_AL	35.5	0.77	1.99		35.1	0.83	0.45	4	AL
9MKRUK_AL	29.9	-2.02 *	11.61	H	56.9	15.85 X	46.59 H	3	XX
A38RXN_AL	32.3	-0.82	1.43		32.0	-1.27	0.49	4	AL
A43BZQ_AL	35.6	0.83	3.16		35.0	0.78	0.80	4	XX
AATKAN	29.5	-2.25 *	4.72		31.6	-1.56	2.00	4	TD
ALM2YP	34.2	0.13	2.58		35.8	1.30	2.79 H	4	GA
CG3QXQ	33.1	-0.43	4.70		34.2	0.26	0.96	4	TP
CG3QXQ_AL	32.7	-0.61	3.11		32.9	-0.65	0.41	4	XX
CU9LGT	34.6	0.31	2.77		34.8	0.61	1.56	4	LP
EP7MXD_AL	34.5	0.26	2.92		33.7	-0.11	0.55	4	AL
F2DRLL_AL	34.2	0.11	2.37		33.9	0.02	0.77	4	AL
FB4DQJ	25.0	-4.51 X	1.70		23.1	-7.43 X	1.89	4	XX
FBKRW8	33.6	-0.18	2.37		33.2	-0.46	0.46	3	LP
FVCFPN	35.3	0.68	2.58		35.7	1.24	1.60	4	XX
GA8J7K	33.3	-0.35	1.68		34.5	0.44	0.87	4	LP
HC9K8G	34.3	0.16	1.77		33.9	0.04	0.62	4	LA
HWCPAG	33.4	-0.29	2.45		33.0	-0.63	1.19	4	LA
J7GWPG	32.5	-0.73	2.07		33.2	-0.45	0.78	4	LP
JLU7PK	33.3	-0.33	1.77		35.2	0.91	3.12 H	3	XX
KF3FK2	34.1	0.06	2.60		34.0	0.09	0.29	4	LP
KF3FK2_AL	37.5	1.81	1.94		37.3	2.39 *	0.61	4	AL
KGTJD9_AL	38.9	2.52 *	2.58		38.8	3.41 X	0.72	4	AL
KNT4DH_AL	32.2	-0.86	1.43		33.3	-0.37	0.79	4	AL
L7APDY	38.3	2.20 *	5.88	H	29.2	-3.19 X	12.86	2	TP
MD7MZ2	35.0	0.55	3.31		34.5	0.42	0.95	4	LA
MR6TRC_AL	34.5	0.27	2.28		34.4	0.33	0.49	4	AL
N2BR3X_AL	31.7	-1.12	2.07		32.6	-0.84	0.71	4	XX
Q8NMWX	35.4	0.72	3.39		34.5	0.44	0.97	4	GA
QFFZTC_AL	33.2	-0.36	3.47		33.5	-0.22	1.10	3	AL
R8JKJY	34.7	0.38	1.85		34.6	0.49	0.58	4	XX
RE4KZB_AL	34.0	0.02	1.99		34.7	0.60	0.67	4	AL
REGCRR	36.1	1.06	5.21		34.1	0.13	1.47	4	TP

Containerboard Interlaboratory Testing Program

Analysis 237

Air Resistance, 42 lb Linerboard - 42L1

TAPPI Official Test Method T460

	Monthly Results				Cumulative Results				
WebCode	Mean	CPV	SD		Mean	CPV	SD Months	Months	Inst
TK2ULU_AL	34.8	0.40	2.48		33.7	-0.09	1.44	2	AK
TY6X9A	34.5	0.26	1.46		33.7	-0.10	0.89	4	LP
VRKHT6	35.6	0.84	2.86		36.1	1.56	1.10	4	GG
X84CXQ_AL	33.6	-0.20	2.94		34.4	0.39	1.00	4	AL
Z6A8F4	29.0	-2.48 *	4.38		31.2	-1.87	1.86	4	TD
Z8DZCM	32.1	-0.95	1.40	L	31.2	-1.87	1.49	4	LA
ZEVCM3	37.4	1.76	3.44		36.1	1.54	1.56	4	GG
ZEVCM3_AL	33.9	-0.02	2.02		33.3	-0.39	0.83	4	AL
ZLWNJZ	32.5	-0.72	2.75		30.9	-2.06 *	1.72	3	LP

Consensus (All Labs) Results

Month Mean	33.95	Grand Mean	33.87
Avg SD	3.24	Avg SD Months	1.25
SD btwn Labs	1.98	SD btwn Labs	1.45
Labs Incld	47	Labs Incld	44

Key to Instrument Codes Reported by Participants

AK	L & W Autoline 300	AL	L & W Autoline 400
GA	Gurley Precision #4340 Automatic Densometer	GG	Gurley Precision #4320 Densometer
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
3CFQRX	64.4 *	62.8	60.8	58.9	61.7	1.44	3.8	2.4	59.6	0.71	3.1	2.8	16	LD
42FHML	68.9 X	66.7 *	68.2 X	65.7 *	67.4	3.74 X	5.8	1.5	66.0	3.28 X	5.9	2.0	12	TX
4B74TK	56.2	55.6	55.9 L	55.5	55.8	-0.97	2.3	0.3	56.4	-0.61	1.9	1.3	14	XX
4PZTMV	57.2	55.9	55.7	51.9 *	55.2	-1.23	3.2	2.3	55.9	-0.78	3.4	1.8	16	EN
8D2Y3X	55.5	56.7	56.3	57.1	56.4	-0.73	2.9	0.7	56.1	-0.70	2.9	1.0	16	LD
8KDCKT	49.6 *	53.6	53.2	53.1	52.4	-2.36 *	3.0	1.9	53.5	-1.77	3.3	2.2	16	LD
A38RXN	54.4	58.5	55.3	56.8	56.2	-0.79	4.0	1.8	56.6	-0.51	4.1	2.1	16	LZ
AATKAN	56.6	60.5	59.7	55.8 H	58.2	-0.01	4.9	2.3	57.0	-0.34	4.3	1.7	16	LZ
ABJN3V	57.9 L	57.9	57.7	57.4	57.7	-0.18	1.7	0.3 L	58.3	0.15	1.7	0.5 L	12	MB
ALM2YP	54.9	54.9	56.8	57.3	56.0	-0.89	4.0	1.2	55.9	-0.79	3.5	1.4	16	LD
BDNVHT	58.3	57.5	57.1	58.9	58.0	-0.09	3.1	0.8	57.7	-0.06	3.5	0.7	16	LD
C8WQPP	57.0	58.5	57.6	56.5	57.4	-0.33	4.2	0.9	56.7	-0.47	3.8	1.2	16	LD
CG3QXQ	55.4	55.3	54.9	56.1	55.4	-1.12	3.7	0.5	55.3	-1.04	3.5	1.6	16	LD
CU9LGT	55.3	54.8	56.2	58.2	56.1	-0.84	3.6	1.5	54.7	-1.29	4.0	2.3	16	LZ
CYKP7A	50.7 *	48.1 *	49.2 *	47.3 X	48.8	-3.80 X	3.4	1.4	50.4	-3.01 X	4.1	2.2	16	TH
DCLNRL	62.8	61.2	60.4	60.5	61.2	1.24	4.0	1.1	59.8	0.76	3.9	1.3	16	LD
DX338R	58.6	65.4	61.3	58.7	61.0	1.13	4.2	3.2	60.2	0.93	4.5	2.5	8	LD
E4MHBP	60.2	61.2	62.1	59.9	60.8	1.07	2.7	1.0	62.1	1.70	3.0	1.5	16	TB
FBKRW8	57.2	57.3	56.8	58.1	57.4	-0.34	2.1	0.5	57.7	-0.09	2.1	0.6	12	LD
FDBTZB	55.7	54.7	52.8	56.0	54.8	-1.38	3.7	1.4	54.5	-1.35	3.5	1.3	16	LD
FVCFPN	55.0	55.3	56.1	57.1	55.9	-0.94	3.2	0.9	56.3	-0.63	3.1	1.9	8	LD
GA8J7K	58.0	56.7	59.9	56.9	57.9	-0.13	3.5	1.4	57.2	-0.27	3.4	1.7	16	LD
GAP9U7	60.4	63.6	60.1	60.7	61.2	1.23	3.3	1.6	60.7	1.14	3.2	1.5	16	LD
GQUZAG	63.0	62.2	61.0	60.6	61.7	1.43	2.6	1.1	61.2	1.34	3.3	1.5	16	LC
HC9K8G	65.3 *	60.4	65.6 *	62.1	63.3	2.10 *	4.5	2.5	62.3	1.79	4.8	3.8	16	TU
HX89BH	57.1	58.3	60.6	58.5	58.6	0.18	4.0	1.5	58.4	0.22	4.4	1.5	16	LD
J3EWNJ	45.7 X	46.0 XH	39.5 X	No Data	43.7	-5.88 X	5.4	3.7 H	44.5	-5.40 X	5.3	4.0	15	TC
J7GWPG	55.5	59.5	58.1	65.4 *	59.6	0.59	3.9	4.2 H	59.3	0.56	4.0	2.2	16	XX
KF3FK2	49.6 *	49.6 *	49.1 *	49.4 X	49.4	-3.57 X	3.2	0.2 L	52.2	-2.29 *	4.2	2.2	16	LD
KNDKTK	60.7	62.0	60.8	57.5	60.3	0.84	3.9	1.9	55.8	-0.84	2.2	4.3 H	16	TU
KNT2ND	58.9	58.8	56.8	58.8	58.3	0.06	4.2	1.0	57.8	-0.02	3.5	1.2	16	LZ
KNT4DH	60.4	59.5	59.9	59.3	59.8	0.65	4.1	0.5	60.7	1.13	4.0	2.5	12	LC
L7APDY	53.8	53.2	53.2	No Data	53.4	-1.94 *	3.6	0.3	55.0	-1.15	3.6	1.9	7	LD
LVBUE4	58.7 H	61.6	60.0	58.6	59.7	0.63	6.4	1.4	59.0	0.46	5.2	1.9	16	LD
N2BR3X	58.2	55.0	55.7	57.9	56.7	-0.61	3.7	1.6	56.5	-0.55	3.6	2.3	16	LD

Flat Crush Strength (CMT), 26 lb Corrugating Medium - CM13

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
Q8NMWX	56.9	59.9	56.5	55.5	57.2	-0.39	3.9	1.9	57.3	-0.23	3.9	2.2	16	LZ
QNXAH9	58.9	58.6	60.5 H	61.4	59.8	0.68	5.0	1.4	61.4	1.41	4.5	2.1	16	LD
QW8XV8	59.7	57.0	59.3	53.6	57.4	-0.31	3.6	2.8	58.5	0.24	3.8	3.2	16	LD
R2TBAZ	58.2	56.6	56.5	60.4 H	57.9	-0.11	5.1	1.8	59.3	0.57	4.3	2.1	16	LD
REGCRR	59.5	58.7	55.8	59.7 H	58.4	0.10	5.0	1.8	58.3	0.16	4.2	1.7	16	LC
TY6X9A	No Data	No Data	No Data	58.5	58.5	0.13	2.3	0.0	57.8	-0.01	1.9	0.6	4	LD
V3W4HV	58.2	59.5	59.0	59.8	59.1	0.39	4.8	0.7	59.5	0.66	3.7	2.0	16	LD
V9LMXT	60.5	59.2	58.9	58.6	59.3	0.46	3.4	0.8	60.3	0.96	3.2	1.1	16	LD
VU3YNU	57.5 L	57.6 L	57.6 L	57.6 L	57.6	-0.24	0.6	0.0 L	57.6	-0.11	0.6	0.2 L	16	LD
WBR7J8	61.8	64.7	63.6	62.9	63.3	2.06 *	3.9	1.2	62.4	1.83	3.3	1.2	16	LC
WZNC3N	59.7	61.5 L	63.2 L	59.7 L	61.0	1.16	1.4	1.7	61.2	1.33	1.4	2.8	16	XX
X2VQAU	56.7	57.4	57.1	55.0	56.5	-0.67	3.4	1.1	55.9	-0.79	3.1	1.3	16	EM
X84CXQ	54.2	53.5	54.6	58.1	55.1	-1.25	3.4	2.1	55.8	-0.83	3.7	2.0	16	LD
Z8DZCM	55.8	58.4	59.1	53.7	56.7	-0.58	5.3	2.5	53.6	-1.71	7.4	2.8	16	MB
ZLWNJZ	55.9	64.6	61.5	59.5	60.4	0.89	3.6	3.6 H	60.7	1.13	4.1	2.6	11	LD

Consensus (All Labs) Results

Wk Mean	57.57	58.33	57.87	58.25	Month Mean	58.18	Grand Mean	57.88
Avg SDr	3.86	3.70	3.80	3.82	Avg SD	3.76	Avg SD	3.68
SD btwn Labs	3.29	3.80	3.36	2.80	SD btwn Labs	2.46	SD btwn Labs	2.47
Labs Incld	47	48	47	46	SD btwn Wks	1.74	SD btwn Wks	2.00
Labs Excld	2	1	2	2	Labs Incld	46	Labs Incld	47
Labs not Rcvd	1	1	1	2				

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
TB	TMI Monitor/Compression Tester, 17-70	TC	TMI Monitor/Compression Tester, 17-37
TH	TMI Compression Tester, Model 17-76	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 - CM13

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
3CFQRX	69.0	71.4	71.3	68.0	69.9	1.41	2.9	1.7	69.8	1.28	2.9	1.2	16	LD
4B74TK	63.0 L	62.9	63.9	62.4	63.0	-1.14	1.9	0.6	63.8	-1.26	1.6	1.3	14	XX
8KDCKT	65.7	64.9	64.7	63.3 H	64.7	-0.54	3.6	1.0	65.9	-0.35	3.3	1.2	16	LD
A38RXN	62.6	62.5	60.5 H	64.7	62.6	-1.30	4.3	1.7	62.1	-1.94 *	4.9	3.1	16	LZ
ABJN3V	65.3	65.8	65.2 L	65.6	65.5	-0.23	1.7	0.3 L	65.3	-0.63	1.7	0.6	12	MB
CG3QXQ	70.4	69.9	68.0	71.5 *	70.0	1.42	3.7	1.5	69.5	1.14	3.7	2.2	16	LD
DCLNRL	67.4	67.2	65.8	65.9	66.6	0.17	3.5	0.8	68.1	0.55	4.0	1.9	16	LD
FBKRW8	67.0	67.5	66.9	66.7	67.0	0.34	2.1	0.3 L	66.9	0.06	2.2	0.5 L	12	LD
GA8J7K	69.0	66.9	68.1	67.8	68.0	0.68	2.8	0.9	67.3	0.24	3.2	1.4	16	LD
J7GWPG	70.7	71.6	68.4	66.5	69.3	1.18	3.3	2.3	68.9	0.88	3.3	1.6	16	XX
JLU7PK	64.2 L	64.8	66.8 L	65.9	65.4	-0.25	1.6	1.2	65.7	-0.46	1.6	1.2	12	LZ
KF3FK2	60.0 *	59.1 *	59.6	59.7 *	59.6	-2.41 *	4.7	0.4	57.6	-3.86 X	6.0	1.4	16	LD
KNT2ND	65.4	62.2	63.2	66.9	64.4	-0.62	3.6	2.1	64.6	-0.92	3.8	1.4	16	LZ
KNT4DH	68.9	70.9	56.9 *H	67.1	66.0	-0.06	5.2	6.2 H	67.9	0.47	4.3	4.0 H	12	LC
L7APDY	64.7	70.1	69.7	No Data	68.2	0.76	3.0	3.0	68.7	0.83	2.9	1.9	7	LD
N2BR3X	66.7	63.6	62.5	65.1	64.5	-0.60	4.2	1.8	62.8	-1.66	4.2	2.1	16	XX
REGCRR	67.0	68.5	68.6	65.8	67.5	0.50	3.3	1.4	68.5	0.74	3.2	1.7	16	LC
WZNC3N	69.9 L	71.6	68.2 L	69.8 L	69.9	1.39	1.3	1.4	70.6	1.61	1.1	1.2	16	XX
X84CXQ	66.3	63.6	66.6	63.8	65.1	-0.38	3.6	1.6	66.3	-0.18	3.9	3.2	16	LD
ZLWNJZ	63.8	68.6	66.5	62.2	65.3	-0.31	3.8	2.9	65.8	-0.39	3.6	2.3	11	LD

Consensus (All Labs) Results

Wk Mean	66.34	66.68	65.56	65.73	Month Mean	66.11	Grand Mean	66.76
Avg SDr	3.44	3.02	3.87	3.06	Avg SD	3.37	Avg SD	3.29
SD btwn Labs	2.84	3.66	3.60	2.74	SD btwn Labs	2.70	SD btwn Labs	2.38
Labs Incld	20	20	20	19	SD btwn Wks	2.10	SD btwn Wks	1.98
Labs Excld	0	0	0	0	Labs Incld	20	Labs Incld	19
Labs not Rcvd	0	0	0	1				

Key to Instrument Codes Reported by Participants

LC	L&W Crush Tester 48	LD	L&W Crush Tester 248
LZ	L&W Crush Tester (model not specified)	MB	Messmer Buchel K440
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
3CFQRX	42.2	40.1	41.5	41.1	41.2	-0.51	2.6	0.9	41.4	-0.21	2.8	1.3	16	LD
42FHML	39.2	42.5	42.9	44.4	42.2	0.11	4.3	2.2	39.2	-1.71	3.8	2.8	12	LZ
4B74TK	41.9	40.6 L	42.6 L	42.1	41.8	-0.17	1.5	0.9	42.1	0.29	1.4	0.6	14	MZ
8D2Y3X	42.1	43.1	42.9	44.5	43.2	0.67	2.7	1.0	42.6	0.67	2.8	1.3	16	LD
8KDCKT	43.6	42.1 H	41.7	42.3	42.4	0.22	4.3	0.8	42.7	0.74	3.2	1.1	16	LD
ABJN3V	40.1	40.8	40.3	40.2	40.3	-1.04	1.7	0.3	40.8	-0.63	1.7	0.7	12	MB
BDNVHT	42.9	43.2	43.5	41.5 H	42.8	0.42	3.9	0.9	41.6	-0.04	3.4	1.0	16	LD
C8WQPP	43.4	44.5	43.8	43.1	43.7	0.99	2.4	0.6	43.5	1.25	2.8	1.1	16	LC
CG3QXQ	40.2	40.1	40.3	39.8	40.1	-1.17	2.7	0.2 L	41.1	-0.44	2.9	0.8	16	LD
DX338R	43.4	42.9	48.4 X	47.5 *	45.5	2.09 *	4.2	2.8	44.5	1.94 *	3.7	2.6	8	EM
E4MHBP	40.6	41.6 L	41.3	41.5	41.2	-0.50	1.7	0.5	41.5	-0.13	1.9	1.1	16	XX
FVCFPN	45.1	43.1	44.0	45.1	44.3	1.36	3.1	1.0	44.6	2.01 *	2.9	1.6	16	LD
GA8J7K	39.6	41.8	42.5	37.8 *	40.4	-0.99	3.6	2.1	40.1	-1.12	3.3	1.7	16	LD
GAP9U7	33.3 XH	31.8 X	34.2 X	33.1 XH	33.1	-5.39 X	4.5	1.0	33.6	-5.61 X	4.0	2.8	16	XX
J3EWNJ	34.6 X	29.1 XH	30.1 XH	No Data	31.3	-6.48 X	6.2	2.9	27.2	-10.08 X	6.8	4.7 H	15	TC
J7GWPG	41.7	41.6	41.2	40.5	41.3	-0.48	3.4	0.5	41.1	-0.37	3.4	1.1	16	XX
KNDKTK	42.2	38.0 *	39.2 *H	43.0 L	40.6	-0.88	3.6	2.4	41.4	-0.16	2.0	1.2	16	TU
L7APDY	41.2 H	45.0	40.4	40.4	41.8	-0.17	4.8	2.2	41.8	0.12	4.1	1.7	8	LD
LVBUE4	41.4	45.3	43.6	45.0	43.8	1.07	4.4	1.8	41.7	0.01	3.7	3.2	16	LD
N2BR3X	40.7	40.2	41.3	40.2	40.6	-0.87	3.8	0.5	40.3	-0.98	3.7	1.1	16	LD
Q8NMWX	42.0	42.0	41.6	40.8	41.6	-0.28	3.1	0.6	40.8	-0.60	2.9	1.5	16	LD
QNXAH9	43.8	43.6	41.0	42.4	42.7	0.39	3.3	1.3	42.3	0.47	3.6	1.6	16	LD
QW8XV8	45.1	41.7	44.2	43.8	43.7	0.99	3.3	1.4	42.4	0.51	4.1	4.2 H	16	LZ
R2TBAZ	43.0	44.2	43.0	42.1	43.1	0.62	3.5	0.9	41.6	-0.05	3.9	1.6	16	LD
REGCRR	43.9	44.0	42.6	40.8	42.8	0.44	3.8	1.5	41.8	0.07	3.4	1.8	16	LC
TK2ULU	36.5 XL	38.7	36.4 XL	39.4	37.7	-2.60 *	1.9	1.5	40.3	-0.99	3.9	2.9	16	LD
V3W4HV	40.3	39.0	39.9	39.7	39.7	-1.41	4.1	0.6	39.5	-1.49	3.2	1.5	16	LD
VU3YNU	43.6 L	43.4 L	43.4 L	43.4 L	43.5	0.84	0.7	0.1 L	43.7	1.39	0.6	0.2 L	16	LD
WBR7J8	46.3 *	43.0	42.7	43.4	43.8	1.06	2.9	1.7	42.2	0.37	3.2	1.5	16	XX
XQDAGM	43.7	42.9	40.2	42.5	42.3	0.15	2.9	1.5	41.0	-0.48	2.7	1.2	16	TH
Z8DZCM	43.8	43.3	44.0	42.1	43.3	0.76	3.6	0.9	43.9	1.53	3.1	0.8	16	MB
ZVJKML	45.1	39.9	37.5 X	38.4	40.2	-1.11	2.7	3.4 H	38.8	-1.98 *	4.5	2.9	16	XX

Containerboard Interlaboratory Testing Program
Analysis 255
Ring Crush (RCT), 26 lb Corrugating Medium - CM13
TAPPI Official Test Method T822

Consensus (All Labs) Results

Wk Mean	42.47	42.07	42.05	41.95	Month Mean	42.05	Grand Mean	41.68
Avg SDr	3.16	3.52	3.20	3.30	Avg SD	3.29	Avg SD	3.20
SD btwn Labs	1.82	1.89	1.44	2.15	SD btwn Labs	1.67	SD btwn Labs	1.43
Labs Incld	29	30	27	30	SD btwn Wks	1.46	SD btwn Wks	1.81
Labs Excld	3	2	5	1	Labs Incld	30	Labs Incld	30
Labs not Rcvd	0	0	0	1				

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	MZ	Messmer Buchel (model not specified)
TC	TMI Monitor/Compression Tester, 17-37	TH	TMI Compression Tester, Model 17-76
TU	TMI Universal Crush Tester (TMI K440)	XX	Instrument make/model not specified by lab

Containerboard Interlaboratory Testing Program

Analysis 261

STFI, 26 lb Corrugating Medium - CM13

TAPPI Official Test Method T826

Report #661
October 2024

	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
4B74TK	13.6 L	12.9 L	13.1 L	13.2 L	13.2	-0.95	0.4	0.3	13.3	-0.63	0.4	0.2	14	LZ
69A8JG	12.9	13.8	13.5	12.6	13.2	-0.95	1.3	0.6	13.2	-0.83	1.2	0.4	16	LA
6MVMKU	14.5	14.0	14.1	13.6	14.0	0.38	1.1	0.3	14.1	1.16	1.1	0.4	16	LA
82L4PJ	12.6	12.2	13.8	13.2	12.9	-1.37	1.0	0.7	13.6	-0.11	1.0	0.6	16	LA
8D2Y3X	14.7	14.1	14.7	14.5	14.5	1.12	1.0	0.3	14.2	1.17	1.1	0.4	16	XX
8FKBJE	13.7	13.7	13.6	13.4	13.6	-0.38	1.1	0.1 L	13.1	-1.07	1.1	0.6	16	TT
8KDCKT	14.3	13.2 L	13.9	14.2	13.9	0.16	0.9	0.5	13.9	0.61	1.0	0.5	16	LA
ALM2YP	13.0	13.6	13.4	13.4	13.4	-0.70	1.0	0.3	13.3	-0.57	1.1	0.3	16	LU
C8WQPP	13.3	14.2	14.4	14.1	14.0	0.32	1.1	0.5	13.8	0.45	1.1	0.5	16	LH
DX338R	14.9	14.9	14.8	15.1	14.9	1.73	1.3	0.1 L	14.5	1.84	1.0	0.6	8	LH
FBKRW8	13.8	13.2	13.7	13.4	13.5	-0.46	1.1	0.3	13.6	-0.08	1.1	0.3	12	LA
GAP9U7	13.6 L	14.1 L	14.1 L	13.1 L	13.7	-0.12	0.0	0.5	13.7	0.20	0.0	0.3	16	LH
GQUZAG	14.0	13.3	14.1	13.5 H	13.7	-0.13	1.2	0.4	13.5	-0.17	1.1	0.4	16	XX
HC9K8G	14.8	14.9	14.1	14.4 H	14.6	1.17	1.3	0.4	14.4	1.61	1.2	0.3	16	LA
J3EWNJ	22.1 X	22.2 XH	22.3 X	No Data	22.2	13.23 X	1.6	0.1 L	21.4	16.75 X	1.6	0.8	15	TS
KF3FK2	13.0	12.8 H	13.0 H	13.1	13.0	-1.32	1.7	0.1 L	12.7	-1.98 *	1.6	0.5	16	LB
KNDKTK	11.4 X	10.9 XL	12.1 *H	12.1 *	11.6	-3.45 X	1.1	0.6	12.0	-3.57 X	1.1	0.4	16	XX
L7APDY	13.3	12.7 L	13.1	13.0	13.0	-1.29	1.0	0.2	16.0	5.22 X	1.4	4.3 H	8	LB
MD7MZ2	13.9	15.0	14.0	13.9	14.2	0.65	1.2	0.5	14.1	1.13	1.2	0.5	16	LA
N2BR3X	12.7	13.3	13.5 L	13.2	13.2	-0.98	1.0	0.3	12.9	-1.49	1.1	0.5	16	LZ
Q8NMWX	13.1	12.8	12.9	13.2	13.0	-1.27	0.9	0.2 L	13.4	-0.46	1.0	0.5	16	LB
QNXAH9	13.4	13.8	13.5	13.9	13.7	-0.21	1.1	0.2	13.5	-0.30	1.1	0.4	16	XX
QW8XV8	12.7 H	12.5	12.4 *	24.4 X	15.5	2.64 *	1.5	5.9 H	13.4	-0.47	1.4	3.0 H	16	LZ
REGCRR	13.8	14.0	13.7	13.4	13.7	-0.10	0.9	0.2	13.6	0.02	1.0	0.2	16	LU
TK2ULU	13.9	14.7	14.9	15.4 *	14.7	1.47	1.3	0.6	14.5	2.00 *	1.1	0.6	16	LH
TY6X9A	No Data	No Data	No Data	13.4 L	13.4	-0.63	0.6	0.0	13.2	-0.89	0.8	0.3	4	LH
U4WM7R	14.1	13.8	13.6	14.3	14.0	0.23	1.2	0.3	13.3	-0.76	1.1	0.5	16	TX
WZNC3N	13.8	13.1	13.5	13.3 L	13.4	-0.64	1.1	0.3	13.0	-1.41	1.0	1.0	16	XX
X2VQAU	14.4	14.7	14.0	14.8	14.5	1.05	1.3	0.4	13.9	0.64	1.1	0.6	16	LH
X84CXQ	13.7	13.1	14.2	13.9	13.7	-0.13	1.1	0.5	13.5	-0.24	1.2	0.4	16	LA
Z8DZCM	15.1 *	14.4	14.0	14.1	14.4	0.96	1.1	0.5	13.9	0.57	1.2	0.7	16	LA
ZBZKGR	13.2	13.7	13.8	13.8	13.6	-0.26	1.1	0.3	13.6	0.07	1.1	0.3	16	LU

Consensus (All Labs) Results

Wk Mean	13.71	13.68	13.72	13.68	Month Mean	13.81	Grand Mean	13.61
Avg SDr	1.13	1.14	1.18	1.10	Avg SD	1.13	Avg SD	1.10
SD btwn Labs	0.69	0.77	0.64	0.72	SD btwn Labs	0.63	SD btwn Labs	0.46
Labs Incld	29	29	30	30	SD btwn Wks	1.16	SD btwn Wks	0.74
Labs Excld	2	2	1	1	Labs Incld	30	Labs Incld	29
Labs not Rcvd	1	1	1	1				

Key to Instrument Codes Reported by Participants

LA	L&W Autoline	LB	L&W Model 152
LH	L&W 282	LU	L&W 52 without moisture correction (was 53)
LZ	L&W (model not specified)	TS	TMI Monitor/STFI Compression Tester, 17-33
TT	TMI Short Span Compression, 17-34 (MB K455)	TX	TMI (model not specified)
XX	Instrument make/model not specified by lab		

End of Report